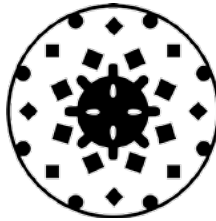International Planning History Society Proceedings
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THE (HIGH DENSITY) METROPOLIS
AND REGION IN PLANNING HISTORY

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International Planning History Society Proceedings
Vol. 20

**THE (HIGH DENSITY) METROPOLIS
AND REGION IN PLANNING HISTORY**

The International Planning History Society (IPHS) is dedicated to the enhancement of interdisciplinary studies in urban and regional planning history worldwide. The theme of urban transformation is critical now due to the new information and technological revolution, the contradistinction of the neoliberal and centre-planned economy, local identity and globalisation and new roles and uses of urban heritage.

Urban history has witnessed continuous changes, which included transformations of urban plans and objects, changing images or identities of certain spaces or whole cities.

This proceedings volume follows in its structure the organisation of the conference panels. Each presentation comprises an abstract, or a peer-reviewed full paper, traceable online with a DOI number. The full conference proceedings ebook, as well as all full papers individually are published online on the website of the proceedings books series:
 https://journals.open.tudelft.nl/iphs.

Letter from co-conveners

Dear Conference Participants,

Welcome to the 20th Biennial Conference of the International Planning History Society (IPHS)!

This document, the Proceedings of the IPHS's 2024 conference held at the Chinese University of Hong Kong, includes abstracts and papers broadly relating to the historical nature of urban culture and the practice of urban planning in Hong Kong, Asia, and beyond. Abstract and papers are composed by persons heralding from almost thirty different countries based in five different continents.

As an organisation with a truly global outlook to the discipline of Planning History, the IPHS via texts such as this Conference Proceeding and its journal, Planning Perspectives, offers unique opportunity, first, to think deeply as to what urban planning has occurred in the past, and, second, to recognise the different approaches and methods employed by scholars to understand how and why different forms of planning occurred in history. Indeed, for those of you coming to present your work in Hong Kong, the city as a high density and world renowned place offers a distinct window to grasp the dynamics affecting urban development in the high density context. Additionally, as a city nowadays increasingly tied to global markets and to its regional setting, by visiting Hong Kong you will be granted a new possibility to not only know its past but, in conjunction, to recognize what from beyond the local territorial borders has shaped, and is nowadays shaping, the built fabric. Whilst by no means a perfect urban place, Hong Kong has become a high density, globalised city with a local character that offers numerous advantages to daily life often lacking in other parts of the world.

We encourage you to carefully read through this document, and to contact each other so as to help enrich Planning History discourse!

Sincerely,
Prof. Ian Morley and Prof. Hendrik Tieben
Co-convenors, 20th Biennial Conference of the IPHS.

Letter from IPHS president

Dear Members of the IPHS Community,

As president of the IPHS, I would like to thank you for attending our 20th international conference. It was a pleasure to see so many of you in person here in Hong Kong. Such a big gathering is a real achievement, especially considering the last two cancelled conferences and the limits of the hybrid event we held in 2022 in Delft with little advance notice.

We are very grateful to the conveners of this year's conference, Professors Ian Morley and Henrik Tieben. They did an amazing job organizing this hybrid event, which started online on Friday the 28th of June, and continued from Tuesday, July 2nd, to Friday July, 5th, with onsite lectures, presentations, field visits, and a wonderful set of proceedings. I would also like to thank all the other members of the international and local conference committee as well as all the local hosts and sponsors who made the conference possible. I am grateful to our multinational management team and the many other people who contributed to putting this event together.

I would like to highlight a few points that are, for me, an essential part of the IPHS. We are international, innovative, and inter-generational. These are strengths that can help us make a difference for and in the future. This conference has helped build the personal ties and community needed to move the society forward. The IPHS is a truly international group of scholars, who talk to each other at eye level and hold conferences around the world. Such international engagement comes with challenges—including diverse political, economic, social, and cultural perspectives.

A meeting like this is an opportunity for all of us to look carefully at terminologies, methodologies and theories, both shared and diverging, and to work towards innovative practices. For example, when scholars of the ancient world from China, Vietnam, or Iran submit research on traditional urban forms some question whether they are doing planning history. Many historians look at planning as a discipline created in response to the industrial revolution. To bridge this gap, I would argue that modern planning practices are always a reflection on historic practices and forms. So, I invite all to be inclusive and generous to the scholars you encounter at such events and to engage with everyone attending as peers from whom you can learn.

While we have scholars from many different continents with us in Hong Kong, there are also notable gaps, and as society members we should reach out to those areas of the world like Africa, where we have fewer members. Also keep in mind that writing international, innovative and inclusive planning histories requires constant innovation and inter-generational collaboration. This means that the society's effectiveness depends on members of all ages interacting with one another in a community of learning.

As a society of planning history, we need to show planning history matters. Planning history makes it possible to evaluate practices of the past for the design of the future. Understanding

the motivations and tools of planners in different times and places can help develop new approaches for the future. Providing an analytical foundation, planning history can help us tackle today's wicked problems. We can explore the reasons why some plans of the past succeeded and others failed and use this analysis to improve contemporary planning.

We may find that we need planning based on ecosystemic thinking to transcend monofunctional and individual approaches. Research on ecosystemic approaches of the past can facilitate inclusive and sustainable practices, an approach in line with the UN Sustainable Development Goals. I am convinced that at a time of individualistic, small-scale and even circular thinking, we need comprehensive planning that benefits from transnational, ecosystemic approaches to planning history.

The past is the foundation of our current spaces, our institutions, our way of thinking. Understanding how we got to where are can help us design the future. Historical analysis can help us better understand how successful or unsuccessful we have been with the strategies, institutions, and planning tools we have developed and put into practice. Planning historians like Sies and Silver (1996) have noted the opportunity for studying complexity through the lens of history. I propose taking advantage of these and other opportunities to use historical analysis to better understand how successful or unsuccessful we have been in implementing the strategies, institutions, and planning tools we have developed. I would like to expand on this approach and offer a few additional ideas.

Specifically, I would like to emphasize a few elements: Systems thinking can illuminate how and why societies in the past have addressed environmental conditions and transitions, what systems have lasted and the role planning has played. Understanding what went wrong, why and when, and how we got into the situation we find ourselves in today can help us understand the complex challenges we need to overcome. The past provides us with extensive data on how societal choices that guide planning affect economic and social development and what happens when we ignore important ecosystem context, social justice, or beauty.

Analyzing historic path dependencies and their impact on contemporary spaces and planning can provide insights to use in developing a more societally just future. The stories we tell about the past and the heritage we keep, including human achievements and failures of planning, are related to the future we hope to achieve. If we want to address the future challenges that the world is facing involving a changing climate and energy transition, we need to acknowledge that we have created these problems. This means that we must rethink the foundations of our institutions and our planning tools to overcome path dependencies.

Heritage is crucial in connecting the past, present, and future, and its preservation and reuse play a key role in achieving this. Historic successes in planning as well as failures merit attention not only in museums, but also in everyday understanding and experiences. As planners design the future, how are we going to interpret the shortcomings of the industrial revolution and the petroleum age that have led to the challenges we are facing today? How can planning historians develop collective histories and historiographies that build bridges to future planning? One hundred years from now, which histories of past planning will be seen as success stories?

Prof. Carola Hein,
IPHS President

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East and South East Asia Urban Development and Water

Chair: Yixin Cao

Lost Rivers in Tokyo
A human–water interaction phenomenon in the mega city

Nakamura Shinichiro
Kyushu Sangyo University

Abstract

"Lost rivers" have emerged as a result of the human-water interaction process in mega-cities, where rivers have been lost due to land reclamation and concrete cover. The phenomenon of lost rivers has been reported in cities such as London, Paris, Milan, Zurich, and Seoul. Even in these cities, once a river is lost, it is often difficult to restore it. The phenomenon of lost rivers is the ultimate and irreversible arrival point of the process of human-water interaction in cities. In the early modern era, Tokyo was a water city, with rivers and canals running in all directions and connecting the commercial centers of the city. However, the modernization of Tokyo over the past 150 years and its rapid economic growth after World War II have made it an Asian mega-city. In the process, Tokyo's rivers were reclaimed or disappeared as concrete sewerage systems after the adjustments of urban planning, river planning, and sewerage system planning in response to the rapid urbanization of Tokyo. We analyzed historical government documents on Tokyo's lost rivers and developed our own historical spatial data to reveal the planning process toward the lost rivers over the past 150 years. The results showed that the historical background of the planning process toward the lost rivers in Tokyo includes the following stages of change in the human-water interaction in the city: 1) water pollution due to urban industrialization, 2) increased water demand and drainage due to rapid population growth, 3) deterioration of water quality and intensified flooding, 4) river artificialization and improvement of water quality through sewage system development, and 5) revival of urban rivers. And the historical spatial data indicate that rivers have decreased in each of these processes. This presentation discusses the similarities by comparing the Tokyo case with those of other countries.

Does Hong Kong have rivers?
HK's evolution of managing urban rivers and streams through the lens of urban development

Yixin Cao
University of Lyon

Abstract

Hong Kong (HK), one of the world's most densely populated metropolises, is home to over 200 rivers and streams that collectively span approximately 2500 kilometers. Between the 1970s and the 1990s, the majority of these waterways were transformed into artificial canals to facilitate flood control and accommodate urban expansion. Before 2011, the channelized watercourses in HK was increasing at an estimated rate of 24 kilometers annually. This rate declined after 2011, averaging about 6 kilometers per year, leading to a total of 363 kilometers of extensively modified river channels by 2016. As a result, the rivers of HK today remain heavily channelized and culverted, primarily serving as storm drains and lacking in ecological value. In response to the global movement towards green infrastructure and the increasing frequency of flooding due to climate change, river restoration has been put on agenda in HK since the 2010s. In 2015, the Drainage Services Department issued the "Practice Note on Environmental and Ecological Considerations of River Design," marking the beginning of a series of river revitalization initiatives. Among these, the Kai Tak River Improvement Works emerged as a flagship project. Moreover, the "Technical Circular: Blue-Green Drainage Infrastructure," published in 2020, emphasized HK's attempts to integrate ecological considerations into its urban water management. More recently, the development plan for the Tung Chung New Town Extension on Lantau Island aims to transform the Tung Chung River—one of the last remaining "natural" rivers in HK—into the city's first River Park to serve multiple purposes: conserving river ecology, mitigating flood risks, and providing a space for recreational activities. This study examines the evolution of the river landscape in HK within the context of its urban development history and critically evaluates the recent revitalization efforts.

Yixin Cao
Does Hong Kong have rivers?

Enhancing coastal flood risk management awareness
A case study in the Vietnamese Mekong delta

Tran Thi Huyen
Vietnam National University

Abstract

This research aims to enhance awareness among local authorities regarding the management of coastal flood risks in the Vietnamese Mekong Delta amidst climate change. A multi-agent simulation approach, implemented as a serious game, was employed to conduct a study involving the participation of local actors. The outcomes of our investigation underscore the adaptability of the participatory simulation model, LittoKONG, for the purpose of mitigating coastal flood risks in conjunction with local stakeholders in the Vietnamese Mekong Delta. This model was adapted from the generic LittoSIM model in the French context to the Vietnamese context. We based our scenarios on historical storm data in the delta to predict future coastal flooding events. Additionally, our simulations considered planning data, both historical and prospective, factoring in scenarios with and without levees or mangrove forests to prevent and lessen coastal flooding impacts. Moreover, the analysis of participants' actions and reactions during the workshops accentuated LittoKONG's role in balancing the involvement of risk management specialists and non-specialists in participatory simulation, thereby mitigating role asymmetry. The assessment of learning facilitated by LittoKONG revealed that cognitive learning, encompassing understanding the complex risk system and risk management strategies, received the most positive evaluations among the four categories, namely cognitive, relational, collaborative, and political learning. Local authorities underscored the imperative of coordinating diverse risk management strategies, with LittoKONG serving as a platform for a more profound comprehension of each stakeholder's role and the significance of collaboration. Nevertheless, optimal inter-district cooperation in LittoKONG has not been realized due to territorial specificities.

Keywords
participatory simulation, serious game, coastal flood risk, Mekong delta, Vietnam

How to cite

Changing freshwater landscapes in Singapore
An ecological and biodiversity perspective

Darren C. J. Yeo
National University of Singapore

Abstract

Singapore's freshwater landscape has undergone significant and rapid transformation, particularly in the past half-century, with many natural waterways converted into artificial habitats, e.g., reservoirs and canals, such that today's freshwater habitats and biodiversity differ in many ways from those encountered a generation ago. Despite such changes, Singapore remains populated by a variety of freshwater animal and plant species, ranging from its original freshwater denizens that continue to thrive in remnant natural freshwater stream and swamp habitats to introduced species commonly seen in urban reservoirs, ponds, rural streams and canals. More recently, further changes have been made to such artificial freshwater habitats as part of efforts to integrate the environment and enhance biodiversity in order to augment their recreational and social value, e.g., through ecosystem rehabilitation. This talk provides a brief overview of some of the changes in freshwater habitat and biodiversity in Singapore, touching on successes, challenges and opportunities in conserving freshwater biodiversity in a highly urbanised city state. It tells the story of resilience in our local freshwater animal communities, and efforts taken to appreciate, understand, and protect our sensitive and threatened native freshwater species and their habitat refugia. The talk also highlights an example of ecosystem rehabilitation, that of a 3-km canalised section of the Kallang River, a major urban stormwater drain and reservoir spillway, into a naturalised, meandering river, using a combination of plants and civil engineering techniques, and discusses its implications for biodiversity and ecosystem services.

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Cities and Natural Environment Philippines

Chair: Michaeil Pante

Feeding Frontier Colonial Cities
Baguio City and its Food Network, 1900–1945

Jose Mathew P. Luga, Jeraiah D. Gray
University of the Philippines Baguio

Abstract

Cities are living entities that could only exist with proper nutrition, just as human beings do. Thus, in establishing colonial cities, most especially in frontier regions, it is also important to consider how the surrounding environment and preexisting supply chains has influenced its development and vice-versa. This paper shall therefore examine the case of Baguio City, and how the natural environment and pre-existing indigenous trade network has nurtured its growth. Consequently, this paper shall also investigate how the imposition of a colonial city in the frontier has altered these natural environs and pre-existing indigenous trade networks for the better or worse. In doing so, we will be able to examine not only how the establishment of colonial cities has affected the physical rearrangement of the natural environment, but also how it may have introduced and/or hastened changes in the local economy.

Just Around the Riverbend
The Pasig River and Urbanization During the 19th Century

Analyn B. Muñoz
University of the Philippines Baguio

Abstract

In the centuries of Spanish colonial period in Philippine historical timeline, the nineteenth century is considered as unparalleled when it comes to countless transformations that occurred in the political, economic, social, and cultural life of the colony. Urbanization was at its peak and was mostly apparent in the colonial capital, the City of Manila. This paper will discuss the manifestations of urbanization that took place surrounding the Manila River, or more popularly and presently known as the Pasig River. It also aims to explain what urbanization meant from the perspective of the historic waterway. Furthermore, it will examine the impacts of urbanization on the river, its utilization, the wider ecological system it belongs to, and the daily life of the inhabitants of Manila. Lastly, this study will discuss the actions of the Spanish colonial government concerning the state of the Pasig River at this time.

Analyn B. Muñoz
Just Around the Riverbend

Health and Environmental Issues in the Planning of Philippine Cities

Michael D. Pante
Ateneo de Manila University

Abstract

Did colonial notions about health and the environment persist into the post independence period in the Philippines? This question will be answered by focusing on the planning histories of key cities such as Manila, Baguio, and Quezon City. While American colonial-era planners and architects like Daniel Burnham and William Parsons were certainly influenced by prevailing ideas about the relationship between geographical space and salubrity—with their belief in the efficacy of colonial hill stations as the most prominent example—not much is known about those who followed in their footsteps in this regard. By looking at how the newly independent Philippine nation-state maintained old cities and constructed new ones, this presentation seeks to track continuities and pinpoint ruptures between the periods of colonialism and formal independence.

Urban Morphology 1

Chair: Michaeil Pante

How to define an urban plot?
Land Regularization of Informal Settlements challenges in Belo Horizonte (Brazil), early 1980s

Gisela Barcellos de Souza, Marcos Felipe, Sudré Saidler, Maria Manoela Gimmler Netto
Federal University of Minas Gerais

Abstract

On January 3, 1983, the first Brazilian Law which legitimized the existence of favelas in the interurban space – and sought to provide instruments for their land regularization – was approved in Belo Horizonte. Through the Law 3532/83, a Municipal Regularization Program of Favelas – PROFAVELA – and a specific zoning to recognize favela areas was established. This presentation analyzes the initial challenges in implementing this pioneering program. The question of how to legally define the land regularization of informal settlements was already the subject of discussion at Superintendence of the Metropolitan Region Development of Belo Horizonte – PLAMBEL (1974-1996) – before the Bill was sent to the City Council (FERNANDES, 2023). On the other hand, the question of how to formally define the limits of lots to be regularized, and how to adequate use and occupation parameter's for these urban situations, was investigated by three architects linked to PLAMBEL shortly after the approval of the PROFAVE-LA. The issues of defining the shape of urban blocks and the road system were essential for the proper insertion of urban services in these territories. The Belo Horizonte option for titling in individual lots to the detriment of horizontal condominiums per block – which had been implemented in the previous experiences of Brás do Pina (1968) and Morro do Tibau (1980), both located in Rio de Janeiro – placed broad challenges for the team. The main challenges were to allow the continuity of roads and minimize the existence of so-called "locked" lots – lots without access to open public places. In order to develop a method for implementing this program, the team develops a case study in Vila Cafezal, a slum in Belo Horizonte, in which the translation of important Urban Design references – Rapoport (1977 and 1979); Krier (1976) and Alexander (1979) – for the context of informal urbanizations played an important role.

Keywords

How to cite

Before the Law
Experiment in Land Regularization of Brazilian Informal Settlements in the turn of the 1980s

Leticia Faria, Gisela Souza
Federal University of Minas Gerais

Abstract

Informal settlements in Brazil arise due to the profound national socio-economic inequality, compounded by the inefficacy of public authorities in allocating resources towards urban infrastructure or housing policies for the low-income population. Although they have been a constant presence in the historical landscape of Brazilian urban areas, it was not until the 1980s that these settlements became the target of specific programs for urbanisation, regularisation, and legalisation (Cardoso, 2007). Several pioneering projects preceded the establishment of dedicated land regularisation legislation, laying the groundwork for discourse and serving as catalysts for subsequent state interventions. Some cases include the favelas of Brás de Pina and Morro do Timbau, both in Rio de Janeiro; the Teimosinho project in Recife; and Vila CEMIG, Vila Cafezal, and Vila Edgard Werneck, in Belo Horizonte. The experience of Vila Werneck, a railway village, stands out for its absence in the current discussions within specialised literature. While receiving limited attention, it is important to emphasise that the extensive process of urbanisation and regularisation was conceived, implemented, and concluded before the establishment of the PROFAVELA law (Municipal Favela Regularisation Program, the first Brazilian initiative dedicated to the regularisation of favelas, approved in January 198,3 in Belo Horizonte). As a result, the regularisation project introduced innovative approaches, such as grouping smaller plots into condominiums, a strategy also evident in other cases. Therefore, the objective of this study is to delve into the experience of Vila Werneck in Belo Horizonte, contextualised alongside other experiences that predate legislative measures, analysing the similarities and differences in the approaches and solutions employed in those different processes. As a procedure in this research, documents were gathered from various archival institutions in Belo Horizonte and Minas Gerais, in addition to the theoretical review of the aforementioned cases.

Leticia Faria, Gisela Souza
Before the Law

Planning and economic development in Brazil
The case of ASPLAN consulting firm

Maria Cristina Silva Leme, Vitor Berge Sato
Federal University of Minas Gerais

Abstract

Since the 1940s an accelerated urbanization process has been a common feature among most of the capital cities in Latin America - in terms of the expansion of urban areas and of the formation of precarious peripheral areas, both of which had similar consequences on the social disaggregation process. In Brazil, planning linked to economic development has brought to the fore discussions about the future of the country and about ways to deal with worsening poverty and income inequality. Established in 1963, ASPLAN professional services consulting firm, headquartered in São Paulo, carried out studies and planning advisory plans for public and private companies in the national territory and also abroad. The firm operated for less than a decade and executed 154 projects covering the broad spectrum of planning during the period: economic, financial, administrative, urban and regional. Large projects such as the Basic Urban Plan of São Paulo (PUB) and the Integrated Development Program of the Taquari-Antas Basin, at the end of the 1960s, defined a significant growth in the volume of services provided by the company, to the point of opening branches in Porto Alegre and Rio de Janeiro. The paper presents the hypothesis that hiring practices for the development of plans and projects and the execution of works by companies and municipal, state and federal governments are similar and articulated. These practices that involve networks of economic and political relationships can explain the rapid expansion of companies, as well as help to clarify the numerous bankruptcies, some unexpected like those of ASPLAN. The study of the process of creation and expansion of ASPLAN helps to understand the context of valuing planning activity in Brazil in a period of expansion of the State's action and consolidation of the public works sector.

Farhat Afzal
A typo-morphological analysis to trace the historical transformation
of urban blocks around Ramna race course between 1947-2000

A typo-morphological analysis to trace the historical transformation of urban blocks around Ramna race course between 1947-2000

Farhat Afzal
University of Cincinnati

Abstract

Due to negligence in planning and deficient urban governance, Dhaka city ranks very low in various liveability indexes and global surveys carried out annually. Unlike Chandigarh or Islamabad, the city was not developed with the guidance of renowned and established city planners. And yet, its physical characteristics have been gradually transforming over the past 400 years. This raises the question, how is that transformation happening over the course of time, and what are the causes? To understand this, this paper aims to look at the transformation of Ramna, one of the historically and politically significant neighbourhoods of Dhaka. The paper focuses on typo morphological analysis of urban blocks in and surrounding the area formerly known as Ramna Race Course, between the time period 1947 and 2000. Using typo morphological analysis, this study identified the main reasons for the transformation of some selected parts of the area in and surrounding the Ramna Race Course area. The results show that power play by political parties, development to support institutional needs of University of Dhaka and encroachment by newer buildings are the primary reasons for the transformation of the six selected study areas.

Farhat Afzal
A typo-morphological analysis to trace the historical transformation
of urban blocks around Ramna race course between 1947-2000

INTRODUCTION

Due to its complicated history, fluctuating geography and unstable political climate, Dhaka has undergone many changes in the past 400 hundred years. Citing these reasons, many may argue that any discourse about changing Dhaka is a matter of luxury. But the truth is regardless of all that the city is indeed changing. Those responsible for changes at the macro level are developers, landowners and policy makers, while small vendors, builders of unplanned dwellings and small business owners are changing the city at the micro level.[1]

Unfortunately, Dhaka did not have the opportunity to develop its urban future with the guidance of renowned and established city planners. Some foreign visitors did play a role in its planning, including Patrick Geddes in 1917 and Minoprio, Macfarlane and Spencely in 1959. But the initiatives by local planners for developing the city have been lacking.[2] This negligence in planning, combined with deficient urban governance has resulted in the city ranking very low in various liveability indexes and global surveys carried out annually.[3] The city has been the victim of wild urbanisation, as a result of which, its physical characteristics have been gradually transforming as well. This raises the question, what are the causes that are inflicting the transformation, and how is that transformation happening over the course of time?

To understand this, it is important to look at the transformation of urban elements of the city, especially the urban blocks. This paper thus aims to look into the social, political and environmental aspects which lead to the transformation of specific parts of Ramna area in Dhaka, between the time period of 1947 and 2000.

BACKGROUND

Dhaka is an old city whose growth and development has been influenced by various influences ranging from geographic to socio-cultural, and from technological to economical.[4] The pacing of its growth goes against specific definition of its boundaries. It is said that Dhaka started its modern life in 1835, with the advent of English education, broadening of roads, and cleaning up of the dirt from the city. But the city experienced sudden changes when Bengal was divided in 1905, and Dhaka became the capital of East Bengal and Assam Province. The city became rejuvenated, and some impressive monuments gained prominence in the Ramna area. In 1912, two years after Dhaka lost its status as a capital, the then viceroy Lord Hardinge announced his plans for establishing University of Dhaka, which began its journey in 1921. The city then slowly progressed along this educational line.[5]

LITERATURE REVIEW

Dhaka's development can be divided into six morphologies, the interconnected components of the city created by the distinctive patterns of open spaces, built forms and social life. One of those

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morphologies is the area around the Ramna Race Course, now known as Suhrawardy Uddyan. The area began as the place for new cultural, educational, governmental and residential buildings that were developed by the British in the early 20th century.[6] However, the history of this area can be traced back to the Mughal era, in the early 1600s, when Emperor Jahangir was reigning. In 1608, Dhaka gained prominence when the Mughals established their provincial seat.[7] This is when the Ramna area was developed as a place of recreation for the wealthy and elite class of people. The name Ramna was chosen by the Mughal as it means "lawn'" in Persian, which referred to the lush green spaces of the neighbourhood.[8] After the fall of the Mughals, the area remained deserted and mostly consisted of graves and jungle growth. The Ramna Race Course was built in 1852, and following the first partition of Bengal in 1905, the jungle growth that emerged after the fall of the Mughals was cleared. This is when the present Ramna was established[9] and it became the central point for growth.[10] Ramna Race Course has witnessed many remarkable moments of Dhaka's history. Following the partition of the Indian subcontinent in 1947, the first ever public meeting of Muhammad Ali Jinnah was held here in 1948. Sheikh Mujibur Rahman's civic reception and historical 7th March speech were both held at Ramna Race Course in 1969 and 1971, respectively. The Race Course is also marked as the setting where the Pakistani Army surrendered, which brought an end to the Liberation War of Bangladesh in 1971. Because of all its layers of historical significance, Ramna Race Course and its surrounding areas are thus selected as the study area to investigate the historical transformation of urban blocks in Dhaka.

Dhaka not only expanded with regards to territory, but it also went through physical transformation at an internal level. Urbanisation is resulting in open spaces being transformed into built areas, while low lands and water bodies are being converted into built-up land.[11] Between the 1950s and 2010s, Dhaka's approximate area has grown by 8.33%. [12,13,14, 15, 16] After the partition of the Indian subcontinent in 1947, the city became the capital for East Pakistan, and that is when it began attracting migrants from other districts. That was the time the city went through some drastic changes, which continued over the six decades following the partition. Hence this time period is the focus of this research.

RESEARCH QUESTIONS:

This paper will attempt to answer the following questions:
- How did the transformation of urban blocks in and surrounding Ramna Race Course take place between 1947 and 2000?
- What were the causes of this transformation?

METHODOLOGY

The area within the street patterns in an urban fabric that can be subdivided into plots for constructing built forms is known as an urban block. In simplest terms, a city's basic unit is an urban block.[17] For the purpose of this research, each individual piece of land that is marked by a solid boundary line is considered as an urban block.

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of urban blocks around Ramna race course between 1947-2000

The typo-morphological analysis of urban blocks takes place in two stages:
− The typological analysis, where types of blocks are comparatively analysed.
− The morphological analysis, where selected urban block's characteristics will be supported by the evolution methods of reading. Transformation is one of the phases of this evolution process.
− In order to look at the transformation through a workable analysis, the study focused on four time periods: 1947, 1970, 1990 and 2000. These time periods were selected based on the availability of their historical maps.
− Using maps from aforementioned sources, this analysis is carried out. Six study areas were chosen to be analysed in detail, in order to find out the causes behind the historical transformation. Finally, all causes for each study area were tabulated.

FINDINGS

Six study areas are selected surrounding Ramna Race Course, whose transformations between 1947 and 2000 are investigated in detail. The areas are investigated over 4 time periods: 1947, 1970, 1990 and 2000.

Fig. 1.   Map of the selected site in Ramna, highlighting the six study areas

1. RAMNA RACE COURSE AREA

The Ramna Race Course served as the military club of British soldiers from the early British period. Charles Dawes, an English magistrate renovated the area previously known as Badshahi Bagh, and called the place 'Ramna Green' on which a race course was to be built in 1825.[18] Except for the Ramna Kali Mandir[19] and the old Shahbaz Khan mosque and tomb,[20] Dawes cleared up the area demolishing remaining monuments. As a result, an oval- shaped area remained and its perimeter was secured by a wooden fence for horse racing and other gaming purposes. And that is how the Badshahi Bagh was converted into a race

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course which was used for other recreational purposes too.[21] In 1972, the area was renamed Suhrawardy Uddyan, as a political decision by Sheikh Mujibur Rahman, founding father of Bangladesh. The 95 acres' area of the park has been significantly constricted, since various parts of the land have been leased out by the government to different organisations. Hence one of the causes of this transformation was political powerplay.

In 1979, 15 acres of land was allotted from Suhrawardy Uddyan to Parjatan Corporation through the Ministry of Works for constructing the Shishu Park.[22] But in 2016, the government decided to remove the Shishu Park and build a Liberation War Memorial in its place.[23] According to Afrin (2016), this too is a display of political power between two rival political parties.

Fig. 2.   Typo morphological transformation of the Ramna Race Course Area between 1947 and 2000.

2. RAMNA PARK AREA

Ramna Park was developed in 1908 as a recreational zone, with 68.5 acres of land surrounding the Ramna lake. With 71 species of plants, the park was officially inaugurated in 1949 with an area of 88.5 acres. In 1952, the landscape was designed by the Public Works Department of Bangladesh. After 1947, much of the area of the park was allotted to other buildings such as Radio Bangladesh in 1957, Hotel Sheraton in 1963 and the Tennis Federation in 1984. These establishments caused pollution in the Ramna lake and had adverse effects on the overall environment.[24] Thus, in this area, the cause of transformation was encroachment by other buildings.

Fig. 3.   Typo-morphological transformation of the Ramna Park area between 1947 and 2000.

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3. CURZON HALL AREA

Following the first partition of Bengal in 1905, Curzon Hall became one of the first establishments to be built, which initiated the process of development of a new town in Ramna. The building was a prime location for the Bengali Language Movement between 1948 and 1956, as students of Dhaka University chose it as a venue to voice their opposition to Urdu being the state language. The site has a number of residential halls for Dhaka University, such as Dacca Hall, presently known as Shahidullah Hall, established in 1921, and Fazlul Huq Muslim Hall, established in 1940. After 1990, the botanical garden for Dhaka University was established in that area, and is used by students and faculties of the Department of Botany for scientific study of plants. Hence, it is evident that due to institutional development, this area has undergone various transformations over the decades.
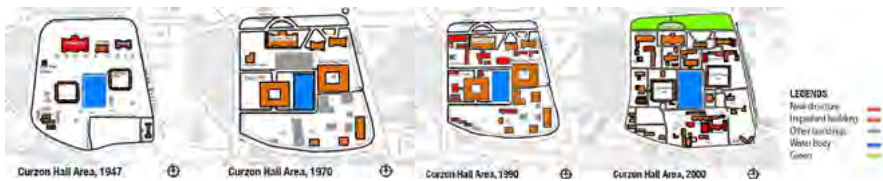
Fig. 4.   Typo morphological transformation of the Curzon Hall Area

4. SHAHBAGH AREA

In 1947, Shahbagh was mostly devoid of large built forms, and contained a canal that ran across the block, and some small but notable structures such as Mohsin Ali Mazar and Civil Officer's Training Camp. In the 1960s, we saw some more developments in the area like Shahbagh Hotel, Fine Arts Institute and Public Library for University of Dhaka. After 1970, the block was divided into two parts, with the access road called 'Elephant road' running between them. After 1980, the Bangladesh National Museum was established in the area. The southern block expanded to include more plots from the western side of Ramna, including the Andre Malraux garden, Shurjo Sen Hall and Institute of Education and Research. All these spaces function as part of University of Dhaka, hence the transformation of this area can be alluded to institutional development. By the year 2000, the canal which was originally a part of the area had disappeared.

Fig. 5.   Typo morphological transformation of the Shahbagh Area.

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5. THE UNIVERSITY OF DHAKA (DU) TEACHER STUDENT CENTRE (TSC) AND PLAYGROUND AREA.

This part of Ramna was mostly vacant in 1947, and the south-east part contained a triangular piece of green space which served as college playground for University of Dhaka. One notable building that existed at that point of time was Bardhaman House, which was the official residence of then Prime Minister of East Pakistan, Nurul Amin. Following the 1960s, the Teacher-Student Centre and the Atomic Energy Commission were established in the area. After the 1990s, some more establishments were developed, which all served various faculties of the University of Dhaka. In the triangular piece of green space, the gymnasium for the University of Dhaka was built. So, this part of Ramna transformed due to institutional developments that were necessary for the University of Dhaka.

Fig. 6.   Typo morphological transformation of the University of Dhaka's Teacher Student Centre and Playground Area.

6. UNIVERSITY OF DHAKA (DU) RESIDENTIAL HALL AREA

After 1947, the area developed into a significant location for learning purposes (Haque, 2013). In block 7, a new building can be seen, which is the Institute of Engineers Bangladesh, established in 1948.[25] Based on these observations, it is evident that the cause of transformation of urban blocks in this area is new planning developments. Based on all the findings mentioned above, the following causes have been identified for the six study areas in and surrounding Ramna Race Course between 1947 and 2000:

Urban blocks	Causes of transformation in Ramna between 1947- 2000
Ramna Race Course	Display of power by political groups
Ramna Park Area	Encroachment by other buildings
Curzon Hall Area	Institutional development
TSC and Playground at DU	Institutional development
DU Residential Hall Area	New planning developments
Shahbagh Area	Institutional development

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Fig. 7.   Dhaka University Residential Hall Area.

CONCLUSION

The idea for conducting this study originally stemmed from the researcher's desire to find out the connections between Dhaka's social, political and environmental factors and the morphology of the city. Ramna being a significant part of the city that had witnessed much of Dhaka's transformation over the past few centuries was thus chosen as the study area. Using typo morphological analysis, this study aimed to identify the main reasons for the transformation of some selected parts of the area in and surrounding the Ramna Race Course area. The results show that power play by political parties, development to support institutional needs of University of Dhaka and encroachment by newer buildings are the primary reasons for the transformation of the six selected study areas.

Much of the study was conducted with some limitations. The information for the analysis was collected from secondary sources, from a postgraduate thesis of a student from BUET. Maps were collected from there, and the entire analysis was based on those maps. Any inaccuracy and discrepancy in those maps will be reflected in this study's findings and analysis. A city is like a living organism, with multiple functions and forces that operate in tandem to transform its morphology. But in the case of most studies concerning urban form of cities, urban fabric or architectural typologies have remained the main point of focus. Few studies, especially for Dhaka, have been undertaken which considered the contexts and intangible factors which are responsible for the city's morphology. Studies like this one can perhaps be conducted for other parts of the city, as well as for other cities in Bangladesh to investigate how social, political and environmental factors play a role in the transformation of a city.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author.

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IMAGE SOURCES

All images are from Sonya Afrin, "Politics as Manifested Spatially in the Morphology of Post-Colonial Dhaka with a Focus on Ramna Area." Master's thesis, Bangladesh University of Engineering and Technology, 2016.

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Asunción, Mother of Cities
The Temptation of an Ecologic Utopia

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Abstract

This study aims to reveal how an original sequence of syncretism characterizes the development of architecture and urbanism in Asunción, capital city of Paraguay, unique in the mainstream urban history of Latin America. This investigation focuses on how a series of cultural syncretism mediate through time the tensions between endogenous and exogenous practices: vernacular material ecologies related to the cultural techniques of the Guarani, and colonial urban models introduced by the Spanish monarchy and the Jesuit missions. Articulated through an ecological, socio-cultural, and spatial understanding of Tereré and its tea rituals. It lies at the navel of every single spiral of syncretism: in its materials, symbols, and forms. As they mutate, so do its territories, urbanisms, and architectures. Even though it shares a history of Spanish colonialism with other capital cities, the grids of the Laws of Indies and the Jesuit castrum organization of space could not completely subdue the environmental logic of the Guaraní nation. Thus, the project aims to highlight the cultural values imprinted within an accretion of syncretism which offers a wealth of spatial expression in Asunción as it stands today.

Fig. 1. Matrix of South American Spanish Colonial Capitals from early 18th Century until late 19th Century. The grid system of urban layout is predominant throughout the main capitals of the South American Region, except for Asunción, a unique case in mainstream South America colonial urban history.

HOPSCOTCH

The characters explored in this narrative emanate from a multi-scalar historical investigation. They were not chosen at will, nor did I have a say on what their role in this investigation was going to be. Rather, they emerged as silent elements of resistance that persisted through the wreckage of events that transcended the history of Paraguayan civilization. As a result, this research does not follow one chronological thread, but rather a variety of patterns. Still, it attempts to weave the several stories of these characters that make up the image of Asunción today.

COLONIALISM

Paraguay shares a similar Spanish Colonial history to most of the continent's countries. In their endeavours, the Spanish explorers managed to deploy over 5oo cities in the span of 100 years. For this, they adopted the Roman Castrum of urban layout, a fast deployment colonialism mechanism. Colonialism unleashes and mobilizes the utopian social potential contained in the grid-shaped heterotopias of Latin America. Three aspects are of particular importance: a) the possibility of registering the absent; b) the distinction between data and addresses; and c) the potentially infinite extension in time and space, as discussed by Bernhard Siegert[1]. In figure 1, a matrix illustrates the South American Spanish colonial capitals from the 18th and

19th Centuries. We can observe that the Laws of Indies and the grid system are employed generally as a cultural technique. But what becomes evident in this case is the fact that Asunción does not follow the same systematic process of colonization and urbanization, but instead becomes a unique case in the mainstream urban history in South America.

THE LAND WITHOUT EVIL

"Si languideciera nuestra cultura también se debilitará la tierra, todo el cosmos entrará en riesgo de hacer crisis en el futuro. Si las nuevas generaciones no la conocieran, si los mayores no les enseñáramos estas cosas nuestras, ocurrirá lo indeseable, lo temido por todos". [2]

"If our culture languished, the land would also weaken, the entire cosmos would be at risk of crisis in the future. If the new generations did not know it, if we, the elders, did not teach them these things of ours, the undesirable, what everyone fears, would happen."[3]

GUÁRA

Before the conceptualization and delimitation of territorial boundaries established by the Spaniards, the Guarani communities were scattered throughout the land in a set of zones that they called Guára. In this culture, the term is conceived as a sociopolitical concept that encloses a well-defined region, delimited by rivers. As a result, the Indians had to make use of these extensions of land strictly for sustaining the communities that were scattered within this boundary, through agricultural practices and hunting. However, neighboring communities were not welcome to enter another community's Guára. Thus, perpetuating a notion of belonging and regional unity, that would render the available natural resources and lands as an exclusive property for its inhabitants.[4]

TEKO'A

This implies agglomeration and coexistence of multilineage in a single place. The Teko'a refers to a self-sufficient social unit based on a lineage that shared communal tasks such as production, consumption, and religious life. Therefore, these communal modes of living would be charged with symbolic, religious, economic, and social connotations that synthesized the cohesion of its members. Moreover, these settlements were a diverse element that did not disturb the natural ecosystems of their surroundings.[5]

OGA GUASU

Represents the cultural identity, resilience, and communal values of the Guarani people. It is a testament to their deep connection with the land, their ancestors, and each other. These communal houses served as multifunctional spaces where families not only gathered for daily activities but also rested at night. The open layout of the Oga Guasu allowed for flexibility in

accommodating sleeping arrangements. Within it families would have designated areas or sections where they would lay out sleeping mats or hammocks for the night, organized based on familial ties, with extended family members sleeping close to one another. Additionally, the communal nature of the Oga Guasu fostered a sense of security and solidarity among community members as they shared the same living space. Sleeping in the Oga Guasu not only provided practical benefits such as protection from the elements but also reinforced social bonds and cultural practices within the Guarani community. It was a way for families to connect and with their cultural heritage in a shared living environment.
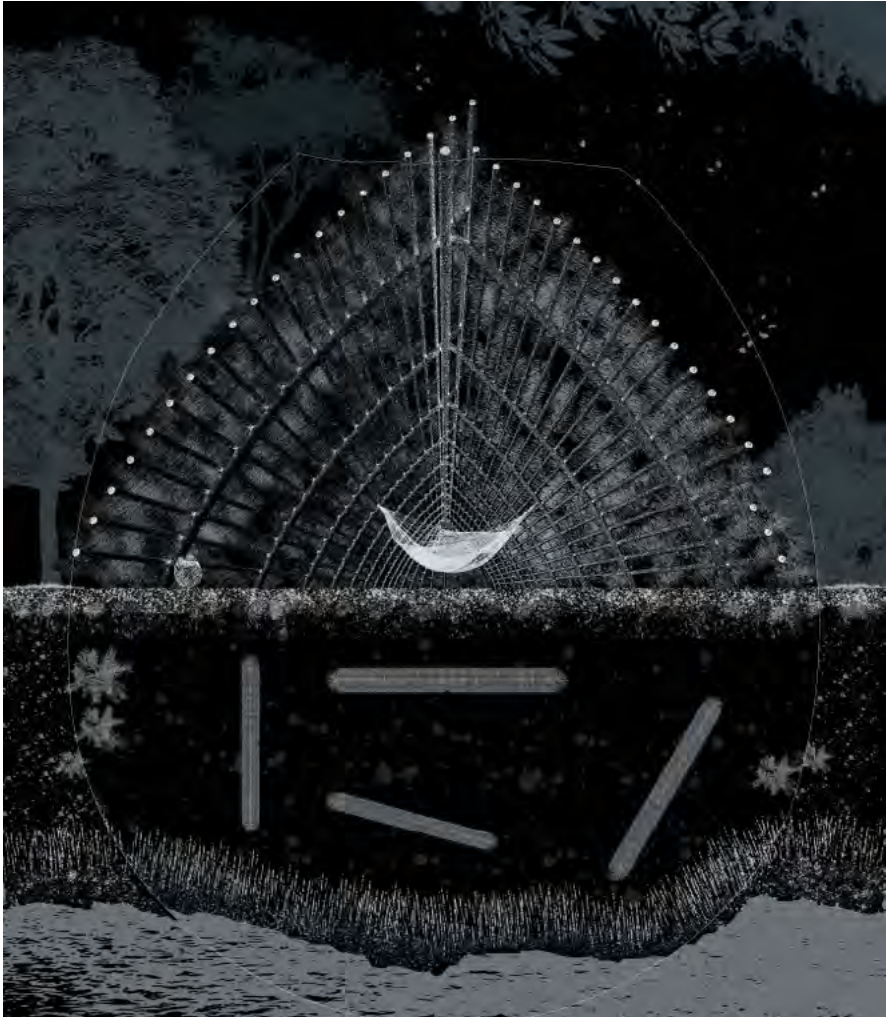
Fig. 2.   Artistic representation. Synthesis of the Guarani Culture's spatial logic, in constant dialogue with the natural landscape. From top to bottom: Oga Guasu section perspective, Teko'a Arrangement in plan

Fig. 3.   Representation of the Primitive Fort of Asunción, illustrating the syncretism of Indigenous bluff model of settlement, with European architectural typologies, in connection with the Paraguay River and natural landscape.

NAVEL

Today, the ritual dictates that the youngest member of the round pour the Tereré in honor of Saint Thomas, and consequently hand it to the eldest. Once the latter takes the first sip, the gourd is shared by the members; Tereré is a socio-cultural phenomenon that dictates the rhythm of the Paraguayan community. Rooted in Guarani culture, it lies at the navel of every single spiral of syncretism: in its materials, symbols, and forms. As they mutate, so do their territories, urbanisms, and architecture. The Ka'a or Yerba Mate is a tree native to the Eastern Paraguay region, on the banks of the Paraná River. Once the leaves and branches are collected, they are first flash dried through direct heat (Sapecado), secondly toasted (Barbacua), and thirdly coarsely ground (canchada or mborobire).

GROUNDING AND LANDING

PACT

The act of conquering is a human phenomenon that, in historical anthropological terms, represents the first step in the formation of early civilizations, propelling sociocultural and socio-political change. The manifestation of the Americas to the Western civilization led to the realization of their eccentric views and blinded by their mission - or the precious metals- proceeded to impose their reign on a vast territory rich in ancestral cultures and natural landscapes. But amid this fast-paced colonial machine, it is in the heart of South America where a unique manifestation of repeated cultural syncretism takes place between the Guarani culture and the exogenous forces: Paraguay.

Fig. 4. Map of Asunción during the colony. The city sits on top of irregular bluffs, the grid system is non-existent. Author: Julio Ramón de César, 1787-92

The base of the Paraguayan nation is rooted in the first encounter between the Carios (Guarani culture that was settled along the Paraguay River) and the Spanish explorers who were on their way to Peru. After an initial dispute, the two worlds settled on a pact that benefited them accordingly: the Spanish would protect the indigenous community from the neighboring tribes in exchange for means and supply for subsistence in their path to El Dorado. As a result, the two entities established the fort of Asunción; they became a mutualistic community that coexisted on the banks of the Paraguay River.[6]

LOMA CAVARA

The Fort of Asunción was located in the Guára of Chief Lambare, on a site that allowed easy access to land from the river, as well as a substantial height that would offer protection to the community. The natural conditions of the land and its topography were dominated by water; numerous streams molded the land at its pleasure, creating a series of irregular bluffs (referred to as Lomas) throughout the banks of the river.[7]

COLONY

Julio Ramón de César rendered the first evidence of Asunción during the colonial period in the early 1790s. From its conception, the city presents an exceptional characteristic of irregularity, with the riverbanks and the main street running parallel to it acting as the main axis of its urban structure. This morphological condition took place due to the heavy rains that eroded the land, and a fire that occurred in 1543, which destroyed the original Fort and led to the reconstruction of the city in casuistry and dispersed form that would mitigate any fire to propagate in the city.

This preconceived informality, implies a new form of rational order in response to natural conditioning and an adverse experience, leaving the Plaza Mayor and the port as the main points of Asunción's operations. The houses were scattered in the periphery of Bluffs (Islotes) that were created by the flow of water, creating spaces for agriculture between them. As we can observe, the uniqueness of Asunción lies in the constant dialogue between the built and natural environment.[8]

PARAGUAY RIVER

"The word Paraguay, taken from the Guarani language admits some meanings. The only one disclosed in the books is that of Rio Coronado (Crowned River), deduced from the decision, and, river, and Paragua, crown, or Luarnalda. The motif of this royal appellation lies in the multitude of birds that populate the banks of the river, which with the beautiful variety of their showy plumage highlight the rays of the sun, and form links of vivid colors, as crowning the banks. On many occasions by the Paraguay, we have been persuaded that the name, of crowned, was in the idea of the Guaraníes another beginning. The Paraguay in its dilated course, forms continuous semicircles, and almost circles, which the Spaniards and Portuguese who trafficked in it, called turns. Each of these in its figure represents a kind of crown, composed of greens, and flowering plants, large and small, disposition and ornament, which incidentally illuminates the Guaranis to leave Paraguay the expressive appellation of Crowned River of continuous turns   Something of this we hint at, and another etymology of Paraguay in the place quoted."

WHAT MAKES ME PAGAN TO YOU,
IS WHAT DOESN'T MAKE YOU CHRISTIAN TO ME.

"When you see this, the vast earth unfolds itself, and the vast rivers recede in great abundance. It is the side of America, the land that stretches to the south, which a wild nation worships naked with its whole body. A few towns are held by those born of Spanish blood and who have barbarously surrendered theirs. This land, warmed by the blood of the sacred heroes, feels to the plowman that the god is within him. He put on human beings without sense, the nation put brutal manners under him, and Christ barbarous necks under the yoke. But how much the culture stood with the blood of the novel, the illustrated table shows with examples"

CULTURAL SYNCRETISM

The term syncretism is defined as a combination of different forms of belief or practice, or the fusion of two or more originally different inflectional forms[9]. The evidence collected suggests that the latter adjusts best to the events that occurred in Asunción and to a greater extent - in Paraguay. As illustrated by Paraguayan writer Augusto Roa Bastos: "The Jesuit experiment remained like the book written by illiterate people who did not know writing but who knew

the language and the magic of myths, the social ritualization of life, the nourishing energy of nature. The social and cultural syncretism of the Missions was even, as a human phenomenon, more interesting than simple ethnic or biological mestizaje."[10]

MISSIONS

Along with the explorers came the Jesuits. Men of action destined to submit even more indomitable societies, they were at the same time natural philosophers and historians who contributed to the serious knowledge of American space[11]. Parallel to their scholarly endeavours, the Jesuits were to carry the Spiritual Conquest as an alternative to the Spanish explorers who were brutally abusing the local inhabitants and their resources. In this regard, they attempted to create the ideal civilization of the heavens on earth, between the temporal and the eternal, manifested in the form of the Jesuit Missions.

From 1640 until their expulsion in 1768, the Jesuits consolidated a total of thirty pueblos along the Paraná River. In essence, the Missionaries adopted the Roman Castrum as an organizational element with the square plaza as the heart of the complexes. Then, the Church, convent, school, and cemetery flank one side of the plaza symbolizing the path of a man's life from its conception until he ascends to the heavens. On the other sides of the plaza, the housing for the priests, the Guarani, and their chief are laid out by the proportions of the main space.

JESUIT HOUSE

The housing typology introduced by the Jesuits departs from the primitive instincts of shelter. The first observation that we can perceive is the adoption of the Basilica typology, which becomes apparent when we visualize the section cut of the houses, which reveals the introduction of the portico as a response to the natural conditions. In the plan, the architecture communicates a similarity with the Oga Guasu, with the inclusion of partition walls that subdivide the singular rectangular form into equal rooms.

YERBALES

"For the same reason, the Guaraní Indians experience serenity in the fire of their blood with the use of their favorite drink, which they call, Caaygua, and the Spanish Mate. Rarely do such Indians drink the infusion of the Paraguayan Herb in hot water. Its most ordinary way is reduced to putting it in cold water, and this in its most tiring tasks, and burning suns. I believe that grass, which has little fire, attracts and receives the blood that is ignited; and this is why they feel relief from their heat with this drink…"

Fig. 5.   Early Nineteenth Century lithograph of José Gaspar Francia, ruler of Paraguay (1814-1840). Artist unknown. Dressed in a European fashion, with a Tereré in hand. Standing in a gallery space with vernacular materials, framing the exuberant landscape.

THE REPUBLIC

DEVELOPMENT

A social revolution shacked the chains of the colony; Asunción wanted its freedom from the Spanish Monarchy. Achieved in 1811 and after a period of political uncertainty, Dr Jose Gaspar Rodriguez de Francia - El Supremo- took the lead of a Nation that was craving their own path. Cities have historically served the political powers as a transgenerational medium. The colonial infrastructure of the city was not responding to the growth of its inhabitants. With this scenario, Francia envisioned a progressive nation, and traced one of the first urban revolutions in the South American continent.

ANCHORS

With development came industrialization. Building on the aspirational ideas of Dr Francia, Mariscal Lopez molded to new economic and political policies in the 19th century. The introduction of the Port and the Railroad anchored the financial hub Asunción, while consolidating the grid envisioned earlier. How can I leave an imprint in history? Whether it is a question or an impulse, I dont have the capacity to say. But, during the time when López was in charge of the country, he followed the route that his predecessors had taken. With the opening of the market as an attempt to be part of the global discourse, he commissioned Italian architects to bring a European aesthetic into Asunción.

QUINTA

La Casa Quinta de López was the president's house. In a period where urbanization and industrialization reconfigured the structure and image of Asunción, his house stands as a paradoxical element. In the plan, the program is separated between public and private, services and spaces to be served, all separate from each other. Interestingly, the layout of the two most prominent areas -the dormitories and the social spaces- resemble the elongated form of the Oga Guasu, with the interior subdivision similar to the Jesuit house. Within these, the house was built with vernacular methods of construction from the Guarani, making use of the natural resources available to the proximity: the walls consisted of a wood structure that acted as a skeleton, which then was covered with soil. Similar to the walls, the roof was made out of wood, a membrane of dried palm leaves was visible from the interior but covered with clay roof tile. The dormitories followed the same logic as the social spaces, with the exception that the exterior walls were made out of brick, and the interior walls were made with vernacular methods. The construction and aesthetic rendering of the house leads us to interpret the president's aspirations for the nation he was leading, as he also embraced his cultural roots.

Fig. 6.   Asunción as a dynamic palimpsest. The different time periods are arranged from top to bottom, the diverse scales are arranged from Object to territorial scale (Right to left).

CONCLUSION: THE TEMPTATION OF AN ECOLOGIC UTOPIA

PALIMPSEST

The Merriam –Webster[12] dictionary defines it as something having usually diverse layers or aspects apparent beneath the surface. In this manner, the palimpsest forged by the territory, urbanism and architecture of Asunción allows us to observe the perseverance of the Guarani roots in syncretistic dialogue with its contemporary time periods. Figure 6 comprehends the diverse time periods that have been explored in this investigation, arranging the different scales, from left to right as follow: Territory, Urbanism, Architecture, and Tereré. When this structure is collapsed, it shows us the palimpsest that is Asunción today. However, when the structure expands, we are able to establish different multi-scale, non-linear relationships.

TERERÉ

The ritual presents itself as a medium for the transgenerational passing of knowledge, and it is practiced at different scales within the society. This has reinforced the cultural identity of Asunción, and consequently the country; a process in which the sharing of the drink establishes ribbons of kinship and fellowship, only possible by the communion involved in the making of Tereré. Consequently, the ritual can be considered as a symbolon, due to the fact that the tradition departs from the pre-Columbian times; it transcends the boundaries of conventional sign, and within this, elements such as the gourd, flask and metal straw come into play in order to avoid the pollution of the symbolic.[13]

UTOPIA

This investigation sheds a light on the term Utopia, as it departs from its original meaning: rather than promoting Asunción as an ideal ecological model to be followed, the concept of Utopia takes the form of a series of repetitions that persist through different scales and time periods as silent elements of resistance, locating the capital city as a culture that unconsciously seeks to conserve its cultural roots within the pressures of globalization. As a result, it is in the repetition of these silent elements of resistance where we can find possible answers for a better future ahead.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author.

NOTES ON CONTRIBUTOR(S)

I am within and without; a condition I embraced from the first time I stepped foot in Asunción, and she welcomed me with open arms regardless. This notion has catalysed a two-way street exploration between the city and myself, which I hope extends to a larger comprehension of her inhabitants and, to a greater extent, the South American civilization. On this note, my role in this play of historical events is similar to that of a detective, who submerges in the scenes almost omnipresent of what is occurring and based on the evidence found, speculates on the meaning of these series of events that led to such results.

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IMAGE SOURCES

Figure 1   Guareschi, Juan M. Matrix of South America Spanish Colonial Capitals. 2024. May 6, 2024.
Figure 2   Guareschi, Juan M. Guarani Spatial and Communal Synthesis. 2024. May 6, 2024.
Figure 3   Gavaldá, Francisco T. Primitive Fort of Asunción. Painting. Date Unknown.
Figure 4   De César, Julio R. Asunción Colonial. Map. 18th Century
Figure 5   Robertson, J.P. & W.P.: Letters on Paraguay, comprising an account of four years' residence in that Republic, under the government of the Dictator Francia. London, J. Murray, 1838, 2 vols.
Figure 6   Guareschi, Juan M. Asunción: Unlayering the Palimpsest. 2024. Physical model. May 6, 2024.

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Transport Planning

Chair: Jeroen van Ameijde

The Development of Brazilian Bus Rapid Transit System and Its Implications for Urban Transportation in Chinese Cities

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Abstract

In the current period when population growth in China's major cities is slowing down and rail transit construction is entering a phase of cautious development, further exploration of the development experience of Brazil's Bus Rapid Transit (BRT) and its role in the development of urban transportation in China will help improve the travel sharing rate of urban public transportation in China and promote the stable development of urban transportation in China. By scrutinizing the development process of Brazil's Bus Rapid Transit (BRT) system, summarizing its constituent elements and system components based on the practices in different Brazilian cities, and investigating the dynamic relationship between BRT and other transportation systems, including its collaborative development with urban space, we can distill the system's developmental experiences and distinctive features. On this basis, combined with the actual development of urban transportation in China, we can analyze the practices and shortcomings of BRT development in different cities. Furthermore, we can explore the strategic positioning of BRT system in the development of different types of urban transportation systems in Chinese cities, and put forward optimization suggestions for its coordinated development with other types of urban transportation systems and urban space.

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Abstract

The largest metropolitan region in Minas Gerais, Brazil, located between mountainous terrain and the Velhas River Valley, is historically significant. This area connects key urban centers from Brazil's colonial gold era and the 19th-century industrial period. The research emphasizes the historical importance of the Velhas River Valley as a crucial route through the Iron Quadrangle, rich in gold, iron ore, and water. The establishment of the railroad along this valley further cemented its developmental role. The study underscores the significant influence of waterways and railways in forming Minas Gerais's primary metropolitan area, now the third largest in Brazil with over 5 million residents. The paper begins with the colonization and territorial expansion in Minas Gerais, highlighting the natural river routes and strategic railway placements that determined the main urban centers' locations. It then transitions to the Brazilian development era driven by road systems, noting the decline of railroads that once underpinned transportation and growth. This shift not only altered urbanization patterns but also negatively impacted the region's socio-environmental quality. The paper critically evaluates the transition from rail to road, observing the deterioration of socio-environmental cohesion and resulting fragmentation and territorial disorder in the Metropolitan Region of Belo Horizonte.

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INTRODUCTION

The process of urbanization in the Metropolitan Region of Belo Horizonte[1] (RMBH) is investigated, adopting a perspective based on Yuk Hui's cosmotechnics[2] and the concepts of natural systems[3]. Traditionally, the origin of Belo Horizonte has been discussed as a continuation of the history of Ouro Preto, the former capital of Minas Gerais. This hegemonic narrative, which represents the official version of history, leaves in the background the particular techniques of the urbanization process of the region's original communities that developed on the banks of rivers and between mountains. In this study, we have built an analysis centered on the Velhas River and the mountains that shape and design the landscape of its valley. We believe that the river and the mountains are fundamental for discussing landscape and environmental aspects of the RMBH.

Yuk Hui's proposal of cosmotechnics as cosmopolitics is particularly interesting, as it suggests the need to identify processes and techniques based on diverse narratives in order to build a more inclusive and sustainable future. The predominant narrative of the Belo Horizonte Metropolitan Region (RMBH) often highlights a conflict between urban development and waterways and mountains, resulting in the degradation of these natural elements. In contrast to this perspective, and based on the thinking of Yuk Hui, this study seeks to develop a narrative that seeks a technique that integrates rivers and mountains into the urbanization process.

Another reference for our study is the notion of natural systems, which explores the complex interactions that define ecosystems and the importance of keeping these interactions balanced for environmental sustainability. We use the categories of geomorphology to analyze how mountains, rivers and other natural formations shape and are shaped by the societies that settle in them. In this approach, natural systems provide consistent inputs for a methodology of territorial analysis.

In opposition to a technical approach based on natural systems, we have Arão Reis's plan for Belo Horizonte[4]. This type of plan favored orientation and circulation using road axes as a structuring technique, disregarding waterways and relief. Thus, the river, as a planning unit and infrastructural basis for urban development, was discarded, and subsequent urban plans throughout the 20th century reinforced this technique.

NATURAL SYSTEMS AND THE URBANIZATION PROCESS

Geological and topographical features, often studied under the term geomorphology, are essential components of natural systems. By analyzing the forms of the earth's surface and the processes that shape them, geomorphology plays a fundamental role in understanding how these systems function and interact. Natural systems, in the geographical and environmental context, include all the physical and biological elements that interact within a specific ecosystem or environment. Geomorphological features[5], such as mountains, valleys, plains, and other landforms, are integral parts of these systems, as they influence and are influenced by other natural elements and processes, such as hydrology, climate, and biological activities.

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Watersheds and watercourses, in particular, are clear examples of natural systems[6]. A watershed encompasses the entire land area where rainwater drains into a main watercourse, such as a river, lake, reservoir or ocean. These systems are dynamic and complex.

In the analysis made in the study presented here, we highlight two categories within the field of study of geomorphology; continuous valleys and slopes.

Continuous valleys play a central role in defining river basins and act as axes of convergence for smaller valleys, notable for their gentle slopes. They are very favorable locations for human settlement and agricultural activities, thanks to the availability of flat land and water resources. Essential for the development of efficient passageways and flows, they naturally support large territorial development infrastructures, giving up their riverbeds for waterways and their banks for railroads. As natural paths of shorter distance, valleys are suitable for becoming main mobility corridors, housing arterial roads and mass transit routes. These valleys go through phases of contraction and expansion, featuring both narrow areas and flat expanses, ideal for activities that require ample space and easy access for cargo vehicles, such as warehouses and industries[7].

The slopes, on the other hand, have varying gradients that directly influence the modes of occupation and use. Although they are generally not ideal for serving as direct passage corridors, they are crucial within the geographical unit in which they are located. A notable characteristic of hillsides is the area immediately above the valleys. This region, because it has a gentler slope, is often developed before the valley due to the difficulties related to sanitation and drainage faced by valleys. Initially, this area is urbanized while the valley remains unexplored. Over time, as the valley is urbanized, these two parallel roads evolve to form a dynamic binomial of activities, integrating commerce, services and other urban functions.

The urbanization process of the Velhas River Valley until the 20th century followed the natural systems, i.e. the infrastructure and location of urban settlements were consequences of the favorable conditions of the natural system. This mirroring of infrastructure with natural systems allowed for an organic and fluid development of the territory. For example, we have the infrastructure of the territory by waterway and railroad, which followed the continuous valleys. The waterway and railroad followed the river valley, connecting urban centers along an axis; these centers, in turn, were located on the hillsides along this axis, allowing immediate and quick access to the transportation system that connected the entire region. The hilltops remained unoccupied, preserving local springs and water sources. When the valleys showed phases of expansion, the nuclei expanded and received larger equipment, including industries, as in the case of the steel mills set up in the region.

Over the course of the 20th century, the development process gradually moved away from natural systems. The waterway, already prevented by the silting up of the river, and the decommissioned railroad were replaced by roads that allowed the tops of the hills to be reached. As a result, the vegetation on the upper slopes and the springs were compromised. The slopes became more prone to erosion and landslides, and the water supply was jeopardized. The automobile allowed access to areas that the railroad and waterway could not reach. This disconnected location from natural systems, when adopted on a large scale, resulted in unnatural urban development processes.

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Fig. 1.   Sabará, 1880.

BETWEEN RIVERS AND MOUNTAINS

The Velhas River, a tributary of the São Francisco River, flows towards the northeast of Brazil until it flows into the Atlantic Ocean. From the Atlantic, following the São Francisco River and then the Velhas River, you arrive in a mountainous region rich in minerals that became known as Minas Gerais. The place name Minas Gerais was used to indicate a long, continuous and contiguous sequence of mines.

It was exactly at the confluence of the Velhas River and the Sabará River that the urban center of the same name was established (Figure 1). This location was not chosen at random; the area was rich in alluvial gold, found in abundance in the sedimentary deposits of the region's rivers. The alluvial gold, found in the form of powder, fine chips or nuggets, was separated from the sediments using methods such as sieving and gravity[8] separation. Sabará was formed at the meeting of these two rivers and was the first settlement in Minas Gerais, consequently the place where the Metropolitan Region of Belo Horizonte (RMBH)[9] originated. Sabará is also the name of a river, a shortened form of the Tupi term *tesáberabu-su*, which means big shiny eyes (*tesá*, eye + *berab*, shiny + *usu*, big), in reference to the gold nuggets that were found there[10].

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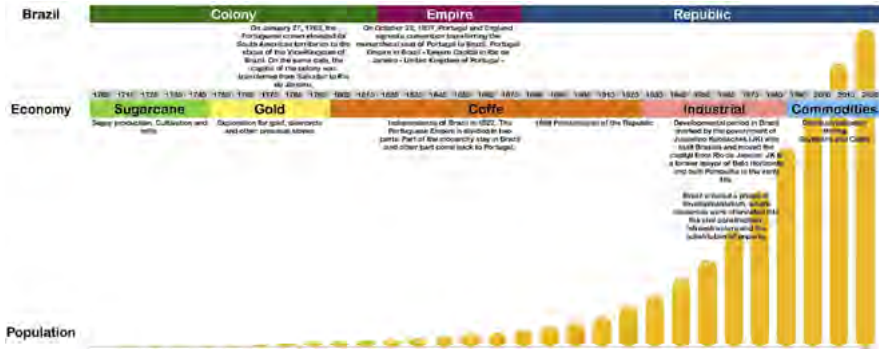
Fig. 2.   Timeline of Brazil's historical, economic and population context.

To discuss a specific urbanization process, it is essential to place it in a historical context, highlighting the events that defined the periods in question and the economic aspects that drove the territory's development. The diagram shown in figure 2 offers a timeline that covers important moments in Brazil's history: the colonial period, the empire and the republic. It also provides an overview of the main economic cycles along this historical trajectory, superimposed on a graph showing the growth of the Brazilian population.

We have structured the analysis into four routes that represent a synthesis of the four historical moments that marked the process of urbanization in the region (Figure 3). The first route, coming from the interior of the country, was navigable by the Atlantic rivers as far as Sabará. With the discovery of gold, the move of Brazil's capital and the clearing of mountains and forests, a connection was established between Minas Gerais and the coast, highlighting the first confrontation between man and natural systems. This route was difficult and represented a struggle against the natural systems that had previously provided the infrastructure for territorial connectivity and urban expansion. In the third period, railway routes emerged, creating a basis for the process of industrialization and consolidation of regions, especially in the Zona da Mata.
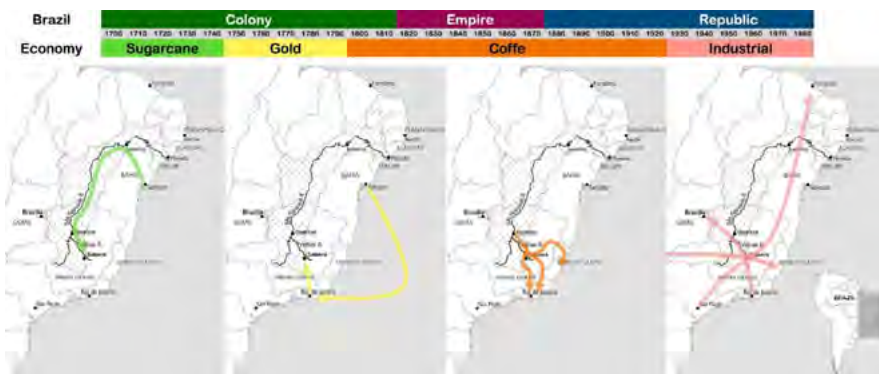
Fig. 3.   Four routes that represent a synthesis of the four historical moments. Fonte: Elaborado pelo autor.

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This period represented a return to natural systems, restoring rivers as axes of development and regional connectivity. In the fourth and final moment, the RMBH is cut off by national highways, experiencing its greatest economic and population expansion, again disconnected from the development axes provided by natural systems. These routes tear up the territory and create a rupture in the pre-existing urbanization process. The BR-040, for example, does not follow the Velhas River Valley as the Central Railroad did, but crosses the top of the mountains and arrives in Belo Horizonte from above, viewing it from above, crossing large viaducts over rivers, original urban centers and railroads.

THE FIRST ROUTE: THE RIVER

Rivers, as the pulsating veins of the Earth, have always played a crucial role in the expansion of human occupation, serving not only as sources of water, but also as natural pathways for exploration and the establishment of human settlements. The journey of the indigenous tribes across the American continent vividly illustrates this role. Starting from the north, these ancient travelers found refuge in caves along rivers, such as the middle Velhas River, in the heart of Brazil[11]. This river proved to be an archaeological landmark, with the unearthing of the oldest human fossil found in the Americas, Luzia[12], a few kilometers from its banks. As time progressed, the Velhas River not only housed the first human settlements, but also guided Portuguese explorers in their search for riches. Coming from the northeast, these explorers followed the course of the São Francisco River[13] and, later, the Velhas River, penetrating the center of Minas Gerais. Notably, the first gold nugget was found in 1677 near Sabará on the banks of the Velhas River[14] and in 1695 gold mines[15].

The city of Sabará stands out both for its historical references and for its unique location. Situated along the course of the Velhas River, the city is positioned where the river crosses a remarkable geological formation: the mountains that frame the south of the RMBH. This crossing takes place on a winding route between very steep slopes called gorges[16]. After this gorge, the river follows a less winding, slower course on a bed that was navigable[17] for many years.

THE SECOND ROUTE: THE MOUNTAINS

In Brazil's colonial history, when sugar cane production was the main economic activity, the colony's capital was Salvador. From Salvador and the Northeast, up the São Francisco River, you could reach Minas Gerais. The network of overland routes would only experience some progress after the discovery of the gold[18] deposits, driven by the need to create a faster connection to the coast and, consequently, to Portugal. This led to the emergence of new routes through the mountains across the Serra da Mantiqueira. Following this dynamic, the capital of the colony was transferred from Salvador to Rio de Janeiro, closely controlling the access routes to Minas Gerais from the coast. The Velhas River and the São Francisco River gradually lost their prominence, as did the entire economic cycle that moved the Brazilian Northeast and the former capital Salvador[19].

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The journey to Minas Gerais at the beginning of the 18th century was extremely challenging, especially through the Serra da Mantiqueira, known as the "weeping mountain" due to its numerous springs and streams. During the rainy season, the crossing became even more arduous, with fog, constant rain and slippery trails. Mules and bales often fell into the gorges, while the trail turned to mud. The people of São Paulo used to say that "Minas begins where the roads end", and many didn't reach their destination, succumbing to the steep slopes, treacherous forests and precipices of the Mantiqueira[20]. This mountainous and wooded region is known as the Zona da Mata of Minas Gerais.

THE THIRD ROUTE: THE RAILROAD

One of the foundations of urban development near the Velhas River is the implementation of a railroad infrastructure, which is responsible for connecting the towns that surround it, allowing the movement of people, goods and services. The proposal of a route for the railroad that crosses this part of Minas Gerais was based on the physical characteristics of its watershed. In this sense, when observing Brazil's railway heritage, the paths of the tracks often coincide with watercourses. This can be explained by the need for a flatter topography for the railroad superstructure, as locomotives are not able to move on tracks with steep gradients. In river basins, the bed of a watercourse - the path of the river - is the portion with the lowest altimetry and least slope, and is therefore the most favorable location for building such a superstructure. The railroad installed near the river catalyzed new settlements and connected regions that were territorially distant[21].

The implementation of rail transport began in imperial Brazil, after a decree was issued in 1852 that introduced a guarantee of interest on the capital to be used in the construction of rail lines. This decree created the D. Pedro II Railroad, which connected the capital of the Empire to the capital of the province of Minas Gerais, Ouro Preto[22]. This railroad later became the Central Railroad of Brazil (*Estrada de Ferro Central do Brasil* - EFCB). Ouro Preto, located at the source of the Velhas River, along with Sabará, Caeté, Santa Luzia, Raposos, Nova Lima, Rio Acima and Itabirito, all historic urban centers along the Velhas River Valley, were connected by the EFCB. Later, in 1835, a law was passed authorizing the government to grant the right to one or more companies to build railways linking the capital of the Empire to the provinces of Minas Gerais, Rio Grande do Sul and Bahia. This law made it possible for coffee and sugar cane producers in the Zona da Mata to invest in railroads, creating a network of branches for the EFCB[23]. The railroads expanded and occupied the river valleys, creating a very efficient logistics network. The EFCB made possible the transition of the Zona da Mata from an agricultural economy to an industrial economy, and enabled the emergence of the steel industry in the Velhas River Valley, the cradle of the Brazilian steel industry. The Velhas River Valley reaffirmed its natural vocation of being the axis connecting the urban centers that originated in the gold cycle and made it possible for new urban centers to emerge with the expansion of the railroad, especially in the Zona da Mata.

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LEGEND
Steelworks
1876 - Escola de Minas in Ouro Preto
1888 - Firts Brazilian blast furnace in Itabirito
1892 - Blast furnace Miguel Burnier
1920 - Minas Gerais Steel Company in Sabará
1921 - Companhia Siderúrgica Belgo-Mineira in Rio Acima
1926 - Brazilian Iron Company in Caeté
1930 - Companhia Siderúrgica Belgo-Mineira in João Molevade
1952 - Manesmann Steel Company in Belo Horizonte
Railways
River Velhas
Urban areas
Topography
1.550
250
0   10   20 km

Fig. 4.   The Velhas River Valley, the Central Railway of Brazil and the origins of the Brazilian steel industry.

The origin of the industry along the Velhas River Valley is deeply intertwined with the discovery and exploitation of iron ore in the central region of the Captaincy of Minas Gerais. This narrative begins in the mid-18th century, particularly in the city of Ouro Preto, where the Velhas River originates, and extends through the cities of Itabirito, Rio Acima, Sabará, and Caeté (Figure 4). In 1795, the potential for industrial growth in this region was recognized due to the abundance of high-quality iron ore and natural resources for charcoal production. Governor D. Rodrigo José de Meneses requested permission from the Court to establish new metal production factories to support mining issued a decree prohibiting the establishment of new iron-producing factories[24] and ordering the deactivation of existing ones[25].

The establishment of the Escola de Minas in Ouro Preto in 1876 provided the necessary educational foundation for advancing mining and metallurgical techniques in Brazil. The late 19th and early 20th centuries witnessed substantial industrial expansion along the Velhas River Valley. In 1888, the Usina Esperança in Itabirito marked the establishment of the first Brazilian blast furnace, stimulated by research from the Escola de Minas. The subsequent creation of additional units, such as the one in Miguel Burnier, highlighted the growing industrial capabilities of the region[26]. In the late 1920s, Companhia Siderúrgica Mineira was established driven by former students of the Escola de Minas, marked a significant milestone. Located in Sabará, the company benefited from the region's resources and infrastructure. Under the nationalist government of Arthur Bernardes, further efforts were made to secure the future of the steel sector. This included the transformation of Compan-

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hia Siderúrgica Mineira into Companhia Siderúrgica Belgo-Mineira in 1921, following King Albert of Belgium's visit, which played a pivotal role in securing international investment[27]. The construction of the João Monlevade unit in the 1930s and the subsequent operations of new rolling mills in 1940 established Belgo-Mineira as the largest steel producer in Latin America. During World War II, the company took on the critical task of producing rails for Brazil's railway network. The equipment used was entirely built at the Monlevade and Sabará units. The production of the first rail occurred in 1943 and was the first in the history of Belgo-Mineira, Brazil, and also Latin America[28].

THE FOURTH ROUTE: THE VIADUCT

According to Pereira and Lessa[29], since 1930, the Brazilian government has invested heavily in land transportation infrastructure, mainly roads, promoting policies that have intensified the use of the national road network. In 1934, the Vargas government formalized the General National Road Plan[30], which, although

superficial in terms of road policy, served as the basis for national transport coordination. Continuing with the road transport policy, in 1944 the Getúlio Vargas government created the National Road Plan (*Plano Rodoviário Nacional* - PRN), prioritizing the economic use of the existing road network and proposing the construction of 27 federal highways, subdivided into three axes: the first, consisting of six longitudinal highways (north-south direction); the second, consisting of 15 transverse highways (east-west direction); and the third, consisting of six connecting highways. The classification of highways into longitudinal, transversal and link[31] served as the basis for classifying highways in subsequent plans.

Fig. 5. Viaduto Vila Rica, 1957. Originally named the Viaduto das Almas, this viaduct spans the Córrego das Almas, a tributary of the Velhas River. Located on the BR-040 highway, connecting Rio de Janeiro to Brasília, it is 50 km from Belo Horizonte and has a length of 262 meters..

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Fig. 6.   Inauguração Viaduto Vila Rica, 1957.

In the 1950s and 1960s, Juscelino Kubitschek's government consolidated the preference for road transport as a support for industrial development, particularly with the automobile industry. The Plano de Metas (Target Plan), as reported by GEIPOT[32] in 2001, was a strategy by the government of Juscelino Kubitschek to concentrate investments in transportation infrastructure in order to support the development of industrial parks and agricultural and agro-industrial projects in Brazil. This plan placed particular emphasis on road infrastructure, which became the main mode of transport and received the lion's share of investment, with the emphasis on a five-year road works plan. The construction of Brasilia, the implementation of major roads and agricultural modernization were some of the main projects that boosted the national economy.

The expansion of the road system and Brazilian industry took place during the same period in which the city of Belo Horizonte grew. The new capital experienced timid growth for a few years, but from the 1930s onwards, the city began to expand rapidly. Belo Horizonte was crossed by three major highways of Vargas' NRP: a transversal one (east-west direction), connecting the central-west to the coast; a longitudinal one (north-south direction), connecting São Paulo to the northeast; and a connecting one, connecting Rio de Janeiro to the new capital of Brazil, Brasília. These three important roads converge in Belo Horizonte in a Ring Road.

Connected nationally by this system, Belo Horizonte industrialized and grew along its Ring Road and the highways that came to and from it. Throughout the 20th century, the RMBH grew and consolidated along these highway routes, which literally pass over rivers, valleys

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and railroads, leaving the original urban development axes out of sight and out of mind. The new highways flow over the mountains, with their infrastructure overlapping the natural systems. introduced to prioritize the economic use of the existing road network, with the proposal to build 27 federal highways organized along three axes. The Joppert Law of 1945 further strengthened the expansion of highways by reorganizing the DNER and creating the National Highway Fund, which would finance the construction and maintenance of federal, state and municipal highways, as well as encouraging the creation of State Highway Departments (Departamento Estadual de Estradas e Rodagem - DEER). This legislation represented a milestone in the institutionalization of road transport policy in Brazil.

FINAL CONSIDERATIONS

In addition to its importance for exploration and settlement, the Velhas River also facilitated navigation and the construction of infrastructure, such as railroads, which made it possible to found the first Brazilian steel mills and facilitate the exploration and export of iron ore. These natural routes were fundamental to economic development and regional integration. Rivers, exemplified here by the Velhas River, are infrastructures of natural systems that have led humanity through its historical journey, shaping civilizations and cultures along the way.

Throughout the 20th century, a series of policies beginning with the National Road Plan (1944) resulted in the double abandonment of the Velhas River, leaving it literally on the sidelines (southeast) of the development of the RMBH. Over the years, the river suffered environmental neglect and lost its leading role as a regional infrastructural axis. These two processes - urban underdevelopment and the degradation of its bed and banks - occurred simultaneously. In the second half of the century, already relegated to the underdeveloped area in the southeast of the RMBH, the river began to receive sewage from Belo Horizonte. The place that used to attract crowds to extract gold from its banks, the origin of Minas Gerais' urbanization and the source of its wealth, is now a sewer.

Considering the analysis made, we identified that occupying continuous valleys and areas close to rivers, from a technical point of view, is not a bad alternative when it comes to environmental issues. Occupying areas far from valleys does not impede the flow of natural systems; in fact, water ends up flowing into these areas, taking pollution and waste with it. Therefore, being far from the river does not result in a disconnection from it. Being close to the river has the advantage of technically integrating the river landscape with the urban development process. In practical terms, the impacts are visible and immediate. On the other hand, occupying regions far from rivers has a major disadvantage: occupying hilltops causes irreversible environmental damage, such as the loss of springs and the pollution of water sources.

Stopping development and occupying river valleys is not an effective alternative for preserving rivers; on the contrary, it can result in a profound disregard for them. This story shows us that if what lies beneath is not seen, it produces no memory and tends to be forgotten and neglected in development plans.

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ENDNOTES

1. The Metropolitan Region of Belo Horizonte, located in the state of Minas Gerais, Brazil, is the third-largest metropolitan area in the country, comprising Belo Horizonte and 33 other municipalities. This region has a population exceeding 5,8 million and is a significant economic and cultural hub. Belo Horizonte, the capital of the state of Minas Gerais, is a city of great significance to Brazil due to its position as one of the country's main economic, cultural, and educational hubs. With a diversified economy, the city stands out in the sectors of services, commerce, and industry, as well as being an important center for technology and innovation. Culturally, Belo Horizonte is known for its vibrant arts scene, music festivals, and rich gastronomy, reflecting the diversity and cultural richness of Minas Gerais. Additionally, the city is home to some of Brazil's leading universities and research centers, significantly contributing to the country's scientific and academic advancement.

2. Chinese philosopher Yuk Hui's cosmotechnics proposes a pluralistic approach, considering technologies as cultural practices rooted in specific contexts and not as neutral or universal entities. Yuk Hui proposes cosmotechnics as a cosmopolist, suggesting the need to discover and integrate a diversity of techniques originating from different cultural narratives in order to build a more inclusive and sustainable future. From this perspective, we investigate urbanization techniques that could harmonize the coexistence between urban development and natural elements such as rivers and mountains. Cosmotechnics allows us to question the hegemonic narrative that often presents urban development in opposition to the environment, and to look for alternatives that integrate waterways and topography into urban planning. In: Hui, The Question Concerning Technology in China.

3. The natural systems approach focuses on the complex interactions that define ecosystems and the importance of keeping these interactions balanced for environmental sustainability. We use the categories of geomorphology to understand how mountains, rivers and other natural formations influence and are influenced by human societies. We analyze the RMBH considering natural systems as the basis for a territorial analysis methodology that incorporates the interactions between biotic and abiotic elements.

4. Arão Reis was the civil engineer and architect responsible for the original urban plan for Belo Horizonte, the new capital of Minas Gerais, inaugurated in 1897. In: Abreu, Evolução Urbana do Brasil.

5. Gregory and Goudie, The SAGE Handbook of Geomorphology.

6. Moholy-Nagy, Urbanismo y Sociedad.

7. Governo do Estado de Minas Gerais, Plano de Ocupação do Solo.

8. CDE Group, "Mineração de Ouro de Aluvião."

9. IPHAN, "História - Sabará (MG)."

10. Navarro, Dicionário de Tupi Antigo, 596.

11. Projeto Manuelzão, "A História da Ocupação Humana."

12. Wikipedia, "Luzia (fóssil)."

13. The São Francisco River is one of Brazil's most important watercourses and the fourth largest river in the country and in South America. With a length of 2,863 kilometers, its watershed covers an area of approximately 641,000 square kilometers, connecting states in the Southeast and Northeast regions of Brazil.

14. Almeida, "Berço de Ouro."

15. Fausto, História do Brasil, 98.

16. In geography, a gorge refers to a deep, narrow valley, often with steep sides, created by the erosion of a river. This term is suitable for describing landscapes where the river has carved a narrow, winding path through rocky or mountainous formations.

17. The Velhas River was navigated and integrated into the most extensive waterway network that has ever existed in Brazil. At the end of the 19th century, the state of Minas Gerais founded the Companhia Viação Central do Brasil with the aim of promoting river transportation in the São Francisco river basin. The steamer Saldanha Marinho was at the head of the company to carry fabrics and cotton, traveling as far as Juazeiro. This small steamer was a pioneer in the navigation of the São Francisco basin, traveling from Sabará to Guaicuí during periods of high water and from there, all year round, to Juazeiro, the northern terminus of navigation on São Francisco River. Guaicuí, or Barra do Guaicuí, is the place where the Velhas River flows into the São Francisco River. The name Guaicuí (in Tupi language) means "river of the velhas", and "velhas" means old women in portuguese. Juazeiro is a Brazilian municipality in the interior and north of the state of Bahia. It was from the port of Juazeiro that the vessels known as steamers departed. It was the most important port on the São Francisco river and communicated with other riverside municipalities in Bahia and directly with the state of Minas Gerais. The steamboat Saldanha Marinho began operating on the Velhas River in 1871. Its construction was attributed to Henrique Dumont, Santos Dumont's father, near Sabará. In: Rangel, "Barcos a Vapor."; Oliveira, "Conheça o Barco a Vapor."

18. The gold cycle was a period in the 18th century, during colonial Brazil, when Brazil held half of the

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world's gold production, attracting many immigrants from Portugal and significantly increasing the colony's population. The gold cycle connected various regions, promoted the urbanization of the country and laid the foundations for Brazil's independence, which took place a few decades later.

19. Brasil Escola, "Mineração no Brasil Colonial."

20. G1, "Minas do Ouro."

21. Constantino, Foloni, and Biernath, "Rios e Ferrovias," 59-82.

22. Arquivo Nacional, *Estrada de Ferro D. Pedro II*.

23. Grandi, "Transportes e Planos de Viação no Brasil Imperial," 104.

24. [24] Neves and Camisasca, *Aço Brasil: Uma Viagem pela Indústria do Aço*, 28.

25. [25] This was a strategic move to ensure the colony remained focused on ore extraction and basic activities, leaving the more profitable processing and manufacturing to be conducted in Portugal. The prohibition was lifted in 1799 with the Royal Charter that encouraged the creation of iron processing factories. This led to the establishment of small iron forges using the African "crucible" method, a technique brought over from gold mining practices. The arrival of the Royal Family in Rio de Janeiro in 1808 further accelerated the development of the Brazilian steel industry. Tax exemptions on raw materials for metallic iron production and pioneering initiatives, such as the one led by Intendant Câmara in Morro do Pilar, marked the early attempts at industrializing the region.

26. Neves and Camisasca, *Aço Brasil: Uma Viagem pela Indústria do Aço*, 44.

27. Ibid, 53.

28. Ibid, 71.

29. Pereira and Lessa, "O Processo de Planejamento."

30. This plan initially supported the creation of the National Department of Highways (*Departamento Nacional de Estradas e Rodagem* - DNER) in 1937, which had a broad role in organizing, building, maintaining and regulating national roads. The DNER was also responsible for the creation of two major roads that would connect the South to the Northeast and North of Brazil. In 1944, the National Road Plan was

31. GEIPOT, Caminhos do Brasil.

32. Ibid.

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IMAGE SOURCES

Figure 1   Marc Ferrez. Moreira Salles Institute Collection.
Figure 2   Prepared by the author. Figure 3: Prepared by the author. Figure 4: Prepared by the author.
Figure 5   Laboratório de Fotodocumentação Sylvio de Vasconcellos da EAD/UFMG.
Figure 6   Arquivo O Cruzeiro, Estado de Minas. "Inauguração Viaduto Vila Rica, 1957.

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Innovations in Bus Rapid Transit (BRT) in Brazil and China

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Abstract

Currently, Brazil and China are at the forefront with the largest Bus Rapid Transit (BRT) networks globally. Since the 1970s, Brazil has been building its expertise, spearheading the creation of an industry focused on designing and manufacturing vehicles specifically for the BRT system. These vehicles have undergone continuous innovation in both Brazil and China. This development has occurred alongside enhancements in BRT stations and the adoption of inclusive urban designs, which have transformed the public spaces surrounding the terminals. This transformation has not only introduced new methodologies in urban design but has also elevated the architectural significance of terminal buildings. The innovations span from vehicle and terminal architecture design to specific urban planning, all augmented by the advent of cutting-edge technologies. These technologies facilitate intelligent traffic management within BRT corridors and automate fare collection, marking a significant step toward transforming transportation into a smarter system. This study aims to compare the significant advancements made in Brazil and China, focusing on the synergy between vehicle design, terminal architecture, accessible urban planning, and smart management and ticketing systems. The goal is to underscore how these advancements are propelling public transport towards greater efficiency, sustainability, and intelligence.

THE ORIGINS OF THE BUS RAPID TRANSIT (BRT) SYSTEM

Curitiba's transportation and urban planning innovations began in the mid-1960s, marking a significant departure from traditional modernist urbanism which emphasised private automobile use. Instead, Curitiba prioritised public transport, establishing itself as a pioneer in this field with several key initiatives that have garnered international acclaim. One of the most notable innovations was the introduction of the Bus Rapid Transit (BRT) system. This system, characterised by dedicated bus lanes (also known as BRT corridors), facilitated efficient and rapid public transport, effectively reducing traffic congestion and promoting the use of public transit over private cars. By closing central streets to private vehicles and dedicating them to pedestrians and buses, Curitiba created a more accessible and environmentally friendly urban core.

Curitiba's urban planning also emphasised the integration of land use and transportation. The city's master plan incorporated zoning laws that supported mixed-use development, ensuring that residential, commercial, and industrial areas were well-connected by the BRT system. This approach not only improved mobility but also enhanced the quality of urban life by reducing travel times and promoting sustainable urban growth. The city's success can be attributed to several factors, including strong political leadership, innovative thinking, pragmatic decision-making, technocratic governance, and the continuity of its policies[1]. These elements helped maintain the effectiveness and relevance of Curitiba's urban planning initiatives over the decades.

Despite the global influence and the spread of modern planning paradigms, Curitiba has retained some traditional elements in its planning approach. The focus on detailed vehicle movement analysis and the involvement of engineers in planning roles highlight a more positivist and infrastructure-centred perspective[2]. However, these characteristics have allowed Curitiba to maintain a robust and effective transportation system, even as new integrative planning trends emerge. Overall, Curitiba's innovative approach to transportation and urban planning has set a benchmark for cities worldwide, demonstrating the potential of prioritising public transit and integrated land use to create sustainable and livable urban environments.

THE CREATION OF CURITIBA'S BRT SYSTEM AND THE TRANSFER OF KNOW-HOW TO BOGOTÁ, COLOMBIA

Three interventions transformed urban transportation in Curitiba: the Express Line buses in 1974, the Direct Line in 1991, and the Biarticulated BRT Express Line in 1992. The Express Line was inspired by the Preliminary Study of the Metro System in 1969, which involved research by professionals and analysis of various systems worldwide. The need for an efficient transportation system to consolidate the 1965 master plan and financial limitations led to the adaptation of a metro system into a road system, which remains one of the main systems today.

The first measure was the implementation of exclusive lanes, which were later used by the new bus model.

Fig. 1 and 2.   The Curitiba BRT.

In 1991, the Direct Line emerged, inspired by the "Network: The Tram as a Solution" plan of 1981. This plan was a response to the oil crisis and proposed linking the city's main structural axes, south and north, with a system of light and electric rail vehicles. Thus, the Ligeirinho bus was created, functioning like a metro on wheels. Boarding was done in tube-shaped cabins with prepayment, increasing operational speed from 20 km/h to 32 km/h and reducing costs by 18%.

The Biarticulated Express Line was created in 1992 to meet the growing passenger demand, using existing lanes with higher capacity and level boarding stations. This new system maintained features such as exclusive lanes, user communication, priority traffic lights, and universal accessibility. The biarticulated vehicle could transport up to 270 passengers, with separate entrances and exits and a sensor-based opening system at the stations.

The interventions in Curitiba's urban transportation system (Figure 1 and 2) represent a milestone in innovation and urban planning. The pioneering solutions, such as the Express Line, Direct Line, and Biarticulated Express Line, demonstrate how adapting traditional concepts can lead to significant improvements in urban mobility. These interventions not only improved public transportation efficiency but also promoted urban integration and sustainability. Curitiba's BRT system shows that it is possible to create effective and economical solutions for public transportation, even in the face of financial limitations. Collaboration between various sectors and the continuous pursuit of innovation were fundamental to the success of these projects.

An example of this collaboration is the relationship between the bus manufacturer Volvo[3] and the Curitiba city council. From the beginning, Volvo played a crucial role in developing specific vehicles to meet the system's needs, such as articulated buses and same-level door boarding, which are essential for its efficient operation. The partnership between Volvo and Curitiba is a prime example of a successful public-private partnership. The city benefits from Volvo's expertise and innovation, while the manufacturer gains an important testing ground for its urban transport technologies.

Furthermore, Curitiba's experience highlights the importance of considering not only transportation efficiency but also the user experience and integration with urban space. The practices adopted in the city demonstrate that a holistic urban planning approach, which takes into account pedestrians and connectivity between different modes of transport, is essential for the sustainable development of cities.

The team that developed the BRT system in Curitiba later played a crucial role in the development of the TransMilenio system in Bogotá. Curitiba's BRT, established in the 1970s under the guidance of architect and urban planner Jaime Lerner, became a model for efficient and cost-effective urban transit solutions. Its success attracted global attention, showcasing how dedicated lanes and rapid bus services could transform city transportation.

In the late 1990s, Bogotá sought to address its growing traffic congestion and inefficiencies in public transport. Inspired by Curitiba's achievements, the city invited the same team of experts to help design and implement a similar system. The TransMilenio, launched in 2000, was tailored to Bogotá's unique needs, incorporating lessons learned from Curitiba. Today, both systems are celebrated for their innovative approaches, significantly improving urban mobility and serving as blueprints for other cities worldwide looking to enhance their public transportation infrastructure.

PRELIMINARY CONSIDERATIONS ON THIS STUDY

It is important to clarify that this is an initial study conducted by a team of Brazilian and Chinese researchers in urban and regional planning. The aim is to better understand the potential of the BRT system in urban development processes and how its implementation can enhance the quality of urban projects and public, walkable spaces around the BRT system.

We are also interested in observing the long-term impact of the system on land use and occupancy, noting significant improvements in environmental quality and urban landscape. As an initial study, we have relied on data collected from international research institutes[4] that advocate for the BRT brand and standards. During the process, we found that some of these sources contained outdated information that needs to be updated in the next stages of our collaborative work.

Therefore, as a continuation of this study, the team intends to deepen the research through selected case studies in Brazil and China, with the aim of updating the data and developing a bespoke evaluation methodology focused on the group's objectives. Our goal is to improve the quality of urban planning, development, and project design, rather than standardising the BRT brand.

THE BUS RAPID TRANSIT (BRT) SYSTEMS

The Bus Rapid Transit (BRT) systems have played a crucial role in transforming urban transportation worldwide, offering an efficient and sustainable alternative to private vehicle use, bringing economic benefits and positive environmental impacts. BRT is an innovation in urban transport systems, with its characterization, standardisation, and quality assessment conducted by the Institute for Transportation and Development Policy (ITDP)[5]. The ITDP initiative created a unified standard, ensuring that only high-quality projects are recognized and promoted. First released in 2012, the BRT Standard was developed to help cities understand and implement high-quality bus rapid transit (BRT) systems. Inspired by Bogotá's TransMilenio and Curitiba's system, the Standard aimed to define and clarify the essential elements of BRT, which was a relatively new and not well-understood innovation at the time. With the implementation of the BRT Quality Standard, corridors are evaluated and certified as gold, silver, bronze, or basic, reflecting international best practices and raising the standard of public transportation globally. The ITDP aims to protect the BRT brand and globally recognize systems that exemplify excellence in rapid bus transit.

According to ITDP[6] the BRT Quality Standard should be applied to specific BRT corridors rather than the entire BRT system, as the quality can vary significantly in cities with multiple corridors in operation. For the purposes of applying the BRT Quality Standard, a BRT corridor is defined as: A section of a road or contiguous roads served by one or multiple bus lines, with a minimum length of 3 km, featuring a segregated lane exclusively for bus traffic.

The main reason for defining the corridor this way is that in some cities, BRT does not have priority over automobile traffic, which is essential for improving both efficiency and cost. To avoid considering systems that do not make this policy choice, the corridor must include segregated lanes exclusively for buses. This definition excludes corridors that have exclusive lanes for both buses and taxis, as the presence of taxis can reduce the speed gains of the buses and the regularity of service for passengers, thereby diminishing the system's ability to attract private vehicle users.

The Basic[7] BRT is defined by five essential elements identified by the ITDP's Technical Committee to distinguish it from regular bus services. These elements are segregated infrastructure with priority passage, bus lane alignment, off-board fare collection, intersection treatment, and level boarding. Each element contributes to reducing delays from congestion and conflicts with other vehicles, enhancing efficiency, and lowering operational costs. To qualify as BRT, a corridor must have[8]: a) at least 3 km of segregated lanes exclusively for bus traffic; b) segregated infrastructure with priority passage (segregated lanes separated by a painted line on the pavement is a minimum required); c) bus lane alignment element; and d) a minimum of 20 points in total across the five Basic ITDP's standard BRT elements. It is noteworthy that the BRT Quality Standard developed by ITDP can be easily applied to rail transport corridors, particularly to trams and light rail vehicles (LRVs)[9]. In fact, we can observe the integration between BRT and LRT in Rio de Janeiro, which has been implemented in recent years with complete integration between the two systems at the Gentileza Terminal[10].

The BRT rating system[11], which awards up to 100 points, is broken down into several categories, each focused on essential aspects for the efficient and safe operation of the service. These

categories include Basic BRT, Service Planning, Stations and Buses, Communications, Access and Integration, and Operations.

Fig.3.   The Belo Horizonte BRT.

Fig. 4.   Map of Belo Horizonte's MOVE network, the green lines represent BRT corridors.

The Basic BRT category has a maximum score of 35 points, distributed across five main criteria: segregated infrastructure with priority passing (7 points), alignment of bus lanes (7 points), fare collection outside the bus (7 points), treatment of intersections (7 points), and level boarding (7 points). Service Planning, with a maximum score of 18 points, evaluates multiple lines (4 points), express, limited, and local services (3 points), control centres (3 points), location among the top ten corridors (3 points), demand profile (2 points), and hours of operation (3 points).

Stations and Buses, another category, has a maximum score of 23 points and assesses aspects such as overtaking lanes at stations (3 points), minimising bus emissions (3 points), stations away from intersections (2 points), central stations (2 points), pavement quality (2 points), distance between stations (2 points), safe and comfortable stations (3 points), the number of bus doors (1 point), shoulder bays and sub-stops (2 points), sliding doors at BRT stations (2 points), and cycle infrastructure (1 point).

Communications, with a maximum score of 8 points, evaluates brand consolidation and passenger information. The Access and Integration category, with a maximum score of 16 points, includes universal access (3 points), integration with other modes of public transport (2 points), road safety and pedestrian access (4 points), secure bicycle parking (1 point), integration with bike-sharing systems (2 points), and cycle infrastructure (1 point).

The Operations category includes deductions that can total up to -77 points, applied for problems such as inadequate commercial speeds (-10 points), peak hour passengers per direction of less than 1,000 (-10 points), lack of enforcement of passing priority (-7 points), a significant gap between bus and platform (-7 points), overcrowding (-7 points), poorly maintained infrastructure (-14 points), low peak frequency (-6 points), low off-peak frequency

(-4 points), unsafe use of bicycles (-3 points), lack of road safety data (-3 points), bus lanes running parallel to the BRT corridor (-3 points), and bus convoy formation (-2 points).

IMPORTANCE OF BRAZIL AND CHINA IN THE BRT LANDSCAPE

The BRT system has become an important form of public transport in South America and Asia, where there has been heavy investment in creating corridors and increasing the number of stations. Data provided by the Global BRTData website[12], developed by the company BRT+ CoE[13], indicates that the country with the highest number of users in the world is Brazil, with an average of 8,824,386 users per day in 2024, while second place is occupied by China, with 4,375,250 users. The high number of passengers in the large cities of Brazil and China, such as Rio de Janeiro, São Paulo, Guangzhou and Zhengzhou, indicate that BRT represents an important means of transport within the urban space of these countries. Figure 1 shows the landscape of BRT in Brazil and China in terms of number of passengers per day and Km of BRT corridors.

The gold standard, according to the official BRT Quality Standard document, represents those systems that "have the greatest potential to inspire the public and encourage other cities to adopt them", with the highest level of performance and operational efficiency. In Brazil, the corridors that receive this classification are Move - Cristiano Machado in Belo Horizonte, Linha Verde in Curitiba and Transcarioca in Rio de Janeiro. In China, the city of Yichang, on the Yixing Ave-Dongshan Ave-Jucheng Rd corridor, have been awarded the gold standard.

MOVE (Figure 3 and 4) is a system of BRT corridors serving high-demand areas in Belo Horizonte, Brazil. One of the system's most notable corridors is MOVE Cristiano Machado, classified as Gold, with a length of 7.1 kilometres and serving approximately 185,000 users a day.

The Cristiano Machado MOVE stands out for its ability to enter the city centre, a region where demand for public transport is extremely high and available space is limited. This corridor has been essential for improving urban mobility in one of Belo Horizonte's most congested areas, providing fast and efficient transport for thousands of passengers every day.

However, there are some points for improvement that could further optimise the efficiency of this corridor. One of the challenges is the waiting time at intersections, which could be reduced by implementing more restrictions on vehicle conversions. In addition, creating pedestrian crossings in the middle of blocks would make it easier for users to access stations outside the city centre, improving safety and convenience for pedestrians.

The Yichang BRT (Figure 6 and 7), located in Yichang, China, is a transport corridor classified as Gold, with a length of 23 kilometres and serving approximately 240,000 users daily. This BRT system is renowned for its efficiency and ability to serve a large number of passengers quickly and effectively.

One of the main strengths of the Yichang BRT is the use of overtaking lanes in its direct line system. This allows a wide range of different bus routes to use the same BRT corridor, optimising the flow of vehicles and ensuring that passengers can reach their destinations with less waiting time and greater reliability.
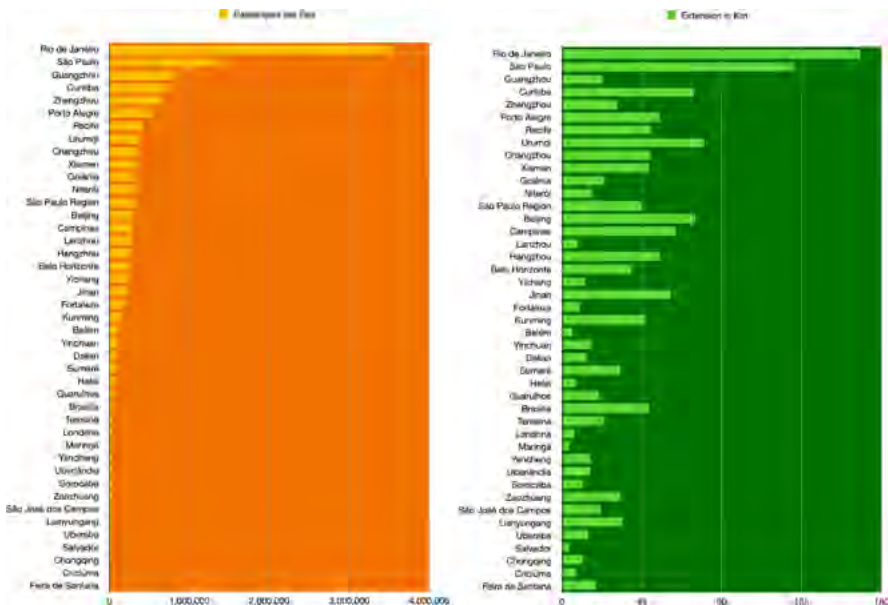
Fig. 5.   BRT Landscape in Brazil and China. The cities in both countries are listed in order of the number of passengers per day. The green chart indicates the length of BRT corridors in kilometres.

Despite its success, there are areas where the system could be improved to benefit users even more. The continuity of cycle paths along the corridor is one of them. Improving the cycle infrastructure and providing more cycle parking would encourage the use of bicycles as a complementary means of transport. In addition, the implementation of a bike-sharing system could make it easier for passengers to access BRT stations, making the system even more integrated and accessible.

THE BRT SYSTEM INNOVATION BENCHMARK

To develop a future collaborative study, we draw from Curitiba's experience and highlight four innovative strategies to create analysis criteria for evaluating recent BRT experiences in Brazil and China. These strategies include: 1. holistic urban planning, 2. collaboration between various sectors, 3. focus on user experience, and 4. integration with urban space.

The quality of station design and the construction of exclusive lanes with high-quality paving

are essential. Stations must be designed to offer comfort and safety, with wide spaces to prevent overcrowding, attractive design, and seamless integration with the urban environment. The paving of exclusive lanes must be highly durable, with a lifespan of at least 30 years, ensuring a smooth and comfortable journey for all passengers. Additionally, the layout should avoid steep gradients and sharp curves.

Fig.5 & 6.. The Yichang BRT.

Among the primary strategies is the adoption of innovative features that improve accessibility, such as platform-level boarding. It is crucial to ensure that the vertical gap is less than 2 cm and that there are no steps inside the buses. Horizontal gaps should be eliminated or kept below 10 cm, using electronic or physical guidance systems to facilitate safe boarding, especially for wheelchair users.

Integrating stations with urban design is vital for facilitating pedestrian access. Safe and comfortable pathways must be established between stations and surrounding areas, promoting a fluid connection and encouraging the use of public transport. By focusing on these aspects, the BRT system can offer a more accessible, efficient, and attractive public transport experience for all users.

Sustainability is another key point. Reducing bus emissions, preferably by using electric or hydrogen vehicles, significantly mitigates urban pollution. Additionally, integrating corridor layouts with landscaping projects can enhance environmental quality. These projects can provide more shade and comfort on hot days, create permeable areas to absorb rainwater, and incorporate greywater collection systems for irrigating gardens and green spaces. This combination not only improves the ecological footprint of the BRT system but also enhances the overall urban environment, making it more pleasant and sustainable for residents and passengers alike.

Collaboration between various sectors is extremely important. Teams developing urban design, terminal architecture, and vehicle design need to work integratively to achieve high-quality results in urban development and the public transport system. This collaborative approach ensures that all aspects of the BRT system are optimised, offering a superior user experience.

CONCLUDING REMARKS

The innovations initiated in Curitiba have spread to other cities in Latin America, Brazil, and more recently, China. Currently, Brazil has the largest network of BRTs in the world, followed by China, which has been rapidly growing in this sector. Initially, the BRT was adopted in Brazilian cities with up to 2 million inhabitants that did not have an established metro system, such as Belo Horizonte. It became an attractive alternative for high-capacity transport, offering a more economical solution for cities without the resources to build a metro. In Belo Horizonte and Bogotá, the system plays a crucial role in transporting large numbers of people between the central region and the outskirts through express corridors. Both have been certified by the ITDP with the gold standard.

This study identifies that despite the gold certification, numerous technological innovations, and system evolution, the central focus and innovative potential that were at the origin of the BRT are not being fully explored in Belo Horizonte, for example. The innovation of Curitiba's BRT lies in its holistic approach, integrating urban planning, transportation systems, urban design, vehicle design, and the architecture of terminals and stations—areas traditionally related but never combined so cohesively in a single project. In vehicle design for the BRT, collaboration with Volvo was crucial, resulting in the creation of articulated and bi-articulated models that meet the system's specific requirements. The architecture of the terminals, integrated with service management, enabled the implementation of a single fare, speeding up passenger boarding and line transfers. However, in current systems like that of Belo Horizonte, urban design does not prioritise pedestrians. The focus is on the immediate solution of access to terminals and the design of dedicated bus lanes in the BRT corridors, neglecting the comprehensive integration that marked the initial innovations of the system.

Another point observed in this study is that in recent years, major metropolitan areas like São Paulo and Rio de Janeiro have been investing in BRTs, even though they already have a metro network. This trend is also seen in China, in cities like Wuhan and Guangzhou. Therefore, the question arises: why are large metropolises that already have a metro system investing in BRT?

Like Brazil, China has adopted and advanced these innovations, contributing to the evolution of BRT systems. Both countries have observed significant improvements in BRT stations and the integration of inclusive urban projects, transforming public spaces around terminals and elevating the architectural importance of these structures. Innovations range from urban planning along BRT corridors to the incorporation of technologies for intelligent traffic management and automated fare collection. Our study starts with the ITDP initiative but expands the scope of innovation by considering aspects beyond the BRT brand, incorporating essential elements of the human experience in urban spaces and being sensitive to other innovative solutions that can complement the BRT system.

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Figure 7   Transport Photo. "Photo ID 13903." Accessed May 21, 2024. http://transportphoto.net/photo?id=13903&c=114.

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Huning-Huhangyong Connecting Line and Its Impacts on Urban Form
A Microhistory of Suburban Railway Planning in Early 20th-Century Shanghai

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Abstract

Sited and constructed between 1909 and 1916, Huning-Huhangyong Connecting Line (沪宁沪杭甬两路联络线, HHCL) bridged two pivotal railways in the Yangtze River Delta and was adjacent to the build-up area of early 20th-century Shanghai. However, its debatable planning schemes and its impacts on the city's urban form after the 1920s remain untold in planning history. Based on official documents, maps, and historical publications, this paper first examines the six planning schemes proposed by different bodies, including the private railway company, the railway bureaus, the local governor Yu Qiaqing (Yu Yah-ching, 虞洽卿), and the railway technocrat Shi Zhaozeng (Shih Chao-tzeng, 施肇曾). It then investigates HHCL's influences on the expansion of the International Settlement and French Concession, their revised road plans, and the differentiated land use patterns in the west reach of Shanghai. Through a comparative analysis of Columbia Circle in Shanghai and Den-en-chōfu (田園調布) in Tokyo, this discussion extends to the relationship between suburban railway planning and the bifurcated practices of garden suburbs in modern East Asian cities. These distinctive schemes and consequences illustrate not only the operational difficulties in suburban railway planning under the divided municipalities, but also the spatialized tension between the planners' political purpose to hinder the foreign settlements' expansion and their economic and developmental pursuits.

Cities in Transformation

Chair: Hendrik Tieben

How to talk about plans
Using models as mediators to frame planning history in Porto Alegre, Brazil

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Abstract

This study proposes an analytical framework to address a gap in Brazilian Planning History, specifically in Porto Alegre, of frameworks to interpret, and historically compare, the epistemic nature of "urbanistic plans" or "masterplans". The issue is not new, and likely not exclusive to the Brazilian context, since, akin to Reade, the rush to develop planning as a professional field led to the persistent mistake of its procedural aspects for substantive ones. In Brazilian historiography, it is common to mistake what constitutes political discourse with the effective action of the State upon the physical surroundings. Moreover, there is a common conceptual amalgamation of different types of plans (comprehensive, traffic, etc.), of distinct contents, objectives, and effectiveness, under the umbrella of "planos diretores". This highlights the ongoing need for theoretical rigor. Therefore, the study proposes a framework for perceiving plans through the "models as mediators" concept by Morgan & Morrison. Here, models are understood as intermediaries between theory and the real world, not as mere representations, or simplifications; but as assemblages of different kinds of knowledge built to facilitate the understanding of the world and, possibly, translate theoretical ideas into practices and interventions. After setting the historical context of the plan-making activity in Porto Alegre between 1914 and 1979, the study highlights some of the identified interpretative challenges in the relevant historiography. It provides an overview of the model application in science, technology, and planning, culminating in adapting the model-mediator concept into an analytical tool to be applied to the first plan-making moment in Porto Alegre's history. In conclusion, it becomes evident that the lack of theoretical clarity about the epistemic nature of plans hinders the proper understanding of historiography and diminishes the political relevance of its production, necessitating, thus, systematic application of theoretical frameworks like the one offered in the study.

Imitating and Imagining
The Diffusion of the 'Bund' in China since the 1870s

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Abstract

This study proposes an analytical framework to address a gap in Brazilian Planning History, specifically in Porto Alegre, of frameworks to interpret, and historically compare, the epistemic nature of "urbanistic plans" or "masterplans". The issue is not new, and likely not exclusive to the Brazilian context, since, akin to Reade, the rush to develop planning as a professional field led to the persistent mistake of its procedural aspects for substantive ones. In Brazilian historiography, it is common to mistake what constitutes political discourse with the effective action of the State upon the physical surroundings. Moreover, there is a common conceptual amalgamation of different types of plans (comprehensive, traffic, etc.), of distinct contents, objectives, and effectiveness, under the umbrella of "planos diretores". This highlights the ongoing need for theoretical rigor. Therefore, the study proposes a framework for perceiving plans through the "models as mediators" concept by Morgan & Morrison. Here, models are understood as intermediaries between theory and the real world, not as mere representations, or simplifications; but as assemblages of different kinds of knowledge built to facilitate the understanding of the world and, possibly, translate theoretical ideas into practices and interventions. After setting the historical context of the plan-making activity in Porto Alegre between 1914 and 1979, the study highlights some of the identified interpretative challenges in the relevant historiography. It provides an overview of the model application in science, technology, and planning, culminating in adapting the model-mediator concept into an analytical tool to be applied to the first plan-making moment in Porto Alegre's history. In conclusion, it becomes evident that the lack of theoretical clarity about the epistemic nature of plans hinders the proper understanding of historiography and diminishes the political relevance of its production, necessitating, thus, systematic application of theoretical frameworks like the one offered in the study.

Trajectories of Transformation
Case of Mixed–use Urban Spaces in India and China

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Abstract

From the earliest examples of human settlements to modern-day planned urban development, mixed-use spaces have found their place in every era as an essential part of urban areas due to their undeniable importance in meeting the most basic demand of connecting different activities and land uses. In the US, post-industrialisation, self-organised mixed-use spaces become restricted to city cores and specific pockets with growing environmental and health concerns, and zoning-based segregation of land uses became a prominent planning practice. However, with growing concerns about the ill effects of strict segregation, in response concepts such as Smart Growth and New Urbanism revitalized the idea of mixed-use development, marking a shift from dominance to resurgence. India and China being two largest economies from Asia and the developing world have seen great urban spatial transformation in past four decades and have adopted planning practices of the West through colonial practices and modern planning movements. This study explores the idea of mixed-use development and its evolution within the boundaries of socio-economic, political, and spatial realms and tries to reflect on how the historical legacies and contemporary influences resulted in the current form of mixed-use spaces. Rather than focusing solely on specific urban centres, the research delves into broader urban processes, governance styles, and influences shaping contemporary mixed-use landscapes. While populist politics influenced development in Indian cities and proceeds through deregulation and exceptionalism, China represents an approach that asserts the state's role and its ambition to plan cities to facilitate market-based economic development. The study presents a unique approach to explore the element of mixedness and its trajectories from past to present in two different setups, enabling us to assess and challenge existing theories, identify gaps, and contribute to the refinement of more comprehensive and sophisticated theoretical frameworks in the area.

Urban planning as political experimentation
A study of Special Economic Zones in China

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Abstract

China's economic rise has engendered fresh inquiries about new possible development models. The Reform and Opening policy, initiated in 1978, has allowed China to explore market strategies that align with its socialist planned economy. This exploration has primarily occurred within designated areas known as Special Economic Zones (SEZs), which serve as experimental grounds for innovative policies. These SEZs are not only seen as urban endeavours but also as the vanguard of a political agenda geared towards modernising and innovating institutions. The concept of SEZs has arisen from the common interests of local, national, and international stakeholders, all aiming for mutually advantageous outcomes. This political endeavour has empowered China to address not only political conflicts with resistant regions and post-Cold War Western powers but also to cultivate a competitive political landscape that consistently enhances its institutions. As a result, the experimental urban developments incorporated by SEZs have evolved into a unique and efficient territorial development model. For nations in the Global South, China's SEZ provides valuable insights into an alternative route towards collaborative and integrated development. This investigation seeks to delineate the fundamental economic and political insights gleaned from China's SEZ initiative.

Keywords

How to cite

INTRODUCTION

Since the 1970s, China has continuously carried out policy experiments on its territorial planning program, which have had an impact on land planning and accelerated urbanisation. China witnessed a substantial uptick in urbanisation from 1978 to 2010. Over this period, the urban population expanded from 172 million to 681 million, with the rate of urban growth, in terms of area, exceeding twice the population growth rate[1]. This shift in demographics can be attributed to the reorientation of the Chinese industrial modernisation policy by the Deng Xiaoping government.

During the Cold War, Western developed countries made significant investments in East Asian industry, leading to its rapid acceleration. Following the conclusion of World War II, Japan emerged as a key recipient of American factory relocation, which in turn sparked a wave of industrialization across East Asia. In the 1970s, Japan achieved its own industrialization and, consequently, Japan replicated the process, transferring its manufactures to Singapore, Taiwan, South Korea and Hong Kong, known as the "East Asian Tigers". The transfer of industries to these expanding markets was primarily focused on lower value sectors, aiming to capitalise on inexpensive labour and thereby decrease production costs. As a result, regional production chains were intensified.

By the late 1970s, there was consensus at the highest political levels that China must develop a strategy to introduce foreign equipment and technology needed for modernization. However, for this to happen, China needed to have access to foreign exchange reserves that would only come from the export market [2]. Therefore, China's proximity to these new emerging markets opened the door to indirect technological co-optation, given that China was still suffering from economic and political sanctions from the West since the Cold War.

After the Third Plenary Session of the 11th Central Committee of the Communist Party of China in 1978, reforms took a new direction with the creation of the Special Economic Zones (SEZ)[3]. The location of SEZ s is based on political interests and geographical factors. It is necessary to find communities less affected by the old Mao Zedong regime in order to minimise resistance to the application of experimental policies[4]. Furthermore, SEZs must be well-positioned in terms of regional geopolitics, as they aim to attract foreign direct investment (FDI) while leveraging the production logistics created in East Asia[5].

However, China's desire to urbanise ran counter to an important debate among Chinese urban planners at the time. During the 1980s, discussions arose regarding the equity and efficacy of national development. Broadly speaking, a significant portion of urban planners during this period believed that small cities should experience rapid growth in order to foster urban-rural integration, conversely, it was suggested that large cities should adopt a slower pace of growth to prevent excessive strain on infrastructure resulting from population expansion[6]. Therefore, the large industrial cities, such as Shanghai and Beijing, would not be considered in the new plan. A new place was needed, with physical and social space to exploit.

Before implementing the project, Deng Xiaoping organised a political delegation to various developed countries to inspect and learn the various different development strategies applied around the world[7]. These visits expanded the party's political capabilities and created an institutional breeding ground for the development of experimental SEZ strategies. In this way, the party attempts to replicate the market-oriented policies that led to Western economic development, but under the reins of Chinese socialism. SEZ has developed into channels for absorbing manufactures and know-how. In 1980, during the 15th Session of China's Fifth National People's Congress, the party finally launched the SEZ plan, initially establishing four territories: Shenzhen, Zhuhai, Shantou and Xiamen[8].

The four initial SEZs shared similar characteristics: they all had a weak industrialisation, sparsely populated areas with a predominantly rural lifestyle and were positioned along the borders of China's recently unified industrialised provinces. Despite commencing at a similar developmental level, these zones diverged in their trajectories due to varying political adjustments made to align with the geopolitical circumstances of each area. Initially, the boundaries of the SEZs encompassed only a small portion of their respective districts, but gradually expanded to encompass nearly all municipal territories.

From that point forward, the establishment of SEZ was initiated and shaped in accordance with economic demand and China's political agenda. The first generation was established in 1980 as part of Deng Xiaoping's reform and open-door policy. During this period, the Chinese government aimed to address its technological lag by attracting new manufacturers and to promote peaceful reconciliation with Hong Kong, Macau and Taiwan through economic co-operation and integration. In the subsequent decade, under the leadership of Jiang Zemin, the second generation of SEZ was introduced, encompassing Shanghai and Hainan provinces. The objective was to experiment with successful policies from capitalist nations, adapting them to Chinese socialism. Therefore, in the 1990s, China's focus shifted towards promoting institutional and governance innovations that would facilitate the transformation of China into a developed and sustainable society.

SEZs have emerged as arenas for political experimentation, as they are established to promote market-oriented policies within a socialist nation. The controversial nature of these enclaves has sparked debates on new possibilities for urban planning strategies and positioned China as a site of continual urban political innovation. Moreover, the SEZ initiative has fostered a more intimate amalgamation between China's urban micropolitics and territorial macropolitics. This is due to the fact that the incorporation of several experimental policies from the SEZ into the national reform plan coincided with the expansion of the special political zones model to encompass other urban projects across the country. Therefore, understanding the urban framework of SEZs is crucial for comprehending the model of urbanisation that China is currently adopting. This article has highlighted some of the political and social benefits that China has gained through its urban experimentation.

THE FIRST GENERATION OF SEZ

From the experience of the first generation of SEZ, China was able to experiment various positive outcomes in its economy, politics, and diplomacy. Taking the cases of Shenzhen and Xiamen's SEZ as the most successful, we find that:

THE SUCCESS OF THE SEZ WAS ONLY POSSIBLE THANKS TO THE EXISTING LABOUR RESERVE IN THE PEASANT INTERIOR.

In the late 1970s, Shenzhen had a population of just 23 thousand, characterised by a high incidence of illegal immigration to various destinations such as Hong Kong, the United Kingdom, the USA, and the Netherlands[9]. Consequently, it was impossible for organic population growth to keep pace with a rapid industrialisation, at the same time the government could not even estimate this demand, given the uncertainty of the reforms. The city's pilot plan projected a population of 100 thousand, but just four years after the establishment of SEZ, the municipality's population had already surpassed 700 thousand residents[10].

In the mid-1990s, the authorities began to recognise the value of the migrant population, because during this period, as industrialisation increased, the demand for young, cheap labour also grew. Hence, the Chinese government saw an increase in the number of internal migrants. The local media partially acknowledged the contribution of migrants in the city's construction, recognizing them as vital to its modernisation. However, simultaneously, the city experienced a flourishing period of the sex market, which had been "extinct" since the late 1950s, raising government concerns about modernisation strategies[11]. Subsequently, in 1994, the local government initiated a discussion on "How to be a Shenzhen citizen," launching a campaign to promote civic values in the modern city, including the recognition of migrant workers[12].

THE SEZ CREATED BRIDGES OF RECONCILIATION AND DIPLOMATIC OPENNESS.

Beyond economic interests, the SEZ was initially established with a geopolitical perspective in mind. China's objective was to bring together territories that were considered "resistant". In 1985, the government introduced the "one country, two systems" policy, using economic ties as a means to reconcile with Hong Kong and Macau. These two provinces gained significant advantages by expanding their production capacity through outsourcing to the territories of the SEZs, accessing more labour and raw materials. Nevertheless, Taiwan did not readily embrace the political reconciliation proposals as effortlessly as Hong Kong and Macau did. Consequently, this resulted in a setback for the economic advancement of the Xiamen SEZ project. The involvement of Hong Kong in the SEZ project held far greater importance compared to Taiwan's contribution. Hong Kong entrepreneurs and government officials were encouraged to engage in the SEZ initiatives. Particularly in the context of Shenzhen, the input of the Hong Kong business sector was sought during the development of the city's masterplan strategy[13].

Hence, comprehending the underlying factors behind Shenzhen's extraordinary progress necessitates an examination of its geopolitical context. Despite its origins as a modest fishing town in 1979, the city experienced accelerated growth owing to Hong Kong's dedication to the SEZ project. This propelled Shenzhen's development far beyond that of Xiamen, which, despite boasting a more well-established infrastructure network during that period, failed to match Shenzhen's progress. The significance of the inflow of direct investment from Hong Kong and Taiwan into China can be observed in Figure 20. Additionally, Figure 21 highlights the crucial role played by Hong Kong in the development of some industrial sectors in Shenzhen.

According to Wu (1997), Hong Kong played a crucial role in acting as a middleman for channelling investments from nations that did not have diplomatic relationships with China, as well as in the transmission of technology by Hong Kong companies that had assimilated it from Western origins. In this way, China's development is due, at least in its early days, to co-operation with Hong Kong and Taiwan. It is worth noting that Japan, the United States, and the European Union are the main sources of FDI globally. However, while these developed economies accounted for 92% of global FDI, their share in China was less than 30%, with Taiwan and Hong Kong being the key players, representing 58% of all FDI[14].

Additionally, the foundation of China's foreign policy would stem from the reunification agreements with Hong Kong. According to Leng (2011), the "one country, two systems" policy sought peaceful reunification by acknowledging the possibility of coexistence between socialism and capitalism within a sovereign state. This stance aimed to demonstrate to the world that historical issues and international disputes could be resolved without conflict. China's ascent came about in a different manner due to the dissolution of the USSR and the advent of the Global War on Terror. Unlike the USSR, which experienced a clash between socialism and capitalism during its expansion, China pursued a path of peaceful mutual benefit by advocating for economic progress.
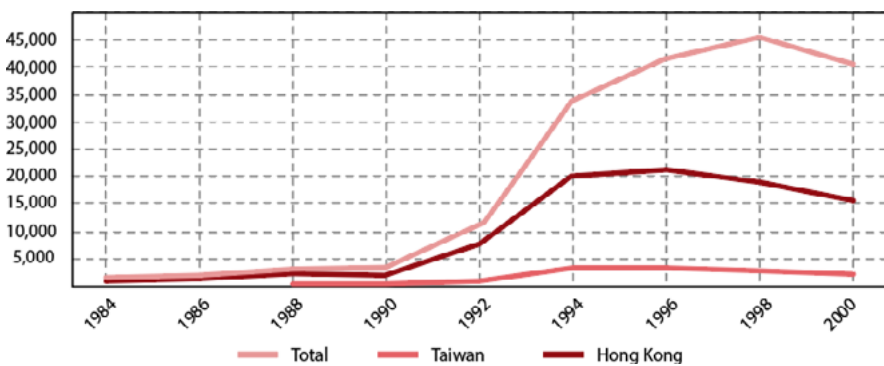
Fig. 1.   Volume of direct investment in China by Taiwan and Hong Kong, between 1984 and 2000, values in US$. Source: Zhang (2005, p.05), adapted by the authors.
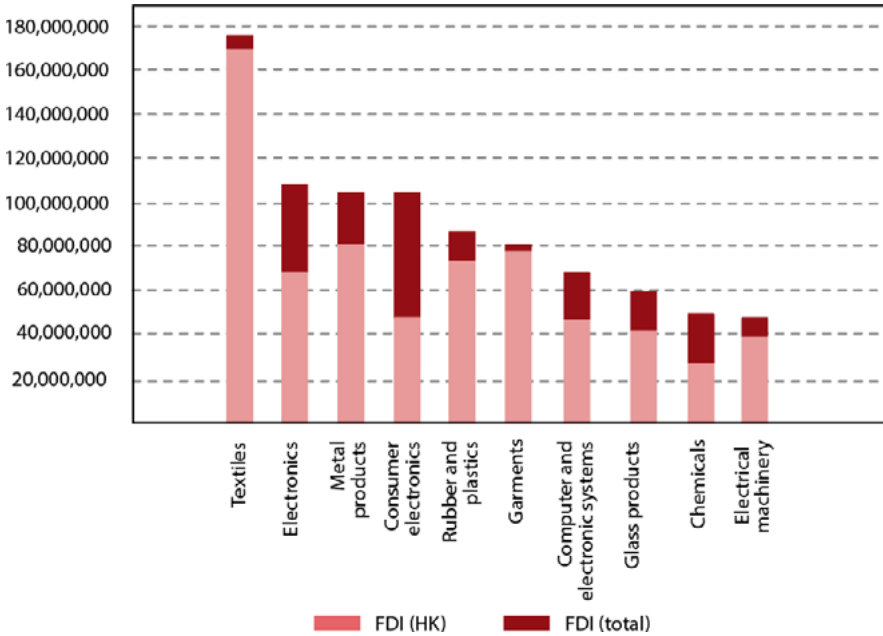
Fig. 2.   Share of Hong Kong investment in FDI, by different industrial sectors, in Shenzhen in 1991 (in US$). Source: Wu (1997), adapted by the authors.

Therefore, China is poised to execute an "economic diplomacy" approach in its worldwide strategy, aiming to enhance and promote diplomatic relations, protect economic interests, and harmonise foreign policy with economic objectives by establishing economic cooperation alliances on bilateral and multilateral platforms. This transition became apparent in China's economic growth in the 1990s, as China delved into developing markets in Africa, Latin America, and Eastern Europe to ensure availability of crucial resources and circumvent global sanctions enforced following the Tiananmen Square event[15]. Consequently, a practical strategy of avoiding conflict was adopted, prioritising economic collaboration on an international scale. Provinces themselves began engaging in diplomatic efforts as part of China's "economic diplomacy." By the turn of the millennium, each provincial government and nearly 300 cities had established connections with 950 sister cities spanning over 100 countries[16].

SEZ HAVE BEEN REPLICATED AS A MODEL OF URBAN POLICY

Due to the rapid success of SEZs in their early years, China utilised them as a development model to drive urbanisation. From 1980 onwards, China expanded special policies to include 14 new coastal cities, two peninsulas (Liaodong and Jiaodong), two river deltas (the Yangtze and Zhujiang Rivers), and the triangular area composed of Xiamen, Quanzhou, and Zhengzhou[17]. Furthermore, China started creating different zones with specific objectives, such as Free Trade Zones (FTZs), Technological and Economic Development Zones (TEDZs), Export

Processing Zones (EPZs), and High-Tech Industrial Development Zones (HIDZs)[18]. The first generation of SEZs had exclusive economic advantages that were not available elsewhere in China, including

taxation controls, land use regulations, labour laws, and wage policies[19]. However, with the diversification of these new special zones, the original SEZs began implementing their own internal development programs to stimulate competitiveness.

In addition to promoting economic development, SEZs stimulated domestic and international relations by granting greater autonomy to local governments. Policy exchanges, production integration, and knowledge sharing fostered the creation of integrated production clusters, many of which were located near SEZs or other Special Zones, contributing to nationwide chain development. By the 2000s, over 60% of FDI flowing into China was directed towards city clusters[20]. Although SEZs were initially conceived as enclaves, the economic development of these cities spilled over to benefit the entire country.

Hence, SEZs played a crucial role in the integrated and collaborative development of Chinese cities. Not only did the national government spearhead and coordinate SEZ projects, but provincial governments also took the lead in establishing their own Special Zones. In the following Figures 22 and 23, we can observe how special policies embedded in these territories rapidly expanded in the first 26 years of reforms. It is also noticeable how, after the 2008 crisis, there was a significant increase in provincial and national efforts to establish new Special Zones, far surpassing the levels recorded in the 1990s.
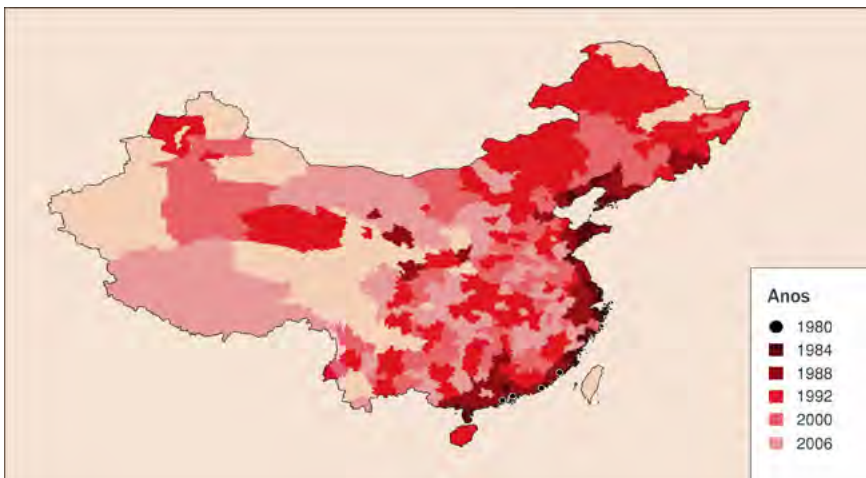
Fig. 3.   Expansion of economic openness through special zone projects by municipal district, between 1980 and 2006. Source: Caporalli, Souto (2022)
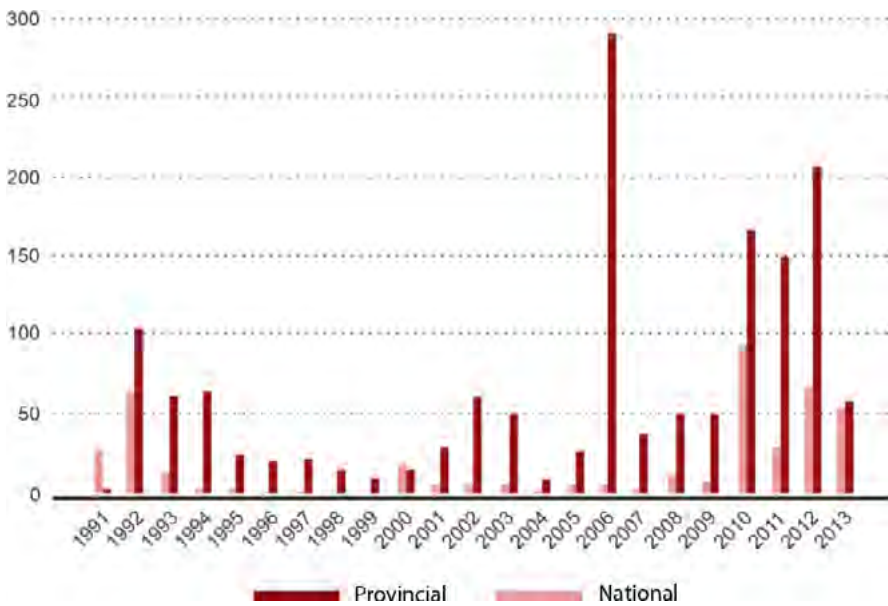
Fig. 4. Development of New Industrial Zones in China from 1991 to 2013. Source: Zeng et al (2021), adapted by the authors.

THE SEZ SERVED AS A POLITICAL LEARNING EXPERIENCE

At the beginning of the reform and opening-up program, Deng Xiaoping faced a lack of sufficient political support to implement nationwide reforms. Consequently, economic reforms were carried out in the limited territories of the SEZ. In 1978, before the establishment of these zones, Deng's top political leaders visited more than 50 countries and organised an economic study group the following year to examine foreign economies, including those of Hong Kong, Macau, France, England, Switzerland, and other developed nations[21]. By studying the economic programs of Western and regional countries, China was able to experiment with market policies that had proven successful in these countries.

Moreover, provinces and local governments established transnational political networks, allowing them to learn from other cities and nations. By the late 1980s, Shenzhen introduced a comprehensive five-year legislative plan consisting of 135 economic regulations, drawing inspiration from observations made during official visits to Hong Kong, Europe and the USA[22]. Additionally, the city's urban development plan incorporated insights from Singapore following a delegation visit led by Party Secretary Liang Xiang to the island in 1983[23]. By implementing experimental policies in specific limited areas and adapting them to local circumstances, policymakers gained a range of experiences that contributed to the development of a nuanced understanding of region-specific economic policies.

THE SECOND GENERATION OF SEZ

In the 1990s, China launched a new political agenda alongside its SEZ strategy. Under the command of Jiang Zemin, two new projects were launched, the Hainan Province's SEZ and the Pudong Financial District's SEZ, through which China wanted to prove itself to the world as a model modern nation. These two new SEZs were forged with the policy repertoire of the first generation, and were characterised by their ecological (Hainan) and financial (Shanghai) focus. Furthermore, China initiated nationwide economic political reform following the outcomes of the SEZ trials. Consequently, in contrast to the initial generation that enjoyed exclusive economic policies, the subsequent SEZ generation would solely be granted precedence in the implementation of experimental policies. From these two new urban projects, we have that:

THE CREATION OF PUDONG HELPED REVITALISE
CHINA'S FINANCIAL MARKET AND THE CITY OF SHANGHAI

In the 1990s, China embarked on a renewed reform and opening-up program aimed at promoting the corporatization of state-owned enterprises through business reforms. These reforms also had the objective of integrating China into international cooperation organisations. During this period, the government implemented tax modifications and relaxed its financial and banking systems[24], by removing non-tariff barriers and reducing tariffs from 13% to 6.8% on its manufactured goods[25]. From 1983 to 1999, China was the top recipient of FDI among Asian countries[26], making it the world's second-largest recipient of FDI from the mid-1990s onwards[27]. China's entry into the WTO in 2001 facilitated the conquest of new markets and, as a result, exports accelerated. From 1990 to 2001 the increase in exports was 427%, while from 1990 to 2001 this growth was 470%[28]. The construction of the Pudong SEZ in Shanghai was the spearhead for China's integration into contemporary globalisation, as it served to modernise China's financial market.

Unlike Xiamen and Shenzhen, Shanghai was already an industrialised and export-oriented city. At the beginning of the 20th century, the industrial sector accounted for more than 60% of the city's GDP and, by 1930, it was responsible for almost 70% of China's total exports[29]. The creation of Pudong would serve to reinvigorate Shanghai's influence in the global financial market, since before the communist revolution, the city was the third largest financial centre in the world[30], but lost ground to Hong Kong in the second half of the 20th century[31]. Success was almost immediate. By 1996, the new financial centre of Pudong had absorbed almost 17 billion in investments[32], surpassing Shenzhen's turnover in 1998[33]. Between 1992 and 2002, the number of companies registered with foreign capital grew around 6 times[34]. The city expanded its financial services network, becoming more relevant on the global network than Seoul and Taipei in 2004[35]. Shanghai's stock exchange became the fifth largest in the world in terms of market capitalisation after the 2008 crisis[36]. In this way, the city returned to its role as one of the protagonists in the international and regional financial market.

Furthermore, the government successfully mediated the development of its three financial centres, allowing China to have different financial fronts. Hong Kong continued to play a lead-

ing role in Asian financial relations, hosting 70 of the world's top 100 banks and being one of the most influential international think tanks[37]. Shenzhen continued to serve as an extension of Hong Kong's financial market, acting as a gateway to the regional domestic market[38]. Finally, Shanghai served as the main gateway for investors into the thriving Chinese market.

ECOLOGICAL DEVELOPMENT HAS BECOME A KEY GOAL IN CHINESE URBAN–TERRITORIAL PLANNING

During the 1980s and 1990s, China experienced a rapid economic and industrial development that gave rise to significant environmental challenges. The air quality in major cities plummeted to levels far from desirable, while more than one-third of urban rivers suffered from severe pollution[39]. In 2003, the estimated costs of air and water pollution had already reached almost 6% of China's GDP[40] .

In response, China launched environmental strategies in the early 2000s, focusing on pollutant mitigation and reforestation. The Chinese government embarked on ambitious projects, including the ongoing "Great Green Wall" campaign since 1978, which aims to reforest the northern regions, and the "Conversion of Farmland to Forests" initiative launched in 1999[41]. At the same time, China initiated the exploration of alternative development models that prioritise environmental sustainability.

The island of Hainan was designated as a testing ground for innovative policies, particularly focusing on eco-tourism and sustainable economic practices. In 1996, Hainan initiated the 'One Province, Two Places' initiative, aimed at creating a conducive economic environment that integrates agriculture, tourism, and industry[42]. By 1999, Hainan achieved two significant environmental milestones: first, it obtained approval from the State Environmental Protection Administration to establish its inaugural pilot city for the construction of an Ecological Province; second, the Provincial People's Congress deliberated and endorsed the 'Guidelines for Planning the Development of Hainan as an Ecological Province' [43] .

In Hainan, sustainable development gained traction in national strategies and plans, promoting a unified approach to planning. One year after designating Hainan as an "ecological province" in 1999, the Fujian government also embarked on formulating an ecological master plan for the province[44]. Furthermore, since 2001, China has been implementing the use of Eco-Industrial Parks to drive its green transition, with over 90 parks established by 2018[45], and in 2012, the authorities established the Ecological Civilisation Pilot Zones, designating Hainan, Fujian, Jiangxi, and Guizhou as experimental regions for the innovative program[46].

The initiative known as the "Construction of an Ecological Civilisation" programme was established as a comprehensive effort, encompassing various aspects in its design, such as green financing and economics, social and scientific organisations and research institutions, public-private partnerships, technological assistance, and ecological regulations and laws[47]. At the 18th National Congress of the Communist Party of China in 2012, it was proposed that advancing ecological development is a continual mission crucial for the sustainable growth of the Chinese nation and global ecological stability[48]. Subsequently, in 2018, the concept was

enshrined in the Constitution through an amendment assigning to Chinese Socialism with Chinese Characteristics the duty to advance progress in economy, politics, culture, society, and now ecology, within the framework of the "Integrated Plan of Five Spheres"[49].

Between 2009 and 2011, the Ministry of Environmental Protection in China initiated more than 50 pilot zones dedicated to the development of eco-friendly cities and counties[50]. By 2013, the number of these zones had risen to 125, with a significant portion of them situated in the provinces of Jiangsu, Zhejiang, Liaoning, Guangdong, and Sichuan[51]. Subsequently, China went on to establish national pilot zones two years later, with the objective of conducting comprehensive experiments on system reform to advance ecological progress, oversee various experimental projects, and gather knowledge to strengthen the institutional framework for fostering an ecological civilization[52].

THE CHINESE SEZ MODEL HAS EMERGED AS A POTENTIAL AVENUE FOR ECONOMIC PROGRESS IN DEVELOPING REGIONS ACROSS THE WORLD

In addition to bilateral investments, China innovates by framing its cooperation agreements within a single productive network. In 2013, China launched the Belt and Road Initiative (BRI) to integrate the productive infrastructure of nations across Asia, Africa, and Europe through land and maritime trade routes. This initiative has attracted participation from over 130 countries, offering opportunities for regional and global development cooperation.

One of China's strategies involves replicating the SEZ model to promote industrialisation in partner developing countries. Currently, the African continent showcases significant examples of SEZs established under the influence of the Chinese model. Caporalli and Souto (2021) highlight China's cooperation agreements for the development of Sino-African SEZs, including the Chambishi Zone and Lusaka sub-zone in Zambia; the Suez Canal Economic and Trade Cooperation Zone in Egypt; the Lekki Free Trade Zone and Ogun in Nigeria; the Jinfei Industrial Zone in Mauritius; and the Eastern Industrial Zone in Ethiopia. These SEZs are designed based on the initial Chinese SEZ framework.

Firstly, these SEZs are conceptualised in relation to global production scales, leveraging existing and developing production routes and hubs. Secondly, the design of African SEZs aligns local and transnational interests, fostering cooperation between national states and local and international businesses. Thirdly, they serve as spaces for absorbing industry and technology transfers from China. Fourthly, most of these SEZs are coastal, enabling direct access to global maritime trade routes for their production.

CONCLUSION

Throughout this study, It has been shown that China's rise in the 21st century is the result of a complex development strategy. By using SEZ, China has managed to combine national economic planning policies in line with its urbanisation process, experimenting with different

combinations of capitalist market economy and socialist planned economy. As these zones have evolved and continue to evolve, these cities prove new political possibilities, providing China with a wide range of institutional repertoires to catalyse its development. In general terms, it can be said that, through the SEZ, the national planning programme was combined with the urban project of these cities. At the same time, it is also possible to suggest that SEZs have stimulated urbanisation oriented towards institutional innovations. Understanding Chinese urbanisation is increasingly necessary as China inspires the development of new cities and urban policies, especially in the global south.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author.

NOTES ON CONTRIBUTOR(S)

Natacha Rena, PhD in Communication and Semiotics from the Pontifical University of São Paulo, holds a position as a professor at the UFMG's School of Architecture and is involved in leading the Geopolítica e Planejamento Territorial (GeoPT) research group and the Nova Economia do Projetamento (NEP) research group. João Souto, an architect and urban planner from the UFMG, is associated with GeoPT and NEP. Elias Jabbour, PhD in Geography from the University of São Paulo, holds positions as a Consultant to the Presidency of the New Development Bank, a Professor at the UERJ's Faculty of Economic Sciences and leads the NEP research group.

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Subjectivity Policies
Comparing Housing after 1945 in Portugal and the USA

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Abstract

Housing policies in southern Europe tend to be compared with those in the rest of the region, often in the framework of arguments on a purported cultural tendency for urban homeownership. This paper argues that planning histories are needed to understand the ways in which present-day mass urban homeownership in the dense metropolises of countries like Portugal was instead a long-term political project. In particular, this paper reflects on the hitherto neglected circulation of housing policies between the USA and Portugal, notably after the partition of the European region in 1945. It recalls the political rationality that designed postwar suburbanization in the USA, and the subjectivities that resulted from this process; as well as the effects of the concept of self-help, diffused by the US-led development apparatus in the global South. The paper discusses the formation of a dual housing regime. For the same period in Portugal, the paper evokes "clandestine" forms of suburbanization in Lisbon, as well as colonial self-building initiatives in cities like present-day Luanda or Maputo, in addition to examining the dual regime created through the Housing Development Fund. More recently, there is a circulation of ideas and practices promoting entrepreneurial cities, exceptional forms of planning, and financialized public housing policies. The paper concludes by defending the urgency of a geopolitics of housing knowledge within planning history.

Keywords

How to cite

Cities, Regions and Hinterland

Chair: Christine Garnaut

Research by walking
Learning from rural revitalization strategies in China's Yangtze River Delta Region

Harry den Hartog
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Abstract

Various progressive rural renewal programs have been launched in China over the past two decades. What does the future of rural areas and regions look like in China's Yangtze River Delta Region, and what can we learn from these for other situations such as in the Northern Netherlands? Our aim is to find a new perspective for more sustainable spatial development. By walking we try to discover a new vision for the future developments of towns and countryside, especially in exurban areas at a medium distance from urban conurbations. Instead of only plowing through archives, this research is methodically based on "walking" in which not only the case is physically experienced intensely, but also a discussion is held with as many different people as possible. While walking there is time to see and discuss things from different perspectives. By walking we expect to discover hidden values in the countryside near metropolitan regions. "Walking through the landscape" is also a metaphor, with an assumption that by deliberate slowing down, we can find sustainable alternatives, as opposed to over-consumption and depletion of the planet.

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From Space to People
Navigating Capital-Led Urban Transformation in Shanghai through Shui On Cases

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Abstract

Various progressive rural renewal programs have been launched in China over the past two decades. What does the future of rural areas and regions look like in China's Yangtze River Delta Region, and what can we learn from these for other situations such as in the Northern Netherlands? Our aim is to find a new perspective for more sustainable spatial development. By walking we try to discover a new vision for the future developments of towns and countryside, especially in exurban areas at a medium distance from urban conurbations. Instead of only plowing through archives, this research is methodically based on "walking" in which not only the case is physically experienced intensely, but also a discussion is held with as many different people as possible. While walking there is time to see and discuss things from different perspectives. By walking we expect to discover hidden values in the countryside near metropolitan regions. "Walking through the landscape" is also a metaphor, with an assumption that by deliberate slowing down, we can find sustainable alternatives, as opposed to overconsumption and depletion of the planet.

Keywords
degrowth, regional planning, rural revitalization, walking as research method

Kaiyi Zhu, Tianchen Dai
From Space to People

Landscapes of Migration
The 'men for coal' agreement, mining settlements, and ecology among the Italian workers of Limburg, Belgium

Jacopo Zani
ETH Zurich

Abstract

In May 1962 a new church and civic centre, named Centro Cattolico Italiano (Italian Catholic Centre) was inaugurated at the edge of the mining town of Waterschei, in the Belgian region of Limburg. The building was born out of the ambitions of a catholic mission and catalysed Italy's attempts to assert ideological and economic influence over its citizens in the mining towns. With the so-called 'Men for Coal' agreement of 1946 in fact, the Italian government had supported the mass migration of its workers to Belgium in exchange for coal, while relying on the local clergy to organize control over their mobility. Yet, the realization of these civic and religious centres, also depended extensively on the voluntary actions of the miners themselves, whose 'voice' only finds a fragmented presence in most official archival materials. Most literature on these mining landscapes has traditionally read them within the 'fixed' representations expressed by governmental social welfare structures. On the opposite, in this contribution, I shift the attention to the perspective offered by oral histories and the inhabitants' archives, to look at the livelihoods of unspecialized workers, children, and women, focusing on their movements within the settlements. More specifically, by relying on a theoretical framework that combines migration studies with an environmental humanities approach, I explore how these people resisted the 'fixed' categorizations imposed by state discipline – such as in the distinction between 'native' workers and 'travailleurs étrangers'. Looking at these 'unfixed' livelihoods I argue, is an important vantage point to understand how the struggle for accessing resources (i.e. land), pushed people to forge socio-ecological relations that equally articulated these landscapes.

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Jacopo Zani
Landscapes of Migration

Yan Zhou, Hong Jiang, Tianyang Lu
Research on spatial characteristics and planning patterns of
settlements in the Jingjiang River Flood Diversion Area, China

Research on spatial characteristics and planning patterns of settlements in the Jingjiang River Flood Diversion Area, China

Yan Zhou, Hong Jiang, Tianyang Lu
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Abstract

In the context of the shortage of land resources in China, there are some human settlements built in the flood diversion areas. These settlements were planned and constructed in conjunction with water conservancy projects arranged by the state, and assume the function of resettlement and flood control. Taking Jingjiang River Flood Diversion Area, an important large-scale water conservancy project constructed in China's Changjiang River Basin in the 1950s, as the research area, this study aims to reveal the planning pattern of the settlement spaces built in this special area in the early period of New China. In this article, the development of its hydraulic environment and human settlements is sorted out. Based on this, the location, scale, form and layout of the 19 refuge areas are analysed, and their formation logic is explored. The results show that the refuge areas in the Jingjiang River Flood Diversion Area have developed unique spatial characteristics driven by flood diversion, resettlement and agricultural production needs. Their physical space is closely related to the water conservancy facilities, developing a specific pattern highly adapted to flood diversion, which has the effect of improving the security of residents' life and production, and reflects the planning ideas of "coexisting with the water and integrating as a whole". The research findings contribute to the recognition of the value characteristics of settlements in flood diversion areas, and provide a reference for the understanding of the national governance during the early period of New China.

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Fig. 1. Development process of the hydraulic environment and human settlements in the Jingjiang River Flood Diversion Area during the 20th century. The second half of the 20th century was a stage of the development and refinement of the human settlement system in the flood diversion area.

INTRODUCTION

There exists a special type of human settlement in the flood diversion areas of China's major rivers. They were planned and constructed in conjunction with water conservancy projects arranged by the state under the socialist system. These settlements present specific spatial patterns due to their function of resettlement and flood control. The Jingjiang Flood Diversion Area, established in Changjiang River Basin of China in the 1950s as the first large- scale water conservancy project after the founding of the People's Republic China, is chosen as the subject of this study because of its significance and representativeness.

In the early years of New China, the state made great efforts to construct flood diversion areas in the middle and lower reaches of major river basins to address water disaster issues. Before the founding of New China, long-term uncontrolled reclamation and internal and external problems led to the stagnation of the flood control construction. For example, the embankments on the banks of the Jingjiang River section of the Changjiang River were breached in 28 years between 1912 and 1949.[1] The frequent floods posed a significant threat to the normal life of the general public along the rivers. In this context, the Chinese government placed great emphasis on water management, considering it an urgent task to restore the national economy and protect the lives and property of the people, and has led the people to carry out large-scale water conservancy construction throughout the country. Jingjiang River, being one of the most challenging areas for water management in China, had thus become a critical focus for flood control along the Changjiang River. The Changjiang River Conservancy Commission submitted the "Jingjiang Flood Diversion Project Plan" to the national government in 1950, and it was approved by Chairman Mao Zedong.[2] The main construction of the project was completed in 1952.[3] Today, it is situated in Gong'an County, Hubei Province.

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The refuge area project is an essential component of flood diversion area construction, designed to safeguard the people's living conditions. The Jingjiang Flood Diversion Area implemented a resettlement strategy primarily focused on relocating residents. Within the flood diversion area, there were originally 240,000 residents. 20 refuge areas protected by embankments were planned and constructed by national investment based on the opinions of local governments and the public from 1952 to 1953. [4] The Jingjiang Flood Diversion Resettlement Commission resettled 160,000 people in these areas. [5]Subsequently, the number of refuge areas in the flood diversion area has stabilised at 19 after being abolished, merged and newly built, with a population of 180,000 residents.

The state requires all levels of government to provide necessary guidance and assistance in the safety and construction of flood diversion areas to rationally and effectively utilize the flood diversion area and to adapt the life and economic activities of their inhabitants to the requirements of flood prevention. [6]As a result, the settlements in flood diversion areas have a distinctly top-down development approach and are related to hydraulic engineering projects. However, there is currently scarce research on the human settlements under the impact of hydraulic construction in this region. Therefore, this study aims to reveal the planning patterns of these human settlements formed in this special area during the early period of the People's Republic of China by analysing their spatial characteristics and discussing their formation logic. In this paper, we review the changes in regional hydraulic environments, identify the constituent elements and settlement types of the Jingjiang Flood Diversion Area. Based on this, we analyse the location, scale, form, and layout of the 19 refuge areas (the primary settlement types), discuss the relationship between human settlements and hydraulic engineering projects, and explore the inherent wisdom in human settlement construction.

DEVELOPMENT OF THE HYDRAULIC ENVIRONMENT AND HUMAN SETTLEMENTS IN THE JINGJIANG RIVER FLOOD DIVERSION AREA

Due to the threat of flooding, water conservancy construction has become the key to the development of the Jianghan Plain region. During the Ming and Qing dynasties, the people of the Jianghan Plain gradually established a "hydraulic society" based on collaborative assistance through a series of water management activities such as embankment construction, maintenance, and management. [7] At the same time, the hydraulic engineering elements physically influenced settlement spaces. The hydraulic environment and human settlements in the Jingjiang Flood Diversion Area underwent the following development in the 20th century (Figure 1).

1912-1949: Frequent floods occurred in the Changjiang River basin during the Republic of China period. Due to the lack of organized water management, river channels, islands, and lakes were blindly reclaimed for agriculture, exacerbating conflicts between people and water over land. At that time, flood prevention mainly relied on embankment construction, and the enclosed spaces formed by embankments were called "polder" (yuan 垸), which were used to

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safeguard production and living spaces. Different polders were interconnected by embankments, and a self-contained system was formed in each polder. Residents built settlements based on family units, relying on natural or artificial highlands, resulting in dispersed settlements.[8] As populations and housing increased, many settlements merged. Moreover, residents along the riversides developed towns at the intersections of embankments and rivers or at the harbours along the rivers, relying on the flood control conditions and water transportation advantages. Taking high grounds, constructing embankments, and enclosing fields have become the basic strategies for subsequent flood diversion area construction. Although traditional polders once met the needs for production and disaster avoidance, the lack of unified management at that time only allowed for small-scale flood regulation, providing limited security for settlements.

1951-1954: After the construction of the Jingjiang River Flood Diversion Area, the layout of the embankment was reorganised, refuge areas and refuge platforms were initially constructed, and the original settlement pattern was altered. In order to ensure the safety of the residents in the diversion area, as well as to provide a level floodway during flood diversion, all dilapidated embankments and piers were levelled. The polders were combined into one big area, which is surrounded by Jingnan dike, Hudong dike and Nanxian dike into a circle with a length of more than 210km, with a total area of 921.34km². Refuge areas and refuge platforms for resettlement were constructed by the state through unified organisational planning. The refuge area is a technical term in the hydraulic engineering, referring to the independent enclosure built by using the flood diversion area's embankments. It serves as the town for the residents of the flood diversion area to live, and is used to isolate the flood water and temporarily resettle the people who usually live outside when the floods occur. The refuge platform refers to the temporary shelter used for moving residence in case of flood diversion, which is built on top of an earthen platform above the design water level along the embankments. [9]

1954-1980: Towns within the embankment were gradually expanding and the evacuation and transferring road network is being supplemented. With the support of the local brick and tile industry and State funding, the people in the hinterland of the flood diversion area have built 950 brick resettlement houses with sloped roofs on the basis of 15 square metres for each household[10] and 85 flood warehouses[11] in the refuge areas and refuge platforms. The resettlement houses were built by the Jingjiang Floodplain Construction Command, a specialised construction unit for the flood diversion area. Their property rights and management are entrusted to the people's communes and production units, which allocate them to the families normally living in the hinterland. At the same time, in order to cooperate with the river network movements, the canals were dug and the roads were piled up in the hinterland of the flood diversion area, forming a network of orthogonal roads adjacent to the irrigation canal system, with intervals of 400-600 metres.[12] Relying on the transferring road network, the people in the hinterland have formed an internal transfer and resettlement pattern of "settling and farming in the countryside during normal times and moving to the towns to avoid disasters during floods". The towns in the refuge areas were constantly being expanded inside the embankment, and have developed into modern towns with a range of industrial, residential, consumer and public service functions.

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1980-1998: The resettlement system has been further improved, forming a system composed of refuge areas, refuge platforms, refuge buildings, and transferring roads and bridges. In 1982, the Hubei Provincial Water Resources Department approved the construction of refuge buildings in the hinterland of the flood diversion area, and by 1992, a total of 246 refuge buildings had been built for residents who were inconvenient to move. In 1990- 1992, a new boat hoist was built in Huangshuitao Refuge Area, which was used as a transport hub for conveying life-saving boats after the flood diversion, transferring people and materials from refuge buildings and for external contact.[13] At the same time, the transferring road, bridge and the ferry along the river were improved to strengthen the transfer and resettlement capacity. By the end of the 20th century, a multi-functional system integrating flood control, resettlement and agricultural production was formed in the Jingjiang Flood Diversion Area.

SPATIAL CHARACTERISTICS OF THE REFUGE AREAS

As a significant outcome of the resettlement project, the refuge areas have become the primary settlement space within the flood diversion area. The location, scale, form, and layout of these settlements are closely related to the water conservancy facilities.

Location: The refuge areas were constructed relying on river dikes and embankments, interconnected by enclosing dikes, presenting a relatively even distribution along the river dikes. Their location must ensure the normal operation of flood diversion and agricultural production. From the perspective of flood diversion, the ground within the flood detention and retarding area needs to remain level, so the main flow area should be free of houses, earthworks, and other obstacles that hinder the flow of floodwaters. Therefore, settlements should ideally be concentrated at the edges of the flood detention and retarding area. However, from the agricultural production standpoint, the farmland and water conservancy facilities in the centre of the flood detention and retarding area need frequent maintenance, which means it inconvenient for farmers to live far from their fields. Under these conditions, the state, giving priority to flood safety while considering a reasonable distance to the agricultural land, has selected the location of refuge areas along the main dikes of the flood diversion area at intervals of 5-10 km, ensuring that the distance from the refuge areas to the fields does not exceed 3-5 km. [14] Among these refuge areas, two-thirds were constructed by relying on existing settlements. Some of them were built based on the existing towns established during the Republic of China era, which were often located near rivers and dikes, benefiting from transportation locations. After the founding of the People's Republic of China, the spatial layout of these towns was preserved, and new spaces were created around them for the construction of roads and resettlement housing. Embankments were built around the towns to form enclosed refuge areas. The others were developed from civilian polder villages of the Republic of China era. The original village mounds within the embankments were removed, and several civilian embankments were merged to form a new refuge area. The remaining one- third were constructed in a new location along river dikes (Table 1).

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Refuge area	Foundation	Location	Relationship with river	Area (km²)
Buhe (埠河)	Rely on existing towns	Northern part	Along Jingjiang River	4.09
Yugongyuan (裕公垸)	Rely on existing villages	Southern part	Along Jingjiang River	2.78
Yangjiachang (杨家厂)	Rely on existing towns	Northern part	Along Jingjiang River	2.67
Douhudi (斗湖堤)	Rely on existing towns	Northern part	Along Jingjiang River	2.34
Ouchi - Nijiata (藕池-倪家塔)	Rely on existing towns	Southern part	Along Jingjiang River	1.705
Huangjinkou (黄金口)	Rely on existing towns	Northern part	Along Hudu River	1.60
Leizhou (雷洲)	Rely on existing villages	Northern part	Along Jingjiang River	1.51
Jiazhuyuan (夹竹园)	Rely on existing towns	Northern part	Along Hudu River	1.27
Yiheyuan (义和垸)	In a new location	Northern part	Along Hudu River	1.24
Donggangzi - Wudahe (东港子-吴达河)	Rely on existing towns	Southern part	Along Hudu River	0.96
Shuiyue (水月)	Rely on existing villages	Northern part	Along Hudu River	0.72
Zhakou (闸口)	Rely on existing towns	Southern part	Along Hudu River	0.64
Guojiaxiaoyuan (吕家小垸)	In a new location	Southern part	Along Hudu River	0.30
Shaojiagang (邵家岗)	Rely on existing villages	Southern part	Along Jingjiang River	0.29
Bajiapu (八家铺)	In a new location	Southern part	Along Jingjiang River	0.25
Baohengyuan (保恒垸)	In a new location	Southern part	Along Hudu River	0.23
Xinkou (新口)	In a new location	Southern part	Along Hudu River	0.18
Huangshuitao (黄水套)	Rely on existing villages	Southern part	Along Jingjiang River	0.16
Yanglinsi (杨林寺)	In a new location	Southern part	Along Jingjiang River	0.14

Table 1.   The information of the refuge area settlements.

Scale: The overall area of the refuge areas is constrained by flood diversion requirements. According to the design specifications for flood detention and retarding basins, the area allocated for refuge construction should not exceed 5% of the flood detention and retarding volume. The total area of the 19 refuge areas in the Jingjiang River flood diversion area is 23 km², accounting for 2.5% of the flood diversion area. The sizes of individual refuge areas range from 0.14 to 4.00 km²(Figure 2). Nearly half (9) of them are larger than 1 km². Among them, 89% (8) are developed on original sites, 78% (7) are located in the generally higher terrain of the northern half, and 67% (6) are situated on the side of the Jingjiang River. Additionally, there are 7 refuge areas with sizes less than 0.3 km², which are generally located in the lower-

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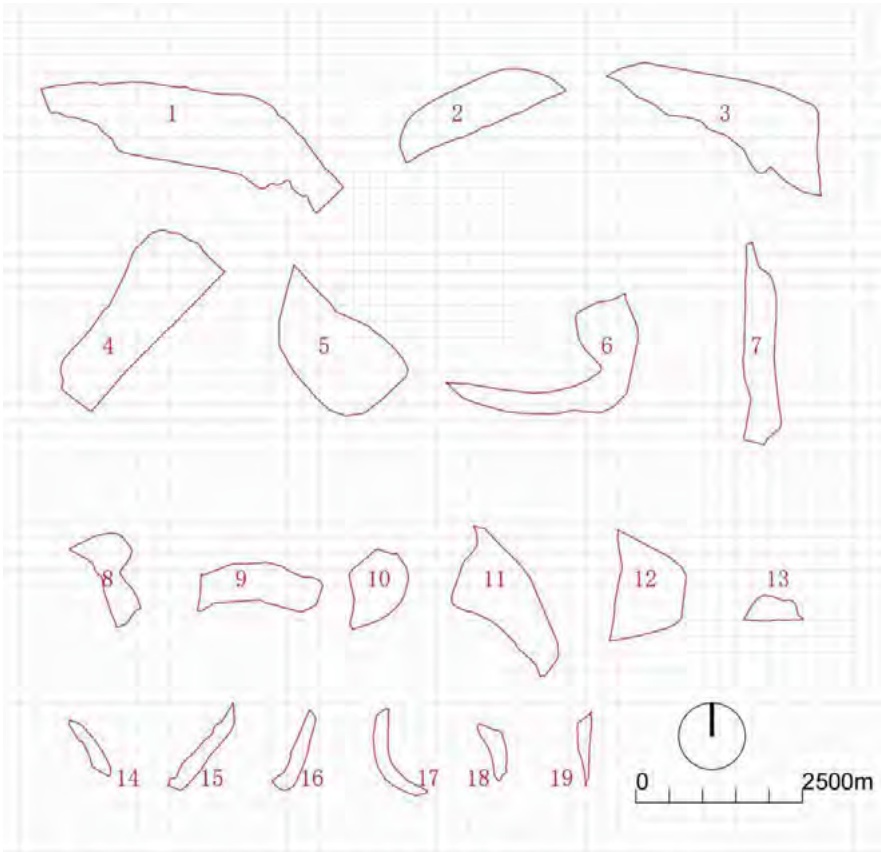
1.Buhe（埠河）, 2.Leizhou（雷洲）, 3.Yangjiachang（杨家厂）, 4.Yugongyuan（裕公垸）,
5.Douhudi（斗湖堤）, 6.Ouchi - Nijiata（藕池-倪家塔）, 7.Yiheyuan（义和垸）, 8.Zhakou（闸口）,
9.Wudahe - Donggangzi（吴达河-东港子）, 10.Shuiyue（水月）, 11.Huangjinkou（黄金口）,
12.Jiazhuyuan（夹竹园）, 13.Baohengyuan（保恒院）, 14.Huangshuitao（黄水套）, 15.Shaojiagang（邵家岗）,
16.Bajiapu（八家铺）, 17.Guojiaxiaoyuan（凤家小垸）, 18.Xinkou（新口）, 19.Yanglinsi（杨林寺）

Fig. 2.   Scale. The size of a single refuge area varies from 0.14 to 4.00km², depending on the design
specifications of the flood detention and retarding area and the spatial conditions of the base sites.

lying southern half of the flood diversion area and are often rebuilt in new locations. The
results indicate that the size of the refuge areas is related to the construction foundation and
correlates with the drainage capacity of their terrain. On one hand, original sites have with-
stood historical challenges, offering higher safety. Additionally, developing refuge areas based
on original sites allows for the direct use of accumulated population, transportation, and land
resources, benefiting urban development. Therefore, refuge areas developed on original sites
tend to be larger, while newly built refuge areas are often smaller. On the other hand, due to
terrain differences, the lower-lying southern part is more prone to deeper and longer-lasting
water accumulation, making it relatively more dangerous. Consequently, refuge areas in the

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southern part are generally smaller, while most larger refuge areas are located in the northern half. Thus, the total area of refuge areas is limited, and the scale of specific refuge area is influenced by safety considerations and development potential.

Form: The spatial form of the refuge areas needs to be adapted to withstand flooding. Each refuge area is enclosed by embankments, with one side bordered by the main dike of the flood diversion area. The main dike is classified as a secondary dam, while the other enclosing embankments are classified as tertiary dams. They rise 9-13 meters above the surrounding ground, have a crest width of 6 meters, and slopes with a gradient of 1:3 on both sides, covered with grass. In terms of shape, the refuge areas are generally elongated along the direction of the main dike. This design maximizes the use of the main dike and minimizes the construction effort. In order to resist the impact of water flow during the flood diversion period, the corner of the embankments is rounded, and the protection forest is built at the foot of the embankments facing the water. The enclosing dikes and embankments establish the development boundaries for the towns at that time.

Layout: In addition to general urban development, flood control and temporary resettlement are comprehensively considered in the land use layout of refuge areas. This paper analyses the layout characteristics of the built-up situation within the 1970s' refuge area (Figure 3). Within the refuge area there are disaster response systems, drainage systems, transport systems, as well as conventional residential, commercial, and industrial zones. (1) The disaster response system mainly includes dikes, sluices, temporary resettlement housing, and flood control material warehouses. During flood diversion, when the water level outside the area is higher than inside, the sluice gates must remain closed. The resettlement houses are row-style collective residences, with each building capable of accommodating 6-20 households. Each household is allotted 15 square meters. [15]There is a space of eight meters in the front and six meters in the back of each house to ensure smooth passage for resettlement vehicles. [16] These resettlement houses are constructed parallel to the roads. Flood control material warehouses are located near the embankments and store emergency facilities such as gravel, sand, woven bags, life jackets, etc., in accordance with the flood control contingency plans for the watershed. These buildings are subordinate to and serve the flood control emergency plans of the flood diversion areas, ensuring the normal operation of the refuge area. (2) The drainage system mainly consists of sluice gates, drainage channels, and drainage culverts. Gates are installed at the intersections of rivers and embankments. Drainage channels are often open channels with a width of 4-6 meters, traversing the central part of the refuge area or encircling along the boundaries. Drainage culverts, as a type of pipe structure, effectively guide water flow. (3) The transportation system mainly consists of the terrestrial road network. The layout of the roads follows the original embankments and field ridges. The roads show the traditional characteristics of being built on embankments or along the water in their names, such as "Hengdi" (Transverse Embankment) Road, "Youjianghe" (Youjiang River) Road, and "Jingjianghe" (Jingjiang River) Road. The road network connects outward with ports along the river and inward with resettlement roads leading to the hinterland. Some refuge areas feature irregular grid-shaped road layouts, while other refuge areas have road networks characterized by a fishbone-shaped structure, with roads mainly running parallel to the main dike. The roads form the spatial framework of the refuge area, connecting scattered resettlement housing areas.

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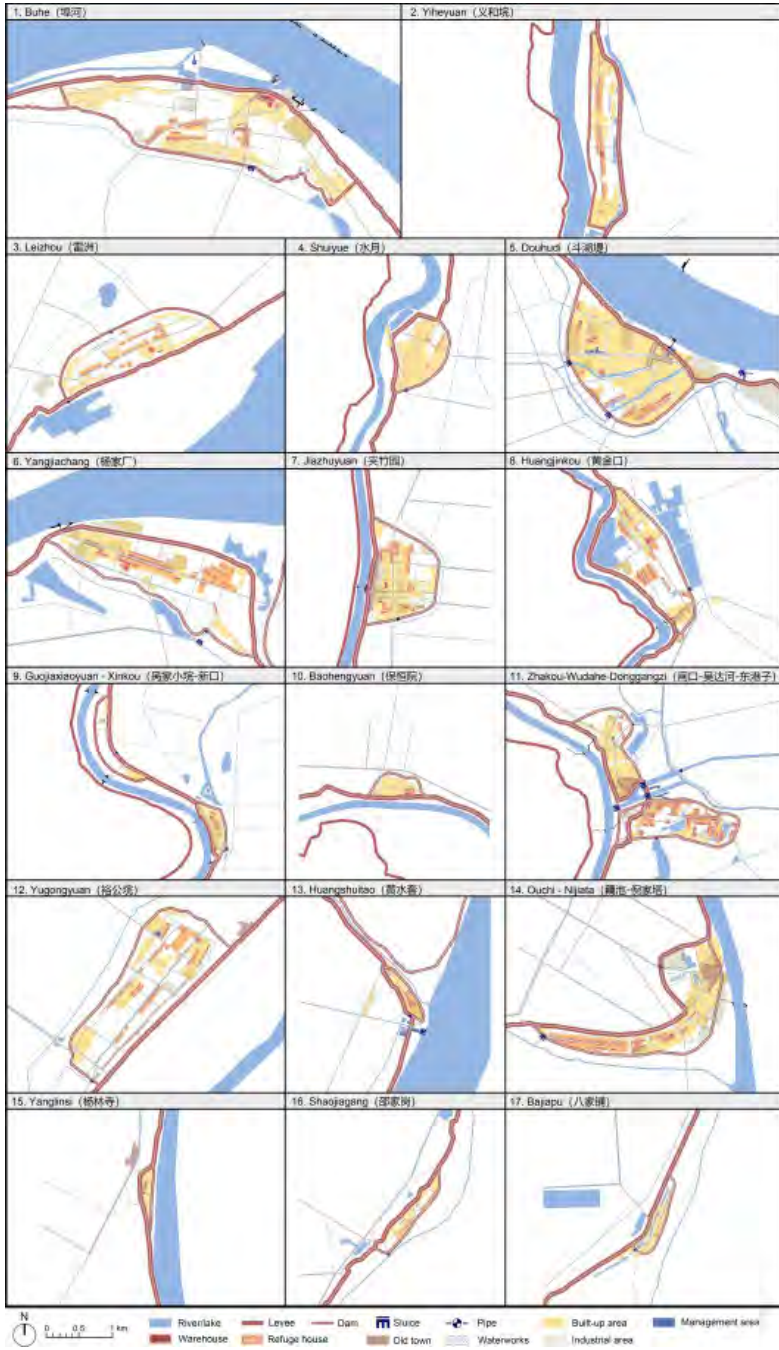
Fig. 3. Spatial form and layout of the refuge areas in the 1970s. The long axis of the refuge settlements generally conforms to the main levees, and the corners are rounded at the turning point. The settlements contain disaster response systems, drainage systems, and transportation systems to meet flood control needs, as well as conventional urban land.

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Other construction land is then developed within the dikes based on this framework. The disaster response system, drainage system, transportation system, and urban development land in the refuge area are coordinated with each other, forming the characteristic layout.

PLANNING PATTERNS OF THE REFUGE AREAS

According to the governance policy of "focusing on flood diversion, ensuring safety during flood diversion, and ensuring harvests during normal times", [17] the construction of the Jing River flood diversion area and its refuge settlements has reflected the planning patterns with far-sighted ideas and effective strategies at macro and micro levels.

The overall distribution of refuge areas in the flood diversion area reflects the planning ideas of comprehensive coordination and multifunctionality at the macro level. To more effectively address flood issues, the planning perspective was extended to a wider scope than that of individual settlements, and a large-scale centralised flood- control zone was creatively built, with systematic dike and embankment construction. On this basis, taking into account the scarcity of national land resources, flood control was not separated from people's livelihoods and agricultural production. Instead, through the construction of resettlement systems and agricultural irrigation systems, proper arrangements are made for the people's lives and property security. The planning and construction of settlements in the flood diversion area comprehensively coordinate multiple demands including flood diversion, residential safety, and agricultural production, forming a nested spatial pattern of rivers and dikes, refuge areas, and flood detention and retarding basin (agricultural hinterland). The refuge area settlements are evenly distributed along the edges of the flood diversion area, striking a balance between meeting the needs of flood control during disasters and facilitating production. The refuge areas and other relocation facilities, including refuge platforms and refuge buildings for temporary shelter, as well as transferring roads and bridges for evacuation, together constitute a complete resettlement system. Along with the agricultural production system, they form a unique living and production system in the flood diversion area (Figure 4).

The spatial construction of refuge area settlements reflects the planning ideas of balancing normalcy and disaster preparedness, and coexisting with water at the micro level. The location, scale, form, and layout of the refuge areas

are closely combined with water conservancy facilities, forming highly flood-adaptive "water conservancy settlements". A series of strategies were developed for their construction. (1) Flood Isolation: Utilizing dikes and sluice gates to keep floodwaters out of the refuge areas during flood diversion. The location of the main dike within the flood diversion area limits the range of possible sites for refuge areas, while the surrounding embankments further delineate the boundaries of these settlements. (2) Internal Flooding Solution: Constructing drainage systems to address the issue of poor drainage within embankment-enclosed settlements. (3) Scale Control: Keeping the total size of the settlements within certain limits according to flood diversion requirements, and determining the size of individual settlements based on

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safety risks and development potential. (4) Disaster Preparedness: Prioritizing the construction of temporary resettlement housing, warehouses, and other disaster response facilities as key projects in town development. These are connected to external evacuation and transferring roads via main town roads. (5) Maintaining Connectivity: Developing a clear and simple road network that connects to river ports on one side and to transferring roads leading to the hinterland on the other. During normal times, these roads serve as economic lifelines for the towns, and during disasters, they become vital evacuation routes.
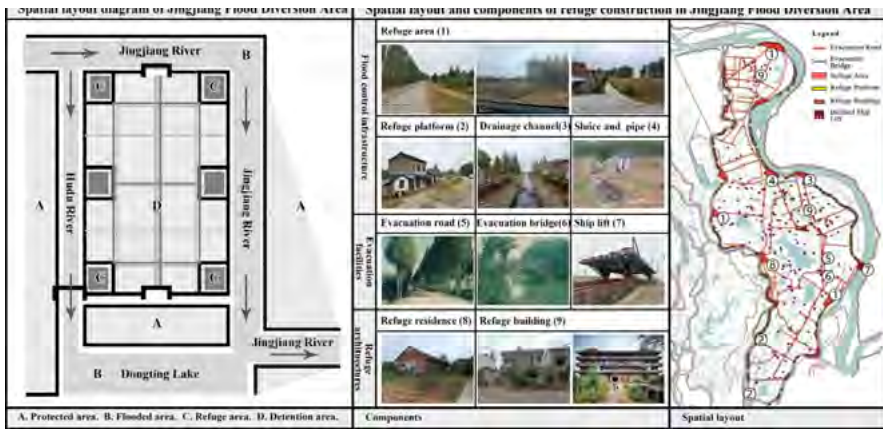
Fig. 4.　Resettlement system with the refuge area as the major component. Together with other flood diversion and relocation facilities such as refuge platforms, shelters, evacuation roads and bridges, as well as agricultural production facilities, the refuge areas constitute a holistic living space system.
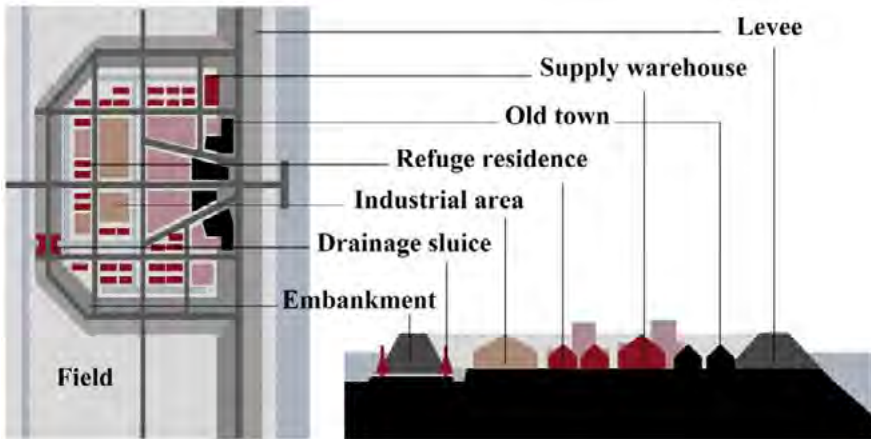
Fig. 5.　Spatial pattern of the refuge areas. The hydraulic facilities such as embankments, drainage culverts and gates, resettlement houses, warehouses for flood defence constitute the characteristic elements of the refuge area.

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CONCLUSION

This study focuses on the refuge areas established with the national water conservancy project of Jingjiang River Flood Diversion Area, and examines the formation process and spatial characteristics of these special settlements in the second half of the 20th century. It is found that the refuge areas have commonalities with general settlements and also form unique spatial characteristics under the influence of the special environment. As an important part of the flood diversion area, they need to be built with simultaneous consideration of flood diversion, temporary resettlement and agriculture production. The 19 refuge areas, in collaboration with other resettlement facilities (refuge platforms and buildings, evacuation roads and bridges), and in coordination with the agricultural hinterland, together constitute a unique human settlement spatial system in the flood diversion area, which has the effect of improving the safety and security of residents' life and production, and reflects a holistic planning approach. Moreover, the space of these 19 refuge areas is highly adapted to the flood diversion function, featuring elements such as enclosed dikes and embankments, drainage facilities, disaster response facilities, which form a distinctive physical space reflecting the efforts to cope with floods.

The refuge area settlements reflect the national intention of regional governance and the systematic planning thinking. We can draw planning wisdom for water management and settlement from the earlier planning approaches. In regional planning, appropriately allocating land for flood can enhance overall disaster prevention capabilities. In urban planning, developing a spatial system that is comprehensively adapted to the needs of flood control can contribute to the resilience of the living space. The engineering wisdom of integrating as a whole and the ecological wisdom of coexisting with the water still hold significant relevance in the face of the current climate emergency.

As a result of national water control and local development, the refuge area settlements are not only historical witnesses to New China's achievement of governance, but also memory carriers of local residents' collective disaster resilience and living experience, as well as typical embodiments of the planning ideas with the characteristics of the times. These settlements in the Jingjiang River Flood Diversion Area have important historical and cultural value, and their conservation and development deserve further study and consideration.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author.

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IMAGE SOURCES

Figure 1   The author. (The first from left is drawn by the author based on the 1: 10,000 Topographic Map of Hubei Province. Survey Bureau of the Ministry of National Defence, Republic of China [1926]).
Figure 2   The author.
Figure 3   Drawn by the author form the Planning Map of Refuge Areas. Jingjiang River Flood Diversion Area Administration of Hubei Province [1970s].
Figure 4   The author.
Figure 5   The author.

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Catherine Townsend, David Nichols, Robert Freestone
Regional town planning collaborations of Frank Heath
and Ernest Fooks in Australia 1939- 1948

Regional town planning collaborations of Frank Heath and Ernest Fooks in Australia 1939-1948

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Abstract

The 1940s era of postwar reconstruction in Australia saw idealistic synergies between decentralisation, regional development and new town planning. Two architect-planners associated with this discourse were Frank Heath and Ernest Fooks. Collaborating within Heath's eponymous practice they produced ten new regional town plans in Victoria and one just outside its boundaries, in NSW, during and immediately after the Second World War. Showcasing a consistent vocabulary of planning and design concepts, locally-trained Heath and Viennese-educated Fooks produced a range of town expansion plans based on neighbourhood unit principles. Their work arguably predates the 'augmented village' British new towns conceptually, and are a blend of decentralisation, continental European modes of city building, progressive Soviet planning ideas, and slum remediation in a unique Australian context. Their schemes and the reports which accompanied them, enhanced planning propaganda and exhibitions throughout the 1940s. For a variety of reasons, the most important of which was the unwillingness of state and federal governments to invest in defence-focused decentralisation strategies after the war, none of these plans was comprehensively implemented. This paper examines Heath and Fooks's process in projecting the orderly expansion of regional centres and subsequent publicising the cause of 'town planning,' their early utilisation of the 'neighbourhood unit' principle in Australia, and what each brought to their collaboration. Their town plans, many unseen for 80 years, will be analysed alongside contemporary reportage, local government records, other material from the Heath and Fooks archives, and texts recently translated from German to English, including writing by Fooks and others on Soviet Planning in the 1930s. The paper provides further insight into the global nature of early new town thinking, the idiosyncratic appropriation and adaption of transnational sources, and political tension at varying levels as Australian governments prevaricated about the extent of their pro-active responsibility in regional urban affairs.

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Catherine Townsend, David Nichols, Robert Freestone
Regional town planning collaborations of Frank Heath
and Ernest Fooks in Australia 1939- 1948

Water and Ports

Chair: Ting Wang

The Technopolitics
of 'Urban Water' in Colonial India
A Case Study of Hesaraghatta
Water Works in Bangalore

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Abstract

This paper employs the analytical framework of Technopolitics to engage in a nuanced examination of the Hesaraghatta Water Works project, a notable infrastructure initiative in the late nineteenth and early twentieth century colonial Bangalore. In place of ascribing mere scientific import to this water supply system, our inquiry discerns its pivotal role in the establishment of a distinctive technopolitical regime. This transformative regime is notably characterized by the realignment of power dynamics inherent to water governance, stringent regulatory oversight over urban space and its denizens, and the emergence of previously unexplored facets of urban inequalities. By comprehensively mapping the societal and political repercussions of the Hesaraghatta project, we argue that it introduced a novel and far-reaching technopolitical construct – 'Urban Water'. This construct, far from being a mere hydrological abstraction, significantly reframed collective conceptualizations of water in the urban context and offered a fertile terrain for the exercise of intricate political and governmental rationality inherent to colonial rule. Our meticulous examination of the Hesaraghatta initiative, situated among several concurrent infrastructural endeavors by the colonial government in India's burgeoning cities, elucidates a pivotal 'technopolitical turn' characterizing the colonial regime during the early twentieth century.

INTRODUCTION

Urban water often a time serves as a pivotal framework to explain the complex and often contentious politics inherent in the processes of urbanization and colonial state formation[1]. This paper aims to contribute to the scholarly corpus on 'urban water' in colonial India by critically analyzing the Hesaraghatta Water Works project, a mega waterworks project based in colonial Bangalore in the late 19th century, within the context of the colonial state-building project. By analyzing the grand infrastructural arrangement of the project and its execution process for everyday water services to the growing city, the paper seeks to bring out the political rationale of the colonial state behind the establishment of this waterworks project, which was often veiled within the grandeur of the imperial science, and infrastructural and bureaucratic framework of the project. Based on the analysis of the water project and its influence on the gradual societal change in the early 20th century Bangalore and its urbanization, the paper finally makes an argument over the reconceptualization of 'urban water' under colonial rule as a distinctive category to exercise governmental power in cities.

Utilizing archival research and data collection, the paper is organized into four sections. The first section delves into a brief history of water in Bangalore from pre-colonial to the colonial era. The subsequent section deals with the theoretical framework and the Methodology of this work. It focuses on the theoretical and conceptual foundations of 'Technopolitics' and its pertinence to this study. In the next, I discuss the planning and implementation of the Hesaraghatta Water Works project in the 1890s, including the development of its networked infrastructure to supply water to Bangalore City and the Cantonment. In the fourth section, employing the framework of 'Technopolitics', the paper scrutinizes the political rationale underpinning the project during that period. By relocating the locus of power in water governance, introducing new regulatory processes for spaces and population, and engendering disparities in resource access, the project not only reveals its political logic but also introduces the technopolitical category[2] of 'Urban Water'. This categorization encapsulates water as a scarce urban resource, transformed through a new technological infrastructure of water conservation and supply, and new patterns of user access with enough rules and regulations by the State, that had ultimately converted 'urban water' into a site or a tool, among many others, where colonial governmental rationality, took root and evolved.

A HISTORY OF WATER IN BANGALORE: PRE-COLONIAL WATER IN BANGALORE

Bangalore, the capital of Karnataka, situated on the Deccan Plateau at an elevation ranging from 839 to 962 meters above sea level[3], has historically grappled with water scarcity, lacking a stable nearby water source like river or sea. Therefore, nestling in the greater semi-arid expanse of South India, the region of Bangalore harbored an extensive historical reservoir and lake system to combat such difficulties that trace its origins to the 5th and 6th centuries AD during the Ganga dynasty[4].

Later, in the era of Raja Kempe Gowda in the 16th century, Bangalore witnessed the establishment of an indigenously developed engineered reservoir network characterized by earthen structures and hydraulic bunds, complemented by a sophisticated network of drains and sluices facilitating water distribution to localities. Based on the natural topography of the region lakes or tanks were created through the regulation of rainwater flow along a topographic gradient, ensuring that water from higher-level lakes supplied those at lower elevations.[5] Over time, these reservoirs metamorphosed into a comprehensive 'tank system', had grown its socio-political fabric, became intrinsically intertwined with socio-political nuances, encompassing power dynamics, caste relations, and political stratagem, and emerged as both a communal resource and "Symbolic capital"[6] reflective of social dynamics, hierarchical standing, and societal honor within the served communities[7].

Both the topographic distinctiveness of Bangalore and the social-political fabric developed around the indigenous 'tank system' were of historical importance to guide the colonial project of the Hesaraghatta Waterworks, which we will try to unveil as we progress in the paper.

AN INTRODUCTION TO THE HESARAGHATTA WATERWORKS

The efficacy of this Indigenous water network and its governance, although commenced diminishing in the late 18th century notably during the reigns of Haider Ali and Tipu Sultan, had undergone fundamental interventions after the colonial invasion. With the advent of colonial intervention through the British government, the Bangalore region underwent a significant spatial transformation, dividing it into two distinct zones: the Cantonment, established in the very first decade of the nineteenth century, later transformed into the Civil and Military Station in the late nineteenth century, which served as the exclusive residence for Europeans and the military initially and later extended to include native elites, and the Old City or *Pettah*, which fell under the governance of the Wodyer Kings of Mysore.[8]

The genesis of the Hesaraghatta Water Works, later known as the Chamarajendra Water Works, can be traced back to its establishment in 1894. Created to supply piped water to the urbanizing Bangalore, the impetus for this project can be situated within the colonial aspiration for a reliable and long-term provision of clean water services, primarily targeting the residents of the Civil and Military Station. Historical references, such as the oldest 'pipeline' and 'Pipeline Road' in today's Bengaluru, reveal that Hesaraghatta water was conveyed to the central city area via three pipelines, covering areas that correspond to modern-day Malleswaram in central Bengaluru, Yeshwantpur in the northern part, and ultimately extending to the new sprawl of Daserahalli. The Hesaraghatta project continued to provide water services for nearly four decades before officially going out of function in 1933, succeeded by the new 'Chamrajasagara Dam Scheme' in 1932.[9] The networked infrastructure and technologies integral to this project gradually became obsolete with advancements in technology. Nevertheless, as a symbol of colonial modernization and 'imperial science', the essence and impact of the technical assemblages within this project remained crucial to the political reconfiguration and societal dynamics of early twentieth-century Bangalore which forms the landscape of our study.
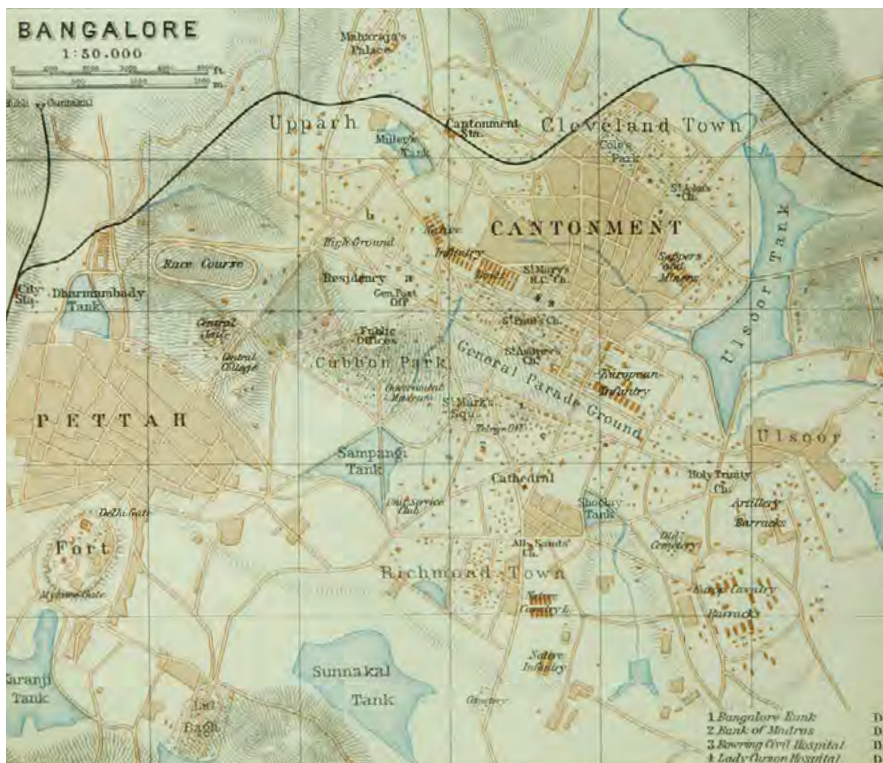
Fig. 1. Map of Bangalore, on the left, is located in the *Pettah* or Bangalore city, on the right, is located in the Cantonment that became the C & M Station, and the two are seen separated by parkland.

TECHNOPOLITICS: A THEORETICAL- CONCEPTUAL FRAMEWORK

The term 'Technopolitics' represents a relatively recent addition to academic discourse, primarily emerging within the domain of Science, Technology, and Society Studies (STS) and related fields in the social sciences. The term 'technopolitics' was first introduced by Timothy Mitchell in his book 'Rule by Experts (2002)'[10]. Gabrielle Hecht subsequently refined the concept, focusing specifically on the domain of technology and its capacity to (re)shape society and politics.[11] Drawing from the foundational conceptualizations, 'technopolitics' in its most rigorous interpretation serves as a conceptual intervention within an ostensibly technical and innocuous technological infrastructure. Its purpose is to unveil the potent process of politicization and the underlying political rationality inherent in technology and infrastructure. These dynamics are engendered either by colonial authorities or contemporary state-capital alliances.

The invocation of the 'technopolitics' framework proves essential in our work as it serves as a potent tool to shift the focus on the materiality of technological artifacts and infrastructure, recognizing their agencies along with the human ones that make the pervasive presence of

the Hesaraghatta Waterworks visible in the growing landscape of Bangalore. Technopolitics becomes a crucial framework to bring light to the active agency of the infrastructural arrangements of this waterwork to produce crucial societal change. The technopolitical lens, more importantly, offers a critical perspective to question the popular logic of 'colonial improvement'[12], and celebration of imperial science, by focusing on unearthing the covert political and governmental rationality underpinning this project. Employing a technopolitical lens reveals how the Hesaraghatta case was crucial to dismantling heavily an already established power structure associated with Indigenous water governance, a necessary project for the colonial government to solidify its rule.

METHODOLOGY

Our chosen methodological approach for this study primarily relies on Archival Research, which entails a comprehensive analysis of original archival records to trace the planning and implementation history of the Hesaraghatta Water Works. Our focus centers on the data about this specific project, encompassing details about the material arrangements, institutional functions, and everyday utilization of the infrastructure. The data talks about micro-level governance, evolving water usage patterns, shifting practices, and perspectives in everyday life. These archival records were primarily sourced from the Karnataka State Archives Department in Bengaluru, with a particular emphasis on the Indexes of the Municipality and the Land and Revenue Department. The data and records encompassed official government reports, and correspondence between government officials associated with the Municipality, the Public Works Department, and the Dewan of Mysore. Additionally, there were numerous letters and petitions from citizens to government officials. While these archival records predominantly represent the voice of the colonial administration, our approach sought to read the colonial archive 'against the grain'.[13] Our analysis of the materials was conducted in a manner that allowed thematic patterns to emerge organically from the textual content within the records. In addition to archival records, we relied on historical maps of the project to gain insights into colonial hydraulic plans and to provide further detailed explanations of our work.

HESARAGHATTA WATER WORKS
AND ITS NETWORKED INFRASTRUCTURE

Following the successful approval of the Hesaraghatta project, the planning and execution of this extensive urban infrastructure project unfolded on a grand scale. Utilizing the topographic nature of Bangalore, the Hesaraghatta Water Works went beyond the direct implementation of the 'Gravitation Scheme'[14] to give rise to an entirely new urban water infrastructure amalgamating the power of Steam Engine with the existing gravitational model that resulted in a grand techno-infrastructural arrangement, encompassed with an expansive catchment area of 211.70 square miles, including nearly 183 small and medium-sized tanks.[15]
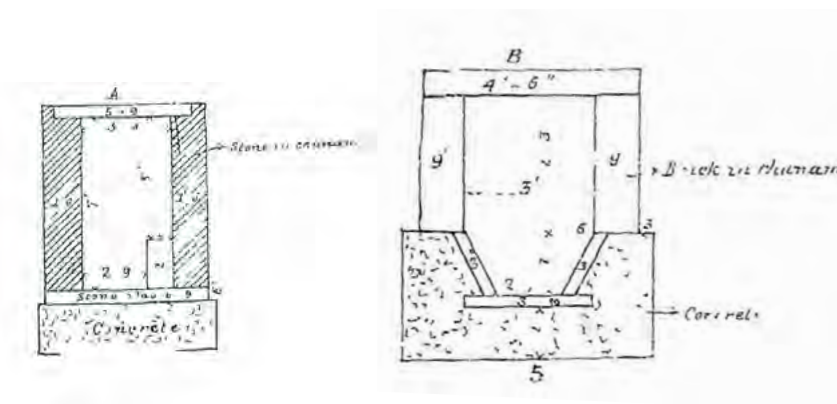
Fig. 2.   The Delivery Channels as designed by the Executive Engineer. The two different types of delivery channels had been constructed which were connected to the service reservoirs through aqueducts and drains and were properly fenced with modern engineered planning. In the process of making the construction, a minimum of 12 acres of land had been taken away from the villagers residing in the place. The estimated cost for these delivery channels was Rupees 1,49,790.

To enhance water preservation rates within the reservoirs, the waste weir of the Hesaraghatta tank was raised to an impressive 15 feet. Approximately 12 miles of iron main or cast-iron pipes were laid to transport water to the city, accompanied by a rectangular masonry pipe. According to the PWD report, at the Hesaraghatta tank, a water tower was constructed from which water was conveyed through masonry delivery channels measuring 23,826 ft in length to the settling reservoirs.

The reservoirs were linked to pumping stations located a short distance from Bangalore city. At the pumping station, water was elevated to a standpipe, standing at a height of 42ft, constructed atop a nearby hill. From the standpipe, water was conveyed via a cast-iron main, 24 diameters wide, using gravitational forces, first to filtering cisterns and subsequently to service reservoirs. For the purification of the water, three Jewell Filters had also been constructed in different parts of the city where the water used to come for treatment and to reach finally both the Cantonment and the old city.[16]

As per the records, the water started to be supplied to the city from 7th August 1896 onwards.[17] The waterworks, with a capacity of 747.7 million cubic feet, had initially been designed for an estimated population of 2,50,000 (although as per the Municipality Records, during the 1890s Bangalore had a population of approximately 1,50,000). Other material infrastructural components associated with this project encompassed earthwork and cistern weirs, among others.[18]

Fig. 3. Original map of the Hesaraghatta Waterworks Catchment Area, created by the PWD, Bangalore, 1893

RESULTS AND DISCUSSIONS:

BUREAUCRATIZATION OF WATER AND INTRODUCING A TECHNOPOLITICAL AUTHORITY

In the aftermath of the implementation of the novel techno-engineered water infrastructure, an intricate web of interconnected institutions, technologies, engineered practices, and policy measures emerged, constituting a functional network for the effective operation of this system. The change was primarily evident in the new institutional framework of the Hesaraghatta Water Works. The new water infrastructure at Hesaraghatta necessitated advanced scientific knowledge and technical expertise in various domains, including steam engine power, pumping machinery, water metering, and more. Maintaining the overall infrastructure, including components such as Jewell Filters, service reservoirs, public fountains, and house connections, required expert oversight.

With the implementation of this new infrastructure and its associated governance system, the traditional sources of authority and power over water, including zamindars, priests, and others relying on Indigenous knowledge of water infrastructure and management, found themselves

inadequate to function in this modern water governance model. Consequently, authority and control began to shift into the hands of technically proficient and scientifically adept individuals, such as Civil Engineers responsible for overseeing the entire system, Sanitary Engineers and government officials tasked with supervising reservoirs and pipelines, Water Inspectors responsible for monitoring the economic and legal aspects of water usage, and licensed Plumbers authorized by the government to conduct repairs on pipelines and individual house connections.[19]

This emerging authority initially found its expression and legitimacy under the broad umbrella of the colonial Public Works Department (PWD). The colonial PWD represented the epitome of the practical exercise of imperial science within the Empire. In 1904, as the Hesaraghatta water works continued to develop, the colonial government established a new water department called "Water Supply and Stores Division", an institutionally authorized body responsible for overseeing water management in the city of Bangalore.[20] Following a decade of successful project implementation, the new technopolitical authority established firm control over water supply and usage within the city. This authority's influence was notably reflected in the revised water supply regulations for Bangalore in 1911. These regulations introduced measures aimed at increasing the monetization of water supply, ensuring economical water usage, authorizing services for house connections, and more.[21] These rules, among others, signified a substantial shift in urban water governance during the early twentieth century in Bangalore, primarily attributed to the new water infrastructure introduced by the Hesaraghatta Water Works project.

The cumulative effect of this institutionalization not only gave rise to a novel colonial Water Bureaucracy but also introduced a regime of "technopolitical authority" – a new regime of authority amalgamated with imperial science, technological efficacy, and human expertise that not only governed the new infrastructure through their professional and technological expertise, but also wielded significant influence over governing the population as a whole, as part of the broader bureaucratic structure of the colonial state, through the means regulating the behavior of the population, changing approach towards the water, producing new laws, and even regulating and transforming the crucial spaces associated with everyday water management in urbanizing Bangalore.

The new regime collectively underscores the displacement of the previous power structure concerning pre- colonial water governance. They exemplify the emergence of a new technopolitical governance framework centered around modern water infrastructure. The replacement of this power structure had been of significant political importance to the colonial state because it had not only dismantled an indigenous water governance framework but in reality, displaced a major pillar of the pre-colonial state that used to exist in this region for a long time and had been a major stepping stone of the pre-colonial state formation in this region.[22] For the colonial state, it was a necessary imperative to replace this system with a new one which will solidify the colonial state-building project in this place. The Hesaraghatta Water Works project was a major stepping stone towards this with far-reaching impacts on urbanizing Bangalore and its relation to water. The replacement also embodied a broader political endeavor in terms of colonial knowledge production. The transition from the pre- existing water system to a new techno-engineered model marginalized in certain ways the indigenous knowledge of water engineering embedded within the former water system and governance structures.

This historical dynamic continues to reverberate in contemporary times, manifesting enduring repercussions in the water and lake governance of the city.

REGULATION OF SPACES AND POPULATION

The next axis pertained to the regulation of spaces and population, focusing on the discourse of everyday water management in colonial Bangalore, which underwent significant transformations upon the implementation of the new water infrastructure. Estimating the population density in the Cantonment and the Old City, and usage patterns in both places, different amounts of water had been allocated for everyday use. The Chief Engineer planned the Hesaraghatta reservoir's capacity, ensuring a continuous water supply for 2 years and 5 months. This duration was considered sufficient, assuming a third consecutive year of drought was unlikely to happen there.[23]

To ensure the judicious use of piped water, the Water Supply department implemented strict rules stipulating that Hesaraghatta water should exclusively serve domestic purposes, including drinking and household chores. In its efforts to prevent the misuse of water, the department appointed water inspectors under Section 176(d) of the Municipal Regulation Act VII of 1906.[24] To oversee these aspects, prosecuting inspectors were employed to enforce regulations on public streets.[25] Alongside these measures, positions such as Sanitary Inspectors and Engineers played roles in promoting spatial regulations intermittently. Crucially, infrastructural elements such as pipelines, stand-pipes, taps, and fountains, which served as essential conduits for water supply, also became tools for the colonial state to exercise regulation and surveillance in public places.

The rise of the Plague as an epidemic in the late 1890s, immediately after the implementation of the new waterwork, further impacted water management severely, controlling its usage and introducing new regulations upon urban spaces and the populace. After surviving the deadliest wave between 1898 to 1905, the colonial government initiated a new town planning project in Bangalore which involved the closure of several tanks that were assumed to be potential disease vectors by the urban planners and the relocation of settlements to newly developed extensions such as Basavangudi and Malleswaram, thus extending the urban boundaries of the city.[26] To mitigate the spread of diseases like Plague, Cholera, and Malaria, the water supply system in these extensions was significantly restructured, shifting from reliance on local tanks to the provision of piped water with household connections. To ensure an adequate water supply for the Old City, the Cantonment, and the new Extensions, the water supply department implemented several measures such as restricting water supply timings to 6:00 a.m. to 11:00 a.m. and 4:00 p.m. to 8:30 p.m., and temporarily reducing the free water allowance for household connections by 25%.[27]

Integrating the new waterworks into post-plague town planning contributed significantly to redefining the concept of 'urban water' in 20th-century Bangalore. It promoted piped water as a 'purer' form of water to be consumed and sought to reinforce the notion of 'urban water' as a scarce resource that necessitated meticulous management by the government in everyday life, which had also potentially facilitated the establishment of a more effective state apparatus for everyday water management in the rapidly urbanizing city.

With the water supply and consumption expansion, state intervention extended to comparatively enclosed household spaces, facilitated by infrastructural and technological components like House Connections and Water Meters. The 1896 Regulation for Hesaraghatta Water Works supply to Bangalore and Mysore outlined conditions for house connections, specifying that house pipes should be always accessible to water supply officers[28]. Matters concerning rent collection and meter accuracy checks further expanded state access to domestic spaces. The utilization and accessibility of water meters additionally facilitated the calculation of daily and monthly water consumption according to the supply, thereby seeking to shape individual and household behavior to align with more frugal water usage practices. Whereas all of these rules and regulations, activities appeared as part and parcel of the new water management by the colonial government, this 'rule of expertise', which became the official representative of the colonial state, also introduced a new regime of monitoring and surveillance of the spaces that had effectively concealed the flow of power within the material infrastructure and technologies (like engine power, water meter, pipe connection, etc.) transforming these elements into vital agents for the dispersion of power across various positions, both expert and non-expert (from water inspector to the government authorized plumber who all had certain special rights to act on these spaces).

Another influential factor in shaping moral attitudes toward water was its cost. Following an initial allocation of free public water access, individuals (who could afford it) were required to opt for costly private house connections for access to excess amounts of water. In the realm of private connections, the allowance of free water did not exceed 160 gallons per month, beyond which households incurred charges for every unit of water consumed. This intricate and hierarchical arrangement of water distribution sought to bring significant transformation in the collective attitude of the populace (See also Von Schnitzler for other such examples in the context of Africa, 2008).

These alterations in daily activities with water and a conscious effort to bring changes in the behavioral aspects of the population toward water culminated in regulatory behaviors and the institutionalized utilization of water infrastructure in everyday life. Through the material expression of power embodied in the Hesaraghatta water infrastructure, the political rationality of the colonial state took a potential 'biopolitical turn'. The infrastructural arrangements established a dynamic relationship between the state institutions and the population, penetrating private and public spaces, moral and cognitive behaviors, habits, and individual bodies. This ultimately resulted in rendering the population both measurable and regulatable.

INEQUALITIES IN WATER GOVERNANCE

The third critical dimension in the context of the Hesaraghatta project pertained to unequal access to water, which added new dimensions to the existing inequalities in the growing urban space of Bangalore. The unequal access unfolded across two distinct phases: the first during the project's preparation, and the second following its implementation. During the construction phase, the colonial government undertook nearly 183 small and medium-sized tanks upon which numerous communities and villages depended. To ensure the project's suc-

cess, at least 33 villages were displaced from their original locations during the years between 1892 to 1896.[29] Consequently, villagers were barred from accessing water resources and lands in these areas for reasons of sanitation and other considerations.[30] Additionally, the government ceased wet cultivation near existing tank lands to expand the catchment area for the waterworks, thereby compelling Ryots (tenant farmers) to vacate these areas [31].

The unequal access to water became more pronounced in the post-implementation phase of the project, particularly with the commencement of water supply and services to the city—several distinctive features characterized this phenomenon. First and foremost, water had been transformed from a common resource into a public good, marked by centralized governance by the colonial state and the subsequent monetization process. While a certain quantity of water remained publicly accessible at no cost, it proved inadequate in the face of growing urban populations and escalating water usage. Consequently, those who could afford it opted for private house connections, which became a lucrative source of revenue for the colonial state, given increased water taxes, pipe costs, water meters, and other associated expenses[33]. This commercialization of water disproportionately disadvantaged urban households that could not afford private house connections and primarily relied on public taps and fountains.[34] While they were not entirely exempt from water taxes, their tax burden was comparatively lighter.

Racial considerations also played a significant role in the unequal access to water, especially during the project's initial stages. In the execution phase, different supply levels for natives and Europeans were advocated by several Public Works Department (PWD) engineers, citing factors such as habits, behaviors, and attitudes towards water, as well as the locals' customary reliance on tank water in their daily lives. This resulted in an initial allocation of 10 gallons per day per native individual in the old city and 12.5 gallons per day for an adult in the Cantonment, as sanctioned by the Municipality. [35]

The infrastructural challenges and technological limitations exacerbated the problem of unequal water access, compounded by the growing population density with the urban extensions in Bengaluru in the early 20th century. A substantial increase in urban density through the establishment of new extensions as part of town planning and industrial development in the early 20th century resulted in rapid population growth, impacting water governance both directly and indirectly. The colonial government leased several tanks for industrial purposes and drained out some local reservoirs to facilitate new town planning, leading to localized disruptions in water access for certain communities. Simultaneously, the city's expanding boundaries and industrial growth demanded an additional 9 million liters per day (MLD) supply from the Hesaraghatta Waterworks at a later phase which were allocated to industries in and around Bangalore to promote industrial development.[36] As a result of this dual activity, despite multiple rounds of adjustments in water usage and control, and changes in the existing infrastructure and technologies, the colonial government struggled to avert an early water crisis precipitated by the increasing urban density and population.[37] On additional occasions, scholars such as Christian Broto and Hita Unnikrishnan argued that the construction of the pipeline from the Hesaraghatta tank to the city traversed specific localities but denied them access to modern water infrastructure. This resulted in these communities feeling alienated from the project's success, leading to a sense of deprivation and discrimination.[38]

CONCLUSION

The discourse of this new water governance guides us on a journey of observing the emergence of a technopolitical regime stemming from ostensibly impartial and innocuous technological assemblages and networked infrastructures. This development is the result of the collective involvement of various individuals, institutions, technological artifacts, geographical features, civil and political programs, and institutional ideologies which precipitated the displacement of established power hierarchies, instigated shifts in civic values and moral conduct among the populace, introduced regulatory and surveillance measures in both public and private domains, transformed patterns of public water consumption, and reshaped the urban landscape. Ultimately, these changes converged to establish a novel technopolitical regime around water governance, keeping 'urban water' and its colonial reconceptualization at its core.

The emergent paradigm of water embraced distinctive attributes and contours congruent with colonial urbanization and its water governance in the early twentieth century. The colonial reign on water governance (re)conceptualized 'urban water' with certain novel characteristics that had been absent in the previous discourses of urban water in these areas – Initially, urban water introduced a technologically adept bureaucratic regime, necessitating institutional procedures and modern technological knowledge for its access and sustenance. The service system governing urban water had also been transformed, transitioning away from the prevalence of extensive manual labour towards minimizing it through engineered and technological amenities. Consequently, the labour associated with urban water governance became more formalized and professional.

Urban water became commercialized and domesticated, shifting from being a localized open water source to becoming accessible primarily through taps and fountains, thereby concealing its primary source from public view. Water now flowed silently within pipes, curtailing its open-ended distribution, and was monetized as a valuable as well as scarce urban resource.

Urban water also started to be upheld as a "pure" source – a sense of purity that emerged from modern chemical analysis, rather than the wholesomeness of water,[39] and thereby, became emblematic of modernity, and a source of exclusive consumption by the urban populace. Thus, urban water also assumed the role of a symbol of civility and progress in the colonies, a tag that is always hard to contest in human civilization at any point in time.

This new characterization of water reflected a symbiosis of transformation in the technological and infrastructural paradigm as well as a transformation into the social and political fabric of water in the early twentieth century. The new geography of urban water could be visible through expansive infrastructural networks, wherein the locus of agency and power both potentially shifted to tangible components such as pipes, filtration mechanisms, and water metering apparatuses, as well as towards the purview of professional human expertise.
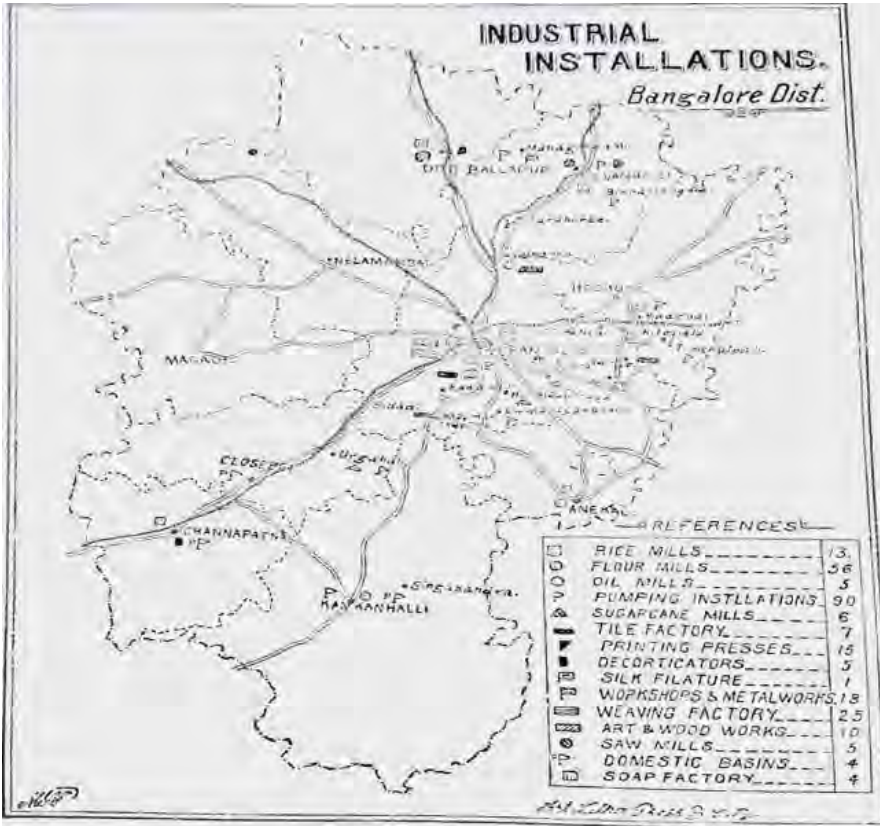
Fig. 4.   Growth of the Industrial Belt in Bangalore District in the 1920s. A reference map to indicate
the growing urban density and expansion of the urban boundary of Bangalore in the early 20th century.

The myriad transformations wrought by this new arrangement, the micro and macro-level
changes in the usage and functionalities of water in everyday life coalesced into reframing
'urban water' as a technopolitical category that aimed at reinforcing colonial rule in the cities.
Imbued with an intricate network of technological artifacts and infrastructural components,
as well as representing an abstract facet of urban life, 'urban water' transcended mere techno-
logical life. The new water with its technological system, material amenities, intensive supply
line, and the new bureaucratic regime had grown with all potential to extensively intervene
in the social fabric of the cities, contributing to the project of colonial state-building by gov-
erning the population, reproducing the spaces, and even reproducing the structure of power
associated with water governance. The process can aptly be conceptualized as a technopolit-
ical venture — creating a locus within the colonial government's repertoire, through which
the political and administrative rationality of the colonial state could be introduced, and the
power of the state could have been exercised in the early twentieth century.

Towards the early twentieth century, the colonial state thus took a 'technopolitical turn' through initiatives such as urban water spreading across several colonial cities of India through new waterworks, and other such civic infrastructures. The flow of water starts carrying governmental rationality in disguise of networked infrastructure and the hegemonic presence of scientific rationality governing their operations. The more the water flows, the more the system traverses through the landscape, and 'urban water' as a technopolitical category has strongly been established.

'Urban Water' as a technopolitical category continues to persist in contemporary discourse, albeit with evolving characteristics and definitions. Its enduring relevance has been a recurring theme in academic discourse concerning urban water and its governance within post-independent states and cities. The colonial water governance in the early twentieth-century cities had been a crucial precursor of technopolitical water management that we witness today in ex-colonial cities.

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DISCLOSURE STATEMENT

NOTES ON CONTRIBUTOR(S)

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ENDNOTES

1. Doshi, "Imperial Water," 174-175.
2. A technopolitical arrangement results from negotiations involving a specific technology, its cultural and political context, and the various actors involved in its implementation, who vie for influence. In the context of our study, it refers to the politically mediated and charged infrastructural organization of water works designed to govern the state. This arrangement generates novel forms of power, often concealed beneath technological prowess and infrastructural frameworks, while simultaneously engendering new agents of power. In the case of the Hesaraghatta Water Works, the technopolitical authorization was molded by the innovative technological and infrastructural design of the waterworks, as well as the newly established governing institutions. These elements collectively influenced the colonial state's pursuit of governance objectives through the utilization of a fundamental necessity, water, and civic infrastructure, the Hesaraghatta Water Works.
3. Kamath, "Karnataka State Gazetteer." D'Souza and Nagendra, "Public Commons," 842-843.
4. Gurukkal and Gurukkal, "Aspects of the Reservoir System of Irrigation in the Early Pandya State."
5. Rice, "Mysore: a gazetteer compiled for government." D'Souza and Nagendra, "Public Commons."
6. The concept of "Symbolic Capital" has been explicitly given by Pierre Bourdieu, for details, P. Bourdieu, *Distinction; Practical Reason: On the Theory of Action*. The foundation of the concept stems from the theory of conspicuous consumption, initially introduced and elaborated upon in the late 19th century by Thorstein Veblen and Marcel Mauss. The concept denotes the assets accessible to an individual based on their honor, prestige, or acknowledgment, representing their value within a given culture. David Mosse

used it in the context of his research where he argues that the protection, construction, or repair of irrigation tanks long involved investments that generated 'symbolic capital' in the form of honor or authority and created domains of influence for individual leaders. For a classic elaboration of this view, see David Mosse, *The Symbolic Making of a Common Property Resource: History, Ecology and Locality in a Tank-irrigated Landscape in South India*, Development and Change Vol. 28 (1997), 467-504.

7.   Mosse, "The Symbolic Making of a Common Property Resource: History, Ecology and Locality in a Tank-irrigated Landscape in South India."

8.   Hasan, *Bangalore Through the Centuries.* Nagendra, *Nature in the City*. Nair, *The Promise of the Metropolis*.

9.   Broto, Sudhira, and Unnikrishnan, "WALK THE PIPELINE: Urban Infrastructure Landscapes in Bengaluru's Long Twentieth Century."

10.   Mitchell, *Rule of Experts: Egypt, Techno-Politics*, Modernity.

11.   In Mitchell's formulation, 'techno-politics' seeks to decenter human agency and power when interpreting social phenomena. It highlights the unpredictable power dynamics inherent in technical assemblages, acknowledges the agency of non-human entities in the redistribution of agency, and unveils the intricate internal dynamics characterized by unresolved tensions among multiple actors (Mitchell, 2002; Hecht, 2011). Building upon Mitchell's formulation, Hecht posited that technopolitical arrangements emphasize the deliberate transfer of power to technical artifacts and infrastructures—a shift consciously orchestrated by designers and policymakers to render enduring. Hecht, *Entangled Geographies: Empire and Technopolitics in the Global Cold War*.

12.   As argued by Malini Ranganathan, the concept of Improvement is intricately linked to the principles of liberal governance, which emerged within imperial contexts. This idea of improvement is then utilized to advance the state's interests in capital accumulation and spatial expansion. In the colonial context, "colonial improvement" was a fundamental element and ideological justification by the colonizers to establish the path of "modern" urbanization in the colonies. For a detailed discussion on the genealogy of 'improvement', kindly follow the, Ranganathan, Malini. "Rule by Difference: Empire, Liberalism, and the Legacies of Urban 'Improvement.'" *Environment & Planning*. A 50, no. 7 (June 22, 2018): 1386–1406. https://doi.org/10.1177/0308518x18781851.

13.   The source of this perspective is Stoler, *Along the Archival Grain: Epistemic Anxieties and Colonial Common Sense*. In this book, Using the 19th-century Netherlands Indies and its extensive archives, Stoler provides the anthropologist's view of colonial archives, through the sometimes-heavy jargon of that discipline, which gives a variety of insights into the nature of archives in general. Stoler's perspective essentially argues that an archival document brings into play many issues of power, control, memory, forgery and fabrication, and other such aspects. Records are not just neutral testaments of evidence waiting to be mined by a researcher, but they are fiction and fact, story and testimony, all rolled up into bureaucratic and societal conventions of recording and remembering. An archival record is not just a flat piece of evidence waiting for its rediscovery, but it is a document full of nuance, depth, and breadth waiting for its interpreter. She tries to persuade us to read against the grain of what the creators of these archives intended these records to serve, seeking to provide archivists and users of archives more insights into the nature and value of the evidence they give us. Her examination of colonial archives enables us to explore a particularly valuable territory about the meaning of archives as documents, institutions, and memory repositories.

14.   It is a nineteenth-century schematic work for supplying water to European cities. Later, it was incorporated into the scheme of the newly built Public Works Departments in the colonies like India. The basic scheme says that a reservoir had to be built at an elevation above the city. An aqueduct or iron pipeline will deliver the water from there to the distant city areas. The Gravitation Scheme involved extensive landscape alteration in the hinterlands of cities, including damming rivers, raising lakes, or flooding valleys, followed by piping water under pressure to urban centers, simultaneously reshaping urban environments and societies. For a detailed discussion on the Gravitation Scheme and its relation to the state formation, kindly follow Broich, J. (2007). Engineering the Empire: British Water Supply Systems and Colonial Societies, 1850–1900. *Journal of British Studies*, 46(2), 346–365. https://doi.org/10.1086/510891.

15.   Unlike other projects such as Vihar Water Works in Mumbai or Delhi Water Works which adhered to the 'Gravitation Scheme', the Hesaraghatta Water Works had to depart from this established scientific method due to the topographic nature of Bangalore and adopted a more complex and advanced scientific model.

16.   Source File: Water Supply to Bangalore from Hesaraghatta Reservoir. *Municipality* Vol. 1, 1-1892. Karnataka State Archives Department.

17.   Subramanian, "Bangalore city water supply - a study and analysis," 56.

18.   This comprehensive description of the Hesaraghatta Water Works infrastructure serves several

important purposes. Firstly, it provides readers with a tangible understanding of the entire infrastructural layout and the integral technical components of the project. Secondly, and perhaps most significantly, it highlights that the Hesaraghatta water project represented a unique amalgamation of steam engine power and the 'Gravitation Scheme'. Unlike previous water supply proposals for the city, examined by various engineers and government officials, which failed to outline a viable method for providing continuous water to the Cantonment solely through the gravitation system, the Hesaraghatta project harnessed the power of steam engines. It harmonized it with the core principles of the Gravitation Scheme. This successful integration enabled the provision of water to both the Pettah and the Cantonment.

19.   Source File: Sanctioning Revised Rules for the Regulation of the Water Supply in the Cities of Bangalore and Mysore. Municipality Vol.2, 42H of 1911. Karnataka State Archives.

20.   Source File: Poll-tax for the Maintenance of the Water Works in the Municipalities. Municipality Vol.2, 22F of 1904. Karnataka State Archives

21.   Some noteworthy rules, as documented in the file "Sanctioning Revised Rules for the Regulation of the Water Supply in the Cities of Bangalore and Mysore. Municipality Vol.2, 42H of 1911. Karnataka State Archives", were:

   Rule no. 1 – To ensure the economical use of water, the supply given for municipal purposes will be charged at concession rates. Rule no. 3 – The limit of annual rental value which entitles a house to a pipe connection has been lowered from Rs.120 to Rs.100. **Rule no. 5** – House service pipes will be laid by private plumbers who will be licensed for the purpose. **Rule no. 6** – A nominal charge of 4 annas per month will be levied as the hire for meters fixed to house connections following general practices elsewhere.

22.   Dikshit, Kuppuswamy, and Mohan, *Tank Irrigation in Karnataka: A Historical Survey*. Shah, "Seeing like a Subaltern: Historical Ethnography of Pre-modern and Modern Tank Irrigation Technology in Karnataka, India."

23.   Subramanian, "Bangalore city water supply - a study and analysis," 56.

24.   These inspectors were tasked with various responsibilities, including preventing water wastage at taps and public fountains, discouraging practices like washing feet and clothes, and discouraging children from using public water sources. Additionally, the colonial government, from the very initial stage of the water management, through a notification dated November 7, 1902, imposed punitive measures for the misuse of piped water and damage to the pipes. Source File: Sanctioning Revised Rules for the Regulation of the Water Supply in the Cities of Bangalore and Mysore. Municipality Vol.2, 42H of 1911. Karnataka State Archives. & Misuse of Pipe water in C & M Station. Municipality Vol.2, 80 of 1904. Karnataka State Archives.

25.   This included refraining from practices such as washing their bodies and feet in public spaces, and abstaining from washing cattle, clothes, or carriages, ultimately leading to an all-around effort by the colonial government to make a profound shift in civic virtues concerning water consumption. Source File: Misuse of Pipe water in C & M Station. Municipality Vol.2, 80 of 1904. Karnataka State Archives.

26.   Influenced by the Miasma Theory of disease, the urban planners at that time closed several local tanks adjoining various settlements. Although the Germ Theory had been discovered by the end of the 19th century, it took some time to be accepted by the Engineers and the Planners at a grand scale. Post-plague Town Planning is such an example which was based on the Miasma theory of disease. For source, J. H. Stephens, *Plague-Proof Town Planning in Bangalore, South India. Iyer and Rajangam. Discovering Bengaluru: History, Neighbourhoods, Walks.*

27.   Source File: Sanctioning Revised Rules for the Regulation of the Water Supply in the Cities of Bangalore and Mysore. Municipality Vol.2, 42H of 1911. Karnataka State Archives.

28.   Source File: Reduction of water rate on house service connection pipes in Mysore. Mun Vol.1, 303 of 1893. Karnataka State Archives.

29.   Source File: Acquisition of Land for the Hesaraghatta Water Supply Project. Land and Revenue, 59 of 1894-95, 1-8. Karnataka State Archives. For reference, a quote from the Executive Engineer's report on this waterworks, "...Ramasandrapalya and Chikdevanpur on the west of the valley and Herohalli and Gundahalli on the east will be on the margin of the tank, and these 4 villages must necessarily be removed." There are several examples like this. Source File: Water Supply to Bangalore from Hesaraghatta Reservoir. Municipality Vol. 1, 1-1892. Karnataka State Archives Department.

30.   In a letter from the Deputy Commissioner of Bangalore district to the Dewan of Mysore in 1895, the unsanitary condition of the catchment area was emphasized, and the necessity of establishing a conservancy system was endorsed by the Chief Engineer. Source File: Acquisition of Land for the Hesaraghatta Water Supply Project. Land and Revenue, 59 of 1894-95, 1-8. Karnataka State Archives.

31.   Source File: Proposals for Supply of Water to Bangalore, April 2, 1892. Municipality Vol.1, 28 of 1892. Karnataka State Archives Department.

32.   The Municipal Commission imposed a water tax with effect from January 1, 1900. The water tax was at

the rate of 6% per annum on the annual rental valuation of all buildings and lands in the Civil and Military Station. Bangalore City had also come under the water tax. Source File: Poll tax for the Maintenance of the Water Works in the Municipalities. Municipality Vol.2, 22F of 1904. Karnataka State Archives.

33. In the case of the Hesaraghatta Waterworks, Colonel Bower's note from 1894 highlights this aspect, indicating that individuals applying for house service pipes were required to pay for the pipe's cost and make an annual payment of Rs. 50 for 12-inch service pipes. Source File: Reduction of water rate on house service connection pipes in Mysore. Mun Vol.1, 303 of 1893. Karnataka State Archives. Again, after the successful implementation of the project, around 1900, the colonial government introduced excess water charges for households at *Rupee* 1 per 1000 gallons, whereas, for shops and trades, water charges had been fixed at a rate of Eight *annas* per 1000 gallons. Both *Rupee* and *anna* are monetary units of India. Source File: Poll tax for the Maintenance of the Water Works in the Municipalities. Municipality Vol.2, 22F of 1904. Karnataka State Archives. For other references, see also Gandy, "Landscapes of Disaster: Water, Modernity, and Urban Fragmentation in Mumbai."

34. To address the risk of water shortages and reduce the misuse of public water, several restrictions have been implemented. These include setting specific times in the morning and afternoon for water supply to public taps, fountains, and households. Additionally, the free water allowance for the public has been reduced periodically, causing some inconvenience for a certain section of the population. Source File: Misuse of Pipe water in C & M Station. Municipality Vol.2, 80 of 1904. Karnataka State Archives.

35. The Executive Engineer of the project argued over the difference in water usage patterns and water sources between the Old City population and the C & M Station population, particularly the reduced need for water for activities such as clothes washing among the Indians, and resorting to wells and tanks for their water needs. Both of these assumptions of the 'need for less water' and resorting to traditional sources of water carry the colonial prejudices of the indigenous population, though in different ways. Source File: Proposals for Supply of Water to Bangalore, April 2, 1892. Municipality Vol.1, 28 of 1892. Karnataka State Archives Department.

36. Subramanian, "Bangalore city water supply - a study and analysis," 56.

37. During the implementation of the project (1890s), the Old City had projected a stable demand of 1.5 million gallons per day for the next decade, while the C & M Station anticipated an annual increase in demand by 200,000 gallons per day, culminating in a demand of 2.5 million gallons per day by the end of the ten years. However, by 1918, Bangalore experienced a water shortage, highlighting the urgent need to increase the capacity of the Jewell Filters and the pumping station in the Hebbal region. Additionally, proposals were made to electrify the pumps, replacing the steam pumps to enhance the overall system. Source File - Subramanian, "Bangalore city water supply - a study and analysis," 56.

38. Broto, Sudhira, and Unnikrishnan, "WALK THE PIPELINE: Urban Infrastructure Landscapes in Bengaluru's Long Twentieth Century."

39. Regarding the Hesaraghatta project also, there was a whole debate on the chemical purity of water versus its wholesomeness that divided chemists, medical practitioners, and sanitary engineers within the Public Works Department. In an era characterized by heightened sanitary consciousness, this debate had far-reaching implications for the Hesaraghatta project. For details of this debate, the source file is – Proposals for Supply of Water to Bangalore, April 2, 1892. Municipality Vol.1, 28 of 1892. Karnataka State Archives Department.

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IMAGE SOURCES

Figure 1   Baedeker, Karl: Indien. Handbuch für Reisende. Verlag Karl Baedeker, Leipzig, 1914, p. 94

Figure 2   Water Supply to Bangalore from Hesaraghatta Reservoir. Municipality Vol. 1, 1-1892. Karnataka State Archives Department.

Figure 3   Water Supply to Bangalore from Hesaraghatta Reservoir. Municipality Vol. 1, 1-1892. Karnataka State Archives Department.

Figure 4   Water Supply to Bangalore from Hesaraghatta Reservoir. Municipality Vol. 1, 1-1892. Karnataka

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Figure 5   The Bangalore District Handbook – 1930, T.Rangaswami. Gazetteer of India – Karnataka State Bangalore District. Sourced from the Mythic Society, Bengaluru.

Influence of Ancient Water System Awareness on historical Planning

Examining Planning in the Taihu Basin from 1750 to 1900 through the "Complete Book on Water Conservancy of Wu"

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Abstract

The natural water systems crisscrossing the Taihu Basin had significant implications for local city siting and planning (Zhuang, Ding, and French). Consequently, governmental institutions and scholars documented water systems, continuously attempted to establish more rational strategies and effective facilities to optimal planning for water systems on settlement development (Wang). The "Complete Book on Water Conservancy of Wu," also known as Wuzhong shuili shu, compiles relevant information on the water management in the Taihu Basin, dating back to before 1636. This compilation includes historical records of water system morphology, disasters, flood control, and dredging efforts, as well as related policies. It can be considered a crucial historical document for comprehending the historical state of water systems and studying the significant role of water systems in the historical urban planning. Based on this understanding, historical planners ere able to more effectively balance the relationship between water systems and urban development. This study examines historical texts, employing knowledge from the field of hydrology to interpret characteristics and measures of ancient water systems. By combining these insights with the outcomes of planning activities in subsequent centuries, the findings are used to investigate the influence of planners' comprehension of water systems on settlement planning spanning 1750 to 1900. This exploration aims to elucidate the significance of water systems for planning and to understand how ancient people addressed issues related to water in settlements development.

Keywords

Planning history document, Water city planning, planning history, water management, Taihu basin

How to cite

Kaiyi Zhu, Tianchen Dai
From Space to People

Building Tokyo by the Sea
Visions, strategies and projects on the edge of the water 1950–2020

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Abstract

Since the time it became the new de-facto capital of Japan with the name of Edo in early XVII century, modern Tokyo has kept a special relationship with its waterfronts and on several occasions the expansion of the city has been pursued by looking at the sea as potential new habitat for growth and development. At the dawn of 20th Century, and especially in the aftermath of the end of the Pacific War, bold architectural ideas and city planning schemes were proposed and enacted to convey a phase of unprecedented economic resurgence and urban sprawl articulated by an impressive process of infrastructure build-up and industrial modernization. Looking at the different stages of city development in the 70 years from 1950 to 2020s, the paper will shed light on several aspects of the process of urban development of the waterfronts of Tokyo during this period. It will provide a critical account of the transformation of the city and the various innovative visions, ideas and projects from the initial stage of economic boom of the 1960s and 1980s, to the end of the "Bubble" in the 1990s, and the phase of relative decline at the start of the New Millennium, until the current new phase of urban regeneration and new wave of large-scale urban development projects driven by new national ambitions in the context of the competition with other East Asian megacities.

Keywords
Tokyo, waterfront development, Asian urbanism, marine city, Japanese architecture

INTRODUCTION: TOKYO WATERFRONT AS AVANT-GARDE

Water has been crucial for a city's foundation since ancient times. Historians like Frank Broeze have even depicted port cities as "Brides of the Sea,"[1] broadly highlighting the strict relation between the liquid bodies of rivers, canals, and seas and a society's cultural, economic, social, political, and technological development.

The presence of water has always propelled the birth and the growth of cities worldwide, later favouring intense interactions of goods and ideas, development of cultures and urban identities, also embodying strategic survival places for entire territories and nations. Facing the ancestral importance of the seminal threshold between waterfronts and port cities, between water, land and communities, many critics have recently underlined the renovated and recurrent relevance of water at the core of many current social and political issues.[2] Contemporary water threats—such as flooding, dryness, and sea/river level rise—reposition humans into a different perspective on the environment, with a "profound alteration of our relation to the world."[3] The ecological crisis forces an environmental ethic shift from anthropocentric (human-centred) to eco-centric (earth-centred)[4], urging different disciplines to focus on a new way of living with water.

This becomes crucial in Asian cities facing the Pacific, where increasing urbanisation imposes 2.1 billion people to live with high pressure on urban water resources.[5] In particular, in Japan, waterfront design has remained a crucial topic in the face of water threats, both in the past and nowadays. If in the 20th century, the pressure of the city on water became a central topic for urban experimentations in the Japanese capital, nowadays, the fear of the pressure of water on the territory seems to propel even more drastic and critical solutions. For example, the 400 km seawall recently built on the northern east coast to defend against tsunamis opens new questions on the dismissed social and ecological "porosity"[6] of the waterfront, which is instead an important contemporary feature for urban regeneration of port cities.

Faced with these urgency and contradictions, this paper prompts the importance of deepening our knowledge of Tokyo's historical development as a primary case study to rethink the urban relation with water also nowadays. The history of Tokyo Bay profoundly embodies the waterfront's design as an avant-garde of urban design and architectural thinking, which influenced architecture worldwide. Tokyo's bay became the place of radical experimentation and proposals for the expansion of the city and urbanisation of the sea, which had never been explored so far. The paper traces the history of Tokyo Bay—from its natural-sustainable "marriage" between the ancient urban structure of Edo and the canals to its more atomic-aged, technological, megastructural-utopian proposals by Metabolism's architects—allowing us to reflect upon the transformations of relations between society and water, uncovering roots and pivotal references for future developments of our built environment on waterscapes.

URBAN TRADITIONS FROM EDO TO TOKYO

Before being named "Tokyo" 東京 in 1863, the city was "Edo" 江戸, literally meaning "bay-entrance" or "estuary," exemplifying the symbiotic relationship established between urban and nature. During this period, Edo was defined by scholars as the "city of water," featuring a network of rivers and canals taking advantage of topographical elements, valleys and hills as they facilitated its early development. The relationship between water and the development of Edo is multilayered and rooted in socio-economic and spatial decisions through which the water's infrastructure flourished over the years, along with urban expansion and human behaviors.

The urban configuration of Edo is based on duality: the 'upper city' and the 'lower city', on the hill and the city on the water, recognizing the topography as the generating element of urban and social space. It is thus originally divided into two parts, Yama-no-te 山の手 (the mountain hand) and Shita-machi 下町 (the lower city). The city's topography clearly shows socio-spatial organization and segregation, creating a clear link between social class and residential typologies in relationship to water, and topography. On one hand, the daimyō, the most relevant feudal lords, with the samurai were located in the higher topography, and their settlement typology was wider and organic. On the other hand, the traders and the proletariat lived in the lower topographical part, near the sea, characterized spatially by a narrow and dense urban grid [7]. Each social class corresponds to a predefined dialectic settlement typology: feudal owners dominated the topographically higher and western areas of Yamanote, although they occupied 3/4 of the urban surface in smaller numbers. The lower classes, the majority of the population, were concentrated in the lower city, the city of water, Shitamachi. These two urban structures are still recognizable in today's Tokyo, a latent morphology that resiliently survives wars, fires, and deconstruction.

The water and the channels, now mostly undergrounded, characterized ancient Edo and served as transport routes, vital arteries for the economy, and mercantile activities. Edo was based on distributing goods and activities along waterways, such as the Sumida River, canals, and the bay. Subsequently, some of the most important stations, Shinbashi, Ryogoku, and Iidamachi, were built along the main canals. For this reason, on the edge of the bay, in general, warehouses and markets were concentrated on the quays where land and water met, which gave the "city of water" a palpably lively and congested image full of activities. Especially in the Shitamachi, the city of water and density where the largest number of inhabitants reside in the smallest available space, transportation and trade occurs. Here, both people and goods oriented their movements toward the waterfront, becoming the favorite subject of many artists, including Hiroshige Utagawa, and visible in the traditional paintings and vistas of Edo. This environment "truly provides a barometer for measuring the urban activities, from trade and distribution to recreation, proper to each area." [8]

Fig. 1. View of Edo waterfront in middle of the 19th Century represented in a series of woodblocks prints (ukiyo-e) by Utagawa Hiroshige (1797-1858)

Another layer that arose from the city's connection to the water was the world of pleasures and entertainment. The Sumida River, in particular, was the cultural symbol of the floating world, with theaters, fireworks events, and houses where geishas resided were located. [9] The river, especially after dark, was Edo's most democratic public space, a "performative space, an "extraordinary" fiction where the populace gathered in search of a sense of liberation, was thus associated with water and enveloped in an atmosphere that was both festival and emotive." [10] Thus, for some hours every day, social divisions between districts and classes were erased in a world of social interchange that escaped the control of government and military authority. Ultimately, the connection to water was not limited to living and livelihood but also to worship through various spiritual and cultural functions in religion, festivals, and theater.

The world of water gave rhythm to Edo's life, creating transportation networks, ensuring a reliable water and food supply, securing the strategic defense of Tokugawa's castle, and promoting the democratization of public spaces in a rigidly structured society. The case study of Shitamachi morphology is a concrete example of a mixed urban form with proximity between activities, architectures, inhabitants, and usages at the core of today's urban question. [11]

At the beginning of the 20th century, with the end of the isolation policy and the start of modernization, Japanese economic development changed the relationship between water and human habitat. During modernization, railroads needed to be constructed, but due to economic problems, the Japanese government could not purchase land. As a solution, they started to fill rivers and moats; therefore, river widths narrowed due to railroad construction, and moats were partly filled, but still, transportation by water was possible. [12] The second phase of the disappearance of rivers was at the end of World War II, which ultimately disrupted the ancestral relationship between the water environment of Edo and its inhabitants.

POSTWAR TOKYO AND THE URBAN GROWTH
1945-1970S

Following the defeat in the WWII, and the consequent collapse of the economy, for five years Japanese cities languished in a state of despair and ruins. With the start of the Korean War and decision of the US military forces to utilize Japan as strategic ally against the common treat of the Communist expansion in the Far East, fresh capitals and substantial resources were poured in. During the 1950s many large-scale projects for the development of new industrial complexes and urban infrastructure were put in place to foster the rebirth of the economy and consolidate a process of urban reconstruction in all major Japanese cities. The fast economic recovery triggered a strong immigration process from the rural areas towards the main productive areas of Japan which were mostly located in the larger cities, especially the capital Tokyo. A fast rate of urban expansion and demographic growth resulted in the sprawl of the suburban fringes and the hyper densification of the core of the city capital, which became a haphazard, largely unregulated, and chaotic patchwork of industrial zones, residential areas, and extensive and intricated systems of mass transport and mobility infrastructures. In spite the accelerated and largely unplanned urban development, there were many early efforts to control the vigorous growth of Tokyo.

In 1956 the "National Capital Region Development Law" was approved with the intent to control the development of the whole Kanto Region (all the territory economically and functionally connected with the capital) up to a radius of 100 km from Tokyo Prefecture. The committee prepared the 'National Capital Region Development Plan' which was approved in 1958 with the goal to develop a constellation of new towns around the main metropolitan area but separated from the central urban core. While this project, inspired by the 1943's Greater London Plan by Patrick Abercrombie, was proposed with the clear intention to contain the problem of traffic congestion and to limit further concentration of industrial plants and residential complexes through a policy of decentralization, other projects aimed instead at the creation of artificial land, for instance by filling in many of the ancient water canals built during the Edo Period and turning them into road arteries, or by expanding the waterfronts by land reclamation and proposing bolder visions for the future of the capital into the sea. Since 1958 Tokyo and Tokyo Bay became a huge urban laboratory for the development of radical urban ideas and experiments, which went on pair with innovative architectural and urban models proposed by a new generation of architects and planners which would echo the cultural and social changes of postwar Japan driven by its economic miracle.

It is certain that the Japanese government strongly encouraged the concentration of factories and industrial complexes in the Pacific Belt region to foster the efficiency gained from the agglomeration of local economies and achieve higher exports. Heavy and chemical industrialization, the sophistication of the industrial structure and the general strengthening of the foundation of industry became the goals of the "New Long-Run Economic Plan" promoted during the years 1958-1962. A large share of public investments for the construction of roads, ports, land reclamation, and railways development was concentrated along the Pacific Belt coasts, aiming at fostering the expansion of strategic industrial sectors such as steel, petro-

chemicals and shipbuilding production. The direct intervention of the State was pivotal in the development of integrated industrial complexes on extensive landfills on the waterfronts of the Pacific Belt region, providing large sites at low cost for the expanding factories. Pime minister Ikeda's "Double Income Plan" of 1960 became functional in achieving the rapid economic growth of Japan following massive public investments in social overhead capitals for the construction of roads, water supply and port installations in the main industrial areas of Tokyo, Osaka and Nagoya, contributing to the concentration of industries and activities especially in the area of Tokyo harbour.[13]

The provision of the new artificial land was achieved by adjusting and reclaiming the edges of the harbor to make room for the settlement of larger factories, gas plants, central markets, sewerage facilities and power houses which were progressively pushed out of the older part of the central city, forming extensive areas of "Kombinatos", clusters of industrial and residential complexes, along the waterfronts. In Tokyo Bay the amount of land reclamation during the period of so-called high economic growth (1956-1975) was 13.000 hectares, for a share of 27 % of the national total, and concentrated 44 % of all Petrochemical plants and 37 % of all Oil plants of Japan, making the capital the primary core of Japanese industrial economy.[14]

In the second half of the 1950s, as the national economy gained momentum, the requests for new lands to sustain the economic growth in Tokyo became more and more a priority. Apart from the need for new industrial facilities such as piers and chemical or cement plants, another important problem was the necessity to contrast the land speculation and the surge of land prices. In the April of 1958 the president of the Japan Housing Corporation (JHC), Kuro Kano proposed the land filling of the North-East side of Tokyo Bay creating artificial land by means of atomic bombs blasts. Known as the "Kuro Kano Proposal", named after the JHC president who proposed the plan, this project was strongly criticized because it implied the radical destruction of the natural environment of the harbor, and it was doubtful that in the long run it could limit the congestion and the sprawl of Tokyo.

In this context new bold proposals for marine habitats based on urban prototypes built on artificial land took shape. The first to propose using offshore artificial islands for the design of marine cities were the architects Masato Otaka and Kiyonori Kikutake, both members of the avant-garde architectural movement Metabolist Group, whose manifesto of utopian megastractures for a new urbanism was presented at the Tokyo World Design Conference in May 1960. Otaka's "Neo-Tokyo Plan - City on the Sea", and Kikutake's "Marine City" represented the beginning of a completely new approach in the Japanese urban design and architecture envisioning and exploring especially the sea and cities waterfronts as potential areas for urban expansion. Their large-scale projects envisioned the extensive use of high density and super-rise residential buildings on reclaimed land or floating platforms in the sea as an alternative to traditional low-rise suburban development complexes built outside the fringes of the metropolitan centres, and, coherently with a general trend of the time, investigated new ways to connect the single architectural unit with the total urban infrastructural system. [15]

Fig. 2.   Tokyo Plan 1960 by Kenzo Tange. The project was conceived as vast super-urban infrastructure designed around mass circulation systems for the linear expansion of Tokyo across Tokyo Bay.

At the same time, as an alternative to the decentralized model based on the redistribution of people and activities in a system of new towns proposed by the planners of the government, the project "Tokyo Plan 1960" proposed by architect Kenzo Tange emphasized instead the possibility of the city's future expansion occurring on the bay. [16] The fundamental characteristic of the project was the divergence from the traditional radial pattern of urban growth, which dated since the foundation of Tokyo, and the proposition of a linear model of development across Tokyo Bay along major vast and multi-level arteries of circulation. Tange proposed to convert the core of the city from a "civic centre" to a "civic axis". Tange's Tokyo Plan highlighted the importance of mobility channels based on mass-transportation systems and massive and huge structures of suspended bridges and artificial floating platforms, Plan for Tokyo was a substantial a deepening of a study started with the research experience of Tange himself at MIT of Boston in 1959 and further refined during his association with the Metabolists.

MODERN DEVELOPMENTS IN TOKYO BAY 1980–2020

The 1980s were among the most prosperous period in modern Japan due to undisputed economic prominence and global influence, which fuelled the ambition to turn Tokyo in a global city on pair with London and New York. During the "Bubble" in the late 1980s a new awareness of the

importance of modern and more efficient public facilities and urban infrastructures for industrial cities, aimed to strength their competitiveness into a more globalized and interconnected world system of cities, resulted into the development of an impressive amount of new mega urban projects in all the major cities of Japan largely financed and supported by the government. [17]

In the 1986 the Tokyo Metropolitan Government proposed the creation of a "multi-polar metropolis plan" in order to limit the further spread of the city central business district, and in doing so to control its urban congestion and the excessive population density, balancing the business and residential functions in the metropolitan territory. The main features of the proposed scheme, known as the "Amano Proposal" after the name of the governor of the city council, was the development of a decentralized system of urban sub-centers, with particular attention at the physical and functional expansion of the areas on the West side of Tokyo Bay.

The main core of this urban restructuring of Tokyo was located on the waterfront, between the Tsukishima and Daiba reclaimed lands, and was named "Tokyo Teleport Town" (named also "Tokyo Rainbow Town"). The construction of the new Tokyo waterfront sub-center developed over many years and absorbed consistent resources and capitals but several of the built urban and architectural projects resulted in what many critics decried as an anachronistic and unfitted late-modernist urban layout, with largely unused public open areas extremely distant from the bustling core of the city. [18] The reclaimed areas were filled with groups of large neo rationalist architectures and buildings scattered about vast empty spaces of reclaimed land and connected by long boulevard- like paths that lacked any formal relation to Tokyo's traditional urban streetscape and pattern of mixed land use. Especially problematic for Tokyo Teleport Town (as well as in other projects of new waterfront developments) was the connection with the mainland and other main urban district of the city in terms of transportation and working activities, which resulted in higher costs for islands' commuter residents and workers.

Sensitive to the spirit of the time and aiming at less commercial design schemes, other projects for the re-design of Tokyo Bay were proposed by renown architects. Among these there was Kenzo Tange and Kisho Kurokawa. Tange's 1986 project for a "Tokyo Bay City Plan", which proposed the creation of a system of large mixed use artificial islands, following his comprehensive and social oriented approach to planning and suggesting again an open-ended and linear pattern of urban growth. Basically, the urban lay-out of the project was a softer and more up-to-date version of the monumental and strictly hierarchical structuralist order of spaces and movement networks that he had already put forward in his first earlier 1961 "Tokyo Plan", but with minor visual impact and reduced concern for mass-housing issues. "Neo Tokyo Plan 2025", proposed by Kisho Kurokawa in 1987, showcased a poetic but sterile vision of architect, simply translated on a grander scale many of his earlier Metabolist urban architectures, that were arranged as clusters of floating structures around and atop a doughnut-shaped area of reclaimed land built in the center of Tokyo Bay. Masato Otaka's masterplan project for Yokohama Minato Mirai 21 (or MM 21 - City of the Future in the 21st Century) - was symptomatic of a process of urban development conceived for and structured around large commercial hubs which presented broad walkable promenades for shopping in largerly empty plaza-like open spaces. Overall, Tokyo Bay waterfronts projects development in the 1980s (e.g. Yokohama Minato Mirai MM21 urban development and Odaiba and Chuo breakwater island projects) were envisaged and designed as large

and comprehensive urban master planned office, leisure and commercial enclaves fundamentally intended for a consumerist society (but also flagship of international corporations, and municipal or national governments expressions of their various local and global ambitions), which especially from the middle of the 1980s were sponsored and supported by means of capitals from many public corporations and private companies.

Fig. 3.   Recent development of Tokyo Bay waterfronts. Old industrial spaces are progressively removed and converted into new residential complexes filled with high rise towers and green amenities.

Fig. 4.   Tokyo Bay waterfronts. The water canals once busy with the traffic of industrial products are now transformed in quiet water promenades which provide relaxing views to high-rise residential buildings.

The burst of the Bubble and the subsequent economic 'lost decade' which started from the early 1990s put a stop to many of the often purely economic speculative and redundant large-scale urban developments and initiated instead a prolonged period of stasis of construction activities which persisted until the programming of the Tokyo 2020 Olympic Games (post-poned 1 year later due to the Covid-19 Pandemic). In a fierce competition with other Asian rival megacities, Tokyo's metropolitan government enacted programs to stress the city as a global multicultural centre through several new projects aiming at the upgrade of transport infrastructures and urban service provisions, and the showcase the most recent sustainable technologies, local ecology protection initiatives and disaster prepareness developments.This international event thus became an occasion to initiate projects to revitalize old areas and regenerate many urban spaces and facilities on the waterfront by retrofitting or transforming most to the obsolete and unused industrial factories and facilities, and other emptied service areas, into more attractive green and recreational zones (e.g. the relocation of the famous Tsukiji Fish Market and the reconversion of the old Harumi port ferry terminal into a park), suitable for new residential projects and the general use by the people in an improving natural environment. A widespread wave of environmental movements started from the 1960s at the pick of the economic growth, and had a very relevant role in exposing the sense of urgency caused by the growing general pollution of the urban environment in Japan. These were directly responsible for the passing of strict environmental laws which together with the rise of public awareness for the necessity of the recovery and the protection of the natural habitats, in recent years have resulted in an improvement of the quality of the air and water in all the major industrial conurbations.

Currently a better natural environment and in general lessened pollution levels has promoted a renovated interest for living and leasure activities on the waterfronts of Tokyo. A new process of urban densification has prompted new high-rise residential developments which are now mushrooming on the edge of the water bringing the people back to the sea, in the joy of rediscovering the wonders and the beauty of Tokyo Bay and reviving the largely lost memories of this city on the water.

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DISCLOSURE STATEMENT

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IMAGES SOURCES

Figure 1   Wikimedia Commons
Figure 2   Public Domain (Kenzo Tange Associates)
Figure 3   Author's personal collection (Pernice Raffaele, 2023)
Figure 4   Author's personal collection (Pernice Raffaele, 2023)

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17. The "Bubble" in Japan indicates a period of strong economic growth following the increased value of stock markets and real estates that characterized the Japanese economy from late 1980s to early 1990s.

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Long term transformation of building locations in 8 villages along the Sanriku coast, tsunami-prone area

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Abstract

The Sanriku coastal region of Iwate Prefecture was severely damaged by the Great East Japan Earthquake of 2011. The area has been repeatedly hit by tsunamis since the 1896 Meiji Sanriku Tsunami, the 1933 Showa Sanriku Tsunami, and the 1960 Chile Earthquake Tsunami, and is therefore called a "tsunami prone area" in prior research. However, this discourse has not been verified. In this study, we quantitatively analysed spatial changes in representative 8 villages along the Sanriku coast from the 1960s to 2022. Firstly, we traced aerial photographs taken since the 1960s on GIS, and created data on infrastructure such as roads and the location of all buildings in the villages. Secondly, all residential areas in the villages were categorized into 10 types according to their formation process and whether or not they were inundated by the Great East Japan Earthquake, and the number of buildings, building density, distance to fishing ports, and elevation were calculated to reveal spatial transformations. As a result, it became clear the eight villages can be roughly classified into two groups: those absorbed the increase in the number of buildings in the district from the 60s to the 00s through gentle slope sprawl and planned residential development, and those suffered significant damage from the Great East Japan Earthquake as residential areas spread within past flooded areas. On the other hand, even within the latter, changes contributed to the reduction of damage were identified, such as the concentration around stations and along national roads, and the relocation to higher ground was planned after the Showa Sanriku tsunami. These results support the discourse tsunami prone areas have been learning from past tsunamis. The study also succeeded in extracting a desirable change, sprawl on gentle slopes during the inter-disaster period, which had not been clearly visualized previously.

RESEARCH OBJECTIVES AND METHODS

Thirteen years have passed since the Great East Japan Earthquake of 2011 caused extensive damage along the Sanriku coast of Iwate Prefecture. This area is known as a "tsunami prone area" and has been repeatedly hit by tsunamis in modern times alone: the 1896 Meiji Sanriku Tsunami, the 1933 Showa Sanriku Tsunami, the 1960 Chilean Earthquake Tsunami, and the 2011 Great East Japan Earthquake. It was said that the repeated damage was caused by people who forgot about the tsunami after a certain amount of time had passed, and repeatedly built and settled in low-lying areas. On the other hand, Aiba, using the Ryori district of Sanriku-cho, Ofunato, clarified that the housing space after World War II was not "located in dangerous places after forgetting the tsunami," but was generally located slowly in safe places, which was influenced by the convenience of urban infrastructure such as roads and railroads that were built after the war. This is due to the convenience of urban infrastructures such as roads and railways that were developed after the war. From a similar perspective, this paper analyses and compares the medium- and long-term changes in the urban infrastructure connecting the eight districts located along the Sanriku coast and in the concentration of housing within the districts. The purpose of this paper is to extract universal knowledge that can be applied to planning techniques from the reconstruction period to the post- reconstruction period or on the eve of the next tsunami through these analyses and comparisons.

In Chapter 2, we focus mainly on roads and railroads, and trace changes in the structure of each community over time due to infrastructure development. Here, among roads, the north-south road in the inland area of Iwate Prefecture is considered the "spine axis," the east-west road running directly parallel to it toward the Sanriku coast is called the "rib axis," and the infrastructure connecting villages located in the coastal area is called the "coastal axis," with particular attention to National Route 45 and the railroad in the coastal axis. The former connects villages scattered along the Sanriku coast as if they were stitched together, while the latter connects the districts relatively more smoothly through the extensive use of tunnels.

In order to compare complex and highly individualized communities along the Sanriku coast, it is first necessary to categorize the residential areas within each community according to their respective characteristics. As residential areas that have been developed in a planned manner, we can start with those developed after the Showa Sanriku tsunami (1,2). Although in some cases, such as Tarou in Miyako City, reconstruction of the original site was chosen, most of them chose to relocate to higher ground as part of a project to develop suitable housing sites. According to Okamura, 1,238 housing units were built in 36 villages in Iwate Prefecture. Some of these houses were planned to be built along prefectural roads, national highways, and other arterial roads. Relocation to higher ground was planned to avoid the inundation area of past tsunamis, but many areas were damaged by the Great East Japan Earthquake. Residential areas that were damaged are designated as 1 and those that were not are designated as 2. After World War II, planned developments by developers (3, 4) were also scattered in the area: small developments of about 10 houses, as well as large-scale developments undertaken by the Iwate Housing Supply Corporation and the Japan Workers' Housing Association. These developments were not necessarily built with tsunami risk in mind. Here, residential areas

that were damaged are designated as 3, and those that were not are designated as 4. The relocation sites (5) and land readjustment sites (6) developed through the disaster prevention collective relocation promotion project after the Great East Japan Earthquake, as well as residential areas developed by small-scale developers, are extensions of these planned residential development sites. On the other hand, in villages where there are no land use regulations, houses are developed sprawlingly. The residential areas (7,8) spread around the villages and their surroundings, mainly where they are convenient for the fishing industry. In the 1960s, seawalls were built to protect these areas, mainly against storm surges, but the tsunami of the Great East Japan Earthquake overcame these seawalls, so we can distinguish between residential areas that were damaged (7) and those that were not (8). In addition, in the latter half of the Showa period, bypassing of highways and construction of railroads opened up new possibilities for land use, and residential areas spread out in a sprawling manner in some districts. These areas can also be classified into damaged residential areas (9) and unaffected residential areas (10).

In Chapter 3, residential areas are classified into 10 categories according to their relationship with the planning intentions and past tsunami inundation areas, and their medium- and long-term changes are analysed using a geographic information system (GIS). Here, we focus on quantitative (number of buildings and density of buildings) and qualitative (elevation and distance from fishing ports) changes of buildings in the villages to enable a more precise analysis of medium- and long-term changes as described in the previous section.

The GIS data of buildings were created from GIS data in 2022 and aerial photographs taken at four points in the past (1967, 1977, 1999, and 2000). In order to determine whether past tsunamis have affected the medium- to long- term changes in residential areas in the village, we compared the rate of increase in the number of buildings in the inundated area with the rate of increase in the entire village. If the former was relatively small, it was evaluated that lessons from past tsunamis had been learned and induced changes in residential areas in a desirable direction.

CHANGES IN THE FRAMEWORK OF THE VILLAGE DUE TO INFRASTRUCTURE DEVELOPMENT

Iwaizumi-cho Omoto is the former center of Omoto Village, which was formed near the mouth of the Omoto River, with the Sanriku Railway station located a little further back. Buildings along the rib axis (National Route 455) along the Omoto River were damaged by the Showa Sanriku Tsunami, and a hill relocation site was built in the southern part of the village. The coastal axis (National Route 45) was constructed to access this relocation site, but the concentration of buildings along the lowland areas damaged by the Showa Sanriku tsunami was also reestablished. Around the same time, a new road, National Route 455, was built across the lowlands, connecting the Sanriku Railway Station and National Route 45 to form the framework of a new village. As a result, the concentration of villages in the lowlands increased, and the area was severely damaged in the Great East Japan Earthquake.

Fig. 1. Past Tsunami Areas and type of residential areas of Omoto, Tarou, Funakoshi, Kirikiri 2-1. Omoto, Iwaizumi

2-2. TAROU, MIYAKO

Tarou, Miyako City, is a town that chose to build seawalls and rebuild the original site instead of relocating to higher ground after the Showa Sanriku Tsunami. The first embankment was completed in 1958, followed by the second (1956-65) and third (1973-78) embankments, completing the framework of the embankment. During the reconstruction of the original site, National Route 45 was built through the center of the site to allow for evacuation to relatively higher ground. In conjunction with the completion of the seawalls, sprawl proceeded to the low-lying areas surrounded by the first and second seawalls, and the lowlands surrounded by the first and third seawalls. The Sanriku Railway opened in 1972 at Tarou Station as the terminal station of the JNR line, and the entire line opened to Kuji in 1984, which may have influenced the formation of sprawl in the southern part of the district. Due to its long seawall, the Tarou area was known as a model for tsunami disaster prevention, but in the Great East Japan Earthquake, the tsunami overcame and destroyed the seawall, and all the districts were severely damaged.

2-3. FUNAKOSHI, YAMADA

Funakoshi and Tanohama, both located in Funakoshi, Yamada-cho, are known for their contrasting paths of planning for relocation to higher ground after the Meiji Sanriku Tsunami, with Funakoshi in the west realizing the creation of sloping land and Tanohama in the east abandoning the plan. Funakoshi has National Route 45 positioned at the eastern end of the Meiji Era upland relocation site. Later, in the late 1930s, a railroad line was built, and in the 1960s, a new Route 45 was built inside the relocated upland area. Therefore, sprawl and planned development sites spread to higher elevations, and the area suffered almost no damage from the Great East Japan Earthquake. The fact that the lowlands were developed as

Fig. 2.   Past Tsunami Areas and type of residential areas of Touni, Sakihama, Okirai, Hirota

Funakoshi Park in the 1990s may have also prevented the spread of the sprawl to the lowlands. After the Great East Japan Earthquake, the disaster prevention collective relocation site was developed to connect to the relocation site. The topography is steeper than that of the sprawl, and the development of land development technology and intensive public investment made it possible to relocate to this area. Tanohama is located along the old Tanohama route along the bay. After the Meiji Sanriku Tsunami, the area was abandoned, and after the Showa Sanriku Tsunami, the area was relocated to higher ground through a housing development project, but the relocation was not thorough, and residential areas were formed in the fishing port and surrounding low-lying areas, which were severely damaged in the Great East Japan Earthquake.

2-4. KIRIKIRI, OTSUCHI

Kirikiri, Otsuchi-cho is a district on National Route 45, but National Route 45 is being redrawn inside the district. Before the Showa Sanriku tsunami, there were two routes from Otsuchi in the south to Kirikiri: the Ando route and the Akahama route, and National Route 45 was the Akahama route. Since the accumulations on both sides were damaged by the Showa Sanriku Tsunami, a hillside was relocated to a higher level on the mountain side, and a new National Route 45 was built in the relocated area. At the end of the 1930s, a railroad line was constructed along the Ando route, and a railroad station was built on the mountain side of the relocated site. In this way, the axis was built on top of the higher areas, and residential areas spread out in the sprawl as if pulled by the higher elevations. However, National Route 45 was switched to the Ando route with the opening of the tunnel at the end of the 1960s. In Kirikiri, the previous national highway was bypassed and National Route 45 was built closer to the sea. A large area between Route 45 and the railroad was sprawled, and most of the area, including the Showa relocation site, was damaged by the tsunami of the Great East Japan Earthquake.

2-5. TOUNI, KAMAISHI

Hongo and Koshirahama, Touni, Kamaishi City, is a district along Route 45. Hongo was severely damaged by the Meiji Sanriku Tsunami, and is known for the mass relocation of residents by building housing lots on the northern slope of the district, which is higher in elevation than the inundation zone of the Meiji Sanriku Tsunami. The only access to both Hongo and Koshirahama from Kamaishi was via the seaside route through Hirata or over a mountain pass following the Kamaishi Kaido inland along the Katagishi River to Koshirahama, but access from the city center was improved with the opening of the Ishizuka Tunnel on National Route 45 in 1969. In the case of Koshirahama, National Route 45 passed through the northern slope, which is higher in elevation than the existing lowland road in the village, and subsequently, a higher elevation built-up area was developed along the road. In the case of Hongo, the prefectural road passing through the relocated area on higher ground merged with National Route 45 at the back of the village, and the internal structure of the village did not change significantly, but in 2006 the Sakura Tunnel leading to the Koshirahama area next to the west was opened, and in 2009 the Sakura-Toge Hirata Line In 2009, the Hongo bypass was constructed, passing through the lowlands to the south of the village and overcoming a tide embankment to the sea. In 1984, Touni Station on the Sanriku Railway's Minami Rias Line was built in the Katagishi district south of Koshirahama, but the concentration around the station was limited and did not have a significant impact on the two districts.

2-6. SAKIHAMA, OFUNATO

Sakihama, Ofunato City is located on the northern side of the bay near the eastern end of the Okirai Peninsula, well off National Route 45, but can be seen as a coastal axis along Iwate Prefectural Road No. 209 Sakihama Port Line extending from the adjacent Okirai District. Until now, no major road has passed through the community, but in 1967, with the opening of the Kitasato University Sanriku Marine Biological Laboratory in Yoshihama Bay on the northern side of the community, a road was opened running north-south through the community, connecting Okirai Bay and Yoshihama Bay. This road acts as a rib axis, and residences are clustered at relatively high elevations. There are no train stations in the vicinity of the district, so the opening of the railroad did not have a significant impact.

2-7. OKIRAI, OFUNATO

Okirai, Ofunato City is located at the far end of Okirai Bay, and National Route 45 runs through the base of the village, which is relatively deep. The district used to have a rib axis along the Urahama side of the road, with Prefectural Road No. 9 Ofunato Ryori Sanriku Line leading to Ofunato via Ryori on the south side. In 1960, the Rasho Tunnel was completed, leading to the Yoshihama area to the north of the district, and National Road No. 45, which directly connects to Ofunato on the southwest side, was completed. In addition, the Sanriku Station on the Japan National Railways' Mori Line was built at a relatively high elevation on the southwestern slope of the district, resulting in a concentration of residences at relatively high elevations. In addition, the gentle slopes on the north side of the area have led to the conversion of farmland to residential land at relatively high elevations.

2-8. HIROTA, RIKUZENTAKATA

Hirota, Rikuzentakata City is a district located in the middle of a peninsula wedged between Ono Bay and Hirota Bay. The district is far removed from National Route 45, which passes through Rikuzentakata at the far end of Hirota Bay. In 1999, the Nitayama Tunnel was opened between the district and Otomo, located to the north, and Iwate Prefectural Road 38, the Ofunato Hirota RikuzentakaTarouute, passes through a ridge-like high point between Hirota Bay and Ono Bay. The district is such that two districts, centered around the Hirota fishing port on the Hirota Bay side and the Mutsugaura fishing port on the north side, are located back-to-back across Route 38. The area is not affected by the railroad, as there are no stations in the neighborhood.

QUANTITATIVE AND QUALITATIVE CHANGES WITHIN THE VILLAGE

Fig. 3.   Four representative indicators (Numbers of buildings, Density of buildings, Elevation, Distance to fishing port) and their transition in each type of residential area, and Numbers of buildings in Past Tsunami Areas in Omoto and Tarou

3-1. OMOTO, IWAIZUMI

The number of buildings increased until 2000. The number of buildings in 1, which was relocated to higher ground after the Showa Tsunami, did not increase much and was damaged by the Great East Japan Earthquake. Existing village 8 was not damaged by the East Japan Earthquake and the number of buildings did not change much. 7, which was created by sprawl on farmland near fishing ports from the 1960s to the 2000s, suffered damage to more than half of its buildings. As we saw in Chapter 2, the development of National Highway 45 through the lowlands in the 1970s may have encouraged this concentration. The fishing village area that was developed around the station after the East Japan Earthquake is an extension of the sprawl from the 60s to the 00s. Because of the gently sloping lowlands throughout the district, the building elevations have changed little. The same is true for the distance to the fishing port. Since the number of buildings has increased even more in the past inundated areas

than the number of buildings in the entire village has changed, it cannot be assessed that the lessons learned from past tsunamis have been applied.

3-2. TAROU, MIYAKO

The number of buildings increased until 2000. The number of buildings is high in 1, which is the original reconstruction site after the Showa Tsunami, but the increase is levelling off, indicating that the number of buildings is increasing in sprawls 9 and 10. As seen in Chapter 2, 9 is a low-lying residential area that continued to accumulate since the completion of the first seawall in 1958 until the Great East Japan Earthquake in 2011. Looking at the change in the number of houses, 10, which was not damaged by the Great East Japan Earthquake, shows the same increasing trend as 9. This means that changes in residential areas over a long period of time did not necessarily increase damage, but also caused changes that partially improved safety. On the other hand, the 8 areas that were not damaged by the Great East Japan Earthquake were densely populated from 1968 onward, suggesting that the increase in the number of buildings could not be fully absorbed. After the Great East Japan Earthquake, the number of buildings in 5, which was relocated to higher ground, was planned to be about 1/3 of that in 1, while the number of buildings in 6, which was raised and improved, decreased to about half of that in 5. Since the number of houses in the past inundated areas has increased in accordance with the change in the number of houses in the entire village, it cannot be evaluated that the lessons learned from the past tsunami have been applied.

Fig. 4.   Four representative indicators (Numbers of buildings, Density of buildings, Elevation, Distance to fishing port) and their transition in each type of residential area, and Numbers of buildings in Past Tsunami Areas in Funakoshi and Kirikiri

3-3. FUNAKOSHI, YAMADA

The number of buildings increased until 2000. There was no change in the number of buildings in the area relocated to higher ground (2) after the Meiji and Showa tsunamis, suggesting that the increase in the number of households was absorbed by the high sprawl on the Funakoshi side (10-1), where the increase was particularly large, and the village and its vicinity on

the Tanohama side (7). The small planned development (4) is located relatively far from the fishing port and at a higher elevation. As we saw in Chapter 2, Route 45, which passed through the district in the 1960s, may have encouraged agglomeration. The density of the number of houses (2) is high and shows little change, while the other sprawl villages and their surroundings have relatively low densities. Residential area 5, which was developed as an elevated relocation site after the Great East Japan Earthquake, has a similar building density and elevation to 2, indicating that it is an extension of 2. The number of houses has not increased significantly since the Chilean earthquake because the slope sprawl absorbed a certain number of the increase in the number of houses in the entire village. Therefore, it can be evaluated that the lessons learned from past tsunamis have been applied.

3-4. KIRIKIRI, OTSUCHI

The number of buildings increased until 1999. The increase in 8, which is an expansion to the western slope, is particularly large and is thought to have absorbed the continuous increase in the number of households. The small planned development (4) is located at a relatively higher elevation. The density of buildings is higher in 1, which was planned development during the recovery period from the past tsunami. As we saw in Chapter 2, the number of buildings has increased in 8 along Route 45, which runs along the ocean side, while the number of buildings has also increased in 8, which already had a relatively high density, which partially improves the safety of the area. 8 around the station and 10, which sprawls on a gentle slope, show a similar increasing trend, absorbing the increase in the number of buildings in the village and not being damaged. Elevation increases in 4 along the national road, which is considered to have been systematically developed since the 1980s, and the same is true for the distance to the fishing port. The increase in the number of houses in the village as a whole has not been significant since the Chilean earthquake because the slope sprawl absorbed a certain number of the increase in the number of houses. Therefore, it can be evaluated that the lessons learned from past tsunamis have been applied.

Fig. 5.   Four representative indicators (Numbers of buildings, Density of buildings, Elevation, Distance to fishing port) and their transition in each type of residential area, and Numbers of buildings in Past Tsunami Areas in Touni and Sakihama

3-5. TOUNI, KAMAISHI

The number of buildings increased until 1999. 2, which is the site of the relocation to higher ground after the Meiji Tsunami, has remained stable at an extremely high density with no change in the number of buildings since the beginning. 9, located in the low-lying area of Hongo, and 7, located in the low-lying area of Koshirahama, were both damaged. It is slowly sprawling to 10 along National Highway 45. Since the number of buildings has increased in the past inundation areas more than the change in the number of buildings in the entire village, it cannot be evaluated that the lessons from the past tsunamis have been applied. However, the relocation to higher ground that was established after the Meiji Sanriku Tsunami was not damaged by the tsunami at all afterwards, so it can be evaluated as having had a certain effect.

3-6. SAKIHAMA, OFUNATO

The number of buildings has increased through 1997 but has not changed significantly. As seen in Chapter 2, sprawl 8 and 10, which spread out on a relatively gentle slope pulled by Kitasato University, located to the north, is increasing steadily. The number of buildings has not increased significantly since the Chilean earthquake because the sprawl on the slope absorbed a certain number of the increase in the number of buildings in the entire village. Therefore, it can be evaluated that the lessons learned from the past tsunamis have been applied. The number of buildings has increased through 1997 but has not changed significantly. Sprawl 8 and 10, spread on gentle slopes, have increased steadily. The number of buildings has not increased significantly since the Chilean earthquake because the sprawl on the slope absorbed a certain number of the increase in the number of buildings in the entire village. Therefore, it can be evaluated that the lessons learned from the past tsunamis have been applied.

Fig. 6. Four representative indicators (Numbers of buildings, Density of buildings, Elevation, Distance to fishing port) and their transition in each type of residential area, and Numbers of buildings in Past Tsunami Areas in Okirai and Hirota

3-7. OKIRAI, OFUNATO

The number of buildings increased through 1997. The largest increase is observed at 10, which is sprawling on a gentle slope. It also increased at 7, which is closer to the fishing port, but the increase was milder than at 10, suggesting that sprawl partially absorbed the increase in the number of buildings in the village as a whole. Since the slope sprawl absorbed a certain number of the increase in the number of buildings in the entire village, the number of buildings has not increased significantly since the Chilean earthquake. It can be evaluated that the lessons learned from the past tsunamis have been applied.

3-8. HIROTA, RIKUZENTAKATA

The number of buildings increased until 2001. Major damage occurred for 7, which are clustered in the lowlands near the fishing port. No significant change has occurred from the 60's to the 00's for 8, which is spread on gentle slopes. Since the number of buildings has increased in the past inundation areas more than the change in the number of buildings in the entire village, it cannot be evaluated that the lessons from past tsunamis have been applied.

MEDIUM- AND LONG-TERM CHANGES IN THE VILLAGES AND LESSONS

As a result of the analysis of medium- and long-term changes in residential areas in the eight districts, it is clear that there are two types of districts: those that absorbed the increase in the number of buildings from the 1960s to the 2000s by sprawl on gentle slopes and planned residential development, such as Funakoshi, Kirikiri, Sakihama and Okirai districts, and those that suffered major damage from the Great East Japan Earthquake, such as Omoto, Tarou, Touni and Hirota districts, which had residential sprawl in flooded areas in the past. The former is the area that was inundated by past tsunamis. In the former, the rate of increase in the number of buildings in the past tsunami inundation area is less than the rate of increase in the number of buildings in the entire community, indicating that the community has learned from the past tsunami. The latter, on the contrary, has not learned from the past tsunamis, since the rate of increase in the number of buildings in the area inundated by past tsunamis was higher than that of the entire community. On the other hand, at the micro level, there are some changes that have worked to reduce damage in the medium- to long-term, such as the concentration around the station located at a relatively high elevation in the Omoto district, the concentration along the national highway in the Tarou district since the 1980s, and the relocation to higher ground developed after the Meiji Sanriku tsunami in the Touni district.

In this paper, we have conducted a more precise analysis of medium- to long-term changes in residential areas in tsunami-hit areas, which were previously regarded simply as "returning to lowlands," by focusing on infrastructure and using a quantitative method. As a result, it became clear that while there are commonalities in the inducement of agglomeration by infra-

structure on a macro level, the degree of influence differs greatly from one village to another. It was also found that no single settlement changes uniformly, but is a complex patchwork of various residential areas. Furthermore, we succeeded in extracting lessons from the desirable changes during the inter-disaster period, such as sprawl on gentle slopes and agglomeration near elevated stations and national highways, which was the objective of this paper. In order to elucidate the mechanism of agglomeration, it is necessary to study hard lessons, such as the planning intentions of infrastructure development at the time, and soft lessons, such as the existence or non-existence of traditions within villages.

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IMAGE SOURCES

Figure 1, 2 Source: the 1:25,000 Topographic Map by Geospatial Information Authority of Japan (2022), Source: the Aerial Photograph by Geospatial Information Authority of Japan (1966, 1967, 1968, 1977, 1999, 2000, 2001)

Planning Systems I

Chair: Jose Luis Sainz

Maryvonne Prevot
Construction and circulation of post-colonial urban knowledge
in the hight density metropolis of Kinshasa (1960's-1990's)

Construction and circulation of post-colonial urban knowledge in the hight density metropolis of Kinshasa (1960's-1990's)

Stakeholders, networks and methodologies, between religious and secular, Europe and Africa

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Abstract

Following the collapse of Belgian colonial rule, the population of Leopoldville-Kinshasa rose from 400,000 in 1964 to 900,000 in 1967, according to the socio-demographic study carried out by Maurice Ducreux, who was seconded to the French Urban Planning Mission (MFU) in Kinshasa in 1967 . As the municipal authorities were technically unable to do so, expertise was delegated to French technical assistance with the setting up of this MFU, which was to expand in line with the contracts signed with a series of French design offices. The problem very quickly arose of drawing up an irrefutable document giving as complete a picture as possible of the capital, in order to explain how it functioned and the processes of urbanisation in a gritable squatting context, in order to drawing up a master plan. Looking back at the construction and circulation of this knowledge will to focus on the networks and porosities between the religious, secular and technical worlds. Firstly, we will present the personal, scientific and technical collaboration of French working missionary priests and Belgian Jesuits based in the country, and their respective networks. Secondly, we will see how the methodologies used in this socio-demographic study are similar to those used in pastoral surveys.

Maryvonne Prevot

Construction and circulation of post-colonial urban knowledge
in the hight density metropolis of Kinshasa (1960's-1990's)

Comparing (High Density) Metropolis' Urban Colonial Legacies

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Abstract

According to the UN's World Urbanization Prospects 2018 (https://population.un.org/wup/), by 2050, almost 70 per cent of the world's population will live in urban areas. Urban areas worldwide are growing very fast, and many are turning into never-ending metropolises; in the expansion process, large portions of their planning history often get overwritten, but sometimes, they survive as an integral part of their contemporary identity. The paper would like to compare the planning history of the most densely populated metropolises of the world, especially those with over 20 million people. The scope is re-reading the urban history of relevant selected case studies – such as Mexico City, San Paolo, Lagos, Cairo, New Delhi, Mumbai, Jakarta, Manila and others – focusing mainly on their colonial period of expansion. Indeed, it is clear that these vast urban areas had a fascinating colonial past or intense foreign exchange and interactions that are still visible in their contemporary urban patterns. The paper will isolate the foreign colonial planning developments in the selected metropolises and compare the different colonial planning approaches adopted by different foreign powers. The aim is to highlight which Western urban models have been mostly exported and why they have been adopted, analyse political reasons behind the choice of one urban model or another, understand to what extent the colonial legacies are still part of the urban identity of these megacities or how much these have been modified/erased for political, economic or social purposes.

Alicia Sainz Esteban, Rosario del Caz Enjuto, Jose Luis Sainz Guerra
Tolerance in City Planning as a central element for understanding
the transformation of the urban fabric of a historic city

Tolerance in City Planning as a central element for understanding the transformation of the urban fabric of a historic city
Applying the Plan Cort in Valladolid under Franco's dictatorship.

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Abstract

The Plan Cort was applied in the city of Valladolid during the first years of Franco's dictatorship. This urban plan was characterized by the application of the classical rules of city planning at that time. It was a plan to reform the street alignments in the historic centre alongside the construction of working class suburbs on the outskirts and new-build areas beyond the city limits. Actions in the years that followed focused on reforming the historic centre, elevating the permitted heights and increasing the authorized buildable depths. By analysing the licenses of the time, we can conclude that a system of concessions for licenses had been established that openly breached the regulations of the Plan, violating numerous legal requirements. Perhaps the most important violations involved the permitted heights, which were frequently over the maximum authorized. The most important proposals were gradually diluted through a long series of reforms and modifications. It was those who approved the Plan who, in the end, transformed it until it was practically unrecognisable. The Plan was in fact a decoy, a false image of modernity behind which a distracted, self-interested administration hid. As a result of the said flexibility, in several streets of the city of Valladolid, it is currently possible to see the different scales, the typological rupture and the stark contrast between modern and traditional buildings side by side, which have given rise to an urban landscape with a great dissonance.

Alicia Sainz Esteban, Rosario del Caz Enjuto, Jose Luis Sainz Guerra
Tolerance in City Planning as a central element for understanding
the transformation of the urban fabric of a historic city

THE CITY'S SITUATION FOLLOWING THE SPANISH CIVIL WAR

During the Spanish Civil War (1936-39), the city of Valladolid and its province was under the control of the military revolt, and as such did not suffer any direct actions during the war, since the front was far away for the duration of the war. In Valladolid and its province there was initially a strong repression that began with the arrest and summary execution of the most prominent citizens of the Republic[1]. Faced with the great number of arrests, several places were set up as de facto prisons and concentration camps were also built[2].

At the very start of the uprising, the Nationalists took over all the positions of the public administration; all the offices in the public institutions, at all levels, from the Civil Governor to the mayor of the smallest village in the province, but also at lower levels in the municipal administrations and public services, were systematically occupied by "individuals truly loyal to the National Movement"[3]. Numerous initiatives were undertaken to remove those under suspicion, replacing them with those loyal to the new political regime[4].

CITY PLANNING IN THE FIRST THIRTY YEARS OF THE 20TH CENTURY IN VALLADOLID

The city of Valladolid in the 1930s, just before the start of the Civil War, was in a particular situation in terms of city planning, due to the lack of any plan to control the city as a whole. There were isolated, uncoordinated projects; there was a lack of any vision for the future with respect to the reforms to be carried out; and there was a quite arbitrary expansion of new suburbs[5]. The city was slowly acquiring planimetric instruments to gain knowledge concerning the situation. From the start of the 20th century, urban areas on the outskirts of the city had arisen that were beyond municipal control. Suburbs were thus added to the edge of the city; areas with new, low quality, self- built, buildings without urbanisation or municipal permits, and with bad sanitary conditions. During the Republic, this phenomenon had accelerated. The City Council, faced with a great need for housing, looked the other way and even allowed such housing to be legalised following the payment of a monetary fine[6]. Some municipal initiatives had taken place, such as the Plan Frías of 1931, to limit the city's urban growth, but it had not managed to slow down the process of uncontrolled growth and there was no general plan for the entire city, no city planning document that could deal with the issue in its entirety.

THE PLAN CORT

The Civil War, incidentally, gave the city council the opportunity to make a general plan with the arrival of a celebrity in city planning at that time, as a political refugee, the architect César Cort. The military uprising initially failed in Madrid, where Cort resided at that moment. Faced with the threat of reprisals, he took refuge in the Norwegian Embassy, where he spent several months, until he could escape to the zone controlled by the Nationalists, settling in

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Fig. 1.   Partial image of the Plan Cort, 1939.

Valladolid. César Cort, who had been a city councillor in Madrid[7] representing the Royalist Party in the Republic, offered to draw up the much needed general urban plan for the City Council of Valladolid[8]. The proposal was finally embodied in a beautiful, carefully drawn and coloured plan that, on the one hand, was the answer to an exercise of the imagination, proposing new parks, markets, churches and arcaded squares, and on the other, proposing an almost total reform of the city's existing alignments. Thus it was that the "Urbanisation Plan of Valladolid: General Expansion & Interior Reform Plan" arose and was approved in 1939, together with its ordinances, now known as the Plan Cort.

It must be said that the Plan Cort gave rise to a strange situation, which would be breached by the very same people who approved it. It would necessarily become complicated due to the way it was applied. The Plan is characteristic of the epoch, one of the last to be drawn up in the Spain of Interior Expansion and Reform[9], mixing the reform of the existing alignments alongside the proposition of extending the city over large areas, surrounding the old city in the form of new growth. In the city centre, large avenues were projected, cutting through the historic fabric, while also proposing the widening of practically all the ancient streets by means of alignment reform. As for the new areas, the proposal was to call it the "manzana americana" (American block)[10]. Of note is the appearance of some proposals derived from the political ideology of the time, that is, the opening up of large avenues: the so-called 'Gran Vía del Rosario', splitting the mediaeval city of the 11th and 12th centuries in two, which would continue via a bridge over the river as the 'Avenida de los Cerros', in order to articulate the expansion towards the 'Huerta del Rey'; the 'Gran Vía de las Angustias', breaking up the existing fabric; the opening up of a new street as the prolongation of 'Platerías', which would necessarily suppose the demolition of the 'Iglesia de la Cruz'; the completion of the Cathedral, an unfinished building, according to the original project, with the creation of squares on the north and

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south façades, with the resulting demolition of the existing housing; the destruction of the municipal market of 'Portugalete', and the creation of the new markets 'del Val' and 'Campillo', substituted by new, larger structures. To these proposals should be added the creation of parks and gardens to accompany the expansion in the city's suburbs.

THE DIFFICULTIES OF ITS APPLICATION

We must first consider the economic crisis that occurred over the long, double post-war years. Added to that were the problems concerning building licences once the Plan Cort had been approved. The system for setting the height of buildings in the ordinances prior to the Plan Cort depended on the width of the street; so the widest streets could have taller buildings, while the narrower ones had fewer floors. When the Plan Cort was approved, many streets were subject to alignment reform, thus changing their width[11].

Fig. 2. An example of "Manzana Americana" (American block) extracted from Plan Cort (block between Paseo de Zorrilla, calle de la Hípica y calle de la Esperanza).

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The biggest obstacle was the procurement of licences for the plots of land that had to be set back when the Plan proposed an alignment reform. No method was clearly set out for managing this situation. The Ordinances of the Plan Cort[12] did not clearly state how to proceed, leaving the solution to a hypothetical agreement between Council and owner. If there were no agreement, there was no clear path set out to follow. Did the Council have to financially compensate owners for the loss of land through a document setting out the expropriation terms? Was the land needed for the street widening ceded to the Council without any compensation at all? When it was a question of only a few metres, there were no problems; but in most cases, the Council had to expropriate the land and, faced with a lack of economic resources, the result was the paralysis of the construction work. Valladolid City Council did not have a large enough budget to expropriate privately owned land for widening the streets. At that time, only State organisms, which had generous budgets, could carry out expropriations of land, in particular for building social housing.

LICENCES FROM 1939 AND 1940 ANALYSED

In fact, an analysis of the building licences for new housing, either individual houses or blocks of flats, in the year the Civil War ended (1939) and the year after that (1940), demonstrates that there was a paralysis in construction work in the city centre, in particular in the so-called 'interior zone'. Among the building licences given for major works in the two years in question, twenty were for individual houses, chalets, mainly in 'Pinar de Antequera' and 'Puente Duero', both areas under the jurisdiction of Valladolid City Council, but outside the sphere of the Plan Cort. There were 25 licences for the construction of small terraced houses, situated mainly in the outskirts lacking services, called 'molineras'; some were self-built, either partially or totally, and most had only one floor and a backyard. There were four licences for blocks of flats, all within the zone regulated by the Plan Cort. To be precise, three blocks of flats in the 'Paseo de Zorrilla' and one in 'Calle Gamazo', this latter in an area with no changes in alignment. At least one was from 1935 and was almost certainly held up by the Civil War[13]. Also worth noting is the expropriation papers of the land for the future construction of 1,126 social houses[14]. In conclusion, the building activity in the city centre, the so-called interior zone of the Plan Cort, stopped and was reduced in the outer areas, forcing the City Council to find a solution[15].

Proof that the City Council encountered difficulties and resistance on applying the new plan comes from the report requested by the Mayor and provided by Council's lawyer concerning whether the Plan Cort had been properly approved and if so, must therefore be adhered to. The lawyer's response is significant: "The new urban plan and its ordinances have been duly approved and are totally effective"[16]. However, this response did not satisfy the critics and the unease of the developers and owners, who were faced with the obligatory nature of the new alignments, forced the City Council to accept, in exceptional cases, the authorisation of every new building even though the current alignment orders were not being respected, as long as the owner agreed to the obligation, in the case of forced expropriation, to demand only the current value of the building, renouncing the value of the new building, which must be included in the Property Register. To do so, a document was drawn up entitled "Note for public deeds", which had to be signed by the owners who did not wish to respect the existing alignment[17].

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THE LACK OF REGULATIONS IN CITY PLANNING MANAGEMENT

As for the creation of new suburbs in areas of urban expansion, the problem once more lay in the serious economic crisis and the lack of financial and legal handling of the newly formed urban land. Thus, for the construction of the so-called 'American blocks', the way the Plan Cort proposed to manage them was through a single operation, which would bring together the entire block as a single piece. This, in turn, would involve one single owner, while setting unreachable financial conditions on the businessmen of that period[18].

THE PARALYSIS OF THE BUILDING WORK IN THE 'INTERIOR ZONE'

Faced with the paralysis in building activity in the city centre, the Director General of Architecture, Pedro Muguruza Otaño, was asked for his advice and to recommend solutions. His response was that the municipal technicians should formulate an alignment reform and that authorisation should be given for the technicians to interpret the general principles contained in the Plan Cort[19]. So the plan would in fact no longer be an obstacle for building activity, essentially passing the responsibility to the municipal technicians and their criteria. This is what, in the years that followed, led to the municipality's tolerance and relaxation in complying with city planning norms.

MANAGING CONSTRUCTION WORK AND THE REFORMS OF THE PLAN

Nevertheless, the main building activity in those years was led by the State through the promotion of social housing. In fact, the State, through its social housing estates managed by the National Housing Institute (INV), was paradoxically the first to violate the resolutions of the new Plan, with the occupation of green zones, the construction of new housing estates on rural land, or the alteration of street alignments fixed by the Plan. The process was gradually violated more and more over time. In this sense, the first, the estate of José Antonio Primo de Rivera (1946), did not respect part of the layout of the streets defined in the general plan, but maintained the principal axis marked out by the 'Reyes Católicos' street and the general structure. The second, the quarter of 'la Victoria' (1946), openly breaks with the Plan, occupying all the free space supposedly dedicated to a park, the 'Prado de San Sebastián', up to the banks of the Pisuerga River; as well as the zone destined for roads, the 'Paseo de Cigales'. In the third case, the Quarter 'José Antonio Girón' (1951), only one street of those proposed in the Plan Cort was respected, the 'Avenida de los Cerros', which linked the quarter to the city; while the layout of the other main street, the 'Ronda de las Contiendas', was modified. Also suppressed in this official housing estate were the parks of 'las Contiendas' and 'de Recreos', being occupied by semi-detached houses. The fourth case is that of the quarter of 'San Pedro Regalado' (1956), promoted by the Diocesan Housing Trust (Patronato Diocesano de la Vivien-

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da), an organisation that depended on the Bishopric of Valladolid. It was situated on rural land where building was not allowed. That is, agricultural space, reserved only for crops, where the construction of neighbourhoods was prohibited. Surprisingly, the State (accompanied by the ecclesiastical institution) would be the first to seriously violate the Plan.

HOW BUILDING HEIGHTS ARE REGULATED

The Plan Cort follows the rule of linking the width of the street with the height of the buildings and in essence distinguishes between two different zones, the interior zone (the so-called historic centre and some of the already existing suburbs), with the exceptions established in the Special Ordinance (mainly such areas as the Main Square, which have fixed façades and heights)[20]; and the expansion zone, where new urban areas are expected to be created. As a general rule, in the interior zone, the regulations concerning the heights of buildings is connected to the width of the street, by defect, the height of buildings being equal to the width or 1.5 times the width of the street (art. 56). Nevertheless, this turns out to be one of the most controversial elements, as the regulations are somewhat contradictory. This is because the maximum height is accepted to be 25 metres, which is the sum of the ground floor height (3.6 metres), plus the remaining floors, measuring 3 metres each. The result is a ground floor (4 m) + 7 upper floors (21 m) in streets with a width of over 16.6 m. (art. 58).

THE CONDITIONS REGULATING PATIOS IN THE PLAN CORT

In the interior zone, in buildings destined for housing, at least 20% of the plot must remain as free surface area, which is reduced to 15% in corner plots (art. 38). Also included is the requirement of a minimum of 20 m2 for the patios of the plot, with a width not inferior to 3m, when "living rooms or bedrooms" give onto them (art. 40). Toilets and bathrooms can be ventilated by "patio chimneys" whose surface area can be inferior to that of the plot's patios, but no minimum dimensions are stipulated. However, whatever their surface area, it is computed as patio surface area for the purpose of calculations concerning article 38.

It must be pointed out that, in the Plan Cort, both the building height and the conditions concerning the patios do not substantially modify what was already stipulated in the ordinances of 1886, the ordinances in force previously. The Plan follows tradition in managing the city; however, patios are now linked to questions of hygiene, which becomes part of the Plan's argumentation. There are long paragraphs concerning this question, such as the regulation of wells, rubbish collection or sanitation. The hygienic conditions of the housing are also regulated, for instance, the minimum size of bedrooms (art. 42) and lighting conditions are established, fixing a minimum size for windows[21].

One interesting example is the building of the 'Paseo de Zorrilla' nº 42, constructed in 1940, one of the first four blocks of flats built under the Plan Cort. This building is less than 100 metres from 'Campo Grande', the city's great park; the adjacent streets being the preferential

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site for the construction of housing for the industrial bourgeoisie in the 19th century. In the original project, the building consists of semi-basement, ground floor and five upper floors, approximately 20 metres high, with two flats on each floor, as well as in the semi-basement, a total of 14 flats. The most characteristic aspect is that the building has an interior patio of 3 x 15 metres (45 m2) and a plot patio of 295 m2, making up 45% of the total surface area, generously complying with the then current ordinances[22].

RESOLVING THE IMPASSE

In response to the discontent due to the Plan Cort, specifically concerning all the changes in alignment and their regulation in the ordinances, and with respect to the undeniable paralysis of construction activity, new ordinances were drawn up and approved that corrected and modified what had been established previously. The key to the success of these ordinances was to allow developers to increase the height of buildings, from two, three or four floors to seven, eight or more. This enabled developers to cede land free of charge in order to increase the width of the street, this being amply compensated for by the extra height. This managed to resolve the impasse, through great generosity it must be said, enabling investment in land and housing, while guaranteeing large profits. The Delegation of the College of Architects played an important role in the modification of building ordinances. In the document presented to the City Council, emphasis was placed on the technical improvement of the ordinances, without mentioning even once the economic crisis caused by the two wars[23]. This was as a reward for ceding land to set back the façade, thus avoiding expropriation; while allowing the owners greater leeway in the height and thus a greater number of flats to sell (art. 45). Five years later, in 1950, the Alignment Reform of the General Plan of Valladolid was approved. A more didactic and rational street hierarchy was established using a colour coding system: red for arterial roads, blue for secondary streets and green for ringroads. The regulation of the patios was also modified[24].

However, the solution found had a serious problem; the daylight patios. These, in fact, had to have a minimum width of 1/6 the height, no less than 3 metres. Thus, in buildings with Ground + 6 floors this minimum of 3 metres was sufficient, but higher buildings had to make the patios wider whenever another floor was added. Greater heights meant larger patios, which forced the builders to have more than 20% surface area in patios. On the other hand, it must be noted that buildings reached their maximum height at the façade; yet one or two attic floors were frequently built, set back, above the façade's cornice. Thus, buildings 30 metres high up to the cornice, in reality had two further floors, reaching 36 metres in the central line. Furthermore, terraces were often added to kitchens (giving onto interior patios, necessary and popular for hanging out washing and putting kitchen appliances and cupboards), which made the patio narrower. This tension between increasing the building height and obtaining greater profits came up against compliance with the standards regarding patios. It was precisely here that municipal tolerance appeared, opting in many cases to turn a blind eye to these "minor" questions.

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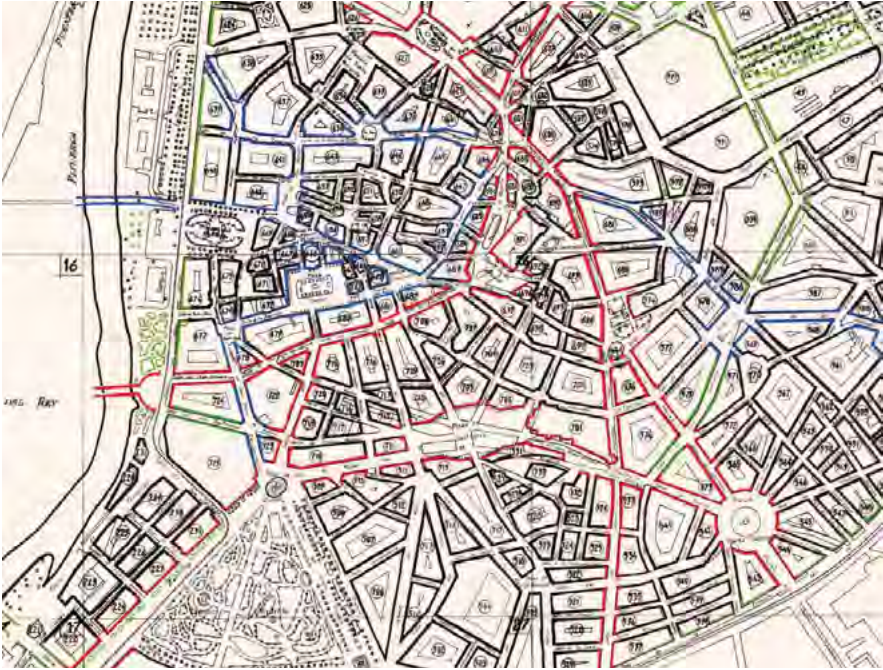
Fig. 3. Partial image of the Alignment Reform Plan of 1950.
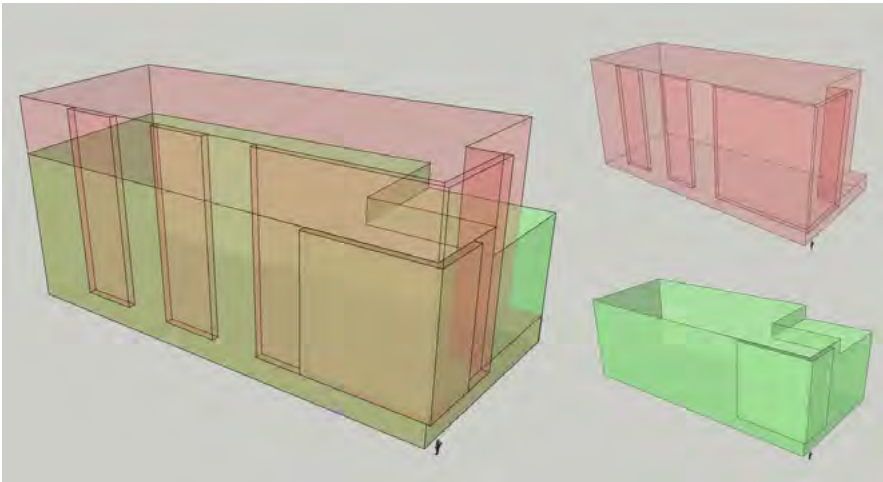
Fig. 4. Image of the building on the west corner of San Quirce with calle Imperial. In red the current building, in green the building according to the ordinances.

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THE CRITICAL POINT: CORNER BUILDINGS

It was with the corner buildings where the seams of the system were stretched. Analysing examples from the 1960s, it is clear that important irregularities did in fact occur in the concessions of licences. We have analysed the licences for several corner buildings around that time; the first being a project from 1963 on the corner of 'calle Imperial' with 'calle Esteban García Chico'[25]. It complies with the ordinances concerning height and patios, but the municipal architect's report points out that there are too many 'miradores' (balconies), despite which the licence is given[26] .

The second example is on the west corner of 'calle de San Quirce' with 'calle Imperial', whose licence was applied for in 1964[27]. These two streets have different widths. According to the regulations, the height should be with respect to the widest street (San Quirce) and, in the narrower (Imperial), the height could be extended up to a distance of 10 metres into the street, but from then on, the height had to be reduced in relation to the width of the narrower street (art. 62). However, surprisingly, they use a trick which is to set back the building in 'calle Imperial' from the first floor, thus creating a 'patio' in the façade on the upper floors, which supposedly permits them to respect the official alignment and, at the same time, build up the fiction of a wider street than in reality, thus maintaining the greater height of the wider street in the narrower one[28]. And the municipal architect's report says:

> "As for the distribution of the flats, it complies with the ordinances and tolerances allowed with respect to some articles of the same"[29] .

That is to say, he openly accepts, in an official document of the City Council of Valladolid that there are "tolerances" in compliance of the ordinances and this generates no reaction from Works Commission or the Permanent Commission. In fact, the Works Commission report is kept in the same file, with the stamp of the Permanent Commission, where both accept the setting back as valid, as well as the violation of the maximum height. The concession of the licence is agreed upon despite the warnings of the municipal architect concerning the illegalities and the so-called "tolerances"[30]. The building was finally constructed higher than the maximum permitted height, with 26 metres (Ground + 7 floors), while also violating the conditions of the patios and the distribution of the flats.

The third example, facing the previous one and built a year later, has a similar projection. On the east corner of 'San Quirce' and 'Imperial', a further floor is proposed (Ground + 8 floors), performing the same 'setting back' as the other building from the first floor 'calle Imperial'. The trick is repeated, except in this case with an extra floor, since the 'calle Imperial' now has opposite the building analysed previously, with a 'patio' on the façade, which means that, according to their way of understanding the concept "street width", this has grown by 3 metres. A detailed analysis of the streets 'Imperial' and 'Esteban García Chico' in the current situation of their surroundings shows us a panorama of up to 21 tall blocks of flats with ground plus 7 or 8 floors, all built between 1966 and 1975. Tolerance triumphed. The new business model won out.

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Fig. 5.

Fig. 6.   Photos of calle Angustias showing the alignment reform at two different times, in which the rupture of the new building at nº 7 and 9 is visible.

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A fourth example is that of 'calle Angustias' nº 7 and nº 9, on the corner of 'calle Fernando V'. The project has a building of Ground + Mezzanine + 9 floors with flats + Attic. According to the municipal architect's report, it does not comply with the height restrictions for 'calle Fernando V' and nor does it comply with the ordinances concerning the patios. Once more, the formula of tolerances is used to accept the granting of the licence[31]. In this case, the City Council forces a reduction in the height in the façade of 'calle Fernando V' and, following an appeal by the developer, the design of the patio in dispute is also corrected, but the construction of open terraces in the interior patios is accepted, thus reducing the width of at least one patio to under the 3 metre minimum, to be exact, to 2.55 m., when it should be 5.00 m. If they had followed the regulations for patios, it should have had 4 fewer floors. However, what is most important is that the building, as constructed, breaks with the urban scale through its height and its relation to several monuments, and this is not commented on by the municipal services. Fig. 5 and 6.

THE GRADUAL ADJUSTMENT OF THE PLAN THAT BECOMES CITY PLANNING 'A LA CARTE' FOR DEVELOPERS

The process of adapting the Plan to the city's economic reality occurs gradually. It is initially justified due to the paralysis in building activity, without citing the disastrous economic conditions of the post-war years; then the plan is adapted to the necessities of the companies and, finally, a sort of unjustified tolerance of the norms is established, since no justification is needed, no-one criticises anything, no criticism is admitted. There is no political opposition. What is to be done is decided by a small group of politicians, developers and architects[32].

The most interesting proposals of the Plan Cort were finally diluted through endless reforms. As for the creation of a system of parks and green zones, most of the designated areas were eventually built up, either through reforms to the Plan, or through the concession of licences with no explanation whatsoever. The development of the periphery did not happen, in particular where the low density 'American blocks' had been planned, following the developers whims. Over time, the Council's administration was honed, adapting the regulations to the demands of the developers. At the same time, public funding was focused on particular developments. Several estates of social housing were built in the 1960s using a new formula: 'officially protected housing', which was constructed through the INV, rather than directly by the State, taking advantage of private initiatives.

In 1968, a new General Plan was approved, which replaced the Plan Cort. However, the Municipal Ordinances of 1945 remained in force until democracy, and were replaced by the ordinances of the General Plan of 1984, which revealed the key value that this document had based on the interests of that small group that held the power of the Valladolid City Council in his hands.

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CONCLUSIONS

The transformation of the historic city of Valladolid was due to many causes; however, the exceptional conditions fostered by Franco's dictatorship had a decisive influence. First, a type of plan that had been, until that time, the formula used to regulate many of Spain's cities, was blamed for paralysing building activity, an unjust accusation that served as an excuse to forget all rationality and foresight in city planning; second, the dictatorship encouraged a total lack of legal control of the citizens over the Administration and this enabled the gradual transformation of city planning; third, the very ones who approved the Plan Cort were the ones who also violated it, favouring an intense transformation of the historic centre, whereby the abuses of a small but powerful group in the City Council could prolong the said abuses in time and thus worsening the effect.

When the economic development started at the end of the 1950s, and in particular in the 1960s, the institutional mechanism was already rotten and the web of economic interests is what controls city planning, with the systematic application of exceptions, tolerances and biased interpretations of the ordinances. The succession of general plans and their respective reforms are aimed at greater profit for the small group who control the resources of the City Council. There are no more references to planning theories, no criticism of the existing city, no references to other urban experiences in Spain or abroad. In fact, democracy, management, financing and leadership were lacking in the defence of planning objectives.

NOTES ON CONTRIBUTORS

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ENDNOTES

1. Including the execution by firing squad of the city mayor and several councillors, as well as mayors and councillors from numerous villages and small towns in the province, the civil governor and members of parliament. Jesús María Palomares: "La guerra civil en Valladolid. Datos sobre la represión en la ciudad". *Investigaciones Históricas 20*. Universidad de Valladolid, 2000. Page 252.

2. These were maintained after the Civil War ended. The repression, which was extremely intense in the first months following the coup, carried on in the prisons for several years after the war ended. Jesús María Palomares: *El primer franquismo en Valladolid*. UVA. Valladolid, 2002.

3. "For any post, preference was given to ex-combatants and those maimed fighting for the Nationalist cause". Palomares (2002), pages 15 & 29.

4. "At this juncture, the victors rounded up the defeated. Places were reserved as prizes for those who accumulated the most merits in the party (blue shirts & founders of the 'Jons')". Palomares (2002). Page 31.

5. María Antonia Virgili Blanquet: "El Plan Cort en el Valladolid de la postguerra" in the *Boletín del Seminario de Estudios de Arte y Arqueología*: *BSAA*, 1979, N.45, page 535.

6. Calderón Calderón, Basilio; Sainz Guerra, José Luis; Mata Pérez, Salvador: *La Cartografía de Valladolid* (Parte Tercera). Valladolid, 1931-1970. Ayuntamiento de Valladolid. Valladolid, 1986. Page 13.

7. A liberal monarchist councillor during the period 1931-35. He was in the Commissions of Public Works & Expansion. Ayuntamiento de Madrid: *Lista de Sres. Concejales. Comisiones y Dependencias*. Artes Gráficas Municipales. Madrid, 1931. Page 25. See also María Cristina García González: *Cesar Cort*. (2018). Pág. 503.

8. In a city traumatised by repression and the Civil War, César Cort drew up a document that, surprisingly, included the participation of the citizens through the local press. Naturally, those citizens who enjoyed freedom were able to exercise that right. José Luis García Cuesta: De la urgencia social al negocio inmobiliario. Promoción de viviendas y desarrollo urbano en Valladolid (1960-1992). Ayuntamiento de Valladolid. Universidad de Valladolid, Valladolid, 2000. Page 62.

9. Antonio Font & others: *Valladolid. Procesos y formas del crecimiento urbano*. Vol. I. Page 139.

10. Large built-up blocks on the outside with common use green areas in the centre of each block.

11. The Plan frequently only changed one side of the street, while the other remained the same. The problem that arose was this rule of the width controlling the height of new buildings. Another problem was that the unmodified side of the street, unaffected by the widening, had certain advantages over the buildings on the other side, where it was obligatory for them to be moved back, thus having to cede land voluntarily or through expropriation.

12. Articles 23, 24 and 25 describe the "act of reassessing alignments" to be done between the deputy mayor and the municipal architect, the landowner and his onwn architect. The plots that could be "expropriated" or were "appropriable" would be marked on a City Council map. If an agreement was reached, it must be ratified by the City Council: "without agreement being obligatory until validated by the City Council".

13. 881(1017-29). AMV.

14. "Anteproyecto de viviendas protegidas. Expediente relativo a la expropiación de terrenos en el Camino Viejo del Prado …". 15836-1. AMV. 740 houses would finally be built by the National Housing Institute (INV) inaugurated in 1946 and the quarter would receive the name of the Phalangist José Antonio Primo de Rivera.

15. In the years of 1934 and 1935, licenses were given for 183 terraced houses, 13 chalets and 24 licenses for multi-family residential buildings. Own elaboration based on AMV data.

16. Report by the lawyer of April 14th 1940. C22005-12. AMV.

17. Report by the lawyer of June 21st 1940 and its ratification by the Permanent Commission the same day. C22005-12. AMV.

18. "The American blocks that appear in the project must be built together, as a whole…". Art. 12 of the Municipal Ordinances of Valladolid, 1939. Throughout the validity of the Plan Cort and its respective reforms, covering over 29 years, the only plots of land developed for new neighborhoods in this way were those financed by the State or the Catholic Church, while private promoters did not create a single square meter of new urban land.

19. María Antonia Virgili. "El plan Cort en el Valladolid de la posguerra", Boletín del Seminario de Estudios de Arte y Arqueología, nº 45, 1979. Pages 536-537.

20. "Ordenanza VIII. Que trata de los parajes de arquitectura concertada" in particular articles 118, 119 and 120. Plan Cort.

21. Sainz Esteban, Alicia: "Transformation of the Historic Center and Urban Landscape of Valladolid (Spain) with the Internal Reform Plans in the Twentieth Century". 14th International Planning History Society (IPHS). I.T.U. Urban and Enviromental Planning and Research Center. Conference Proceedings Vol. 3. Istanbul, 2010. Pág. 157-173.

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22. Building licence in Paseo de Zorrilla 64, 66, 68, subsequently 56 and current 42. Exp. 29/1940. AMV.

23. The new ordinances also fixed the height of buildings with respect to the width of the street on which they were to be built, but with prodigality. For the streets of the "interior" (the historic centre), a maximum building height of 1.5 times the width of the street was fixed; while in expansion areas and newly created streets it was fixed at the same as the width of the street. The maximum height was also raised to 30 metres. Delegation of the College of Architects. Reform Project of the Municipal Building Ordinances. 1944. AMV.

24. The building ordinances of 1945 define a more complete, varied terminology for patios. Ventilation Patios, daylight Patios (patio de luces), plot Patios (patio de parcela).

25. Project for shops and 16 flats in calle Imperial nº 2. C01190. Exp. 19/1963. AMV.

26. "The surface area of balconies greatly surpasses the quarter part of the surface area of the façade set out in article 80 of the said ordinances". Report of the municipal architect. Exp. 19/1963. AMV.

27. Building for shops and 98 subsidised flats in calle San Quirce c/v calle Imperial. C01222. AMV.

28. According to the municipal architect's report, the project violated the restrictions in both streets: "The mean width in 'San Quirce' in the part where the projected building is in measures 13 metres". As the authorised height is 1.5 times the width of the street, the maximum height would be 19.5 metres. In the case of 'calle Imperial', setting back the building is not the solution, according to his judgement: "With the proposed setting back (in 'calle Imperial'), a width of 12.0 m is reached, corresponding to a maximum height of 18 m. The projected building at the façade has a height of 26.0 m". The report also warns of the non-compliance with the conditions of the patios. In other words, not even this 'trick' of setting back the buildings allows greater height. Municipal Architect's Report to the Mayor dated 1st December 1964. C01222- 013A41C. AMV.

29. Ibidem.

30. It is not the only licence or the only document which mentions "tolerances" in applying the norms. See for instance the following files, among others: Exp. 5/1964, Exp. 201/1969 of the AMV.

31. "The building complies with the Municipal Ordinances and custom tolerances with respect to some articles". Municipal Architect's Report 16-9-1968. Exp. 201/1969.

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IMAGE SOURCES

Fig. 1   Urbanización de Valladolid. Plano General del Ensanche y Reforma Interior. Known as Plan Cort. AMV. [https://www10.ava.es/cartografia/planos_historicos.html]

Fig. 2   Urbanización de Valladolid. Plano General del Ensanche y Reforma Interior. Known as Plan Cort. AMV. [https://www10.ava.es/cartografia/planos_historicos.html]

Fig. 3   Reforma de Alineaciones al Plano General de Valladolid. AMV. [https://www10.ava.es/cartografia/planos_historicos.html]

Fig. 4   Drew by ASE.

Fig. 5   Valladolid. Fotos Antiguas.

Fig. 6   Photo JLSG.

Planning Systems II

Chair: Alessandro Frigerio

Garden City or Dense Metropolis?
Codification and Canonisation of City Components in Early Town Planning Manuals

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Abstract

Since the 'modern' European city grew extensively in the nineteenth century and suffered over-crowding and congestion, the question of density and its impact on the people's health and safety became one of the central issues in the arising town planning discourse around 1900. Various models to remedy the current situation were discussed, ranging from founding new, sparsely populated (industrial) towns on the countryside to hygienic restructurings or well-regulated extensions of existing dense cities. While only few counterexamples could be realised during the formative years of town planning, the whole spectrum was presented in the emerging professional literature. In contrast to Continental European approaches, low density solutions were preferred in Great Britain, and particularly handbooks addressed to municipal administrations regarded the limitation of dwelling-houses per acre as key tool. However, designing town planners went a step further in their manuals and introduced elementary urban components, such as housing units, street systems as well as public squares and parks. By describing their characteristics and spacing in detail, these authors created a hierarchy of urban density which allowed them to codify their underlying ideal city concepts. Forming a crucial part within their books, these recurring planning models and components in the long term implied a specific terminology and imagery, which finally led to their canonic compilation. This paper focuses on early British town planning manuals. First of all, it analyses how the different authors approached density in their writings and where present inquires their inherent ideal city conception. It then examines the applied text and image strategies as well as recurring compilation patterns in order to retrace, to what extend these codified elements implicated the canonisation of a seminal town planning knowledge. The paper finally discusses the impact the controversy of the Garden City versus the transformed metropolis had on the formation process of town planning as discipline and profession in Great Britain, as mirrored in these early manuals.

Helene Bihlmaier
Garden City or Dense Metropolis?

Critiquing Planning Principles
The Case of La Défense Business District

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Abstract

In this paper, I propose to explore the question of the legacy of modern urbanism, using the case of the La Défense business district in the western suburbs of Paris as a starting point. Criticized from the outset and still today for having opted for a functionalist urbanism, the La Défense operation is even said to be the "archetypal expression" of this. However, my paper shows that this judgment of the business district's urban planning is based on haphazard or caricatured historical and urban diagnoses. As a result, criticism of La Défense cannot be seen as a direct criticism of "functionalism" or modern urbanism. We propose a necessary "historical adjustment" at a time when contemporary planning for the site is asserting its opposition to the planning methods that gave rise to the district in the first place. In the first part, I show that the business district project as a whole cannot be summed up in either modernism or functionalism. The architectural composition of the business district, its scope (geographical area, architectural form, human and financial resources) and its programming (balance between housing, offices and shops, and transport facilities) are also largely influenced by classical urban planning principles, some of which are in direct opposition to functionalist doctrine. In the second part, I compare the criticisms leveled by the press and users with the concrete historical events seen in the first part, in order to assess their relevance. It then becomes clear that criticism of La Défense's atmosphere, governance, mineral quality and commercial offer is not all attributable to the original La Défense project, but to a wide variety of reasons (budgetary, power struggles, aesthetic choices, etc.). Thirdly, I show that the current projects, by taking a stand "against" the "modernist" urban planner of La Défense, are in fact taking a stand against a vague and confused image of the history of post-war urban planning.

Milano and the role of parks in shaping its recent urban development

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Abstract

In the last decades, Milano has reinvented itself from industrial city to advanced tertiary global capital, more attentive to sustainable development, with a progressive change in the role and nature of planning tools and a controversial redefinition of the balance between public and private sectors in determining urban development through regeneration projects. Parks have a crucial role in this process, and landscape design has increased its importance in urban transformation projects, on the edge between fashionable greenification and the progressive affirmation of an ecological approach that interprets the landscape as a primary and structuring element of the urban and metropolitan sustainable development. A decisive milestone in this planning history, the project "Nine Parks for Milano", envisaged in 1995 the launch of a broad strategy to restructure the city shape, starting from the configuration of nine urban parks. Moving from a historical overview on park-making in the city, the paper investigates some of the projects that were directly or indirectly generated by the "Nine Parks" vision, discussing planning tools, negotiation processes, design actions, and effective results, reflecting on the combined role of urban and landscape design and planning in shaping more sustainable and resilient metropolitan systems.

INTRODUCTION

Cities are the primary research territory in which to act, as urban designers and planners, to experiment with forms of rebalancing the relationship between urbanisation and natural resources. According to data reported by the United Nations in support of the 2030 Agenda for Sustainable Development, today more than half of the world's population (which will be two-thirds by 2050) lives in urban settlements that occupy only 3% of the Earth's surface but are responsible for 75% of carbon emissions, significantly contributing to climate change and putting the planet's ecological balance at risk.

Urban parks originated at the end of the 18th century and the beginning of the 19th century as a space for environmental and social rebalancing, where one could find refuge from an overly congested urban space. This challenge soon became an urban planning issue, particularly in the Anglo-Saxon world, as evidenced in the work of Frederick Olmsted. The reflections of the Modern Movement attempted to radically alter the relationship between open and built spaces but planning logics have mostly remained tied to a rational-comprehensive quantitative urban planning approach, linking the presence of green spaces to surface area standards to be guaranteed. If urban parks are considered as part of the environmental resource system that ensures urban quality of life (if not its survival), and thus a common good, the core issue remains the balance of power between private and public actors in producing the city.

In the 1980s, Western Europe experienced a significant transition from an industrial economy to an advanced service economy, freeing up large spaces previously occupied by industries in urban areas that were once peripheral but then engulfed by urban expansion. This process represented a great opportunity for many cities to equip themselves with urban parks that alleviated the settlement pressure on these expanding areas, experimenting with both new forms of 'park' as a varied and complex social space with ecological value, and new forms of negotiation between public and private stakeholders to make the creation of these green areas possible while containing real estate appetites.

In this sense, Milano, which since it began expanding beyond its historic walls has seen the frequent predominance of private interests in construction over public investments, can be considered an interesting case study to examine how that transitional period of the 1980s and 90s was managed, what the outcomes were, and what possible lessons can be drawn for the present and future, also considering the rising worries about climate change effects and the spread of a 'greenification' wave that risks to banalize the role of urban design and planning.

GREY TO GREEN MILANO:
A BRIEF HISTORY OF THE PREMISES FOR A TRANSITION

Milano has grown and evolved over the centuries thanks to its unique geographical position, straddling the dry and wet plains and along the axis connecting central Italy, the Po Valley, and Central Europe. This strategic location fostered its development as a city-territory linked

to agricultural activities until the industrial revolution, when its rich network of waterways fuelled the industrial development that, during the 20th century, made Milano one of the most important industrial hubs in Italy and Europe[1]. Between 1870 and 1970, Milano's population surged from about 200,000 to approximately 1.7 million, a dramatic increase that, especially in the second after-war period, led to rapid urbanization dynamics. Despite some interesting experiments in urban design, this process generally resulted in poor-quality developments, lacking in consideration for public space and environmental systems[2].

In the 1980s, when the challenge of managing significant industrial dismissions arose, the city was celebrating itself as a place of prosperity, fashion, and high life, despite social tensions and poor environmental quality also marked the era. The "Milano da Bere"[3] of those years, as depicted in films of the time, was actually a city in shades of grey, suffocated by traffic and pollution. As the demographic curve reversed, with people fleeing to the suburbs, the inefficacy of existing planning tools led, as in other European countries, to the alternative practice of "special projects"[4], even if with limited effectiveness, as they merely expressed broad intentions without specific proposals for the physical transformation of places[5].

The progressive urban deregulation of the 1980s, instead of fostering renewal, reinforced covert practices that enabled private real estate profits at the expense of collective urban well-being, resulting in fragmented and often incoherent urbanization. A major political and judicial scandal in the early 1990s revealed pervasive corruption within urbanization dynamics, spreading general distrust about the city's future and necessitating the redefinition of planning scenarios, tools, and procedures. During this period, continuing with a "city by projects" approach, the groundwork was laid for a radical transformation of the city's reputation and image, later culminating in the 2015 Expo. The symbolic document of this ambition to reinvent itself was the strategic planning document "Rebuilding Greater Milano" presented in 2000[6], that tied the post-industrial city's development to its international role as a global city of creativity and advanced tertiary services. The spatialization of this vision reaffirmed some historical axes of urban development, confirming the necessity and opportunity to transform disused industrial areas, favouring special area projects where transformation terms could be directly negotiated with investors. The political objective was to introduce flexibility and subsidiarity in the planning process, reduce decision-making times, and involve external actors in the choices, aiming for greater transparency to limit corruption opportunities[7]. This phase in Milano's history, albeit not entirely linear and coherent, marks the beginning of the city's transition from grey to green.

THE ROOTS OF GREEN MILANO
AND THE ROLE OF THE "NINE PARKS FOR MILANO" PROJECT

Given that Milano was founded on the control of water systems and the exploitation of land for agricultural purposes, the city has always considered its open spaces as productive areas. Within the city, the waterways were canals and ports, while the green spaces within the historic core consisted of a few gardens of noble palaces and, between the Roman and Spanish walls, of fields and orchards tended by monasteries. It is precisely from some of these monas-

tic gardens that Milano's first public park, the Porta Venezia Gardens, originated. Designed in its initial form by Giuseppe Piermarini at the end of the 18th century, these gardens, along with the tree-lined walks on the city walls, formed a significant landscape structure, connecting public space and nature and kicking off the peculiar milanese urban landscape history[8].

The Beruto Plan[9] at the end of the 19th century marked the beginning of imagining a structure of tree-lined avenues and squares, along with some neighbourhood parks, as elements to balance the building pressure. Results were limited as building interests were often winning on public space designation. Fortunately, this was not the case for the city's second most important park, Parco Sempione, designed by Alemagna on the site of the former parade ground, after several proposals discussed at the municipal level to exploit the area for building purposes. The Beruto Plan also influenced the creation of Parco Ravizza (1905) and Parco Solari (1935) and, following the same logic, subsequent urban plans preserved Giardino della Guastalla from development (1939) and established the first outskirts' park, Parco Lambro (1936), aiming to create a new relationship between the city and one of its natural rivers. In the post-war period, Parco Montestella (1960) was created, an idea by Piero Bottoni to transform the accumulation of debris from wartime bombings into the dream of a mountain for Milano. It also became a special nature oasis completing the green open spaces of the experimental QT8 district, which tested new settlement forms for the city's expansion related to the massive urbanization triggered by the industrial development.

To curb the urban sprawl during this period of significant expansion, the 1970s and 1980s saw the initiation of processes to create Parco Forlanini (1970), Parco di Trenno (1971), Parco delle Cave (1973), Bosco in Città (1974), Parco Nord (1983), and Parco Agricolo Sud (1990). These large metropolitan belt parks established buffer zones dedicated to nature to limit land consumption at the interface between Milano and its sprawling metropolitan area. It is within this historical context, where real estate pressure was intense, urban planning tools were weak, the city was governed through special projects and public-private negotiations, and attention to public interests was scarce, yet there was an awareness of the need to act to contain rapid environmental degradation, that an extremely interesting and relevant project for the future of the city emerged: the strategic project "Nine Parks for Milano"[10].

Developed in 1995 on behalf of the Municipality of Milano by the Urban Design Laboratory, with the concept by architects Pierluigi Nicolin, Raffaello Cecchi, Vincenza Lima, and Pippo Traversi, this project began with the call to outline a program for the urban reorganization of some disused industrial areas and, more generally, the city as a whole. The key idea of the project was to set each of the urban transformations included in the strategy around a large central space to be designated as a park. In this perspective, the project thus envisaged the start of a broad strategy to restructure the shape of the city, starting with the configuration of nine urban parks and three promenades, with the aim of weakening the radiocentric monocentricity of Milano to open it up to a metropolitan dimension that symbolically reversed the logic of polarization by placing public open spaces at the core of new urban centralities. These spaces were envisioned as predominantly natural and with a well-defined and recognizable geometric shape, capable of becoming a reference point for a new urban mental map even in the fragmented and heterogeneous contexts of more recent disordered urbanization, within which they were proposed as structural elements of reorganization and recomposition[11].

Fig. 1. The Nine Parks for Milano Strategic Plan (1995)

In a historical moment of great debate on the salvific role of strategic planning compared to traditional regulatory urbanism, the project of the Nine Parks for Milano (9PM) proposed itself as a strategic tool endowed with the peculiarity of being articulated into specific, spatially determined interventions which then as a whole draw a comprehensive strategy of urban transformation. This specificity, highlighted by Luigi Mazza, unfolds into three specific characteristics that are complementary and integrated with each other, namely the provision of a design that is: defined and comprehensive; flexible; and long-term[12]. Moreover, the strategy supported the trend of public- private negotiated urban transformation by placing the public interest at the centre in an unprecedented way.

The morphological proposals for the urban design of the different areas included in the strategic plan had no prescriptive value, but served a prefigurative purpose, useful for establishing dynamic and negotiable scenarios based on the permanence of the spatial layout and the criteria for designing the public space[13]. This approach was similar to what was being experimented, as Marinoni points out[14], in the "coordinated urban projects" being tested in Europe at that time, such as the Olympic Village in Barcelona, the Bercy Park in Paris, and the Borneo Sporenburg in Amsterdam. The project was to be undertaken by a coordinating architect. In Milano, besides the designers who had conceived the overall plan, O.M. Ungers, R. Koolhaas, J. Navarro Baldeweg, A. Siza, and M. Solà-Morales were initially involved to fulfil this role[15].
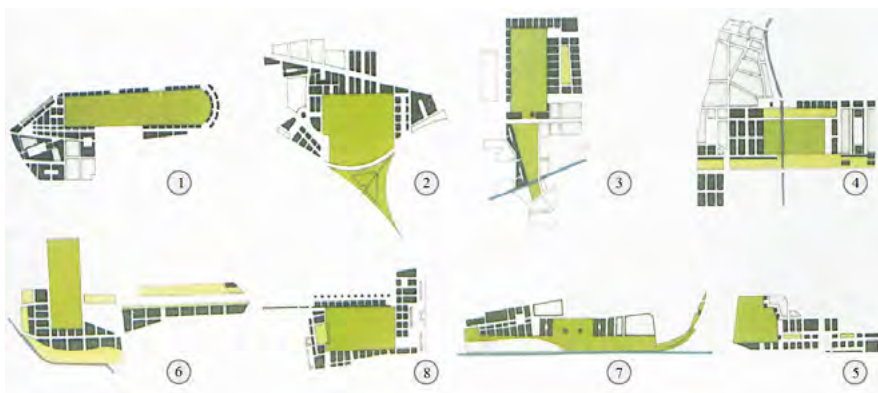
Fig. 2. Spatial layouts for eight of the nine parks: 1. Parco dell'Ippodromo; 2. Parco Certosa; 3. Parco della Martesana; 4. Parco dell'Acquabella; 5. Parco Liberty; 6. Parco Beruto; 7. Parco San Cristoforo; 8. Parco delle Rogge.

THE NINE PARKS: WHAT HAPPENED TO THEM?

Despite having the characteristics to be a strategic plan that could be adopted as a true guiding tool and having been later cited in the strategic document "Rebuilding the Greater Milano" in 2000, the 9PM never properly became an urban planning tool. However, as often happens with urban visions, it remained in the city's imagination and initially guided some of its contemporary urban transformations, supported by a national program for special urban redevelopment projects (PRU), and influenced many others (PII), although with not entirely convincing outcomes and without achieving the systemic urban effect envisioned at the beginning. A brief survey of what happened to the nine parks can be helpful in making some assessments[16].

PARCO DELL'IPPODROMO

The initial 9PM's proposal envisioned to overcome the barrier created by the large fenced area of the gallop racetrack, built at the end of the 19th century on the outskirts of the city and now incorporated into the urban fabric, while maintaining the track and form of the sports facility as a structural morphological element of a new park, surrounded by mixed-use buildings. The area today still retains its sports function, and the transformation project never had any development, although significant transformation projects are underway in the immediate vicinity for the Trot area and the San Siro Stadium. The former is the subject of an intervention with intentions like those of the Parco dell'Ippodromo project, applied to the Trot racetrack area, that was closed in 2015. The San Siro area, on the other hand, has been at the centre of public debate for some years, concerning the possible demolition (recently banned) or reconfiguration of the stadium, one of the most important symbols of Italian and international football, seeking new forms of interaction with the city and enhancement of the adjacent public spaces. Such a strategic context, however, remains without a clear unified vision.

PARCO CERTOSA

The Parco Certosa area, located northwest of Milano, was occupied for several decades by the Finalube oil depots, which created a physical and psychological separation between the working-class neighbourhood of Quarto Oggiaro and the city centre. The 9PM's project envisioned the redevelopment of the area through the construction of active edges to give a regular and recognizable shape to the new park. Despite the presence of significant barriers around it, the project aimed to enhance the connection with the local railway station through a tall public building, serving as a pivot for the public spaces at its base, and good permeability to urban systems to the north, symbolically and physically reconnecting Quarto Oggiaro to the city, and to the southeast, in anticipation of the regeneration of the Bovisa university area. The strategic position along the city's north-west development axis made Parco Certosa one of the first of the nine parks to be effectively realized. The PRU Fina Palizzi, was approved in 1997 and embraced the general approach of the 9PM strategy, with a large park area surrounded by building developments. However, the final project abandoned the role of reconnecting different parts of the city. These principles seem intentionally contradicted by the realized project[17], with a deliberate distancing from the adjacent working-class neighbourhoods and a poor and ineffective system of urban relationships. The area, which has seen slow development and the abandonment of some potentially driving public functions, is now a tangle of barriers and fences that deny the large park (the second-largest fenced park in the city) and the new neighbourhood the possibility of being an effective multifunctional centrality for this urban sector.

PARCO DELLA MARTESANA

Parco della Martesana was envisioned by 9PM as an opportunity to rethink the area of the large Magneti Marelli factory, a landmark of its neighbourhood since 1917 and at that time disused, as a new central organizing element for the surrounding fragmented and dispersed city fabric, also capable of connecting with the historical axis of the Martesana water canal. The effective project, changing its name in Parco Adriano, was limited to the northern part, foregoing the connection with the Martesana, and has been developed starting from 2006, the year of approval of the two Integrated Intervention Programs (PII) on a masterplan designed by Caputo. This was drafted from a scheme that denies the premise of the previous strategic project to give a complete and recognizable form to the park, now surrounded by towers and semi-courtyard buildings that fail to build a coherent and active edge system. The development of the new neighbourhood is proceeding slowly, both in terms of residential buildings and public facilities/mobility. The park, partially inaugurated in 2014 and enlarged in 2021, appears more as a large peripheral park rather than an urban park capable of establishing centrality for the neighbourhood, although it is appropriate to wait for the completion of the new developments to make further evaluations.

PARCO DELL'ACQUABELLA

Parco dell'Acquabella, now partially realised as Parco della Lambretta, was envisioned as a catalyst for the regeneration of another large disused industrial area, the Maserati Innocenti factory, straddling the eastern ring road and the Lambro River. The 9PM project, proposing the undergrounding of the stretch of motorway that cuts across the area, envisioned a dense residential settlement to the west, in continuity with the historic neighbourhood of Lambrate, and the retention of two large industrial buildings to be converted to major attractive functions to the east, with the new large park acting as a hinge. The project, initiated thanks to a PRU approved in 1997, has only been realised in its western part, with a commercial square and a dense residential fabric organised along a public axis that leads eastwards to the completed section of the park, which passes under the elevated ring road, attempting a poetic dialogue with the infrastructural landscape. The completion has been hindered over time by the difficulty in identifying the major urban function to be established in the former industrial warehouses to the east, a situation recently resolved with a competition for the construction of the laboratories for the Teatro alla Scala, which also includes the completion of the park with an ecological water management function, in synergy with the Lambro River. This is an additional piece that it is hoped will help to revive the role of urban and metropolitan reconnection, which has so far not been achieved.

PARCO LIBERTY

The location of Parco Liberty is particularly significant at the time in which the 9PM project takes shape because it corresponds to the disused and strategically important Porta Vittoria railway yard, where the underground railway line that was under development begins its passage through the city. The 9PM strategic vision is ambitious and aims to bury a section of the urban ring road to make the new park an extension of the historic Parco di Largo Marinai d'Italia. Abandoning the road burial and focusing solely on the railway yard, the PII Porta Vittoria was presented in 2000, with a masterplan by Vittorio Gregotti, later taken over by Studio Nonis with the supervision of Rafael Moneo. The project also included the European Library of Information and Culture (BEIC) as a driving public function of the new centrality, with a project awarded through an international competition won by Bolles+Wilson. Although the initial premises were promising, the project soon fell victim to delays, economic and judicial difficulties, and political decisions that led to the cancellation of the BEIC project, replaced by an urban park called Parco 8 Marzo, which partly returns to the original vision. The library project, relaunched through another competition in 2022 on an area further east, contiguous with the park and in a potentially connecting position with the ongoing project for the redevelopment of the former slaughterhouse area, testifies to the long-term vision of the 9PM, despite difficulties and partial interpretations.

PARCO BERUTO

Parco Beruto was envisioned as a project capable of integrating the historic Parco Ravizza with the areas of the Om industrial plants and the Porta Romana railway yard, both to be transformed to become the most important centrality of the southern district of the city. Once

again abandoning the ambitions of burying road and railway infrastructure, the project saw the design of an initial section through the PRU Pompeo Leoni (1998), which completely overturned the 9PM concept, abandoning the idea of a large central park in continuity with Parco Ravizza and organizing all volumes along an east-west axis that separates two green areas of different character: the Parco delle Memorie Industriali to the north (still awaiting connection via an underpass with Parco Ravizza) and Parco della Vettabbia, enhancing an existing historic canal. Except for the northern connecting park, the intervention is complete, and the dismal poverty of public spaces and the urban relations system makes this place far from what was envisioned by the 9PM. More recently, the process for rethinking the Porta Romana railway yard has also been initiated, as part of a major urban regeneration project for the railway infrastructure areas, with far more significant ambitions in terms of representativeness and urban role.

PARCO SAN CRISTOFORO

The area proposed by 9PM for Parco San Cristoforo included a linear system stretching from the location of Porta Genova Station, which is still under discussion for decommissioning, extending along the axis of the Naviglio Grande. The aim was to replace the existing industrial fabric with a linear park that would enhance the historic presence of the canal and order the expected practices of urban regeneration. The project never materialised, and the area has transformed through a disordered process of various small-scale redevelopment interventions. The area of the station and Porta Genova railway yard has been subject to new architectural prefigurations during the public debate on the future of the railway yards, as has the area of the San Cristoforo Yard, further west. In this area, a large linear park will be created, envisioned as a metropolitan ecological water management device, but without any building interventions or supporting urban functions.

PARCO DELLE ROGGE

The last parade ground in the city, to the west of Milano, is still a vast green space with a regular shape that, due to its military connotation, has resisted speculative pressure. This reserve of open space and nature is still a topic of discussion regarding its future, with a conviction that it should retain much of its qualities as an urban oasis. In the 9PM project, the intervention area was envisioned as a large, regular park characterized by water, with construction limited to the edges, continuing the European and Milanese tradition (such as Parco Sempione) of transforming parade grounds into large urban parks capable of revitalising and redeveloping the peripheral areas in which they are located. After decades of waiting for the availability of the area, the project has recently returned to the spotlight, with new design investigations suggesting its imminent realisation according to principles similar to the original 9PM intentions.

Nine Parks for Milan	Planning Tools			Masterplan				Park			
original name	type and name	approval (year)	developer	planner/designer	UT index[1] (sqm/sqm)	current name	landscaper	opening year	proposed surface by 9PM (sqm)	current surface (sqm)	current % of the masterplan area
1 Parco dell'Ippodromo	unrealized and no plans to	--------	--------	--------	--------	--------	--------	--------	250.678	--------	--------
2 Parco Certosa	PRU - Palizzi	1996	Euromilano spa	A. Balzani, A. Barbieri, D.Catrambone e A. Secchi	0,29	Parco Franco Verga	Diana Armstrong Bell	2007// 2013	315.536	198.600	44%
3 Parco della Marcesana	PII - Adriano Marelli	2006	Aedes srl e Gefim srl	Caputo Partnership, V.Benati	0,75	Giardino Franca Rame	Franco Giorgetta	2014	65.402		21%
	PII - Adriano Cascina San	2006	Gruppo Pasini	Caputo Partnership	0,19	Parco Sandra Mondaini e Raimondo Vianello	Franco Giorgetta	2021/ u.c.	251.202	88.797	53%
4 Parco dell'Acquabella	PRU - Rubattino	1996	Rubattino 87 srl	A. Gritloni, A. Gallo, L. Imboui, Alpina Spa, Andion Kipar	0,59	Parco della Lambretta[2]	Guido Ferrara Associati, Studio Land	2004	165.200	110.000	22%
5 Parco Liberty	PII - Porta Vittoria	2002	IPL Elsa srl Metropolis	Vittorio Gregotti, Inter Studio Nonis with Rafael Moneo	0,52	Parco 8 Marzo	Laura Gatti	2023	103.317 [including Parco Formentano]	28.000 [+72.300 Parco Formentano]	20%
6 Parco Berno	PRU - ex Om-Pompeo Leoni	1997	Società P.A.LEO. NEODIMORA, Cooperativa edilizia FIDUCIA, Esselunga, Eurogeulij	Ufficio tecnico Sergroup (with V.Benati, L.Imberti, A.Secchi)	0,58	Parco delle Memorie Industriali e Parco della Cultura	Cristophe Giroit, Studio Land	2004/ u. c.	186.697 [including Parco Ravizza]	70.400 [+ 62.900 Parco Ravizza]	27%
7 Parco San Cristoforo	PII - Zona Speciale San Cristoforo	ongoing	Hines-Prelios-UniCredit	OMA, Laboratorio Permanente[3]	0[4]	to be defined	to be defined	•	143.693	140.199	100%
8 Parco delle Rogge	t.b.d. - Piazza d'Armi	ongoing	Invimit Spa	Leopoldo Freyrie[5]	0,7	to be defined	to be defined	-	162.724	270.000	50%
9 Parco Sempione	t.b.d. - Cadorna	ongoing	Cestra Italy	Arodie, Cestra, Land, Mic-Hub, Stefano Boeri Architetti	t.b.d.	to be defined	to be defined	-	432.606 [including Parco Sempione]	-	-

1 UT index refers to the ratio between the total masterplan area and the buildable surface.
2 The park is under expansion. The surface is the one of the completed park.
3 Authors of the winning competition proposal.
4 All the buildable surface has been moved to the Farini Railway Yard area as part of an integrated project.
5 Author of a first prefiguration. The process is still ongoing (2024).

Table 1. Information and data about the nine parks, comparing proposals and effective realizations. Elaboration of the author on multiple sources cited in the bibliography.

PARCO SEMPIONE

Parco Sempione, as previously mentioned, is the main historic park of the city, home to cultural institutions and a beloved landscape for the Milanese. The vision proposed by the 9PM plan envisaged extending the pedestrian area of the park to cover the railway tracks of Cadorna Station, with an intervention that would complete the western edge of the park with a system of public buildings dedicated to an international cultural centre in dialogue with the Triennale. The idea referred to the role of the park not only as a green area but as a cultural forum for the city, echoing the 19th-century plans for the Foro Bonaparte. The project was never realised, although the debate about covering the railway tracks has occasionally resurfaced. In 2023, a concrete development scenario for the project was announced. According to the initial information, the park's extension will be accompanied by the construction of residential and tertiary buildings, abandoning the predominantly public vocation of the original proposal.

To complete the vision of the 9PM, some of the parks were integrated with each other and with the existing urban system through three promenades. These promenades were intended to establish connections that would combine mobility themes and landscape quality in fostering a polycentric network of connections. None of these promenades have materialised as envisioned.

THE NINE PARKS THIRTY YEARS ON: AN ASSESSMENT

Approximately thirty years after the project's presentation, it is possible to make some evaluations regarding the significance and legacy of this initiative for the city's development. Out of about 150 hectares of parks planned in the strategy[18], around 50 hectares have been realised so far. Although comparison with some contemporary European experiences may seem discouraging (the Parc de la Villette in Paris alone, cited by 9PM as a prototype for the role of the contemporary park in transforming the city[19], spans 55 hectares), the 9PM project effectively established a model for organising special urban transformation projects around a park. The 2000 planning document "Rebuilding Greater Milano" incorporated a regulation allowing the use of special planning tools (PII) to activate a negotiation and evaluation procedure for urban projects, starting from a basic building index of 0.65 sqm/sqm and allocating 50% of the area for public spaces including a park, to be ceded to the community. This approach characterised major subsequent urban transformation projects, not envisaged by the 9PM strategy, such as the PII Portello (2001), PII Santa Giulia (2002), PII Garibaldi Repubblica (2003), PII CityLife (2005), PII Calchi Taeggi, and PII Cascina Merlata (2009). In the last twenty years, following these initiatives, more than ten new parks have been inaugurated in Milano, contributing, along with the urban regeneration and construction boom and anti-pollution policies, to renewing the city's image. Milano has shifted from grey tones to greener hues, although with some critical issues and without developing a holistic city design idea, confirming the trend of episodic and project-based city development[20].

Regarding the projects inspired by the 9PM suggestions, several key discussion points can be highlighted, which are useful for addressing the city's contemporary challenges. The idea

of developing new centralities through these projects has failed for several reasons. Milano has always struggled historically and politically to conceive itself as polycentric, remaining anchored to a Duomo-centric mindset. This has also affected the difficulty in finding or confirming significant public functions to drive the transformations of the eight 9PM's non-central areas, a challenge often compounded by the public administration's weak negotiating position, leading to complete reliance on private developers. Consequently, the economic viability of the interventions has been defined by private interests rather than public ones, reduced to mere compliance with urban planning parameters and the minimum green area requirements. The functional scheme juxtaposing residences – park – supermarket, aggregated according to very basic urban design principles, self-referential to the convenience of new private constructions, and with modest public space design, has resulted in outcomes far removed from the 9PM proposals and the selected European park projects cited there as references[21]. The actual projects, by more or less consistently overturning the 9PM prefiguration schemes, stripping the park of its recognisability and treating its edges in a way that did not define any urban relationship, have made them places primarily useful for views from the balconies of the residences and local uses, almost limited to the residents of the new housing. Despite the likely good intentions of the designers, the negotiation forms and methods between public and private were certainly critical, unsupported by clear guidelines regarding space quality and district plans managing the integration of new projects with the surroundings. In later cases in the 2000s this aspect improved, especially for parks located in more (and already) strategic areas.

The prolonged realisation times have also contributed to the described failure. Environmental remediation due to previous industrial use, completion of infrastructural works in some cases, and difficulty in identifying or financing supporting public functions, have meant that project completion processes were extremely protracted. During this extension, the areas delivered later (or not completed at all) were often the public ones, including parks. This overturned one of the 9PM principles, which envisaged each park as foundational and driving subsequent operations[22]. Again, this points to ineffective negotiation, better managed in later cases[23].

Finally ,the public space and parks design itself suffer from a peculiar Italian delay in considering the role of landscape design, lacking an integrated ecological vision of the relationship between built and unbuilt environments [24] , without indications on soil permeability, sustainable mobility traffic management, or the protection and promotion of ecosystem services linked to natural resources. The architectural and urban character of the 9PM prefigurations was misinterpreted, consolidating the practice of allocating a self-referential park plot for which a landscape professional (often foreign, given the low relevance of the discipline in Italy at the time) was consulted. A multidisciplinary vision including landscape aspects could have more effectively combined urban and ecological-environmental needs, ensuring both attractiveness and urban quality values and the continuity of natural systems. Only later, with the gradual spread of widespread awareness and the related economic return on investing in nature in the city, have Milano's urban transformation projects begun to consider the socio-ecological systemic role of parks. This attention has also made its way into urban planning tools, despite the limits of ineffective metropolitan-scale planning.

Fig. 3. Milano in 2024 with overlapped the shape of the 9PM parks (dashed outlines) and highlighted the correspondent existing/realized parks (green shapes): 1. Parco dell'Ippodromo; 2. Parco Certosa; 3. Parco della Martesana/Parco Mondaini Vianello e Giardino Rame; 4. Parco dell'Acquabella/Parco della Lambretta; 5. Parco Liberty/Parco 8 Marzo; 6. Parco Beruto/Parco delle Memorie Industriali e Parco della Vettabbia; 7. Parco San Cristoforo; 8. Parco delle Rogge; 9. Parco Sempione. In lighter green some other recent urban parks realized or under-construction following the same 'special projects' logic of negotiation: A. Biblioteca degli Alberi (PII Garibaldi Repubblica); B. Parco Alfa Romeo (PII Portello); C. Parco Cascina Merlata (PII Merlata); D. Parco Tre Torri (PII Citylife); E. Parco SeiMilano (PII Calchi Taeggi); F. Parco Segantini (PP Sieroterapico); G. Parco Santa Giulia (PII Santa Giulia).

Although Milano's modern urban history has often seen real estate interests and car traffic prevail over urban public space design, compromising the vision for a city of interconnected green centralities, the legacy of the 9PM project is valuable. It has established logics for safeguarding public areas, reserves of common good for the future city, which opportunities for new design, completion, or forms of redesign might still interpret more effectively concerning present and future needs. Moreover, it anticipated a vision for a greener city that became a crucial aspect of the city government two decades later, helping in facing the contemporary challenges.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author.

NOTES ON CONTRIBUTOR

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ENDNOTES

1. For Milano's territorial and urban history through time: Gentili Tedeschi, Eugenio. Milano. I segni della storia. (Firenze: Alinea, 1988); Denti, Giovanni, and Annalisa Mauri. *Milano. L'ambiente, il territorio, la città.* (Firenze: Alinea, 2000); Morandi, Corinna. Milan. *The great transformation.* (Venezia: Marsilio, 2007).

2. Marinoni, Giuseppe. "Milano la Verde" In: *Milano la Verde (European Practice Vol. 30)*, edited by Giuseppe Marinoni. (Milano: SMownPublishing, 2019).

3. "Milano da bere", literally "Milano to drink" is a journalistic expression, originating from an advertising campaign, that defines Milano during the 1980s, a decade characterized by the perception of widespread prosperity, by the ambitious and ostentatious display of wealth by emerging social classes, and by a fashionable image.

4. In Milano it was crucial the role of the 1983 Passante Project and the 1989 Directive Document for Disused Industrial Areas. More details on the two plans and their effects in: Marinoni, Giuseppe. "Milano. Città in evoluzione/Milan. An Evolving City." Lotus, n.131 (2007):132- 141

5. Effects of these dynamics are described by witnesses of that period in: Balzani, Andrea, *La fantasia negata. Urbanistica a Milano negli anni ottanta.* (Venezia: Marsilio, 1995); Marinoni, Giuseppe. "Milano la Verde" In: *Milano la Verde (European Practice Vol. 30)*, edited by Giuseppe Marinoni. (Milano: SMownPublishing, 2019).

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18. Excluding existing ones that were included in the project calculations in Laboratorio di Progettazione Urbana. *Nove Parchi per Milano*. (Milano: Electa, 1995).

19. Laboratorio di Progettazione Urbana. *Nove Parchi per Milano*. (Milano: Electa, 1995). 163.

20. The only attempt to recompose Milan's open spaces into a more unified strategy was the project for the Raggi Verdi (Green Rays), included in the 2012 urban planning tool (PGT). This project, somewhat echoing the idea of urban and territorial scale green promenades, referred to a monocentric vision, proposing eight green force lines that radiate from the city centre towards the periphery, integrating existing

and future green spaces.

21. Laboratorio di Progettazione Urbana. *Nove Parchi per Milano.* (Milano: Electa, 1995). 160-163.

22. Ibid. 191.

23. Such as in PII Cascina Merlata (2009), where the municipality negotiated the competition of the park as the first step for the urban transformation.

24. Morandi, Corinna. "Strumenti urbanistici e politiche per la sostenibilita urbana. Il caso di Milano, Italia." In: *Ciudad, Territorio y Patrimonio,* edited by Alfonso Alvarez Mora, and Francisco Valverde Diaz de Leon. Puebla: Universidad Iberoamericana Puebla (2004): 291-329. 302, 314.

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IMAGE SOURCES

Figure 1   Laboratorio di Progettazione Urbana. *Nove Parchi per Milano*. Milano: Electa, 1995
Figure 2   Vercelloni, Matteo. "Un atlante del verde pubblico a Milano." Casabella, n. 808 (2011): annex
Figure 3   Elaboration by the author, 2024

Investigating the Urban Response to Border Closure in a Transnational Metropolitan System
The case of the Gibraltar/Algeciras Bay

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Abstract

Border regions tend to be the cradle of dense metropolitan areas shaped by the (socio- economic, governance, and planning) differentials intrinsic to borders. However, the border permeability variations have historically exposed such systems' fragility. The paper aims to investigate the spatial repercussions of border closures in cross-border metropolitan regions characterised by strong socio-spatial inequalities. It takes the Bay of Gibraltar/Algeciras cross-border area as an analytical framework, focusing on two instances of abrupt border closure. The first is historical (1969-85) and was caused by the Francoist dictatorship's expansionist policies, while the second is recent, caused by the overlap of the Brexit process and the Covid-19 pandemic. These crises shed light on the vulnerability of strongly asymmetrical cross-border urban agglomerations. They act as cautionary tales and testing grounds, proving the necessity of a robust endogenous collaboration on the local cross-border level to create a more resilient, equitable, and polycentric socio-spatial development.

INTRODUCTION

The socio-spatial development of European border regions is chiefly driven by differential benefit, which leads to a functional division between the two sides of the border based on the most advantageous normative and economic situation.[1] The stronger the degree of socio-economic disparity, the stronger the push for this functional division. Yet, if left unchecked, such phenomenon gives rise to an exacerbated unequal territorial development, which, by pooling (human) resources, perpetuates and entrenches socio-economic inequalities. In addition, it makes the economic viability of both sides overly dependent on the continued permeability of the border, something that recent political, migratory and health crises, in primis the Covid-19 pandemic, have put into question. This paper aims to investigate the spatial repercussions of border closures in highly asymmetrical cross-border regions. It takes as analytical framework the Bay of Gibraltar/Algeciras, a cross-border metropolitan system encompassing five municipalities across the Spanish - Gibraltar border. The latter is a British Overseas Territory nearly completely self-governed.[2] The paper will focus on two periods of sudden and prolonged border closure in the territory's recent History. The first (1969-85) was caused by the Francoist dictatorship's expansionist policies. It constituted a critical dividing line for the economic and spatial development of the region, dictating its contemporary highly industrialised nature. The second is recent, caused by the overlap of the ongoing Brexit process and the Covid-19 pandemic. This prolonged uncertainty has shaken the foundations of a system based on border permeability and spurred the Spanish part of the Bay to take concrete actions to decrease its economic over- reliance on Gibraltar. A change which is being enacted notably through spatial planning tools.

HISTORICAL OVERVIEW
OF THE GIBRALTARIAN–SPANISH BORDER FORMATION

The historical urbanisation of the Bay of Gibraltar/Algeciras is a direct consequence of its liminal and contested nature. Throughout the Middle Ages, it is contested between competing Christian and Muslim powers, as born witness by a relatively well-preserved built heritage.[3] The end of the Spanish Reconquista and the European discovery of the Americas mark a period of peace and prosperity. With the British conquest of Gibraltar during the Spanish Succession War, ratified with the 1713 Treaty of Utrecht, the area becomes once again a strategic pawn disputed between global powers. Following the invasion, virtually all of Gibraltar's population flees to the surrounding hinterland, re-founding Algeciras (which had been destroyed in the late 14th century) and developing two rural towns – Los Barrios and San Roque – into proper cities. Through the 18th century, Spain actively tries to regain control of the peninsula, with a constant military presence and several sieges. This entails a heavy militarization on both sides of the border. The first extended period of complete border closure commences in 1730 with the construction of a fortified line with two bastions (the Contravallation Line) sealing the isthmus separating Gibraltar from Spain. The territory comprised between the two opposing fortification lines becomes the Neutral Zone. The Contravallation Line construction

Fig. 1.   Map of the Contravallation Line and Gibraltar's northern defences in 1782.

and garrison give birth to the eponymous town, La Línea de la Concepción.[4],[5] Hence, the birth of all four cities on the Spanish part of the Bay can be directly linked to the establishment of the Gibraltarian border.

The Peninsula Wars (1807 – 14), which sees the British and Spanish crowns allied against Napoleon, marks the end of military animosities and the destruction of most Spanish military infrastructure in the Bay, including the Contravallation Line.[6] Full border permeability is hence reinstated. The 19th and 20th century witness Gibraltar's progressive territorial expansion and urbanisation of the Neutral Zone, now home to Gibraltar's airport. The British consolidate this territorial claim by building two successive border fences, in 1854 and 1908, marking the present position of the border, which is no recognised by Spain. Despite political tensions, the status quo perdures. It also perdured during the two World Wars, despite Gibraltar being turned into a major naval and aerial Allied base during WWII, with the evacuation of the civilian population. Though Spain had fallen under the dictatorship of Franco, who was close to the Axis and had prepared militarily for a hypothetical Allied invasion from Gibraltar, it maintained its neutrality, preventing any serious escalation.[7]

Parallelly, the 20th century sees the consolidation of Gibraltar's economy, notably thanks to its role as strategic military base and free port. It becomes the economic motor of the wider cross-border region. Integration is not only economic, but also socio-cultural and linguistic, as testified by the diffusion of cross-border marriages and of 'Llanito' (an anglicised Spanish).[8]

1969 – 1985: FRANCOIST BORDER CLOSURE, GIBRALTARIAN AUTARCHY, AND SPANISH INDUSTRIALISATION

Following WWII, Franco's nationalist claims over Gibraltar escalate. Political pressure is exerted by restricting border transit, first limited to pedestrian use, then banned to Gibraltarians. Following repeated dead-ends in British – Spanish negotiations, a referendum is organized in 1967, in which Gibraltarians overwhelmingly vote to stay under full British rule, with 99.6% of votes. As retaliation, Franco unilaterally closes the border in 1969, leaving Gibraltar isolated for the second time in its history.[9] The closure, which will last 16 years, has profound impacts on the economic and spatial development of the area, as both sides try to adapt to the traumatic seizure of what had been a highly integrated cross-border region.

Gibraltar finds itself cut off from its functional hinterland, its reservoir of human and natural resources. Propelled by important financial aids from London, and by a hard-earned culture of resilience, it responds by maximising endogenous resources and importing the rest. To counterbalance the loss of cross-border workers, which accounted for a third of the workforce, ca. 2,600 Moroccan workers emigrate to Gibraltar, and housewives are encouraged to enter the labour market. [10] The territory's already existing autarchic infrastructure is potentialised. A new desalination plant is commissioned in 1969 to support water production (Gibraltar has no fresh water source).[11] The population remains stable, preventing the need for land reclamation, a tool extensively used both before and after this border closure. Yet,

the Neutral Zone – previously only occupied by sports and green infrastructure and military bases – is fully urbanised.[12] The Gibraltarian economy hence manages to withstand Spain's chocking, notably thanks to its robust, outward oriented economy and infrastructure. Indeed, despite its extremely small territory (6.8km²), Gibraltar has a commercial port, a military one, and an international airport.

Not only did the Spanish isolationist policy fail to demolish Gibraltarian economy and morale, it cruelly backfired. Indeed, the effects of the border closure on the Campo de Gibraltar are far more drastic and long-lasting. The local economy is brought by a griding halt by the sudden suspension of the thriving legal and illegal commerce (tobacco smuggling), and by the loss of employment of 4,600 cross-border workers, mostly residents in La Línea. This plunges the region in a deep economic crisis, from which it has never fully recovered. Half of La Línea's population is forced to migrate.[13] Following local protest, the Francoist government intervenes, declaring the Campo de Gibraltar a Preferential Industrialization Zone. Over the span of the following decade, it invests considerably in its development. The zone around the Guadarranque river mouth witnesses an extremely rapid industrialisation. In 1970 the steel mill ACERINOX and its port is completed, quickly becoming one of the leading steel mill plants worldwide. Seven years later, the Gibraltar – San Roque refinery opens its doors, and is to this day the most important Spanish refinery. In 1985, a thermal Power Plant is inaugurated, which in turn gives rise to a new surge of industries benefitting from its energy production. Transport infrastructure is incrementally enhanced, to keep pace with the area's growth. The only unsuccessful project is the construction of an enormous shipyard, Crinavis, abandoned in 1978, and to this day partially unused.[14] The creation of these new private ports slows down the growth of the port of Algeciras, which only takes off after the border re-opening.

The border closure hence sparks the development of one of the main energy nodes in Southern Europe. Yet this has not managed to counter the region's economic downfall and the parallel rise of illegality. La Línea and Algeciras are consistently among the cities with the lowest life expectancy and highest unemployment rates nationally.[15] On the opposite, these large industries are responsible for dangerously elevated levels of air, water and land pollution, which compromise the wellbeing of the local ecosystem and population, subject to elevated risks of cancer.[16] They have further prevented the area's touristic development, cut off from the Costa del Sol and the Atlantic coast's touristic circuits, despite being at the intersection of the two.

With the end of the Francoist dictatorship in 1975 and Spain's accession to the EEC and NATO in 1986 and 1982, relations with Gibraltar are normalised, enabling the partial and then complete reopening of the border in 1982 and 1985 respectively.[17] Gibraltar quickly regains its role as economic motor for the whole Bay: within one year of the border opening, tourism revenue in Gibraltar has doubled, Spaniard day-trippers have exploded, and exports thrive.[18] Through an astute use of its low tax legislation and a successful branding strategy directed at international investors, Gibraltar has successfully re-oriented its economy to compensate for the progressive decrease of military and state funding in the 1980s, becoming a thriving financial centre.[19]
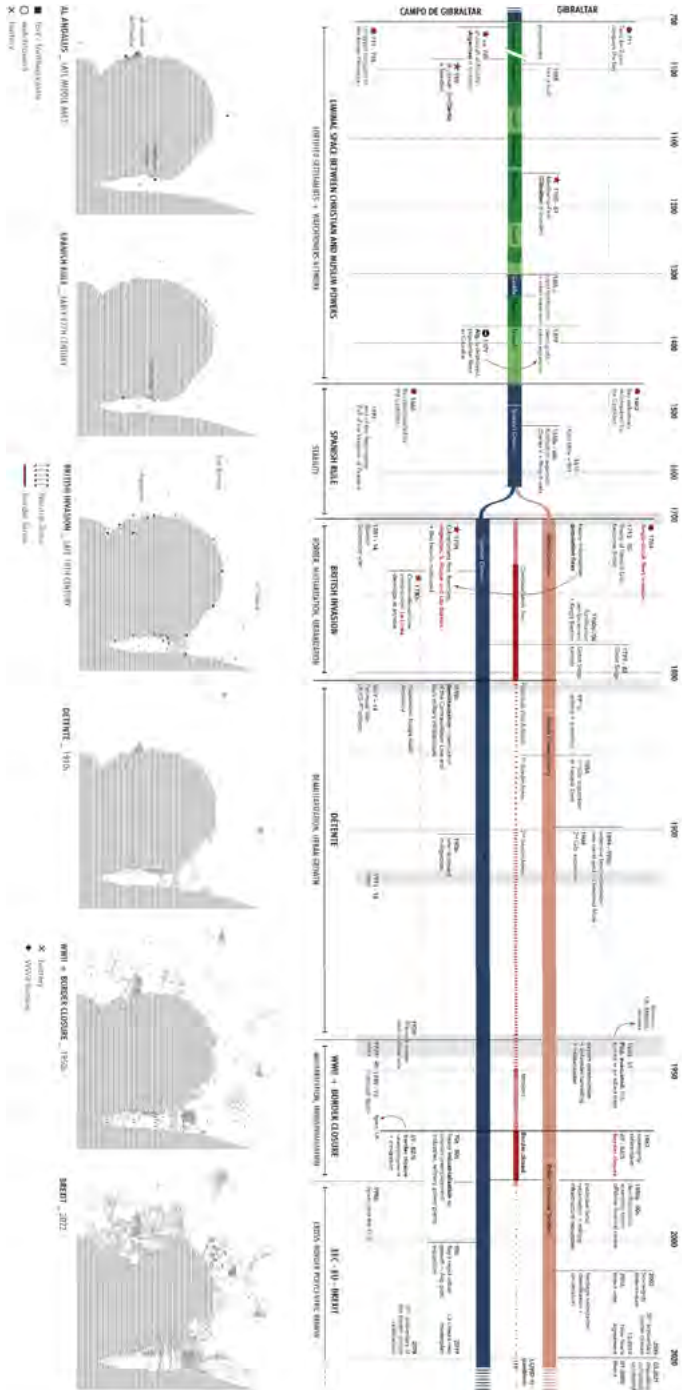
Fig. 2.   Bay of Gibraltar/Algeciras's historic and urban timeline since the Early Middle Ages

CONTEMPORARY SITUATION:
A CROSS-BORDER REGION SHAPED BY STRONG INEQUALITIES AND 'BORROWED-SIZE' MECHANISMS

Today, the bay of Gibraltar/Algeciras can be described as a cross-border metropolitan region which orbit around two main poles: Algeciras (the largest city and port), and Gibraltar (the main economic driver). The five municipalities (Gibraltar, La Línea, San Roque, Los Barrios and Algeciras) form a nearly uninterrupted dense urban crescent along the Bay's shores. This system is dominated by a strong economic inequality, comparable to that between the United States and Mexico. With a GDP/capita of 80,517£[20] and virtually no unemployment, Gibraltar benefits from a thriving and innovative economy. It has succeeded in imposing itself as hub for financial services, notably in the cryptocurrency and online gambling sectors.[21] On the other hand, the Spanish side – Campo de Gibraltar – suffers historically from soaring unemployment, low income, and a pervasive problem of smuggling (both from Gibraltar and Morocco), narcotraffic and violence. La Línea is the most fragile municipality, with a 29,3% unemployment rate, the worst nationally. A rate that exceeded the 40% bar between 2013 and 2015, clearly indicating that the crisis is systemic, and precedes both Brexit and the Covid-19 pandemic. [22,23]

Gibraltar's economic power is made possible thanks to what the planner and economist William Alonso defines as "borrowed size"; namely that an urban area's potential is increased by drawing resources from a wider (cross- border) network.[24] This model is "characterised by a strange relation between jobs and residents [...], a significant volume of daily and periodical commutes, and also by dysfunctional real estate markets and, associated with this, extraordinarily high housing prices".[25] Indeed, with 31,523 jobs for a population of 34,003,[26] Gibraltar heavily relies on cross-border workers, which make up for a staggering 49% of its workforce (2023 data).[27] In its 2015 Economic Impact Study, the Chamber of Commerce of Gibraltar has estimated that nearly 25% of jobs in the Bay depend on Gibraltar's economy.[28] These data would be even higher if non-registered jobs and smuggling activities were considered. Gibraltar's real estate market is 'dysfunctional' its own way: half of it is government owned and/or funded, while the other half is subject to intense speculation. It is among the most expensive in Europe, with an average price is of 4,000 €/sqm for "lower end" real estate.[29]

At the territorial scale, 'borrowed-size' mechanics translate in an exacerbated centre-periphery model. The Campo de Gibraltar is relegated to the role of industrial and residential periphery. As part of its human resources, especially those with a higher education, are pooled by Gibraltar, the Campo's growth potential is impaired, with a tertiary sector which struggles to take off. Gibraltar also benefits from the proximity to the industrial pole without having to bear its environmental costs. For example, by buying oil from the CEPSA refinery (located in the Guadarranque industrial zone), and then re-selling it at very competitive prices thanks to low taxes and less restrictive port legislation, the Port of Gibraltar has imposed itself as the largest bunkering port in the Mediterranean.[30] La Línea is particularly vulnerable to this 'peripheralisation' process. It suffers from being a mere transit space for the 7,200 vehicles which cross the border daily, on average,[31] causing intense traffic and pollution. While it benefits

from the expenditures of Gibraltarians in fresh fruit and vegetable and late-night entertainment, these flows do not generate solid local development opportunities.

CONTEMPORARY BORDER UNCERTAINTIES: 'GIBREXIT' AND COVID-19 PANDEMIC

The reciprocal interdependency entailed by this unequal functional and territorial subdivision makes the region extremely vulnerable to variations in the border's permeability, in a region subject to ongoing political tensions. Indeed, Gibraltar remains the stage of political skirmishes, mainly centred on the contested nature of Gibraltar's territorial waters, which Spain does not recognise. This culminated in 2013 when the Spanish government slowed down border checks to a near paralysis for several days as retaliation for the construction of an artificial reef in Gibraltarian waters (not recognised by Spain). The political impasse was only solved when inspectors were despatched by the European Commission, upon British request. This intimidatory action backfired at the European scale, in terms of image damage; and at the local scale, as La Línea's economy was estimated to lose 30 to 40% of its revenue.[32]

To some extent, the 2013 events prefigured the much more dramatic Brexit referendum and its ongoing geopolitical aftermath. Despite an overwhelming 96% of votes against, the territory had to follow its mainland in the Brexit process, with the aggravating factor of having to negotiate a separate agreement. In addition, Gibraltar did not benefit from the political and mediatic attention that the Northern Irish border had, which meant it was relegated to the background in EU-UK negotiations. This resulted in an Agreement (aptly named New Year's Agreement) being signed with barely eight hours to spare to the end of the Transition period, on the 31st of December 2020.[33] At the time of writing (May 2024) a definitive framework agreement for 'Gibrexit' has still not been reached, though it seems imminent.[34]

Because of the Gibrexit's negotiations protraction, it has overlapped with both the 50th Anniversary of the border closure in 2019 and the Covid-19 pandemic. Both crises have given the opportunity to local communities to stage formal and informal solidarity actions, in expressed defiance to the possibility of a 'hard Brexit'.[35] In a blatant acknowledgement of its interdependence on cross-border workforce, Gibraltar – which was among the first territories to fully vaccinate its adult population – extended its vaccination campaign to cross-border workers.[36]

Aware of the existential threat posed by a hard Brexit, Gibraltar undertook an extremely thorough preparation, overseen by a complex Command & Control structure, and based on focus groups working on strategic fields ranging from critical services to waste management.[37] The general focus was on providing the information and infrastructure (both administrative and physical) to limit the difficulties and delays entailed by the bureaucratic reframing of the territory as non- EU. For example, a new ferry dock had to be built to process the import of goods from non-EU countries (such as the UK) travelling by sea.[38] Nonetheless, extensive preparation did not prevent some bottlenecks. For example, when the period initially covered by the New Year's agreement finished in 2022, so did the agreement with the waste processing plant

located in Los Barrios which processes most of Gibraltar's waste. For two month, 6,000 tonnes of rubbish accumulated in Gibraltar, the time necessary for a new agreement to be signed.[39]

Urban impacts can only be partially assessed, as 'Gibrexit' negotiations are still ongoing. Generally, the insecurity linked to Brexit, coupled with the coming into force of a taxation discouraging people working in Gibraltar from residing abroad, has led many cross-border workers, prevalently Gibraltarian and British, to seek first or second houses in Gibraltar. This has seen the surge in the offer of studio and small apartments, to be used as pied-à-terre.[40] What is certain, is that Brexit has not slowed the rate of prime and super prime real estate development aimed at 'high-net-worth individuals', one of Gibraltar's main economic catalysers[41].

It hasn't stopped the development of flagship reclamation projects, generally promoted by international investment funds, such as the East side development of Victoria Keys; nor luxury reconversions, such as the old Casino, which is being transformed in The Reserve luxury condominium.[42] The good health of the real estate sector testifies the territory's economic resilience and international exposure: it has managed, once more, to bounce back.

Brexit has had as much of an earth-shattering effect on the Spanish side of the Bay than on the British one. Suffice to consider the impact on the local economy of the pound (£)'s 16% devaluation following the Brexit vote, considering that cross-border workers spend an estimated two million pounds yearly in the Comarca de Gibraltar.[43] Yet, Brexit did not prompt the creation of a strong and cohesive response and investment plan neither at the local, nor regional or national scale. What could have constituted an opportunity to lessen the territory's (politic) marginality was lost.

The most tangible urban impacts can be sensed in La Línea. Following the Brexit vote, the municipality has taken matters into its own hands. It commissioned a socio-economic study of Brexit's impacts on the city[44] and, successively, a Strategic Plan of Impulse and Growth[45] aimed at creating a vital local economy less dependent on the British territory. The flagship action was to become Spain's third Autonomous City (together with Melilla and Ceuta), which would have granted preferential tax status and governmental welfare. This request has been denied by both the central Spanish government and the Supreme Court,[46] and has been criticised by the other Campo de Gibraltar municipalities for its lack of solidarity. Beyond normative tools, the Strategic Plan proposes an ambitious use of spatial planning to re-imagine the whole municipal territory. On this base, the municipality commissioned the urban firm Estudio Seguì to design its new *Plan General de Ordenación Urbana* (PGOU), in 2021.[47] The latter foresees extensive urban redevelopment, with the aim of fostering the development of the services sector. The main strategic projects include the urbanization of a vast area North of the historic centre, structured along a new axis, the *Eje Norte*; the urban renewal of the Zabal area, an agricultural area extensively occupied by illegal construction over the years; and the redevelopment of the zone near the border. Through the valorisation and environmental protection of the territory's two coasts, the PGOU also aims to increase the area's attractivity for naturalistic tourism. At the time of writing, the PGOU is in the process of being approved definitively by the Andalusian region. In the meantime, the municipality has proceeded with smaller independent projects, such as the construction of a new football stadium near the border.[48]

ASYMMETRIC URBANISM

SAN ROQUE

LOS BARRIOS

LA LÍNEA

ALGECIRAS

GIBRALTAR

A POLYCENTRIC CONURBATION...

- international
- regional } urban centre
- local

- central
- consolidated } urban area
- peripherical

...STRONGLY SPECIALIZED & INDUSTRIALIZED

- military area
- industrial / logistic area

- international
- national } industrial pole

- international
- national } port

- main road
- train network

Fig. 3.   A cross-border region dominated by a centre-periphery model

The Neutral Zone deserves to be treated separately, as it condenses the tensions between territorial disputes and the strive to foster economic development through cross-border synergies. Spain claims sovereignty over the entirety of the Neutral Zone. Hence, Gibraltar's airport – situated on the Neutral Zone and owned by the Royal Air Force – has always crystallised territorial tensions. Negotiations to expand the use of the airport by creating a communicating terminal on Spanish territory have been underway since the border re-opening in 1985. Yet, despite the ratification of the 1987 airport agreement and of the 2006 Córdoba Agreements, this plan has never been concretised, because deemed by both Madrid and Gibraltar inseparable from sovereignty claims.[49] Nonetheless, both sides are highly aware of the economic potential of a bi-lateral airport. The new terminal, built following the Córdoba Agreements and completed in 2011, was designed to enable a potential future connection to a Spanish terminal.[50] The negotiations on Gibrexit have once again revived this debate, with the municipality of La Línea taking a keen interest. As part of its PGOU, it has foreseen to develop the zone facing the airport in an ambitious high-tech business centre, which aims to pool Gibraltar's resources in this sector. [51] An equally ambitious project, detached from the PGOU, has been implemented on the opposite side of the border strip. The *Gran Marina del Estrecho* foresees to expand considerably the existing marina and create a cruise ship terminal (in competition with Gibraltar's one) and shopping centre. Meant to be completed in 2023, the construction has been paused since 2021 due to various concurring crises.[52]

FUTURE OUTLOOKS AND CONCLUDING REMARKS

What clearly emerges from the study of these two periods of border closure and/or restriction, is the asymmetry in the economic and functional resilience of the two sides of the border. Gibraltar has managed to withstand well the periods of border crises, especially economically. This is due to the combination of various factors, notably Gibraltar's unique political and legislative status, its strong economy, its international projection, and London's financial help during both crises. At the same time, it should be noted how the future of the city is challenged on the one hand by the geographical and logistical challenges posed by climate change, especially on land reclamation projects due to the progressive sea-level rise, as well as by the increasing demand for affordable housing, particularly among the younger population.

On the opposite, the Campo de Gibraltar suffers from (political) marginalisation, an extremely fragile economy, and lack of cohesion and cooperation at the local scale. Consequently, despite its considerably larger territorial and resources, it doesn't dispose from the necessary resilience to respond to the border crises. The failure of heavy governmental investment and industrial development to counterbalance the 1969 socio-economic crisis clearly indicates the limits an exogenous and tardive (urban) tool in generating new urban and economic poles. La Línea's PGOU constitutes a more promising, endogenous answer, but its implementation heavily relies on pooling resources form the local to the European scale, something which would be greatly facilitated if framed within a stable cooperation programme.

This case study shows that creating a robust polycentric urban system is a pre-requisite to promoting a more socially and spatially equal and resilient cross-border (spatial) development. It further shows that this can only be achieved through a robust endogenous collaboration at the local and cross-border level, able to withstand political changes and uncertainties, to pool resources from various scales, and to put in act long-term strategies.

The 'Grand Genève' EGTC (European Grouping of Territorial Cooperation) on the Frech-Swiss border provides a flagship example in this regard. Since 2007, it develops of a joint long-term "agglomeration project" updated every four years. Special attention is given to implement actions aimed at counterbalancing spatial functional asymmetries[53]. In the Bay of Gibraltar/ Algeciras, the *Grupo Transfronterizo* (Cross Frontier Group) has long been lobbying for the formation of a European Grouping of Territorial Cooperation (EGTC), an action also proposed in La Línea's Strategic Plan of Impulse and Growth. Though the proposal had gathered political momentum on both sides at the local scale, it hasn't been concretised, in part because its formalisation would entail putting territorial disputes by side.[54] Yet, as proven by the Campo de Gibraltar's planning history, the region can only flourish if local interests are put to the forefront.

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NOTES ON CONTRIBUTOR(S)

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Figure 2   Elaboration by Isabella Traeger based on various sources, notably historical maps, cited literature, and Instituto de Estadística y Cartografí de Andalucía's historic aerial photographs.
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Planning Ideas

Chair: Stephen Ward

Travelling Ideas
The 1895 Journey of Per. O. Hallman and the Shaping of Swedish Town Planning

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Abstract

In 1895, Per Olof Hallman, a newly graduated architect, received a scholarship from the Stockholm Chamber of Commerce and embarked on a study tour to some forty cities around Germany, Austria, France, and Belgium. The scope of his journey was to delve deeper into the emerging town planning approaches sweeping across Europe, gather insights and assess their applicability within the Swedish context. Upon returning to Sweden, Hallman started advocating for a shift towards a more aesthetically rich and varied approach to urban design by challenging the prevailing chessboard pattern. He argued against the rigid, linear streets and criticised the focus on practical considerations at the expense of aesthetics. This paper argues that Hallman played a crucial role in bridging European town planning ideas to the Swedish practice, emphasising the importance of artistic integration in urban planning. His transformative study trip across Europe initiated a significant paradigm shift in Swedish town planning, highlighting Hallman's legacy in promoting the exchange of ideas and the lasting impact of his travels on the establishment of town planning as a discipline in Sweden. Drawing from Hallman's personal archives, spanning 1894 to 1898 –a resource that has remained largely unexplored– this study examines his sketches, lectures, and writings to revisit his pivotal role in the development of Swedish town planning. It reopens a critical chapter in the field, showcasing how Hallman's exposure to European urban planning philosophies, notably Camillo Sitte's theories and Karl Henrici's plan for München, profoundly influenced his approach to town planning. From a student architect to a key figure in the Swedish urban planning reform, Hallman's 1895 voyage stands as a career-defining period that has since been overlooked.

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Per O. Hallman
and the Art of City Planning
Revisiting the Early Town Planning Competitions in Helsinki-Töölö and Gothenburg

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Abstract

This article delves into the pioneering town planning competitions of the Nordic countries, focusing on two landmark events: the extension of the Töölö area in Helsinki (1899) and the establishment of a new urban district in Gothenburg (1901). These competitions stand out as early examples of their kind in Finland and Sweden, respectively. They mark the initial public acknowledgement and acceptance of Camillo Sitte's town planning concepts in both countries, although the resulting town plans were never fully realised. Central to this narrative is the Swedish architect and town planner Per Olof Hallman, who was a link and facilitator for transferring the new town planning ideas from the continent to the Nordic countries. His inspiration came from a study trip in 1895 to some forty cities in Germany, Austria, France, and Belgium. In 1899, Hallman served as an external expert for the first stage of the Töölö competition. He conducted an in-depth site analysis and provided critical evaluations of the eleven competition entries to the judging committee. Archival documents reveal the collaborative relationship between Hallman and another eminent town planner, Joseph Stübben. During the spring of 1901, both of them were invited to Helsinki as expert consultants. There, they jointly evaluated the two revised proposals submitted by the winning teams. The Gothenburg competition saw Hallman teaming up with the Swedish architect Fredrik Sundbärg in 1901 to submit an entry, leading to their eventual victory out of the thirty-two international entries. Embracing Camillo Sitte's ideas, their design rejected the conventional grid systems, favouring streets that followed the natural terrain and more artistic principles. The research is based on Hallman's personal archive, which comprises largely unexplored materials. This includes, among others, unpublished private correspondences with prominent figures of the time and articles from national and international journals of that era.

the Helsinki-Tölö and Gothenburg Early Town Planning Competitions." In Ian Morley and Hendrik Tieben (eds.), *International Planning History Society Proceedings*, 20th IPHS Conference, "The (High Density) Metropolis and Region in Planning History," Hong Kong, 2 - 5 July, 2024, TU Delft Open, 2024.

What is radical planning history?

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Abstract

How might planning history contribute to projects of collective emancipation? Does our research reflect the plight of vulnerable communities from the past and ongoing struggles for social and spatial justice? Can it speak to broader analyses of social change and projects to advance democracy? Despite its contribution to the understanding of cities and urbanization, planning historiography still has limited capacity to address these challenges and influence larger political processes, especially when it comes to sweeping, grand narratives of urban development. These aspects constitute fundamental, longstanding aspirations of spatial planning, but pursuing them with the necessary degree of accuracy and political awareness demands a substantial transformation of planning history epistemologies. This paper suggests the notion of "radical planning history" as an overarching framework and potential path toward this goal. This approach seeks to engage our scholarship in the principles of democratic place-making, social justice, and collective emancipation, aspects that were a foundational pillar of progressive planning discourse and still attract students and younger colleagues to this field. To do so, this paper highlights the need to extend and strengthen previous critical perspectives within the discipline through a more consistent dialogue and cross-pollination with the traditions of radical planning, radical history, and critical (urban) theory. This will allow us not only to tackle the aforementioned challenges, but also to renew conventional frameworks of analysis in key aspects related to issues of periodization, methodological strategies, the characterization of planning's roles and destiny, and its connection to the history of urbanization and social change. Only through such radical reconceptualization of planning's mission, past and future, can we engage our scholarship in broader efforts to achieve more egalitarian and liberatory forms of urbanization.

Export agencies and the international circulation of planning expertise

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Abstract

In part, modern urban planning's development has involved identifying cities with planning experiences to be admired. Learning and drawing lessons from such locations and applying that knowledge elsewhere have been important in forming and evolving planning theory and practice. Yet, although researchers are now exploring this international learning and synthesis of knowledge, some aspects of how admired exogenous knowledge is translated into actual practice elsewhere remain under-investigated. The process has usually been somewhat disaggregated, involving actors from the places that are 'importing' and those 'exporting' knowledge, together with interventions from various intermediary agencies. In some circumstances, however, admired places created collective agencies that have been more purposive and decisive in 'exporting' their planning and related expertise. This paper is a preliminary survey and review of some such agencies, considering the circumstances of their creation, their activities and effectiveness in practice. They include examples which have been or remain successful but including some that have failed. In part this survey draws on wider reading of recent planning history research and writing, especially the work of Orillard, Stanek and others, together some of the author's own detailed primary research. Although the work may evolve further in the interim, the conference paper will certainly consider various French agencies, past and present. They include L'Institut Paris Region, originally created, under another name, in 1960 and the GIEVNF created 1984, merged 2001 into ADEFRANCE, itself abolished in 2013. Others include the still very active Singapore Cooperation Enterprise (SCE), created 2006 and numerous agencies in the former Soviet bloc, including the Soviet State Institute for Planning Cities (Giprogor) or Miastoprojekt Krakow. It will also consider the failed British Urban Development Services Unit (1975-8), a cautionary tale of how such agencies can attract opposition.

Keywords

How to cite

Stephen Ward
Export agencies and the international circulation of planning expertise

Environmentalism from the WC
Understenshöjden, Stockholm, 1989–1995

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Abstract

According to sociologist Philip Selznick (1954), when alternative ideas are coopted, a previous vigorous and emancipatory collective struggle is neutralized by accommodating it within institutions. In the case of environmentalism, the dissemination of the notion of sustainable development in 1987 institutionalized environmental practices and, concurrently, coupled environmental concerns with economic development. In Sweden, this concept became the main strategy under Göran Persson's social-democrat government, which aimed to transform Sweden into the first ecologically sustainable society, epitomized by the slogan "Hållbart Sverige" (Sustainable Sweden), later "Gröna folkhemmet" (Green People's Home or Green Welfare State). The campaign sparked a series of reforms geared towards more efficient energy usage, non-toxic and resource-efficient cyclical systems, and sustainable management of the built environment, thereby integrating green standards into planning and architecture. Selznick identifies co-optation as a process that unfolds in various phases. In this paper, I will explore the third stage, assimilation and transformation, which elucidates how institutional bodies launch formal reform programmes and invite activist leaders to participate in them. To illustrate this within the context of environmental practices concerning the built environment, I will delve into the experience of Understenhöjden, the first Swedish urban ecovillage developed under the structure of HSB, the largest cooperative housing of the country. Innovations on circular planning, self-sufficiency and environmental ethics were tested for the first time in an urban environment. After the completion of Understenhöjden's construction, its initiator, architect Mia Torpe, was hired as environmental manager at HSB to develop the 'Green HSB' action with the mission of bringing environmentalist considerations to the cooperative's housing stock. In this paper, I aim to analyse this example through the theoretical lens of cooptation by narrating its story focusing on the experiments on circularity and innovations in the sewage system. Additionally, I will scrutinize its subsequent impact on the campaign of greening the Swedish welfare state. The study comprises archival work and ethnographic analysis.

An experiment of bottom-up knowledge exchange

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Abstract

This paper addresses pedagogical experimentations, which took place between community groups and master students from the department of architecture and cities, at the University of Westminster, based on the research-action project "London Soundings: London Creative Communities Towards Sustainability" (2018-2020), led by Prof. M. Neuman and Dr M. Tchapi. The research project explored innovative and sustainable grassroots activities throughout the Greater London, their ambitions, and challenges. It aimed at understanding such aspirations, to question and nurture the debate on sustainability, its complexity, and place-making processes, through bottom-up lenses. Two of those groups have seen the students working on proposals to either attempt to serve their cause or illustrate possibilities: Latin Corner and Wards Corner Community Coalition battling to preserve a local identity asset for nearly two decades and Deptford Neighbourhood Action aiming at more affordable housing through the neighborhood plan. Such collaborations revealed some benefits but often limitations and mitigated expectations for all the participants. It questioned the role of the different parts (community groups members, researcher, lecturers, students, and the university as an institution), from pedagogical, research and practical perspectives, but also politically, as both community groups were actively fighting to meet their ends. While the global agenda stresses the need to develop interdisciplinarity and shared knowledge among different stakeholders, especially with regards to sustainability, climate change and social injustice related issues, the reality involves several layers of commitments, which can be difficult to fulfilled within a pedagogical semester framework. A variety of task's contributions and the planning expertise of the researcher can often be sought after by the community groups, to balance the practical needs required in the process and the exchange of knowledge in that case. The role of the university is to be questioned, from a militant perspective and with regards to what sustainable education entails.

Keywords

community groups, knowledge democratization, interdisciplinarity, sustainability in education

How to cite

Mireille Tchapi
An experiment of bottom-up knowledge exchange

Planning and Heritage

Chair: Ian Morley

The Urban and National Design-Politics of Housing "World Heritage"

Lawrence Vale, Aarthi Janakiraman
Massachusetts Institute of Technology

Abstract

Over the last half century, UNESCO's World Heritage program has often been associated with protecting famous monuments and iconic cultural landscapes, yet the list also includes more than 300 inhabited residential neighborhoods – more than half of them located in the Global South. Nominating such neighborhoods as "World Heritage" entails conjoined choices about both design and politics. These choices affect the course of planning history both by revealing which parts of the past present-day leaders wish to highlight, and by triggering a new set of planning protocols for directing and managing the implications that follow from championing particular aspects of heritage through delineated sites. Drawing on a variety of examples from South and Southeast Asia and Latin America, this paper outlines the design-politics challenges involved in demarcating which areas to put forth for World Heritage consideration (including their designated "buffer zones"), as well as the urbanization and gentrification challenges that often follow such decisions. Questions include: Whose heritage gets highlighted when a multi-cultural postcolonial nation-state positions itself on the "World Heritage" stage -- and who decides? How are those decisions linked to larger questions of identity and nationalism? How does such designation play out on the ground in the social, economic, cultural, and political life of these places in the contexts of rapid urbanization, appeals to tourism and foreign investment, escalation of real estate values, and displacement of existing residents? What are the potentials and implications of heritagizing housing? Given the universalist and Eurocentric underpinnings of World Heritage, what particular issues emerge in the production of inhabited World Heritage in diverse socio-political cultures of the Global South? By exploring the design-politics nexus revealed by the answers to these questions, the paper shows how political values --whether tacit or explicit-- are encoded in the resultant design choices at multiple scales.

Heritage Value Re-Formulation in Planning
Examining Historic Centre of Prague

Vít Rýpar
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Abstract

Successful cultivation of the historic urban landscape in city planning depends on the clarity of formulation of its attributed values. The content of these values may remain relevant for many generations. How can we attribute and formulate values of the built environment for contemporary city planning? The historic centre of Prague constitutes one of the most extensive urban assets on the World Heritage List. It is also the living heart of the Czech capital and has always been in a process of endless transformation. However, these transformations are not random; especially today, they are subject to detailed planning documentation, both at the city-wide level and particularly within the centre. The task of planning materials in this process is to provide essential and dependable information suitable for the level of detail required in planning documentation. This paper presents a case of formulating values of the Historic Centre of Prague for three levels of urban planning: the local building regulations, the city land-use plan, and the regional principles. The sources for the value formulation are various and often archival. The novelty of the approach lies primarily in their re-formulation and communication. It has proven useful to: a) publish the results in web applications dedicated to a specific level of planning scale; b) increase objectivity by providing clear evaluation criteria; and c) consistently distinguish between assessed objects, attributed meanings and qualities, and public interest in the evaluation process. Although city planning may no longer be an activity confined to a narrow group of experts, the increase in information and communication underscores the significance of expert evaluation within the process. If the description of the values of the historic urban landscape is not accessible and intelligible to the public, the cultivation of its heritage becomes challenging.

Keywords

How to cite

The Resignification of the Garden Suburb as International Heritage

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Politecnico di Milano

Abstract

The garden suburbs, developed around the turn of the 20th century, are often defined as the inferior version of the Garden City model created by E. Howard in 1898, England, mainly due to their overlapping design principles. However, this definition appears to be a perfunctory conclusion as the story behind the garden suburb is rather complex, and the origin predates the Garden City creation. Understanding the term and its design principles is essentially the initial step to be taken towards designing successful preservation strategies for these endangered garden suburbs. With only scattered mentions in the literature, there is still no consensus on the definition and concepts of the garden suburb, leading to the undervaluation of its potential role in future urban developments. This research aims to take the first steps towards envisioning a new future scenario for the garden suburbs. The study contributes, through literature studies, to the still ongoing debate by unravelling (mis-) conceptions behind the garden suburb. This results in a comprehensive taxonomy used as a base for discussion on the origin, definition, concept, and migration of the garden suburbs. In addition, the research redefines the significance of preserving the garden suburbs, and recognises its international relevance.

INTRODUCTION

During the late 19th century, the era of social reform and the search for better living conditions, the garden suburb developed, among a variety of many other urban concepts and utopias, including the Garden City (1898)[1]. These urban innovations were a reaction towards the industrialization and the resulting worsening conditions in the cities all around the world. With the invention and explosive growth of the railway network, it became possible to change the social society through suburbanization[2]. As a result, the garden suburb reached its peak around the turn of the 20th century. By this time it was recognized by the British government as a way to control the rapid growth of cities[3]. Meanwhile, the garden suburb was internationally boosted due to the association of the term with Howard's Garden City and other utopian ideas that envisioned gardens in urban planning[4]. Consequently, the understanding of the garden suburb began to diminish due to confusion with other terms. Many relatively green neighbourhoods were mislabelled as garden suburbs or Garden Cities, despite bearing little resembles with the design principles, leading to the erosion of the original concepts.

Since the distinction between the garden suburb and the Garden City is still lacking in the common literature, even though one "…can hardly avoid the realization that the underlying principles of the garden city and the suburbs are absolutely different."[5], it is essential to start there. A common misconception is the idea that the garden suburb is a descendant of the Garden City and can be interpreted as a small-scale version of it. It's important to realize that the Garden City is a very specific city model, that allows very little variations and is thoroughly explained in Howard's 168-page book[6]. Only two authentic Garden Cities have been built, according to Howard himself, although he believed they didn't fully realize his utopian vision[7]. In contrast to the Garden City, the garden suburb is a concept that is highly adaptable to local contexts, with several fundamental principles, which allow for numerous variants, many of which were built in the early 20th century. Even though not applied in all its variants, the core of the garden suburb concept is evident, and is known for its preplanned character, that relates to a relatively green, high-quality and healthy design, often achieved through a low-dense urban layout, embedded with a specific socio-economic concept[8].

The misunderstanding of the garden suburbs is one of the main contributing factors to the endangered situation they are facing in the contemporary city. During the last decades, the survival of the garden suburbs is threatened worldwide by the force of urban expansion. As cities are driven to the extreme and are given limited options regarding growth pressures, the globally dispersed garden suburbs are increasingly viewed as old-fashioned and anti-urban. They have to make place for new high-rise developments, often violating their protective status[9]. It can be stated that the garden suburb has lost its value and is being overlooked[10]. Often, these suburbs are confronted with two destructive future scenarios: privatization and gentrification, eroding their original purpose and social inclusiveness, or neglection, until demolition becomes justifiable.

There is an urgent need to generate new ideals to safeguard and revitalize the design principles of the garden suburbs regarding the current and future challenges they are facing[11]. In

response to these challenges, this paper proposes the hypothesis that the principles of the garden suburb design are more relevant than ever before. Their highly-adaptable character to different urban contexts presents an opportunity to explore new ways of connecting cities and nature through architectural and urban heritage, which is arguably one of the main concepts of the garden suburb utopia. However, with only scattered mentions in the literature and a lack of recognition of its value and strengths[12], the initial step that needs to be taken is to provide a deeper understanding of the garden suburb in order to recognize it as significant cultural heritage after which the preservation process can start[13]. This paper seeks to extend the limits of the academic field of the garden suburb. It builds on the existing knowledge, and aims to myth- bust the historical misunderstandings, in particular to distinguish the concept from the Garden City. It also attempts to indicate the global migration of the garden suburb in order to establish their place as integral components in the field of international heritage. Moreover, the role and significance of garden suburbs in the contemporary society will be redefined, contributing to the discussion to restore their original purpose.

DEFINITION THROUGH HISTORY
AND DISTINCTION FROM THE GARDEN CITY

Initially, it may seem easy to define the garden suburb as a significant portion of sources in the related literature tend to begin their investigations with a definition of the term. However, upon closer examination, the sources appear to contradict each other rather than align. As we open the debate on the definition, it becomes clear that there are many other terms associated and often confused with the garden suburb, such as the Garden City and the garden village. As a result, the garden suburb has been given different meanings, which are explained by different variations in design and realization. Moreover, the term has been used in different contexts all over the world and the design has been transformed and adjusted to the local conditions[14]. The lack of consensus on the definition and concept, still existing today, can be explained by its diverse origins. Even though England is often related to the origin of the garden suburb, it is far from being solely English[15]. The garden suburb developed mainly through a closely intertwined urban development between London and New York City the two largest and fastest growing cities at the end of the 19th century[16].

The roots of the garden suburb can be traced back to the Romantic era, coinciding with the rise of landscape architecture and town planning as disciplines[17]. During this period, the 18th and 19th century, there was a notable shift towards favouring the natural and rural environment[18], evident in the ideals of William Morris, who perceived cities as 'something to escape from'[19]. The garden became a symbol of a healthier and better future[20]. It is challenging to establish a direct relationship between the origin of the garden suburb in England and the United States, as there is a great difference between related English and American literature. On top of that, the garden suburb seems to lack its own dedicated literature in both countries. English literature related to the garden suburb is primarily focused on the concept of the Garden City and urban planning as a discipline, while American literature covering the garden suburb is more centred around suburbanization, and only sporadically mentions the garden suburb.

In England, the garden suburb seems to have derived from a tradition of searching a better life for the working class, following a line of utopian-socialist predecessors[21]. This started with the utopian villages later evolved into model villages, garden villages and the Garden City[22]. It seems that the garden suburb arose gradually along with the growing attention shift towards the living conditions and health inside the city, evidently predating the Garden City by several decades[23]. Since "…one day's suburb often became the next day's slum…"[24], the garden suburb was the solution for the uncontrolled expansion of the city inhabited by the lower class.

In the United States, it appears that the 'ancestor' of the garden suburb already started its development by the so- called 'dreamers', who were glorifying the rural life, envisioning a utopian life mainly for the middle and upper class[25]. This anti-urban ideal and green city concept became one of the cornerstones of America's urban planning in the 19th century[26]. Since the United States was lacking regional planning by public authorities, the search for a new type of family life was mainly led by private entities, that were traveling to England and Europe for inspiration on suburban typologies[27]. It's important to stress the great difference in socio-economic concept between the origin of the garden suburb in England, aimed at the working class, and in the United States, the middle and upper class.

At the end of the 19th century, the garden suburb concept was established and the term started to be used broadly[28]. This is the moment where we enter the age of rapid development and change. City planning movements spread in a climate of internationalism through publications and great events[29]. The international migration of the garden suburb was mainly due to the connection with the Garden City, one of the most famous and extensively promoted urban utopias[30]. The Garden City was created by Ebenezer Howard and published in 1898, Britain, and later revised in 1902. Howard's idea was to build a completely new city on the country side according to specific conditions, which are extensively explained in his book. It's important to realize that the Garden City is a design for society, prescribing a disciplined lifestyle shaped by urban design, and the definition is the model itself[31]. The city was planned in its entirety, in an almost 'scientific' way, considering precise proportions. The timing of Howard was exactly right, as conditions in big cities reached a low[32], and his 'unique combination of proposals'[33] was embraced on a great international scale. He distilled the garden city concept from significant writers and idealists, who had a great influence at that time, such as Thomas Spence, Frederick Law Olmsted, Alfred Marshall, Peter Kropotin, James Silk Buckingham, Benjamin Ward Richardson, Robert Owen, Edward Bellamy, and so on[34].

It seems that right from the start, the Garden City was misunderstood. Not only was it understood as a primarily environmental model, neglecting the social reformation and holistic vision, but also the scale of the idea was misinterpreted[35]. The term has often been used to describe small scale neighbourhoods, such as garden suburbs and garden villages. Howard tried to distinguish his Garden City from other urban planning terminologies, but without success[36]. Eventually, the terminology around garden suburbs, villages and cities became very complex and subsequently "… began to be synonymous with suburbia."[37]. In particular, the misuse of the garden suburb term resulted in a loss of value[38]. Until today, the garden suburb has often been defined as the corollary or even inferior version of the Garden City.
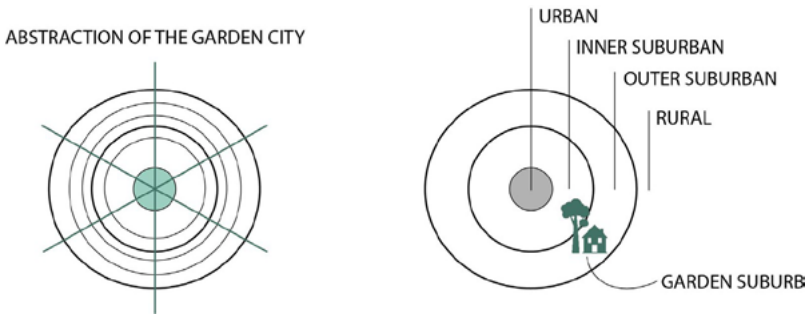
Fig. 1.   The distinction between the Garden City and the garden suburb. Left: an abstraction of the Garden City; a model for a completely new city located on agricultural land far from developed urban areas. Right: the original place of the garden suburb situated on the outskirts of an existing city.

In order to define the garden suburb term, it's essential to acknowledge that the garden suburb is a broad term, arguably an umbrella term[39], used for a wide array of green, healthy enclaves or districts established worldwide during the late 19th and early 20th century. Often, these suburbs are designed with a specific social plan. The garden suburbs are highly adaptable to existing cities in which they are implemented by following a set of global design elements which are part of the overarching international garden suburb idea. These global design elements include recognizable features, such as preplanned layouts, unity in urban design, the acquisition of low-priced land on the city outskirts, proximity to public transportation and large green spaces, and health-conscious urban and housing design. Typically, the implementation of this healthy design in garden suburbs was realized through low- dense urban layouts rich in green spaces and high-quality constructions, relatively to their surroundings. Additionally, less evident elements, yet found in the majority of garden suburbs worldwide, include internal reserves[40], networks of small footpaths[41], horizontal façade compositions[42], and arguably the pergola serving as a symbol for the garden suburb. In order to realize the global concept of the garden suburb, architects and designers often used a vernacular and traditional architecture style, incorporating local materials and characteristics of the local climate[43]. The vernacular architecture is part of the reason for the quality and durability of the garden suburbs[44]. The fusion of localism and internationalism in the architecture of the garden suburb is essential for understanding its design.

THE WORLDWIDE MIGRATION OF THE GARDEN SUBURB

Due to the international domination of London and New York City, as previously noted, the garden suburb concept migrated all over the world during the early 20th century and was boosted by the Garden City Movement[45]. Before a definitive understanding of the garden suburb and its distinction from the Garden City was established, these terms, along with the garden village, had already been interpreted in various ways across different countries and adjusted to the local conditions [46] . On top of that, the terms were often translated in a way that increased confusion[47]. Eventually, the three terms garden suburb, garden city and garden

village were used as synonyms. In reality, the realized garden-housing-design often bore closer resemblance to a garden suburb, even though it was labelled with the term Garden City:

"Suburbs, villages and cities became sadly mixed up in the popular mind, with results detrimental to the movement, and things became worse when speculative builders and companies began to use these names as attractions to estates which had no substantial claim to them. ... The term 'Garden City' has been applied, even more often abroad than at home, to enterprises which are not in accord with the full principle. The 'cités-jardins,' established by the Department of Seine, are no more than garden suburbs. There is even now no 'Gardenstadt' in Germany which actually bears or is entitled to that name. The 'Ciudad Lineal' of Madrid, while it realises several garden city principles, distinctly breaks away from others. Radburn, in the neighbourhood of New York, is a Hampstead rather than a Letchworth."[48].

To fully understand the impact of the garden-housing concepts, the migration of the three terms, garden suburb, garden city and garden village, is mapped, indicating the worldwide spread of these terms. The map (figure 2) is based on the existing literature that covers the spread of three terms. It becomes evident from the map that the migration of the concepts reaches far beyond their origins in Europe and the United States. The adoption of these terms by numerous countries occurred at various points in time and is categorized according to the timeframes of World War I and II, explained in the legend of the map. The bigger aim of the map is to highlight the international relevance of the garden suburbs and to advocate for their recognition as international modern heritage. The survival of the suburbs and their strengths is a worldwide issue and the care of these sites and preservation of the concept are essential to maintain their history and valuable design characteristics.

Fig. 2.   The global spread of the garden suburb, Garden City and garden village, categorized by time and direct and indirect influence. New York City and London are identified as the primary pioneers in the development of the garden suburb.

THE TAXONOMY OF THE GARDEN SUBURB

When exploring the definition of the garden suburb, it becomes clear that various terms are associated. In reality, the term garden suburb seems to include a multitude of terms, each explaining a different type of garden suburb with nuanced interpretations of the design principles. The most comprehensive international collection of garden suburb types can be found in the book 'Paradise Planned; The Garden Suburb and the Modern City'[49]. While the classification presented by the authors may be subject to debate, the concept of classification itself holds value. Delving deeper into this topic, this research paper presents a comprehensive collection of garden suburb types in the form of a taxonomy diagram. The diagram (figure 3) aims to acknowledge and recognize the diversity of terms related to the garden suburb, and to establish a historical overview on the garden suburb development. The collection consists of pre-planned communities, that served as turning points in the historical development of the garden suburb, beginning as early as the 18th century, marking the beginning of the prehistory of the garden suburb[50]. The taxonomy diagram encompasses the evolution over time and the variations in social concepts regarding the American and English origins. The diagram is shaped in the form of a timeline, where each term is placed according to the emergence of the first community associated with it, as determined by the dominant consensus in the existing literature. A distinction has been made between American and English terms. In addition, the diagram is divided into the workers' class and the middle and upper class, with each term positioned along a hypothetical horizontal axis that determines the integrated social concept. As a result, the difference in social concept between the American and English garden suburb becomes clearly visible.

Upon analysing the taxonomy diagram, it is clear that the definition of the garden suburb should be broad and inclusive. After an extensive literature research, two definitions within the American and English literature have been selected as encapsulating the essence most effectively. Within the American literature, Kroessler presents a concise definition:

> "Yes, the planned garden suburb emerged out of a utopian impulse, a vision of what urban living could be if we were only bold enough to start anew, but it was also a pragmatic response to the overcrowded, unsanitary, unhealthy, and socially destructive conditions found in European and American cities."[51].

In the English literature, Richard Harris offers a comprehensive historical definition, describing the main characteristics of the garden suburb:

> "The word 'suburb' was born in late eighteenth century England where it soon captured people's imagination. That is not surprising: by 1850, Britain had become the first urban nation, in that a majority of people then lived in cities. This trend involved large-scale suburbanization, a process that continued through the late nineteenth century. Working-class districts in industrial cities were crowded and unhealthy. Those who could escape to the suburbs did so, and reformers extolled the anti-urban virtues of suburban living: a healthier environment that was better for children; more space in and around the home; access to nature, in gardens and parks; a moral, home- centered life, distant from the corrupting influences of the city (Clapson, 2003, pp. 51-78). The purest version was called 'the garden suburb' (Whitehand and Carr, 1999). It was an appealing vision, a suburban ideal."[52].

This research paper argues that the garden suburbs from the workers' class category in the taxonomy can be classified as a distinct type: the social garden suburb. This type is designed with a conscious social inclusiveness, which can be described as "... an attainable, inhabitable arcadia for everyman."[53]. They are a product of the progressive era of housing reform and possess an experimental nature in terms of community shaping[54]. The social garden suburb can be defined as follows: 'The social garden suburb is a distinct category within the inventory of garden suburb, which emerged during the era of social reform in the 19th century as a response to overcrowded and unsanitary living conditions in cities. The social garden suburb is characterized by preplanned designs that regulate cities' growth and break away from traditional urban forms, through an urban model that incorporates more open spaces and access to nature, and focuses on the health and well-being of people. Additionally, this type of garden suburb stands out for its affordable housing options for a diverse mix of socio-economic classes, with a significant portion of housing reserved for the lower class.' Regarding the contemporary social and planning needs, the social garden suburb remains highly relevant. Its design principles could offer inspiration and potentially serve as a basis for an adapted urban model that addresses the needs of future generations.

CONCLUSION:
THE GARDEN SUBURB IN THE CONTEMPORARY CITY

During the last century, the situation of the garden suburbs has changed significantly. Generally, with exception of some successful cases mainly in the United Kingdom and Australia, their current state is outdated and they have been neglected[55]. The garden suburb faces several challenges considering a comprehensive international scope, with the main issues being urban high-rise expansion and densification, industrial growth, social segregation and gentrification[56]. The suburbs, originally built on the edges of cities, encounter challenges in terms of their ability to adapt[57]. Slowly, the garden suburbs worldwide are becoming part of the expanding city centre or the growing industrial area as a result of their strategic positioning (figure 4). The expansion of expensive urban high-rise developments poses a threat to their distinctive character, potentially eroding their unique qualities. The absence of plans to modernize garden suburbs to meet future needs leads to their neglect and eventual demolition. They grapple with the pressures of the evolving needs of the housing market, due to the escalating land value and rising house prices[58]. In particular, the social garden suburbs that were once designed for the working class now find themselves surrounded by expensive high-rise typologies, facing threats to their original inclusive intention. On top of that, the garden suburbs face criticism for their perceived unsustainability, anti-urban nature, and lack of climate resilience[59]. Despite all these challenges, there is a limited availability of models and guidelines to support major cities in effectively managing the expansion of their outskirts[60].
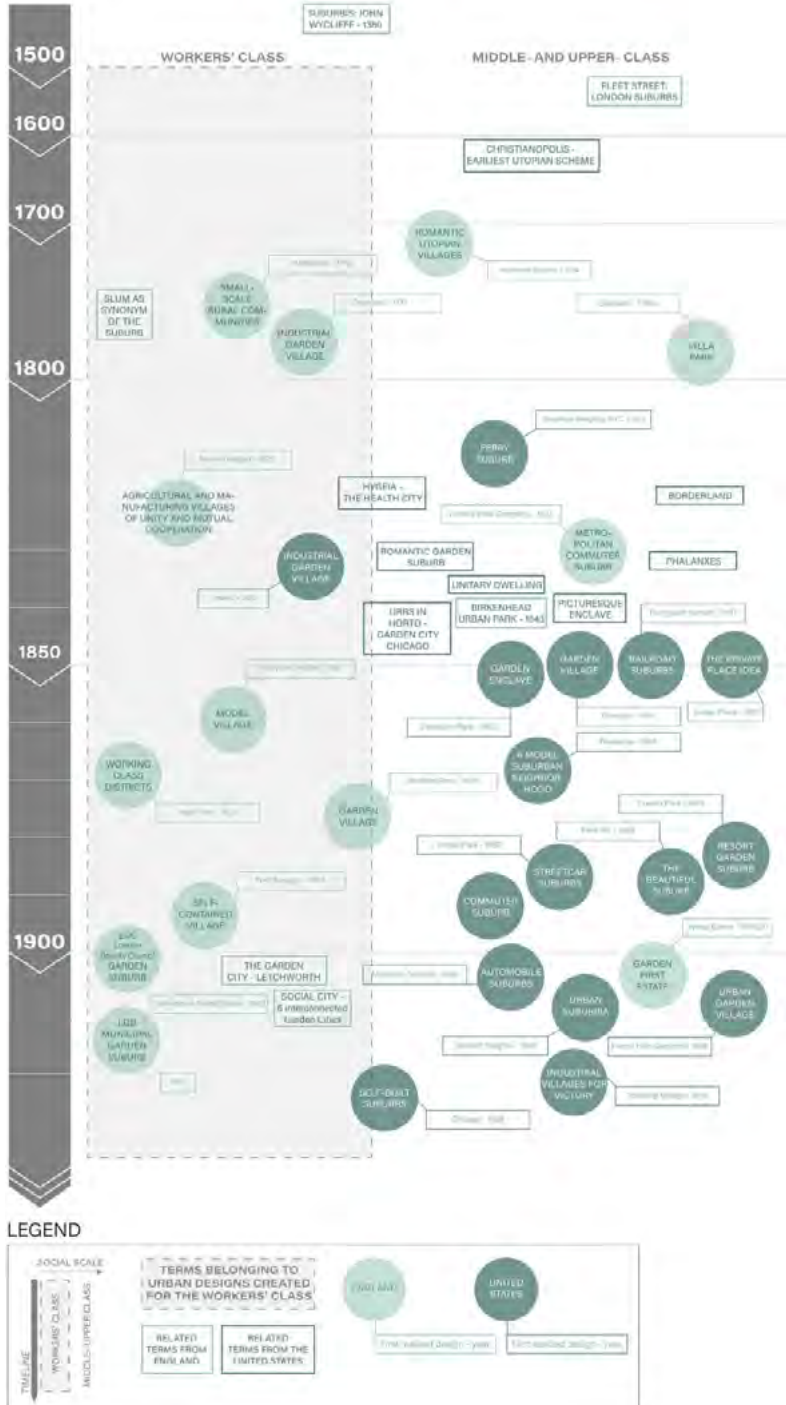
Fig. 3. The taxonomy of the garden suburb. Related American and English terms to the concept of the garden suburb are placed in a vertical timeline with the first realized design. A horizontal axis determines the integrated social concept.
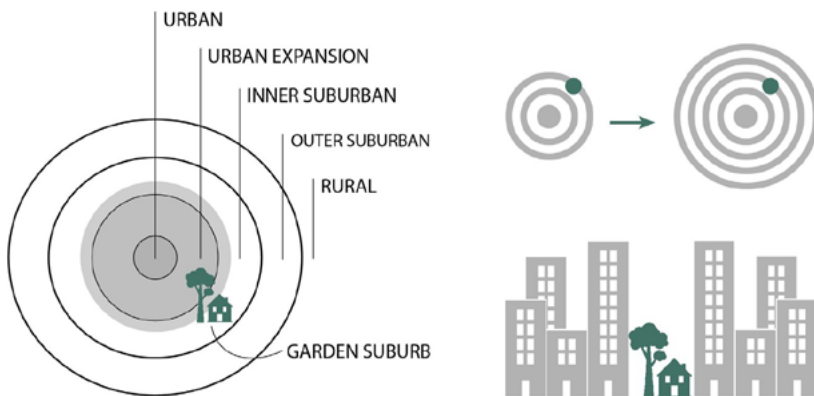
Fig. 4. The 'change of place' of the garden suburb, causing a number of challenges including urban development pressures, neglection and potential demolition, social exclusion, privatization and gentrification.

However, there is an opportunity to turn the situation around. In a similar manner, cities are facing comparable challenges as during the industrial revolution of the 19th century: densification and the land is scarce, social inequalities and the ever-increasing urban sprawl[61]. As a response, while searching for a sustainability future, we are rediscovering the value of earth's natural resources and reconsidering our existing built heritage[62]. There has been a noticeable shift in urban development from a fragmented approach to a more integrated approach that incorporates the physical, economic, and social aspects[63]. It can be stated that the main principles of the garden suburbs design, such as access to green spaces, high-quality housing and design elements aimed at improving the well-being of the community, are more relevant than ever. In particular, the social garden suburbs, with affordable housing for all socio-economic classes, create opportunities for high-quality urban living and socially engaged communities [64]. They represent the green and socially inclusive society that is sought after, moved by new environmental and social consciousness. By reviving the garden suburbs, using their strengths and making them stand out as sustainable, green and social catalysts, we will be able to find new ways of connecting cities and nature through architectural and urban heritage. The garden suburb deserves to be replaced in the developing network of contemporary utopian ideas, where they are no longer seen as a bourgeois idyll or romantic retreat, but an experimental place in which new ways are found to use heritage as a resource[65]. To conclude, this study emphasizes the importance of their preservation and the risk of losing this valuable international heritage. Preserving the garden suburb extends beyond its architecture and urban design, implying that we should not freeze these suburbs in time, but rather explore opportunities for adaptation while using their strengths. The monumental character includes intangible qualities such as affordable housing, walkability, distribution of green spaces, and so on, making the garden suburbs exceptionally adaptable. The complexity of this type of preservation highlights the need of establishing guidelines and strategies for the care of the garden suburbs.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author.

NOTES ON CONTRIBUTOR(S)

Hannah Jeanne Baghuis is a second-year PhD student in the Department of Architecture and Urban Studies at the Politecnico di Milano, Italy. Her current research focuses on enhancing preservation strategies for the early 20th century garden suburbs in response to emerging challenges with cases from Italy, the United States, and the Netherlands. She received her Bachelor's degree in architecture in 2019 and her Master's degree in architecture in 2021, both at the Technical University of Delft, The Netherlands.

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2. Avermaete and Gosseye, *Urban Design in the 20th Century; A History*, 34.
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IMAGE SOURCES

Figure 1 Image credit: Author. Based on Howard's original drawings of the Garden City and descriptions of the garden suburb's original location sourced for this study.

Figure 2 Image credit: Author. Based on: Beevers, *The Garden City Utopia*.; Bigon and Katz, *Garden cities and colonial planning.; Creese, The Search for Environment: The Garden City: Before and After*.; Hall and Ward, *Sociable cities: the legacy of Ebenezer Howard.*; Hutchings, "Garden suburbs in Latin America".; Macfadyen, *Sir Ebenezer Howard and The Town Planning Movement*.; Miller, "Garden Cities and Suburbs: At Home and Abroad"; Stern, Fishman, and Tilove, *Paradise Planned*.; Ward, *The Garden City; Past, present and future*.

Figure 3 Image credit: Author. Based on: Antrop, *A brief history of landscape research*.; Archer, "Country and City in the American Romantic Suburb"; Avermaete and Gosseye, *Urban Design in the 20th century; A History*.; Cohen, *A Worldwide History*.; Creese, *The Search for Environment: The Garden City: Before and After*.; Hall and Ward, *Sociable cities: the legacy of Ebenezer Howard.*; Hammer, *New Towns in the New World*.; Hayden, *Building suburbia*.; Jackson, *Crabgrass Frontier*.; Stern, Fishman and Tilove, *Paradise Planned*.; Tagliaventi, *Citta Giardino*.; Ward, *The Garden City: Past, present and future*.

Figure 4 Image credit: Author. Based on the latest sources in the literature used for this study.

Urban Morphology 2

Chair: Hendrik Tieben

Yi Zheng
Characteristics and Mechanisms of Spatial Pattern Transformation
of Historic Urban Areas in the China's Urbanization

Characteristics and Mechanisms of Spatial Pattern Transformation of Historic Urban Areas in the China's Urbanization
A Case Study of Beijing Outer City (1980-2020)

Yi Zheng
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Abstract

The comprehensive study of spatial patterns transformation and mechanisms of historical urban areas is pivotal for understanding the evolution of the city's historical core during China's urbanization. It is also a critical avenue for optimizing the land resource allocation in the city's central area and enhancing the ecological environment. This study focuses on the spatial pattern of Beijing's Outer City from 1980 to 2020, utilizing Historical Geographic Information System (HGIS) and Geoprobe software. Quantitative analyses of spatial area transformation rates, spatial pattern stability, and driving factors are conducted using the evolutionary perspective of "spatial pattern - spatial function - spatial mechanism". The results reveal that: (1) The spatial pattern transformation process is characterized by three stages with significant dynamic heterogeneity; (2) The residential land-dominated spatial pattern remains relatively stable, yet residential land continues to decrease due to escalating conflicts in the human-land relationship. The evolution of commercial spaces is particularly pronounced under the influence of rapid urbanization; (3) The transformation and upgrading of industries towards green and digitalization, along with the preservation of cultural heritage have emerged as pivotal drivers for the spatial pattern transformation of Beijing Outer City over the last four decades. Additionally, Secondary factors such as ecological sustainability and demographic changes have contributed to shaping distinctive regional variations in the land use spatial pattern transformation mechanisms across different areas of Beijing Outer City through diverse scenario combinations.

Yi Zheng
Characteristics and Mechanisms of Spatial Pattern Transformation
of Historic Urban Areas in the China's Urbanization

A Study on the Construction Model of Ancient Vietnamese Capital Cities

Congcong Yao, Yan Wang
Southeast University

Abstract

China's urban planning theories originated from the 'harmonious relationship between humans and nature' perspective of ancient environmental culture, which was disseminated through the process of 'Mutual Understanding of Civilisations'. Vietnam is geographically adjacent to China, and has the closest relationship with China in the Southeast Asian region. Numerous cultural artefacts and symbolic elements dating back to the Stone Age have demonstrated the cultural origins of the two countries. The northern region of Vietnam has been under the control of the Chinese Feudal Dynasties from the third century B.C.E. until the early tenth century. After gaining independence, Vietnam continued to have a suzerain-vassal connection with China for about nine centuries. Vietnam is a significant research subject in the "Han Cultural Circle" because of the aforementioned variables that have contributed to a high degree of cultural resemblance between China and Vietnam. In order to determine the genetic relationship between the original mode and localised innovation from the perspective of urban planning history, this study will compare and contrast the construction models of ancient Vietnamese and Chinese capital cities. Additionally, it will show how Chinese urban planning theories have influenced Southeast Asian urban construction activities, either directly or indirectly.

INTRODUCTION

As the ancient cultural origins of East-Asia, the Chinese Civilisation had successively played the role of 'Water Pump' and produced profound impacts on the development of neighboring countries' culture, before pre-modern times. From present academic consensus, the Indochina Peninsula, Korean Peninsula and Japanese Archipelago were the most significant regions that be influenced with Chinese Civilisation in political institutions, feudal ethics, customs, literature, and etc[1]. Analysis of cultural phenomenon, the process of influence was divided into 'active learning' and 'forced acceptance', and the subsequent integration with their own cultural system. However, due to the different historical-cultural context and motivations, these countries were formed their specific Hua-Yi Concept out of their perceptions of 'self' and 'other'[2]. Especially, system of prefectures-counties and suzerain- vassal relations had contributed to a high degree of cultural resemblance, but with the advancement of powerful clans and the separatist regimes gave rise to a sense of local self-reliance, which made the Vietnam gradually forming political subjectivity, cultural subjectivity, and auto-ethnocentrism.

Capital City as sanctity and legitimacy of a unified national political power, which as followed China's cultural view of the environment and harmonious relationship between natural and artificial environment[3]. At present, most research is based on map analysis and decoding methods to analyse the constituent elements, spatial evolution process, development mechanism and planning principles of the capital cities. The number of typology-based studies on the dissemination of planning theories and comparisons between Chinese and international capita-cities is relatively fewer. Based on the excavation of extensive historical literature and maps, this research aims to adopt the comparative study on the characteristics of the built environment of ancient Vietnamese and Chinese capital cities; and to parse composited urban spatial features under the combination of geographic environment and historical context, from the planning and morphology perspective. Moreover, the research attempts to further find the prototype of chosen cases cities based on the comparative and historical analysis, which would help to understand how Chinese urban planning theories have directly or indirectly influenced the construction of Southeast Asian cities in different historical periods.

METHODOLOGY

In the perspective of material choosing, the research will select the literature records from the ancients' codes and official history records from China and Vietnam, by combining the historical perspectives of both parties to make the historical discourse more objective and comprehensive. Apart from research results of historical literature, archaeological and anthropological research, the study will mainly rely on the historical maps decoding. As an important research medium, the maps' drawing process expressed a cognitive intentions or concepts in geographical and spatial aspects for the ancients. As a kind of intuitive material that record the urban morphology and spatial pattern and function by visual graphics, which are primarily illustrated the 'relationship' between the built environment and natural

environment, even with the inaccurate scale, position, and object's shape, these characters made the necessary to digital translate on the basis of modern maps. The decoding process is divided into information extraction and information reorganization, with the error correction by whole course[4]. The information extraction is the interpretation of historic information, associating with the annotation text, the relationship between the city and natural base in regional scale, and the facilities and buildings in urban scale. Information reorganization could be recognized as translation of historic information in modern map base, firstly, following the Classification of Information Theory, the data would be classified as basic spatial information, conceptual spatial information and comprehensive spatial information that is collected by historical map[5,6], and the original abstract graphics would be further concreted during the process. Subsequently, the information reorganization is regarded as an analysis process by principles of synchronicity and diachronicity, and the overlying with modern map to qualify the spatial features. The process often accompanies by the understanding of explanatory notes, which will ensure the accuracy of translation work and highlight the most historically valuable element. In urban studied perspective, the map-based derivative research is basic research, comparative research and data research[4]. Currently, from the comparative research, the mostly research focus on the endwise dimension of urban development, which has completely displayed the trajectory of urban space in different historic period, and further explain their evolutionary patterns. However, the amount of cross-section dimension results is relatively fewer and not yet systematic, since the dimension will involve multiple sites in cross-regional perspective.

This research will conduct comparative research on the base of historical maps decoding. In pre-step, researcher will collect the map of Vietnamese and Chinese capital cities in the same period, built by same ethnic group or remarkable cultural connections. The decoding process would be targeting landscape pattern, urban spatial layout, street system and the facility-type structures. The comparative research will adopt the cross-section dimension as the main perspective, which aim to excavate the cultural genes based on the analysis of construction's context and urban spatial characteristics. Moreover, the research process would not ignore the endwise dimension and the phenomenon on the integration effect about Eastern-Western planning theories. From the endwise dimension, with the following of integration effect about Eastern-Western planning practices, the historical value of Vietnam's historical capital cities would be further clarified, and further understanding particularity of this cultural phenomenon.

CAPITAL CITY IN ANCIENT PERIOD

POLITICAL–CULTURAL RELATIONSHIP IN EARLY ANCIENT PERIOD

From the official Vietnamese chronological materials, the southward migration activities for various Chinese ethnic groups had founded the ethnic and cultural basis of Vietnam. Especially in Vietnamese historical materials, the construction of historic image with blood-tie with China was the description of Lạc Long Quân as the earliest monarch in Vietnamese mythical lends, who is the descendant of Chinese Ancestor-Flame Emperor, and also possessed dragon-style

totem[7]. This kind of consciousness originated from the profound historical ties between China and Vietnam, which also represented the political and cultural relations between the Chinese Central Regimes and Yue ethnic groups in the south. From the literally interpretation, Yue is mainly referred to the ethnic groups of Vietnam in the present context, but from afford-mentioned migration and mixed-race effect, the distribution range of this ethnic group had covered from Jiangnan region in China to central Vietnam. The viewpoint was be proved by the Ancient Chinese Documents; the records was taken the 'BaiYue' to describe the nations who mainly active in the south to the lower reach of the Yangtze River in China[8] [9] [10]. From the perspective of ethnic composition, the branch of the BaiYue ethnic groups that located in the present-day Guangdong, Guangxi and northern Vietnam regions, which be named as Nan-Yue, Luo-Yue and Ou-Yue in Ancient Period. In the Vietnamese official records, above branch of Yue ethnic group had established Văn Lang Kingdom and Ou Luo Kingdom successively. Although the social nature still remained clan tribal alliance, the appearance of the capital city caused the historians believed the political system of Vietnam was already a regime state[11,12,13].

CITADEL CAPITAL

The first capital city was appeared in the dynastic transition stage, when the An Dương Vương defeated the Hùng Duệ Vương to establish the Ou Luo Kingdom. According to the official recordings, the An Dương Vương was originally the king of the Ancient Shu Kingdom, and southward migrated to the area after being defeated by the Qin Kingdom[14] [15]. Thus, the related urban construction activities could be classified as the 'Construction based on the ethnic culture integration'. The capital city was found in Cổ Loa in 257.BCE, which locating in the northern upper plain of Hồng River Valley, and where under the jurisdiction of Đông Anh District, Hanoi. For the geographic perspective, the valley has formed by the impact of the Hồng River and the Sulich River, is an important industrial and agricultural centre in Vietnam and even in Southeast Asia, and its geographical location determines the attributes of human settlements. Archaeological data shows that, before the construction of capital city, the site was also unearthed artefacts Phùng Nguyên Culture to Đông Sơn Culture for Bronze Age[16].
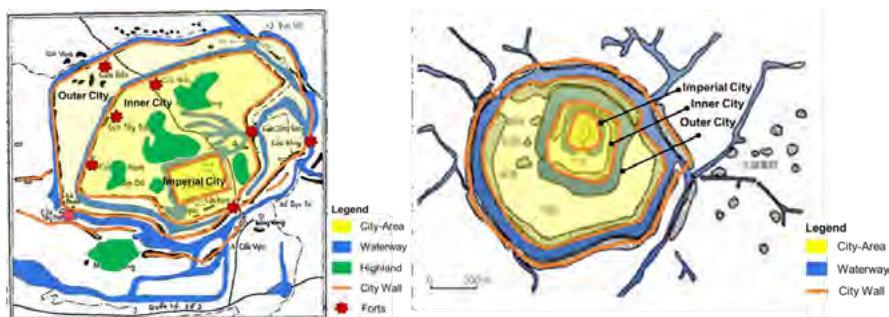
Fig. 1. Urban Structure of Cổ Loa Citadel (Left) and the Yancheng Ancient City (Right)

Compared with named as a 'city', the urban structure is closer to the 'citadel' in ancient period, due to the construction context should consider the defence as the essential factor. River and topography as the important natural advantages, which has been adequately utilized by the layout of Cổ Loa Citadel. From the positional relationships, the Cổ Loa Citadel is located on the northern highland about 6 kilometers from the main stream of the Hồng River, and the linked by branch channel. The citadel surrounded by water was taken the water environment as the first line in the defence system. Analyzing the entire structure of Cổ Loa Citadel, the three- story city wall structure caused the urban spatial structure similar appearance with snail, with a total of nine stories city-wall staggered with moat from west to east inside and outside the city, that is the reason why it also be named as 'Spiral City' in Chinese characters. Moreover, fortification was systematically consisted of moats, internal trench, numerous defence engineering, three-story soil wall with a total length of about 16 kilometers, and earthen mounds and towers on the outer city[17]. In the urban zoning, as the left picture in Figure 1, the urban area was divided by city-walls system into outer city, middle city and inner city, the spatial layout and functional zoning is similar as the Yancheng Ancient City in the Eastern-Zhou Dynasty of China (right picture in Figure 1). Yancheng Ancient City was constructed by 'Juwu', as the earliest branch of BaiYue, over than ten cities were established by the ethnic group in the lower reaches of Yangtze River, and these cities mostly located on the area that adjacent to rivers or lakes [18] . Although the archaeological data show a gap of nearly three hundred years between the construction of the two cities, similarity in urban form and function zoning is extremely obvious. As the central area of the whole city, inner city located the highest position, where including the imperial palace and royal residential areas[19]. Moreover, the middle city and outer city respectively distributed residential area of the officials and troops, and the two layers of urban space gradually decrease in elevation. The urban form reflected the hierarchical classification system and political control in early tribal settlements, with urban defence pattern, the urban construction model showcases the idea of 'adapting the environment resources' in Chinese traditional planning theories. More importantly, though the comparative analysis, the spatial layout could be summarized to a special model with tradition wisdom between the built environment and water. In the geography perspective, the waterfront cities are a common phenomenon in alluvial fan plains, and the clan-based social context and the military threat from the north still important external driver for the production of this type of urban form.

OPPOSITION TO CHINESE FEUDAL DYNASTY IN LATE ANCIENT PERIOD

In the 221.BCE, Emperor Qin Shi Huang had unified the vassal states in Eastern Zhou Dynasty and effectively formalized and administrated the territory as empire. To further stabilize the political power, began military campaigns to the south and north in succession, and the southern expedition was carried out five times and lasted for seven years. With the implementation of System of Prefectures and Counties, the places where the BaiYue ethnic group previously lived was under the jurisdiction of Nanhai Prefecture, Guilin Prefecture and Xiang Prefecture respectively, and Zhao Tuo was appointed as the governor of Nanhai Prefecture to administer the territory for the three prefectures[20,21,22]. However, the stable political situation only lasted

ten years and was broken by massive peasant uprisings. Zhao Tuo was established the Nanyue Kingdom in 204.BCE that independence from the central dynasty. Although the Nanyue Kingdom as an independent regime and opposite to Western-Han Dynasty, and Nanyue became a vassal state of the central dynasty in 196.BCE with the tied political and economic relations. Thus, this episode was taken the Nanyue Kingdom be regarded as the 'Pre-phase for Chinese Rule', and which was the official threshold of Vietnamese History Documents in Dynastic Period, and was described as Triệu Dynasty[23,24].

PREFECTURAL SEAT OR CAPITAL CITY

The boundaries of the Nanyue Kingdom were substantially inherited from the areas governed by the prefectures set up in the Lingnan region during the Qin Dynasty. Zhao Tuo possessed the dual identity with 'Magistrate' and 'King' due to the independent state-building operations after the fall of the Qin Dynasty. With the implementation of 'maintaining harmonious relations with BaiYue ethnic group', the productivity and technology had achieved rapid development in the region, while the Nanyue Kingdom also received numerous refugees from the north, and the policy also realized the assimilation between the 'Han' and 'Yue' Culture.

In terms of urban construction perspective, the Panyu City also possessed the dual identity with 'Prefectural Seat' and 'Capital City' with the changing of regional governor's identity. As a governor with Han Chinese ancestry, the site selection and the spatial form of Panyu City were reflected the utilization of traditional Chinese planning theories. From the site selection, Panyu City located in the northern land of the Pearl River, and the southern side of Yuexiu Mountain. According to the statements in Shang Shu, "basic principles and pattern of site selection for residential area, villages, and cities should be follow 'Negative yin-yang hold, and Mountain seat back surface water'[25]. Figure 2 has illustrated the positional relationship, the site of capital city of Nanyue Kingdom was followed the principle, and the site was located at the middle position between the mountain and river. Panyu City was regarded as the starting point of Guang Zhou's construction, the site was inherited in Song and Qing Dynasty. The archaeological research has confirmed that the similarity in the city-wall, imperial buildings and garden design of the palace city of Panyu City and Chang'an City in Western Han Dynasty. With the archaeological reports that, the city-wall of Panyu City has adopted the construction techniques for foundation trenching on both inner and outer sides, since the soil with high viscosity[26]. Additionally, the architecture and layout planning of the palace city was broadly imitated the regulations of Chang'an City, though the scale of palace buildings is relatively small.

The similarity also reflected in the imperial garden site, the most intuitive is architectural form, terrain processing and water-related landscape[18]. In architectural form, the unearthed cultural relics contain numerous of platform- pavilion style architectural structures. The appearance of platform-pavilion style architecture was stemmed from the worship of nature, especially from mountain and river. In specific layout, the landscape skeleton was converted to the combination of 'platform-pavilion style architect' and 'pond'. which symbolized the 'Divine Kingship' and 'Divine Space'[27,28].
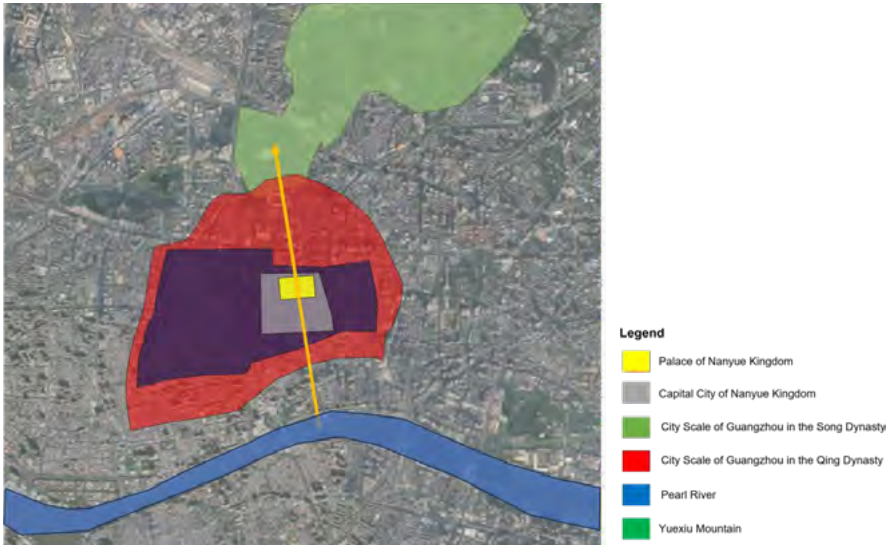
Fig. 2. The Relationship between the Natural Landscape and Location of Panyu City

CAPITAL CITY IN DYNASTIC PERIOD

THE FIRST CAPITAL CITY- THĂNG LONG

After the Nanyue Kingdom be conquered by Western-Han Dynasty in 111.BCE, current Vietnam had entered to Chinese Rule Period, and set the Jiaozhou State with three prefectures. Until the 938.CE, Vietnam has independence from China and became monarchical-feudal state, and maintained a vassal relationship with China. After nearly a century of war, Vietnam was unified by LýThái Tổ in 1,010. CE, and stepped a period of stable development. With the capital city was moved to the Đại La Citadel, and changed the name to Thăng Long[29].

Similar as the Panyu City, the site location of Thăng Long also presented the relationship with the natural elements, located in the southwestern side of Hồng River and against the Tản Vieˆn Mountain. It embodied a spatial vision that oriented by 'Feng-shui' and 'Kingship'. As the of "capital city within the city, unifying the four directions", and the intersection of rivers was be regarded as 'dragon's belly' where gathered the 'National Essence'[30]. The Capital relocation Action has caused a spatial location relationship with 'the capital is in the middle area'. The thought was originated from the Jifu System in *Shangshu and Zhou Li*, as a requirement of capital's location, which produced 'Central-Edge' Ring Layer Structure with geographic and political nature. Thus, the Capital Relocation Proposal was the governor implemented the 'Construct the Capital in the Centre' in the geographical space concept[31] [32]. Meanwhile, the site selection also be interpretation as the realistic thinking, since China is more threatening from the north compared with Champa in the south, the Hồng River could be regarded as natural defence.
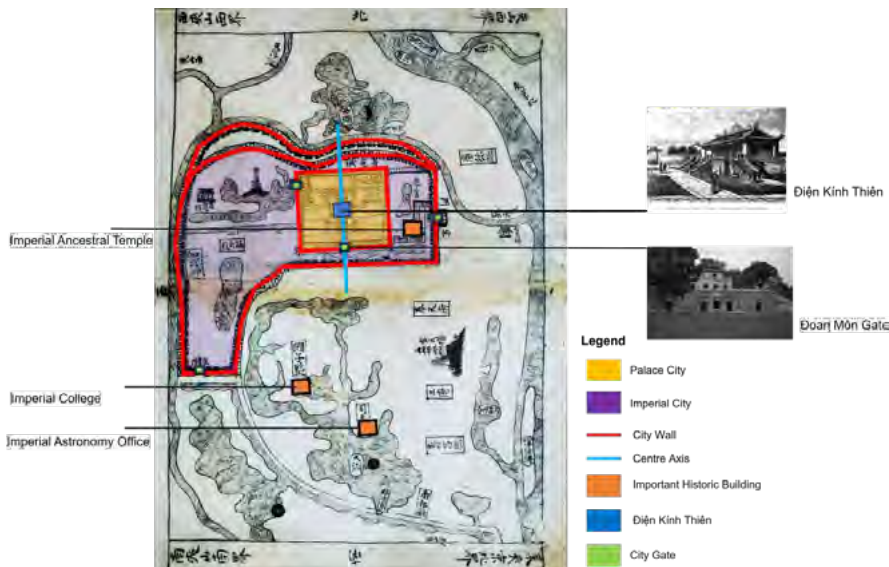
Fig. 3. Urban structure and Buildings' Layout of Thăng Long

Influenced by Confucian culture, the urban spatial structure of Hoàng thành Thăng Long and Chang'an City had illustrated strong similarity. Firstly, the capital's programme had emphasized the etiquette and hierarchy, and formed the Outer City-Inner City-Palace City, and corresponded to the Civilian residential areas, Officials' Residence-Office Area and Royal Residence respectively[33]. In the perspective of palace buildings' construction, consistent with the Chang'an City, the palace city located in the north part of the capital city, centred around the Điện Kính Thiên, formed a north-south axis with Đoan Môn Gate, and Bac Mon Gate, the Imperial College and the Imperial Ancestral Temple are located on the south-east and south-west sides of the palace respectively[34] (Figure 3). In addition, the south gate's form of Hoàng thành Thăng Long also followed the 'one gate, five roads', accompanied by strong political and etiquette functions which also reinforced the symbols of kingship[35,36,37]. In the civilian residential areas, the linkage with market has emerged has emerged at the junction of the east side of the imperial city and the Hồng River, with the ceremony ideology. Similar as Chang'an City in Tang Dynasty, the market was concentrated in specific blocks[38,39]. In the following period, with the concentration trend of lane and street, the opening neighborhood with commercial and handicraft industries has formed around the market, which named as '36 Guild Streets' by the number of streets.

THE LAST CAPITAL CITY– IMPERIAL CITY OF HU

During the Western Han Dynasty, Huế City was under the jurisdiction of Rinan Prefecture, Jiaozhou State, and was subsequently occupied by Champa nearly 9 centuries. The political significance of the city was shown on the last feudal unified Dynasty of Vietnam, Nguyễn Dynasty.

Fig. 4.   Geographical conditions of Imperial City of Huế

Although the Huế City was formally founded as the capital city in 1,802. CE, the city has been as the capital for the Nguyễn Regime in the south since 1,635. CE and the name were PhúXuân[40]. After being officially proclaimed emperor, Nguyễn Phúc Ánh had ultimately located the capital city on the north side of Sông Hương, and with the old site of Phú Xuân. From a practical perspective, experiencing the operation nearly two centuries, generous social and economic foundation would the stability of political regime. As a regime that has just experienced war, rebuilding on the original site is the most cost-effective approach[41]. In geographic perspective, the location is on the middle area of the country, where was easy to control the border. Moreover, from the relationship with natural landscape, the site is located on the waterfront area between the Trường Sơn Mountain-Yang and South China

Sea-Yin, by the connectivity of Sông Hương, the position had reached equilibrium between two substances (Figure 4)[42].

In addition to influence of suzerain-vassal relationship with Qing Dynasty, the urban layout was completely modelled on Beijing City, Qing Dynasty (Figure 5) [43]. In the shape, different with the Thăng Long, Imperial City of Huế was presented as a triple courtyard-style square with strong symmetrical characteristic, which symbolled the characteristics of etiquette have been further strengthened. The primary palaces were built in the south part of the capital city and near the Sông Hương, the zone was formed the Imperial city and Forbidden City from outside to inside, and the remaining part belongs to the capital city. In the period, the centre-axis had throughout the three- story urban areas, the layout of other ceremonial buildings followed the regulation with 'Ancestor Hall in the left, Alter of Land and Grain in the right', Điện Thái Hòa located in the centre, and 'outer palace and inner court', even the names of the palaces were consistent with those of Beijing City[44,45].

Fig. 5. Comparison of Urban Structures of 'Imperial City of Huế' and 'Beijing City in Qing Dynasty'.

Different with Chinese traditional fortified tower, the city-wall's form of Imperial City of Huế has illustrated the similarity with French Vauban-Style Fortification. Most historians interpreted that originated from the French assistance in Trịnh–Nguyễn Civil War, and the bastion of Vauban-Style would increase thickness of walls to resist artillery-type weaponry, which enhanced practicality in 19th Century warfare[46]. However, traditional Chinese defence elements have not been completely discarded, the artificial moat and trenches were distributed around city wall, and formed an integrated defence system. The construction of Imperial City of Huế could be seen as a successful attempt that compromised and integrated of Chinese and Western urban construction culture, and the fusion phenomenon also appeared on the Thăng Long in the late 19th century (Figure 6). More importantly, the two different cultures had achieved balance and harmony in a same built environment. On the one hand, the Vauban-Style Fortification would present a concentric zone form in the Europe, the city wall's form in Imperial City of Huế has demonstrated a spatial imagery of the compromise of defence structures to administrative space. On the other hand, the city gate of Imperial City of Huế has broken the taboo on the even-numbered gates in traditional Chinese culture, which aim to maximise the defensive nature of the Vauban-Style Fortification[47].

CONCLUSION

Based on the analysis of the planning evolution process of ancient Vietnamese capital cities under the influence of Chinese urban planning theories, the historical stages of capital cities construction could be preliminarily divided as 'Construction based on the ethnic culture integration' and 'Overall imitation and referencing'. In the first stage, the urban defence system as the most prominent feature has showcased the adaptation and utilization of nature resources. With the extended research for the capital cities of the Yue ethnic group, the capital cities' location has widely distributed in the estuarine area and the water-related built environment had reflected the maritime character. Cổ Loa Citadel and the Panyu City could be regarded as the beginning and the end of this phase, respectively, and the process could be summarized as a process from 'independent construction' to 'participation of Han ethnic group in construction and management'. In the spatial perspective, the shape of palace cities was represented a square, and the shape of inner

city and outer city has experienced the transformation from 'integrating with the natural environment' to 'compliance with the ideology of ritual system', by the course of the national amalgamation. Entering to the 'Overall imitation and referencing' phase, the urban construction was based on the adoption of Confucianism by Emperor. In addition to complied with the requirements for urban site selection for 'Centre' in Fengshui Theory, in specific spatial structure, the increasing symmetry and the division of urban areas due to ritual systems was the most direct manifestation of the following of Chinese urban planning theories. However, this process also contained the 'innovation stage' by the reference to Western Urban Defence Culture, which achieved a 'harmony' in spatial arrangement and create a special local characteristic.

Fig. 6.   Hanoi in 1873.

The thesis regards the 'ancient Vietnamese capital city' as an entirety, to discuss the relevance with Chinese Urban Planning Theories from the spatial structure and functional layout, based on historical map. In the perspective of cultural transmission, the construction of ancient Vietnamese capital cities could be seen as direct evidence of the dissemination of Chinese urban planning theories to Southeast Asia, especially during the Dynastic Period of Vietnam. Due to the suzerain-vassal relations between China and Vietnam, the consciousness of 'Southern China' caused the Vietnam expected the equality between its regime and China, and the urban space became an intuitive medium for this idea. 'Kingship-Supremacist' and 'Harmony between mankind and nature' was directly determined the site selection and construction mode. Meanwhile, with the development of history, Southeast Asia as a venue for witnessing the integration of the world's diverse cultures, the Vietnamese capital cities which be constructed or experienced reconstruction since the 19th century could further refine its heritage value from the perspective of integrating Chinese and Western urban planning theories, and accelerating the conservation works for this cultural heritage type.

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DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author.

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IMAGE SOURCES:

Figure 1   Vietnam National Museum of History—Bài 2: Cổ Loa - công trình phòng thủ sớm nhất. Website: https://baotanglichsu.vn/vi/Articles/3096/10191/bai-2-co-loa-cong-trinh-phong-thu-som-nhat.html
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Figure 2   Search: Museum of Nanyue Kingdom Palace. Website: https://www.google.com/maps (Decoding by: Schematic Diagram of the Capital city of Panyu in Nanyue Kingdom. In: Hu Jian. Aesthetic Characteristics of Architecture in Capital Panyu of Nanyue Kingdom[J]. Huazhong Architecture. 2006(11): 66-70.

Figure 3   Based map: Emperor LêThánh Tông. Map of Đông Kinh (Hanoi) in 1490- Hồng Đức bản đồ sách

Figure 4   Search: Thành phố Huế. Website: https://www.google.com/maps

Figure 5   Search: 'Kinh thành Huế' and 'Beijing City'. Website: https://www.google.com/maps
Decoding by 'National Library of Vietnam, The citadel's plan in the Đại Nam nhất thống chí' and 'Peking, 1914, Cartographic Department of the Royal Prussian National Survey'

Figure 6   Phạm Đình Bách, Map of Hanoi in 1873 drawn in 1902. Website: https://www.flickr.com/photos/13476480@N07/11387030115

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Eleftheria Square
The Legacies and Dichotomies Woven into Nicosia's Urban Fabric

Alex Ioannou
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Abstract

The redesign of Eleftheria Square was imagined to be the spearhead of a new era in Nicosia's urban identity. However, the capital of the Mediterranean island of Cyprus is still struggling with a complex decision-making process and a weak planning system. Rapid urban change, coupled with urban sprawl, are raising questions about the sustainable future of Nicosia, and other Cypriot cities. The aim of this paper is to position the redesign of Eleftheria Square within Nicosia's urban historical context. The paper explores the city's development under Ottoman and British rule, discussing how social norms, design vernaculars and urban plans influenced the city's built fabric and citizens' expectations of urban relationships. The paper argues that the legacies of these two periods continue to manifest in current ideologies and values regarding urban space across the Republic. The new Eleftheria Square, designed by Zaha Hadid Architects is then presented as an example of a third 'glocalised' (gentrified) approach that exacerbates the existing dichotomy between the Ottoman and British approaches. The article concludes by questioning Eleftheria Square's legacy and advocating for a wider discussion about what constitutes, influences and drives the trajectory of urban change in Nicosia.

Alex Ioannou
Eleftheria Square

The Evolution
of Xiamen's Old City Core
A Morphological analysis 1920-2020

Zisheng Tang
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Abstract

Xiamen, a former port city, its old city core has been influenced by diverse political, economic, and social relations intersecting with urban planning and design. These relations reflect the city's process of urban transformation. The old city core of Xiamen is studied to interpret morphological changes between 1920 and 2020. The purpose is to make a chronological analysis of morphological characteristics, focusing on the changes in street patterns, block usage, and building typology. The principal aim is to understand how urban physical forms have evolved over time and how they have influenced the morphology of the city. The link between morphological characteristics and their influencing factors is also to be proposed through morphological analysis. This research illustrates the changes in physical form in the different level resolutions. It explains the growth trajectory of the old city core during the last centenary, through the graphic representations from micro to macro scales. It argues, that despite the ordered urban structure being well reserved, the variation occurs in the form of mass development and volumetric typology only in certain blocks. The findings show that market economy and planning policy directions collaboratively play a part in facilitating morphological evolution. The resultant urban form strongly suggests these two conflicting factors shape the current urban form. The local identity and cultural traditions as a dynamic process still co-exists with the high-rise contemporary building. On this basis, a comparative study hopes to explore new ideas for future urban regeneration.

Housing

Chair: Laura Kolbe

Shao Shuai
Rethinking the reproduction and innovation of modernism in
China through Kunio Maekawa's residential district planning in Shanghai

Rethinking the reproduction and innovation of modernism in China through Kunio Maekawa's residential district planning in Shanghai

Shao Shuai
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Abstract

This paper investigates Kunio Maekawa's contributions to urban construction through two residential projects in Shanghai, initiated by different clients and yielding varied outcomes. The planning of the Oriental Development Company residential district showcased the designer's avant-garde understanding of modernist urban planning theory and reflected his aspirations for Shanghai's urban development at the time. The Hua-Hsing Commercial Bank residential district, which was successfully realized, demonstrated Maekawa's skill in adapting modernist principles to meet the local context and urban planning needs of Shanghai. The analysis focuses on the realized Hua-Hsing Commercial Bank residential district, exploring how Maekawa's designs fostered community interaction and social cohesion. The project underscored his innovative integration of public spaces within residential districts, which not only enhanced the residents' quality of life but also strengthened community bonds. These spaces were thoughtfully designed to balance high- density housing with accessible communal green areas, reflecting a sophisticated understanding of the interplay between architecture and urban living dynamics. By examining these projects, the paper highlights Maekawa's significant impact on urban development and modernist architecture in Asia, particularly through his thoughtful approach to designing community-oriented living spaces in rapidly expanding urban environments.

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INTRODUCTION

Urban development in China from the early 20th century until the founding of New China had a significant influence on contemporary urban planning. During this period, diverse urban and regional planning practices were observed in Chineses cities, primarily due to the absence of a common construction code. This fragmentation resulted from the central government, regional authorities, colonies, and concessions each pursuing divergent development strategies. The residential construction under various planning strategies exhibited differences concerning different builders (government or enterprises), residents (Chinese or foreigners), purposes (for workers or middle-to-high income groups), and scales (individual houses or residential districts). Shanghai became a national leader in urban planning and development, largely due to its unique position in trade and diplomacy. The early modernization of Shanghai's urban landscape was propelled by concessions from the British and French. This influence compelled the Nationalist government to introduce the "Greater Shanghai Plan" in the 1920s, aiming to comprehensively enhance the city's infrastructure and expand its urban framework. This plan laid the foundation for major urban development initiatives at Wujiaochang region, located northeast of Shanghai's city core, following Japan's occupation.

The Wujiaochang region was primarily planned to meet the living and working needs of the Japanese community in Shanghai[1]. The Wujiaochang region also functioned as an experimental venue for Japanese designers. Development corporations, backed by the Japanese government, not only constructed urban infrastructure but also established numerous residential districts. Among these, the Oriental Development Company residential district and the Hua-Hsing Commercial Bank residential district, both designed by Kunio Maekawa, showed avant-garde modernist concepts. After a two-year tenure at Le Corbusier's studio, Maekawa became one of the pioneering architects to introduce and embrace modernism in Japan. His architectural endeavors, extending into the 1980s, played a pivotal role in shaping a uniquely Japanese modernist movement. Despite the popularity of modernism in Europe and America by the 1930s, its adoption in Asia, especially in mainland China, was significantly limited. Although some Western architects and Chinese architects with international expertise had begun exploring this style on the mainland[2], complete examples of modernist architecture — from the planning of residential districts to the design of individual houses — remained scarce. Additionally, Maekawa's two residential district plans, developed concurrently with the urban planning of the Wujiaochang region, exemplify the designer's vision for modern urban forms at the time. These plans illustrate Maekawa's forward-thinking approach and his ability to integrate modernist principles within the specific context of Shanghai's urban development.

Previous research conducted by Chinese scholars has primarily focused on Kenzo Tange, who was influenced by Kunio Maekawa, as well as on Maekawa's house served as a model for contemporary Japanese architecture[3]. Japanese scholars focused on Maekawa's architectural achievements within Japan, viewing him as a pioneer of modernist Japanese architecture. Or focus on his identity as a disciple of Corbusier to analyze the process of modernism entering Japan[4]. In recent years, Hiroshi Matsukuma has conducted comprehensive studies on Maeka-

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wa's entire career and architectural output, highlighting the various challenges he faced throughout different periods. Scholarly analyses have also been conducted on the building processes and architectural principles depicted in the blueprints of the Hua-Hsing Commercial Bank residential district[5]. However, as a Japanese architect who worked in mainland China, there remain insufficient discussions regarding his approach to designing living spaces within modern urban settings and the broader impact of his work on Asia.

METHODS

Aside from a few government-directed initiatives for welfare housing and governmental servants, most residential construction in China since the late 19th century has been driven by profit-oriented real estate developers. To minimize costs, these projects often compromise on building quality and location. Conversely, colonial powers frequently incorporated urban planning within their colonies and concessions to enhance their local influence.

This essay delves into the 1938 "Greater Shanghai Metropolitan Plan," exploring the strategic orientation and developmental objectives set by the Japanese government for the Wujiaochang region to understand the role of the residential district within the urban framework. The "Greater Shanghai Metropolitan Plan" is closely related to the residential districts made by Maekawa. It examines Maekawa's specific design and zoning proposals, highlighting the modernist urban intentions.

This paper utilizes a range of sources including construction photos, photographs taken by residents during their occupancy, floor plans, and master plans of the Hua-Hsing Commercial Bank residential district preserved at the Japanese National Archives of Modern Architecture. It focuses on the relationship between the residential district and urban planning, the utilization of residential courtyards, the layout of the dwellings, and their impact on community development. This analysis will elucidate how Kunio Maekawa integrated modernist architectural concepts into his exploration of urban environments in Asia, providing insight into his approach to adapting modernism within distinctly Asian urban contexts.

"GREATER SHANGHAI METROPOLITAN PLAN"

As the nation's primary port for international trade, Shanghai was undeniably China's economic center in the early 1920s. However, concessions led to an uneven urban layout, inefficient traffic patterns, and a lack of well- coordinated municipal infrastructure. Following discussions and the establishment of the Urban Construction Committee by the Nationalist Government in 1927, efforts were made to seek new solutions. In July 1929, a new area in the northeast (today's Wujiaochang region) was selected for development. The following month, the "Plan for the Central District of Shanghai City" was released[6], which included recommendations such as improving canal transportation, restructuring the road network, and classifying lands according to their intended uses. These initiatives collectively formed what was

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known as the "Greater Shanghai Plan." Although the war halted the plan in November 1937, several of its components were implemented, enhancing Shanghai's infrastructure development.

To create a new urban plan for Shanghai, the Japanese Cabinet Office dispatched a team of twelve, including the head of city planning, Seiji Nakajima, and urban planning experts Eiyo Ishikawa and Tatsuo Yoshimura, from May to November 1938[7]. This marked the first time Japan had directly sent a team of urban planning specialists to China for an in-depth study. In March of the same year, this team merged with another group responsible for the development of Shanghai's port, initiating the creation of a comprehensive urban plan for the city.

Developing the "Greater Shanghai Metropolitan Plan(Figure 1)," the team expanded upon the "Greater Shanghai Plan." This plan extended north, encompassing the Wusong area, with a total planning area of 57,430 hectares. The first phase included 7,759 hectares, adhering closely to the principles outlined in the "Greater Shanghai Plan". The Qiujiang Wharf area, evolving into a major commercial dock, was designated to become the central district of the new area, focusing on administrative departments and commercial zones. The administrative center was designed to project two main thoroughfares to the west and southwest to create a striking urban landscape. One thoroughfare aimed directly at what is today the intersection of Songhu Road and Zhengli Road, connecting to the railway station. The other was planned to extend from Wujiaochang along Siping Road towards the southwest. To facilitate direct transport links to the Japanese mainland, the plan also proposed the construction of industrial complexes and the development of a port at Wusong, located to the north.

Compared to the "Greater Shanghai Plan," the "Greater Shanghai Metropolitan Plan" introduced more specific building restrictions. Architect Tatsuo Yoshimura, utilizing his professional expertise, proactively initiated these regulations, without government directives. These included detailed guidelines for housing development, rental systems, and architectural form criteria tailored for each designated land use area. The land allocated for construction, comprising residential and multi-tenant areas, was initially distributed with 43% classified specifically for residential purposes[8]. Within this classification, residential zones were further divided into first- class and second-class categories; first-class residential areas were generally reserved for single-family or two- family residences, whereas second-class residential areas were designated for multi-unit dwellings.

Factories were positioned on the west and north sides, situated upstream of the Suzhou River and downstream of the Huangpu River towards Pudong. This placement was influenced by factors such as the prevailing wind directions, which help dissipate waste emissions, and the logistical advantages for industrial transportation. First- class residential areas were developed away from the industrial areas, situated near green spaces like Wujiaochang or Zhabei. Planning maps show Wujiaochang's encompassment by a circular green belt, which is flanked by large-scale commercial areas along the roadsides. Consequently, the neighborhoods proximate to Wujiaochang square are considered among the most desirable residential areas in the new district.

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	First-class residential area
	Second-class residential area
	First-class commercial area (cluster)
	First-class commercial area (linear)
	Second-class commercial area
	Public area
	First-class industrial area
	Second-class industrial area
	Reservation land
	Multi-tenant zone
	Warehouse area
	Park
	Planned road
	Area boundaries

Fig. 1.   The first phase of "Greater Shanghai Metropolitan Plan."

The multi-tenant areas were designated for the residential use of Chinese residents. Architectural planning was managed by Yoshimura, who conducted detailed investigations of the Lilong[9], a traditional Shanghai neighborhoods, and incorporated them as the foundational design element for these multi-tenant areas. Predominantly, these neighborhoods housed laborers and dock workers, with their locations close to railroad stations and ports to accommodate the residents' employment needs. However, due to challenging environmental conditions, the living standards in these areas were generally below par, reflecting the harsh realities faced by the inhabitants.

THE ORIENTAL DEVELOPMENT COMPANY RESIDENTIAL DISTRICT

The residential construction in the Wujiaochang was not completed during the Nationalist Government's tenure in Shanghai; aside from public structures, the majority of the area remained undeveloped. The "Greater Shanghai Metropolitan Plan" aimed to establish first- and second-class residential areas targeting middle-class and upper- class individuals employed in government agencies, banks, and offices. These residences were allocated a higher budget compared to worker housing in Manchuria, resulting in superior construction quality and better infrastructure.

Kunio Maekawa, who had recently founded his studio in 1935, was facing limited job prospects. The onset of the War in 1937 led to significant military expenditures, causing a downturn in construction activities within Japan. Seeking to expand his firm's presence internationally, Maekawa was receptive to opportunities abroad. Following the completion of the general urban planning in Shanghai in February 1939, Maekawa's University of Tokyo classmate, Yoshimura, invited him to Shanghai to assist in designing the residential section[10]. Maekawa readily accepted this invitation, eager to explore new architectural challenges and expand his practice.

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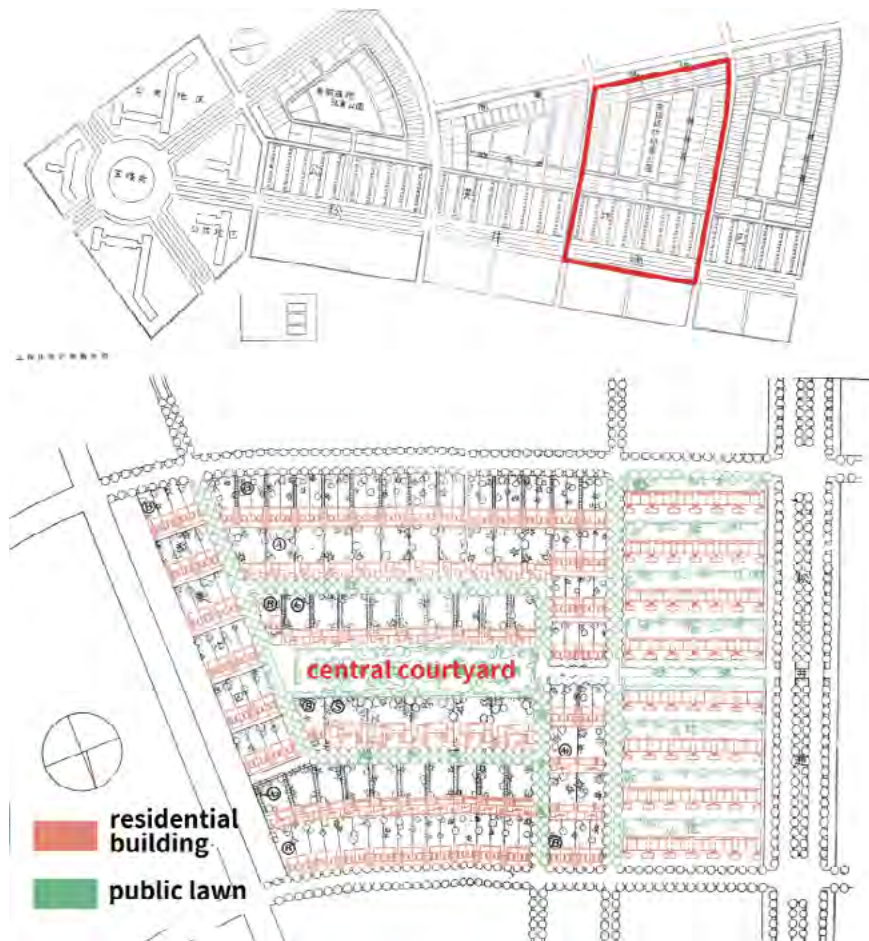
Fig. 2.   master plan of the Oriental Development Company residential district. The central courtyard becomes the public space of the low-rise residential district. The green promenade between the multi-unit dwellings is open to the outside, connecting the main road and the residential district.

The Oriental Development Company was initially slated to purchase land in the Wujiaochang region to construct a substantial residential neighborhood aimed at Japanese immigrants. The plan included 32 multi-unit dwellings and four first-class residential districts on the east side of Matsui Road(Siping Road now), all designed by Maekawa (Figure 2). The first-class residential districts primarily featured detached single-family or two-family villas with outdoor courtyards. The plan of these houses drew heavily from traditional European and American villa styles, with bedrooms located on the second floor and living rooms and dining rooms on the first. The facades of these houses were characterized by large horizontal windows that incorporated modernist elements. Additionally, it emphasized the development of communal spaces within the community, as seen in the central courtyard of the first-class residential district, which was influenced by the garden city theory.

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During his tenure at Le Corbusier's studio, Maekawa focused on residential projets, including the minimal housing scheme exhibited at CIAM. In a September 1939 article, Maekawa observed that Shanghai was a well- developed city with many high-end residential built by the British and French. If builders follow the example of constructing numerous low-rise residences in the suburbs of Tokyo, it will deviate significantly from the original vision of the new city planning and may not be as appealing to locals as the concessions or older parts of the city[11]. Notably, Maekawa designed thirty-two three-story multi-unit dwellings for common people in an area originally intended for public use fronting the main road. To enhance urban aesthetics, he opted for a layout of parallel residential buildings interspersed with green promenade, aligning these with the green belts along the main roads to create an orderly and open streetscape. This approach diverged from the traditional European landscape avenue planning, which uses vast parks or planting roadside trees to create landscapes. Maekawa's strategy reflects his vision for modern urban planning, closely aligning with Le Corbusier's concept of the Radiant City, where green spaces are seamlessly integrated with multistory housing units[12].

The Oriental Development Company residential district was predominantly composed of low-rise housing due to the material and technological limitations prevalent in China. Kunio Maekawa critiqued the term "first-class residential districts" and expressed his dissatisfaction with developers and decision-makers who lacked an understanding of the Chinese environment[13]. Taking these considerations into account, he went on to design the Hua-Hsing Commercial Bank residential district, incorporating adjustments that better suited the local context and constraints.

THE HUA-HSING COMMERCIAL BANK RESIDENTIAL DISTRICT

Similar to the Oriental Development Company but with a stronger focus on the Central China region, the Central China Development Co. was established after Japan conquered Shanghai in 1937 to consolidate its control and expansion in China further. Shanghai Hengchan Co., a subsidiary of this corporation, was tasked with managing the land development rights and acquiring land in the Wujiaochang region. The Japanese government handed over the main development tasks of Shanghai to the Central China Development Co., and the Oriental Development Company was only required to participate as a shareholder[14]. Finally, Maekawa's plan for the Oriental Development Company residential district remained unrealized, existing only on paper.

The Hua-Hsing Commercial Bank residential district was smaller in scale than the Oriental Development Company residential district, but Maekawa's understanding of China and Shanghai had expanded. He was trying to explain housing in contemporary cities from an additional Asian viewpoint. It demonstrates his deeper comprehension of Asian conditions and also shows how he has thought about and interpreted Asian modernism. In May 1939, the Nationalist Government and several Japanese banks collaborated to establish the Hua-Hsing Commercial Bank. Following the acquisition of land in the Wujiaochang region, the bank planned to build dormitories for its employees on this site. Kunio Maekawa's younger brother, Haruo Maekawa, was once a subordinate of Kaheita Okazaki, the president of Hua-Hsing Commercial Bank. Therefore, through Haruo Maekawa's introduction, Okazaki commissioned Maekawa Kunio to design dormitories between May and July 1939[15].

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Fig. 3.   Location of two residential districts. The location of the Hua-Hsing Commercial Bank residential district is based on the "Land Transfer Map in Wujiaochang region" published by Shanghai Hengchan Co..

The Hua-Hsing Commercial Bank residential district project, with a site area of approximately 30,000 square meters and a substantial budget of 5 million Japanese yen (560 million yen today). It marked Maekawa's first completed project in mainland China, to which he devoted considerable attention, relocating six employees to Shanghai in August 1939 to set up a local studio. The design phase spanned six months, beginning in the summer of 1939 and concluding in January 1940 when construction commenced. By October 1941, the first phase of construction was completed. The residential district was divided into two sections: 101 units for Japanese residents on the eastern side, and 92 units for Chinese residents on the western side. These two sections, totaling 15,000 square meters, were situated 340 meters apart (Figure 3).

The Japanese residential district was divided into two parts: a large central courtyard was encircled by three- story buildings on the east side. On the west side separated from the east by a street, there was only one residential building. Every unit provided a courtyard that buffered from the road. The courtyard on the east side, measuring 4400 m^2 (Figure 4), is similar to the first-class residential district in the Oriental Development Company but much bigger. Since the residential buildings are all three-story, and each household does not have its own independent courtyard, the central courtyard has become the spatial and functional core of the entire residential district. Each building featured one entrance facing it, except for the one on the east, which had openings on both the front and back sides. It aimed to create a secluded community area primarily for the use of the residents, fostering a sense of community while maintaining privacy.

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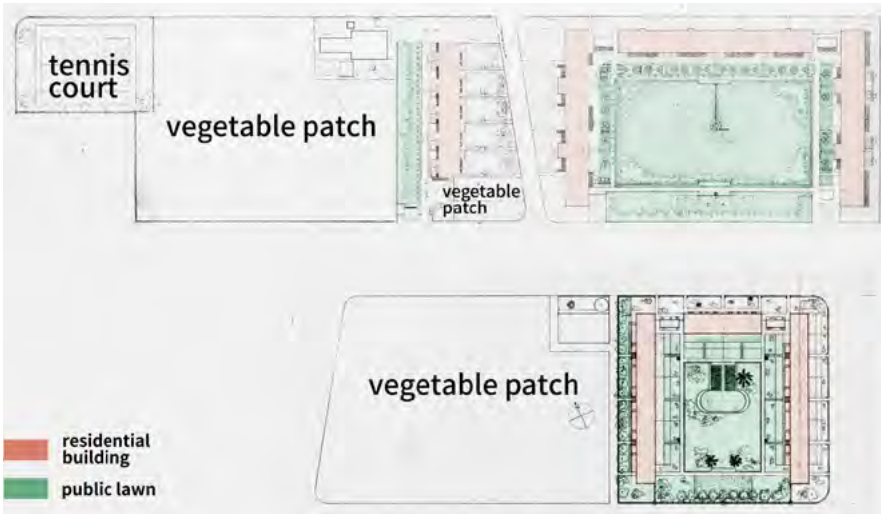
Fig. 4. master plan of Japanese residential district(up) and Chinese residential district(down)

Maekawa's attempt at designing this enclosed residential district was not simply a reference to Shanghai's traditional residential form. The Immeubles-Villa designed by Le Corbusier in 1922 had a perimeter of 400× 200 meters (Figure 5). The Hua-Hsing Commercial Bank residential district was less than half this size. Despite this difference, the Immeubles-Villa also featured a large central courtyard within the enclosed residential building, with direct access to the courtyard from the first floor. Although the Immeubles-Villa was never constructed, one of residential unit(The Pavillon de l'Esprit Nouveau) was exhibited at the Exposition des Arts Décoratifs in Paris in 1925. Maekawa had participated in a project designed based on this Pavillon while working at Le Corbusier's studio[16]. It can be inferred that he was very familiar with the Immeubles-Villa and was deeply influenced by it.
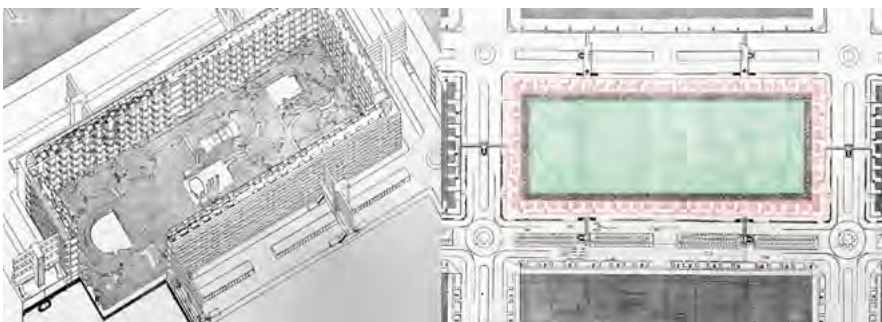
Fig. 5. Axonometric drawing (left) and First floor plan of Immeubles-Villa(right)

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Additional children's facilities were later constructed on the south side, and a fountain was positioned to the north of the courtyard. It not only provided a play space for the children but also served as a venue for community events such as sporting competitions and fire drills (Figure 6). However, due to Japan's disadvantageous position in the war by the time the dormitories were completed, the construction progress in the Wujiaochang region was slow. This situation inevitably limited the range of activities available to the residents. Historical photographs show that bank workers and their families engaged in various community events. Besides these group activities, the courtyard also hosted family-oriented events such as flower viewing and picnics. Testimonies from employees suggest that staff actively participated in these community gatherings, highlighting the space's role in strengthening Japanese community connections. Large vegetable patches have been cultivated on the westernmost sides of the two residential districts. For high-income bank clerk families, getting food is not difficult in Shanghai. These vegetable patches provide residents with more opportunities for leisure activities. Joint management of vegetable patches is also an effective means to maintain the community further.

Everything revolved around the courtyard, whether it was the company's major public events, small private gatherings of several families, or the children's specific recreational activities. Neither Okazaki's photo albums nor other sources document any events occurring in the Chinese residential district. Despite the area of this courtyard is only 1980 m², there is no statistical difference in population between the two sides. This suggests that larger events are more feasibly held on the east side. Additionally, the Chinese residents likely have more opportunities to participate in social events outside of the Wujiaochang region compared to the Japanese residents, who may not be as familiar with the local languages and cultural contexts.

It is evident from comparing the house layout on the two sides that the Chinese residences lack the highest quality A-type houses, and each one is smaller than the Japanese (Table 1). C-type are similar in size and configuration, revealing how the designer addressed cultural differences between China and Japan and the intended lifestyle of the residents. Japanese C-type features an entrance hall at the entry point and a small light court in the middle. There is also a loft living room at a half-story level in Japanese style. This layout not only meets the demands of contemporary living but also retains the essential spatial elements of traditional Japanese residences, harmonizing modern requirements with culture.

Fig. 6. Various activities taking place in central courtyard. Sports competitions (left), picnics (middle), fire drills (right).

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house type	Japanese					Chinese			
	A	B	C	D	E	B	C	D	E
area (m²)	307	193	169	110	100	180	140	75	70
story	3	2	2	1	1	3	2	1	1
total number	5	16	16	16	12	8	12	16	14
bedrooms	6	3 /4	3	2	1	4	3	2	1
Japanese-style rooms	3	2	2	1	1	2	1	1	0

Table 1. House type information statistics

Although Chinese housing features a relatively simple spatial configuration, the plan considers the Chinese lifestyles. Chinese housing includes one Japanese-style bedroom, whereas Japanese housing has two, each with 4 bedrooms. The living room and kitchen are positioned near the entry to facilitate hosting and greeting guests. Additionally, the bedrooms on the second level are larger, clearly delineating private areas from guest quarters. The shared drying laundry on the second floor is larger compared to those in Japanese housing and accommodates two households (Figure 7). It is suitable for Shanghai's humid climate, which is adapted to local environmental conditions.

Maekawa innovated with several technical construction approaches during the building process. He chose not to use traditional Japanese wooden structures or reinforced concrete structures. Instead, aligning with the hybrid construction techniques typical of Shanghai's Shikumen architecture, the building utilized wooden roof frames supported by brick walls. Maekawa later incorporated this method into the construction of his own residence "Kunio Maekawa House" (Figure 8). This can also be verified from interviews with employees who participated in the project at the time. The roof slope of both is 26.6 degrees, and the construction method of the joints of wooden components is basically the same. It's just that the scale of Maekawa House is smaller, so the size of the components is reduced. Part of the external staircase leading to the entrance to the residential building uses precast concrete technology on an experimental basis. This attempt demonstrates Maekawa's exploratory spirit and the construction experience accumulated by the studio. The same staircase made of precast concrete elements appeared in a 1958 apartment project "Harumi Apartments".

bedroom
livingroom
drying laundry
kitchen

Fig. 7.   C-type layout. Chinese housing has a living area of 140 m² (left). Japanese housing has a living area of 169 m² (right).

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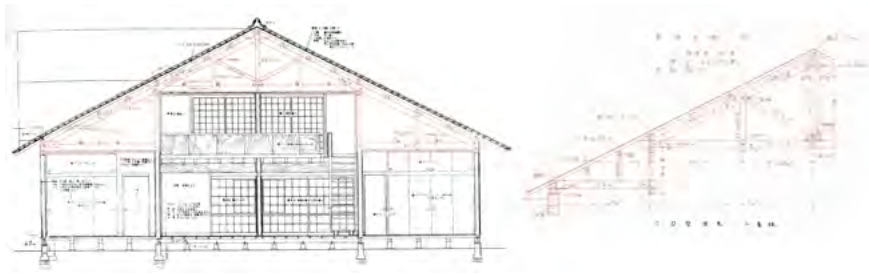
Fig. 8.   Section of Kunio Maekawa House(left). Roof section of C/D-type residential building(right).

CONCLUSION

The two residential planning projects in Shanghai by Kunio Maekawa could be viewed as his initial forays into contemporary residential design and urban planning. Unlike his later designs in Japan, Maekawa's work in Shanghai was crucial in his exploration of modernism tailored to Asian residential traditions. At that time, many modernist designers envisioned the modern city with high-rise apartments replacing low-rise houses amid urban expansion and population growth, integrating large green spaces seamlessly with living areas. What sets Maekawa apart is his approach to considering the combined residential and urban design. In addition to focusing on the metropolitan landscape, he paid meticulous attention to the public spaces and daily activities of residents within the neighborhoods. His works in Shanghai melded practical function with community building, providing a blueprint for modernist architecture that was not only more livable but also deeply sensitive to the unique social fabric and environmental context of Shanghai. This approach exemplified a compassionate and practical modernism, distinctively suited to the challenges and opportunities of the time.

The vision for the future living conditions of the majority in modern cities can be observed in the bank dormitory housing, which targets middle-class residents as opposed to the more commonly constructed worker housing or villas of the era. Creating comfortable living spaces for a large population within a constrained land area requires maintaining strong community bonds within the residential district. Undoubtedly, the Hua-Hsing Commercial

Bank residential district exemplifies how to design a public space that meets the needs of the entire district while respecting the distinct living cultures of its residents in Asia.

A significant challenge in contemporary neighborhoods is how to host communal events effectively. All the residents are affiliated with the Hua-Hsing Commercial Bank, which is why display a strong sense of community. This collective consciousness facilitates the development of an internal community and the organization of numerous public events. However, the sustainability of the community cannot be ensured without adequate spaces designated for such activities. The courtyard is central to the area and is designed to be enclosed, allowing various groups to use it.

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The Hua-Hsing residential district documents are still being sorted, and discoveries are expected in the future. Based on this survey, future research subjects are to expand the scope to the relationship between the Hua-Hsing Residential Community and the Wujiaochang region; and comparisons with residential planning designed by Chinese architects at the same period.

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DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author.

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Figure 3 Shanghai Hengchan Co., *Overview of Shanghai New City Construction Plan* (Shanghai: Shanghai Hengchan Co., 1940)

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Housing for public benefit
Limited-profit associations, regulations and land in Vienna

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Abstract

The city of Vienna boasts a rich legacy in social housing, with a significant portion of its population residing in municipal or limited-profit housing. This paper delves into the historical evolution and contemporary landscape of Vienna's limited-profit housing sector, governed by the concept of "Gemeinnützigkeit" or public benefit, enshrined in the Wohnungsgemeinnützigkeitsgesetz (WGG). Vienna's unique housing model allocates approximately a quarter of its housing to municipal dwellings (the famous "Gemeindebau") and another quarter to limited-profit housing associations (LPHAs). Dating back to the early 20th century, these associations, often considered the "third way" between state and market, emerged to address pressing housing and food shortages following the disintegration of the Austro-Hungarian empire. This paper focuses on six selected LPHAs, comprising cooperatives and limited liability companies founded at different points throughout the last century. Through an in-depth analysis of their legal and operative structures, the study explores the organizations' building stock, analyzing land acquisition, financing and planning strategies. Additionally, the paper provides a first geographic overview of public benefit housing developments in Vienna. The roots of Vienna's LPHA sector trace back to the establishment of the first housing fund in 1921, supporting the construction of affordable housing settlements and fostering the creation of housing cooperatives. Subsequent waves of building activity, particularly after World War II and with the aid of the housing reconstruction fund of 1954, solidified the position of LPHAs as integral contributors to Vienna's housing landscape. While LPHAs have been continuing actors in Vienna's housing sector, the paper also notes a decline in their numbers since the 1980s, attributed to mergers into more stable entities. The study sheds light on the enduring impact of the "Gemeinnützigkeit" concept, reflecting on its evolution over time and its lasting influence on the city.

Keywords

How to cite

Social Housing for Metropolitan Beirut

Projects, Failures, and Debates in Post-Colonial Lebanon, 1943–1975

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Abstract

This paper traces the history of social housing projects for Metropolitan Beirut, their failures, and corresponding debates in post-colonial Lebanon, 1943-1975. By drawing on archives spread over three continents, newspapers, and debates in the Lebanese parliament, it analyses why despite various stakeholders' continuous advocacy, no social housing projects were realized. Key factors prohibiting their construction were rooted in the political economy of Beirut's urban space: sky-rocketing land prices that benefitted vested interests and lacking support by the state, which choose to prioritize needs of richer socio-economic strata. The article thus reveals historical continuities and underscores the relevance of political-economic analyses.

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Jan Altaner
Social Housing for Metropolitan Beirut

Planning and Heritage in East-Asian Cities (1)

Chair: Lui Tam

Heritage Regeneration, Planning, and Resistance
The Bell and Drum Towers Area in Beijing

Lui Tam
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Abstract

This paper examines the evolution of urban heritage regeneration approaches in the Bell and Drum Towers (BDT) area in the past one and a half decades. At the heart of Beijing's historic centre and the north end of its historic Central Axis, the BDT area is one of the most iconic landmarks of the metropolis. The BDT area comprises some of the historic city centre's most intact and lively neighbourhoods. However, it has had its share of controversies, particularly during the regeneration project from 2010-2014. The square between the two towers and surrounding neighbourhoods became a stage of political tension, urban activism, and grassroots resistance, which were then 'wiped clean' nearly overnight. Although the noises have faded in the last decade, more subtle changes have picked up pace in preparation for the 2024 World Heritage inscription application of Beijing's Central Axis. Through critically examining the planning framework governing the BDT area's heritage management, the projects and controversies over the past 15 years, this paper highlights how heritage has been used in the somewhat fluid narratives for urban heritage regeneration in Beijing. It argues that some of these issues are emblematic of the low-rise and high-density historic urban areas with high land value, which remain sources of tension in the metropolis.

INTRODUCTION

The Bell and Drum Towers (*Zhong Gu Lou*) (BDT) are located at the north end of the historic Central Axis of Beijing (BCA) from the Ming and Qing Dynasties (1368-1911). Their strategic position in the capital city was established during the Yuan Dynasty (1261-1368) when it was at the centre of the Great Capital (*Dadu*, or Kahnbaliq).[1] Both towers were later moved and reconstructed in 1420, slightly eastward, when the Ming Dynasty established a new capital just south of the Yuan Capital.[2] Just like most capital cities in ancient China, the urban morphology of Beijing was highly planned and symmetric, accentuating the central axis's significance. The monuments located at the strategic locations along the axis are all politically symbolic. One can argue that such symbolism has continued far beyond the imperial dynasties till the present.

The BDT, initially playing the significant role of time-telling, took on various connotations after this role was no longer needed. In the 1920s, during the Republic of China era, the BDT started displaying anti-colonial objects and took on the connotation of museum spaces and tourist attractions. This connotation has remained until today, even though the exhibitions have evolved. Distinct from the other monuments along the BCA is the proximity of their surrounding neighbourhoods. Being outside of the Imperial City (*huangcheng*) meant that *hutongs* (alleyways) and courtyard houses could be built almost immediately adjacent to the towers, despite their official status. Between the two towers is the Drum Tower Square, and the narrow Bell Tower Square is at the north end, both shielded from the main roads by the towers and nearby neighbourhoods. The squares' relatively small scale, their sheltered positions, and the proximity of their neighbourhoods create a sense of intimacy and safety. Compared to other awe-inspiring monumental squares such as Tian'anmen Square, the BDT squares and their neighbourhoods provide public space of the human-scale within Beijing's historic centre. The squares became a commercial area where temporary markets took place, evidenced by historical photos from the 1930s-40s (Figure 1), and this commercial characteristic was still present until 2012.

Although seemingly charged with less political tension, this area is not void of controversies, most notably during the 2010-2014 BDT Regeneration Project. The various actors' involvement through online and offline effort have been examined closely[3,4,5]. More broadly, Bideau highlights the loss or disregard of collective memories and emotions within Beijing's rapidly transforming urban landscape.[6] Liu's doctoral thesis discusses conflicts between state and private ownership in the BDT area. It sometimes takes the form of self-built houses being deemed 'illegal' by the state.[7] These conflicts are particularly heightened during a regeneration project like the one in BDT. Residents built these 'illegal' structures partly out of necessity and partly with the hope that these structures would be counted towards the total area based on which compensation is calculated should they be asked to move.

Stakeholder and community involvement in China's heritage activities has been the focus of many publications in recent years[8,9,10,11], and some specifically examines the role of social media in the community or public participation in heritage activities, including those at the BDT project.[12,13,14,15] However, the more peripheral actors' involvement on-site, as presented in the BDT project, has not been addressed. Furthermore, existing literature has not considered this regeneration project in the broader context of Beijing's urban planning. The most recent

Fig. 1.   The temporary market between the Drum and Bell Towers, 1933-1946, photographed by Hedda Morrison.

development of the planning context has not been explored either. Ten years since the regeneration was somewhat completed, efforts to get the BCA's inscription onto the World Heritage list, which will be deliberated in July 2024, have put the spotlight on the area again. Most of the urban planning framework that existed during the Regeneration Project was due to expire in 2020. New plans have been formulated since 2016. This article will examine these plans and the type of regeneration projects currently occurring along the central axis to explore how the approaches and emphasis on urban heritage conservation have evolved. It will consider the increasing attention paid to the 'public participation' concept and how it should be interpreted within China's heritage context.

The research informing this article spans from 2012 to the present. The review and analysis of the relevant planning and legislative framework will use primarily desk-based research methods, focusing on how this framework shapes the planning and management context of the BDT neighbourhoods. The change in the area has been documented through auto-ethnographical and ethnographical methods, including photographic documentation, field notes, and direct observations from 2012-2015.[16] The limitations of potential bias that come with auto-ethnographical methods should be acknowledged. This article will corroborate the empirical data with existing academic literature to ensure rigour. It will also take on a critical lens when analysing the BDTT and other relevant actors' actions during the project.

THE 'OFFICIAL' AND 'UNOFFICIAL' HERITAGE IN THE BDT AREA

The BDT were designated National Protected Cultural Heritage Sites (PCHS) in 1996. The area has several lesser-known heritage sites or places of historical interest. Hong'en Taoist Temple (*Hong'en Guan*), a Municipal PCHS initially constructed in the Yuan Dynasty, is located at the north end of the Bell Tower Square. As explained in the next section, the recent uses of Hong'en Temple's various buildings played an intriguing role as part of the grassroots scenes in the area. A few courtyards are also listed, either for the integrity of their surviving historic layout or as a former residence of a historic figure or former temple, along with a historic garden and several ancient trees in the neighbourhood.

Besides these officially recognised heritage entities, the BDT area's richness as a historic urban landscape also lies in other 'unofficial' heritage associations, including the emotions and collective memories of the residents and the general public to this landmark area, the local businesses, the vibrancy of cultural activities, and the urban communal qualities. This richness and the hybrid form of public, commercial, communal, and residential space already existed in the form of temporary markets in the early-mid 20th century. More recently, this richness was embodied through a different composition of small, often community-serving businesses in the area and the various community activities on the squares, such as dancing, singing, chatting, chess-playing, and family activities. Reviewing the urban plans that govern the conservation and management of the historic urban area around the BDT before 2016 demonstrates that such richness was somehow captured in a loose manner. However, it also reveals a gradual reduction of scope from value assessment, value attribute identification, to planning measures and their implementation.

In the first one and a half decades of the 21st century, the BDT area's urban planning and urban heritage conservation strategies were governed by two editions of the Beijing Master Urban Plan (BMUP) (1991-2010[17] and 2004-2020[18]), the Conservation Plan of the Beijing Historic Cultural City (CPBHCC) (2002), and the Conservation Plan of 25 Historic Areas[19] in Beijing's Old City (referred to as the 25-Area Plan in short) (2005).[20] The 25-Area Plan remains the most referential regarding Beijing's urban historic conservation areas. It includes detailed assessments of the height, building condition, and historical characteristics (*lishi fengmao*) of each building within each conservation area. However, the accuracy of these assessments is not always reliable. It also contains overall assessments and planning measures for each conservation area. This level of detail stands it out against all other urban plans relevant to urban heritage conservation in Beijing. The BDT neighbourhoods are primarily included within the Shichahai Area.

The 'Historic and Cultural Conservation Area (HCCA)' concept was conceived to account for various elements of the historic urban landscape. According to the 25-Area Plan, the Shichahai Area embodies historical and cultural values in three dimensions: 1) Historical Value refers to the tangible remains (such as ancient sites and traditional architecture) and intangible heritage (traditional culture) that directly document Beijing's historical evolution, historic figures, and events; 2) Cultural Value refers to the historic literature related to the area and how the area provides space for citizens' cultural activities; 3) Scenic Value refers to the natural resources within Beijing's city centre. The 25-Area Plan further suggests that the three value categories constitute the area's tourism value. The plan identifies five categories of value attributes for the Shichahai Area: the intact historic urban composition, a large number of historic landmark buildings, the overall spatial dimensions and urban fabric, the grey colour pallet of the urban built environment, and various folk customs as well as newly emerging cultural activities within the area. The plan acknowledged the intangible elements as significant for the residents' sense of belonging and coherence.

This holistic concept of HCCA and the value-based assessment in the 25-Area Plan, encompassing the natural, intangible, and urban-level heritage elements, was quite visionary at the time and had the potential to inform a holistic approach to the areas' conservation. However, from the value definitions to the value attributes, one can already see a reduced scope for 'unofficial' heritage elements to be considered and an increased emphasis on tangible and built elements. This reduction of scope was further emphasised when it came to the proposed planning measures in the 25-Area Plan. The plan does not include any specific measures for intangible elements. Understandably, this was perhaps due to the limited scope of an urban conservation plan. Even so, many measures suggested in this plan were not implemented in the end. Furthermore, the planning measures impose strict restrictions on building heights[21] and a relatively stringent limitation on building forms and colour palettes. Nevertheless, the measures did consider the residents' need to renovate traditional courtyard houses within the area and its potential benefit for the urban space's overall quality. The plan also acknowledged the challenges resulting from the fact that many of these traditional courtyard houses are owned by the state, discouraging residents from investing in renovation and maintenance.
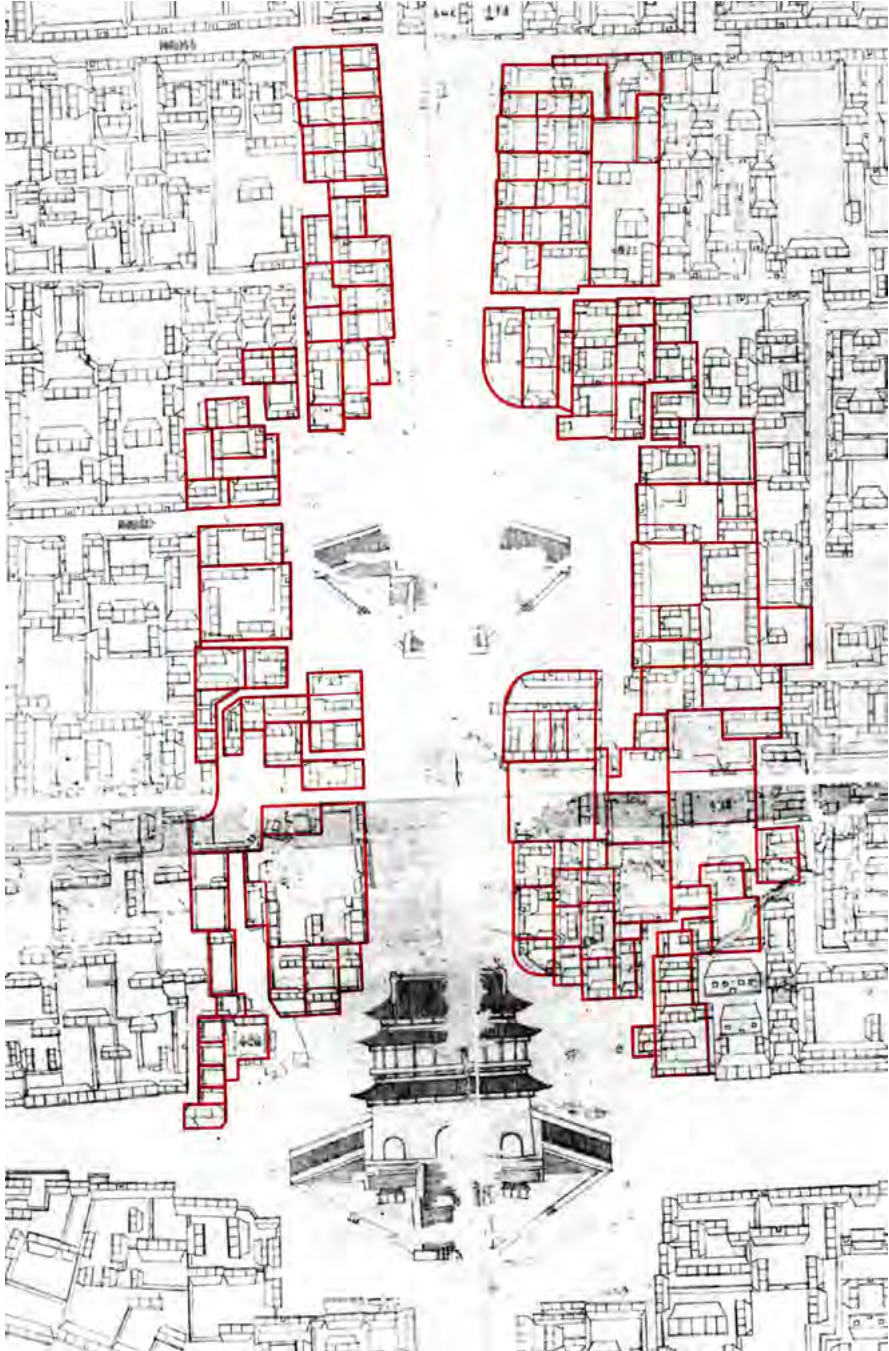
REGENERATIONS, DEBATES, AND RESISTANCE

The BDT area first drew contestation over its regeneration project in 2010, when the Dongcheng District government announced the proposal for the 'Restoration and Rectification Project of Bell and Drum Tower Square'.[22] This project went through various phases from 2010 to its eventual completion around September 2014 (2010-2011 and 2012-2014).[23] Besides the local authorities and the registered company responsible for the project[24], various stakeholder groups were involved, not so much in the project's decision-making but rather through constructing and influencing discourse, performing and expressing resistance, and exercising individual agencies for personal advancement. These stakeholders included an officially registered civil society organisation (CSO)[25], the Beijing Cultural Heritage Protection Center (CHP), an informal interdisciplinary team of volunteers, the Bell and Drum Tower Team (BDTT),[26] formed online and offline through common interests, the local residents, and local business owners. CHP was the leading civil organisation advocating against the project in the first phase, while the BDTT, formed in 2012, aimed to document the neighbourhood, its residents' micro histories and memories, and the demolition process. It also questioned the project's legitimacy by holding the decision-makers accountable for the inconsistencies within their narratives. The informal team included urban planners, heritage professionals, architects, journalists, sociologists, and student volunteers.

The proposed project plan published in 2010 was the only published document indicating the project's ultimate goal across the two phases.[27] According to the plan, the project intended to enlarge the existing squares to how they were documented on the 1750 Complete Map of Qianlong Emperor's Beijing City (*Qianlong Jingcheng Quantu*) (Figure 2).[28] The proposed plan took measurements from the 1750 map to determine the dimensions of the 'original squares'. It subsequently proposed the demolition of 'later buildings' that come within those 'original squares' to create a 'BDT Time Culture Square' and 'restore the historic visual characteristics of the squares'.[29]

This reference presents several issues. The 1750 map is a significant historical document to study the urban history of the capital in the 18th century. It was detailed to specific buildings and drawn approximately to scale. However, it was not a precise enough map from which to take small measurements. The more critical issue, however, is the historicist approach and somewhat fluid interpretation of the area's 'historic urban landscape'. The city certainly continued to evolve and grow since 1750. The project's approach implied that buildings that emerged in the 260 years after are less important (Figure 3).

The proposal also referenced the 25-Area Plan to determine the quality and historical significance of the surrounding buildings, including those to be demolished and 'regenerated'. The 25-Area Plan's inaccuracy regarding building condition and history mentioned above directly impacted the justification and legitimacy behind this proposal, demonstrating the problematic rippling effect of flaws in the planning process. Besides the historical reference, the project proposal also cited other practical reasons, such as widening the street around the towers for fire safety. However, the *hutongs* from which the fire engines would potentially enter the squares are not widened. Therefore, the actual impact of this intervention is questionable.

Fig. 3.   The BDT area captured in a 1959 aerial photo overlaid with the situation in 2012. The buildings in red are the only ones that did not exist then. This directly contradicts the project proposal's claim that these buildings were all recent additions with no historical significance at all.

Furthermore, the assessment carried out in the 25-Area Plan does not account for the residents' potential enhancement of the houses. As revealed during the fieldwork in 2013 by the BDTT, some of these houses have been renovated or added with guidance and endorsement from the Dongcheng District Bureau of Housing Management [30],[31.] However, these additional buildings were still deemed 'illegal' in the announcement for demolition and evacuation that appeared around the neighbourhood overnight on 12th December 2012, with no forewarning or consultation with the neighbourhood residents.[32]

EXPROPRIATION ZONE
(DEMOLITION RANGE)

REDEVELOPMENT ZONE

PRESERVATION COURTYARDS
IN REDEVELOPMENT ZONE
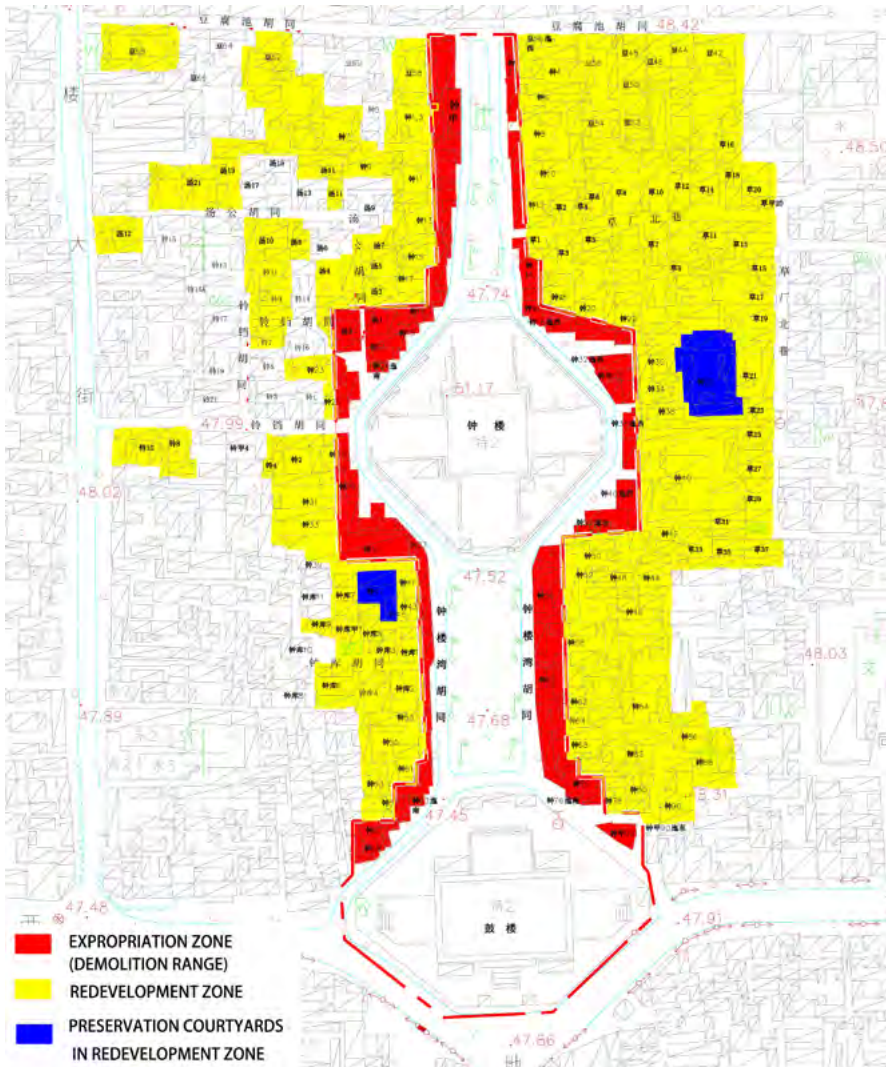
Fig. 4. Map of the demolition and redevelopment zones compiled by the BDTT in their unpublished report sent to UNESCO in January 2013.

This announcement signified the start of the project's second phase after a brief hiatus due to the restructuring of the Dongcheng District Government. In this announcement, two categories of courtyard houses were requested to be evacuated, including 66 courtyards (136 households) to be demolished and another 126 courtyards (1000+ households) to be 'regenerated' (Figure 4). Compared to the 2010 proposal, the demolition zone remained approximately the same, but with a much larger evacuation area in the 'regeneration' zone. Due to the lack of an updated project proposal, it was unclear what this 'regeneration' entailed and how this boundary was decided.

Much more resistance was heard in the second phase compared to the first, partly due to the more immediate impact of the evacuation on the local residents and businesses and the emergence of Weibo as an online platform that fundamentally changed how grassroots discourse and debates on heritage related issues were made visible and spread [33,34]. Despite the short turnaround time in the announcement, which gave the residents two and a half months to negotiate their compensation and move out, the evacuation process started slowly after the first family left in February 2013. The demolition took up pace from the summer of 2013 and carried through to the summer of 2014 (Figure 5). The demolition process was much slower than most other projects in the historic centre of Beijing, partly due to the scrutiny it received for its central location, the public debates it ignited, and the split opinions among residents.[35] Consequently, the area surrounding the BDT squares remained an open ruin for almost a year, something quite extraordinary in Beijing's historic centre.

Besides voices from the BDTT and split opinions of the residents expressed online and offline [37,38], the open ruin became a stage of informal resistance online and offline. The general public's interest was drawn to the demolition sites after a renowned traditional street food shop *(Baodu Ren)* on the square was removed, and its demolition site was posted on Weibo. Subsequently, graffities started to creep up on the demolition sites, including some well-known graffiti 'writers' who tag as 'Zato', 'Wreck', and 'AK47' (Figure 6). Zato's graffities can be seen all around Beijing, especially around the Drum Tower area. It is sometimes accompanied by the phrase 'I have no past. I have no future'. AK47, whose real name is Zhang Dali, a painter among the first street artists in China, often leaves his marks at demolition sites to 'converse with the urbanisation process'.[39]
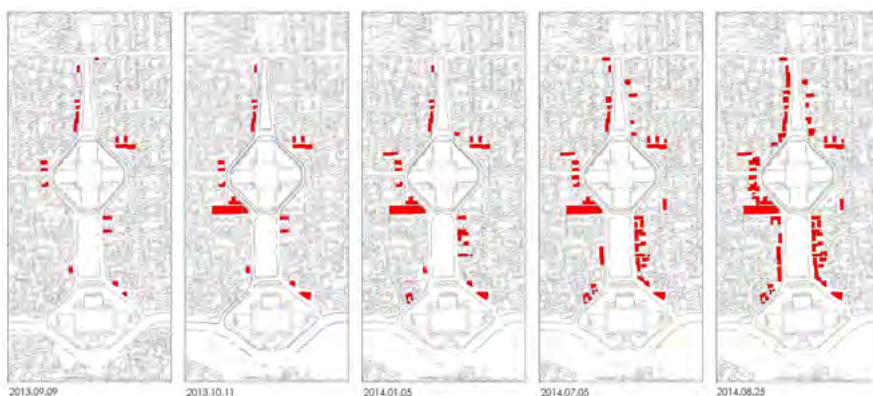
Fig. 5.   Buildings demolished around the two squares from September 2013 to August 2014, published by BDTT's Weibo account.[36]

Two other grassroots events were organised at the gate of the Hong'en Temple in 2013. Before the most recent restoration in 2023, there was an additional building in the courtyard space between the temple gate and the main hall, used as the grocery market after Bell Tower Square was no longer allowed to be used as a market in the 1980s. The additional building was built during the 1960s-70s when the temple, much like many temples across the country, was used as a factory during the 'Socialist Transformation' movement[40]. The temple gate was initially used as a tofu workshop until a Chinese-Italian couple of independent filmmakers and artists transformed it into a studio and café in 2001 called Zajia Lab.[41]

Zajia organised a Hutong concert in March 2013 at its doorstep, next to the Bell Tower square and a recently emptied-out corner shop. The event did not address the regeneration project directly but aimed to raise awareness and highlight the vibrancy of culture in the area, which constitutes part of the intangible elements within the historic urban landscape. Another event was a discussion organised by the author and a Die Zeit newspaper journalist in December 2013. At this point, the demolition was well underway, but over that winter, the pace was slowed down again. The discussion was attended by an international and wide variety of stakeholders and those who were concerned about the project, including local residents, business owners, new neighbours who had just moved to the area, journalists, architects, heritage professionals, urban planners, artists, and tourism providers. The discussion was peaceful and open, and the fact that it took place was already quite extraordinary, particularly considering a public discussion organised by CHP during the project's first phase was called off by the government last minute.[42] In hindsight, however, such discussion would have been more effective if the decision-makers were present, if it happened before the community felt 'threatened', and if local media were present. However, the timing and sensitivity of the project and such a public discussion event largely excluded these elements. On the other hand, the event would have drawn more attention from the local authority if it were more effective, increasing the risks to the organisers and participants and the potential for it to be shut down.

Fig. 6.   Series of graffities appearing on the BDT demolition site from 2013-2014.

The graffities were present for the better part of a year before the ruin was eventually cleared out or 'hidden' by a new wall erected around the boundary of the demolition in September 2014.[43] While some of the project's components, such as the construction of a Time Museum on the south side of the Drum Tower, continued, October 2014 largely signified the completion of the evacuation and demolition. Most of the businesses along the edge of the squares were removed. Instead of allowing the courtyards' gates to open directly towards the square, the new wall prevented the buildings from being turned into shop fronts.[44] The eventual evacuation and demolition area was much smaller than the project intended. While it is hard to know exactly who or which factors were most determinative, it is reasonable to conclude that the public debates and various resistance from local residents and other actors did play a role in it.

'SURGICAL' REGENERATION AND WORLD HERITAGE NOMINATION

As mentioned in the introduction, most of the planning and legal framework governing the management and development of the BDT area has been renewed over the past eight years, most of which had an overarching emphasis on the preparation to inscribe the BCA onto the World Heritage List. This new framework includes a new Beijing Master Urban Plan (2016-2035)[45], a new Controlled Detailed Plan of the Capital's Functional Core Zone (Street and Neighbourhood Level) (2018-2035)[46] as well as the latest Conservation and Management Plan of Beijing's Central Axis (2022-2035).[47] Relevant regulations were also formulated to guarantee the implementation of these plans, such as the Regulations for the Beijing Central Axis's Cultural Heritage Conservation.[48] One of the hidden issues in the conflicts between residents and the demolition office during the BDT Regeneration Project was that residents, whether wanting to leave the BDT area or not, generally thought the compensation rate was far from enough.[49] The low-rise and high-density characteristic of the historic centre has long been a source of conflicts during relocation negotiations.[50] The latest BMUP emphasises a strategy to reduce the population density in the city centre by developing a satellite city centre and moving some of the facilities and businesses out of the city centre. It sets a target to reduce the population of the six central districts from a target of 23,000,000 in 2020 to 10,850,000 from 2035 onwards.[51]

These latest plans further emphasise the 'holistic conservation (zhengti baohu)' of Beijing's historic city and accentuate the two axes (the BCA and the horizontal axis along Chang'an Street). Interestingly, many documents quote a directive from President Xi Jinping, who requests that 'the old city must not be demolished anymore (*lao cheng bu neng zai chai le*)!'. Besides the urban planning framework and existing PCHS conservation and controlled construction zones, the BDT area also falls within the World Heritage buffer zone of the Forbidden City. The buffer zone's management is enforced through the local planning and management system rather than having additional requirements. The latest 2022 Conservation and Management Plan of Beijing's Central Axis also put the BDT area within the buffer zone of the BCA. However, it does not stipulate additional measures on the area.[52] One notable change in the latest plans is that they highlight the need for 'surgical regeneration' rather than the large-scale demolition and regeneration projects seen in previous decades. This strategy will hopefully put a stop to the large-scale alterations of the historic urban fabric and displacement of

residents. The latest projects aimed to 'enhance the historical characteristics' along the BCA have highlighted this strategy. [53] Future case studies on some of these surgical regeneration projects will be needed to examine their impact.

The 2018 Controlled Detailed Plan stipulates specific measures for preserving the intangible elements of the historic urban landscape, including preserving traditional shops (lao zi hao) and their original locations, recording oral histories, and retaining traditional performance and folk customs.[54] This inclusion is undoubtedly a step up from the 25-Area Plan. The 2022 Conservation and Management Plan of Beijing's Central Axis highlights the significance of public participation.[55] Whether this element can be genuinely implemented in China's political reality is questionable.[56] Nevertheless, the detailed measures suggested in the management plan are a promising sign.

CONCLUSION

It should be noted that the various forms of resistance performed during the 2013-2014 regeneration project were not homogenous. The ambivalent and implicit messages behind the graffities are an appropriate analogy to the fluidity of stakeholders' opinions on what they were trying to resist. Many residents were willing to move to better living conditions if the compensation and relocation process were more just, while others had more attachment to the place rather than any specific historic courtyard houses to be demolished. For the conservationists such as BDTT and CHP, their reactions were triggered by the fear of the BDT area going through sweeping demolition and wholesale 'regeneration' that creates 'pseudo-antiques' (*jia gu dong*) in such a cherished historic neighbourhood. Some of the media and expat writers who wrote about the project framed it as yet another top-down initiative to displace local communities, the composition of which is indeed much more complex and nuanced. For the general public, those who expressed resistance online were more concerned about losing some of the traditional businesses than other historic urban fabrics.

Reviewing the project proposal from 2010 highlights how the urban plans can be used in various ways. The holistic approach to urban heritage conservation in the 25-Area Plan was somehow ignored or manipulated in the proposal, and the inaccurate assessment of individual buildings was used to legitimise demolition and evacuation. As pointed out by Bideau and Yan, the collective memory and emotions of this historic urban landscape have not been considered in these projects.[57] The latest development of urban plans and other relevant planning tools further elevated the significance of holistically preserving the historic city centre. It is encouraging to see that in the Controlled Detailed Plan and the BCA's World Heritage planning framework, intangible heritage has been highlighted, and the BCA's management plan and conservation regulation show a higher level of commitment to encouraging public accountability and public participation in heritage management. However, public participation is still characterised primarily as an obligation of the public rather than a civil right, a distinct characteristic compared to the same notion in other heritage contexts.[58] It remains to be seen how these measures will be implemented and how much the public and communities will be able to influence decision-making.

ACKNOWLEDGEMENTS

DISCLOSURE STATEMENT

NOTES ON CONTRIBUTOR

Dr **Lui Tam** is a lecturer of architectural history at the Welsh School of Architecture (WSA), Cardiff University. Her experience and expertise stand at the interdisciplinary crossroads of architecture, archaeology, urban planning, and heritage studies. Before joining the WSA, she practised as a heritage conservation planner and consultant for sustainable heritage tourism. She is the deputy lead of the History Heritage & Conservation Research Group at the Welsh School of Architecture. Her publications and research interests cover topics such as sustainable heritage management, heritage tourism and community development, Historic Urban Landscape, and adaptive reuse of historic buildings, focusing on empirical studies in China and Southeast Asia while also expanding into heritage in Wales.

TABLES AND FIGURES

Figure 1   The temporary market between the Drum and Bell Towers, 1933-1946, photographed by Hedda Morrison. Source: Morrison, Hedda. "South Façade of the Bell Tower, and the Adjacent Market, Beijing." Harvard-Yenching Library, 1933-1946. http://id.lib.harvard.edu/images/olvgroup39/urn-3:FHCL:4821/cataloghttps://images.hollis.harvard.edu/primo-explore/viewcomponent/L/HVD_VIAolvgroup39?vid=HVD_IMAGES&imageId=urn-3:FHCL:4821&adaptor=Local%20Search%20Engine.

Figure 2   The BDT area on the 1750 Complete Map of Beijing overlaid with courtyard boundaries within the boundary of the 'regeneration area' proposed in the 2010 project proposal.
Source: Adopted by BDTT, from Uya Hala, Haiwang, Yuan Shen, and Giuseppe Castiglione. "Compete Map of Qianlong's Beijing City." 1750. http://dsr.nii.ac.jp/toyobunko/II-11-D-802/.
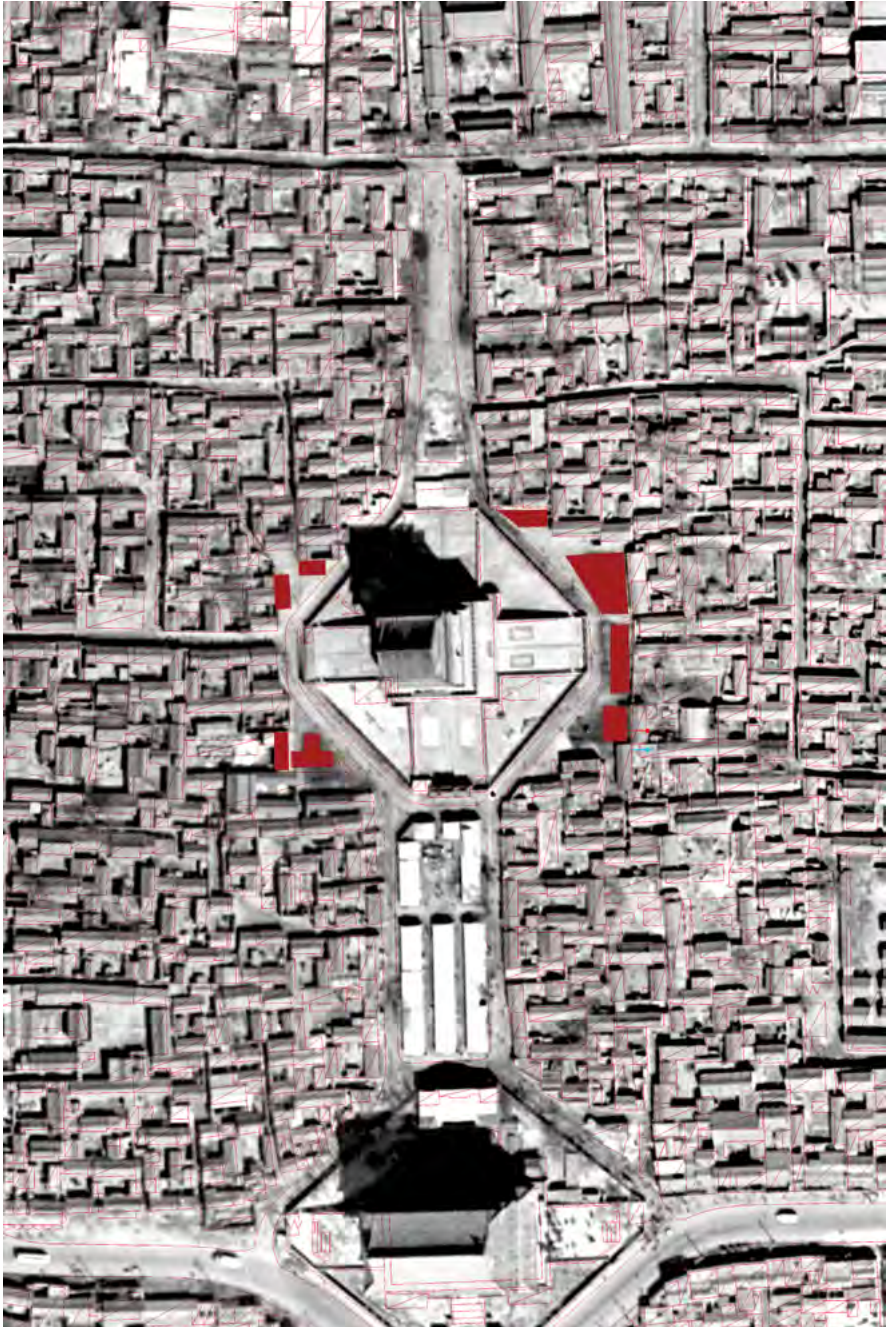
Figure 3   The BDT area captured in a 1959 aerial photo overlaid with the situation in 2012. The buildings in red are the only ones that did not exist then. This directly contradicts the project proposal's claim that these buildings were all recent additions with no historical significance at all.
Source: Adapted by Tam, from Bell and Drum Tower Team. *Brief Report About the Recent Situation in Bell and Drum Towers Square Area and Its Impacts to World Heritage Site.* (2013). p. 28.

Figure 4   Map of the demolition and redevelopment zones compiled by the BDTT in their unpublished report sent to UNESCO in January 2013.
Source: Bell and Drum Tower Team. *Brief Report About the Recent Situation in Bell and Drum Towers Square Area and Its Impacts to World Heritage Site.* (2013). p. 9.

Figure 5   Buildings demolished around the two squares from September 2013 to August 2014, published by BDTT's Weibo account. Source: BDTT, "Weibo Account of the Bell and Drum Tower Team," *Sina Weibo*, 2013, https://weibo.com/u/3229147557.

Figure 6   Series of graffities appearing on the BDT demolition site from 2013-2014. Source: Tam, Lui. "Graffities in the BDT Area." 2013-2014.

ENDNOTES

1.   This was the first time the capital's central axis was moved to approximately the position it is now, northeast of the previous Middle Capital (*Zhongdu*) of the Jin Dynasty (1115-1234).

2.   Renzhi Hou, *An Historical Geography of Peiping*, 2014 ed., China Academic Library, (Berlin, Heidelberg: Springer Berlin Heidelberg, 2014).

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6.   Florence Graezer Bideau, "Resistance to Places of Collective Memories: A Rapid Transformation Landscape in Beijing," *The Palgrave Handbook of Urban Ethnography* (2017).

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14.   Xiaoxu Liang, Yanjun Lu, and John Martin, "A review of the role of social media for the cultural heritage sustainability," *Sustainability* 13, no. 3 (2021).

15.   He et al., "Measuring social network influence on power relations in collaborative planning: A case study of Beijing City, China."

16.   The auto-ethnographical component includes my experience as a member of the Bell and Drum Tower Team (BDTT), a voluntary group who was an active advocate during the BDT regeneration project in 2013-2014.

17.   Beijing Municipal Institute of City Planning & Design, Beijing Urban Master Plan (1991-2010), (Beijing: Beijing Municipal Commission of Planning and Natural Resources, 1992).

18.   Beijing Municipal Institute of City Planning & Design, Beijing Urban Master Plan (2004-2020), (Beijing: Beijing Municipal Commission of Planning and Natural Resources, 2005).

19.   'Historic Area' is used as the translation for 历史文化保护区 (*Lishi Wenhua Baohu Qu*) in the English title of the plan, but this protection category should be more accurately translated as 'Historic and Cultural Conservation Area'. The 25 conservation areas were designated in the 1990s, with a further five within the Old City (within the Ming and Qing Dynasty city walls) designated in 2002, and three more in 2004-2005.

20.   Beijing Municipal Bureau of Cultural Heritage, Conservation Plan of 25 Historic Areas in Beijing's Old City, (Beijing 2005).

21.   The building height is the most fixed criteria when it comes to controlling the construction within these conservation areas. The height restriction is aligned with other legislative and planning framework regarding PCHS's Controlled Construction Zones. In Beijing, these are stipulated in the 'Management Regulation of the Conservation Zone and Controlled Construction Zones of Beijing's PCHS' (2007), and their boundaries are drawn across the entire Old City area, distinct from the rest of the country where these measures are usually specifically determined in each PCHS conservation plan.

22.   Boston International Design Group, *Zhong Gu Lou Guang Chang Hui Fu Zheng Zhi Xiang Mu [Restoration and Rectification Project of Bell and Drum Tower Square]*, Dongcheng Historic City Preservation and Construction Ltd. (Beijing, 2010).

23.   The project is described as having two or three phrases within the same project or two consecutive projects in various literature.

24.   The initial project in 2010 was commissioned and developed by Dongcheng Historic City Preservation and Construction Ltd. (DHCPC), which is a subsidiary real-estate company of Beijing Oriental Cultural Assets Operation Corporation, a company whose capital was injected by state-owned Assets Supervision and Administration Commission of the State Council. The proposal was designed by the Boston International Design Group (BIDG), a company that was accused of corruption and plagiarism at the beginning of 2012.

25.   CSOs in China are NGOs officially registered with the government and required to go through an annual inspection with the Bureau of Civil Affairs.

26.   The Chinese name of the team 钟鼓楼片儿区关注团队 (*Zong Gu Lou Pian'er Qu Guanzhu Tuandui*) can

be more accurately translated as 'the Watching Team of the BDT area'. For convenience, BDTT will be used as the acronym in this article.

27. Boston International Design Group, *Zhong Gu Lou Guang Chang Hui Fu Zheng Zhi Xiang Mu [Restoration and Rectification Project of Bell and Drum Tower Square]*.

28. Haiwang Uya Hala, Yuan Shen, and Giuseppe Castiglione, "Compete Map of Qianlong's Beijing City," (1750). http://dsr.nii.ac.jp/toyobunko/II-11-D-802/.

29. Boston International Design Group, *Zhong Gu Lou Guang Chang Hui Fu Zheng Zhi Xiang Mu [Restoration and Rectification Project of Bell and Drum Tower Square]*.

30. Bideau and Yan, "Historic urban landscape in Beijing: The gulou project and its contested memories."

31. Bell and Drum Tower Team, *Brief Report about the Recent Situation in Bell and Drum Towers Square Area and Its Impacts to World Heritage Site* (2013).

32. This is not a singular incident in Beijing, but a common tactic used for various displacement or demolition areas within the historic city.

33. Zhaohua Deng et al., "Collaborative planning in the new media age: The Dafo Temple controversy, China," *Cities* 45 (2015).

34. He et al., "Measuring social network influence on power relations in collaborative planning: A case study of Beijing City, China."

35. Bideau and Yan, "Historic urban landscape in Beijing: The gulou project and its contested memories."

36. Another problematic aspect that further undermines the credibility of the project is that the demolition resulted in various complete courtyards being cut half. One notable example is the three-courtyard complex at the northeast corner of the Bell Tower (the tower above), where the first row (jin) houses were demolished, the traces of which can still be seen today, like a gaping wound of the courtyard behind.

37. Zhang et al., "Strategies of the built-heritage stewardship movement in urban redevelopment in the Internet Age: The case of the Bell-Drum Towers controversy in Beijing, China."

38. Bideau and Yan, "Historic urban landscape in Beijing: The gulou project and its contested memories."

39. Anon., "*Zhongguo You Tuya: Shenye Jietou de Jinji Youxi* [China has Graffities: A Forbidden Game on the Midnight Streets]," *Jiemian Global*, 11/12/2017, 2017, https://en.jiemian.com/article/1806253.html.

40. The temple's main hall, accessed via a small lane next to the temple gate, was occupied by a private owner after a restoration by a Brunei architect in 2004. The additional building was demolished during the recent restoration in 2023, and all other private users have been moved out.

41. S. A. Smith, "Contentious Heritage: The Preservation of Churches and Temples in Communist and Post-Communist Russia and China," *Past & Present* 226, no. Suppl_10 (January 1 2015), https://doi.org/10.1093/pastj/gtu027.

42. From around 2001-2015, this was a venue where independent film screening and a wide variety of arts events took place, including films that were banned in the country and artists who were on the government's watchlist due to their political stance. It is no less than miraculous that such a venue was able to survive for as long as it did in the historic centre of Beijing. The temple site is now reopened as a museum for postal history. The exhibition also includes a sign from Zajia donated by the owner.

43. Zhang et al., "Strategies of the built-heritage stewardship movement in urban redevelopment in the Internet Age: The case of the Bell-Drum Towers controversy in Beijing, China."

44. It was likely to 'tidy up' the squares for the National Day Golden Week in October. The current information board in front of the Drum Tower explicitly states that 'all forms of graffiti are prohibited' on the square.

45. More recently, small businesses were opened on the annex buildings of the BDT. Businesses did come back to the area, but in a different profile.

46. Beijing Municipal Institute of City Planning & Design, Beijing Urban Master Plan (2016-2035), (Beijing: Beijing Municipal Planning and Land Resources Management Committee, 2017).

47. Beijing Municipale Planning and Natural Resources Committee, Controlled Detailed Plan of the Capital's Functional Core Zone (Street and Neighbourhood Level) (2018-2035), (Beijing: Beijing Municipal Government, 2018).

48. Beijing Municipal Bureau of Cultural Heritage, Conservation and Management Plan of Beijing's Central Axis (2022-2035), (Beijing 2023).

49. Beijing Municipal Bureau of Cultural Heritage, "Regulations for the Beijing Central Axis's Cultural Heritage Conservation," ed. 15th Standing Committee of Beijing's Municipal People's Congress (Beijing: Beijing Municipal Bureau of Cultural Heritage,, 2022).

50. Florence Graezer Bideau and Haiming Yan, "Re-creating memories of Gulou: Three temporalities and emotions," in *People-Centred Methodologies for Heritage Conservation* (Routledge, 2021).1A household of three to five people within a courtyard, which is often shared by multiple households, can sometimes have only 20sqm within their 'legal structures'. Even with a compensation rate much higher than new-built

apartments per square meter, the total amount is still far from enough for the families to move to a decent apartment elsewhere, let alone the fact that these allocated apartments are often far less convenient than the city centre.

51. Beijing Municipal Institute of City Planning & Design, Short Beijing Urban Master Plan (2016-2035). Strangely, however, the BDT neighbourhood area was already within the national PCHS conservation zone of the two towers, which stipulates that new construction is restricted, and any demolition must be justified. It apparently did not stop the demolition to take place in 2013-14, because the buildings were labelled 'illegal' and had no historical significance. The intricacy and complex inconsistencies between these planning mechanisms deserve further dissecting but will not be elaborated on further due to the limited scope of this article.

52. Yan Du, "*Zhong Gu Lou Zhou Bian Di Wu Li Mian Feng Mao Hui Fu - Deng Lou Nan Wang Lan Zhong Zhou Xian Feng Mao* [Restoration of the fifth facade in the surrounding of the Drum and Bell Towers - A south-ward view of the Central Axis on the tower]," *China News (Zhong Xin She)* (Beijing) 2022, https://www.bj.chinanews.com.cn/news/2022/1107/88509.html.

53. Beijing Municipale Planning and Natural Resources Committee, Short Controlled Detailed Plan of the Capital's Functional Core Zone (Street and Neighbourhood Level) (2018-2035).

54. It should be noted that public and community participation has now become an essential element in any World Heritage inscription dossier. This management plan, being the primary planning framework support for the inscription, needs to include this element.

55. Haiming Yan, *World Heritage Craze in China - Universal Discourse, National Culture, and Local Memory* (New York: Berghahn Books, 2018).

56. Bideau and Yan, "Re-creating memories of Gulou: Three temporalities and emotions."

57. Lui Tam, "Sustainable Heritage Management in Contemporary China" (Doctoral Thesis, Cardiff University, 2022).

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Challenges of Heritage Conservation on a High-Density Island Port Hamlet Mitarai town, Hiroshima, Japan

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Abstract

The legacy of a high-density island port hamlet - Mitarai town has well reflect development process of regional maritime transportation and entertainment sectors for transit passengers. The town is well remained and representing glory of regional maritime legacy and architectural heritages which known as the highest population density of the region. Since the diffusion of new transportation modes, the town faces serious social shrinkage which significantly appeared social ageing and depopulation. Recent hope in Mitarai town where included nation's 36th preservation district in 1994, however, community faces significant social changes which endangered to sustain substance of local living culture. A number of issues are yet to be addressed to secure residents' contemporary living needs, which includes: maintaining sustainable tourism demands; prevention measures for natural disasters; appropriate community engagements; and encourage local entrepreneurs. In this paper, author firstly collect and analyse the periodical development discourse on the Seto Inland Sea region, particularly historic transformation of the Mitarai town and the region. Secondly, to analyses development / preservation discourses in Mitarai town.

Keywords

How to cite

INTRODUCTION

REGION'S HIGHEST DENSITY HAMLET ON A REMOTE ISLAND

High-density built environments have historically been observed in urban areas. The built environment has undergone dramatic changes, including sky-high concreate jungle, chronic traffic congestion, and intensified land use through uncontrolled densification, to accommodate the growing population. However, the challenge of urban planning has evolved to improve a more sustainable urban system due to urban densification. In particular, new physical development and social organization methodologies emerged to prevent urban society's collapse.

Interestingly, high-density phenomenon was also observed in the rural sector under specific circumstances. For example, Mitarai, a port hamlet on a remote island, has historically had the highest population density in the region. Mitarai has developed and thrived as a port of call for major shipping routes since the Edo period. The town's opulent architecture, which is still considered unparalleled in the region, reflected the prosperity of the maritime trades. Furthermore, the town had the region's largest Kagai (Geisha entertainment enclave), which members of the maritime trade frequented. As a result, many women who live in poverty had no choice but to work and serve there. The memories of the light and shadow of the people who came and went to Mitarai village help elucidate the village's high density.

High-density societies have seen both prosperity and decline across all ages and countries. Mitarai is no exception; with the decline of shipping routes and the enforcement of prostitution laws, the population has shrunk, and the community has lost its vitality. Mitarai is one of the region's most rapidly declining areas. The authorities are taking various measures to revitalize the community through heritage conservation practices. For many Japanese provincial societies, heritage conservation represents the last ray of hope for social revitalization.

Social shrinkage affects entire social structures and the nature of local communities. There is an urgent need to develop a new planning methodology to address the social shrinkage observed in Mitarai town and its provincial counterparts. Social shrinkage is dependent on the social context, and future issues are primarily unpredictable.

The social shrinkage phenomenon is not only observed in Japan but also visible in other Asian countries and regions in the future. The concurrent social shrinkage phenomenon and the challenges faced by Japanese local administrators and planners could serve as a seed for a new approach to future urban planning.

RESEARCH FOCUS AND METHODS

Mitarai town is located middle of the archipelago of Seto Inland Sea in Western Japan, Ohsaki-shimojima Island is an area of blessed natural beauty and rich history. The island's area is only 18km2, including a 26km shoreline, and the topography mostly comprises steep mountains, which are home to a number of renowned citrus farms. The six small towns along the island's coast are administratively under Kure City, Hiroshima Prefecture (Fig. 1).

Among those towns is the community of Mitarai, which was selected as the 38th national Important Preservation District for Groups of Traditional Buildings1 in 1994. Mitarai's harmonious natural scenery and traditional built landscape heritage were highly evaluated along with its history as an old-time transit port town.

However, despite a lengthy community-based effort to preserve its historic built environment and social revitalization, Mitarai's social shrinkage is escalating; the aging rate has been increasing at a constant, such that the population of individuals aged 65 and above was 57% in 2015, and the population decreased by 50% from 1995 to 2015 2. Statistics recorded only 13 school children under the age of 15 in the town.

Mitarai historically served as the busiest transit port in the region where sailors awaited tailwinds, escaped from pirates, moored and repaired ships, and replenished essentials. Merchants bought and sold goods and sought information, and entertainers provided passing relief for travellers and sailors.

During its golden era, Mitarai's community was highly diverse, and non-permanent dwellers also contributed to forming its vibrant culture. Although the present representation of the island reflects geographic remoteness and marginality from the nation's mainstream developments, port towns historically played important roles as inter- regional interfaces and driving forces toward prosperity.

Mitarai town's glory derived from its status as the country's busiest transit port and a place to find entertainment. During its peak thriving period around the 1750s, over 100 geishas resided in Mitarai, comprising 20% of town's population3, and this figure does not include wanderers of them. Geishas are female livelihood those trained of singing, dancing and the art of conversation which generally entertain their male guest.

Research by the Mitarai History Record Group identified the town's entertainment sectors among its most effective magnets for attracting voyaging ships[4]. In fact, most of its transit port counterparts also had well-developed port functions, including Kagai (geisha's entertainment enclave) [5] near harbours.

As enclaves, Kagai were widely formed in Japanese cities, which comprised variety of businesses to entertain guests. Kagai had large population of Geisha which comprised by Geigi (entertainer) and Shogi (harlot). Their definitions and denominations were often varied depend on the region and city. This paper refers these definitions are based on the case of Mitarai town.

After the enactment of the Anti-Prostitution Act in 1956, only Geigis were officially remained and Kagais were functioned for the place of luxury entertainment as well as representing a part of Japanese tradition, but slowly disappeared.

Kagai is widely observed in Japanese cities and helped substantial urban growth. According to the geography study by Masahiro Kato, there were over 600 Kagais in Japan, and he described that even "Kagai bring up the cities in large" [6]. Of course, these Kagais have diverse feature which reflected local social settings and characters.

Needless to say, its large Geisha population has also reflected an unsavoury shadow on the town's history, which unjustly falls most strongly upon the female community. Also, social inferiors were underlying support for town's glory. Even though, it reminds us an important query; as historian Hiroshi Nunokawa clearly pointed out;

> "Extent the thought on the character of maritime world of archipelago of Seto Inland Sea which evolved by essential shipping business those have carried the people, commodities, money; it is inevitable to questioning the mean and form of prostitutions" [7].

Considering shadows of history can be burden, particularly as the cope of conducting an official heritage conservation project embodies the process of selecting the preserving property and collecting narratives and memories. Arguably, conservation practice is the reflection of social norm as well as politics. As such, it could be understood that efforts aimed at preserving Mitarai's built heritage would lead to important inquiries that remind us of diverse past varnishing memories, including sorrowful and as yet untold narratives.

In this article, the author portrays the historic built environment of Mitarai as a high-density living environment, captures its social transformations up to the present day, and considers the future role of urban heritage conservation and living heritages under the situation of a shrinking society.

GLORY OF MITARAI: MARITIME TRADES AND SOCIAL DIVERSITY

OFF-SHORE NAVIGATION AND THRIVING MITARAI TOWN

The legacy of Ohsaki-shimojima Island is believed to be traceable to the early settlements that archaeological research revealed were established during the Tumulus period[8].

During the early days of navigation, sailors generally selected Jinori (coast-wise navigation). Later, maritime innovations enabled more rational navigation via Okinori (offshore navigation). With the introduction of Okinori, Mitarai became one of the most popular transit ports. Mitarai is ideally situated in the central position of inland sea and surrounded by smaller islands; it was characterized by a manageable tide flow, escapable from stormy winds and pirates. (Fig. 1)

The Edo Shogunate established a feudalistic social hierarchy that was closely associated with residences and economic roles; generally, landlord farmers were ranked highest, followed by peasants, and then fisherfolk with homes on land. Fisherfolk living on Ebune (boat house) were considered inferior in the hierarchy—among the lowest classified status groups, they lived destitute lives and wandered between coastal hamlets to seek their keep. However, they were adapted to life on the sea and were not always content to reside on land.

These non-permanent communities served as an interface between maritime world and towns, bringing novelties and fashionable accents, supporting the intelligentsia, assisting with local rituals, and even working as handyman. Remarkably, folklorists Kazuteru Okiura described their existence as one of "ambiguity" between holiness and baseness[9]. The nature

of port towns was wildly open; criminals pretending to be Komuso (mendicant priests) often wandered the alleys; however, they were also visited by wealthy and professional people such as medical practitioners, well-educated maritime professions, and ambitious entrepreneurs. Traders in Mitarai had access to extended networks of information brought by sailors and travellers from as far as Kyushu Island.

PROSPERITY OF PORT TOWN AND GROWING ENTERTAINMENT BUSINESS

Okinori (offshore navigation) required travellers to wait for favourable winds and tides at transit ports between voyages, and entertainment sectors catered to travellers and sailors in prominent transit ports. Katsushi Shimizu described Mitarai's population density as being significantly higher than its urban counterparts, and its glory was prized as "matchless in Chugoku region." [10] In 1724, Wakaebisu House was among four Ochayas (entertainment Geisha house) granted permission from the domain. These entertainment businesses grew further; in 1927, there were 14 Okiyas (agent houses) and 17 accommodations. Mitarai's population totalled 1339 persons in 1950. Yet, there was a higher percentage of females (54.5%), and at 28.9%, the proportion of residents recorded as being part of the "service sector" was significantly high compared with its country district (5.8%) and the wider prefecture (7.9%).

Geishas were generally from poor families and bonded by debt. In 1900, the Meiji government implemented a policy for the Regulation and Control of Prostitution that established supervision over the entertainment business and defined a legal distinction between Geigi (entertainers), and Shogi (harlot). In Mitarai, the former was called Oka geisha (Geishas on land), whereas the latter were called Oki Geisha (Geishas on the offshore). Popular Geishas were wearing gorgeous kimonos, speaking in pert accents, and always attentive; these Geishas represented a port town's prosperity. However, their distinction was sometime ambiguity.

Travelers and sailors eagerly awaited transit stops at Mitarai so that they could return to its gorgeous entertainment houses and see their regular Geisha partners. Dazzling lights were seen from ships along the town's southern neighbourhood near the pier. For offshore ship customers, Ochoro Bunes (lighters) carried Oki Geishas. Each lighter was operated by nine Choro-oshi (lighter oarsman) agents. Sometimes, Oki Geishas were referred Funa- goke (widow on lighter) and played the role of transient spouses for travellers and sailors. During this thriving period, Mitarai's quantity of alcohol consumption was high relative to its population size; in fact, the town had over 12 sake (rice liquor) retailers in 1927.

These entertainment businesses were not highly reputed by the ruling classes; despite their enough wealth and social power; Ochaya owners were unselected as town chiefs by rulers[11]. Nonetheless, the community of Mitarai warmly accepted Geishas as their neighbours. Harumi Kato portrayed that the residents of Mitarai typically referred to the women as Beppin san (belles), thus reflecting social intimacy[12]. Hiroshi Nunokawa remarked that not a small number of local men married former Geishas[13], and History of Yutaka Town reported that they were always offered freshly drawn hot baths in the town's public baths[14]. When they died, the townspeople buried them reverently in the local cemetery.

Fig. 1.   Map of Mitarai Town, and Seto Inland Sea. Map drawing by author.

Nevertheless, it is important to understand that the Geishas were bonded by money and lived under inhumane rules.

CHANGING LANDSCAPES:
RECLAIMING LAND, BUILDING HOUSES, FREQUENT DISASTERS

During the Edo period, Mitarai had the highest population density among regional settlements, including the ruler's castle town of Hiroshima[15]. It was continued to the postwar period. According to statistics in 1950, population density in Mitarai was significant at 6695 per square kilometre[16].

Fig. 2 indicates the map of Mitarai town which overlaid with area's former coastline, current designation of preservation district. Coastal land for residential and commercial use has always been limited; therefore, continuous construction of land reclamation and high-density settlements were inevitable. According to the town's oldest written records, one of the earliest reclamations was on southern hamlet in 1828[17]. Thus, most of present major streets and preserved houses are standing on reclaimed sandy low land. This has been a primary reason that Mitarai has experienced frequent flooding during storms and high tides in recent years.

Settlements were formed and constructed accordingly, including Machiyas (town houses) which are a common building type of historic towns in Japan. The Machiyas along Mitarai's main streets have gabled entrances, finished white plaster walls, and oxidized silver Kikuma roofing tiles. The diverse sizes and specifications of the Machiyas reflect the owners' social status and wealth.

Mitarai's remaining oldest buildings are believed to have been constructed as early as the Edo period[18]. Some buildings were remarked important history, such as the Wakisaka Residence was used as a transit accommodation for members of the Satsuma Domain.

Fig. 2.   Picture of Mitarai Town, and Seto Inland Sea. Picture provided by author.

Frequent disasters have hit Mitarai. During its golden age in the 1770s, typhoons destroyed shores and major buildings. A fire in 1759 destroyed Mitarai's central neighbourhood, and epidemics and periods of starvation also claimed resident's lives and affected the town's trade climate.

HERITAGES AND MEMORIES REMAINED

DECLINING PORT TOWN: LOSING SEA ROUTES AND PROSPERITY

Since the Meiji period (1868–1912), Japan has urged social industrialization and modernization. Maritime engineering evolved more rational navigation methods. Newly invented navigation methods enabled longer voyages, even under conditions of adverse winds and stormy weather. New sea routes became available and fewer transit ports were required. Moreover, nation's major intercity rail-link reached this region as early as middle of Meiji period, thus providing cost efficient and faster service.

Katsushi Shimizu has pointed out one of the reasons for Mitarai's obsession then; the enactment of the Anti- Prostitution Act in 1956 and subsequent closure of Ochayas (entertainment Geisha houses) and related businesses had a significant downward[19].

Under the above conditions, people on the island struggled to develop a new business sector, eventually turning to citrus Unshiu farming on the mountain. However, the residents of Mitarai did not have sufficient citrus farms within their island[20]. Although Mitarai faces the sea, the residents have a limited involvement in fisheries, as they have only a small sea zone with fishing rights.

BRIDGE LINK AND REMOTE ISLANDS DEVELOPMENT ACT

Population declines and social aging has been apparent in the Mitarai since the 1930s. According to statistics, Mitarai's population reached its peak in 1880s with 1730. Despite the islands' social decline, other industrial cities have changed the landscape of the inland sea area due to massive land reclamation and infrastructure projects. The socio-economic declines experienced by Mitarai are similar to those occurring among provincial societies, particularly

remote villages and islands.

Against the downward trend on remote island societies, Japan's government enacted a new legislation, the Remote Islands Development Act in 1953. The law was extended to include Ohsaki-shimojima Island in the ninth batch in 1961.

Since then, the island has obtained relatively cordial development incentives, and successfully upgraded the islanders' living environment.

In 1966, government began revoking the law's applicability for islands connected with the mainland by newly constructed bridges. For Ohsaki-shimojima Island, Remote Islands Development Act applicability was eventually revoked in 2010 after the Aki-nada Bridge link was completed in 2008. (Fig. 1)

HERITAGE CONSERVATION: DESCRIBED HISTORY AND MEMORY

Mitarai's heritage has been proposed for preservation by professionals and academics. Residents have eagerly taken action toward the area's social revitalization, and they established the Historic Town Tourism Promotion Association in 1990.

Heritage conservation efforts began immediately after Mitarai suffered severe storm damage in 1991, when the Typhoon Mireille destroyed the coastal houses and many others experienced flooding from high tides and severe waves. The ground level of Mitarai subsided significantly after the 1946 earthquake, which has made the town vulnerable to frequent flooding from storm surges[21].

Aftermath of the typhoon, Mitarai's town authorities urged the implementation of disaster recovery projects and commenced with a heritage inventory survey. When the research was completed, policy implementation was settled at an unprecedented pace; the enactment of the preservation ordinance occurred in 1992, and 6.9ha of Mitarai's town area was designated as a preservation district in 1993. Subsequently, in July 1994, the area was selected for inclusion among the nation's Important Preservation District for Groups of Traditional Buildings by the Agency for Cultural Affairs. 203 buildings, 75 structures and 17 natural properties have been listed as preservation properties, which are subsidized by a relatively coordinal restoration fund.

Subsequently, various measures were taken, including the Urban Living Environment Improvement Project[22] and the Disaster Prevention Plan[23] in 1999. Electric power lines were put underground beneath the main streets in 2000, and a community hall and fire station were also upgraded during this period.

Arguably, there is a limited footprint to document the life of the Geishas in Kagai. During the early stages of heritage conservation in 1990s — only less than 40 years left since enactment of Anti-Prostitution Act in 1956, some residents remained who had witnessed Mitarai's both glorious and shadows. Even today, locals desire visitors to have proper understanding and attitude for the town's long legacy.

However, there has been a limited discourse from the heritage conservation field, particularly on the legacy of Geisha and Kagai. In recent years, architectural researchers have focused more attention and respective academic discourses on Kagais; for example, case studies in Kanazawa City[24] and Kagurazaka, Tokyo[25]. The authors of the former paper pointed out that Kagai incubated essential traditions in Japan, which is reflected in architectural, entertainment, cuisine, and manner. The authors urged to take immediate conservation measure for Kagais and its heritages.

HERITAGE CONSERVATION AND COMMUNITY RESPONSE

Heritage conservation efforts in Mitarai were initiated and formed by the local community, which the Japanese preservation district system encourages as a means to ensure future continuity.

After the town's selection as a national preservation district in 1994, Mitarai's residents established the Preservation District Residents Association, which initially began with 42 members, and others from off-island have joined as well. However, the group reflects that their initial proposals have not been entirely realized due to insufficient manpower and financial resources. Finding new leaders is also urgent matter.

Residents' expectations and perceptions toward heritage conservation have changed over time. The author and research group carried out series of questionnaire surveys in 1997, 2007, 2013 to gauge secular changes of residents' perceptions of conservation in Mitarai[26]. (Fig.3)

According to the resulting analysis, residents have maintained largely positive views concerning the continuation of heritage conservation. For example, in response to the question regarding the "necessity of heritage conservation" for their town, nearly 70% of residents agreed, and their stance has remained unchanged over 16 years. However, they have a relatively low understanding of the conservation system (e.g., official restoration subsidization and funding procedures), which 60% of residents who participated in the 2013 survey described as "incomprehensible." Notably, their understandings have decreased over time.

Importantly, gender and generation gaps are prime determinate factors of survey responses. Male respondents have expressed increasingly positive attitudes (47.2% in 2013) toward the "necessity of heritage conservation," whereas female respondents have always had lower levels of interest, and those who chose the response of "whatever happens will be fine" reached a peak of nearly 50% in the 2013 survey.

SHRINKING SOCIETY AND EXPECTATION TOWARD HERITAGE TOURISM

In 2005, Yutaka Town was administratively merged into Kure City under the Law of Comprehensive Regional Decentralization Act. Kure City is located 30km away from Mitarai, which connected by bridge link since 2008. Upon the merger, an official preparation committee emphasized the substantial benefits to be gained by both Yutaka Town and Kure City[27].
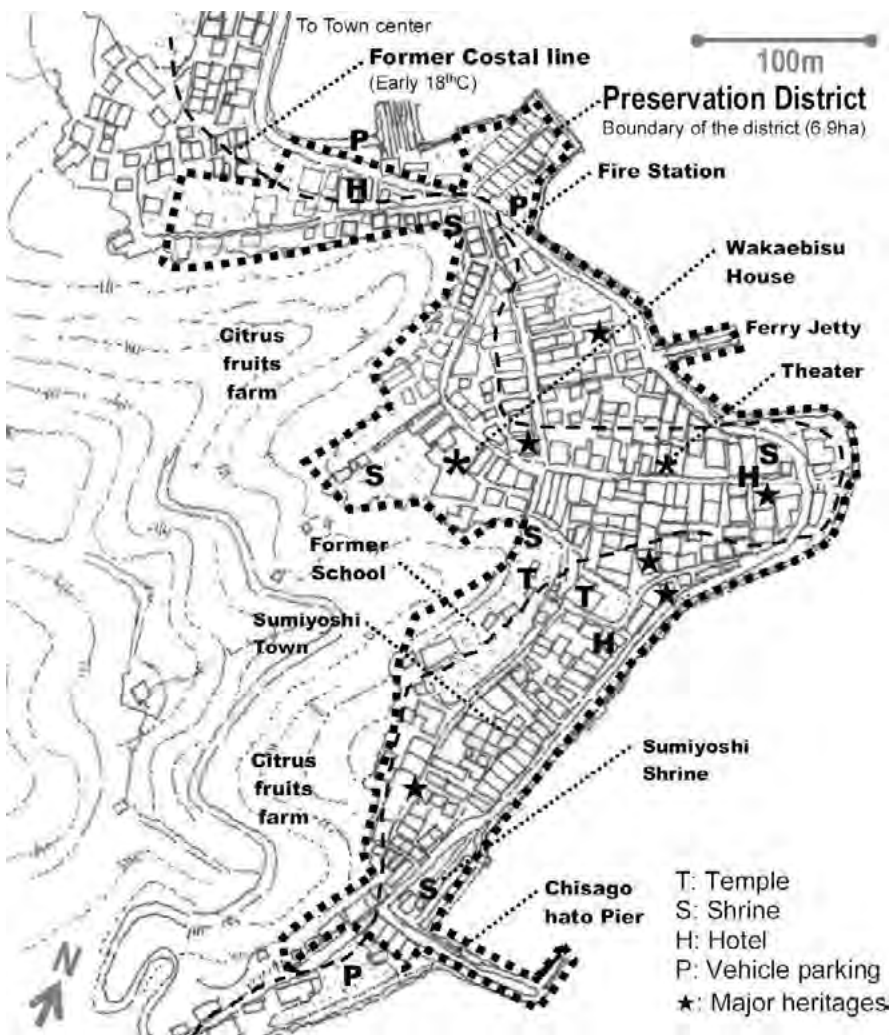
Fig. 3. Map of Mitarai town, Kure City, Hiroshima Prefecture. Former shore line was the town's approximate location in the early18thC. Adapted from Board of Education of Yutaka Town, 2000, History of Yutaka Town: Main Section, Yutaka Town. Map drawing by author.

The bridge link to the mainland is an islander's long year's dream, and the 903-meter-long Toyoshima Bridge was completed in 2008. Ohsaki-shimojima Island is fully connected by the Aki-nada Bridge link comprising eight bridges. (Fig. 1)

Since then, the islanders have experienced changes in their daily life. A report prepared by the National Land Development Council to discuss the revocation of the Remote Islands Development Act confirmed that the new bridge had brought various benefits, including more convenient travel, new marine products and citrus markets, and an increased number of tourists. However, the island has lost retailers, subjected to unlawful dumping of garbage, and passenger ferry service routes were terminated.

The report concluded that the:

> "bridge link was the result of long years of petition by the islanders and a variety of benefits were confirmed. However, there are points to be re-examined to generates more benefit through newly completed bridge link." [28]

The lack of any high school along with limited job opportunities are prime reasons that younger generations are leaving from the island. Eventually, not a small number of families rent flats on the mainland near to their children's high schools. Higher educational institution is not existed in the island.

The new bridge has brought more tourists to the town. According to estimated value statistics by local government[29], the town received approximately 8,000 annual visitors in 2007; which sharply increased to 28,000 annual visitors the year after the bridge link was implemented.

Even though the reality, heritage tourism is not a panacea for town's future. Social shrinkage trends accelerate year by year, and there are increasing the number of empty houses and land plots in the town. According to the results of field research by the author and research group, there were 70 empty houses (39.7% of houses in the preservation district) in 1997, and the number increased to more than 90 empty houses (50.2%) in 2013.

Many of the owners of the empty houses are living away from the island. They are not keen to sell or rent to others for worry of problems with former neighbours, and property taxes for old houses are relatively low. It is said that the town's relatively conservative social atmosphere does not always promise openness to anyone outsiders.

As we observed (Fig.3), population decline and social aging have not been subsided in the area. A population cohort analysis by Aika Kanematsu revealed that Mitarai's population was projected to be reduced to only 208 persons by 2025; that number would nearly equal that of the town's preserved historic properties[30].

Even though, the town faces silence, but notable changes, former residents' senses of belongings and nostalgia have not been faded. As one resident recalled:

> … Upon the summer festival of Mitarai, often I receive phone call from friend living away from Mitarai. If he cannot manage to come back to Mitarai, he asks me to listen the sound of festival's blasting drum through mobile. Always he expresses this really sincerely from his heart…
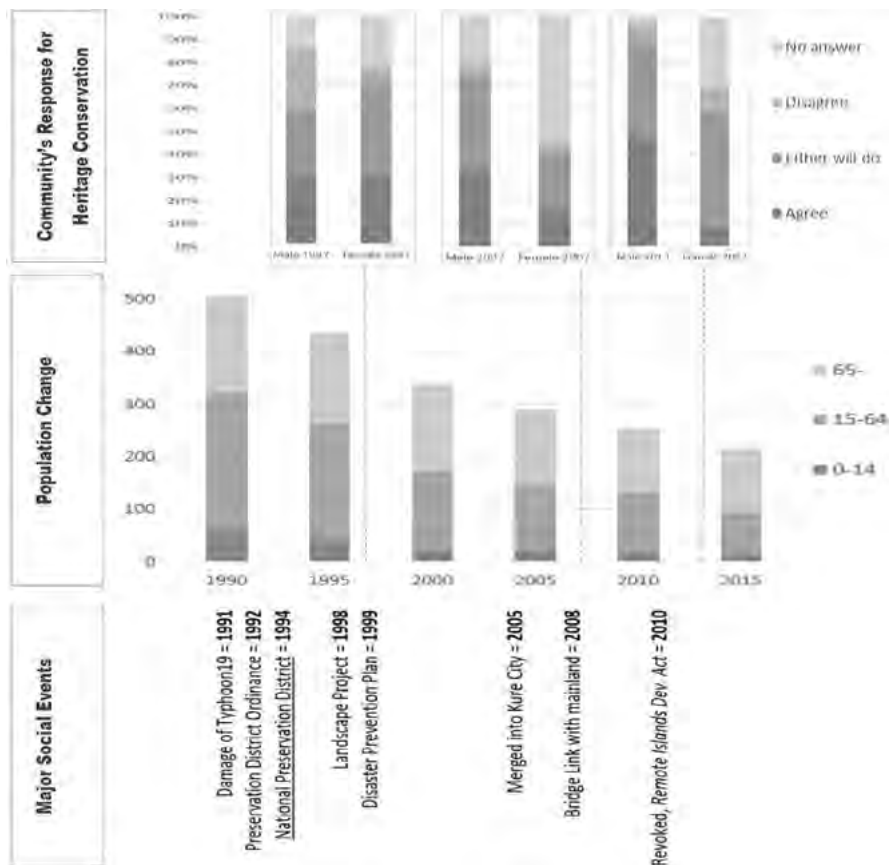
Fig. 4.   Mitarai's Major Social Events, Population Change and Community's Response for Heritage Conservation.

Recently, there have been some encouraging signs; some young families from cities have settled in Mitarai, and they have opened heritage-inns or cafes. Other entrepreneurs are also looking for places to start their businesses.

Remaining issues will determine the current and future direction of Mitarai's community. Yet, heritage conservation experts and administrators have identified Mitarai's case as a fortunate example; official recognition as a national preservation district has been a positive factor to enhance its social revitalization and sustainability. Compared with other hamlets on the archipelago, Mitarai has experienced a slower degree of depopulation and aging.

Efforts by long-time residents and the local authority have preserved historic landscape and enriched the local identity, after their catastrophic damage of typhoon in 1991. In the future, Mitarai's experience will be a leading example for other communities that hoping to counter social shrinkage by benefit through heritage tourism.

However, the relationship between tourism popularity and the town's selection as the preservation district should be re-examined; as there are now nearly 130 nation's important preservation districts in Japan, the status is not as rare as it was a few decades ago.

Nonetheless, there are a limited examples of preservation districts that include a historical Kagai. Each preservation district focused representations of its historic significance and uniqueness. As we learned from the history of Mitarai, the town was a product of social diversity, dynamism, and openness for outsiders in the maritime world of archipelago. Those who encountered Mitarai on their transit routes were also invisible actors in the town's legacy. From its initial settlement as a port town, Mitarai revolved its trade and entertainment functions like the wheels of a vehicle, and became popular among travellers and sailors. As a result, Mitarai's "heritages" - luxurious and beautifully designed built heritages were constructed.

To describe the glory of the town, the past existence of Kagai - entertainment sector will be invisible component, even though it is sometimes associated with shadow of memories. In the context of contemporary social norms, the prosperity of Mitarai's entertainment businesses were results of social injustice and misfortune imposed on its female community and social inferiors. However, these people's footprints are relatively limited on the current physical appearance and interpretation of the town.

Recently, wider generations in Japan have expressed more interest the legacy of Kagai and Geisha, which have been documented in several publications and received positive reaction from the public[31].

Nearly 70 years have passed since the enactment of the Anti-Prostitution Act in 1956 and the subsequent closure of the Ochayas. Gradually, the pain and stigmas of Geisha culture are easing among the public. Masahiro Kato pointed out that Kagais were not situated away from general public; on the contrary, they were existed as an essential contributor of built Japanese cities too.

Historic perspectives and people's memories continuously transforming with the passage of time. It will be a valuable challenge to provide site management and interpretation approaches to revive vanishing memories and untold transient narratives.

DISCLOSURE STATEMENT

NOTES ON CONTRIBUTOR

Yushi Utaka - research interest is in Asian urbanism with a special focus on built environments and cultural diversity in Asia. Utaka obtained his doctorate in 1997 at Kyoto University, Japan. Utaka has been involved in heritage conservation in Japan and the Asian region under the auspices of the authorities and international organizations. While joining these field projects around the cities in Asia, spend time to think and write following areas past years. (1) Globalizing heritage conservation: place, society and politics, (2) Cultural diversity and multi- ethnic built environment, (3) Reinventing traditional built heritages, cultural landscapes and community.

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Comprehensive Survey and Heritage Value Evaluation of
Weiyuan Settlement Remains onChina's Jianghan Plain

Comprehensive Survey and Heritage Value Evaluation of Weiyuan Settlement Remains onChina's Jianghan Plain

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Abstract

The Jianghan Plain in the middle reaches of the Yangtze River was covered mainly by the ancient Yunmeng Marsh for an extended period. Many primitive residential forms related to water, such as Ganlan (elevated sheds), Haopai (wormwood rafts), and Weiyuan (circular embankments), emerged as early humans developed this vast region. They used Ganlan to settle at the lake edges, Haopai to explore deeper waters, and eventually mastered Weiyuan construction techniques. They discovered that building Weiyuan embankments could permanently secure parts of the swamp, leading to the creation of early Weiyuan settlements. Over millennia, Weiyuan evolved from water conservancy structures in prehistoric settlements into complex residential units during the Ming and Qing dynasties. These units formed water conservancy commonwealths, developing into micro-hydraulic societies. Recent urbanisation has severely damaged Weiyuan, posing a risk of complete disappearance, necessitating urgent surveys and protection. The vast Jianghan Plain makes it challenging to discover Weiyuan remains. This study employed machine vision to identify 210 villages (towns) with potential Weiyuan remains. After comparing them with historical maps, 136 Weiyuan settlement samples were selected and classified into 4 grades (A, B, C, and D) based on their integrity. Field investigations identified six towns and seven villages with well-conserved Weiyuan remains. Specific measures for protecting and optimising contemporary Jianghan Plain villages and towns centred on "Yuan" are proposed.

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INTRODUCTION

UNDERSTANDING WEIYUAN: A WATER MANAGEMENT SYSTEM

"Weiyuan" refers to a closed area created for production and living by constructing embankments around river or lake shoals, sandbars, and coastal beaches, providing easy access to water (Water Resources Construction and Management,2020). This system includes Yuan embankments, water systems, ditches, culverts and floodgates, pumping stations, Yuan fields, and Yuan settlements. The term "Weiyuan" is a compound word derived from two synonymous characters, "Wei" and "Yuan", which are used respectively in the middle and lower reaches of the Yangtze River (Zhang JM and Lu XQ,2011). Both terms refer to embankments designed to protect farmland and homes from floods (Zhang JM and Lu XQ,2011). Circular embankments are known as "Yuan embankments", and the fields they enclose are called "Yuan fields". These embankments are equipped with culverts and floodgates, and pumping stations for water storage and discharge. People typically settle on high ground within these embankments, forming natural villages.

Historically, the Yangtze River basin experienced frequent flooding, necessitating effective water management for agricultural development. Consequently, constructing embankments, often made of soil and stone, became the primary water conservancy measure. Weiyuan emerged as crucial water management facilities. Residents along the Yangtze River and its lakes built Weiyuan by enclosing low-lying, fertile sedimentary soil with embankments, using pumping stations, culverts, and floodgates to introduce water from external sources for irrigation and daily needs (Wang DY et al.,2023).

On the Jianghan Plain, located in the middle reaches of the Yangtze River, while river and lake embankments are widely distributed and commonly seen today, Yuan embankments, once prevalent, are now rare. Thet were initially built to protect water conservancy fields, a defining element of the local agricultural landscape. Over time, as people were attracted to live in these facilities, they evolved into complex residential units. By the Qing dynasty (1644–1911), the Weiyuan system on the Jianghan Plain had transformed into numerous hydraulic commonwealths or miniature hydraulic societies based on shared water management interests. This system significantly influenced the social and cultural aspects of life in the region (Lu XQ,2013). A dual structure of state water control and regional social self-governance developed, with Yuan as the administrative unit (Luo D,2020). Additionally, the Yuan system became the basis for levying taxes and labour services by the Qing regime (Zhang JM and Lu XQ,2011). As residents within the Yuan engaged in water management, they gradually developed a shared belief in water gods. Yuan temples, primarily built to suppress floods and ensure the safety of the embankments, became centres of worship and ritual activities (Lu XQ,2013). Clan forces, based on blood relationships, played a significant role in the development of Weiyuan in this region, leaving behind numerous ancestral shrines as spatial representations of clan organisations (Fang Y,2016).

The following subsections will delve into the historical evolution of the Weiyuan system on the Jianghan Plain and explore its natural, social, and cultural significance. This comprehen-

sive analysis will highlight the importance of considering various elements when identifying Weiyuan remains, including Yuan settlements, Yuan patterns, Yuan embankments, Yuan fields, roads, water systems, culverts and floodgates, watercourse mouths, Yuan temples, and ancestral shrines.

HISTORICAL EVOLUTION OF THE WEIYUAN SYSTEM ON THE JIANGHAN PLAIN

The origins of the Weiyuan system on the Jianghan Plain can be traced back to the Neolithic Period, when people began constructing primitive Weiyuan in low-lying river valleys to protect their settlements from flooding (Liu JG et al.,2023). According to the meteorological history of China written by Zhu Kezhen, the Eastern Jin dynasty (317–420) coincided with the second of four Little Ice Age periods in Chinese history. During this time, the Yangtze River's water levels decreased, floods receded, and the ancient Yunmeng Marsh disintegrated, giving rise to the Jianghan lake group. New settlements gradually formed on the high ground exposed in the lakes and marshes. Silt deposition from the upper reaches of the Yangtze and Han Rivers led to the gradual formation of land on the Jianghan Plain, which was continuously enclosed by embankments (Chen YH,2008). Regarding the development scope and scale of Weiyuan on the Jianghan Plain before the Ming dynasty (1368–1644), historical records suggest that even during the Shaoxing period of the Southern Song dynasty (1127–1279), the Jing-Hubei Circuit still had "vast barren land". This indicates that from the mid-1st century, when historical records for this region begin, until the early and mid-Ming dynasty (15th century), despite some development—such as the large-scale immigration from the Central Region during the Southern Song dynasty—the lake area in Jianghan Plain remained sparsely populated overall (Chen X,2004).

However, during the Ming dynasty, Weiyuan on the Jianghan Plain experienced a comprehensive development period, which can be further divided into three stages: steady growth in the early Ming, with Weiyuan emerging across the region; rapid expansion in the mid-Ming, with Weiyuan proliferating quickly; and accelerated growth in the late Ming, with high saturation of Weiyuan in the region (Zhang GX,1989). The spatial changes of Weiyuan were also notable in the three stages: distribution along both banks of the main streams and major tributaries of the Han and Jing Rivers in the early Ming dynasty; continued expansion along the Yangtze and Han tributaries in the riverside and lakeside areas in the mid-Ming dynasty; and further expansion into the swampy, low-lying lake areas and silted rivers and harbours in the late Ming dynasty.

The Weiyuan on the Jianghan Plain during the Qing dynasty also went through three stages: early Qing restoration, mid-Qing prosperity to saturation, and late Qing oscillation between aggressive reclamation and abandonment (Zhang GX,1989). The spatial evolution of Weiyuan in the Qing dynasty was characterised by the following stages: in the early Qing, there was a restoration of Weiyuan that had been damaged and abandoned due to war and natural disasters at the end of the Ming dynasty, bringing development back to mid-Ming levels. After diligent restoration by the local people, the area entered a period of significant development after Kangxi's reign, leading to an unprecedented scale of reclamation. Reclamation promot-

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ed sediment deposition, which in turn facilitated new enclosures, peaking in the mid-Qing dynasty. During this period, the expansion extended from enclosing lakes within the Yuan to enclosing river sandbars and shoals outside the embankment, resulting in numerous new sandbar and shoal Yuan. In the late Qing dynasty, despite saturation, predatory draining of lakes for farming and blind enclosure of sandbars and shoals continued, leading to a cyclical pattern of aggressive reclamation and abandonment.

From the late Qing dynasty period to the Republic of China (1912–1949), internal warlord battles and external invasions, coupled with neglected water conservancy and embankments left is disrepair, led to continuous floods and waterlogging disasters, leaving people in misery. With no other economic resources, people relied on building private Yuan to eke out a living. In the event of severe natural disasters, they had to survive the entire year without a harvest. The quality and scale of Weiyuan were poor due to the limited workforce and resources.

While the Weiyuan was less resilient to floods, people responded by building even more Weiyuan. Despite the declining economic and water conservancy values, the number of Weiyuan increased significantly (Li S,2019).

After the founding of the People's Republic of China in 1949, under the "taking grain as the key link" policy during the Great Leap Forward, three large-scale campaigns of enclosing lakes and creating farmland occurred in 1957–1962, 1963–1971, and 1971–1976. The "marching toward desolate lakes and planting rice seedlings to the heart of the lake" movement led to the disappearance (Chen Lake, San Lake, Datong Lake, Bailu Lake, Liantong Lake, and Dasha Lake), shrinking (Wangjiada Lake, Wu Lake, Diaocha Lake, and Paihu Lake), or disintegration (Baishuitan Lake, Gu Lake, and Chong Lake) of numerous lakes on the Jianghan Plain (Zhao Y et al.,2000). Large-scale enclosure of lakes for farmland caused significant damage to the water system landscape of the Jianghan Plain, and the rivers, lakes, and water systems of Jianghan were reduced and blocked (Zhang Y et al.,2009).

In the 1980s, under the central government's guidance, local governments in the Jianghan Plain undertook initiatives to return reclaimed farmland to lakes. These efforts gained significant momentum after the catastrophic Yangtze River flood in 1998, leading to the large-scale disappearance of Weiyuan under the directive to "flatten Yuan for flood discharge" (Bulletin of the State Council of the People's Republic of China, 1999). The opening of the Three Gorges Dam in 2003 was another pivotal event. It reduced water and sediment from the upper reaches, increasing downstream riverbed deposition and sandbar development (Yang YP et al.,2018). Coupled with modern water conservancy facilities, agricultural production on the Jianghan Plain gradually became detached from Weiyuan, rendering these structures agriculturally obsolete (Ma Q et al.,2019).

THE CULTURAL HERITAGE ATTRIBUTES OF WEIYUAN ON THE JIANGHAN PLAIN

The rise, prosperity, and decline of Weiyuan on the Jianghan Plain in the middle reaches of the Yangtze River resulted from the interplay of natural and human factors (Fang Y,2016). It was a survival strategy adopted by the people of Jianghan in response to the changing

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water systems and frequent floods in the natural environment. Weiyuan were initially introduced to the Jianghan Plain as water conservancy facilities to develop Yuan fields and agriculture. As they evolved into large settlements centred on the "Yuan", they shaped the unique economic, social, and cultural landscapes of the Jianghan Plain. Even today, the core areas of Weiyuan, such as Tianmen, Qianjiang, Mianyang, and Jianli, maintain distinct local dialects, culinary traditions, and cultural practices, representing a significant branch of Jing-Chu culture.

The Weiyuan settlements on the Jianghan Plain possess three key categories of attributes: historical and cultural towns and villages, traditional Chinese villages, and agricultural heritage. Relevant authorities in Hubei Province have gradually recognised the first two categories, declaring four historical blocks within the province as Chinese historical and cultural towns[1] and two locations as traditional Chinese villages[2]. However, the agricultural heritage value of Weiyuan on the Jianghan Plain has not yet been fully acknowledged or appreciated by the relevant authorities. As a result, under the pressure of new urbanisation, villages and towns in the region are losing this crucial category of cultural attributes and increasingly conforming to the homogeneous "one face for a thousand villages" model of development (Kang CC et al.,2023). According to the "Hubei Province Urbanisation and Urban Development Strategy Plan" completed by the China Academy of Urban Planning and Design, Hubei Province's urbanisation rate was 46.0% in 2009. The plan projects that by 2020, the urbanisation level will reach approximately 54%–55%, and by 2030, it will climb to 63%–65%, with an annual increase of 0.8–1 percentage points (Hubei Provincial People's Government,2012).

Fig. 1. Jianghan Plain Study Area. The study area of this paper includes not only the area within the contour line of 50 metres above sea level, but also covers the granitic land within 50-90 metres above sea level in West E, and the hills within 50-70 metres above sea level in East E, with a total area of about 46,000 square kilometres.

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As major national strategies, such as integrated urban-rural development and the construction of a new socialist countryside, are implemented, the urbanisation process in the Jianghan Plain is expected to accelerate further. Faced with the impact of urbanisation, many villages and towns are experiencing a shift in residential landscapes deprived of regional characteristics (Chen T,2018). In the ongoing village and town construction, Weiyuan remains are disappearing at an accelerated pace. Conducting a comprehensive survey of Weiyuan settlement remains and evaluating their heritage value, thus enabling more people to recognise and protect the agricultural heritage value of Weiyuan, is a crucial initiative for the current cultural heritage protection endeavour on the Jianghan Plain.

RESEARCH MATERIALS AND METHODS

OVERVIEW OF THE STUDY AREA

The Jianghan Plain is located in southern Hubei Province, north of Dongting Lake, spanning the Yangtze and Han Rivers. It is a basin-shaped area with high surroundings and a low centre, dipping slightly from northwest to southeast. The study area includes the river and lake alluvial plain between the Yangtze and Han Rivers, and the platform and hilly land on the inner edge of the basin, roughly within the 50-meter contour line and between the 50–90-meter contour lines, respectively, with an average elevation of around 27 meters.

DESCRIPTION OF THE MACHINE VISION ALGORITHM

Machine vision studies how computers understand the content in digitised images or videos. The machine vision algorithm used in this study is a segmentation model based on YOLO, utilising differences in building materials, architectural forms, and construction techniques in traditional buildings to identify traditional buildings and further identify traditional villages and towns based on the density of the concentrated distribution of traditional buildings.

The YOLOv5 model is an object detection model used to identify and locate objects in videos or images. It is the latest version of the YOLO algorithm, using convolutional neural networks to learn object features in videos or images and employing segmented geographic scale grids to locate and detect targets.

Since the heyday of Weiyuan on the Jianghan Plain was mainly during the Ming and Qing dynasties, and China did not have advanced geodetic surveying capabilities at that time, the earliest standardised geodetic survey was the 1:50000 topographic map "Ten-Year Rapid Survey Plan" (hereinafter referred to as the "Republican 1:50000 topographic map") implemented by the Republican government in 1917–1925, which is also the topographic map with the most comprehensive Weiyuan information. Therefore, this study is mainly based on the Republican 1:50000 topographic map, while also using historical maps of the Ming and Qing dynasties and satellite images since 1944 as references.

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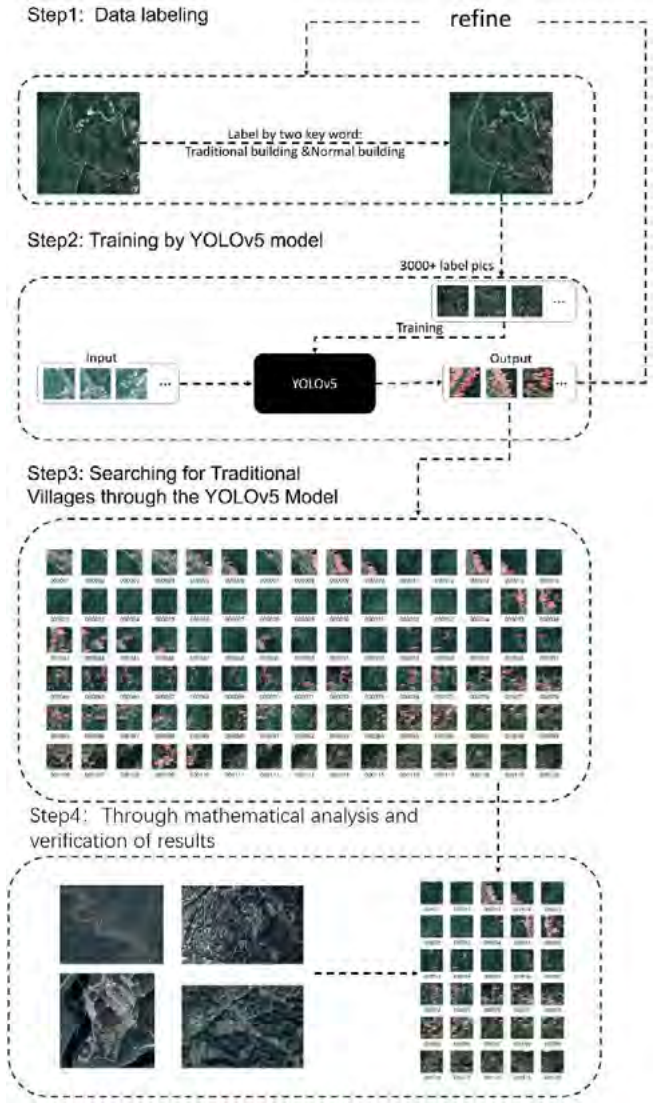
Fig. 2. Workflow for identifying traditional villages through machine vision. After many experiments, it is confirmed that when the image scale is 500m*500m, the accuracy of machine vision can be guaranteed, and at the same time, the planar texture of traditional settlements can be preserved as much as possible.

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DATA SOURCES FOR REMAINS SURVEY

Data Acquisition Year	Data Type	Data Description
1917–1925	Topograph ic map	Involving field survey, scale 1:50000, in the 2nd year of the Republic of China, the General Staff Headquarters issued the "Ten-Year Rapid Survey Plan" for 1:100000 survey maps and 1:50000 topographic maps. The Hubei Survey Bureau began surveying in 1917 and ended in 1946, completing a total of 403 sheets of 1:50000 topographic maps. The survey work in the Jianghan Plain was completed in 1917–1925, with 96 sheets; Chinese annotation, detailed legend, but incomplete survey elements, no coordinate system and projection parameters, but longitude and latitude identification.
1944–1945	Topograph ic map	Aerial map, compiled by the U.S. Army Map Service in 1954, scale 1:250000, transverse Mercator projection.
1968	KH-8	Images obtained by the U.S. military's "Key Hole" (KH-8) military satellite in November–December 1968, with a spatial resolution of 1.8m.
2023	Landsat 8	Google Earth satellite data, WGS84 latitude and longitude projection, image resolution of 1m.

Table 1. Summary of data sources for remains survey.

DATA TREATMENT FOR REMAINS SURVEY

2. Summarise the characteristics of Weiyuan on the Jianghan Plain and the elements for identifying Weiyuan remains through a literature review.

3. Use the neural network model constructed by U-Net to perform character detection tasks on ancient maps; input the individual characters detected into an optical character recognition system for place name recognition on ancient maps. This system can recognise both traditional and simplified Chinese characters.

4. Utilise neural network machine vision supplemented by human assistance and correction. Specifically, the YOLOv5 algorithm is used to identify ancient buildings, which are used to spot traditional villages (Yuan settlements), further leading to the discovery of Weiyuan systems. By matching the Republican 1:50000 topographic map of Hubei Province, which includes both Weiyuan settlements and associated systems, with contemporary Google satellite images, the present-day locations and place names of these Weiyuan settlements can be revealed. Field surveys are then conducted at these locations to search for Weiyuan settlement remains, ultimately establishing a database of these remains.

The following example illustrates the identification process for the Weiyuan settlement remains of Chengji Ancient Town. As mentioned earlier, the key elements in identifying Weiyuan settlement remains on the Jianghan Plain include Yuan settlements, Yuan embankments, Yuan fields, roads, water systems, ancient culverts and floodgates, ancient watercourse mouths, Yuan temples, ancestral shrines, and Yuan patterns. Employing the neural network machine vision YOLOv5 algorithm, the identification process starts from the unique trait of black roofs on traditional buildings in Yuan settlements on the Jianghan Plain. Identifying clusters of buildings with black roofs and comparing them with Google satellite images and drone aerial images confirms whether they are traditional settlements. To further verify the existence of Weiyuan remains, other elements such as the surrounding water systems, Yuan

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embankments, and culverts and floodgates are also considered.

- Step 1: Label the certified traditional villages on the Jianghan Plain and divide their satellite images into separate 500m×500m geographic scale images.
- Step 2: Train the YOLOv5 model by continuously adjusting data parameters to establish a model that accurately identifies traditional villages and towns.
- Step 3: Divide the satellite images of the Jianghan Plain into separate 500m×500m geographic scale images, with each individual image overlapping by 50%, and input them into the YOLOv5 model for identification.
- Step 4: Differentiate the identification results through mathematical analysis to isolate images of traditional villages.
- Step 5: Locate the traditional settlements on the Republican 1:50000 topographic map, search for indications of associated Weiyuan systems, and compare them with Key Hole satellite images and remote sensing images to find potential Weiyuan remains.

REMAINS SURVEY RESULTS

Following the working principles and methods described above, this study conducted an extensive survey of Weiyuan settlement remains on the Jianghan Plain. The results of the neural network machine vision survey of Weiyuan settlement remains are as follows: through machine vision, 210 villages (towns) with potential Weiyuan remains were identified. After comparing historical and modern maps, 136 villages and towns with Weiyuan remains were confirmed (49 towns and 87 villages).

HERITAGE VALUE EVALUATION OF WEIYUAN SETTLEMENTS ON THE JIANGHAN PLAIN

CONSTRUCTION OF A SYSTEM OF AGRICULTURAL HERITAGE VALUE EVALUATION INDICATORS FOR WEIYUAN SETTLEMENTS

To conserve and responsibly utilise Weiyuan settlements, a rigorous evaluation of their agricultural heritage value is essential. The evaluation system should be complete, systematic, comprehensive, universal, and operable. In building this system, the study drew from the "Evaluation Index System for Chinese Historical and Cultural Towns (Villages)" and the "Evaluation and Recognition Index System for Traditional Villages" issued in China, as well as the concept and meaning of agricultural heritage proposed by the Globally Important Agricultural Heritage Systems (GIAHS) initiative. Specifically, the study considered the attributes of Weiyuan settlements in terms of water conservancy, society, and culture. Basic traits and core requirements of completeness, antiquity, integrity, harmoniousness, and representativeness were incorporated into a customised evaluation system to present the heritage value of Weiyuan settlements on the Jianghan Plain in the middle reaches of the Yangtze River.

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Workflow diagram of the neural network machine vision algorithm Image source: Created by the authors

Chengji Town identified by
machine vision

Google satellite image of
Chengji Town

Bird's-eye view of Chengji Town

compare the Republican 1:50000 topographic map with Key Hole satellite images and remote sensing images
to find potential Weiyuan remain

Fig. 5. An example of results from the neural network machine vision algorithm.The case of Chengji ancient town in the Jianghan Plain, China, where the dike is located.

DESCRIPTION OF THE SYSTEM OF EVALUATION INDICATORS

The study analysed the "Evaluation Index System for Chinese Historical and Cultural Towns (Villages)", the "Evaluation and Recognition Index System for Traditional Villages", and the recognition indicators of GIAHS to gather information and insights. The Delphi method was

then used to determine the weights for the criteria through expert consultation. The system of evaluation indicators was structured into three main criteria: heritage type, heritage traits, and value system. Regional indicators were included as allowed by data availability to reflect the regional characteristics of Jianghan Plain Weiyuan heritage. Ultimately, 35 indicators were selected to construct the system of evaluation indicators for Jianghan Plain Weiyuan heritage.

HERITAGE TYPE

The heritage type criterion includes two sub-criteria: tangible cultural heritage and intangible cultural heritage. Tangible cultural heritage covers indicators such as ancient towns, ancient villages, ancient buildings, residential forms, land use systems, agricultural landscapes, agricultural tools, and agricultural flora and fauna. Intangible cultural heritage encompasses indicators like agricultural techniques, agricultural knowledge, agricultural folklore, songs and dances, handicrafts, and cuisine.

HERITAGE TRAITS

The heritage traits criterion consists of indicators evaluating the completeness of Weiyuan elements, antiquity, integrity of layout, environmental harmony, and representativeness of regional characteristics. The completeness of Weiyuan elements assesses the conservation of the 10 key elements carried by the remains: ancient villages and towns, Yuan patterns, Yuan embankments, Yuan fields, roads, water systems, ancient culverts and floodgates, ancient watercourse mouths, Yuan temples, and ancestral shrines. Remains with more conserved

elements are considered to have higher heritage value. Antiquity assesses how far back in history the existing Weiyuan elements in the remains can be traced. Remains with elements dating back to earlier historical periods are considered to have higher heritage value. Integrity of layout evaluates the remains based on four aspects: overall appearance around the Yuan, street and lane system within Yuan settlements, traditional public spaces within the Yuan, and supporting facilities within the Yuan. Better-conserved remains are assigned higher heritage value. Environmental harmony considers the degree of natural environmental protection around the remains and the level of disturbance caused by construction projects. Remains with better environmental protection and less disturbance from construction projects are regarded as having higher heritage value. Representativeness of regional characteristics assesses whether the various elements of the Weiyuan remains represent the local regional cultural characteristics and possess distinct engineering and technical representativeness. Remains with more evident regional characteristics and stronger engineering representativeness are considered to have higher heritage value.

VALUE SYSTEM

The value system criterion includes two main sub-criteria: existence value and potential value. Existence value comprises carrier value, product value, ecological value, scientific and

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technological value, social value, aesthetic value, cultural value, historical value, spiritual value, and brand value. Potential value primarily refers to the future positive effects of the heritage systems.

WEIGHTS FOR EVALUATION INDICATORS

This study used the analytic hierarchy process to determine the weights for the evaluation indicators by establishing a hierarchical structure model and comparing the relative importance of each indicator through pairwise comparison, setting the creation of a system of heritage value evaluation indicators for Weiyuan settlements on the Jianghan Plain in the middle reaches of the Yangtze River as the overall goal (A).

Three criteria (Bn, n = 1,2,3) were identified: heritage type (B1), heritage traits (B2), and value system (B3). Heritage type (B1) includes two sub-criteria (Cn, n = 1,2): tangible cultural heritage (C1) and intangible cultural heritage (C2). Heritage traits (B2) comprises five sub-criteria (Cn, n = 3,4,5,6,7): completeness of Weiyuan elements (C3), antiquity (C4), integrity of layout (C5), environmental harmony (C6), and representativeness of regional characteristics (C7). Value system (B3) consists of two sub-criteria (Cn, n = 8,9): existence value (C8) and potential value (C9). These 9 sub-criteria (Cn, n = 1,2,3,4,5,6,7,8,9) were further divided into 35 indicators (Dn, n = 1,2,3,…,35). The relative importance between the sub-criteria (Cn) and indicators (Dn) is represented by judgment matrices obtained through expert evaluations. The characteristic vectors were calculated using the Yaahp software to obtain the weight values Wi (i = 1,2,3…35) of the evaluation indicators. The consistency of the judgment matrices for both single-level ranking and overall ranking at each level was verified through consistency tests.

GRADING CRITERIA

Based on the Weiyuan settlement cultural heritage value system constructed in the previous subsection, each factor was scored. The comprehensive evaluation score of Weiyuan settlement cultural heritage value was calculated using a multi-objective linear weighting function, as follows:

$$Z = W_1A_1 + W_2A_2 + \ldots + W_iA_i = \sum_{i=1}^{n} W_iA_i, \quad W_i > 0$$

where Z is the total score of the cultural heritage evaluation for the Weiyuan settlement villages and towns, Ai is the score value of a single criterion i of the criteria level Bn, and Wi is the weight of the i-th criterion in the evaluation criteria. According to the scoring results, Weiyuan settlement heritage can be classified into four grades: Grade I (first-tier representative villages and towns): Well-conserved remains, high heritage value, score range [80–100]; Grade II (second-tier representative villages and towns): Relatively well-conserved remains, relatively high heritage value, score range [60–79]; Grade III (third-tier representative villages and towns): Moderately conserved remains, moderate heritage value, score range [50-59]; and Grade IV (fourth-tier representative villages and towns): Poorly conserved remains, low heritage value, score range [0–49].

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Goal Level Au	Criteria Level Bn	Sub-criteria Level Cn	Indicators Level Dn	First Grade (8–10 points)	Second Grade (5–7 points)	Third Grade (2–4 points)	Fourth Grade (0–4 points)
The system of heritage value evaluation indicators of Weiyuan settlements on the Jianghan Plain in the middle reaches of the Yangtze River A Course	Heritage type B1	Tangible cultural heritage C1	Ancient towns D1	Well-conserved	Moderately-conserved	Poorly-conserved	Neglected
			Ancient villages D2	Well-conserved	Moderately-conserved	Poorly-conserved	Neglected
			Ancient buildings D3	Well-conserved	Moderately-conserved	Poorly-conserved	Neglected
			Residential forms D4	Highly distinctive	Moderately distinctive	Ordinary	None
			Land use systems D5	Very typical	Moderately typical	Ordinary	None
			Agricultural landscapes D6	Very rich	Moderately rich	Ordinary	None
			Agricultural tools D7	Highly distinctive	Moderately distinctive	Ordinary	None
			Agricultural flora and fauna D8	Highly distinctive	Moderately distinctive	Ordinary	None
		Intangible cultural heritage C2	Agricultural techniques D9	Highly representative	Moderately representative	Ordinary	None
			Agricultural knowledge D10	Very high level	Moderately high level	Ordinary	None
			Agricultural folklore D11	Highly distinctive	Moderately distinctive	Ordinary	None
			Songs and dances D12	Highly distinctive	Moderately distinctive	Ordinary	None
			Handicrafts D13	Highly distinctive	Moderately distinctive	Ordinary	None
			Cuisine D14	Highly distinctive	Moderately distinctive	Ordinary	None
	Heritage traits B2	Completeness of Weiyuan elements C3	Yuan settlements, Yuan patterns, Yuan embankments, Yuan fields, roads, water systems, ancient culverts and floodgates, ancient watercourse mouths, Yuan temples, and ancestral shrines D15	8–10 elements conserved	5–7 elements conserved	2–4 elements conserved	0–1 elements conserved
		Antiquity C4	Construction period of Weiyuan: the period when existing sites of Yuan settlements were formed and the period when the traditional buildings within Yuan were first built D16	Ming dynasty or earlier	Qing dynasty	Republican era	After the founding of the People's Republic of China
		Integrity of layout C5	Overall appearance of core elements (Yuan embankments+Yuan fields+settlements+water systems+roads) D17	Well-conserved (overall)	Moderately-conserved	Poorly-conserved	Neglected
			Traditional street and lane systems within Yuan settlements D18	Complete layout, rich space, and pleasant scale	Ordinary	Relatively poor	Poor
			Traditional public spaces within the Yuan D19	Well-conserved	Moderately-conserved	Poorly-conserved	Neglected
			Supporting facilities like ancient culverts and floodgates, ancient watercourse mouths and ancient ferry piers D20	Well-conserved	Moderately-conserved	Poorly-conserved	Neglected
		Environmental harmony C6	Degree of natural environment protection around the remains D21	Well-protected	Moderately-protected	Poorly-protected	Neglected
			Level of disturbance caused by nearby construction projects D22	No construction projects, or projects with no environmental impact	Projects with moderate impact	Significant impact	Very significant impact
		Representativeness of regional characteristics C7	Representativeness of regional cultural characteristics D23	Good	Moderate	Ordinary	None
			Engineering and technical representativeness D24	Very high level	Moderate level	Ordinary	None
	Value type B3	Existence value C8	Carrier value D25	Very high	Moderately high	Ordinary	None
Ecological			Product value D26	Very high	Moderately high	Ordinary	None
			Ecological value D27	Very high	Moderately high	Ordinary	None
			Scientific and technological value D28	Very high	Moderately high	Ordinary	None
			Social value D29	Very high	Moderately high	Ordinary	None
			Aesthetic value D30	Very high	Moderately high	Ordinary	None
			Cultural value D31	Very high	Moderately high	Ordinary	None
			Historical value D32	Very high	Moderately high	Ordinary	None
			Spiritual value D33	Very high	Moderately high	Ordinary	None
			Brand value D34	Very high	Moderately high	Ordinary	None
		Potential value C9	Future positive effects D35	Very significant	Moderately significant	Ordinary	None

Fig. 6. The system of heritage value evaluation indicators of Weiyuan settlements on the Jianghan Plain in the middle reaches of the Yangtze River.

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HERITAGE VALUE EVALUATION RESULTS
OF WEIYUAN SETTLEMENTS ON THE JIANGHAN PLAIN

OVERVIEW OF WEIYUAN SETTLEMENT REMAINS

Based on the indicator system and evaluation indicator weights constructed in the previous subsection, an empirical evaluation and preliminary classification of the 136 village and town Weiyuan settlement remains were carried out.

EVALUATION CRITERIA

Based on the evaluation indicator system constructed in the previous subsection, a comprehensive judgment was made on the 9 sub-criteria and 35 indicators, quantifying multiple qualitative indicators. Grade scores were assigned according to the evaluation indicator weights. Finally, through the superposition calculation of factors, the heritage value evaluation results of Weiyuan settlement remains by villages and towns were obtained.

EVALUATION RESULTS

According to the heritage value evaluation indicator system and indicator weights for Weiyuan settlements on the Jianghan Plain in the middle reaches of the Yangtze River constructed in the previous subsection, 136 Weiyuan settlement remains were scored and evaluated by villages and towns, completing the total heritage value score and sub-criteria scores for the surveyed Weiyuan settlement remains. The heritage value scores of Weiyuan settlement remains on the Jianghan Plain were ranked to provide a general picture of their heritage value. Among the scores of 48 Weiyuan settlement remains at the "town" level, the comprehensive scores ranged from 37 to 87 points. Four towns were in the first tier with scores of [80–100]: Chengji Town (Jianli City, Jingzhou City), Zhoulaozui Town (Jianli City, Jingzhou City), Qujiawan Town (Honghu City, Jingzhou City), and Xiongkou Town (Qianjiang City), corresponding to Grade I. Twenty towns were in the second tier with scores of [60–79], corresponding to Grade II. Fourteen towns were in the third tier with scores of [50–59], corresponding to Grade III. Ten towns were in the fourth tier with scores of [0–49], corresponding to Grade IV. Among the scores of 80 Weiyuan settlement remains at the "village" level, the comprehensive scores ranged from 40 to 85 points. Four villages were in the first tier with scores of [80–100]: Yufan Village (Xiantao City), Miaosan Village (Jianli City), Hengdi Village (Jianli City), and Sunqiao Village (Qianjiang City), corresponding to Grade I. Six villages were in the second tier with scores of [60–79], corresponding to Grade II. Thirty-six villages were in the third tier with scores of [50–59], corresponding to Grade III. Thirty-four villages were in the fourth tier with scores of [0–49], corresponding to Grade IV.

DISCUSSION

This study constructed a system of cultural heritage value evaluation indicators for Weiyuan settlements on the Jianghan Plain, considering various types and characteristics of Weiyuan remains and highlighting their heritage value. Both qualitative and quantitative indicators

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were incorporated. Through its comprehensive survey of Weiyuan settlement remains on the Jianghan Plain and empirical analysis of 136 sample villages and towns, this study plays a crucial role in the recognition and exploration of the heritage value of these settlements. The evaluation results can inform the graded and classified conservation and responsible use of Weiyuan settlement cultural heritage on the Jianghan Plain.

The survey and heritage value evaluation of Weiyuan settlement remains on the Jianghan Plain revealed that Weiyuan are mainly distributed in the river and lake areas of the Jianghan Plain and the surrounding hilly river valley areas, along major rivers and their tributary harbours and streams, in the shape of fish scales or grapevines, which is consistent with historical records.

This study found that villages and towns located within the same Weiyuan shared the same social attributes, not only in terms of enjoying the same water conservancy resources and bearing common water conservancy maintenance responsibilities and obligations, but also in economic and cultural aspects. This has made the Jianghan Plain the granary of all of China since the Ming dynasty due to the prosperity of Yuan field agriculture, with a developed commodity economy and trade radiating throughout China and the world, and a prosperous commercial culture.

This study revealed that the need for flood control is the main factor in the rise of Weiyuan on the Jianghan Plain in the middle reaches of the Yangtze River. The concept of flood control has always been embodied in all aspects of the construction of Weiyuan settlements on the Jianghan Plain, from the site selection of Weiyuan to the site selection of villages and towns within the Yuan, as well as the construction of residential buildings.

This study found that the agricultural heritage value of Weiyuan settlements is mainly embodied in the traditional village and town layout model centred on "Yuan," as well as the "Yuan field-fish" rice farming system formed thereby. Similar systems worldwide, such as the Ifugao rice terraces in the Philippines, have been declared GIAHS. The "Yuan field-fish" rice farming system on the Jianghan Plain in China should also receive attention and be declared a GIAHS as soon as possible.
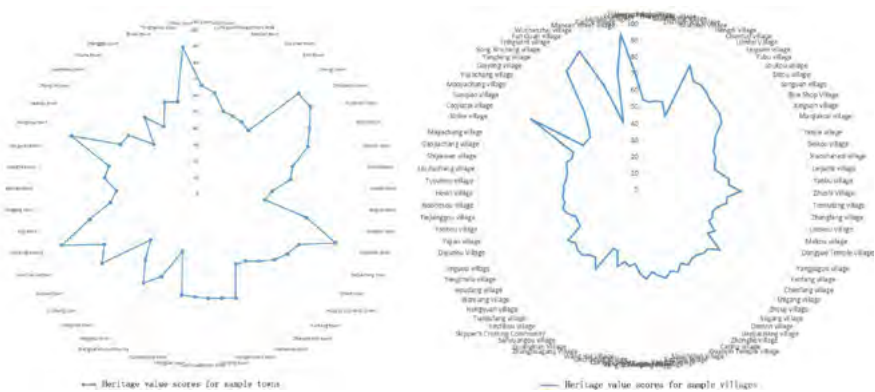
Fig. 7. Heritage value scores of Weiyuan settlement remains on the Jianghan Plain at the town and village level.

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CONCLUSIONS

The conclusions of this study are as follows: The four ancient towns rated as Grade I (Excellent) are conserved due to the protection of red tourism cultural resources, with well-conserved Weiyuan remains and high heritage value. Currently, all four ancient towns have been rated as Chinese historical and cultural towns. The 20 towns rated as Grade II (Good) have relatively well-conserved Weiyuan remains and relatively high heritage value. However, they have not been rated as historical and cultural towns and lack effective protection measures. They urgently need recognition of their heritage value and protection. Among the four villages rated as Grade I (Excellent), only Yufan Village has been renovated and protected thanks to being rated as a traditional village, while the other three villages currently lack effective protection measures and are at risk of disappearing at any time during the urbanisation process. They urgently need recognition of their heritage value and protection. The six villages rated as Grade II (Good) have relatively well-conserved Weiyuan remains and relatively high heritage value, but they also lack effective protection measures and are at risk of endangerment, requiring attention and protection from cultural heritage protection author

ENDNOTES

1. They are (1) Zhoulao Zui Town, Jianli City, Jingzhou City, Hubei Province (2nd batch); (2) Chengji Town, Jianli City, Jingzhou City, Hubei Province (3rd batch); (3) Qujiawan Town, Honghu City, Jingzhou City, Hubei Province (3rd batch); and (4) Xiongkou Town, Qianjiang City, Hubei Province (5th batch).
2. Yufan Village, Zhengchang Town, Xiantao City, Hubei Province (3rd batch) and Keli Village, Laowan Hui Ethnic Township, Honghu City, Jingzhou City, Hubei Province (5th)

DISCLOSURE STATEMENT

The authors declare no known conflict of interest.

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Figure 2   Created by the authors

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The Perspective of Integrated Protection of Industrial Heritage
A Case Study of Shuanggou Historical Town Protection Planning

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Abstract

This article will emphasis on a special kind of industrial heritage, the alcohol-drink industry heritage. Currently, there are 163 sites of the Chinese industrial heritage, most of them are established after 1900s. however, the alcohol-drink industry heritages are different with most of industrial heritage that this kind of heritage inherited long history of brewing traditional industry. Meanwhile, the alcohol-drink producing mode was transited from manual workshop to modern industry during the modernization upgrades after the founding of New China, and continuing to this day. therefore, the alcohol-drink industry heritage is a witness for development of traditional Chinese industries and represent the characteristics of living heritage. Additionally, due to geographical constraints on alcohol-drink producing, there is used to a close relationship between distilleries and the towns they are located in. This relationship demonstrates how towns promote the clustering of the alcohol industry, and how the distilleries influence on the economic and spatial development of these towns. However, currently, the protection practices of industrial heritage mainly focus on the conservation and utilization of the core items of the heritage, and lack of attention on the relationship between industrial heritage and the surrounding factory towns. In December 2023, the Jiangsu provincial government announced Yanghe town and Shuanggou town as Jiangsu Historical Towns. It shows a perspective of industrial heritage protection extent towards the urban-rural relationships on which these heritages based on, and a discission to protect that kind relationship. Therefore, this article based on the application work for the Jiangsu Historical Town of Shuanggou, and it reevaluates the value of the Shuanggou alcohol-drink industry for the development of the town from the perspectives of geographical factors, industrial development transition and distiller-town relationships. And the framework for town protection was constructed by the value.

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Planning Politics and Culture in Hong Kong

Chair: Melody Yiu

No room for culture?
A brief review of cultural and urban planning in Hong Kong since the late 20th century

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Abstract

A cultural city is represented by its iconic cultural architecture, often attributed to the capacity for urban transformation vis-à-vis the legacy of Bilbao. However, cultural landmarks were conceived in urban development plans long before emerging on the architect's drawing board. Meanwhile, advocacy in cultural support argues for the intrinsic value of culture, which has a greater social impact that cannot be measured by economic utility alone. This paper will discuss the planning of cultural facilities within the context of Hong Kong's pronounced urban planning for economic growth, to unpack the sometimes-conflicting objectives between urban and cultural development. It will be done by mapping out key cultural projects since the post-war period and its intricate relationship with the major urban development plan. Although Hong Kong has never had a well-defined cultural policy, the piecemeal development of both landmark and district cultural facilities over the past decades has nonetheless constructed a rich depository of cultural resources. The establishment of the Culture, Sports, and Tourism Bureau (CSTB) in 2022 provides a timely occasion to review the trajectory of Hong Kong's cultural development, from which this paper proposes to reconsider future cultural planning beyond the mega-project developmental approach.

INTRODUCTION

POSITIONING CULTURE IN URBAN PLANNING PRACTICE

Hong Kong was infamously known as a "cultural dessert" in the late 20th century when the city was preoccupied with rapid economic growth, as the laissez-faire government played a minimal role in cultural affairs. Even during the 1970s/80s, known as the "golden age" of social welfare, the objective of cultural planning was pragmatic – to create a stable social environment favourable to business development[1]. Housing, education, and healthcare were the main concerns in urban centre and new town master plans, in which culture was marginally included in the rubric of "leisure and recreation" and an afterthought. Although there was never a clearly defined cultural policy and planning in Hong Kong[2], the piecemeal cultural development over the decades has nonetheless built a rich network of venues and facilities that have become the foundation of the city's cultural infrastructure. How cultural facilities are planned reflects the place of arts and culture in society[3], and this paper offers a brief review of cultural planning and development in Hong Kong to illustrate how culture is positioned within major urban development plans. The research revolves around two questions: *How does cultural planning work in collusion or against the greater urban development goal? What are the components in urban planning that can support and nurture the development of arts and culture?*

Cultural planning is considered within the scope of amenity planning in the discipline of modern town planning to facilitate efficient resource distribution[4]. It has an egalitarian origin that builds upon culture's utility as an instrument of public instruction for a civilising effect, which place it alongside other social provisions such as education or sanitation[5]. In the Western post-war welfare state, cultural development was part of the reconstruction effort and a means to build national solidarity[6]. The colonial territory of Hong Kong has a different and more complex geo-political situation than its British sovereign, which results in a vague cultural policy that avoid the ideological aspect towards colonial or Chinese nationalist sentiments [7] . As the territory grew into a global metropolis, the instrumental purpose of culture gradually establishes as a driver for economic development, which is still the primary direction of Hong Kong's cultural and urban planning nowadays. In the past several decades, there is increasing focus on the intrinsic value of culture and how cultural experience has a more significant social impact in the global context [8]. However, this paradigm change relies on a strong social vision that looks beyond the immediate return to support long-term cultural development, which policymakers in Hong Kong has yet to adopt and it is still a difficult battle to justify public investment in culture if not in economic terms.

This paper maps out key cultural projects and corresponding urban planning initiatives, to illustrate how cultural development in Hong Kong respond to the economic-driven urban development objectives (Fig.1). The study includes both cultural landmarks – the Hong Kong Cultural Centre (HKCC) and the West Kowloon Cultural District (WKCD); as well as smaller scale cultural facilities – the municipal Town Halls and heritage revitalisation projects in Central. These projects reflected two periods of active cultural development in Hong Kong during the late colonial governance in the 1970s/80s and as later the Special Administrative Region (SAR) after 1997. Although the socio-political context was very different before and after the change of sovereignty

from the British to the People's Republic of China (PRC), striking similarity is found regarding the planning approach and the attitude towards cultural development, which this paper questions the development mindset of planning practice in Hong Kong and suggests an alternative approach.

CULTURAL PLANNING
AS WELFARE PROVISION IN THE LATE COLONIAL PERIOD

THE METROPOLITAN AND MUNICIPAL CULTURAL CENTRES

The opening of the City Hall in 1962 marked the beginning of Hong Kong's cultural policy development, as the first public facility with comprehensive cultural functions, including a concert hall, a theatre, a library, a museum, and other civic services. Its planning, design, and operation have since become the models for public cultural facilities in the decades that followed. A report in 1965 by the Urban Council Museum & Art Gallery Committee documented the surging public interest in arts and culture with over one million visitors in the City Hall Museum's first three years of operation, which became the evidence to support the need for a new museum[9]. Concurrently, a new civic centre for the Kowloon with similar functions as the City Hall was conceived to accommodate the growing population, especially in the urban core of the Kowloon peninsula, since the 1950s[10].
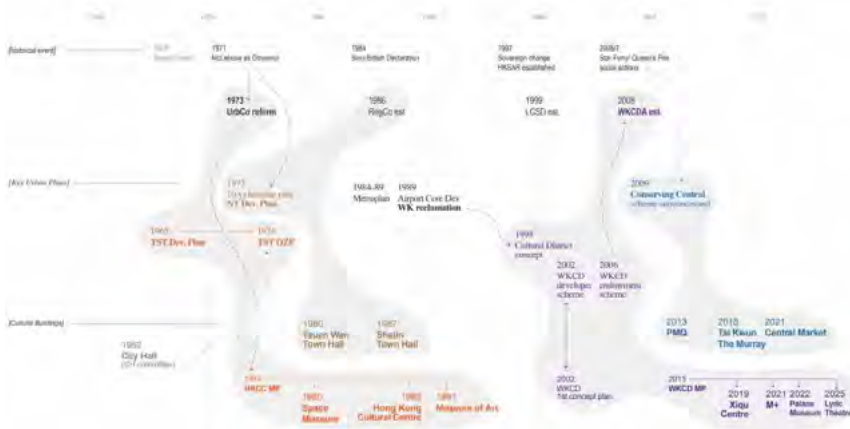
Fig. 1.   Timeline and relationships of major cultural projects & urban plans from 1960s to current

Following the 1949 Abercrombie study and recommendations for Hong Kong's future urban planning, a development plan was drafted in 1965 to position the Tsim Sha Tsui area as a business and tourism centre[11]. The proposal includes the relocation of the Kowloon-Canton Railway (KCR) terminal and redevelopment of the former military outpost (Whitefield Barrack) and the Goodwin and logistic area along the waterfront. In this development plan, a small parcel surrounded by public open space at the waterfront was indicated for "Government/ Institution/ Community" (GIC) land use, as a potential site for the new Museum (Fig.2).
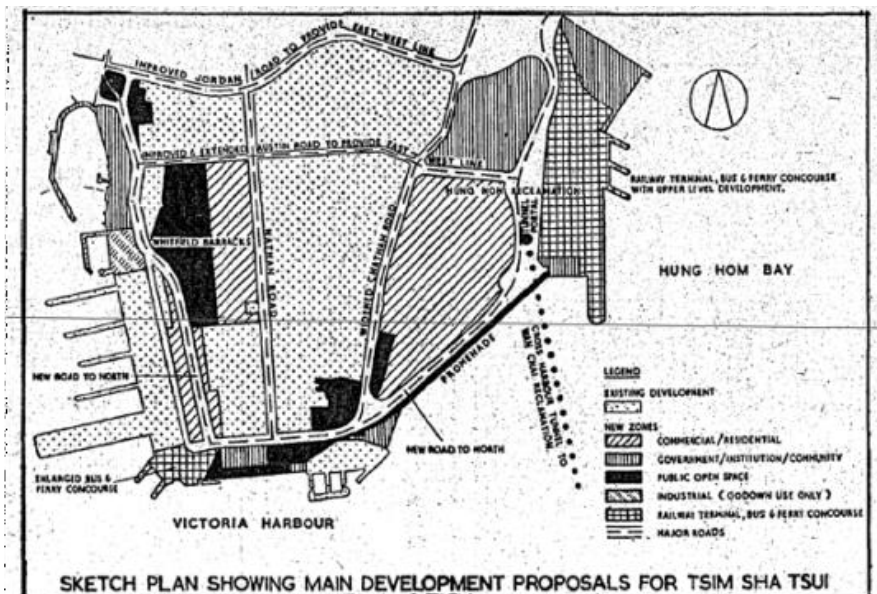
Fig. 2.   Development Plan for Tsim Sha Tsui (1965)

Cultural provision in Hong Kong during the 1950s and 60s primarily catered to a small circle of expats and local elites, and public investment in culture had a lower priority than other immediate needs such as sanitation and housing. Only after the 1967 riot incidents did the government begin to pay attention to cultural development as a means to maintain social stability, which was recommended by the post-riot report to the British Colonial Department[12]. It is followed by the organisation of various outdoor festive activities for public enjoyment and the building of new facilities addressing the local youth's recreation needs. Furthermore, the organisational reform of the Urban Council (UrbCo) in 1973 has granted it budgetary autonomy and greater number of elected members, allowing further public participation in urban affairs, and it has provided an opportunity for cultural development and to discuss the role of culture in society.

Under the leadership of its first chairman, A.de O. Sales, the Urban Council embarked on an ambitious building scheme of leisure and cultural facilities such as parks, sports grounds, and cultural centres. The proposals for a new Museum, the Kowloon Civic Centre, and the earlier-approved Planetarium were consolidated into a comprehensive plan for the Hong Kong Cultural Centre (HKCC) complex. With advice from the City Hall senior management and involvement of the growing local cultural sector, the project aimed to create a cultural landmark for the burgeoning metropolis in the region. As noted by Mr Darwin Chan, the former City Hall General Manager who was involved in the planning of the HKCC, the project was a result of "multiple favourable circumstances"[13]. The newly reformed Urban Council had the resources to pursue large-scale development, and the positive economic outlook at that time gained them public support to build a new cultural icon for the city. The strong and persuasive character of the Urban Council leadership was also instrumental in negotiating a prime site for the cultural landmark[14].
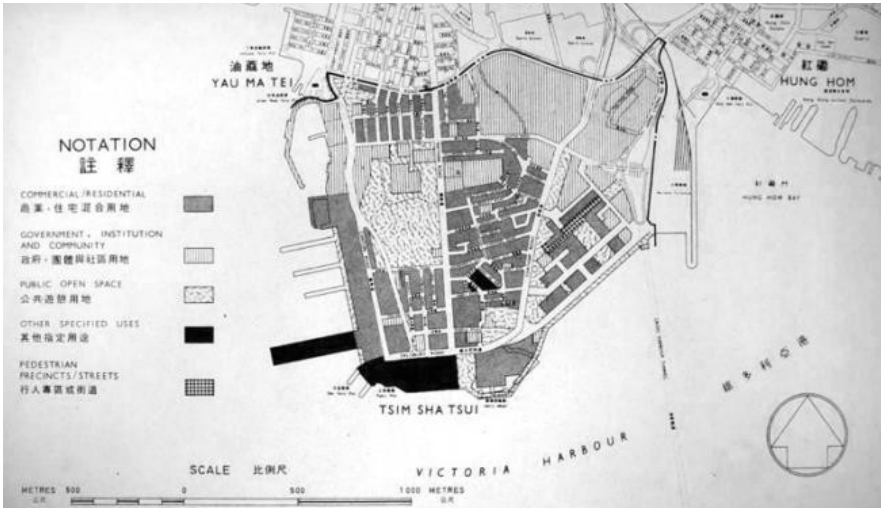
Fig. 3.   Tsim Sha Tsui Outline Zoning Plan (1976)

In the 1976 Outline Zoning Plan for Tsim Sha Tsui, almost the whole extent of the waterfront public land was allocated to the HKCC complex and designated as "Other Specific Uses" (Fig.3). This land use indication gave flexibility and liberty to the project planning, design and later management over both the architecture and surrounding public space. The process of the HKCC development demonstrated a reciprocal influence of cultural and urban planning, where the iconic cultural architecture responded to the greater vision of urban planning in the business and tourism centre.

Besides the flagship project for city-wide residents and international tourists, cultural planning at a municipal level was also compliment to the social welfare objectives in urban planning. The 1970s was considered the "golden age of social welfare" through multiple programs initiated by Sir Murray MacLehose during his tenure as Governor from 1971-82. Most notable was the ten-year housing plan to house one million residents who were in subordinate living conditions, and building suburban new towns to disperse the urban centre population. These new towns were planned to be –self-contained– with a balanced function not only for living but also for work and leisure, completed by a town centre with shops and services, as well as recreation and cultural facilities. The Shatin new town, planned on reclaimed land across the Shatin River, presents the examplary modern image of a high-density new town with complete function, highlighted by the Shatin Town Hall that connects the riverfront park and the shopping centre to the commuter-rail station. (Fig. 4, 5)

These town halls were planned as a component of the new town master plan, with a generic program and non- specific identity regarding cultural content. It would have been logical for the Urban Council (UrbCo), who was responsible for cultural provisions in the city, to take up the planning and operation of the new town cultural facilities, and it could be an opportunity to develop an overall cultural policy vision for Hong Kong. However, new town plan-

ning and administration was a delicate matter due to the opinions of the small but significant indigenous new territories population[15]. There was a sense of protectionism by the village leaders who wanted autonomy in local affairs, and the new town residents were indifferent to the preference of predominately established art form and elitist image in urban cultural provision. Eventually a Regional Urban Council (RC) with similar functions and budgetary resources as the UrbCo was established in 1986 and subsequently took up the programming and management of the Town Halls. As a result, the cultural presentations at the municipal town halls have a stronger local appeal, such as Cantonese Opera, which gradually developed into a competitive relationship between the two Councils in cultural development matters.

The new town cultural facilities are comparable to the municipal arts centre in the UK or "masion du culture" in France in the late 20th-century welfare states. These town halls or district-based cultural facilities were not conceived under a holistic cultural vision but planned according to demographics and growth in different areas. In accord with the colonial government's intention to de-emphasise the ideological aspect of cultural services, the role of these new town halls was simply venues for hire and managed by technocratic operations. The discussion regarding these projects in the Council focused on function and scale, mainly a pragmatic response to population projection and cost.

The dissolution of the two urban councils in 1999 has further eradicated public participation in urban affairs, and the Leisure and Cultural Service Department (LCSD) replaced the cultural provision function of the Council that has some public representation. Remained at an operation level evaluated by attendance or venue hire income, the LCSD has effectively no involvement in cultural policy and budgetary decision, which were decided in the upper - level Home Affairs Bureau. As a result, the focus of cultural policy became distanced urban development strategies on tourist attraction of economic catalyst.

Fig. 4.   A sketch of Shatin New Town (1976/78)

PLANNING FOR CULTURAL ECONOMY SINCE THE MILLENNIUM

THE WKCD AND CONSERVING CENTRAL

The 1980s/90s saw a period of drastic urban transformation as the earlier planning schemes came into realisation. As the new town development was well underway, Hong Kong's urban planning re-focused on the city centre first with the Metroplan in early 1980s, followed by the Port and Airport Development Strategy. Publicly presented as the "Rose Garden" project in late 1989, it was the colonial government's last significant urban development plan that will span across decades into the early 2010s. Some scholars saw it as an attempt to regain the confidence of foreign and local investment after the Tiananmen incident in Beijing in June 1989, which overshadowed Hong Kong's change of sovereignty to communist China in less than a decade[16].

The extensive development package included the construction of a new airport, a cargo port, a high-speed rail terminal, with associated large-scale reclamation to the west of Kowloon. Besides those to accommodate transportation infrastructure, most newly created land was zoned for residential and commercial private development. This 'neoliberal turn' signalled a departure from the previous welfare investment to a greater emphasis on market forces in shaping the city's development. There was no indication of cultural function in the earlier proposals, until the new administration 1998 Policy Address announced the idea of developing a cultural district in Kowloon[17]. It was followed by a survey of existing cultural facilities in Hong Kong [18] and a feasibility study for a new performance venue commissioned by the Hong Kong Tourism Association (HKTA)[19]. These reports suggested the need for new large-scale cultural facilities in Hong Kong, anticipating local residents and tourists demand, which the HKTA study presented the concept of a new performance venue with a 2300-seat theatre and a 6720-seat semi-open venue on a 5.5 hectares site at the tip of west Kowloon reclamation land (Fig.6).

Fig. 5.   Shatin Town Hall in construction (1986)
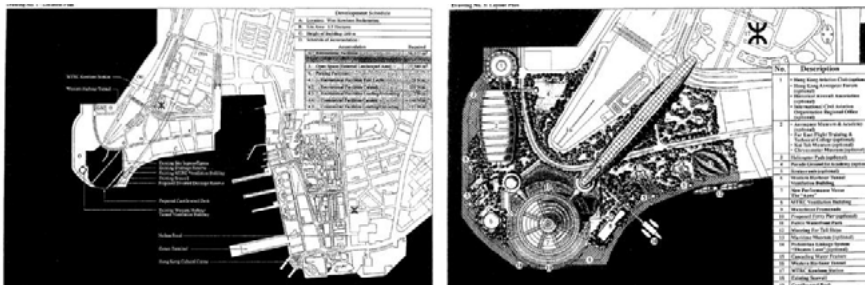
Fig. 6.   Feasibility study of a new performance venue (1999)

The West Kowloon Cultural District (WKCD), eventually occupying the full extent of the 40-hectare West Kowloon waterfront, was the most ambitious cultural project that the city has long waited for. Starting from the Arts Policy Review Report consultation by the Government Secretariat Recreation and Culture Branch in the early 1990s[20], there was enthusiastic feedback from the local cultural sector who argued the need of local cultural development during the transition period into the semi-autonomous Spetial Administative Rregion (SAR)[21]. While the cultural sector saw the new cultural district as an opportunity to address cultural and social development issues, the initial proposal presented in 2003 did not meet their expectation and lacked detail on how it would impact cultural sector development and growth[22] as the development's central argument pivoted around tourism and real estate potentials.

Viewing in conjunction with the adjacent luxury commercial and residential development that was not part of the cultural district plan[23], it is effectively a grand urban development project with culture as a branding instrument. After the initial single-developer consortium development model was called to halt due to strong public opposition, the project turned into a plublic funding initiative with a $20 billion initial endowment, and establish the statutory body (WKCD Authority) established in 2008 to manage its design, construction, and later operation. A second round of international competition was conducted in 2011, and the development master plan was approved by the Town Planning Board and Executive Council in 2013 (Fig. 7, 8). The narrative of the WKCD development reinforced the real estate-driven characteristic of urban planning in Hong Kong, in which the discussion of cultural development was focused on and its instrumental and economic benefit instead of social and local cultural sector benefit.

Since the 1990s, increasing discussion calls for a visionary cultural policy for Hong Kong, which coincides with the emerging concept of cultural economy that became popular in the planning and development practices. The HKSAR government embraced this concept and conveniently adopted it to frame the cultural policy as one that supports the growth of a "creative industry" [24]. At the same time, a rising awareness of local identity was reflected in public interest towards heritage conservation, exemplified by civil actions against the Star Ferry Pier and the Queen's Pier demolition in 2006-07 [25]. This is the background that the hybrid urban and cultural development plan, "Conserving Central", emerged in 2000 proposed by the HKSAR Development Bureau, it can be seen as the government's response to public sentiment that intersects with the new policy strategy to promote cultural economy.

Fig. 7.   Rendering of the WKCD (2011)

Fig. 8.   Development plan indicating cultural facilities (2013)

The plan identified eight projects in Central with heritage value to be revitalised for public use, mostly with cultural functions. These projects in prime urban centre locations are removed from the public land sales list, and therefore saved from the risk of demolition by commercial property developer. However, it was presented at the outset as an "urban development opportunity", that might consequently benefit heritage conservation [26]. The essence of the scheme is a development instrument of plot-ratio transfer that allows excessive built area allowance of the heritage building to be transferred (i.e. sold) to another development.

Summarized in Table 1 below, the collection of projects has a range of different regeneration models, including: 1) The reclaimed land development in the Central harbourfront; (2) the Central Market as a urban renewal project; 2) The revitalisation plan of the former Police Married Quarter; (4) the philanthropy-funded conservation of the Central Police compound; (5, 6 & 7) former government buildings with functions to be relocated in 2011; and (8) a colonial building complex with private ownership.

Although all proposals have some form of leisure and cultural function, these projects were not conceived as a holistic urban or cultural plan and there is minimal programmatic or spatial relationship among them (Fig. 9). It could instead be read as a publicity scheme to package the projects, including some controversial ones, under a unified image of conservation for better public appeal. While specific project details have been discussed elsewhere[27], this paper uses the overall scheme as a case to illustrate how urban and cultural planning is entangled, sometimes with conflicting objectives. Cultural planning aims to enhance public accessibility to culture through infrastructure provision and resource distribution, which has found opportunities in repurposing heritage buildings for cultural use. Meanwhile, planning objectives in Hong Kong is often guided by the preparation of developable land resources.

Project	Year built	Ownership / Operation	Proposed Redevelopment	Status
Central new Harbourfront	New (reclamation)	Government / public and private development mix	Plot-ratio transfer of parcel #1, 2 to parcel #5 for commercial dev.	developed in phases
Central Market	1939	Urban Renewal Authority / commercial operation	Cultural and leisure space, with venues for cultural activities, retail and F&B	reopened 2021
Police Married Quarter	1948	Gov. fund for renovation / RFP for operation	Creative Industry centre, with designer studio, space for events	reopened 2014 as PMQ
Central Police Station Compound	1864-1919 [a]	Funded by HK Jockey Club / independent operation	Restored heritage building, with new art gallery, theatre, event space, retail, F&B	reopened 2018 as Tai Kwun
Central Gov Office Complex	1961-63 [b]	Government / operations pending	Partial demolition for future commercial development + public open space	pending
Murray Building	1969 [b]	Gov. own / public tender of land & building	Private hotel development	reopened 2018 as Murray Hotel
Former French Mission Building	1843-1846 [a, b]	Government / operations pending	Pending adoptive reuse	pending
HK Sheng Kung Hui Compound	1848-1919 [a]	Private ownership	High-rise development on site while preserving the 4 heritage buildings (incentive thru plot-ratio transfer)	pending

Table 1. The projects of the Conserving Central Scheme
* notes: (a) certified monument / (b) former government offices to be relocated in 2011

Fig. 9. The Conserving Central scheme publicity brochure (2009)

Therefore, a review of how projects in the Conserving Central scheme have developed illustrate the different possibilities in response to the above-stated purposes. For example, the Police Married Quarters on Hollywood Road has been turned into a creative industry cluster directed by the government agency CreateHK, which reopened in 2014 as the "PMQ". The local philanthropy, Jockey Club, funded the Central Police Compound project and restored the heritage buildings with new constructions of an art gallery and a theatre, which reopened in 2018 as the cultural and commercial complex "Tai Kwun". These projects have a more pronounced cultural function but operate differently from the LCSD or WKCD model as independent operations with minimal public investment, which means it is necessary to have a comparable commercial programme to ensure financial viability. Meanwhile, other projects in the scheme have more straight-forward objectives as commercial real estate operations. The Central Market was tendered to private operation after the renovation was completed with urban renewal funding, and the Murray Building became a private hotel development. Proposed by the HKSAR Development Bureau, the Conserving Central scheme tested different development models for heritage sites. It reiterates the argument that cultural development in Hong Kong is overshadowed by economy-driven urban planning. However, on a positive note, it has also contributed to the city's cultural infrastructure with small and medium-scale cultural spaces.

CONCLUSION

CULTURAL PLANNING AND CULTURAL VALUE

With a brief overview of significant cultural projects in Hong Kong built since the late 20th century, this paper demonstrates the intricate dynamics between cultural and urban development. It underscores the unique challenges of cultural planning in Hong Kong that are inextricably linked to the instrumental purpose of serving economic growth, whether in the scale of flagship or smaller projects, as well as during the time of colonial rule or current SAR governance. It was an exception instead of the norm that the early Urban Council had a vision to build the Cultural Centre complex and negotiate through the urban planning process to implement it with a prime location. In most cases, the cultural project is an afterthought in the larger urban planning schemes, primarily to serve economic outcome by real estate, tourism or the creative industry.

Although cultural and urban planning might have diverging objectives, the common goal of planning practice should be to build a better society, of which culture can play a positive role. With the cases introduced above, there have been multiple occasions for public discussion on what could be a cultural policy for the city. Yet, it was a lost cause and an inclusive cultural vision for Hong Kong has yet to be formulated. The establishment of the executive-level Cultural, Sports, and Tourism Bureau (CSTB) in 2022 is the latest opportunity for such discourse, although the current pronounced vision remains to focus on the economic potential of culture, for which the argument for cultural development has to be translated into quantitative and instrumental terms in order to convince the technocratic policymakers.

However, the value of culture cannot be reduced to the revenue that it brings. In international discourse, after the phases of post-war welfare state cultural provision and the neoliberal

turn in cultural development around the millennium, decision-makers in global cities are revisiting the intrinsic value of culture and its impact on propelling social good and democracy[28]. Furthermore, culture is now recognised as the fourth pillar of sustainable development alongside the environment, economy, and social dimensions[29], which renders an urgency to re- examine the role of culture in urban planning. Unfortunately, such value has yet to be incorporated into the cultural policy discussion in Hong Kong and the current preoccupation is still the building of grand projects and hosting mega-events, as it interprets the PRC Central Government's positioning for Hong Kong as a "centre for international cultural exchange"[30].

While acknowledging the potential benefits of large-scale cultural projects, this paper will conclude by proposing a new perspective in cultural planning that focuses on multi-scalar development. In anticipation of an economic downturn in the years ahead, it is necessary to reconsider a resilient cultural planning model, moving beyond the reliance on welfare provision and reinstating cultural and social value into the current speculative development. A cultural infrastructure vision plan can integrate culture into urban planning practice, and it should consider not only the grand display for cultural consumption but also the supporting infrastructure for cultural production[31]. Cultural development would always require some form of public funding, but the critical question is how to effectively distribute resources to provide an infrastructure that allows the local cultural sector to grow. The study of different cultural development cases has revealed the problem of developmental urban and cultural planning in Hong Kong, and it calls to reimagine cultural development not only as the iconic structures but as a working system that includes the smaller and less visible components, answering to the purpose of urban and cultural planning to facilitate sustainable urban growth.

DISCLOSURE STATEMENT
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NOTES ON CONTRIBUTOR(S)
Melody Hoi-lam Yiu is a designer and scholar on urbanism, public space, and cultural architecture. Her research builds upon the professional experience in architecture and urban design, to investigate public space issues and their relationship to the cultural sector. After completing the PhD research on historical and spatial study of the Hong Kong Cultural Centre, her current research focus on the topic of cultural infrastructure and spatial agency for cultural development in Asian cities. An upcoming monography publication, "Cultural Architecture and late- colonial space: constructing cultural centres in Hong Kong" is anticipated to be published by Routledge Research in Architecture series in early 2025.

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IMAGE SOURCES

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Figure 2   South China Morning Post, "Big Govt Plan to Change Face of Tsim sha tsui", 11 Dec 1965

Figure 3   HKSAR Government Records Service. [HKRS70-8-4844] Town Planning Board. "Explanatory Statement: Kowloon Planning Area No. 1, Tsim Sha Tsui Outline Zoning Plan No. LK 1/56. Sect 4.5.1". 1976

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Figure 8   HKSAR Town Planning Board. [DP No. S/K20/WKCD/2]. Retrieved from: https://web.westkowloon.hk/pe3/filemanager/content/proposed_development_plan.pdf

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Melody Hoi-lam Yiu
No room for culture?

New Town planning in Hong Kong
The case of Sha Tin

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Abstract

Previous narratives suggested that Sha Tin New Town was the model New Town in Hong Kong. This study looks at its formation process from the perspective of planning politics. It unravels how colonial power dynamic between multiple politico-economic interests influenced planning ideas and the built environment of Sha Tin and its later New Town. The examination of archival documents and other materials unmasks the shifting rationales of urbanising Sha Tin from socioeconomic-oriented to political-oriented. The drivers of landscape transformation evolved from local-led, ad-hoc government-led to mainly government-led. Based on various contextual and temporal constraints, planning officials skilfully shaped a high-density urban form of Sha Tin New Town and attempted to transform the nature of New Town to achieve the strategic objectives of colonial government. Meanwhile, exploring shifting priorities of land use within New Town accounts for the need to catch up in New Town formation. Additionally, based on declassified archival material, this study could offer a historical and narrative-driven account to fill a research gap in the formation of New Town in post-war Hong Kong.

INTRODUCTION

In the eyes of the public, Sha Tin was perceived as a successful case in the modernisation process of New Territories in terms of the growing sizes of both the population and the urban area. Sha Tin grown from a rural township with 22,000 inhabitants in 1961 to a New Town with 692,806 inhabitants in 2021. With a total area of 6,940 hectares, the total development area of Sha Tin (including Ma On Shan) has been growing to 3,590 hectares in 2021.[1] However, is there any grounds to justify such widespread discourse? This study attempts to demystify the planning politics of Sha Tin New Town in a historical-specific manner. Given valley terrain constraints, this study examines how pro-development land interests, including colonial government, negotiated with each other towards planning motives, visions and objectives of the urban form of post-WWII Sha Tin and its New Town over time. Meanwhile, it investigates the shifting priority of land use, landscape design and the shifting nature of New Town for the sake of identifying official priorities and strategies for town development.

EARLY DEVELOPMENT IN POST-WAR SHA TIN

In the aftermath of WWII, Sha Tin Valley functioned primarily as a typical agricultural area with only two major government interventions. At that moment, colonial government focused its efforts on developing an entrepot economy for post-war recovery in the main urban areas, and had no intention to initiate socioeconomic development in rural New Territories. Still, it only developed necessary military land and diffused self-help ideas for post-war recovery. The former meant the construction of Sha Tin Airfield in 1949 to react to the communist threat, while the latter indicated the much more powerful initiative of local private land development to transform the local landscape.[2] Mr Den Lau, the youngest son of local landlord Mr Lau Hey Shing, reclaimed his inherited fields and acquired the land near Sha Tin Railway Station to produce the flatland of a new market town in 1949, speculating on the economic prospect of a market town in the 1950s.[3] During 1950-56, a modern market town, known as Sha Tin Market Town, was built. It comprised 120 village houses and a Sha Tin Market with water, sewage and power access. As a source of land production, Mr Den Lau donated 4,000 sq. ft. of land to colonial government for the creation of the market.

The broader context of satellite town formation in the early 1950s was situated in the influx of Chinese immigrants, which increased the population of Hong Kong from 600,000 in 1946 to 2 million in 1950 and 2.6 million in 1956, resulting in widespread expansion of squatters across the territory.[4] In 1952, the foreseeable prosperity of Sha Tin Market Town and the long-standing reputation as a resort destination during the weekend prompted both unofficial legislator Mr Dhun Ruttonjee and leading businessman Mr U Tat-chee to seek to build a residential area to accommodate low-income white-collar population in Sha Tin. Subject to the concern of overcrowding, the latter worried that if Sha Tin became a government-led project, it would likely be designated as the site of resettlement estates for the grassroots.[5] In June 1954, the South China Textile Company also proposed to develop a garden

suburb. Though the pressures from real estate interests prompted the making of the Outline Development Plan for Sha Tin, colonial government expressed a strong intention to develop New Territories to facilitate industrial expansion via the form of satellite towns during the early 1950s. Thus in 1954, in addition to the proximity of Ngau Tau Kok, Kwun Tong was selected. Financial Secretary Sir Arthur Clarke rejected the garden suburb proposal and explained that Sha Tin could only be a future dormitory and recreational area. Owing to the official priority of land development, no comprehensive plan was made for the New Territories in 1954.[6] Both politico- economic interests shared a utilitarian ideology for Sha Tin's development, though their specific objective did not fully align.

In the late 1950s, for the ongoing needs of squatter resettlement and industrial expansion, Town Planning Office confirmed that Tai Po, Gin Drinker's Bay (Kwai Chung), Sha Tin, Castle Peak (Tuen Mun) and Junk Bay (Tseung Kwan O) were the recommended sites for the new satellite towns. Due to financial constraints, New Territories Administration indicated that only building one satellite town at the same time was feasible and the choice would not immediately fall on the site requiring extensive reclamation. Since clearly defined boundaries of Sha Tin New Town are shaped by natural topography (the valley with Shing Mun River, the Tolo Sea and steep Kowloon foothills), constraints of vulnerable ground levels and poor ventilation were essential clues to determine the urban form of Sha Tin.[7] In view of this, when colonial government invited Scott Wilson Kirkpatrick and Partners as the consultant for the upcoming New Town development, a separate feasibility study was requested to be conducted for the necessary reclamation in Sha Tin as well.[8] Unsurprisingly, Tsuen Wan (including Kwai Chung) was selected once high flooding risks in Sha Tin were considered. Nonetheless, this feasibility study marked the beginning of the detailed planning of Sha Tin New Town, taking into account various context-specific constraints.[9] Through reclamation, the plan in 1959 envisioned the production of 239 hectares of land to accommodate a population of about 275,000. A natural town centre was developed as a major shopping area, surrounded by low- density residential areas. Industrial sites would be located further on the reclaimed land, complemented by public open spaces.[10] It roughly set out the prototype of nowadays' Sha Tin New Town.

In 1959, the primary focus of the official land policy in the New Territories was to serve the water consumption needs of the urban areas, which led to the Plover Cove Reservoir project involving Sha Tin. The resultant construction of Lion Rock Tunnel prompted the production of a more formal town development framework, leading to the implementation of the first statutory planning process in March 1960. The revised New Town layout of 1961 was designated to accommodate 360,000 people, significantly larger than the existing population of around 22,000 in 1960. The major revision was the development of a 'green' housing and industrial New Town via the provision of green belts and ample open spaces.[11] Also, this 1961 plan largely outlined the scale of reclamation that would eventually characterise contemporary Sha Tin New Town. Unsurprisingly, this plan drew criticism in mid-1961 from the Hong Kong Society of Architects, who criticized the destruction of recreational resources of regional significance. Consequently, this plan was put on hold. But these primarily set out today's recreational space and reclamation approach for Sha Tin New Town. As of 2019, approximately 39% of Sha Tin New Town area was zoned as green belt.

The preservation of large-scale green belts could be attributed, in part, to the ad-hoc land development for the establishment of the Chinese University of Hong Kong in 1963. Driven by the Cold War mentality, colonial government was concerned about political risks posed by the return of local Chinese secondary school graduates who received higher education in both Socialist China and Taiwan, thereby confirming the formation of a Chinese University in Hong Kong in the late 1950s. When Chung Chi College planned to build a permanent campus site for residential- and non-residential students, it decided to move to a location near the railway station in rural New Territories. In 1955, colonial government granted 10 acres of government land in Ma Liu Shui and confirmed the construction of Ma Liu Shui Station (now University Station). Later, in the name of forestation, Chung Chi College submitted a lease application for an additional 30 acres of adjacent land to prevent urban tycoons from building their luxurious houses. Surprisingly, Governor Grantham offered a counter-proposal to lease 300 acres of land, later called Chung Chi Shan. In 1961, the Chinese University Preparatory Committee considered five potential locations for the university, including Hong Kong Island, Whitfield Barracks, Lung Cheung Road, Clearwater Bay Road and Hung Mui Kuk. In 1962, while the Committee proposed the dual-campus solution (the existing site of Chung Chi College and Hung Mui Kuk for another two colleges), the political challenge of clearing Hin Tin Tsuen and Sheung Keng Hau soon eliminated this feasibility. As a result, Chung Chi Shan was confirmed as the site for the Chinese University.[12] In short, this outcome was largely driven by political urgency and the efforts of Chung Chi College. By and large, before 1964, the development of Sha Tin was still left mainly to private land actors.

The ongoing influx of Chinese immigrants led to significant overcrowding in urban areas, marked by the proliferation of squatters and private tenements. This increase in population requirements prompted colonial government to make a critical decision in 1964 – All future land development would be at the full urban area densities, thereby confirming the establishment of two future New Towns: Sha Tin and Castle Peak. These decisions were driven by the need to meet the public housing targets through high-density resettlement estates, Subsequently, the revised plan for the first stage of Sha Tin New Town expected that 350,000 out of 395,000 residents would be accommodated in resettlement estates. In the mid-1960s, the powerful influence of urban interests on New town planning was evident when the Royal Hong Kong Jockey Club, a long-standing social club of colonial elites, proposed building a new racecourse in Sha Tin New Town. Through the formation of a capitalist city-state, Hong Kong was characterised by laissez-faire governance, which was shaped by official reliance on merchants, industrialists, and bankers to steer the economy. In 1969, the Land Development Planning Committee, the territory-wide official committee of New Town planning, considered that the land allocation for the pavement might be too high. Nonetheless, the alternative of roads replacing the pavement might reduce the size of saleable land. Immediately, the District Commissioner of the New Territories, Sir Donald Luddington, raised concerns about whether the size of saleable land could meet the land exchange commitment.[13] Land exchange, involving the resite of existing villages to another location, facilitated the preparation of the sites for the planned land use. This negotiation process between the affected landowners and land officials in each resite case might modify the planned land use in the town layout. Hence, when land officials navigated the planning and formation of Sha Tin New Town, the powerful urban and local rural interests showcased their strength in these processes.

In 1971, various planning ideas were first introduced in the design of Sha Tin New Town. Government town planner Mr E. G. Pryor advocated the development of a "balanced" community with a mix of different social classes. He argued that incorporating a combination of public, public-aid and private housing was crucial to reproducing a multi-class New Town environment, which help raise potential community leaders to handle future social problems in Sha Tin.[14] Besides, in order to develop a New Town with a modern standard, Pryor also proposed the idea of an 'integrated' and 'self-contained' New Town design. This concept involved the inclusion of low-cost resettlement housing, private commercial and residential areas, industrial areas, markets, schools, roads, car parks, cinemas and other public services. These ideas were seen as a diffusion of the experiences gained from long-standing British New Town programmes. In 1972, the proposal for a cultural centre and three tertiary education institutes was also introduced for Sha Tin New Town.[15] Subsequently, the overall town design of Sha Tin New Town was slightly adjusted to the formation of a number of different-type residential areas, the main high-density urban core connected to an open space system and three main industrial areas. This necessitated the development of a high-capacity transportation network, which set out the nowadays' linear-based town structure. However, subject to the difficulty in determining a suitable reclamation method, no further progress was made, and only the Maunsell Consultants Asia was appointed as the consultant in 1973 to provide the layout plan for Sha Tin New Town.

POLITICALLY DRIVEN NEW TOWN PROJECT

In July 1971, the Foreign and Commonwealth Office and Sir Murray MacLehose discussed the political agenda for the upcoming governorship of Hong Kong. In order to enhance the likelihood of continuing colonial governance after 1997, they decided to develop a 'modernised' Hong Kong via urbanisation strategy prior to sovereign negotiation in the 1980s.[16] When the 10-year Development Programme (also known as the 10-Year Housing Programme) produced both permanent housing and resettlement estates in the New Towns, colonial government attempted to strategically create a substantial gap in the living standard between colonial Hong Kong and Mainland China, thereby boosting the legitimacy of colonial governance and the bargaining capacity during sovereign negotiation process. The means of zoning effectively produced spaces for urban housing, village housing, and country parks in this programme. In other words, the motive of developing New Town shifted from the growing need for industrialisation to a politically driven modernisation agenda.

In this regard, the year 1974 marked the genuine commencement of the Sha Tin New Town program by creating the New Territories Development Department and inviting private land investment, as 42% of the targeted proportion of private housing had been set since 1971. Since the international oil crisis created economic recession and budget deficits in 1975, colonial government needed private capital to assist in financing reclamation and some basic urban infrastructures required for New Town formation. This allowed a successful public tender for the present-day City One Shatin in February 1975 under the lease conditions for reclamation and the construction of school sites, drains, sewers and car parks.[17] Thus, mobilising private land development to align with long-term land interests in New Town enabled the growing power of private developers in the formation of Sha Tin New Town.

In response to the uncontrollable influx of immigrants, the consultant report led to the final major revision of the Sha Tin New Town Outline Development Plan in 1977.[18] With a growing target of accommodating 500,000 people, Sha Tin New Town was confirmed to be extended to Ma On Shan area. Additionally, the Prince of Wales Teaching Hospital replaced one of the proposed sites of tertiary education institutes. The principal objective of Sha Tin New Town was to provide accommodation and local job opportunities. To elucidate, the self-contained elements were fully articulated in the following visions.

– to produce a balanced society with a mix of different social classes and meet the basic needs of all residents
– to provide a wide range of housing locations and types, as well as job and education opportunities
– to develop a strong sense of belonging to the New Town
– to create a safe and convenient transport network
– to achieve efficient resource utilisation
– to develop an attractive town

As the first public housing estate in Sha Tin New Town, Lek Yuen Estate was completed in the late 1970s. According to an interview with the Assistant Director of Housing, Mr D. I. McIntosh, its population density is half that for newly-built housing estates in urban areas at that time, and the allocation of 4.8 acres of local open space. A lower population density reflected the improvement of the living environment, whilst the provision of local open space aimed at encouraging the formation of community spirit, thereby developing a strong sense of civic pride.[19] Meanwhile, the first Sha Tin shopping centre in New Territories introduced air conditioning as a means to achieve a sense of modernity and attractiveness.[20]

In July 1979, the Senior Town Planner of Sha Tin New Town Development Office explained a directional shift of Sha Tin in the 1980s – from both industrial and housing-oriented to pure housing-oriented. In contrast to other New Towns (say Tsuen Wan), industrial production in Sha Tin only played a complementary role.[21] On one hand, it was influenced by the broader trend of deindustrialisation since the late 1970s. On the other hand, it was shaped by the vision of creating a 'cleaner' Sha Tin New Town via the implementation of stricter environmental requirements. The new factories in Sha Tin were subject to the lease conditions that only coal gas, petroleum gas, natural gas, and electricity were allowed to be used in fuels and industrial activities. Factories were required to install approved pollution control equipment for the disposal of toxic heavy metals and strong acids or alkalis.[22] Meanwhile, colonial government demolished existing industrial undertakings and the farms within the New Town area. For instance, 70 small factories, pigsties, and poultry farms in Pak Shek village, involving 4000 working people, were demolished in 1981.[23] Unsurprisingly, about 60% of industrial land in Sha Tin was still idle in 1983.[24] Concurrently, after the introduction of China's Opening-up policy, Sha Tin's strategic location, with its railway connection between Guangdong and Kowloon and its proximity to Kowloon, combined with the completion of the Tolo Highway in 1985 and the permanent Tai Wai Station in 1986 enabled significant growth of Sha Tin and Tai Wai. Consequently, commercial development and various forms of urban housing had increasingly become the central focus of Sha Tin New Town's evolution.

THE SHIFTING PRIORITY OF LAND USE

Based on the planning document from the 1960s, the production of the New Town building was unfolded over four distinct stages. After forming the land and basic urban facilities, the initial stage would concentrate on public housing, schools, and industrial areas, which served to reproduce factory workers and the entrepot economy. The second stage would provide roads, public spaces, and government amenities, with the goal of attracting private real estate investment. The third and fourth stages would see private housing development, followed by commercial and hotel development.[25]

However, in the 1970s, the evolving governmental rationale and actual progress of the early development in Sha Tin New Town modified the priority of the land use development schedule. Large-scale land resumption and reclamation started in the early 1970s, and the first public housing estate in Sha Tin New Town was built concurrently. After the government encouraged private housing development, the late 1970s witnessed the development of the first wave of private housing in Sha Tin New Town, including the landmark middle-class residential estate of City One Shatin. In the early 1980s, government investments in amenity facilities, for example, Sha Tin Town Hall, Sha Tin Central Library, and Sha Tin Park, demonstrated the objective of producing a self- contained new town. Simultaneously, private developers exhibited political confidence by building several shopping malls with office apartments. Furthermore, the planning and development of Kau To area in the early 1980s, which emerged as a low-density residential area for the upper-middle class, coincided with the completion of the new Racecourse in 1977. From the above evidence, it is clear that the higher priority of private housing served as the modified sequence in the overall production process of Sha Tin New Town. This shift was likely driven by the government's need to accelerate modernisation progress prior to sovereignty negotiation.

LANDSCAPE DESIGN

In 1974, Maunsell Consultants Asia proposed a podium-cum-bridge scheme as a space-saving technique to facilitate the construction of a high-density, modernised new town in Hong Kong. This design approach was not entirely novel, as the first well-known podium design for a housing estate had emerged in Mei Foo Sun Chuen in 1968. At that time, this design resulted from new planning requirements for open space and ventilation for the issues of deep floor plates, lighting, and ventilation. Later, the podium design was further adopted under the modernisation vision championed by Governor MacLehose. This vision sought to improve the living conditions of local residents and foster a stronger sense of belonging to the new town. As a modern imagination of a middle- class community, podium design shapes a convenient and safe living environment. Given the limited land area and the significance of efficient circulation for both vehicles and pedestrians in the town centre, the continuous podium deck and multiple pedestrian bridges were built as a covered walkway for the provision of all-weather, convenient access to generate a natural pedestrian flow and achieve vertical segregation.[26]

In March 1974, nonetheless, the Principal Government Town Planner and the Director of Urban Services expressed doubts about the feasibility of building three super-blocks (a town centre, a market and a cultural centre) on a single podium.[27] The design was subsequently revised to feature a single block of commercial centre and high-rise towers, with the wings of residential/commercial buildings. In February 1975, the Chief Planning Officer of Sha Tin first introduced this revised podium-cum-bridge design as the town centre model during the meeting of the Sha Tin New Town Management Committee, emphasising the rationale of segregating pedestrian and vehicular traffic.[28] The podium design was developed to incorporate the future housing development above the remodeled Sha Tin Station, as suggested by a representative of the railway company. However, the Environment Branch later questioned the feasibility of this idea with private developers' involvement.[29] The Public Works Department assured that the podium's design would be under colonial government's leadership, with clear lease conditions defining the rights and responsibilities between colonial government and private developers. Later, this podium- cum-bridge design was approved in March 1976. Additionally, this design also catered for possible flooding concerns in Sha Tin New Town, as exemplified by Wo Che Estate, the second public housing estate in Sha Tin New Town.

As the maximum height for non-residential land use was limited to 15 meters or 50 feet, the podium form offered a flat, complete, and barrier-free site. Over time, the podium form evolved into the podium-cum-tower form, where the podia and their surfaces were conceived as an "archipelago" and the footbridges as "the wings" to create a megastructure. The prevalence of the shopping podium, integrated with residential space, eliminated the separation of private and public domains, shaping a new urban fabric in both urban areas and new towns since the 1980s, particularly in terms of streetscapes and skylines.[30] This "imagined" boundary production for each megastructure attempted to strategically foster a sense of community spirit in Sha Tin New Town.

THE EVOLVING NATURE OF SHA TIN NEW TOWN

Regarding the evolving nature of Sha Tin New Town, it is worthwhile to examine the planning process for transport infrastructure. According to Galanty, the major difference between a satellite town and a self-contained New Town hinges on whether the built-up population in Sha Tin New Town could work and enjoy urban services within the New Town.[31] As mentioned in the 1959 Sha Tin Consultant Report, it already pointed out that the forecast population target of New Town was contingent on the capacity of enhanced transport infrastructure with Kowloon. In 1965, while Castle Peak was already envisioned as a self-contained New Town, Sha Tin New Town was still envisaged to rely on job opportunities and urban services in Kowloon as a satellite town. Consequently, the newly built transport infrastructure not only plays a critical role in attracting internal migration and securing the creation of a new community in Sha Tin New Town, but also serves as an internal traffic and long-term commuting channel for the economic well-being of the built-up population. Therefore, at that time, the planned construction of the mass transit line between Sha Tin and Kowloon was seen as the key to transforming Sha Tin towards a self- contained New Town. In 1977, the senior town planner of

Sha Tin even commented that "what appears to be a seemingly higher proportion of the total area allocated to major roads and interchanges".[32] However, actual implementation reveals the shifting priority – While the construction of Tai Po, Sheung Shui and Fanling New Towns was expedited in the early 1980s, only Tuen Mun Light Rail was put into construction till 1985. Despite the land for Sha Tin Rail being reserved since the 1970s, its plan during the mid-1980s was still put on hold, and it commenced construction in 2001. Thus, coupled with the tendency of deindustrialisation and the lagged progress in extending New Town to Ma On Shan, the making of Sha Tin New Town during colonial era may have leaned towards a satellite town rather than a self-contained New Town.

CONCLUSION

This study uses Sha Tin as a case study to investigate how the evolving official motives and rationales of planning a New Town contested with private land interests and how colonial government navigated its New Town project amidst various difficulties and contextual constraints over time. The politically driven modernisation process of the colonial city-state undoubtedly serves as a watershed for planning motives and urban forms of Sha Tin New Town. The planning idea of Sha Tin New Town evolved from a satellite town to a self-contained New Town. The drivers of landscape transformation evolved from local-led, ad-hoc government-led to mainly government-led. Constrained by various contextual and temporal factors, planning officials skilfully shaped a high-density urban form of Sha Tin New Town and attempted to transform the nature of New Town to achieve the strategic objectives of colonial government.

In terms of research contributions, this study attempts to offer a contextual and historical account of the social transformation of Sha Tin in order to debunk the taken-for-granted top-down model of colonial power and the discourse of the model New Town. By unpacking the politico-economic processes of New Town planning and formation, this study provides a nuanced understanding of the complex interplay between official planning visions, private interests and contextual constraints in shaping the evolving urban landscape of Sha Tin New Town. When actual outcomes were revealed to be far from the initial plans, whether the limitations of Sha Tin and other New

Towns could be overcome rests upon governmental motives and techniques and available resources of the post- handover Hong Kong government.

NOTES ON CONTRIBUTOR(S)

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NOTES

1.   *"Population Census 2021"*, Census and Statistical Department, Last modified November 30, 2023.

2.   *"Why did Shatin Airfield disappear?",* Wetoasthk, Last modified November 27, 2017 https://www.wetoasthk.com/%e3%80%90%e6%b8%af%e8%ad%98%ef%bc%8e%e4%ba%a4%e9%80%9a%e9%81%94%e4%ba%ba%e3

From the 1967 Leftist Riots to the Yellow Economic Circle (YEC) in Hong Kong
How political activism shapes the City's development

Noella Tsz Wai Kwok
Independent researcher

Abstract

This research is retrospective and speculative; it is interested in how informal economies of political movements engage with the public realm and shape cities. When the Yellow Economic Circle (YEC), an informal economy that comprised of pro-democratic enterprises, was being developed as continuation of the networked 2019 anti-ELAB protests in Hong Kong, columnist Chip Tsao argued that political consumption within an economic infrastructure is not new to the City. He further iterated that the "red pro-Chinese Communist Party (CCP) economic circle", mobilised in the 1967 Leftist riots to oppose the British colonial government, is the perfect example to prove the YEC's potential . Considering the 1967 riots and YEC as critical junctures in Hong Kong's urban history and possible futures, this research consists of two parts – the study of (1) North Point, one of the former 1967 riots strongholds and highly-charged protest grounds in 2019 where pro-establishment residents often clashed with the pro-democratic protesters; and (2) the YEC network. The first part predominantly scrutinises the pro-CCP infrastructure in North Point – its relationship with migrant history and integration into education, housing, commerce, and industries in the neighbourhood – to examine the influences of the 1967 riots on the contemporary. Similarly as a resistive force, the second part of the paper reconstructs the story of the YEC network, illustrating how the pro-democratic businesses associated with the network infiltrate the spaces within the city. Built upon the innovative mobilisation tactics used to organise the crowd in the 2019 protests, the YEC offers insight into how digital platforms affect our ways of partaking in the physical infrastructure of political activism. Street occupation has never been the only form of protesting. This research sheds light on how opposition, specifically (informal) economies driven by political activism as products of large-scale protests, conditions a new form of guerrilla urbanism.

Arts Collectives
in High Density Environments
Mapping relationships
for the imagined future of KongsiKL

Kye Lee Clarissa Lim
Independent researcher

Abstract

In 1991, Malaysia's Vision 2020 was a directive to modernize the country with high-tech systems and skyscrapers, leaving little space for community-driven projects. Bringing in an analysis of arts collective, KongsiKL, an arts collective, is relocating from a warehouse to a potentially a carpark rooftop of a shopping mall, highlighting the emerging relationship between capital and culture. How do the edifices of a visionary project, Vision 2020, such as futuristic shopping malls begin to engage with embeddedness? This move offers a case study to examine the complex relationship between arts and capital. This paper visually analyses the mismatch between the urban symbolism created by Vision 2020 and the current community-driven work by KongsiKL. Interviews also support the visual material to offer clues for the next steps. The relocation elucidates new relationships between everyday spaces and public arts programming, revealing the tensions of uneven urban planning and sudden densification. Adopting the triad of solidarity as a framework, it suggests that forming new relationships may be challenging. KongsiKL's move, following the trend of other malls, offers a case-study to follow, as the construction is yet to begin.

Port Cities and River Spaces in East Asia (1)

Chair: Ruoran Wong

The Pyramid Model
A Comparative Study of British Planning and Regulations in East Asian Treaty Port Cities (1840–1949)

Ruoran Wang, Subin Xu, Nobuo Aoki
Tianjin University

Abstract

In the 19th and 20th centuries, Britain, as the imperialist country with the broadest expansion, opened treaty port cities as the "contact zones" between Chinese and Western cultures. Their urban planning models and regulations, as the fundamental guidelines for spatial construction, have profoundly impacted the modernization process of many East Asian cities. The current relevant research on treaty port cities is mainly single-case studies, and there needs to be more systematic international comparative studies to analyze them from a global perspective to clarify the relevance of urban planning in these cities and Britain. Therefore, this study takes the implementation and influence of British urban planning in seven types of treaty port cities in East Asia, namely colonies, leased territories, concessions, open port cities, settlements, public settlements, and summer resorts, as objects of study. Based on first-hand archives from many countries and international comparative research, it first analyses the transplantation process of British urban planning in different types of cities. Secondly, it takes an international comparative study of these cities in implementing planning regulations and the characteristics of localization. Thirdly, it analyses the underlying motivations for the uniqueness and differences of the seven types of urban planning models. The study proposes the characteristics of modern Britain's overseas territorial autonomy practice and localization under the concept of commercial imperialism, indicates the interrelations and influences in the urban planning of these cities, and establishes a pyramidal model of Britain's urban planning in the treaty ports of modern East Asia. It reveals the complex driving forces behind the modernization of these treaty port cities. This study will complement the urban history research of urban planning in East Asia and provide a scientific basis for modern heritage conservation in the contemporary linear treaty port city belt under the perspective of globalization.

Ruoran Wang, Subin Xu, Nobuo Aoki

An investigation into determinants shaping the spatial vitality of regenerated historic port areas
A comparative analysis of Shanghai, Liverpool, and Marseille

Tianchen Dai
Harbin Institute of Technology

Abstract

As the central hub for the origination and evolution of port cities, historic port areas boast abundant spatial, economic, and cultural resources, but they may lack regional vitality due to changes in their role within cities. Against the backdrop of contemporary urban renewal, the utilization of port-related resources and the enhancement of regional vitality have emerged as focal points in planning and regeneration of historic port areas. Existing studies on urban spatial vitality have primarily focused on dimensions such as spatial form, function, and accessibility, often overlooking the impact of waterfront characteristics and port-related historical and cultural features specific to port cities. Which determinants influence the spatial vitality of historic port areas? How can port-related resources be leveraged to shape positive outcomes? This study delves into these questions by measuring the integrated vitality of historic port areas and analyzing the correlation between each determinant and regional vitality. Employing Shanghai (China), Liverpool (UK), and Marseille (France) as illustrative cases, this research explores both the commonalities and distinctions in historic port areas before and after renewal across these three global port cities with varying planning and development approaches. The analysis reveals that positive determinants influencing the regional vitality of historic port areas include the degree of functional mix, traffic accessibility, and historical and cultural characteristics. Conversely, functional density, road network density, and distance to waterfront show no significant impact on the regional vitality of the area. This research underscores the importance of mixed functional allocation, port heritage preservation, and shaping of the atmosphere of historical port areas to reinvigorate their spatial vitality. The findings offer insights and strategies for urban planning and revitalization of historical port areas from a global perspective.

How to cite
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Tianchen Dai
An investigation into determinants shaping the spatial vitality of regenerated historic port areas

Foreign trade and Port-city dynamic of Guangzhou
From 7th to 20th century

Wenjun Feng
Delft University of Technology

Abstract

As a long lasting and sometimes the only foreign trade port of China, Guangzhou is the experimental ground for new foreign trading policies and structures envisioned by the imperial government. The changing policies and structures of foreign trade not only influence the culture and society in Guangzhou but also left marks on its urban development. The location of port area in Guangzhou has shifted several times due to the different needs for the trading activities, and its relationship with the walled city of Guangzhou varied. While the urban history of Guangzhou and its changing port areas are well studied, this article explore the influence of different foreign trading policies and structures behind the decision making of Guangzhou's port area development. Through a reading of the foreign trade history and urban development of Guangzhou from 7th to 20th century, this article looks at Guangzhou's foreign trade management and urban development together in a chronological order to understand how different expansion of new ports were created to meet the demands of its foreign trade activities. As conclusion this article argues that the different foreign trading policies and structures had causes the dynamic port-city relationship of Guangzhou in history.

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Developing treaty ports through waterfront planning in early modern China
A comparative study of Shanghai and Tianjin, 1845–1920s

Yanchen Sun[1], Kaiyi Zhu[2], Boyang Liu[1]
Beijing University of Civil Engineering and Architecture

Abstract

After the First Opium War in 1840s, a series treaty ports were established in China, such as Shanghai, Tianjin, Hankou, Xiamen and Ningbo. In these treaty ports, foreign powers set up residential areas (concessions/settlements), where they enjoyed extraterritorial, administrative, policing and taxation rights. These areas were usually located along waterways, convenient for trade and transport, acted as gateways through which foreign powers introduced foreign planning ideas into China. Scholars have conducted a lot of research on the history of treaty ports and the urban development process. However, few in-depth research has been done on planning and transformation of waterfront areas of settlements, which played an essential and leading role in the development of treaty ports. By comparing the urban practices of Shanghai, and Tianjin the late 19th and early 20th centuries, this research emphasizes the fundamental influence of the planning and development of waterways and waterfront areas on promoting the process of regional economic and cultural modernization. It presents a comprehensive analysis of waterfront plans and planning practices at different periods of the concessions in the two treaty ports, involving perspectives such as concession site selection, water management, road network planning, zoning plans, and development of bunds and docks. It reveals that waterfront areas of the two treaty ports have similar road planning mode and functional transformation, which is a continuation of the implementation of European planning ideas in colonial areas. However, different geographical conditions and development goals of the concession authorities made the final patterns of the waterfront areas in Shanghai and Tianjin different. In addition, unlike Shanghai, which had only two official concessions, Tianjin had up to nine concessions, leading the development of waterfront areas a result of cooperation and competition among the concessions.

Keywords
Treaty port, Concession development, Waterfront planning, Intercultural exchange

Yanchen Sun1, Kaiyi Zhu2, Boyang Liu1
Developing treaty ports through waterfront planning in early modern China

Photography and/in Planning Histories

Chair: Wes Albrecht

Unveiling Urban Narratives
Slideshows, Photographic Taxonomies, and the Shaping of Planning Legislation in 1950s Chicago by the Women's Council for City Renewal Critiquing Planning Principles

Wes Aelbrecht
Cardiff University

Abstract

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Keywords

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How to cite

Women's Collectives
Photography as a means to counteract dominant urban narratives in 1970s Berlin

Nolan Van Der Linden
University of Greenwich

Abstract

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Keywords

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Manila, built fabric change and development in postcards

Ian Morley
The Chinese University Hong Kong

Abstract

-

Keywords
critique, planning, La Défense, functionalism

How to cite

Ian Morley
Manila, built fabric change and development in postcards

Christchurch in 35mm Slides
The Photographic Collection
as a Site of Knowledge Production

Sarah Boree
Goethe-University Frankfurt am Main

Abstract

Two major earthquakes in 2010 and 2011 significantly altered the urban fabric of Christchurch, Aotearoa New Zealand. In this context, a mostly forgotten collection of 35mm acetate slides kept by the Department of Art History and Theory at the University of Canterbury suddenly gained new relevance. Until the early 2000s, such slide collections were a vital resource for teaching the history of architecture and planning around the world. With the advent of digital image production and projection, however, they were no longer needed and many of the slide collections were discarded or put into storage. Tracing the origins of the Christchurch collection to a 1980 architectural survey project, the paper develops a reading of it as an instrument through which established colonial views of New Zealand were challenged and its relationship with its (colonial) architectural heritage renegotiated. Using the Christchurch collection as a case study, it thus draws attention to the insights into urban histories and the multiple ways in which photography is implicated in the making of such histories that can be gained by considering the historical circumstances in which photographic images are produced, circulated and perceived, and by asking how, where and why photographs were collected.

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Sarah Boree
Christchurch in 35mm Slides

02 July 2024: Session 1.5

Urban Design, Discipline and Practice in Brazil

Chair: Renato Leao

Planning ideas in post-Brasilia Brazil

Renato Leão Rego
State University of Maringa

Abstract

Which ideas shaped the town planning practice in Brazil after the construction of Brasilia? To answer this question, four important facts in the country's planning history are explored: the establishment of the Municipal Institute of Research and Town Planning in Curitiba in the mid-1960s; the creation new towns along the Transamazonian Highway in the early 1970s; the Seminars on Urban Design held in Brasilia in the early 1980s; and the construction of Palmas in 1989, the last capital city planned in 20th century Brazil. Brasilia (1957-1960) was planned during the democratic period, but its initial development is strongly linked to the dictatorial regime (1964-1986). The new towns later implemented in the Amazon by the federal government, adopted the rationalist urban layout, again endorsing the national- building discourse. In contrast, the pragmatic urban proposals implemented in Curitiba were in line with the postmodernist rationale. The criticism of the modernist town planning was more emphatically expressed when the first of the Seminars on Urban Design was held. Nevertheless, the layout of Palmas, a city planned in the re-democratization, postmodernist period, still emulated features of Brasilia. The framing of this ambivalent panorama is a much-needed contribution to the country's recent planning history.

Keywords

planning diffusion, urban design, new towns, postmodernist urbanism, Jaime Lerner

INTRODUCTION

One might wonder, which ideas shaped the planning practice in Brazil after the construction of Brasilia? How was the criticism of rationalist urbanism assimilated in a country that had built the epitome of modernist town planning?

To answer these questions, four important facts in the country's planning history in the second half of the twentieth century can be explored: the creation of the Municipal Institute of Research and Town Planning in Curitiba (IPPUC) in 1965; the creation of new towns along the Transamazonian Highway in 1972; the first of the Seminars on Urban Design (SEDUR) held in Brasilia in 1984; and the construction of Palmas in 1989, the last provincial capital planned in 20th century Brazil.

Brasilia (1957-1960) was planned during the democratic period, but its initial development is strongly linked to the dictatorial regime (1964-1986). The dictatorship not only insulated Brazil from contemporary, progressive ideas but also favoured modernist architecture as the most appropriate image for the country of the future. In 1972, as part of the nation-building discourse, the federal government adopted a radical urbanization enterprise in the Amazon, based on the rationalist urban layout.[1] As a result, postmodernist ideas and critiques of modernism were delayed. The pragmatic urban proposals implemented in Curitiba in the second half of the 1960s included issues of identity, belonging, context, and environmental planning, in line with the postmodernist rationale.[2] The criticism of Brasilia and modernist town planning was more emphatically expressed in 1984, when the first of the Seminars on Urban Design was held; SEDUR represents an "official" turning point in planning discourse and practice.[3] Nevertheless, the layout of Palmas, a city planned in the re-democratization, postmodernist period, still emulated the characteristics of Brasilia.[4]

The framing of this panorama and the discussion of this conflicted, ambivalent situation is a much-needed contribution. This paper therefore gathers and examines several contributions that have been independently published elsewhere. This original approach sheds light on the country's recent planning history.

CURITIBA AND THE ESTABLISHMENT OF THE LOCAL PLANNING INSTITUTE

Since the mid-1940s, Curitiba has undergone a series of events that would change the image of the inexpressive capital of the affluent Parana State. The creation of the local Course of Architecture and Urbanism (1962), the establishment of the Municipal Planning Institute (1965) and the preparation of a new Master Plan actively contributed to the expected urban transformations, stimulated by the increasing urban development.

The urban environmental quality and sustainable development of Curitiba are largely based on (historical, physical, social, and cultural), contextualism, local identity, sense of belonging,

cultural memory, revitalization, recycling, as well as preservation of the natural surroundings and environmental planning (Fig. 1). Understated criticism of modernist thought and the early reception of some globally debated postmodernist ideas updated local architecture and urbanism.

The architect, urbanist and civil engineer Jaime Lerner was part of the IPPUC team and served as its president in 1968-1969 (while continuing to teach at the university). Lerner had worked in the Paris studio of Georges Candilis, Alexis Josic and Shadrach Woods in 1962. These architects, associated with the TEAM X group, promoted the "utopia of the possible" by abandoning the universal claims of urbanism and accepting the preferences and necessities of people, rather than changing the way they lived. According to them, spatial practices should be the result of socio-cultural logics. Candilis-Josic-Woods' ideas certainly left an indelible mark on Lerner's practice. He also campaigned against the modernist disregard for the traditional street, the functional segregation of cities, and the dominance of private automobiles over pedestrians in urban spaces. Lerner was twice appointed mayor of Curitiba (1971-1975; 1979-1984) and then elected for a third term (1989-1993). Interestingly, since 1965, eleven of Curitiba's fourteen mayors have either been associated with IPPUC or the city planning activity, ensuring continuity and implementation of town planning decisions – an unusual and positive case in the country's planning history.[5]
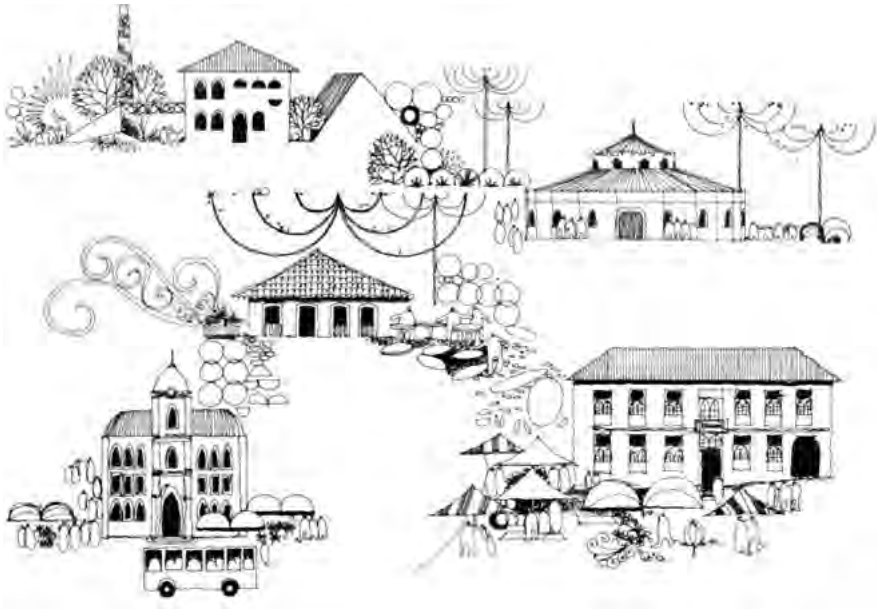
Fig. 1.   IPPUC's representation of Curitiba's landmarks and local features, 1980s.

The large number of urban proposals implemented in Curitiba have been deemed attractive, innovative, functional, cost-effective, and replicable. They were grounded in the real city and included public transportation, historic and cultural preservation, revitalization and pedestrianization of downtown areas, and catalyst architectural designs. IPPUC also implemented an effective environmental approach to planning, departing from the prevailing practice of treating urban drainage and sanitation separately. A comprehensive vision of environmental problems led to the design of an urban park system which jointly addressed urban river flooding and the creation of leisure areas.[6]

Curitiba's urban design proposals of the 1970s reveal the ideas and themes debated at the time, such as ecological thinking, city and urban history, and identity politics. Curitiba's projects reflected the postmodern turn towards social and environmental issues. Curitiba's urban projects drew inspiration from the site, the social context and mass culture, and re-everything – revitalize, recycle, reuse and renew. Unlike Brasilia, Curitiba was designed 'in the vernacular', based on the past (historicism) and the locale or site (regionalism). Regional symbols, conventional features and an infatuation with the past contributed to a valuable sense of place. However, the external impact of Curitiba's planning only became more pronounced in the decades that followed.

Fig. 2.   Aerial view of one of the Transamazonian new towns, 1970s.

NEW TOWNS IN THE AMAZON

Brazil had been under a dictatorship since 1964, and the military regime implemented a development plan that was responsible for significant growth rates from 1968 to 1973. During this period, known as the "economic miracle,"

the annual GDP jumped from 9.8% in 1968 to 14% in 1973. In 1972, the federal government launched a colonisation scheme that created a series of new towns along the Transamazonian Highway, then under construction. State-led colonisation was intended to promote regional development, economic growth, and national integration. According to Hecht,[7] "the new agricultural frontier in the Amazon was to provide a solution to vital economic and ideological questions, thus serving important political and legitimizing functions for the new regime". Like Brasilia, these modernist new towns embodied the government's efforts to occupy the territory, develop the country and build the nation (Fig. 2).[8]

The Amazonia colonization scheme altered the traditional regional urbanization pattern of river towns and inland waterway transportation systems. The simplified artificiality of the settlement layout and the linearity of the highway contrasted with the aquatic connectivity, the dendritic structure of the region, and its complex systems of integrated mobility. The location of the new towns followed a geometric layout pattern that did not properly consider the physiography. A large dose of utopia infused the colonization project, which discarded traditional urban configurations and established functionalist/rationalist urban forms aimed at reforming the physical urban environment to transform life in society. The rationale of modernist town planning impeded dense, diverse, vibrant urban environments. Aspects of functionalist town planning seemed pointless in small towns in the middle of the forest; separation of pedestrians and automobiles, functional zoning, neighbourhood units and cul-de-sacs were certainly more appropriate to more complex, dense, and developed urban areas.

National development, pursued by democratic and dictatorial administrations, was translated into progressive urban forms, i.e. rationalist urbanism. The functional city grew out of the modernist struggle to subjugate nature, and the image of progress rarely coincided with habitual urban forms. Brazil's insularity during the military dictatorship (harsher from 1968 forward) and the regime's patronage of rationalist architecture and urbanism (along with its revolutionary goal) delayed the local critique of modernist production. Contemporary postmodern thought and its associated ecological concerns, environmental planning, cultural ties, sense of belonging, and praise of traditional construction methods and building types would then have materialized a counter-image of progress. By supporting the old ideology of building the country, the military regime's plan for national integration and development overlooked important social components in favour of a productive apparatus and infrastructure. Despite substantial funding, the colonization scheme was abandoned as a failure within a few years of its inception. Since then, deforestation and a low Human Development Index have been among the most important issues in the region.[9]
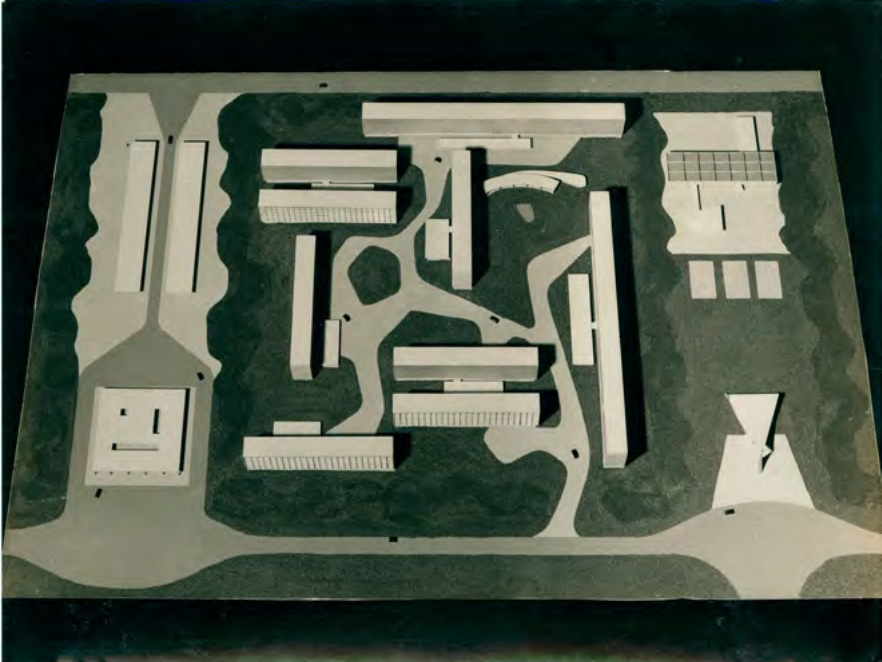
Model of Brasilia's superblock, 1957

THE EMERGENCE OF URBAN DESIGN INITIATIVES

The Seminars on Urban Design (SEDUR) are considered a milestone in the institutionalization of urban design in mid-1980s Brazil. The SEDUR meetings (1984, 1986, 1988, 1991) were all held in Brasilia (Fig. 3) in the context of the re-democratization of the country – after two decades of dictatorship. The new political situation fostered critical debates on various aspects of Brazilian society, including the architecture, urbanism, and town planning. The first session affirmed the failure of rationalist principles and criticized the functional city.

The seminars discourse focused on the physical aspect of cities, advocating urban morphology, the preservation and renovation of traditional settings, and a different approach to informal settlements, urban expansion, and new towns. It noted the importance of design as a fundamental tool for improving urban form – and thus the quality of urban life. A new agenda for urban design was proposed, focusing on existing urban forms, and abandoning preconceived rationalist urban models; a new approach to public spaces was recommended, including valuing local communities. The traditional urban tissue, contiguous and continuous, was once again praised. The re-emergence of urban social movements and the return to democracy corresponded to the consideration of the vernacular.[10]

The urbanization of favelas was a relevant topic in the seminars as a new approach to intervening in informal settlements. It was noted that this experience echoed some of the theses defended by the English architect John F. C. Turner, who visited Brazilian favelas in the 1960s as an advisor to the Housing National Bank (BNH). "They showed me problems – slums, mocambos, flooded areas, etc. – which I consider solutions. And they showed me solutions – low-cost housing projects – which I call problems" because the BNH projects were rationalist, standardised, proposals with little or no sense of place.[11] His testimony had a strong impact in the 1970s, putting the performance of public agencies responsible for housing in Brazil in a new perspective, both for the architect and the urban planner.[12]

The seminars attracted participants from almost all over the country. The participants were mainly architects and town planners working as university lecturers and public institution technicians. Interestingly, no representative of IPPUC attended the seminars, nor did any of the papers presented at the events deal with what had been happening in Curitiba over the last twenty years, even though IPPUC had anticipated and converged with the main ideas of SEDUR. Two aspects may have contributed to this absence: 1) The architects of IPPUC were very pragmatic and rarely published about their work, even though they had academic roles;[13] 2). Most of the seminar attendees presented personal experiences and practical case studies, rather than reflections on the production and theoretical essays of other people [14] SEDUR was not particularly dedicated to planning history, and postgraduate courses in

Brazil, as well as academic research, especially in architecture and urbanism, really flourished after the military dictatorship. Local books on town planning history, urbanism, and urban design date from a more recent period.

A NEW CAPITAL CITY: PALMAS

The Brazilian Constitution of 1988 created a new state in the federation, Tocantins. A capital city was to be designed, and like the new capitals in the hinterlands of developing countries, it was planned to promote economic growth and regional development. Driven by political and economic imperatives and imbued with expectations of transformation, the creation of a new capital city was once again perceived as a potential opportunity for progress. Naturally, it deserved an innovative urban form.

The outline of Palmas rejected and at the same time strongly embraced the design of Brasília. A gigantic grid, wide avenues, functional zoning, and the adaptation of the neighbourhood unit concept are the salient features of Palmas (Fig. 4). Its layout was site-purposed and designed with the environment in mind; its grid was adapted to natural conditions and the resulting urban form is strongly related to the landscape. However, other post-machine- era considerations contributed little or nothing to the project. Palmas is a city for the automobile. Modernist in its super-wide avenues and large distances between civic buildings, the extensive street network is highly dependent on the automobile and overlooks the pedestrian.[15]

Palmas' neighbourhood units are an evolved version of Brasilia's. Its plan insisted on single-use neighbourhoods when this concept had long been challenged in favour of more urban diversity. Its layout has fostered diversity of form in the inner core of the macroblocks – to the extreme of the uniqueness of each macroblock – but not in their uses, resulting in reduced vitality. Although they avoid modernist standardization, the varied contours of the macroblocks lack legibility. Palmas' civic centre avoids the monumentality of Brasília, although the arrangement of its public buildings and government palace on a vast green square recalls the organization of the modernist city. Nevertheless, Palmas' design eluded the monumentality, uniformity, and standardization of Brasilia.

From the beginning, the design of the city disregarded the modernist utopia of creating a new social order through urbanism and architecture, but Palmas' urban life was still largely idealized, as evidenced by its functional sectors, land use segregation, and the insular structure of the neighbourhood units.[16] The city's individuality and image were strongly based on natural features. As a modern urban capital intended to be the symbol of largely rural territory, Palmas' layout relied extensively on modernist urban features, and disregarded the kind of ideas developed in Curitiba, for example, the consideration of ordinary citizens and their conventional city life.

Palmas' designers had studied town planning in London and were familiar with Milton Keynes plan, which they used to inform their design. They attended the last session of SEDUR, where they presented the modern city still under construction. The strong criticism of the rationalist urbanism that characterized the first SEDUR was absent this time.

CONCLUSION

The city of Palmas has suffered some problems due to the low population density, vitality and legibility, and the lack of a pedestrian-friendly urban structure. This has necessitated a revision of the urban regulations and plan. The neighbourhood unit has not turned out as planned. The same can be said of the Transamazonian new towns. These new towns demonstrate that modernism alone does not produce a better city; it simply produces a city with a distinct urban form. Most of these towns were abandoned when the colonization scheme was dropped. The few towns that evolved show no sign of the neighbourhood unit layout. Cul-de-sacs were opened and streets crossed the common public areas, which ended up being parcelled out. Exclusive residential areas were modified into mixed-use neighbourhoods as commercial establishments sprang up between the houses. In contrast, Curitiba became a model of urban sustainability and planning.[17]

These situations, their origins and outcomes coincide with many of the modernist planning aspects debated at the Seminar on Urban Design. Moreover, urbanization and urban problems in Brazil in the 1970s were the scope of town planning, which then focused on technocratic, deterministic, macro-analysis. At that time, socioeconomic approaches prevailed over the design and the physical aspects of the urban form. SEDUR proposed to change this approach. As a legacy of SEDUR, a course on Urban Design or Urban Project was widely introduced into the curricula of architecture and urbanism at Brazilian universities. The SEDUR debate contributed to the organization of the Seminars on Urbanism and City History, which are still held every two years.

Before the criticism of rationalist urbanism, Brasilia was admired as an image of progress and modern urban life. Its innovative town layout was then rejected in favour of more typical urban forms. Curitiba was recognized worldwide as a model city and ecological capital, without any of the urban elements for which Brasilia was famous. It seems that every era produces its own model town (ready to be selectively reused at any time). The layout of Palmas', despite initial environmental concerns, has mostly been cited for its drawbacks related to the principles of rationalist urbanism. Even when it came to producing a new capital city from scratch, the modernist layout more easily provided the representation of an advanced new town.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author.

NOTES ON CONTRIBUTOR(S)

Renato Leão Rego is a full professor at the State University of Maringá, Brazil. His teaching focuses on

modern architecture and town planning history. His current research project is related to the construction of new towns in developing countries. He has been Associate Research Fellow at the Centre for Iberian and Latin American Visual Studies, Birkbeck College; Visiting Professor at the Center for Latin American Studies, University of Florida; Researcher at the University of São Paulo; and Guest Lecturer at Harvard. He is member of the editorial board of Planning Perspectives. He has published widely on the diffusion of planning ideas.

ENDNOTES

1. Rego, "Lessons from the Modernist Project;" Rego, "Shaping an Urban Amazonia."
2. Irazábal, "Urban Design;" Rego, "Curitiba;" Ellin, *Postmodern Urbanism*; Vianna, *O Plano de Cutitiba*.
3. Leme et al, "Seminars on Urban Design;" "Desenho Urbano I;" "Desenho Urbano II;" "Desenho Urbano III;" Turkienicz & Malta, *Desenho Urbano*; Holanda & Kohlsdorf, *Seminário de desenho Urbano*.
4. Rego, "Palmas;" Rego, "New Capital Cities."
5. Rego, "All Cities Should Have a Dream;" Rego et al, "Lerner, Friedman, and Candilis-Josic-Woods."
6. Irazábal, "Urban Design;" Macedo, "Planning a Sustainable City;" Rego, "Curitiba;" Vianna, *O Plano de Curitiba*.
7. Hecht, "Environment, Development and Politics," 668.
8. Rego, "Palmas;" Rego, "Shaping an Urban Amazonia."
9. Rego, "Lessons from the Modernist Project."
10. Leme et al, "Seminars on Urban design;" "Desenho Urbano I;" "Desenho Urbano II;" "Desenho Urbano III;" Turkienicz & Malta, *Desenho Urbano*; Holanda & Kohlsdorf, *Seminário de Desenho Urbano.*
11. Turner, "Habitação de Baixa Renda."
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13. Rego et al, "Lerner, Friedman, and Candilis-Josic-Woods."
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Urban Reform in Brasil (1960-1964)

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Abstract

Urban reform can be understood as a Latin American political agenda that inspired (and still inspires) many of the continent's countries to deal with their poor and segregated cities. Far from being a technical tool or a closed system of planning, it opens incisively a political dimension of struggle for the transformation of cities, particularly regarding urban land tenure and right to housing. In a very polarized geopolitical context, the Urban Reform Law was conceived in Cuba just after the 1959' Revolution. Approved in 1960, it states that "every family has the right to a decent home". Several measures were formulated to solve the problem, confronting real estate and land speculation, transforming tenants into owners, establishing strategies to produce social housing. In Brazil, in a short period of time (1960-1964), a field of Urban Reform was constructed, concomitant to huge urbanization, planning promises and an insurgent context. Through analysis of different sources, the study highlights progressive political perspectives on urban reform, mobilizing various political and professional alliances, as well as the disappearance of its problematization with the military coup of 1964. This agenda will re-emerge in the 1980s, within the process of democratization.

INTRODUCTION

The occasions in which fields of knowledge and their constitutive objects occupy a critical space in critical contexts[1] are not so frequent. That is, moments in which these fields of knowledge, as part of the process of their very construction, in interaction with the broadest social field, are urged to respond to problems that afflict the societal collective in general.

A particularly fertile moment to deal with this issue are the 1960s, with the activation of the banner of social reform in Latin American countries, based on the Cuban experience. In each context, it mobilized political alliances from different horizons, including professional ones. As far as we are concerned here, the politization of the urban issue and of the instruments of regulation and proposals for its resolutions – including urbanism and planning – strained the ways of understanding and operating reality. At the same time, it intensified the interfaces between social universes configured by diverse affiliations and interests. Thus, the greater breadth and depth of the field corresponded to its necessary interrelation and interaction with other fields.

To analyze the intense process of urban reform in Brazil between 1960 and 1964, it is necessary, in the first place, to appeal to some conceptual anchors, making it possible to contextualize the reformist and turbulent situation that characterized the country at that time. A necessary passage through Cuban urban reform makes it possible to enunciate, in the sequence, a situation of clashes between different perspectives involving this issue. It is then time to delve into the main expressions of the progressive reformist field, its composition, forms of action and the meanings attributed to urban reform. This then allows us to characterize this powerful movement and delineate the paths towards its comprehension.

CONCEPTUAL ANCHORS

Political banners don't arise out of nowhere and are not the outcome of simple evolution in linear, homogeneous time. They result from complex interactions and overlapping movements between transscalar conjunctures, contexts and propelling agents, mobilizing aspirations, formulations, accumulated experiences, inventions, battles, conquests, defeats, alliances, ruptures.

The banner of urban reform is a clear expression of this process. Formulated and put into practice since the 1960s in Latin American countries, it derives from a set of processes, of practices and theories active since the end of the nineteenth century, updated with different profiles, temporalities, and intensities[2]. Some concepts are fundamental to analyze it.

One of these is the reformist field[3]. According to Christian Topalov and based on an analysis which has as its point of departure networks of entities, associations, institutions, and conferences in France, between 1880 and 1914, the "laboratories of the new century" were configurated. Morphologically autonomous and with intrinsic properties, they aggregate political, institutional, professional, and scientific dimensions. However, to implement the reforms,

public bureaucracies will exercise a strong protagonism, breaking the autonomy that previously characterized this set of initiatives. Certainly, this represented a significant transformation in the public sphere. Still, half a century later, the issue of reforms emerges with intensity in Latin American countries, placing an entire continent in search of its place in the world.

After the experience of two world wars, communist revolutions, the flourishing of anti-colonialist struggles, the setting up of an international governance system, the theoretical elaboration that seeks to emancipate itself from the colonized comprehension of underdevelopment, it seems possible to address once again, although evidently with other characteristics, the issue of a restless reformist field present in these countries since the 1950s and, above all, since the 1960s[4].

In this sense, it is inspiring to activate Braudel's historical times for these temporal displacements, as well as continental and societal shifts in the endeavor to comprehend this theme. On the one hand, the brief time, allusive to the individual and the event "has long accustomed us to its hasty, dramatic, short- breathed report". On the other, conjunctural time, carried by economic history. Or "another form of historical narrative appears, call it the 'recitative' of the conjuncture, the cycle, even the 'intercycle'"[5], varying from some decades to half a century. The combination of these times makes it possible to understand reformist actions, contexts, and situations in a relational and intertwined manner.

Considering that the reforms that are of interest here are those linked to interventions in cities, the concept of the field of urbanism or of urban planning becomes fundamental. In general, Bourdieu understands that social space is constituted by diverse fields, which are at once fields of forces ("whose needs impose themselves on the agents that are involved in it") and fields of struggles ("within which agents confront each other, with different means and ends, according to their position within the structure of the fields of forces, contributing in this way to the conservation or transformation of its structure"), which delineate "spaces of possibility", always in interaction[6].

In other words, like others, the field of urbanism is based on the action of the social groups that produce it. Furthermore, it involves the recognition and delimitation of, albeit with relational and changing borders[7], sets of problematics, of theoretical and empirical references, of experiences, propositions, disputes, formations, traditions, symbols, and expectations. At the same time, it is a relatively autonomous field, with its own history.

Within these overlapping formulations, it seems possible to address the issue of urban reform in Brazil in the first half of the 1960s.

BRAZIL IN THE 1960S: TENSE AND REFORMIST CONJUNCTURE

In the 1960s, Brazil was living through a turbulent process, marked by an instable society and a recent democratic experience, as well as structural political and economic issues. In turn, the accelerated mode of urbanization and, above all, metropolization was combined with a situation of fierce geopolitical dispute at the international level.

In terms of internal politics, the newly elected federal government, that took office in 1961, was extremely unquiet, with the elected president resigning after just seven months in office. Vice-president João Goulart, close to left-wing sectors, including the Communist Party, was viewed with great suspicion by conservatives and the military. They imposed a change to the parliamentary regime as a condition for his instatement. However, this was short-lived, presidentialism being reinstated in the beginning of 1963.

If reforms, although fragmented, were already an issue, being an important theme of debate during the electoral process, they became the key word of the governmental projects from then on. In other words, "a politics of development in the current phase of our political formation, should be a politics of reform"[8]. Furthermore, according to the President of the Republic, it was about promoting "economic development guided by criteria of social justice"[9] through agrarian, urban[10], tax, banking and administrative reforms. University, exchange rate and electoral reforms were also mentioned during this period. Indeed, the politization of planning was central to this situation: "planning constitutes, a basic reform, despite being instrumental. The social and political objectives of the Nation are what dictates the content of planning"[11].

In the city and the rural area, the issue of access to land was on the agenda. Among many other elements, conflicts over the agrarian issue, which had been going on for at least a century, strained the situation. The exacerbation of the urban issue, in which access to housing and infrastructure constituted points of dissatisfaction, mobilization and action were also a cause of mounting tension. Speculative processes, in general, were being questioned and, more specifically, the perspective of the right to property conditioned by social interest gained strength in political conflicts. Although this right was already foreseen by the 1946 Federal Constitution, its practice was incipient and fragile.

It is within this perspective that, in Brazil, urban reform progressively gains forums for public debate and contours of a banner of struggle[12]. Between 1960 and 1964, many interpretations and objectives were defined with respect to urban reform, but the first times it is mentioned in the national press derive from the Cuban experience[13]. By directly confronting the issue of property ownership, making it subject to expropriation, the continental repercussions of the measures taken, including in Brazil, were enormous. Discussing this experience, particularly Cuba's position at that moment within the geopolitical disputes and tensions present internationally and, specifically, in the American continent, is essential.

CUBAN URBAN REFORM:
THE RADICALIZATION OF A BANNER OF STRUGGLES

In the aftermath of the 2nd World War, the Cold War brought tension to some parts of the world, but had preserved the Americas, until 1959. The latter was a region relatively controlled by world capitalism – although full of instabilities – through the hegemony of the United States. The Cuban Revolution interrupts this trajectory by bringing another political, eco-

nomic, and social regime to the heart of the continent. Marked initially by the anti-dictatorial and anti-imperialist struggle, it soon unfolds into socialism.

Urban reform marks exactly this transition between the reformist and socialist periods[14]. A deep housing crisis, characterized by a permanent housing deficit and highly speculative processes that govern the production of location as well as properties was widely acknowledged. Bearing this in mind, "the Cuban Revolution considers the right to housing as an essential and unalienable human right" [15], and the *Ley de Reforma Urbana*[16] , is drawn up to address this issue in all its complexity. Approved on October 14th, 1960, just over a year after the Revolution, it declares, in its first article, that "every family has the right to decent housing"[17].

A set of principles, procedures and institutions are created with this law to regulate the use of land and properties as well as the production of housing, thus confronting speculation and exploitation of real estate and land. The expropriation of properties used for rental as well as income and the transformation of renters into owners seems to have been, in the field of urban policies, the measures that had the most impact on the international political scene, since they directly confronted property rights. A series of other measures, such as the establishment of the Urban Reform Councils, the definition of the periods of time for achieving the right to housing, the use of unoccupied properties, the issuance of urban reform bonuses, constitute a strategy of public policy elaborated to confront the serious problem of housing, while lending it central importance in the struggle against poverty.

"The Cubans, thanks to their rich experience, are already launching new sociological figures, of which 'urban reform' is an example (...) which will certainly make a career in the world, particularly in Latin America."[18] This recognition derives from the fact that the formulation is also extremely close to the context and challenges posed by urbanization in Latin American countries, in which the issue of housing assumed a central place[19].

Furthermore, the level of political instability and dissatisfaction with living conditions and the forms of international aid, derived from a subaltern position in the geopolitical hierarchy, created in these countries a context more conducive to receiving the new possibilities that emerged from the Cuban experience. The action of progressive political networks and parties, with special emphasis on the communist parties, gave scope and depth to this process. In turn, the revolutionary government itself had this continental action as its objective. The First Declaration of Havana, resulting from the General National Assembly of the Cuban People, assembled on the 2nd of September, 1960, affirms its commitment to the "self- determination, sovereignty and dignity of the brotherly peoples of the Continent", as well as to "work towards this common Latin American destiny, that will allow our countries to edify a true solidarity, based on the free will of each of them and the joint aspirations of all"[20].

It is not by chance that, after a long construction, postponed since the 1950s, the North American government launched a financing program for Latin America. It was called the Alliance for Progress and was announced only a few months after the Declaration of Havana, the Cuban Law of Urban Reform and soon after the United States had severed diplomatic relations with Cuba. Along this path, combating underdevelopment becomes at the same time, combat-

ing the so-called communist threat. The speech delivered by United States president, John F. Kenedy, when presenting the program, on March 13th, 1961, alerts the public of the great danger threatening the continent. He appeals to the unity of the Americas, to the "common revolution" pursued by its countries, to the necessary reforms, to social justice and economic development, goals that can only be achieved within the framework of democratic institutions. Housing and land integrate the main issues concerning basic needs to be satisfied, referred to in both English and Spanish: "Therefore I have called on all the people of the hemisphere to join in a new Alliance for Progress - *Alianza para el Progreso* – a vast cooperative effort, unparalleled in magnitude and nobility of purpose, to satisfy the basic needs of the American people for homes, work and land, health and school - *techo, trabajo y tierra, salud y escuela*"[21].

It is within the context of this geopolitical dispute that Brazil will experience urban reform and its developments.

URBAN REFORM IN BRAZIL (1960-1964)

The issue of Cuban urban reform very rapidly entered the space of public debate in Brazil. Its initial manifestations in the newspapers[22], in October of 1960, were informative. While coverage of the banner of struggle for urban reform was discussed more or less in-depth, the suppression of the real estate property regime and the suspension of evictions were highlighted. Soon, however, there were reactions against these measures, qualifying them as "crazy" and stating that another kind of housing policy was desirable. There were still those who justified the measures taking into consideration their intrinsic connection with the defense of the revolutionary process and with the popular support they gained, especially from the middle classes. Some months later, however, in May 1961, the issue had already been nationalized: a law proposed in congress[23] provided for the expropriation and sale of residential properties, transforming rents into amortization of the purchase[24]. The reaction to the proposed measure was immediate, both in terms of support and rejection, and the theme starts to guide a set of movements around the issue of urban reform in the country.

Fig. 1.   Cuban Urban Reform Law
Fig. 2.   Cuban Urban Reform Law reported by te Newspaper "Revolucion," Oct. 1960.
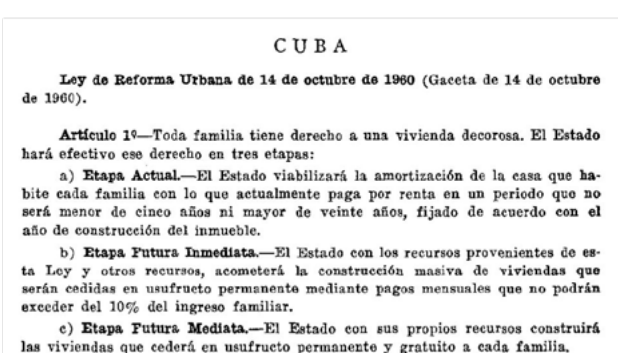
One should note that, in this temporality, an attempt was made to build, as mentioned above, through vigorous action by the US government, an alternative to the Cuban perspective. Housing was given a special place within the program of the Alliance for Progress, being considered part of the social policy to be implemented. The Agreement of the program was signed in August 1961, at the Punta del Este Conference, approved by all countries except Cuba.

Thus, simultaneously with a series of other developments and conflicts[25], a polarization starts to build up in Brazil around the banner of urban reform, which gains greater centrality in the reformist agenda[26]. The importance and strength of the repercussion of Cuban urban reform and its political premises imposes the use of the banner by diverse, although discordant political groups. Thus, it mobilizes Brazilian society, always agglutinating to a greater or lesser degree, parties, organizations, and entities of civil society. On one hand, in a more progressive and structural perspective, urban reform is understood as a way of confronting the issue of property as a strategy to address the issue of housing. On the other, within a more conservative field, without causing a rupture in the status quo, urban reform is circumscribed to housing production operated by means of market mechanisms, including financial, mutual aid and land negotiations. There is also a middle ground, sensitive to the issue of housing and that moves between these two positions depending on how contexts and circumstances are being problematized. This text will focus on the progressive perspective on urban reform in Brazil, highlighting that its own configuration is strained by the simultaneous movements of the other two fields.

This political dispute around the definition and operating modes of urban reform reveals the centrality that it detained at that time in the public agenda. Although the right to housing had already been announced by the Declaration of the Rights of Man in 1948, its problematization was now anchored in a new geopolitical situation and in a context in which intense urbanization substantially incited issues concerning habitation.

THE PROGRESSIVE FIELD OF URBAN REFORM IN BRAZIL

For Brazil, "it seems that the time has come to recognize as legitimate the right to housing"[27]. There were several initiatives, alliances, and disputes in this search for urban reform, revealing the movements of the fields of forces and fields of struggles. Four of its main expressions, that worked with each other, will be discussed here.

It is necessary to recognize, firstly, that urban reform, this "new sociological figure" and I would add political one, becomes part of the basic reforms of the federal government, those that should guide, with social justice, the transformation of Brazil. Mentioned explicitly by the President of the Republic in a message to Congress in 1963, it still has an imprecise and fragile formulation. The need for housing policy and regulatory legislation to combat speculation were suggested as means for addressing the obstacles that impede the poorest population from having access to their own houses. As mobilization around urban reform grew, throughout 1963 and the beginning of 1964, the federal government became more aware of this issue,

giving it more space. However, it always kept postponing a decision on it[28].

Nationally, the legislative construction of urban reform, the second expression of this process, was being elaborated since 1961, as mentioned above. A Bill "based on the Urban Reform decreed by the revolutionary government of Fidel Castro"[29] was presented to Congress in May 1961 by Congressman and engineer Sergio Magalhães, of the *Partido Trabalhista Brasileiro – PTB* [Brazilian Labor Party]. Its first article declared, "of public utility for the purpose of expropriation for social interest all apartments and residential houses leased to the same tenant for ten years or more". At the same time as it expropriated, exercising a constitutionally foreseen right, it also provided compensation for the owners and other operational measures. The proponent hoped that the approval of the project would be "proof of the possibility of carrying out social reforms within a democratic regime"[30]. The project, however, was shelved, being presented once again, without changes, two years later, in March 1963, in the wake of the Presidential statement on the issue.

In November 1963, a new bill was proposed in Congress by Congressman and architect Artur Lima Cavalcanti, also elected by PTB. PL 1329/63 foresees the creation of the Superintendency of Urban Policy [*Superintendência de Política Urbana – SUPURB*][31], an eminently planning body. It represented a significant change, for its goal was to act directly on the construction of an institutional framework. The attributions of *SUPURB* contemplated, among other things, the responsibility for expropriation of urban real estate for public utility or social interest; the creation of a special fund for urbanization and housing; as well as undertaking plans for mutual aid. These are considered prior measures to a necessary urban reform, a second phase, which should focus on the "revision, updating and even restriction of property rights"[32] due to its association with land and real estate speculative processes. This would require – and constitutes a source of much controversy – constitutional review, particularly in the chapter that refers to the forms of compensation arising from expropriations. At the beginning of 1964, given that the bill was not progressing through parliament, work began on the idea of establishing *SUPURB* via presidential decree, which was continually postponed.

In addition to proposed laws and decrees, there is also a set of parliamentary fronts to be mentioned, not be detailed here, which were structured on defending the reform agenda, and urban reform specifically, together with other social segments.

The mobilization of these segments constitutes the third expression of urban reform. The political situation, already tumultuous, was aggravated by the increase in rents and the possibility of expiration of the tenancy law[33]. The defense of the need to alter the constitution as one of the paths designed for urban reform, changing the form of payment of eventual expropriations, also fueled various movements[34]. The social fabric, emulated by various types of organizations defending different principles and interests became progressively active between 1960 and 1964[35].

The formation, right in the early 1960s, of fronts of movements that sought to associate peasants, workers, and students for reforms and against imperialism must be stressed. In addition to proposals of marches to Brasilia or civic vigils in the city to pressure for reforms, the idea of establishing the First Popular Parliament of Brazil was also put forward. Likewise, program-

matic fronts of action were defined, such as the Unity and Action Pact, for which 15 guidelines were listed, including urban reform. Always present in the diverse initiatives, it was justified as necessary to put an end to real estate speculation and to the concentration of properties or as a solution for home ownership.

Large assemblies of workers, bringing together seafarers, dockers, railway workers and public servants, important workers' strikes, or national union meetings were also in favor of urban reform as the only solution to the housing problem or owning a home. The National Congress of Banking and Insurance workers took a more radical stance, formulating diverse demands. Amongst them were urban reform, with the expropriation for public and social interest as well as constitutional reform[36].

Entities of solidarity and protection to tenants were also important agents acting in defense of urban reform. Organized occupations of land and property were promoted, as well as protest marches against the expulsion of populations from their living quarters, all articulated around the banner of urban reform.

The action of the Catholic Church, in those sectors inspired by the encyclical *Mater et Magistra*, of 1961, was also felt with intensity, whether by the organizations linked to it or by the practice of religious people. Lectures in workers' organizations, declarations in the newspapers or effective experiences of housing production were carried out by different segments of the Catholic hierarchy, that defended the implementation of urban reform as a necessary measure to achieve housing adequate to the dignity of the human person. At the same time, the criterion of free competition to guide programs aimed at resolving the housing issue was questioned.

Fig. 3.   *Arquitetura*, journal published by the Brazilian Institute of Architects, reporting on the Urban Reform Seminar held in Rio de Janeiro and São Paulo, July 1963

Finally, as the fourth expression of movements for urban reform, there was "first attempt to find a technical solution for the anguishing problem of housing in the country"[37]. Promoted by *IPASE – Instituto de Previdência e Aposentadoria dos Servidores do Estado* [Institute of Social Security and Retirement for Employees of the State] and by IAB – Institute of the Architects of Brazil, the Seminar Housing and Urban Reform – s.HRu[38], held in Rio de Janeiro and Sao Paulo in 1963, conceived urban reform from the perspective of national interest as well as from a technical one. Therefore, in line with various other reformist expressions, it was now a question of "obtaining, through the seminar, a clear definition of Brazilian Urban Reform."[39] A set of proposals was outlined, relating to a national housing and urban planning policy and its institutional construction, including *SUPURB*, mentioned above. Urban reform, in the Seminar's final document, was defined as "the set of State measures aimed at the equitable use of urban land, the regulation and allocation of equipment to urban agglomerations providing decent housing for all families"[40]. Cautious in its formulation, it seemed to respond to the political strategies of the federal government and sectors of the legislative body concerning urban reform, giving it an institutional structure and principles of social justice.

The different social categories present in the seminar – in addition to the architects, there were union leaders, politicians from different parties, high-ranking public servants, social workers, urbanists, sociologists, economists – explicit, once again, the articulation of various political and professional expressions that sought to build urban reform in Brazil as its own political field. Although with varied but similar formulations, with the city as its epicenter, an entire, complex movement was underway to search for possibilities of social and political transformation to overcome the profound injustices and inequalities to which a large part of the population was subjected.

CONCLUSION

Throughout this reflexive path, the construction of urban reform as its own political field, articulated to the Brazilian reformist agenda, seems evident. The longer period of building rights is brought to life in the very short period of searching for reforms now. Through housing, it is the living conditions in the city that are called into question and the reasons for their existence problematized. Difficult to construct, requiring theoretical-conceptual, legal, and political articulations, in a field always mined by the defense of the status quo, urban reform reveals itself as a category of practice. It is as a practice in a field of struggles under construction that it carries the set of mobilizations in its defense.

Within the field of urbanism and urban planning in particular, the Seminar on Housing and Urban Reform, convened by a professional entity and a social security institute, may be considered, in conjunction with the entire network, as a participant and privileged interlocutor of this entire process. This role places the s.HRu in a distinct position from so many other events, that are, for the most part, professionally or academically circumscribed. It is the formation of a political field specific to urban reform, which allows us to understand the presence of so many different political agents in a meeting of this kind.

Fig. 4.   Rally for reforms in Rio de Janeiro, bringing together around 200,000 people, March 1964, two weeks before the coup d'État

The violent interruption of this process brought about by the military coup in 1964, will dismantle and submerge these social experiments, drastically interrupting an incipient and fragile process of construction of democracy, republic, and justice, of which the Brazilian city sought to be a part and an expression. Progressive urban reform practically disappeared from the public agenda from then on, with most of its protagonists impeached, imprisoned and/or persecuted by the regime of force that was imposed. It returns to the scene almost 20 years later, with the process of redemocratization.

ENDNOTES

1. Kingdon, *Agendas, Alternatives, and Public Policies*.
2. Part of this conceptual framework is discussed in Fernandes, Reforma urbana no Brasil: inquietações e explorações [Urban reform in Brazil: concerns and explorations]. A brief panorama of debates concerning the concepts of reform and Revolution is also constructed there.
3. Topalov, *Laboratoires du Nouveau Siècle*.
4. According to Hobsbawm, *Tempos Interessantes*, 396, "there wasn't any [leftist] intellectual from Europe or the United States who did not succumb to the spell of Latin America, a continent in which apparently the lava of the social revolutions burbled".
5. Braudel, História e Ciências Sociais, 263 e 266.
6. Bourdieu, Espaço Social e Campo do poder, 50
7. Ibid.
8. Goulart, *Mensagem ao Congresso Nacional*, 9
9. Ibid., 10
10. Differently than the perspective adopted here, the term urban reform will also be used by some authors in Brazil, since the mid- 1980s, to describe large operations of urban transformation à la Haussman, highlighting, above all, their character as public works and the ideologies they carry. For example, Pereira, *A Reforma Urbana de Pereira Passos* [The urban reform of Perreira Passos]. It may also be the case that authors name initiatives retrospectively when the expression had not yet been formulated as such.
11. Goulart, *Mensagem ao Congresso Nacional*, 18

12. Although it does not carry the name of urban reform, a reformist sense of regulation of the city in Brazil dates back to the 1920s, expanding from the 1930s and 1940s. In general, it is led by a more technical political spectrum and aims to curb speculative processes, limit the right to property and exercise more public control over processes of growth and extension of the cities.

13. One of our main research sources are approximately 1.800 articles concerning urban reform published between 1960 and 1969 in 50 newspapers from different parts of the country. A greater volume of articles, however, is from Rio de Janeiro, the city that had recently lost its post as federal capital to Brasilia. The role of international news agencies and of diverse information networks also played a significant role in this diffusion.

14. Suárez Pérez, Caner Román, "*A 55 años de la Ley de Reforma Urbana*"

15. Cuba. *Ley de Reforma Urbana*, 771

16. Already in 1953, the Moncada Program, although defeated on that occasion, considered housing conditions tragic, requiring immediate action to address them. Castro, *La História me absolverá,* 14

17. Cuba. *Ley de Reforma Urbana*, 771

18. Ramos, "*Ponto de Vista Nacional*", 4

19. Since the 1950s, the intensification of processes of urbanization in Latin America, although at varying degrees and paces, has placed the issue of housing as an inescapable topic of governmental action. Also worth noting is the important role played by international agencies, particularly the OAS. See Montoya Pino, Ramirez Niero, Aravechia-Botas, *CINVA: Un Proyecto Latinoamericano*.

20. *Primera Declaración de la Habana*, 1, 4

21. Text of an Address by President John F. Kennedy, 1

22. We used as our references, 4 publications from different political fields: the liberal newspaper, the *Diário da Noite*; a progressive newspaper, the *Última Hora*; a weekly communist newspaper, the *Novos Rumos*; and a conservative newspaper, the *Tribuna da Imprensa*, all based in Rio de Janeiro.

23. It was elaborated by Congressman Sérgio Magalhães, from the Partido Trabalhista Brasileiro – PTB [Brazilian Labor Party], which housed several deputies also linked the Communist Party, which was then illegal.

24. *Diário da Noite, "Reforma Urbana"*, 3

25. This very turbulent period will not be discussed here in greater detail, but it involves movements and disputes of different scopes and significance in the early 1960s, such as, among others: the nationalization of US properties in Cuba and the Cuba-USSR agreement; the attempt to invade the Bay of Pigs, in Cuba, supported by the USA; Che Guevara is distinguished with the *Ordem Nacional do Cruzeiro do Sul* [National Order of the Southern Cross] by the President of the Republic; regulation of the remittance of profits from Brazil to the exterior; the expulsion of Cuba from the OAS.

26. In the period between 1960 and 1964, among the set of reforms mentioned above, the agrarian and urban reforms are those that were able to gain the support of a large part of the sectors mobilized in favor of transformations in the country.

27. Magalhães, "A Reforma Urbana", 4

28. The initiatives of some of the state governments also deserve to be highlighted in this construction. However, it is not possible to approach them in detail here.

29. Diário da Noite, "Reforma Urbana", 3

30. Magalhães, *PL 2975-61*

31. We cannot fail to make a connection with the creation of *SUPRA – Superintendência de Política Agrária* [Superintendency of Agrarian Policy], in October 1962, which had, among its responsibilities, "planning, promoting, executing and insuring execution (…) of the agrarian reform". Brasil, *Lei Delegada 11/62*, art. 2º

32. Câmara dos Deputados, *Projeto de Lei 1329/63*

33. Law approved in 1950, number 1300/50, it offered protection to tenants and was renewed annually, always generating great public discussion due to the conflicting interests between owners of rented properties and residents.

34. The aim was to amend ¶ 16 of article 141of the 1946 Federal Constitution, relating to the methods of compensation for expropriated properties, from payment in cash to payment in public debt securities, with a 20-year term.

35. The source of these information are articles published in the 4 newspapers mentioned in footnote 22.

36. See note 34.

37. Batista, "Solução Técnica para a Habitação", 2

38. For an analysis of the Seminar, see Fernandes, "Reforma urbana no Brasil"

39. IAB, "Seminário de Habitação e Reforma Urbana", 24

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IMAGE SOURCES

Figure 1   Granma. Official Voice of the Communist Party of Cuba. Central Committee. Archivo. October 21, 2015

Figure 2   Boletin del Instituto de Derecho Comparado de México n. 41, 1961

Figure 3   Instituto de Arquitetos do Brasil. *Revista Arquitetura* n. 15, julho 1963.

Figure 4   Outras Palavras. *História e Memória*, 01/04/2022

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Participatory Budgeting in the Global South

Experiences between Belo Horizonte (Brazil) and Chengdu (China)

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Abstract

Participatory Budgeting (PB) is an urban policy that emerged in Brazil in the late 1980s, that consists in opening up part of the municipal budget for the public deliberation, so that the citizens can decide the investment priorities. The first experiences of PB in brazilian cities were characterized by a significant political and spatial aspect, as they managed to redistribute financial resources towards the impoverished areas of the cities, while promoting political engagement and citizenship formation (Fedozzi, 2009; Avritzer, 2003). However, as the policy spread internationally (and, at the same time, suffered a downfall in Brazil), most of this characteristics were lost, making space for a "managerial" and "politically distilled" instrument, predominantly practiced in european cities and/or promoted by international institutions (Oliveira, 2016; Cabannes; Lipietz, 2017). The purpose of this paper is to demonstrate how some emerging experiences in the Global South (especially, Asia and Latin America) have been reclaiming this original virtues of PB. To do so, a small comparative case study will be presented between two distinct experiences: the first one is the PB of Belo Horizonte (Brazil), which was one of the first in the county, beginning in 1993 (and no longer active), strongly tied to the housing movements of the city, implemented by the Workers Party administration and motivated by a logic of "inversion of priorities" in urban planning (Rena et al., 2022). The second one would be the contemporary PB of Chengdu (China), a massive policy (in terms of financial resources invested, territorial spread and complexity) promoted by the municipal government/party, based on a logic of "balancing rural and urban development" (Cabannes; Ming, 2014). We argue that both PB experiences are based on promoting territorial development in previously unprivileged areas, and are strongly tied to political party and local leadership strengthening.

The Coimbra Bueno Foundation and Central Brazil
Potential histories from the Coimbra Bueno Archives

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Abstract

Urbanization companies were fundamental to the implementation of new urban frontiers in Brazil. Many have participated in the occupation of the Brazilian hinterland stimulated by public policies, since the proclamation of the Republic, but especially from the mid-twentieth century. At that time, urban areas were still excessively concentrated on the coast and nearby regions, leading the federal government to encourage plans and strategies for occupation in central Brazil, resulting in the creation of new urban centers, new cities, but also the updating and amplifying a colonizer imaginary in which the private sector actively participated. Thus, it is very relevant to understand the modus operandi of urban development companies as an intrinsic part of the historiography of urban planning in Brazil, such as The Coimbra Bueno company. This research aims to contribute to the planning historiography in Brazil through the Collection of the urbanization company Coimbra Bueno e Cia. Ltda. The Coimbra Bueno company was founded in 1934 by the engineer brothers Jerônimo and Abelardo Coimbra Bueno, and was responsible for the construction of the new capital of the state of Goias, Goiânia, a turning point in the urbanization of Central Brazil in the 20th century. However, the company's activities go far beyond Goiania, including projects and construction of other cities and neighborhoods in the hinterlands of Brazil; agricultural and industrial activities; social housing; active involvement in the movement advocating for the transfer of the national capital from Rio de Janeiro to Brasilia through the Coimbra Bueno Foundation for Capital Transfer (FCB), and the development of a socio-economic project for the construction of a "sertaneja civilization." This proposal aims to contribute to the historiography of urban and regional planning in Brazil by discussing the role of the private sector in the occupation of central Brazil through the case of the Coimbra Bueno company.

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The Coimbra Bueno Foundation and Central Brazil

Academic Writing in/for Planning History

Chair: Stephen Ramos

Planning Systems and Designs in the Greater Bay Area (China)

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Transplantation, Translation, and Integration

A Study on the Development of Urban Planning in the Macao Peninsula (1557–1949)

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Abstract

Macau has experienced more than 400 years of development since the opening of the port in 1557. In the process of urban planning development, Macau has been influenced by Portuguese colonial culture and traditional Chinese culture and has experienced the transformation from translation to integration, and the scale of the city has experienced the transformation from a "Portuguese city" to Macau. In 2003, the Historic Center of Macau was included in the list of World Heritage Sites and more and more experts and scholars have researched the development of urban planning in Macau, but mostly from the perspective of history and less from the perspective of urban planning history and comparison of the development of urban planning in modern Macau Peninsula. However, most of them are from the perspective of history, and fewer of them are from the perspective of urban planning historiography and comparative perspective on the urban planning development of the modern Macau Peninsula. This study takes the present-day Macao Peninsula as an example (formerly known as Portuguese City or Macao City) and proposes a historical staging of the development of modern urban planning in Macao by studying its urban planning development and changes in modern times. At the same time, it explores the factors that influenced the development of urban planning in Macau Peninsula in different periods, to supplement the lack of research on the corresponding aspects of Macau as a special case of modern urban planning in China, and to help the current preservation of Macau's urban heritage and cultural lineage.

The Myth of the Codes
Exploring Self-Built Rules in Peri-Urban Villages, Southern China

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Abstract

This paper challenges the prevailing belief that informal settlements lack effective zoning and building regulations by presenting an ethnographic study on self-built practices in multiple peri-urban villages in the Guangzhou metropolis, Southern China, from 2012 to 2019. Under China's urban-rural divided system, not only do formal urban zoning codes and building regulations not apply to these locales, but the emerging village regulatory frameworks are also often sites of contestation between the local state and residents. The research highlights how three distinct social groups within these villages have formulated their own informal self-built rules, akin to zoning and building codes. Local villagers have negotiated with their neighbours to establish rules on setbacks and patio arrangements to reduce overcrowding, enhance ventilation and natural lighting, and be competitive in the rental market. Peasant-workers, who fulfil dual roles as both builders and tenants, have improved housing standards by making on-site ad hoc adjustments to building elements like windows, balconies, patios, entrances, and staircases. Small businesspeople have established bottom-up guidelines to preserve and renovate traditional houses that are excluded from official preservation lists. This paper argues that these self-help settlements are not devoid of zoning and building regulations; rather, these communities develop their own sets of rules, albeit informally. Despite facing various limitations, these informal rules are crucial for grassroots empowerment. They use these rules to enhance their living conditions, establish collective actions, and leverage their economic and social interests. By revealing the rationales, mechanisms, and outcomes of these self-initiated rules, this study calls for a deeper reflection on how zoning and building codes could be made more effective and just in informal settlements.

INTRODUCTION

The study of informal and self-help and settlements has long been characterized by the assumption that these areas lack effective zoning and building regulations, which often lead to perceptions of chaos and disorder. Scholars such as Davis[1] and Neuwirth[2] have described informal settlements as spaces marked by a lack of planning rules, building codes, and substandard living conditions. However, recent research has begun to challenge this view, suggesting that informal settlements possess their own systems of order and regulation. For example, Al-Sayyad argues that informal settlements should be understood as dynamic spaces where residents actively engage in self- regulation and community governance.[3] Similarly, Roy contends that informal settlements are not merely spaces of deprivation but are also sites of innovation and resilience.[4] These perspectives highlight the agency of informal settlement residents in shaping their environments through informal practices.

The ethnographic study (2012-2019) of multiple peri-urban villages in the Guangzhou metropolis presented in this paper builds on these insights. It provides a detailed account of how self-built practices emerge and function in contrast to formal zoning codes and building regulations under China's unique Urban-Rural Division. This research aligns with the findings of Sanyal and Mukhija, who highlight the adaptive strategies of informal settlement residents in response to regulatory voids.[5] It also resonates with the work of Holston, who examines how residents of informal settlements negotiate and establish their own rules to improve living conditions and achieve a degree of stability.[6] The case of Guangzhou adds to this body of literature by illustrating the specific mechanisms through which different social groups within peri-urban villages create and enforce informal self-built rules. The study shows that local villagers, peasant-workers, small businesspeople each contribute to the development of these rules, reflecting their distinct needs and priorities. They demonstrate that diverse and overlapping self-initiated regulatory practices are critical to understanding the self-improving mechanisms in self- built settlements.

Furthermore, this research contributes to the broader discourse on urban informality by revealing the interactive relations between formal and informal regulation. As De Soto[7] and Yiftachel[8] suggest, the informal sector can offer valuable lessons for formal urban planning. By documenting the informal zoning and building codes created by residents in Guangzhou peri-urban villages, this study underscores the importance of recognizing and integrating these grassroots practices into formal governance frameworks.

DUAL-TRACK BUILDING REGULATION UNDER CHINA'S RURAL-URBAN DIVISION

To better understand the self-initiated building regulations in Guangzhou's peri-urban villages, it is crucial to outline the divided regulatory framework under China's unique urban-rural division. In urban settings, building codes and planning rules are formalized, comprehensive,

and strictly enforced by municipal authorities. These regulations encompass zoning laws, construction standards, safety protocols, and environmental guidelines, equivalent to international building codes operating under well-defined urban planning frameworks dictating land use, building heights, densities, and architectural aesthetics. Conversely, in rural and peri-urban villages, such formal regulations are minimal. Village governance is often more flexible and localized, allowing residents to adopt informal practices to meet their specific needs.

This legislative division roots back to the Maoist urban-hukou division in 1958. In the 1950s, China's Ministry of Construction Engineering compiled the "General Principles of Civil Building Design". It began formulating various building design codes, marking the initial efforts to establish standardized building regulations in the country.[9] However, building codes and planning rules were centrally controlled and only applied to urban areas, excluding rural areas from the formal urban planning system. Rural construction was governed by basic, often local guidelines focused on communal living and agricultural productivity. The division allowed the country to sustain food and resources extraction from rural areas while maintaining minimal administrative effort in the name of promoting rural self-reliance and self-governance.[10] This approach led to disparities in infrastructure and living standards between cities and villages.

After the 1978 Open and Reform, the urban-rural divided system persisted. In 1984, the Ministry of Urban and Rural Construction and Environmental Protection established the Civil Building Design Standards Review Committee to organize and manage the compilation of civil building design standards. This review primarily focused on urban construction activities, largely bypassing the self-built housing in rural areas under the rural self- governance framework. [11] It was not until 1991 that the State Council required rural households to apply for and obtain permission from village collective committees and local governments. The central state aimed to formalize housing and land management in villages, bringing these activities under its supervision.

In the mid-1990s, the regulatory framework in Guangzhou's urban and peri-urban villages became a site of contestation between local officials and village residents. A fundamental driver of this shift was the land- centered fiscal mode that originated in Guangzhou during the early 1980s.[12] This mode relies on commodifying land use rights. The formula is simple: the municipal government appropriates cheap rural land from villagers, converts it into urban land, then sells the land use rights to developers at high prices, accumulating revenue through the land price gaps. This model was adopted nationwide and became the dominant fiscal mode for local governments after the central government's tax reform in 1994. In the new tax system, the central government standardized the tax rate for all provinces and divided taxes into three categories: central, local, and shared. The central government took stable revenue from industrial and commercial entrepreneurs directly, but to avoid fierce resistance from local states, it returned part of the revenue according to local development needs.

Crucially, it allowed local governments sole control over land use right transfer payments.[13] To generate more local revenue, local governments pushed the real estate industry to gain more land use right transfer fees.[14]

In 1994, the Guangzhou municipal government implemented the "Guangzhou Land Management Regulation," the first detail regulation specifying local rules for rural housing land use. According to these regulations, rural housing land was only eligible for villagers with local rural hukou (residence), and new housing land could not occupy farmland. Households could not apply for new housing land after selling, leasing, or giving away their existing rural housing land.[15] In 1995, the municipal government introduced the "Guangzhou Rural Residents Self-Built Housing Land Temporary Regulation." It is the first building regulation applying to self-built housing, setting limits for housing lot sizes based on per capita farmland size. For areas with less than 0.5 mu of farmland per capita, households with four or fewer people could apply for a maximum 40 m² housing lot, while larger households could apply for slightly larger lots. The regulations also stipulated that self-built houses less than 3.5 stories high could omit the formal construction report and review process by municipal departments. Complying with these regulations, district governments further restricted new rural housing land for villages on the urban fringe, granting each villager a 20 m² rural housing land quota for future population growth.[16] The purpose of these local regulations was to safeguard the local government's ability to sell land to urban real estate developers. As they enhance their control over rural housing land, they can reduce the productivity of village housing, and keep rural housing- especially the ones in and close the city- out of urban markets. Thereby, the local government can ensure that their revenue streams remained unaffected.

The 3.5-story limit was widely rejected by urban and peri-urban villagers. For them, self-built housing represents both the most important asset for village households and a major income source from rental units. However, different building norms and living environments emerged between the two. Urban villagers universally built "handshake buildings," where residents in adjacent buildings can shake hands through their windows due to the proximity, resembling tenement buildings in early 20th-century New York City. In contrast, peri-urban villages adopted setback buildings, patio principles, shifting windows, improving living norms, and informal preservation codes. Through the practices, they have created more diverse housing forms and less spatial congestion. The informal regulatory frameworks in peri-urban villages were not the efforts of "progressive reformers" or planning professionals as seen in the West at the turn of the 20th century. Rather, they are the diverse, often overlapping building and settlement rules formed by local villagers, peasant-workers, and small businesspeople.

VILLAGE LANDLORDS' SELF-INITIATED HOUSING CODES

Scholars often attribute the substandard living environments in urban villages to "greedy landlords." As long as their properties yield significant rentals, they see no reason to improve conditions.[17] So, what drives peri-urban village landlords to create informal housing codes and improve living conditions? Their motivation is closely related to two distinct features of peri-urban villages that contrast with urban villages.

THE SUPPLY-OVER-DEMAND RENTAL HOUSING MARKET

The primary difference between urban villages and peri-urban villages lies in the rental market's supply-demand configuration. Because of their central locations, urban villages enjoy high market demand, resulting in low vacancy rates. In contrast, rental housing in peri-urban villages often faces a supply-over-demand situation. This is due to the sheer number of peri-urban villages; while there are only tens of urban villages, there are thousands of peri-urban villages. Additionally, each peri-urban village typically has hundreds of rental buildings.

Since the mid-1990s, residents of peri-urban villages have been keen on building rental apartments to secure stable incomes amidst economic turbulence. The massive supply of rental apartments in these areas has created a highly competitive market for village landlords. Unlike earlier days when migrants had to "beg" villagers to rent apartments, now villagers must cater to the tenants. Rental housing advertisements are ubiquitous in peri-urban villages. While existing housing awaits occupancy, new apartments continue to be constructed, further flooding the rental market. In many peri-urban village, the rental housing vacancy rate was between 30-40% as the village leader estimated in 2014, much higher than the American housing vacancy rate of 10% during the 2010 foreclosure crisis. Therefore, improving the housing condition allow peri-urban village landlords to appear competitive in such rental market.

HOME FOR BOTH: LANDLORD-TENANT CO-HABITATION

Another significant difference is the villager-migrant co-habitation mode in peri-urban villages. In urban villages, few villagers live in their rental apartments. With good rental incomes, most villagers buy real estate properties and live in urban residential communities (xiaoqu). Some outsource their village buildings to rental agents for professional management, detaching themselves from tenant interactions and concerns about living conditions. If the high-demand market guarantees good incomes, they are not motivated to make changes. In contrast, many villagers in peri-urban areas live with their tenants.

Drawing from my ethnographic fieldwork, several reasons account for this co-habitation dynamic. First, families with limited economic capacity and only one housing lot have no choice but to live with their tenants. Second, even families with two or more housing lots often build co-habituated apartments first due to financial constraints. Building a three-story apartment costs around 200k to 300k yuan, which takes many years to accumulate. For villagers who can afford to build a separate building, it is usually still within the village, as soaring urban housing prices make urban apartments unaffordable. This co-habitation makes landlords and tenants "staying in the same boat," compelling peri-urban villagers to consider building better housing conditions.

SETBACK APARTMENTS

Building setbacks are a regulatory measure that originated in New York City at the turn of 20th century. It has since been adopted by many high-density mega cities. Peri-urban villages have

developed their own versions. For those with housing lots near the main street, they divide their lots into two parts: the ground floor for commercial use and upper floors set back a few meters for residential purposes, allowing for better sunlight and ventilation (Figure1). To compensate for the lost floor area, they often build up to four or five floors in the back part, despite municipal height restrictions of 3.5 stories. Though this violates local regulations, it is generally accepted among neighbours as it improves living conditions for both inhabitants and the community.

For those with lots not near the main street, they create a front patio, arranging the building layout in an "L" shape to form an air-well for ventilation and sunlight. In cases of larger lots, the apartment building only occupies two- thirds of the lot, leaving more space adjacent to the street (Figure2). Building setback rules are a common strategy used by peri-urban villagers to improve the living environment. Because they create better sunlight, ventilation conditons, and less visual interference between buildings on all floors.

These setback rules usually follow the principles of reciprocity and mutual benefit among neighbouring lots. The extent of the building setback and the height of the buildings are often determined through discussions and negotiations between adjacent lot owners. This is why clusters of village apartments may follow one type of setback while others follow different patterns, and some may appear as fully occupied structures similar to urban village buildings. As the rental market becomes increasingly competitive, more villagers are adopting the setback mode to create better living conditions to attract tenants, especially "white-collar" workers who prefer decent living.

Fig. 1.   Setback apartment with ground floor commercials. (Image by author, 2014)

Fig. 2.   Setback apartments with front door patio. (Photo by author, 2015)

PATIO APARTMENTS

The "Patio Apartment" strategy, though less common, profoundly improves housing conditions. Families or relatives with adjacent housing lots combine two or more lots to collectively develop their new apartments. This collaboration offers greater flexibility in designing floor plans and building layouts. Often, households use a patio as a central feature to organize the buildings. They work together, along with their neighbours, to position the structures in a way that maximizes sunlight and ventilation. The patio creates a shared space for landlords and tenants, benefiting the public street by increasing sunlight and providing visual openness.

In the following case, Auntie Chen and her relatives co-built a patio apartment complex on three consecutive, narrow, west-facing lots. West-facing houses are undesirable in Guangzhou due to excessive heat and poor ventilation. Rather than constructing three narrow buildings with poor orientation, they reoriented the buildings to the south, enhancing natural ventilation and reducing heat. They arranged the buildings around a patio, creating communal areas for bike parking, stroller storage, children's play, and socializing. To address neighbors' concerns about spatial standards, they lowered the street-facing building to two stories, improving sunlight and ventilation for the street and surrounding buildings (Figure3 and Figure 4). This layout improved the physical condition of each unit, making the rental units popular and resulting in a tenant waiting list.

Patio apartments are remarkably effective for alleviating congestion in larger areas compared to setback buildings. Such designs benefit owners, tenants, and neighbors by providing stable rental incomes, better housing conditions, and enhanced communal environments. However, because it requires collaboration among adjacent lot owners, it is less commonly adopted than setback rules.

Fig. 3.   The street view of Chen's patio apartments. (Photo by author, 2015.)

Fig. 4.   The patio view of Chen' patio apartments. (Photo by author, 2015.)

PEASANT-WORKERS' INFORMAL BUILDING CODES

Peasant-workers,[18] the primary tenants in low-rent, sub-standard housing units in urban villages, have little legal protection against poor living conditions. However, as both major tenants and core constructors of peri-urban village housing, they leverage their construction skills and tenant status to influence landlords and housing practices, advocating for informal building codes. Through these efforts, they seek to improve their living conditions and assert their housing rights.

ADVISING LANDLORDS

Many peasant-workers have extensive experience working on various construction sites, both in the city and in villages. Familiar with urban building codes through empirical knowledge, they understand what types of village units rent well. Some often serve as informal consultants, advising village landlords on building new rental apartments with higher living standards. This advocacy has led to the establishment of new norms, such as larger windows, higher ceilings, and better amenities. For instance, they often recommend design features that enhance ventilation and natural light, improving the overall livability of the apartments.

OPTIMIZING ARCHITECTURAL LAYOUTS

Peasant-workers optimize architectural layouts and spatial arrangements through onsite ad hoc design. Unlike urban construction, codified architectural drawings are uncommon in village building processes. Instead, villagers use abstract diagrams to illustrate building layouts, leaving room for builders to improvise. Builders adjust window locations to maximize sunlight and privacy, alter building areas to accommodate existing trees, and make other decisions through onsite discussions with owners and neighbors. This flexibility allows for practical and context- specific improvements.

USING SHORT-TERM LEASES

Peasant-workers leverage short-term leases to pressure landlords into upgrading apartment conditions. To avoid taxes, few landlords sign formal rental contracts, leading to oral month-by-month or short-term leases. This arrangement allows peasant-workers to move flexibly between different low-cost rentals, seeking better deals and conditions. By exchanging rental information among themselves, they can promptly relocate from dated, low- standard units to newer, improved rentals.

> "I do think the rent should go up that fast. I used to live in a place that charged 600 yuan/month. It was too expensive. I could not afford it. Well, it was not really that I could not afford it. I just thought it was not necessary. A laoxiang (hometown fellow) lives in a similar place. It only takes 400 yuan/month. She even has two windows in her place. I talked to my landlord; she was not willing to lower the rent. Then I moved out. The place I live now is 400 yuan/month, including water."

> Master Hong, an experienced builder from Guangxi.[19]

These informal building codes and strategies have led to significant improvements in living conditions for peasant-workers. The advice and adjustments made during construction result in better-ventilated, well-lit, and more comfortable living spaces. Short-term leases and the flexibility to move allow peasant-workers to continuously seek better housing options, fostering a dynamic rental market where landlords must respond to tenant demands.

SMALL BUSINESSPEOPLE'S ARCHITECTURAL PRESERVATION GUIDELINES

Small businesspeople are the main advocates for historical building preservation in peri-urban villages. Unlike urban villages, peri-urban villages have a significant number of traditional houses. However, these houses are largely excluded from government-funded architectural preservation programs. Small businesspeople, who are often passionate about these buildings, rent them from villagers and self-initiated preservation. They run various businesses such as tea houses, small inns, galleries, studios, classrooms, cafés, and boutique shops.

> *"My competitor is not the people who run businesses in the traditional houses, but those who want to demolish them. In fact, the more people run their businesses in these traditional houses, the better. This is why we organize ourselves. In our WeChat group, you can see how people are helping each other.*
>
> *We try to preserve this village. One day, when all these traditional houses are gone, this place will become another urban village, giving the government a reason to demolish it, and we will need to leave too."*
>
> Ted, a design studio runner in the village.[20]

As cities continue to expand, many peri-urban villages face the threat of demolition to make room for urban renewal projects. In response, as Ted mentioned, small businesspeople have begun coordinating their preservation efforts collectively. These efforts involve organizing both online and onsite, spreading preservation methods and guidelines as broadly as possible. By expanding the preservation area, they can assert the village's historical and cultural significance and gain public support against demolition. They organize themselves through a "decentralized loose network," with no leader, formal name, explicit rules, or regular meeting times. Communication occurs via WeChat groups, phone calls, and ad hoc meetings, which helps avoid the risk of state intervention.

Rather than following a "discussion-action" route, preservation efforts operate through an "action-redirection" route. Small businesspeople engage in spontaneous preservation and renovation, then visit each other to learn effective methods, formulate preservation guidelines, and circulate them around. This loose network extends beyond small businesspeople to include village cadres and landlords. Some small businesspeople build trust with village cadres, who are also landlords of vacant traditional houses, facilitating access to resources and contacts for preservation efforts. These connections allow them to disseminate information to more interested parties.

"What's Mine Will Be Yours" – Guidelines for Recycling

> *"Every time there is a house deconstruction, we inform each other. Someone's trash is another's treasure. Some villagers think their old furniture is worthless, but we see it as priceless. We use them for our projects."*
>
> *Xia Li, an active traditional house preservationist.*[21]

Recycling materials from deconstructed traditional houses plays a significant role in preservation efforts because it keeps renovation costs low. Recycled materials range from architectural components and building materials to furniture and decorations (Figure 5). Social connections within the village facilitate the sharing of tools and workshop spaces, enabling small businesspeople to repair and repurpose discarded items. This collaborative approach not only preserves the historical integrity of the buildings but also fosters a sense of community and

shared responsibility for maintaining the village's cultural legacy. Moreover, as most of the materials come from deconstructed houses, they retain the aesthetics of traditional building culture, including material characteristics, colour tones, and traces of time. Therefore, the recycling rules act as spontaneous preservation guidelines, embodying the material culture of the village's heritage.

"Seeing Old, Using New" – Guidelines for Renovation

> *"What you see can remain old, what you intensively use, should be clean and relatively new"*
>
> *Boss Zhao, an experienced traditional house renovator in villages-by-the-city.*[22]

Boss Zhao, an experienced traditional house renovator, shares strategies or renovation guidelines that have widely circulated among small businesspeople. These guidelines involve manipulating lighting and flooring to highlight the "old" while maintaining functional areas as "new." They include specific treatments for windows, floors, staircases, walls, and doors. Despite the absence of formal written documents, the renovated houses serve as living examples. These practices help lower renovation costs and make preservation accessible to newcomers, thereby expanding their impact.

"PRESERVATION FOR LIVING" – GUIDELINES FOR PROGRAM

In contrast to formal preservation guidelines and codes, which often rigidly define building usage, small businesspeople bring flexibility and versatility. For instance, Dong renovated a traditional house in 2011 and later expanded to multiple properties, transforming them into multi-functional spaces for various businesses. By signing long-term contracts, he ensured stable rental rates and reduced financial risks. Other occupants, like Ye and Brother Si, increased their income by introducing new uses for their spaces, such as cinemas, galleries, and shooting locations for commercials and films. This diversification not only gives traditional houses a new aesthetic while maintaining their overall tone, but also makes the preservation activity economically sustainable (Figure 6).

Fig. 5.   Example of using recycling materials for interior renovation for a traditional house. (Photo by author, 2015)

Fig. 6.   Example of new program for a traditional house. (Photo by author, 2015)

These collective efforts in preservation and adaptive reuse highlight the resilience and creativity of small businesspeople in peri-urban villages. By forming effective guidelines to preserve architectural heritage, they sustain their businesses and communities amidst rapid urbanization pressures. Two characteristics distinguish these informal guidelines from formal ones. First, they are persuasive rather than coercive. While they may not result in highly consistent aesthetics as formal guidelines do, they respect individual choices and demonstrate a more just process in forming collective consent. Second, these codes and guidelines aim to vitalize and sustain people's living environments rather than turning historical houses into static artifacts.

CONCLUSION

The study of informal and self-built settlements, traditionally characterized by perceptions of chaos and disorder due to the assumed lack of effective zoning and building regulations, has been challenged by recent research.

This paper builds on these insights by providing a detailed ethnographic study of peri-urban villages in the Guangzhou metropolis. It highlights how self-built practices emerge and function in contrast with formal zoning codes and building regulations. The findings illustrate that resident of these settlements—local villagers, peasant- workers, and small businesspeople—actively engage in creating and enforcing informal building codes and guidelines that reflect their distinct needs and priorities. Their diverse and overlapping regulatory practices demonstrate a dynamic self-improving mechanism within self-built settlements.

This research also contributes to the broader discourse on urban informality by offering new insights of the interactions between formal and informal regulation. Unlike urban areas that have already adapted international building codes, the case of Guangzhou's peri-urban villages captures the emerging moments on how bottom-up building codes and guidelines are formed. Although these guidelines and codes may fall short in terms of universality and physical strictness, they illustrate effective collective efforts to enhance housing conditions, preserve architectural heritage, and sustain community livelihoods. They also demonstrate more just processes in building regulation-making by considering grassroots' interests rather than overlooking them. By documenting these practices, this study calls for a reevaluation of how zoning and building codes can be made more inclusive and effective in self-built settlements. Recognising the agency of informal settlement residents and integrating their innovative strategies into formal planning processes can lead to more resilient and sustainable urban development.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author.

NOTES ON CONTRIBUTOR

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12. For more urban land use right commodification experiments in Guangzhou, please refer to: Quanle Huang, *Metropolis of Rurality A Spatial History of Shipai in Guangzhou from the Perspectives of Typo-Morphology (1978-2008)*(China Architecture & Building Press, 2015).
13. In 1994, the central government reformed the tax system to reclaim revenue control, as it was only receiving about 25% of reported earnings, with local governments hiding significant portions. This imbalance created a "rich local, poor central" scenario. The reform shifted the revenue distribution, with the

central government securing about 60% post-1994, leading to increased reliance of local governments on land sales for income. More on land-center development after 1994, please see book: (Hsing 2010)

14. Two decades after the new tax reform, a real estate reliant mode was developed, rooted in local governance and development. According to the Guangzhou Construction Yearbook, the revenue from land sell took up more than half of the city's total revenue since the early 2000s, with a significant growth on the real estate sector.

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17. Li, Peilin. 2002. "The End of the Chinese Villages-— A Study of the Villages Located in Southern Urban China." *Chinese Social Sciences* 2.

18. In the Chinese context, "peasant-workers" (农民工, nóngmín gōng) are migrant workers from rural areas who work in urban centers. They have a rural hukou (household registration), which classifies them as peasants despite their employment in urban industries. This dual identity reflects their transitional status between rural and urban life and highlights the institutional barriers that restrict their access to urban public services and benefits. They are crucial to China's economic boom, providing labor for construction, manufacturing, and service industries, often under harsh conditions for low wages, while living in sub-standard housing with little legal protection.

19. Interview with Master Hong, an experienced builder from Guangxi, 2015.

20. Interview with Ted, a design studio runner in the village, 2015.

21. Interview with Xia Li, an active traditional house preservationist, 2014.

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INTERVIEWS:

Interview with Boss Zhao, an experienced traditional house renovator in villages-by-the-city, 2015. Interview with Master Hong, an experienced builder from Guangxi, 2015.

Interview with Ted, a design studio runner in the village, 2015. Interview with Xia Li, an active traditional house preservationist, 2014.

How high can we go?
Exploring the history of Macau's urban density (1557) 1987–2024 (2049)

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Abstract

Sustainable futures are being led by cities, which are being designed to be socially inclusive, better integrated and connected, and spatially compact (UN-Habitat World Cities Report 2022; SGDs Goals UN 2023). Compactness and diversity have been stated as essential indicators of social and spatial sustainability (Haupt & Pont 2020, Ahfeldt & Pietrostefani 2017, Dempsey et al 2011, Hillier 2009, Grazi et al 2009, March & Steadman 2021, Newman 2005). Densification has been regarded as the key solution against space consumption and to arrive at a more sustainable city form, and since the 1990s a main planning strategy (Pont & Haupt 2020). Yet, the solution is not as simple, and density trade-offs might be the urban problems of tomorrow. Thus, we need the ability for simultaneously articulating quantity and quality, and this calls for further evidence-based knowledge (Pont & Haupt 2020), which this paper aims to contribute by looking at the case of Macau in China. Until 2021, the Special Administrative Region of Macau (MSAR) was the densest place in the planet with a 20 806 Km² population (World Bank 2021). The territory is defined by a low to medium rise urban setting in a small land area of 33.3 Km² (peninsula and two islands). In short, extremely compact, and with a fixed territorial border so it continues to expand by land reclamation and densification. Also, it is demographically hyper-diverse (Vertovec 2023, 2007; Tasan-Kok, Tuna, et al 2014). This makes Macau a unique case study of urban form and density in China, and at large. One that provides evidence to the counterintuitive fact that high-density need not to produce high-rise settings (Steadman 2003; Martin & March 1972), and that diversity can be sustainable and does not constitute a threat to an imagined social order (Amin 2002; Tasan-Kok, Tuna, et al 2014). Therefore, this paper explores the relationship between urbanisation, density and planning by looking at the history of Macau's urban transformation from 1987 (Sino-Portuguese Join Declaration) until now by defining morphological periods (spatial orders) entwined with the state projects of deterritorialization and reterritorialization (Morais 2017, 2014). Up to the handover, urban transformation occurred under a laissez-faire planning system and a divided ethno-power political economy. Since then, the MSAR is being redesigned and rescaled to integrate the Greater Pearl River Delta (PRD) City-region by 2049 under the 'One Country, Two Systems' formula so it is vital to discuss further densification and how sustainable its future may be. How high can we go? This is a qualitative morphological study, based on a historico-geographical approach (Conzen 1960; Whitehand 1977) that builds up on prior publications, and a long-term research on Macao's urban transformation and politics of territorial identity (1557-2009/2049) (Morais 2017, 2014).

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Spatial Constraints and Urban Dwellings

Minimum Space Living in early 1960s' Macau, Hong Kong, and Singapore

Niccolò Arnaldo Galliano, Daniela Arnaut, Ana Tostões
University of Lisbon

Abstract

The present paper focuses on socio-economic and architectural aspects of minimum space living format in Macau, Hong Kong, and Singapore's urban landscapes, during the early 1960s, looking to the ground of research of emerging forms of inhabiting spaces in contemporary urban territories. The main analysis encompasses the historical contexts, considering influence of colonial legacies and public policies on housing practices, presenting a set of case studies, aiming to unravel similarities and differences within their spatial constraints. The achievement of such goals is to be developed through a comparative analysis, in order to derive, on one hand, an amplitude equation of adopted theoretical matrix; and, on the other hand, to identify variations between housing typologies, collective spaces, spatial distributions, and technical systems. This proposal examines architectural behaviours shedding light on the evolution of high- density living conditions and public awareness regarding housing standards. Drawing on archival documents, photographic survey, and architectural records, this reflection investigates insights from first statements of architectural modernity in the field of modern housing in tropical climate conditions. Moreover, it provides a nuanced understanding of the complex interplay of architectural innovations in shaping Macau, Hong Kong, and Singapore's built environments during a pivotal period of their developmental history.

How to cite
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INTRODUCTION

Housing scenarios in Macau, Hong Kong, and Singapore during the mid-20th century were characterized by a confluence of colonial legacies, rapid urbanization, and social challenges. This era marked a pivotal period in the urban development of these regions. Burgeoning populations, economic transformations, and political transitions profoundly shaped housing demands and constraints.

As former colonies under European rule in Asian territory, Macau, Hong Kong, and Singapore inherited complex socio-economic structures and urban configurations, which influenced their approaches to housing provision and management. Moreover, the tropical climates, prevalent in these regions, posed unique challenges to architectural design, urban planning, and housing infrastructure.

Colonial legacies of Portuguese Macau, British Hong Kong, and British Singapore left enduring imprints on their housing systems. The administrations, during the early 20th century, prioritized economic activities such as trade and manufacturing, often at the expense of comprehensive urban planning and housing provision for local populations. In Macau, the Portuguese government maintained, for the first half of the century, a laissez-faire approach to urban development, leading to populated urban areas with not much adequate housing infrastructure. Similarly, British colonial policies in Hong Kong and Singapore favoured the interests of expatriates and commercial elites, resulting in stark socio-economic disparities and housing shortages among indigenous and immigrant communities.

The housing crisis during the mid-20th century was exacerbated by rapid population growth, rural-to-urban migration, and limited land availability; while the three concessions were hit by uncontrolled cross-border immigrants flew. Due to persistent socio-economic upheavals of southeast Asian countries and attraction from industrialization and economic opportunities, people from the neighbouring regions intermittently sought refuge by crossing borders into the colonies. Urban centers faced unprecedented pressure to accommodate housing needs

and the short available land of the islands, beyond the consolidated historical urban framework, was mostly occupied by improvised shelters and unorganized areas.

In Hong Kong and Macau, the influx of refugees from mainland China further strained an already overburdened housing market, exacerbating overcrowding and informal settlements in squatter areas. Similarly, Singapore experienced a surge in population due to post-war reconstruction efforts, leading to acute housing shortages and slum proliferation in urban peripheries.

Since the early 20th century, Eurocentric modern conception embarked upon ambitious initiatives oriented towards the metamorphosis of burgeoning industrial cities into refined, verdant urban hubs. Innovations in sanitation, public health infrastructure, and the establishment of social housing proved effective and valid potential in revitalizing unsanitary areas, thereby effecting a profound transformation of erstwhile inhospitable locations into emblematic bastions of modernity and civic advancement. Following the conclusion of World War II, the realm of

social housing experienced a notable surge, solidifying its presence on a global scale, albeit with variegated rates of expansion and implementation across diverse geographical contexts.

In summary, the housing situation in Macau, Hong Kong, and Singapore during the early 1960s, shaped by a complex interplay of colonial legacies and housing shortages, posed formidable challenges to experiment housing policies, dwellings design, and construction, underscoring the importance of sustainable and context-sensitive approaches to urban development. Understanding the historical dynamics of housing provision and environmental adaptation offers valuable insights for addressing contemporary housing challenges and fostering inclusive urban development in tropical regions.

Furthermore, the tropical climates of Macau, Hong Kong, and Singapore presented unique challenges to housing design and environmental sustainability. High temperatures, humidity, and occasional typhoons necessitated innovative architectural solutions and building materials to ensure comfort and structural resilience. Traditional vernacular architecture, characterized by open spatial layouts, elevated structures, and natural ventilation systems, provided valuable insights for modern housing developments in these regions.

The present paper aims to contribute to the study of built environments, minimum format living space and its design, considering three major projects where architects exemplify the capacity to interpret, comprehend, and enrich the modern paradigm, thereby engaging with a spectrum of physical and social contexts:

- − Resettlement Housing Complex in Ilha Verde Area, by Arch. Manuel Vicente e Natalia Gomes – 1962
- − Ming Wah Dai Ha Estate, by HKHS, Hong Kong Housing Society – 1962
- − Queenstown New Town 45-48-49 Housing Blocks, by HDB, Housing Development Board– 1960

Through their endeavours, they navigate multifaceted challenges, employing innovative methodologies to generate solutions that endure compelling and relevant contributions to the contemporary discourse.

THE CASE OF MACAU.
RESETTLEMENT HOUSING OF ILHA VERDE. 1962

Architects Manuel Vicente and Natalia Gomes's Resettlement Housing Complex in Ilha Verde Area serves as a significant case study in the examination of minimum space living units during the 1960s in Macau. This project represents a remarkable response to the acute housing challenges faced by low-income population during the 1960s. The adopted architectural vision aimed not only to provide shelters but to redefine communal living in a constrained urban environment. The complex's design intricacies, including multi-functional spaces and efficient layout planning, reflect a forceful awareness of spatial optimization's needs. The project, characterized by its simple and effective design, aimed to maximize limited space while addressing socio-economic challenges faced by the local population.

Fig. 1. Resettlement Housing of Ilha Verde Area. Front Façade. © Niccolò A. Galliano, 2023.

Fig. 2. Resettlement Housing of Ilha Verde Area. Back Façade. © Niccolò A. Galliano, 2023.

Architects' approach combined functionality with a consideration for community well-being. The building aims to maximize the utilization of available space, encompassing a total of 90 apartments distributed across five stories. The project allocates 18 residential units per floor, characterized by rational distribution of space in both plan and section.

Vertical circulation is provided by a central core of walk-up stairs located at the centre of the rectangular perimeter, effectively dividing the structure into two wings. Horizontal circulation is managed by an exterior common gallery running along the back façade, allowing each unit to benefit from natural cross-ventilation. The design minimizes circulation space to maximize areas designated for living.

Each unit, approximately 25 m² in size, features integrated facilities within a single-compartment format. To delineate living and sleeping areas within the main space, the room is divided into two zones using a two-step stair and fixed furniture, rather than walls. The south-facing side of each apartment includes a balcony, extending the living space outdoors. This exterior area, created by a volume subtraction, provides diagonal sun protection, addressing hot and humid subtropical climates. For economic reasons, water facilities are designed to occupy minimal space, with shared plumbing and drainage systems between neighbouring units. The modestly equipped bathroom opens onto the balcony for hygienic purposes, including a concrete fixed washbasin integrated into the handrail. The kitchen, delineated by fixed wooden partitions, coordinates seamlessly interior and exterior household dynamics. Units' walls and ceilings are simply painted, while balconies' surfaces are covered in marbleite for conservation and weather protection, reducing maintenance requirements.
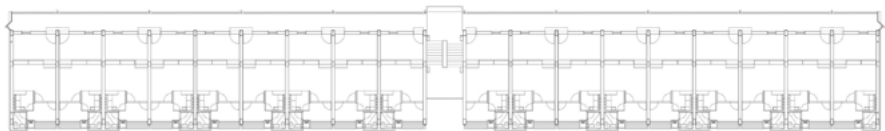
Fig. 3. Resettlement Housing of Ilha Verde Area. Floor Plan. Own elaboration based on CD-FAUP.
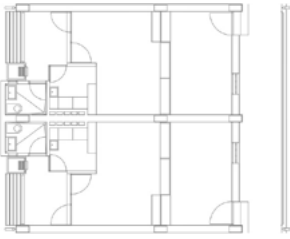
Fig. 4. Resettlement Housing of Ilha Verde Area. Unit's Floor Plan. Own elaboration based on CD-FAUP.
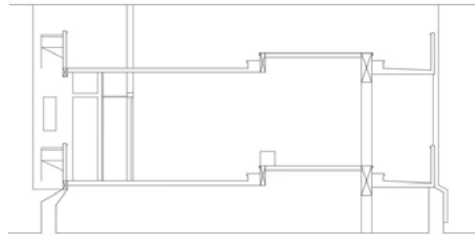
Fig. 5. Resettlement Housing of Ilha Verde Area. Unit's Section. Own elaboration based on CD-FAUP.

Fig. 6. Resettlement Housing of Ilha Verde Area. Front Façade. Own elaboration based on CD-FAUP.

The building's structural system consists of a reinforced concrete frame with concrete block infill panels forming double-wall partitions. The roof's ceiling slab is covered with fiber cement sloping panels. The inclined roof combines economical and efficient materials to withstand heavy subtropical rains and typhoons. Façade's design emphasizes the relationship between interior and exterior spaces, adopting light filters and maximizing functionality. The visual appeal is marked by the grid-like pattern of the white-painted structure, which highlights the modular units and contributes to a sense of simplicity and functionality. The setback of the open balconies and the central staircase core further enrich the building's rhythm of voids and volumes scheme.

From an architectural standpoint, the innovative use of elevated platforms to give proportions to the interior of the unit module counterbalances the inherent constraints of minimum space living available, mitigating the adverse effects of overcrowding. Additionally, the lived experiences of residents within this resettlement complex, shed light on how the designed spaces influenced their daily lives.

Despite its innovative character, featuring raw concrete, steel, and glass, the Affordable Housing Block of Ilha Verde currently presents severe disrepair and poor conservation status, exacerbated by numerous significant modifications. Economic considerations have often taken precedence over heritage values, placing this important architectural example in Macau's urban landscape at risk of fading over time.

Fig. 7. Resettlement Housing of Ilha Verde Area. Front Façade. © Niccolò A. Galliano, 2023.

Fig. 8. Resettlement Housing of Ilha Verde Area. Back Façade. © Niccolò A. Galliano, 2023.

Fig. 9. Ming Wah Dai Ha Estate. Façade. © Niccolò A. Galliano, 2023.

Fig. 10. Ming Wah Dai Ha Estate. Complex. © Niccolò A. Galliano, 2023.

THE CASE OF HONG KONG. MING WAH DAI HA ESTATE. 1962.

In Hong Kong, Ming Wah Dai Ha Estate stands as testament to the concerted efforts of the Hong Kong Housing Society to address the housing crisis in the 1960s. This Estate holds the distinction of being the oldest public housing project built by the Hong Kong Housing Society, designed by Szeto Wai, a leading architect in the region during that period. This case study displays the estate's design, emphasizing the collaborative approach between architects, policymakers, and the community.

The project initially encompassed thirteen blocks on a 37,811m² plot's site. This development was designed to accommodate 3,169 units, providing housing for approximately 15,000 residents. The original blocks of the project consisted of seven- to ten-storey buildings extending from the steep terrain to the south. The design of these blocks, mainly, aimed to promote public interaction and ensure hygienic living conditions.

The main floor plan hosts 22 residential units, and it is characterized by a rational space distribution. Vertical circulation is provided by sides and central cores of walk-up stairs. Horizontal circulation is made by a central corridor between rows of apartments. As a common gallery, it encouraged social interaction and it is characterized by floor subtractions in front of each interior's windows, providing privacy, natural light, cross-ventilation between up-down stories, and making it looks like suspended.
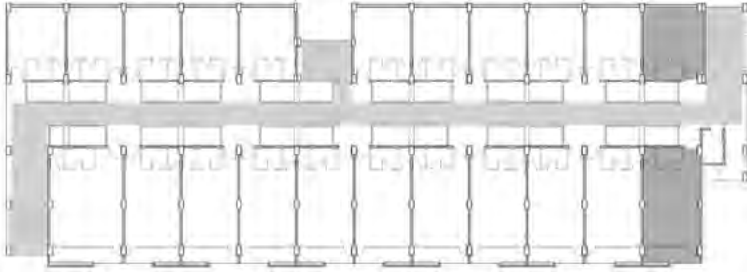
Fig. 11.   Ming Wah Dai Ha Estate. Floorplan. Own elaboration based on HKHS.

The housing unit is characterized by a minimal design intention, providing single-room compartment format solutions integrating basic services and facilities. Kitchen and bathroom, equipped with modest installations, are located facing the internal corridor because of hygienic purposes, and are self-contained by thin dry walls. South- facing apartments are furnished with external balconies, obtained by a volume subtraction, while north-facing ones of wide window screens.

The urban character of the building grows on elevation following the mountain morphology, splitting access within vertical and horizontal distribution. The blocks are arranged in a north-south orientation along Kung Ngam Road and Shau Kei Wan, and approximately twelve-meter-wide strips of communal space were strategically positioned between the buildings to provide unobstructed views and facilitate through ventilation.

The façade of Ming Wah Dai Ha Estate proposes a simple but effective design strategy. The use of concrete, brick, and glass creates a durable and low-maintenance façade that is also visually appealing. The white-painted concrete frame is used for the main structure of the buildings, stating rational grid intentions on the façade scheme. External brick walls are painted in a variety of colours, such as white, yellow, blue, and green. This helps to break up the monotony of the façade, creating a sense of visual interest.
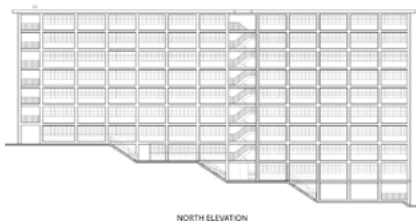
Fig. 12.   Ming Wah Dai Ha Estate. Back Façade. Own elaboration based on HKHS. Fig

Fig. 13.   Ming Wah Dai Ha Estate. Front Façade. Own elaboration based on HKHS.

Fig. 14. Ming Wah Dai Ha Estate. Playground. © Niccolò A. Galliano, 2023.

Fig. 15. Ming Wah Dai Ha Estate. Complex. © Niccolò A. Galliano, 2023.

Fig. 16. Ming Wah Dai Ha Estate. Vertical Access. © Niccolò A. Galliano, 2023.

Furthermore, the socio-economic impact of this housing project is a success in fostering sense of community and providing a dignified living environment for its inhabitants. The ground floor of every building is furnished of communitarian spaces and facilities such as kindergarten, youth centre or outpatient clinic. Social interactions are also encouraged by the provision of covered playgrounds and congregational urban green areas in the surroundings.

By combining historical context, valid landscape reading, healthy minimal unit module, and design philosophy, Ming Wah Dai Ha Estate's legacy contributes to a comprehensive understanding of the dynamics between urban planning and social welfare interventions during a critical period of Hong Kong's housing development.

During the beginning of the 21st century, the Hong Kong Housing Society undertook rehabilitation process of part of the Estate; while some blocks were demolished to give way to new housing projects with higher plot ratios, reflecting vertical living shifts towards higher-density development.

THE CASE OF SINGAPORE. QUEENSTOWN 45-48-49 HOUSING BLOCKS. 1960.

In Singapore, Queenstown New Town 45-48-49 Housing Blocks represent a pivotal project developed during the early phases of high-density public housing initiatives in the 1960s. The ambitious project, first completed complex by the newborn Housing and Development Board (HDB), aimed to accommodate the rapidly growing population and improve living standards.

Alongside the buildings on focus, the terrace houses onward Stirling Road, built by the previous public board, Singapore Improvement Trust (SIT), during the late 1950s, contrast with the nearby Blocks 45, 48, and 49. While SIT maintained a low population density plan with the terrace units, the HDB adopted a strategy of constructing higher blocks to optimize land use.

Fig. 17.   Queenstown New Town 45-48-49 Housing Blocks. © Niccolò A. Galliano, 2023. Figure 18 -

Fig. 18.   Queenstown New Town 45-48-49 Housing Blocks. © Niccolò A. Galliano, 2023.

The present case study displays the beginning of new urban planning behaviours and innovative approaches to Singapore's mass housing, reflecting both socio-economic needs of the population and architectural trends of the time, emphasizing HDB's commitment to create sustainable and healthy communities.

The 45-48-49 housing blocks in Queenstown were designed with a comprehensive range of facilities aimed to enhance quality of life's residents. The buildings were characterized by utilitarian and functional design, reflecting western modernist principles. The project employed an orthogonal grid layout, with rational plans and sections that facilitated efficient construction and maintenance.

Pretending to maximize the assessment of available space, with a total of 112 apartments distributed in 7 storeys per block, architects divided the main floor plan into 16 residential units. Vertical distribution is provided by two core of walk-up stairs and a slow lift located in the middle of the rectangular perimeter, dividing the volume into two main wings. Horizontal distribution is made by an exterior common gallery that walks along the building side on the street-facing façade, allowing each unit to benefit from private access and natural cross-ventilation.

Typology's conception of 45-48-49 housing blocks focused on maximizing the efficient use of limited space. Each unit was compact yet designed to accommodate essential family needs and arranged to enhance natural ventilation and lighting. Early designs featured shared facilities, such as communal kitchens and bathrooms, which were later modified to include private amenities as living standards and expectations evolved. The internal layout typically included multi-functional spaces, allowing residents to adapt rooms for various uses, reflecting the practical and flexible approach to housing design.

Fig. 19.   Queenstown New Town 45-48-49 Housing Blocks. Floor Plan. Own elaboration based on HDB.
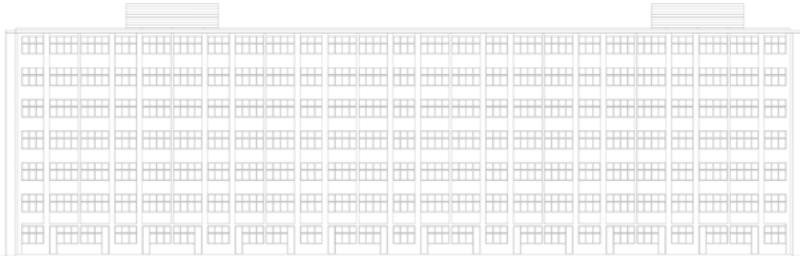
Fig. 20.   Queenstown New Town 45-48-49 Housing Blocks. Back Façade. Own elaboration based on HDB.

The unit's scheme kept a flexible manner integrating three different combinations of living spaces, defined by the number of occupants, with simple and effective solutions. The main module unit, giving proportions to all complex metric arrangements, disposes of a single-compartment space solution. The main room is furnished of private sanitary facilities and a kitchen facing the back-side façade's large window. One-bedroom apartments follow an L-shaped format, occupying one and a half modules and crossing half of the side unit while living facilities remain unchanged. Located at both extremities of the building, the two-bedroom format solution, intended for larger families, occupies two modules following the same living facilities' scheme and dividing into two dormitories last peripheric available unit.

The building is supported by a structural frame of reinforced concrete and infill panels of brick walls. In the façade, the architects express a strong relation between the interior and exterior, showing light filters and maximum functionality. The visual portrait is marked by the adoption of the interior matrix and enriched by the two functional side windows.

Façades were typically plain and unadorned, emphasizing in grayscale tones the structural scheme. The use of repetitive unit modules not only streamlined the construction process but also provided a uniform appearance across the development. The use of raw concrete, steel, and glass gave 45-48-49 housing blocks in Queenstown an inevitable innovative character. The white-painted structure creates a grid-like pattern that emphasizes the modular fenestration of the building, while also providing a sense of simplicity and functionality. The overall result is an orthogonal plain minimal design that is both striking and functional.

By examining the socio-economic impact and community dynamics within Queenstown, the project seeks to assess the long-term implications of the HDB's intervention in shaping the urban landscape. 45-48-49 Housing Blocks, as first steps of Queenstown's new town, represent the new wave of Singapore's public policy ensuring the success of large-scale housing project, shedding light on the unique approach to address housing challenges during the 1960s.

CONCLUSIONS

The combined analysis of these three case studies aims to provide a nuanced understanding of the historical context, architectural innovations, and socio-economic implications of minimum space living units in Macau, Hong Kong, and Singapore during the 1960s.

Fig. 21. Queenstown New Town 45-48-49 Housing Blocks. Complex. © Niccolò A. Galliano, 2023.

Fig. 22. Queenstown New Town 45-48-49 Housing Blocks. Façade. © Niccolò A. Galliano, 2023.

Amidst the rapid urbanization, population growth, and economic transformation characterizing the housing scenario under analysis, this study's findings seek to enrich the broader discourse on complexities and opportunities involved in balancing transformation and preservation of relevant early modern housing initiatives and viable minimum space solutions.

By providing insights spanning from inaugural origins to contemporary housing challenges in the extremely densely populated former concessions, this article examines potential interpretations of domestic and urban comfort. It explores foundations and substantial evolutions of minimum space living formats, reshaping how individuals experience, inhabit, and intend comfortable spaces.

From an architectural standpoint, the three case studies reveal several notable similarities that underscore their shared design principles. Firstly, all façades adhere to corresponding metrics, predisposed by internal units' modules, that are both orthogonal and rational, ensuring coherent and structured visual rhythm in both plan and section. The orthogonal framework not only enhances aesthetic uniformity but also facilitates the efficient spatial organization and basic climate behaviours.

Moreover, each case study employs a similar unit module that is consistently repeated throughout the structures, establishing a standardization that simplifies construction and maintenance. Despite this commonality, the unit's interior distribution strategies differ significantly, reflecting varying approaches to optimize minimum spaces pursuing accurate proportions, functionality, and comfort.

The present historical comparison highlights a significant evolution in amenity provision: whereas the previous housing designs incorporated shared facilities to serve multiple units, 1960s modifications have transitioned towards privatized amenities. This shift from communal to private facilities indicates a broader change in residential design, emphasizing individual convenience and privacy. The juxtaposition of these elements within the case studies provides a rich context for understanding the dynamic interplay between architectural uniformity and adaptation to changing socio-cultural needs.

This comprehensive exploration intends to contribute with valuable insights to the broader discourse on urban development, housing policy, and the enduring impact of qualitative mid-20th-century interventions on contemporary urban landscapes.

The present reflection aims to demonstrate how the modern conception could be interpreted, understood, and enriched in terms of content, facing diverse physical and social conditions, experimenting innovative solutions which remain currently interesting and valid.

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Water Heritage of China: Planning, Technology and Promiscuous Landscape

Chair: Ting Wang

Preservation through Planning
Adapting the polder landscape of Taihu Basin in the Yangtze River Delta

Christian Nolf
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Abstract

This presentation focuses on "Jiangnan Park", a territorial vision for the low-lying polder area at the heart of the Taihu Basin in the Yangtze River Delta (YRD) megacity region. Until recently sparsely connected by roads and rail, this area has maintained the characteristic mosaic of fields, ponds, basins, lakes, canals, and lacework of linear villages and water towns that constitute the Jiangnan polder landscape. Present since the fifth century BCE and adapted multiple times throughout history, the polder landscape still informs the structure and morphology of the rural territory. Today, this historic landscape is threatened by the modernization policies for rural areas promoted by the national "Ecological Civilization Construction" strategy. Focused on ecological and agricultural performance, these policies tend to overlook the inhabited and cultural dimensions embedded in the productive landscapes. In the YRD, many villages are demolished, and populations are relocated to larger "super villages," while the historical polder landscape is reconfigured into regularly gridded fields to maximize agricultural output. Proposing an alternative approach, "Jiangnan Park" is a research-led initiative carried out by a multidisciplinary team of academics. Based on a regional-scale cartographic study and refined through a series of pilot projects, it emphasizes the role of characteristic landscape features and the involvement of local stakeholders in defining tailored adaptation strategies for Taihu Basin's polder landscapes. Among the pilot projects, the nationally awarded1 project for the village of Hunan illustrates how the polder system, originally designed for rice cultivation and later converted into ponds for aquaculture, can now be adaptively reused as a constructed wetlands circuit to contribute to purifying the region's water system. This vision and project, by offering an interpretation of the Dutch concept of "Preservation through Planning," aim to enrich the reforms led by the "Ecological Civilization Construction" strategy with a heritage dimension.

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The Labor Adaptation and Morphological Evolution of Chinese Duotian Settlements Over the Past 100 Years

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Abstract

The Lixiahe region is a low-lying wetland located between the Huaiyang section of the Grand Canal and the Yellow Sea of China, with a complex historical hydrological environment and frequent flooding. Through digging deep ditches or small canals in wetlands, obtaining soil to pile up into arable islands, Duotian has been a typical land use pattern in the region for over 600 years. Numerous richly shaped islands, water ways, and wetlands make up of Duotian settlements and develop the typical landscape characteristics of the Lixiahe region. As a Globally Important Agricultural Heritage System (GIAHS) and World Heritage Irrigation Structure (WHIS), Duotian system is considered an outstanding representative of agricultural organization and water management. Since the early 1900s, the water environment and social structure in Duotian regions have undergone several significant changes, resulting in different settlement morphology. Although these causal relationships are widely acknowledged, it remains unclear how these differences have been achieved through continuous labor practice of the locals, while ensuring population growth and agricultural surpluses. The study regards the evolution process of settlement morphology as the process of human beings responding to social-ecological environment by adjusting their labor practice, establishing a labor adaptation perspective to explain the operation mechanism of traditional waterfront settlements. By comparing the morphological differences between three main periods over the past 100 years (1920s-1950s, 1950s- 1990s, 1990s-2020s) of Duotian settlement, combined with water environment and anthropological investigations, the study explains how these differences are driven by the interaction of three aspects: form configuration, labor processes, and tools. Distinct from abstract spatial science, this vision contributes to a more accurate discussion of how the productive and adaptive nature of settlements is established in time and space. In addition, this study can support more bottom-up strategies for the current heritage conservation and utilization of Duotian.

Keywords

critique, planning, La Défense, functionalism

The Oyster Shell Landscape in Pearl River Delta
Historical Technology and Contemporary Inheritance

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Abstract

This paper explores the recognition of oyster shell landscape as a water-related heritage in the Pearl River Delta (PRD). Instead of the large-scale oyster landscape focused on cultivation, oyster shells, often processed into various forms, have been neglected for their heritage value as a renewable biomaterial. In this context, the study investigates the material forms, techniques, and ecological functions of using oyster shells as building materials for housing and landscape formation. It analyzes how oyster shells were utilized as building decoration, mixtures in rammed earth walls, and powder for dike-fishponds in the historical PRD region. The paper also discusses the inheritance of oyster shell culture and ecological functions in contemporary wetland landscape design in Hong Kong. Construction use of oyster shells mainly appeared in the rural areas of the PRD during the Ming and Qing dynasties. Coastal people were skilled at using the alkaline properties of oysters to neutralize the soil acidity caused by long-term fishpond cultivation. After oyster farming and consumption, the shells left behind were collected as building materials for other villages for their corrosion-resistant function. The residents spontaneously form the oyster shell landscape, capitalizing on the coastal resources. However, with urbanization and advancements in construction techniques, the number of existing oyster shell structures has decreased and dispersed in villages. The paper argues that the Oyster shell landscape as a cultural landscape reflects the changing needs of society, economy, and government. It reveals the close relationship between humans, natural resources, and the formation of settlements and landscapes in the PRD. It also reflects the cultural-ecological interactions and dissemination of indigenous knowledge in marine cultures within Southeast Asia. The research's findings can simultaneously provide insights into the integrated water heritage perspective in the relationship between sustainable architecture, landscape design, and ecological conservation.

Keywords
Oyster Shell Landscape, Pearl River Delta, Technology, Ecology, Water Heritage

Mengxiao Tian1, Ting Wang2
The Oyster Shell Landscape in Pearl River Delta

Morphological research on the water adaptability of the water heritage, Sangyuanwei, in the Pearl River Delta

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1   The Chinese University of Hong Kong
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Abstract

Due to climate change and rapid urbanization, the Pearl River Delta (PRD) region has experienced frequent large-scale water-related disasters recently, with dramatic impacts on human settlements. Therefore, increasing attention has been paid to the water adaptability of cities. Sangyuanwei, a World Heritage Irrigation Structure, is a representative water adaptability case in the Dike-pond landscape. It is located at the areas affected by both flooding and tides. The constant improvement on the water system responding to the increasingly severe floods over time has formed a water adaptable cultural landscape with its special land and settlement patterns. The research studies the water adaptability of Sangyuanwei cultural landscape in the historical era, intends to understand its underlying mechanism and concludes spatial design tools for water adaptability planning and conservation of other Dike-pond landscapes. The cross scales morphological and digital mapping approach is applied to reveal the formation of Sangyuanwei over time. Furthermore, how the water adaptability is achieved cross scales and over time via the integration of water system, agriculture system, human settlement, and water management is discussed. Then, the spatial prototypes and governance patterns of the water adaptability on each scale is distilled and their interrelation cross scales are concluded (please see figure 1). This atlas-index can serve as a design tool. On the one hand, it demonstrates how the classic water heritage, Sangyuanwei, has achieved water adaptability spatially. Therefore, it provides new insights and comprehensive understanding to designers. On the other hand, these prototypes can be used as design references for the conservation and renewal of other water heritage, and for the development of water-proof new towns.

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Shixian Xie,1 Jiaxiu Cai,1 Wei Guo2

Morphological research on the water adaptability of the water heritage, Sangyuanwei, in the Pearl River Delta

Shixian Xie, Jiaxiu Cai and Wei Guo
Study on the Characteristics and Conservation Strategies
of Shuikou Landscape of Historic Cities Along Rivers in Bashu Region

Study on the Characteristics and Conservation Strategies of Shuikou Landscape of Historic Cities Along Rivers in Bashu Region

Shixian Xie, Jiaxiu Cai and Wei Guo
Chongqing University

Abstract

The protection of the landscape environment of historic city has become a focus in the field of heritage conservation in China. Shuikou　water entrance and outlet,　　, as a highly characteristic element in the construction of ancient cities, is a symbolic landscape that distinguishes the living environment of the ancient city from the outside natural world. Influenced by the natural geographical environment crisscrossed by rivers and mountains, ancient cities in Bashu region attach great importance to the construction of Shuikou landscape. To explore the regional characteristics of the construction of Shuikou landscape in Bashu region, the study first analyzes the location and elements of the Shuikou landscape based on historical maps and gazetteers(
　) analysis and ArcGIS spatial analysis of seven national historic cities (Chengdu, Yibin, Langzhong, Leshan, Dujiangyan, Luzhou, Chongqing). Then this study takes Chengdu and Chongqing as cases to analyze the spatial pattern, influential factors and cultural connotations of the Shuikou landscape. The research findings indicate that the types of Shuikou Landscape elements include Shuikou hills, towers, temples, gardens, weirs and canals; spatial patterns encompass various organizational methods such as "tower-temple-hill"; and cultural connotations primarily revolve around praying for prosperous literary fortunes, ancient city defense, flood control, and serving as gateways over water ways for ancient cities. In response to issues such as the damage to the integrity of the Shuikou landscape pattern due to current urban development and obstructed sight corridors, combined with the new type of "historic district" protection system proposed by the national government, this study proposes protection strategies for the recognition of Shuikou landscape resources and value, spatial pattern remediation, sight corridor management, cultural connotation display, and vitality enhancement. These measures aim to promote the comprehensive protection of historic cities and their surrounding landscape environments.

Shixian Xie, Jiaxiu Cai and Wei Guo
Study on the Characteristics and Conservation Strategies
of Shuikou Landscape of Historic Cities Along Rivers in Bashu Region

Planning Systems in Hong Kong

Chair: Will Wu

The Dwelling Density Control in Housing and Planning in Hong Kong 1950s

Junwei Li
The Chinese University of Hong Kong

Abstract

Hong Kong's high density housing landscape by postwar has been shaped by a unique tripartite land administration system inherited from British colonial rule. This research focuses on the transformative decade of the 1950s in Hong Kong's housing landscape, a period characterized by significant private housing reconstruction and the evolution of land administration under British colonial rule. The study explores the precursor of dwelling density control in housing and planning in the 1960s before the introduce of plot ratio in the 1960s. It specifically examines the interaction between the leasehold system and the Buildings Ordinance, two pivotal elements of the tripartite land administration system. The crux of this research lies in analyzing how these mechanisms, particularly the Buildings Ordinance enacted in 1955 and its crucial Section 9(6)(c), established a framework for modern dwelling density control. A key finding of this study is the embedded tension between administrative-led housing regulation and the capitalist, market-oriented approach to property rights. This dichotomy presents a unique historical insight into the planning legitimacy and property rights in colonial Hong Kong. The enactment of the Buildings Ordinance symbolizes the administrative dominance in housing regulation and urban planning, yet simultaneously, it highlights the contentious relationship between government policies and market forces. Employing a diverse range of sources, including colonial archives, newspapers, private collections, journals, and court judgments, our research methodically dissects the dialogues and debates of this era. We provide a detailed analysis of the complex interplay between economic factors, bureaucratic considerations, and the rule of law. This approach allows us to unravel the nuanced evolution of the plot ratio concept within the broader context of colonial legal and planning frameworks.

Sedimentary Planning
The Making of the 'Squatter' Category in Early Postwar Hong Kong, 1945–1953

Quinton Huang
University of British Columbia

Abstract

Existing research on Hong Kong's postwar urban planning has fruitfully investigated the various motivating factors and external pressures that led to both a widespread public resettlement program and the toleration of squatter areas into the late twentieth century. But how did the category of 'squatter' come to encapsulate—and flatten—the heterogeneous communities across the British colony that found shelter in informal housing? This paper focuses on the critical yet often overlooked period immediately following the re-establishment of British control over Hong Kong. First, I demonstrate that the genesis of the postwar 'squatter problem' lay not just in increased immigration and limited housing stock, but also in the accumulated layers of displacement and land regimes from the precolonial, prewar, and Japanese occupation periods. I juxtapose three sets of sources—(1) bird's-eye view mapping and photography, (2) social welfare surveys, and (3) correspondence between military authorities, colonial officials, and informally housed residents—to reveal how this process of sedimentation created uneven conceptual and physical planning boundaries. Second, I trace the contested process by which 'squatter' became a hegemonic category in postwar public discourse and planning policy. Not only did colonial authorities struggle to discipline informally housed residents into recognizing themselves as 'squatters,' but the persistence of other planning and demographic categories gave these residents opportunities to resist and complicate squatter policy. By not taking the term 'squatter' for granted, these findings not only raise considerations for the postwar development history of urban Hong Kong, but also the co-produced nature of ostensibly high modernist planning across the Global South.

Quinton Huang
Sedimentary Planning

Responsibilizing housing
Ordinances and subdivided units in Hong Kong

Kachun Alex Wong
University of Toronto

Abstract

This paper uses an "a-legal" approach, inspired by Hans Lindahl, to measure the law's effects on subdivided units (SDUs) in Hong Kong. SDUs are informal housing involving the subdivision of a flat into separate living spaces for multiple households, while their renovations often are unrecorded and thus illegal. This paper asks how its architecture is a critique of the rigid boundaries of legality. The paper looks at three sets of ordinances attempting to regulate SDUs, namely the Minor Works Control Scheme, rent control, and licensing system. This paper asks in addition to how laws have caused architectural forms, how this causality is ridden with friction and resistance. In doing so, this paper takes SDUs residents in their own terms, in how they recreate and redefine boundaries of legality. Their insights are crucial to understanding how architectural law is rigged and biased against marginalized groups, as an uneven tool enforcing the systemically discriminatory project of modernism.

Politics of the High-rises
Councillors in the making of public housing in Hong Kong (1952-1973)

Will Wu
Manchester Metropolitan University

Abstract

This paper examines the interface between politics and urban planning in the creation of high density public housing in Hong Kong. The history of Hong Kong public housing in Hong Kong is often presented as a linear progression: from the spartan resettlement blocks, communal low-cost housing, finally towards modern tower blocks – a triumph of government planners and architects alike. Less known was the involvement of the councillors in the Urban Council. Until 1973, Hong Kong Urban Council was the government arm in executing housing projects in Hong Kong through its control of the former Housing Authority and their oversight power to the Commissioner for Resettlement. As the council was the only public body with direct election in Hong Kong until 1983, it brought a rare taste of citizen participation and account-ability into the housing project. They were pivotal in the management of the estates, from the rent policy, public space, zoning, to receiving complaints, and even filling the applications forms for the estates. They were the force that transformed the high-raising estates into the most well-sought accommodation for Hong Kong residents. With their political clout, council-lors acted as a counterweight against critics of the public housing project, such as neo-liberals like John Cowperthwaithe, ensuring the celebrated continuity of the project. This paper chal-lenges the technocratic or government- centred narrative about public housing in Hong Kong by bringing council politics to the centre of discussion.

INTRODUCTION

Imagine a new housing estate was built. An engineer's job is finished when the buildings are built. For residents, it was only the beginning. Who would be entitled to move in, and how? After moving into the unit, who would deal with the electricity, water, rubbish, or noises? Where could job be found? Public housing has always been more than just buildings and designs, but administration and management.

Alan Smart argued that Hong Kong, similar to other colonial cities in the world, has a dual-city structure: one Western city super-imposed onto the native city. They were physically in the same place, but architecturally and socially different, defined by sanitary-insanitary and legal-illegal dichotomy.[1] The story of housing in Hong Kong could be seen a transition from the native city to the Western city, people moving from the unregulated, unserviced slums to the highly-regulated, intensive housing unit. The difficulty in this transition should not be under-estimated, both sides having a lot of reasons to mistrust each other.

Urban Council and its councillors had facilitated this transition. Urban Council was entrusted with the supervision of resettlement, and low-cost housing in the early 1950s. Councillors had been responsive to grievances and demands. They checked official power by parliamentarian procedures including questioning and debates, bring a taste of participation and accountability rarely found in colonial Hong Kong into the housing project. Employing the official records of proceedings the Urban Council and the Housing Authority, this paper shed light on the previous overlooked political aspect of Hong Kong housing.

ENTRUSTING HOUSING TO THE URBAN COUNCIL

The Hong Kong Housing Authority today "develops and implements a public housing programme." It has two official members and 20 non-official members. Appointments are made by the Chief Executive."[2]

Before 1973, the governance structure for housing was rather different. The Housing Authority was practically a part of the Urban Council. Housing Ordinance 1954 s(3)(2) defined its membership as "all members of the Urban Council" in addition to the Commissioner for Housing. The Housing Authority operated like a committee under Urban Council, even using the same room for meeting. For the sake of convenience, this Housing Authority before 1973 will be referred as the "former Housing Authority" in this essay.

Moreover, housing function was taken up by another government department responsible: the Resettlement Department. Resettlement and low-cost housing were seen as "two sides of the same token"[3] to the general problem of housing. Administratively, they were different operations. The former Housing Authority built buildings for low-income family, which eligible families could apply. Resettlement Department cleared the informal settlements ("squatters") and resettle the squatters onto the multi-storey resettlement estates. No one could "apply" for a resettlement unit, only to be arranged into one. Although they were dealing with the same problem, they were different operationally.

The Urban Council exercised control over the Resettlement Department. The Commissioner for Resettlement was the ex-officio member of the Urban Council, where he had to answer questions. Two committees of the Urban Council, the Resettlement Policy select committee, and Resettlement Management select committee (merged in 1971), discussed and made policy regarding resettlement. These committees sometimes served as an appeal board for decisions such as evictions.

Hong Kong government introduced the "Government Low-cost Housing" (GLCH) programme in 1961. The GLCH was completely funded by the government, building units to be rented to poorer families of monthly income up to HKD$500. The management of the GLCH estates were entrusted to the Housing Authority. In this way, the Urban Council had a major influence on the management of public housing in Hong Kong before 1973.

Urban Council became responsible for housing for administrative reasons. After the Second World War, wartime destruction and the influx of refugees created massive housing shortage, and informal settlements ("squatters") in Hong Kong. There were already plans of government interventions. Hong Kong Government planned to let the Urban Council be responsible for housing, as housing was a municipal responsibility in Britain, and the Urban Council being its closest equivalent in Hong Kong.[4] Following this logic, Hong Kong government let Urban Council to supervise the resettlement programme, and the low-cost housing programme under the former Housing Authority later.

	Former Housing Authority	Resettlement	Government Low-cost Housing (GLCH)
Aimed group	Family with monthly income from HKD$400 to HKD$900	People living in informal settlements ("squatters"), regardless of their financial status	Family with monthly income up to HKD$500
Involvement of the Urban Council	Direct controlled by the Urban Council	Accountable to the Urban Council	Estates managed by the former Housing Authority
Source of finance	Loans; rents	Hong Kong government	Hong Kong government
Design	Unique	Standardised	Standardised
Current status of its buildings	Mostly standing, with planned reconstruction	Mostly demolished	Mostly demolished
Examples	Sai Wan Estate; Choi Hung Estate; Wah Fu Estate	Mark I blocks; Mark II blocks; Mei Ho House	Mark III blocks; Mark IV blocks

Table 1. A summary of three types of public housing before 1973.

Urban Council was constitutionally special under the Hong Kong colonial setting. Hong Kong government has refused any attempts to liberalise until after the Sino-British Joint Declaration in 1983. There were no popularly elected members of the Legislative Council, the local legislature, until late 1980s. Yet, the Urban Council had directly elected councillors since 1887.[5] Until 1983, the Urban Council was the only public body with direct election, elected around 2/5 to 1/2 of its members through a qualified, limited franchise. The rest of the councillors were appointed or government officials. It was agreed among political scientists that the electoral turnout in the Urban Council election were not impressive, and its franchise being too limited.[6] Nevertheless, meaningful, competitive elections produced some of the earliest politicians in the Urban Council in Hong Kong, such as Brook Bernacchi, Elsie Elliot and Hilton Cheong-Leen.

Nevertheless, Urban Councillors were more similar to city councillors rather than parliamentarians. They lacked a shared cohesive political agenda in Hong Kong. Not to mention political line was drawn on Nationalist- Communist divide, which councillors were keen to avoid. The political role of the Urban Council should not be over-emphasised.

In 1973, three housing functions merged and consolidated into a singular Housing Authority as we know today, after a general restructuring of the Urban Council. The restructuring withdrawing some of its powers, including all of its responsibilities over housing, in return for more autonomy. This was an attempt to limit the political ambition of the councillors, and delay constitutional reforms as I argued in my thesis.[7] Even though councillors continued to pay close attention to housing affairs, the official relationship between Urban Council and housing was severed in 1973.

COUNCIL POWER IN HOUSING

Urban Council, like local governments in the Commonwealth, adopted a parliamentarian structure in its operation. In the monthly plenary meeting, questions were tabled, motions were debated, and various decision were voted on. The routine business, such as reviewing documents or discussing policy details, were conducted in its select committees. There was also an annual debate, where all councillors have a chance to speak whatever they wanted. A standing order following the Hong Kong Legislative Council was adopted. The former Housing Authority adopted a similar structure, though only meeting once a year with its own committee system doing most of its works.

Housing affairs, like all the other responsibilities of the Urban Council, were subjected to a parliamentarian style of scrutiny. Officials were expected to answer and gave account for questions tabled in the meetings. When a question was tabled, an answer must be given whether the officials like the question or not. The Commissioner for Resettlement was questioned monthly in the Urban Council meetings, and the Commissioner for Housing once a year in the former Housing Authority meetings.

Any questions related to the portfolio of the Urban Council, which included resettlement or low-cost housing, could be tabled, sometimes to a meticulous amount. Hilton Cheong-Leen (Civic Association) questioned in 1957 about a malfunctioning latrine flushing system in one resettlement block.[8] In all fairness, the toilets in the resettlement estates were communal, so the nuisance of a malfunctioning flushing must be considerable. In 1966, the Council investigated and denied an allegation about air circulation in lifts of Tsz Wan Shan Estate being so bad that they caused suffocation.[9] These questions sounded trivial at first glance, but it showed the amount of attention and knowledge the council and councillors in the estates. They were able to quickly address questions and grievances to an extremely small details.

Motions were also debated. Since officials also have to vote for the motion, they had to defend and give account of their positions. For example, Hilton Cheong-Leen (Civic Association) moved in 1962 that the "(g)overnment is urged to accelerate its public housing programme."[10] During the debate, councillors debated whether the government was doing enough for housing, and the officials had to defend themselves by making promises and quoting statistics. In this way, council control contributed to openness and accountability of the housing programme.

An amount of discretion could be used by councillors. Due to construction delays, 30,000 people first moved into Choi Hung Estate with two banks, but no shops, clinics, schools, kindergartens, nor playgrounds. Since Urban Council also controlled hawking, councillors used their discretion to not to prosecute hawking in Choi Hung estate until the market was completed.[11]

Outside of the council, councillors made use of their social status and prestige. The Reform Club and the Civic Association both offered to help any applicants to fill the application form to apply for the housing estates, since the application form was in English only and people were not necessarily literate. An officer in Resettlement Department accused Elsie Elliott (In-

dependent) to have written him 30 letters a day. Elsie Elliott denied, though she admitted that there might have been 30 letters a week.[12] Their activities further contributed to the accessibility of the housing programme.

Nevertheless, officials were only to give an account, with no obligations to act positively. For example, Alison Bell (Reform Club) received complaints of a rude Housing Authority staff. She brought with her the letter written by that person and demanded disciplinary action. However, this did not happen because the said staff could not be identified.[13] There could be limits of the councillors' powers.

COUNCILLORS IN THE HOUSING AUTHORITY

Councillors' role in low-cost housing was more active. Urban Council's power in resettlement was supervisory, yet the power of former Housing Authority was directly exercised by councillors. The Resettlement Ordinance gave the power to the Commissioner for Resettlement, but the Housing Ordinance gave the power directly to the authority itself. Councillors did not need to question the officials – they could do it themselves, and they had only themselves to blame for any failures.

With more autonomy came more control. Unlike resettlement or GLCH which were funded entirely by the Hong Kong government, the former Housing Authority was financed by loans, mostly at 5% p.a., with land provided at 1/3 of market price.[14] As generous as the provisions were, land development was still capital-intensive and costly. In the year 1967/68, 35.2% of the total expenditure, or over 9 millions were paid by the Authority to the government.[15] Although councillors had more autonomy in operation, they were limited by their budget and other practical constraints.

With their tight budget, councillors juggled between building high-quality units, cost control, and supply. There were some truth when Brook Bernacchi (Reform) called the former Housing Authority "a rather cumbersome Land Investment Company".[16] Since the former Housing Authority had to cover its costs and repaid its loan, it had to set its rent at an economic level, which in most cases, were not low enough to be affordable to the poorest. Only 10% of the flats in So Uk Estate, 50% in Ma Tau Wai Estate, and 75% in Choi Hung Estate were planned for families with a monthly income of $300-$500 , the lowest income group that could apply Authority flats.[17] The speeches in the former Housing Authority were largely dominated by suggestions to push the costs down or to create new revenue.

Even though councillors may have their own visions on low-cost housing, they found it difficult to realise them in light of the practical constraints. For example, K. S. Lo (appointed) suggested to build the estate at a lower density, dropping the planning density from 2,000 people per acre to 1,000 people per acre. He was replied that the Authority intended to further increase density, only prevented by other practical considerations.[18]

Unlike resettlement blocks which adopted standardised designs, with archetypes known as "Mark I", "Mark II" etc., the former Housing Authority did not adopt a standardised design. Each estates was individually designed suited to their sites. However, it was more of an accident. Land allocated to the Housing Authority were mostly located on slopes. It would be more efficient to make the maximum use of the land than to adopt a standardised design.[19] Councillors and officials alike expressed desires to standardised their building designs. Accidently, it made the former Housing Authority estates more unique on their own, experimenting different designs and spatial layouts.

Architectural designs tended not be controversial to be debated, except when the design was too radical in one instance. In late 1965, it was proposed to build five polygonal towers, 416 feet in height and 50 stories high each, on the site today known as Ping Shek Estate. It would hold a population similar to a convention design, but allowing for much more open space.[20] This plan proved to be visionary, as high-rising residential towers are now most common in Hong Kong. In late 1960s, however, councillors were divided on its merits. Cheung Wing-in (Civic Association) supported the scheme to provide more open space, while Henry Hu (Reform) questioned whether there would be psychological implications for residents living such high up.[21] Ping Shek scheme was one of the rare incidents where an architectural design was debated in the chamber. Policy and management issues where more commonly debated by the authority.

Compared with other types of housing, the amount of units built by the former Housing Authority was smaller. From 1963 to 1972, 156081 resettlement units were built, compared with 48534 GLCH units, and 27341 former Housing Authority units.[22] Nevertheless, the former Housing Authority set a higher standard. After the housing functions were consolidated into the Housing Authority in 1973, the standard of the former Housing Authority was promoted to all types of government housing.

A REVIEW OF THE URBAN COUNCIL'S ROLE

The story of the Urban Council showed frequent dialogues between councillors and residents. Certainly, there were still strong power imbalance, with the councillors "spontaneously" listening to the opinion of the residents who had no formal right to be consulted. This type of interaction could not be titled "self-governance" or "democracy". Nevertheless, this kind of interaction already gave a rare taste of participation and citizenship in the housing projects given the colonial context of Hong Kong.

The councillors in the Urban Council enjoyed a high amount of trust from the residents. Since councillors needed to be voted in, they acted differently than other types of public servants. Councillors adopting a critical stance to the government were enjoyed more popularity, seeing them as the voice of the people. The 1966 Kowloon Riots were triggered by the arrest of a protester protesting in support of Elsie Elliott's cause. In contrast, the official attempts of consultation has not necessary successful. The government installed suggestion boxes in all housing estates. In 1964, it was reported that nothing was found inside all the boxes for 3 months, suggesting that the residents were not willing to voice their opinion to those whom they did not trust.[23]

Housing in Hong Kong was a controversial public policy matter. Cheung and Louie quantified the number of social conflicts from 1975 to 1986. They found out that housing matter created 2nd most conflict in Hong Kong, only less than labour issues.[24] This paper found out that the councillors had a huge role in mitigating these conflicts, even as early as the 1950s and 1960s. Public housing needed a lot of public services. Water, electricity, fuel, lifts, rubbish collection, maintenance of corridors, collection of rent, recreational spaces, road access all needed to be planned and managed, and could not be left to the wisdom of the residents themselves. In resettlement blocks, even toilets and kitchens were communal. Three days without flushing water could already made life of thousands unbearable. Councillors provided a speedy, responsive feedback system, effectively addressing the tension of living in an intensive setting.

With their political clout, the urban councillors also presented a political alternative. Hong Kong public finance in the 1960s was characterised by "positive non-interventionalism" promoted by the Financial Secretary John Cowperthwaite, where the government had been very reluctant to increase public spending and intervene with the market. Urban councillors were ardent opponents of this idea. They had been arguing for increased public spending and involvement, not just in housing, but also in welfare, education, and other services. Effectively, they have become a counterweight of the government narrative.

High-rise housing in Hong Kong are sometimes referred as "Corbusian", comparing the housing estates with the ideas of architect Le Corbusier. Ironically, never once had any councillors mentioned the word "Corbusier" in the council records. The councillors never had any grand architectural visions to be imposed in their estate buildings, with their highly strained budget and the urgency of housing situation. In this context, the councillors approved using high-density and low-cost buildings suggested by the architect to solve their problems. They were a local solution to a local challenge that rhymed with Le Corbusier. The word "Corbusian" also discounted the importance of daily management, from flushing water, lifts, to rent and policy. It placed too much stress on the designers and the architects. The success of the public housing in Hong Kong did not lie only in its planning and architecture, but also in its management.

CONCLUSION

This paper studies the political aspect of the public housing in Hong Kong between 1952 and 1973. During this period, the Hong Kong Urban Council was entrusted with the function of housing, exercised scrutiny and control over resettlement, the former Housing Authority, and government low-cost housing (GLCH). The officials were subjected to a parliamentarian style of scrutiny, giving the housing project a level of openness and accountability. Moreover, their management role in the former Housing Authority shaped the early public housing in its formative years. Their legacy has carried on to the Housing Authority in 1973 as the housing functions were transferred and consolidated into it.

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Will (Wai Man) Wu acquired his MPhil in History from the Department of History, Chinese University of Hong Kong. His thesis "the Urban Council as a Political Institution in Hong Kong, 1935-1973" explored the constitutional history of the Hong Kong Urban Council. He is currently enrolled in the law school of Manchester Metropolitan University.

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The unfinished project of the Socialist City in Eurasia and Europe

Chair: Jasna Mariotti and Ginanni Talamini

The unfinished project of the socialist city

Jasna Mariotti, Kadri Leetmaa, Gianni Talamini
Queen's University Belfast, University of Tartu, City University of Hong Kong

Abstract

This panel will explore the unfinished transformation of cities during the period of state socialism through the analytical lenses of urban planning and architecture, often seen as important tools for national re-consolidation following the WWII. Urban planning during socialism was integrated with the overall economic activities of the state and operated within a system where the means of production were nationalised and central governments were responsible for decision-making, be it spatial arrangement of the economy and political or military objectives of the country. Urban planning during socialism was often seen as an attempt to promote egalitarian society where access to assets and amenities, and allocation of commodities was consistent and equal to all. Yet, socialist cities were rarely completed as initially anticipated. This panel is based on our recent book published by Routledge "Urban planning during socialism: views from the periphery" and it takes the unfinished project of the socialist city as a point of departure, drawing further on case studies of the unfinished, unrealized and unimplemented projects of the socialist city. We argue that the largely unfinished project of the socialist city, neither homogenous, nor anticipated is central to understanding the transformation of cities during the period of state socialism. This panel invites proposals that consider theories, projects and intersections between different scales of the unfinished project for the socialist city, building on:;Unfinished large-scale projects of socialist cities; • Unfinished large-scale territorial planning projects in socialist cities, beyond architecture, including water/energy/mining infrastructures;Architectural radical experiments and unbuilt utopian projects framed through the concept of socialism;Relationships and coordination between different stakeholders, organisations, construction enterprises, agencies, Ministries that dominated the planning and architecture during socialism, resulting with unfinished projects;Complexities with deadlines, access to material and labour in urban planning and architecture that resulted with unfinished projects

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Jasna Mariotti, Kadri Leetmaa, Gianni Talamini
The unfinished project of the socialist city

Urbanising the virgin lands
At the frontier
of Soviet socialist planning

Gianni Talamini
City University of Hong Kong

Abstract

The paper discusses the findings of ongoing research on the Central Asian palimpsest, intended both as a space to read the stratified layering in the spatial crystallisation of power and as a place semanticised through original spatial signs. Based on a recently published essay, the presentation is intended to provide evidence of the historically contextualised association between systems of signs and modes of spatial production in Central Asia. Today's Astana, approached on a longue durée, reveals the unfolding of history in three well-defined phases, in which urban planning and architecture served the needs and expressed the hegemonic values of the Russian territorialist expansion (1718–1917), the Soviet infrastructural development (1922–1991) and the Kazakh national self-determination (1992–). Concurrently, the urban form mutated from a point to a line and, finally, to a radial shape.

Gianni Talamini
Urbanising the virgin lands

Exploration of Marxist Humanism in 20th Century Global New Town Planning
A Case Study of Vällingby in Sweden

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Harbin Institute of Technology

Abstract

Massive new town construction activities unfolded globally in the 20th century, demonstrating the desire to embody the idealistic and democratic spirit of a new world order. Amidst a world torn apart at the time, new town construction became a window of opportunity to explore, consolidate, and showcase ideologies. In the 1930s, influenced by Marxism, the Swedish Social Democratic Party emerged from the working class and came to power. Faced with insecurity caused by the Great Depression, the party proposed to bridge the gap between the opposing American free-market economy and the Soviet socialist system by attempting to combine socialist programs, democratic politics and capitalist enterprise, advocating for a relatively moderate middle path. As a result, rooted in Marxist humanism, the goal concept of People's Home emerged and was embodied in the country's new town development backed by spatial planning and public policies, with Vällingby being the most representative. The paper examines the innovative ABC-Town theoretical model derived from new town planning practices under the People's Home initiative. Using the planning of Vällingby as an example, the study summarizes five key aspects of the planning model, and proposes thoughts and insights for current new town planning.

INTRODUCTION

The "short twentieth century" is marked by a succession of events that culminates in two world wars, interspersed with the disintegration of the New York Stock Exchange in 1929 and the Great Depression, the Cold War, and the consolidation of American hegemony and the welfare state[1]. This makes all countries urgently need to find a path that suits them in a world torn apart by various extreme ideas. Various ideas have emerged, and new town planning has become a window for the display of national ideology. At the dawn of the twenty-first century, Escola Superior Artística do Porto(ESAP) hosted an international conference in 2014 titled "20th Century New Towns: Archetypes and Uncertainties." [2] This conference served as a focal point for showcasing new town planning initiatives worldwide during the twentieth century. It also provided a platform for diverse countries and regions to reflect upon and respond to the tumultuous challenges of the past century.

Among all the national ideologies and international planning theories that have shaped new town planning, Marxist humanism, and its associated planning theories have emerged as significant influences. Sweden, particularly from the 1930s to the 1970s, exemplifies the influence. With the ascent of the Swedish Social Democratic Party(SAP) to power in 1930s, the concept of the People's Home was introduced, shaping a coherent set of public policies and spatial planning systems in alignment with the national governance framework. The planning of Vällingby, a new suburban town in the Stockholm metropolitan area, grounded in the concept, emerged as a notable practical implementation. Examining the implementation of the People's Home in the planning of Vällingby provides benefits for the realization of planning ideologies rooted in Marxist humanism and advocating for collaboration and social equity in twenty-first century urban planning.

THE INFLUENCE OF MARXIST HUMANISM ON NEW TOWN PLANNING IN THE TWENTIETH CENTURY

Marxist Humanism is one of the four philosophical forms of modern humanism, it is a particular type and approach of critical social theory that is informed by Karl Marx's works[3]. Christian Fuchs defines Marxist Humanism as a philosophical tradition and worldview inspired by Marx that considers the human being as the central aspect of society; takes the human being as a starting point for the theoretical and practical analysis and critique of alienation,

capitalism and class society; puts an emphasis on human practices and class struggles; and sees democratic socialism as the good society that enables a good life for all humans[4].

The twentieth century saw the emergence of numerous Marxist-influenced socialist urban planning practices in the form of "utopian socialism" and "socialist ideal cities". On the one hand, some of them focused on the design of small-scale utopian communities, for example, Robert Owen advocated the building of utopian communities based on the paternalistic social principles he developed while supervising the textile mills he owned in New Lanark, where-

in the prototypical utopian town, organized as a parallelogram, housed the town's 1,200 citizens according to their age and marital status within residential buildings on all four sides[5]. Charles Fourier developed a plan for the City of Garantism, which envisioned a city consisting of three concentric bands: a commercial zone surrounded by an industrial zone, both enveloped by an agricultural zone[6]. Furthermore, there are many utopian communities worldwide, such as the Kibbutz in Israel[7].

On the other hand, most importantly Ebenezer Howard, worked to restore the balance between urban centres and the countryside. He proposed the Garden City with utopian overtones which about 30,000 people zoned in such a way as to segregate different activities while at the same time ensuring that they were easily accessible[8]. According to Fishman, "the utopian socialists were largely forgotten by the time Howard, Although, the utopian socialists had little direct influence on Howard, it is likely that they had a strong indirect influence on him through such intermediaries as Edward Bellamy, Peter Kropotkin, Henry George, William Morris, and John Ruskin"[9]. The most important idea shared by these men was their shared approach to Marxist humanism[10].

Although Marx and Engels were wary of utopian speculation for tactical and strategic reasons, they developed a utopian vision which they based on both dialectical humanism and on historicism. This utopia emphasizes the importance of both human development and egalitarian dialogue. Thus, it follows that Marxism would approve of urban forms that would facilitate these processes[11]. It is centred on the urgent needs of the society as a whole, the pressing needs of the people, and the ideals of cooperation and social justice. This is why, when "garden cities" show signs of gentrification, some countries or governments intervene in them socially, and the new town of Vällingby in Sweden is one of them.

Fig. 1. The association between the Swedish concept of the People's Home and the Middle Way route, as well as the role of Marxist Humanism in this system of thought and action, Marxist Humanism is precisely the principal line of scientific socialism[14].

THE MIDDLE WAY:
THE THOUGHTS ROOT OF THE PEOPLE'S HOME IN SWEDEN

In 1932, the SAP came to power, in response to the insecurity caused by the Great Depression, they proposed a relatively moderate approach known as the "Middle Way" between the opposing economic systems of the United States' free-market capitalism and the Soviet Union's socialism[12]. The strategy aimed to reconcile socialist programs, democratic politics, and capitalist enterprise by advocating for state intervention involving consumers and producers (Figure 1). The goal was to ensure that capital operated rationally, serving the greater interests of the entire nation[13].

The formation of the "Middle Way" drew upon theoretical ideas from Keynesianism, social corporatism, and pragmatism. The publication of Sweden: The Middle Way in 1936 by Marquis W. Childs garnered global attention,

highlighting the success of this approach, which, as Childs summarised, relied on authorities' willingness to adapt, compromise, and confront reality, moreover, they emphasized cautious, incremental formulation and implementation in the application of socialist planning, prioritizing the welfare of societal order over the ultimate goals of the plan[15].Therefore, within this system of thought and action, the needs and well-being of the people are upheld as the highest goal. Facing the situation that Sweden had some of the worst housing conditions in Europe after the Second World War and had suffered mass unemployment due to the financial crash of 1929, the SAP aimed for everyone to have equal access to good housing regardless of social and economic status[16]. They insisted that housing accessibility should be linked to need, not income[17], which clearly reflects the influence of Marxist Humanism. This approach boosted the Swedish concept of the People's Home and extended the spatial planning system into new domains.

The concept of the People's Home epitomizes Sweden's the "Middle Way" approach, addressing the genuine needs of society. It serves as a tangible manifestation of the "Middle Way" philosophy, providing a blueprint that guides social and economic reforms, as well as material spatial planning development within the framework of the "Middle Way". The concept has led to the development of a coherent set of public policies and spatial planning systems consistent with the national governance structure.

THE BLUEPRINT OF THE PEOPLE'S HOME IN SWEDEN

In a renowned speech delivered on January 18, 1928, Per Albin Hansson, the Prime Minister of Sweden and a proponent of social corporatism, articulated a vision of society as follows: "A beautiful home without privilege or misfortune, without favouritism or exclusion, where no one looks down upon another, where no one exploits another for personal gain, where the strong do not prey upon the weak, where there is a home of equality, kindness, cooperation, and willingness to help one another"[18]. This is Per Albin Hansson's vision of the People's

Home, reflecting its ideals and connection to Marxist Humanism. At its core, it emphasizes equality for all, achieved through building relationships between individuals and the collective. As stated in the Communist Manifesto, it envisions uniting people as "an association in which the free development of each is the condition for the free development of all"[19]. The People's Home embodies the aspiration to become such an association, with its spatial demand and supply reflected at multiple levels and for different groups (Figure 2).

At the first level, Hansson's values are the classless, equal and democratic society, where there are no prioritized citizens. All citizens live in equal harmony and share prosperity, social burdens and rights. Democracy covers all parts of society, both social and economic democracy. Hansson's instructions for action are his constant demands for the implementation of social reforms and the need for economic equality and democracy[20].

At the second level, Hansson believed that the realization of the People's Home required the establishment of three fundamental pillars. Firstly, the state, local authorities, and the large common community serve as the foundation of the People's Home[21]. Secondly, ensuring home education, school education, and individual education are essential elements to safeguard within the People's Home[22]. Thirdly, the integration of workers and farmers constitutes the cornerstone of the People's Home[23], reflecting contemporary issues such as the rural- urban divide and urbanization.
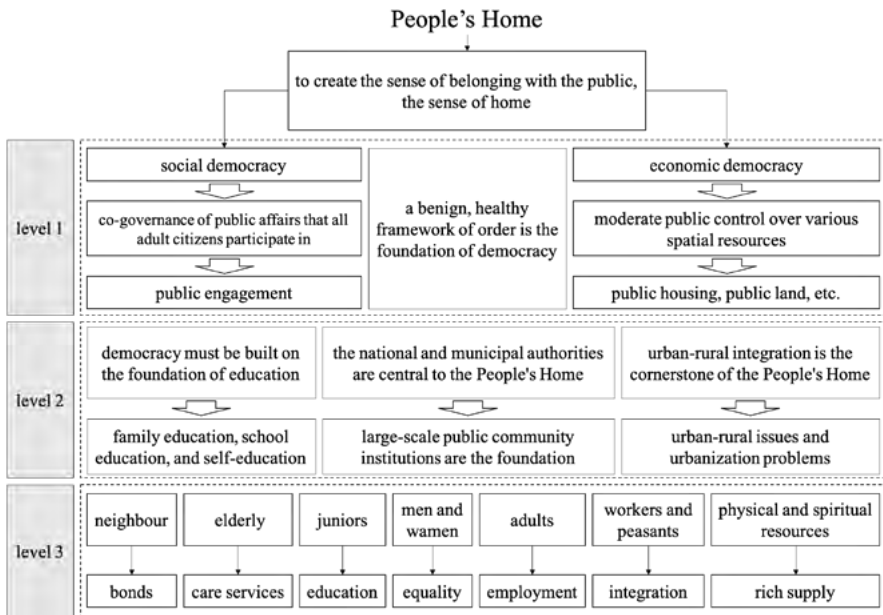
Fig. 2. Based on Marxist humanism, the People's Home conducts multi-level identification of the needs of the people at that time. The diagram also illustrates some connections between the needs of people at that time and current urban issues, such as the urban-rural integration reflecting the contemporary issue of urbanization.

At the third level, the People's Home anchors all citizens and emphasizes the creation of a society and physical space conducive to fostering neighbourly bonds. Beyond ensuring care for the elderly, education for the young, and gender equality, it aims to provide ample employment opportunities for adults, foster an environment and conditions conducive to rural-urban integration, what's more, offer rich provisions both of physical and spiritual resources[24]. These objectives directly inform the specific directions of spatial planning systems and public policies.

Around 1950s, the concept of People's Home began to manifest on the physical spatial level, with improving housing quality emerging as a core goal[25]. For instance, in Stockholm, one new town was produced annually during the era of rapid growth from the 1950s to the 1970s[26]. Satellite new towns served as commuter, community, and employment centres[27]. On the one hand, this effectively alleviated the expansion pressure on the old city centres. On the other hand, every family received an adequate housing supply, regardless of social or economic status.

ABC-TOWN: A SPATIAL PLANNING PARADIGM BASED ON THE CONCEPT OF PEOPLE'S HOME

ABC-Town is a spatial paradigm formed by integrating and refining various theories within the framework of the People's Home (Table 1), with the interrelated development depicted in Figure 3.

Fig. 3. The illustration of how People's Home transforms into ABC-Town, supported by three main ideas and involving many planning theories.

Theories	Year	Representative figure	Application and adoption in Vällingby
Garden Cities	late 19th century	Ebenezer Howard	Garden Cities propose A rational diagram for a decentralized, hierarchical garden city. The early Swedish experiments with garden cities evolved into white-collar communities, the government initiated self-built housing programs. By 1939, 3500 cottages accommodated 12500 self-builders; 60 percent of the inhabitants were manual labourers and factory workers, 20 percent service workers, and 20 percent white-collar[28].
Neighbour-hood Unit	Early 20th Century	Clarence Perry	Neighbourhood Unit is A comprehensive spatial planning tool aimed at fostering community-centreed lifestyles. Suburban areas around Stockholm were during the 1930s and 1940s dominated by three-story lamellar houses and groups of single-family detached houses. These areas soon received criticism for being singlepurpose housing areas with no access to jobs or social and commercial services. Influenced by the concept of Neighborhood Units, new town planners are trying to recon-struct community spaces[29].
New Town Movement	Early 20th Century	New Towns Act 1946	New Town Movement aims to construct new towns that are both livable and workable, balanced, and self-sufficient. According to this principle, Stockholm clarified that the construction of new towns should be based on decentralized employment30. It proposed the ABC-Town paradigm, with "work" as a significant driving force for new town development[31].
Culture of Cities	Published 1938	Lewis Mumford	Inspired by Culture of Cites, Sweden integrated the implementation of welfare systems with new town construction, promoting the formation of centralized, comprehensive urban centres and public service institutions within the new towns[32].
Greater Lon-don Plan	1944	Patrick Abercrombie	Greater London Plan revolves around five key themes: population growth, housing, employment and industry, recreation, and transportation. The planning of Vällingby, combining functionalism and pragmatism, explored planning paradigms and methods for these five key themes.

Table 2.   Planning theories guiding the maturation of ABC-Town and how these work in Vällingby.

"ABC" represents the initials in Swedish, where "A" stands for "Arbete" (Work), "B" stands for "Bostad" (Home), and "C" stands for "Centrum" (Centre)[33]. The purpose was to con-struct satellite towns of an independent character that nevertheless had a strong connec-tion to their mother cities, at least half of the residents should be employed within the new town[34]. Under the theoretical framework, two planning paradigms were initially conceived (Figure 4).
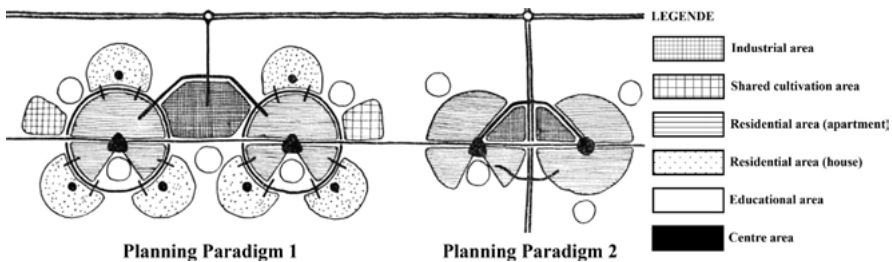
Fig. 4.   Two ABC-Town planning paradigms.

Planning Paradigm 1 envisions two fully developed urban districts with a common industrial area and grouped around a radial suburban track. No connection to ring road. Stations are approximately 1800 meters apart, with commercial and service cores clustering around the stations, typically extending outward no more than 500 meters. Residential areas of various kinds are located within 900 meters of the stations and centre. This radial distance roughly determines the maximum scale of the new towns[35]. The initial conception envisioned approximately 33,000 inhabitants working and living here[36].

Planning Paradigm 2 envisions two city districts trained only with apartment buildings and based partly on location around the radial suburban railway, and partly on location next to ring road with bus traffic. The stations are approximately 1100 meters apart, and about 24,000 inhabitants were initially envisioned to work and live here[37].

Through planning practice verification, it was determined that the first paradigm was more successful. In Planning Paradigm 1, the layout and scale of various land uses are as shown in Figure 5.
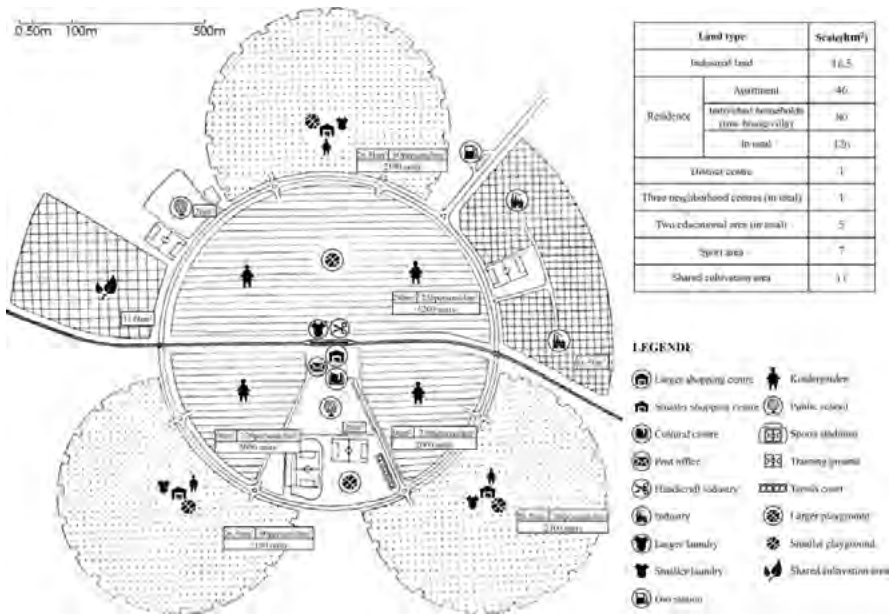
Fig. 5.   ABC-Town planning paradigm 1.

THE APPLICATION OF ABC-TOWN
TO THE NEW TOWN PLANNING OF VÄLLINGBY

Planning Paradigm 1 was implemented in the new town planning of Vällingby, which embraced the three key elements of "work", "home", and "centre" as proposed by ABC-Town. The planning of Vällingby exhibited five distinct layout patterns (figure 6), each characterized by its unique structural features.

Firstly, focus on "work", the planning demonstrates an intercity layout pattern of "work-centre-work" along the metro line. "Work" as an integral component driving the development of new towns within the ABC-Town, exhibits characteristics of extensive aggregation and radiating influence on both sides. Independent rail stations are set up in the working areas, forming an intercity linear layout along the metro line from the urban centre to the work areas and then to another urban centre. This layout preserves the independence and accessibility of industrial spaces while facilitating nearby employment for residents on both sides of the radiation. Each side of Vällingby is allocated an industrial area of approximately 30 hectares, connected by independent metro stations and located about 1 km from the metro station at the centre of Vällingby.

Secondly, focus on "home", the planning demonstrates a residential layout pattern of "rental apartments- individual households" around the centre. According to the planning paradigm, there are 10,200 units of rental apartment housing, accounting for 62% of the total housing stock, located in the central part of the new town, encircling the district centre and laid out on both sides of the rail lines. The population density is 220 people per hectare. Peripheral areas, considering terrain and environmental factors, are designated for family-oriented residences such as row houses and small villas, totaling 6,300 units, comprising 38% of the total housing stock. These are distributed in three locations outside the apartment areas, each covering approximately 26.5 hectares and providing 2,100 units, with a population density of 80 people per hectare. In Vällingby's apartment residential areas, kindergartens, playgrounds, and other children's facilities are evenly distributed, while schools, sports stadiums, training grounds, tennis courts, and other sports facilities are concentrated in areas connected to the district centre.

Thirdly, focus on "centre", the planning demonstrates a two-tiered central system consisting of the "district centre-neighborhood centre". The planning paradigm presents a two-tiered central system comprising one district centre and three neighborhood centres. The district centre, also named as Vällingby Centrum, is built around the metro station, while the neighborhood centres are distributed among three surrounding single-household

residential units. The distance from the Vällingby Centrum to the neighborhood centre is approximately 600 meters. Vällingby Centrum includes a core commercial centre, post office, cultural centre, artisan workshops, large-scale laundromats, etc. Neighborhood centres include amenities such as kindergartens, playgrounds, and self-service laundromats for residents' convenience.
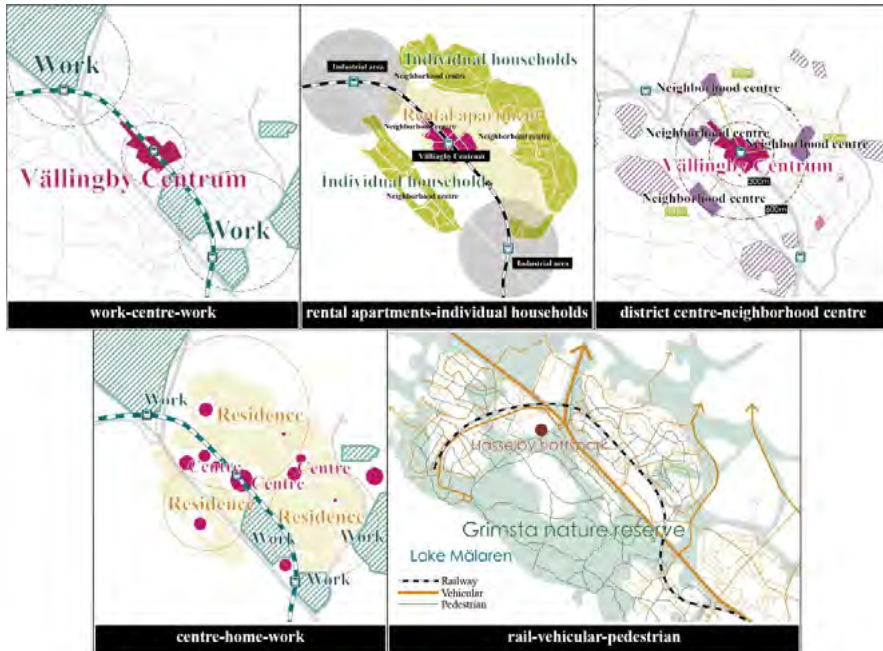
Five distinct layout patterns in Vällingby, guided by ABC-Town, influenced by People's Home.

Fourthly, the planning integrates the spatial organization logic of "centre-home-work", merging three elements to construct a new urban form that embodies the integration of industry and city. In the planning paradigm, residents living in any location can access the centre within a maximum distance of 300 meters and work within 600 meters, forming a "centre-home-work" spatial pattern where residents can conveniently work and access public services nearby, thus achieving an integrated city-industrial spatial state. Specifically, starting from the district centre, the maximum distance to apartment housing is 450 meters, to single-household residences is 900 meters, and to industrial areas or cultivated land is 600 meters. Neighborhood centres primarily serve single- household residences within a radius of 300 meters. In Vällingby, each large residential area is evenly covered by public service centres and workspaces, where public welfare and job opportunities are integrated into the neighborhood as a whole, ensuring that residents enjoy equal access to public services and employment opportunities.

Fifthly, the planning establishes a transportation system with independent layers for "rail-vehicular-pedestrian" traffic. The transportation system in Vällingby exhibits three fundamental characteristics: firstly, vehicular traffic and pedestrian traffic systems operate independently without interference; secondly, the pedestrian system is closely integrated with rail transit stations, forming a cohesive pedestrian network; thirdly, the transportation system features a diverse hierarchy of roads: expressways primarily cater to through traffic, main roads encircle the town, secondary roads facilitate cross-town travel, and local roads mainly serve as access

points. The independent transportation system enables the pedestrian network to seamlessly connect natural landscapes, such as forests and lakes, and cultural landmarks, such as castles and heritages, ensuring high-quality pedestrian access.

ASSESSING THE IMPACT OF ABC-TOWN'S APPLICATION IN VÄLLINGBY

The three pivotal elements proposed by ABC-Town—namely "work", "home", and "centre"—hold significant sway over the ongoing development of Vällingby. Each of these components embodies the fundamental thoughts of People's Home. Moreover, Marxist Humanism serves as the underlying ideology guiding these elements, exerting influence not only locally but also on a global scale.

Regarding "work", the practice in Vällingby reveals that job security is the cornerstone of the new town's prosperity, and two approaches have been proposed to ensure job supply. One is through significant measures, led by the government, which relocates state-owned enterprises to Vällingby to stimulate the enthusiasm of various enterprises to settle there, thereby ensuring an adequate supply of job opportunities. For instance, the Stockholm City Council relocated the headquarters of Sweden's largest real estate company, Svenska bostäder, and the major power company, Vattenfall, to Vällingby. Under state leadership, a growing number of companies, including IBM, Volvo, among others, have established themselves in Vällingby[38]. By the mid-1960s, there were approximately 14,000 job vacancies listed on the Vällingby website[39], which exceeded the expectations, with more than half of the eligible working population finding employment opportunities, and these companies are still operating in Vällingby today. The other approach involves fundamental measures, SAP successfully promoted the signing of the "Saltsjöbaden Agreement" in 1938, whereby the government introduced tax breaks and subsidies, leading to a compromise between the Swedish Trade Union Confederation (LO) and the Swedish Employers' Confederation(SAF)[40], thereby increasing job opportunities across society at their roots.

Regarding "home", fair supply, improvement of conditions, and environmental enhancement have been the cornerstones of Sweden's implementation of the People's Home and the development of the welfare state from the 1930s to the 1970s. The practice in Vällingby reveals that to achieve the goal of implementing the People's Home, new town construction should focus on three key issues in housing: ensuring an adequate supply, fair distribution, and equitable use. Firstly, to address the housing shortage comprehensively and ensure an ample supply of housing, the Swedish parliament decided to construct one million new houses between 1965 and 1974, known as the Million Homes Programme[41]. Vällingby became a prototype residential area during this plan, and this decade was also referred to as the "record years" of Swedish urban development[42]. During this period, Sweden's housing stock increased by one-third[43]. Secondly, the state formulated a set of policies known as "Corporatist Implementation", specifically targeting the entire rental housing industry in Sweden[44]. This includes rent control policies and housing democracy policies, ensuring tenants have decision-making rights in

various aspects such as daily life and housing renewal, thus achieving fair distribution and equitable use of housing. The approach ensured that both urban residents and rural migrants had equal opportunities to access affordable, high- standard modern housing.

Regarding "centre", the blueprint of the People's Home emphasizes that the state and municipal authorities are the main actors of the People's Home. On the one hand, this refers to the power held by the state and government to organize public services. On the other hand, it indicates that large public community institutions will serve as the centre and core of the new town. Vällingby Centrum as the centre of the town, setting the precedent for subsequent global new town centre planning. Here, an innovative unified structure combining service centres and railway stations was pioneered. Vällingby Centrum serves as a comprehensive service hub, meeting the holistic service needs of all residents. It is equipped with retail businesses, cinemas, libraries, hospitals, churches, and a proportion of apartments[45]. At the same time, it functions as a transportation hub, pioneering the innovative pedestrian- friendly system of separating pedestrians from vehicular traffic, becoming one of the pioneers of pedestrian-friendly spaces globally[46]. The central development model laid the groundwork for the TOD approach seen today.

CONCLUSION

The ideology of Marxist humanism emphasizes responding to the urgent needs of the people, and the concept of People's Home originates from the ideology, aiming for "people's well-being" and meeting "the needs of the people." In the extension from the concept to physical spaces, the theoretical framework of ABC-Town and further planning paradigms, especially the spatial organization logic of the three elements, "work", "centre", and "home", along with the assurance of its implementation methods and policies, all demonstrate the influence of Marxist humanism on urban development and even national development at various levels.

Today, China is also rooted in the ideology of Marxist humanism and has proposed the conceptual goal of constructing People's City based on the path of Chinese socialism. Currently, it is at the stage of extending from concept to physical spatial planning. From a technical standpoint, Swedish models have informed contemporary Chinese thinking in four aspects:

Firstly, by drawing on the planning paradigm of ABC-Town, the spatial structure of cities in China should be optimised. According to the concept of People's Home, the space planning method centred on the ABC-Town is significant as it accurately identifies the three key elements of people's needs at the time: work, home, and centre. While planning needs are time-specific, the method of translating and applying the concept can be referenced. In response to people's needs, China currently has developing Life Circle, Complete Community, etc. However, these are still limited to certain areas. It is necessary to go beyond technical standards, approaching the comprehensive optimisation of urban resources from the dimensions of functional integrity, balance, and dynamic governance of the city's overall functions.

Secondly, drawing on the public policy of equally distributed spatial resources in Vällingby, China should establish a housing security system from a comprehensive planning perspective. In Swedish practice, the public policy ensuring the fair distribution of housing is an integral part of the planning and construction process in Vällingby. This includes the full lifecycle of new town development, starting from land supply, through construction financing and standards, to the low-threshold allocation principles after completion. All these aspects are coordinated with the new town's entire lifecycle planning and construction. These insights suggest that China should combine the establishment of a housing security system with the transformation of Territorial Spatial Planning. In this way, it can ensure not only the equal supply of housing but also environmental and social resources.

Thirdly, the new town planning of Vällingby, in fact, a paradigm for Swedish exploration of translating the People's Home conceptual system into physical space. Similarly, the current concept of the People's City in China requires a spatial paradigm to support it, to illustrate the "Chinese model" of urban planning, and to showcase the ideal city under the goal of "Chinese-style modernization".

In addition, the significant meaning of studying Swedish People's Home concept and its practical application, also lies in to expand the thought foundation of People's City in China from the perspective of the global influence and dissemination of Marxism. Despite growing in different soils and developing through different paths, both Sweden's People's Home and China's People's City originate from the same Marxist seed of people-centric philosophy, aiming to seek "people's well-being" and meet "people's needs." This demonstrates that the proposal of People's City makes Marxist humanism bloom again in contemporary times, the enduring Marxist humanism thought system also will support the concept of People's City in China will be promising.

DISCLOSURE STATEMENT
No potential conflict of interest was reported by the author.

NOTES ON CONTRIBUTOR(S)
I was awarded my master's degree in Architectural Design and History from Politecnico di Milano, Italy, in 2018. Then, I worked as an urban planner at the Beijing Institute of Architectural Design for four years before starting my PhD training in Urban and Rural Planning at Harbin Institute of Technology, China, in 2022.

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IMAGE SOURCES

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Figure 6   Drew by the author.

Heritage as survival
Peace-building and the making of everyday heritage in Sarajevo

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Abstract

Regarding the politicisation of heritage upon manipulations through the power of contested world politics and ideologies, the paper attempts to provide a brief critical commentary on the reimagining conflict heritage in democratizing, caring, healing and reconciling. The research is constructed upon visible and invisible terrains of the conflict in the public space through art-based responses to conflict. The Siege of Sarajevo 1992-1995 is taken as a standpoint in the exploration of the 'alternative' narratives of atrocities whereas creativity, art and politics transcends in the making of everyday heritage of survival as a record of material world and knowledge of heritage behind the siege proclaimed by crimes against humanity, ethno-religious war and genocide. The Sarajevo today also presents a key arena to quest upon the nationalisation of heritage as part of the interplay between national policies and grassroots activism. The paper is structured to elaborate on how conflict heritage can be transformed into a source in democratizing, healing and reconciling society; and how we can engage with the trilogy of conflict, heritage and arts in the public space. The focus of exploration is through discovering, learning and tracing conflict heritage by ethnographic and archival work through different urban histographies, geographies of conflict and trans-mapping narratives. Apart from in-depth research through textual (and visual archives) and scholarly work, the research is built upon oral histories by interviews and on-site documentation in the understanding and mapping of alternative narratives and experiences of survival. The research is an outcome of the "Trans-making: Art, culture, economy to democratize society", a Horizon 2020 MSCA-RISE Project of the author which has been finalized in September 2022.

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Urban Design, Discipline and Practice in Brazil

Chair: Carola Hein

Socio-Spatial Effects and Mechanism of Living Habitat Heritage Conservation
The Case of Phrae in Thailand

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Abstract

The global approach to heritage conservation is evolving from a material-based to a value-based and then to a people-centred approach (PCA). However, the application of PCA in urban regeneration has faced significant challenges, and the long-term social and spatial implications remain underexplored. Taking Phrae, a city in Thailand that served as a pilot project for ICCROM's Living Heritage Sites in 2002, as an example, the study shows that the effects of the PCA over the past 20 years have been mainly (1) to strengthen the sense of belonging and identity in the hometown by reintroducing the local culture and traditional way of life to the local community of different age groups, and (2) to empower citizens to take action for their hometown. This paper constructs a theoretical framework for living habitat heritage conservation, redefines core communities, and discovers specific spatial and social manifestations of authenticity and continuity by exploring the efficacy of PCA in urban environments and explaining its impact mechanisms. It fills gaps in the existing theoretical framework of urban heritage within the PCA paradigm, enhances the social research aspect of heritage conservation, contributes to localising living heritage in East Asia, and complements authorised Western heritage discourses.

From Perahus to Cars
Sectoral Planning and the Transformation of Fishing Villages in Kuching, Sarawak

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Abstract

As Kuching, Sarawak expanded in the 20th century, Malay fishing villages on the edge of Kuching's rivers faced challenges due to congested waters and disruptions caused by sectoral planning policies. The villages' growth trajectories were determined by economic activities in their vicinity, such as industrial estates, trading ports, educational institutions, or eco- tourism in rainforest parks. Situated in various locations, they have undergone significant changes that are directly linked to the expansion of Kuching and the emergence of new infrastructure. The replacement of rivers with roads has gradually severed their historic connection to the river, leading to a fundamental reshaping of their built environment, livelihoods, and sense of community. This study examines the transformation of four Kuching fishing villages from the 20th century to the present day. Drawing on in-depth semi- structured interviews with villagers, preliminary fieldwork, studies of settlement morphology, and analysis of planning documents, this research uncovers the often- overlooked human costs of sectoral planning and offers valuable lessons for planners facing similar challenges in Southeast Asia and beyond. Through the lens of four fishing villages in Kuching, we reveal the complex interplay between infrastructure growth, social resilience, and economic viability in the face of rapid development and call for a nuanced approach to planning that prioritises the well-being of peripheral rural communities.

INTRODUCTION

As the cities in Borneo have undergone exponential growth in the past century, scholarly attention has often been captivated by early colonial settlements. This tendency to define a city's origins solely through colonialism or Western settlers has resulted in the overlooking of coastal villages and their contributions to urban development. Kozlowski et al. (2021)[1] briefly acknowledged the existence of coastal or water villages but failed to accord them the importance they deserve. Notably, however, they advocated for the preservation of these settlements.

From Kuching to Kota Kinabalu, Banjarmasin, and Pontianak, the initial development of these cities was inextricably linked to a maritime culture. Prior to the advent of roads, rivers served as the lifeblood of transportation throughout Borneo. The dense rainforest made traversing the land by foot incredibly difficult, necessitating the transport of building materials, food sources, minerals, and other essentials by boat. This water- based way of life shaped the identity of the Bornean people residing in cities.

However, since the 1970s, advancements in technology, alongside the clearing of rainforests, levelling of hills, and construction of extensive road networks, have led to a gradual decline in reliance on boats for transportation. This shift has been further amplified by government policies and structures surrounding waterborne transport and management. The enduring presence and resilience of fishing villages on the fringes of urban areas now represent the last vestiges of this fading culture.

The Sarawak River in Kuching bifurcates and flows into the sea through five river estuaries, which have constituted the principal source of sustenance for the fishing villages for centuries. Prior to the establishment of the port in Kuching, the centre of trade for northwest Borneo was located in Santubong, which was known as Po'ni according to ancient Chinese sources dating back to 860 AD.[2] Ships from across Austronesia, as well as Arab and Chinese traders, have been engaged in trade in Santubong since 200 AD, when the population was estimated at 10,000.[3] At the time, they would construct semi-permanent settlements during the monsoon season, awaiting a change in wind direction before embarking on another voyage.[4] Santubong ceased to exist by the mid-1500s, and northwest Borneo subsequently came under the rule of the Sultanate of Brunei. During the rule of Indra Sarik (1053-1096) in Santubong, several settlements were established in the vicinity of Santubong. Among these settlements were Sungey Buntak and Bakok, which subsequently became known as Kampung Buntal and Kampung Bako, respectively. Muara Tebas was first mentioned during the reign of Indra Rangga (1096-1131). Sungey Buntak became one of the ports for ship repairs in Santubong.[5] Consequently, three of the villages under consideration have been documented as existing for approximately a millennium. These settlements can be observed when one

departs from the city and proceeds towards the coast or along the Sarawak River. The way of life of the inhabitants of these villages is undergoing a process of change. In some cases, their identity is shifting as the population no longer depends on fishing as their sole source of income and takes on other jobs to adapt to the changing circumstances.

Data on the lifestyles and conditions of the Malay villages, including Boyan, Gersik and Simun-jan, situated on the north banks of Kuching in the city centre, were recorded as early as 1953. These villages were found to be highly dependent on the urban economic activities across the river. In the mid-20th century, the area that is now known as Petra Jaya was characterised by vast expanses of rubber tree estates and small orchards owned by the local villagers. Furthermore, they would navigate the rivers and travel downstream for several days in the mangrove forest reserve in Rambungan and Buntal to procure wood for sale to the Chinese or for their homes.[6] The historical records in question are becoming increasingly valuable and poignant in light of the government's 2019 announcement of plans to develop and demolish the remaining villages on Petra Jaya, with the intention of relocating the villagers in a resettlement scheme, as what happened to the inhabitants of Kampung Panglima Seman, who were relocated to Darul Hana. Given its proximity to the city's economic and financial hub, it was inevitable that development would occur. Regardless, there is a paucity of detailed records pertaining to the Malay villages situated on the peripheries of the coastal areas of north Kuching.

While colonialism and the governance of foreign entities have influenced urban planning and the settlement patterns around the city, the majority of these changes and developments in road infrastructure occurred in the postcolonial era. The Brooke and British colonial admin-istrations did not impact the traditional villages during their tenure. However, they did devel-op the existing cities surrounding trade and exportation of resources. The most significant legacy of colonialism is the establishment of policies and segregated planning.[7] These were subsequently calibrated and adapted by the subsequent government, which had an impact on the fishing villages. It is possible to describe these changes from a larger scale, in terms of their relationship with all aspects of spatial and sectoral planning by the government, and the regional policies which affected their way of life. Kozlowski et al. (2021)[8] observed the 'lack of regional plans, local planning legislation and tropical planning and design guidelines.'

In this case, Kuching serves as a noteworthy example, as it is home to a multitude of fishing vil-lages situated along its periphery, which have undergone significant changes and exhibit diver-gent trajectories, contingent upon their spatial position and the degree to which they contribute to the city's vitality. The early modern postcolonial urban expansion policies, which included road developments, the allocation of industrial zones, the movement of ports, educational insti-tutions, and the designation of corridors for ecotourism, have had consequences for the village.

Therefore, the objective of this essay is to describe the transformations within the theoretical framework of planetary urbanisation and operational landscapes and contribute to the exist-ing scholarship on urbanism in developing Southeast Asian nations. In particular, the study aims to provide a multi-faceted view of fishing villages as part of the urban narrative. The villages that form the subject of our study are Buntal, Bako, Muara Tebas and Sejingkat. The research questions we aim to answer are as follows:

1. How has the centralised sectoral planning of Kuching affected the morphology and growth trajectory of the fishing villages in Kuching?
2. How has this manifested itself in the socio-spatial production of the village?

This essay comprises four sections. The subsequent section will discuss the underlying concept that informs our understanding of the villages' transformation. Subsequently, the third section demonstrates how these case studies and their morphological development were influenced by territorial planning involving national, local and foreign interests. The fourth section of the essay considers how the urban fabric of these villages was generated as an outcome of these large-scale interventions. The findings presented in this study were derived from a combination of fieldwork, interviews with the village leaders and locals, a morphological study, and an analysis of planning documents. The objective was to gain insight into the complex interplay between infrastructure development, social resilience, and economic viability in the context of urbanisation. It is therefore recommended that a nuanced approach to planning be adopted, with a particular focus on the well-being of peripheral rural communities that are caught in the urban tide.

COASTAL FISHING VILLAGES AS EXTENDED URBANIZATION AND OPERATIONAL LANDSCAPES OF KUCHING

Studies of agrarian sites and resource extraction in the hinterlands have garnered attention, and the areas previously perceived as non-urban are now being accepted as part of the urbanisation process.[9] Fishing villages on the urban peripheries of Southeast Asian cities have been largely overlooked throughout the discourse of urban studies. Brenner & Schmid (2015) propose three types of urbanisation: concentrated urbanisation within cities and the formation of agglomerations; extended urbanisation, which 'transforms territories in the hinterlands as operational landscapes of global capitalism'; and differential urbanisation, i.e. sites of 'political engagement and social struggle.'[10]

In Sarawak, coastal fishing villages have historically been subordinated to port cities. Their settlement growth reflects the impacts of hierarchical, centralised territorial planning imposed by state regulations, which engender socio-spatial consequences as described by Brenner.[11] The establishment of road networks within these villages, which have become part of the global value chain, has gradually transformed them over time. This is consistent with Henri Lefebvre's theory of the state mode of production.[12] In analysing each case study, it is important to consider the concept of scales and the point at which the urban fabric has crystallised.[13] The state-spatial planning of territories at a large scale has implications for the social production, urbanisation, socio-environmental metabolism and goods circulation insofar as it pertains to the fishing villages and their relationship with the city.

THE EVOLVING PLANNING LANDSCAPES OF KUCHING

Understanding Kuching's current planning landscape necessitates acknowledging its historical context. The Brooke Dynasty era (1841-1946) laid crucial foundations. Charles Brooke, the second Rajah, initiated significant road infrastructure projects that influenced settlement

patterns and economic activity. Additionally, the concept of Native Customary Rights (NCR) land, established during this period, continues to influence development applications today. Following World War II, the urgent need for coordinated development and infrastructure planning in Sarawak became evident. As a British colony at the time, the state implemented the 1947-56 Development and Welfare Plan, a precursor to the Sarawak Development Plan (1964-68). This earlier plan prioritised investment in transportation, agriculture, and rural development sectors, laying the groundwork for more comprehensive development efforts that would follow under Sarawak's own plan. Sarawak's annexation into Malaysia ushered in a new era of large-scale planning efforts fueled by federal grants. Key government ministries like the Ministry of Resource Planning and Environment (then known as the Ministry of Land and Forests) played a central role, working in conjunction with federal authorities in Kuala Lumpur led by Deputy Prime Minister Tun Abdul Razak.

This shift emphasised infrastructure development, evident in projects like the Pan-Borneo Highway and feeder roads connecting rural areas to the broader network. These initiatives aligned with the Malaysia Plan's key objectives of infrastructure development and poverty eradication. Moreover, the New Economic Policy (NEP), the brainchild of Tun Abdul Razak, designed to address economic disparities in Malaysia, significantly impacted the lives of fishermen. Classified as Bumiputera, these communities gained access to various institutions aimed at improving their livelihoods. One such institution, *Lembaga Kemajuan Ikan Malaysia* (Fisheries Development Authority of Malaysia, or LKIM), provided crucial support through programs offering new boats, training initiatives, and resources to increase fishing productivity.[14]

Tun Abdul Rahman Ya'kub, Sarawak's first Chief Minister after Malaysia's formation, played a crucial role in implementing the Sarawak Development Plan. He participated in discussions with the federal government and ensured the plan's alignment with Sarawak's specific needs and priorities, including navigating the complexities of NCR land rights established during the Brooke era. The Plan's emphasis on industrial development undoubtedly impacted the Malay fishing villages in Kuching, as observed in the following case studies.

In terms of planning in Kuching, regional and national plans hold greater weight than small-scale town planning. It is more important to consider the larger picture of how Kuching is integrated within the vast networks of sectoral planning as part of the Malaysian Plan, once Sarawak became annexed to the federal government in 1963. The calibration of the port of Kuching to the needs of the nation, connecting it to West Malaysia via Port Klang became more important, while accommodating to international freight networks.[15] The Malaysian Plans substantially influenced Kuching's port infrastructure, beginning in the 1970s. Previously, cargo movement relied on the Lorna Doone wharf and the Waterfront jetty. However, these facilities gave way to larger and more modern ports like the Biawak Jetty, Pending, and the Damai Kuching Port (DKK Port). This development coincided with the establishment of the Marine Department and the implementation of the Shipping Ordinance, both crucial for regulating and promoting maritime activity. As a result, the Sarawak River transformed into a bustling waterway for cargo ships and containerised vessels, underlining Kuching's growing importance within the national transportation network.

Fig. 3.   View of Muara Tebas and the Ching San Yen temple on a hill, while Chinese-owned seafood businesses flank the Sarawak River.

DESCRIPTION OF THE FISHING VILLAGES MUARA TEBAS

Muara Tebas, a village situated along the Sarawak River in North Kuching, presents a striking case study of historical development shaped by religious practices and economic opportunities. The Ching San Yen temple, a prominent Buddhist landmark overlooking the river, has attracted Chinese visitors for over two centuries (Figure 1). According to local accounts, the temple served early Chinese traders as a place of worship and a source of fresh water until the introduction of piped water in the 1980s.

The village population of over 1,900 is predominantly Malay, with tourism associated with the temple contributing significantly to the local economy. Notably, the village layout reflects a historical shift in demographics. Guided

by the principles of "Fung Shui" in the early 20th century, Chinese settlers established themselves near the seashore, eventually founding seafood restaurants and a processing facility. Land transactions between Malays and Chinese residents further influenced the spatial development of Muara Tebas.

The construction of roads connecting Muara Tebas to Kuching in the 1980s marked a turning point. This infrastructure project led to a change in settlement patterns, with houses gradually spreading outwards along the main road. Essential amenities such as markets, healthcare facilities, mosques, and schools were subsequently established to serve the expanding community. The presence of the Maritime Complex and Marine Department across the highway underscores Muara Tebas' strategic location as a gateway to Kuching's maritime activities (Figure 2).

Historically, fishing has been the primary livelihood for a majority of the village population. However, stricter regulations on river navigation implemented since the 1960s have impacted traditional fishing practices. While a contingent of over 200 registered fishermen remains active, a significant portion of the workforce now seeks opportunities in the civilian sector,

private companies, or self-employment. Improved accessibility through road networks has further bolstered the village's economic potential by facilitating the transportation of goods, particularly seafood products, to a wider range of markets beyond Muara Tebas.

BAKO

Kampung Bako, a village embedded at the mouth of the Tabo River near Muara Tebas, presents a contrasting case study in terms of development and economic activity. The village, named after the abundance of mangrove trees ("bako" in Malay Sarawakian) in the area, is nestled beneath two hills overlooking the river. The surrounding land is managed by various stakeholders, including the Public Works Department, Ministry of Tourism, and Ministry of Forestry, reflecting a diverse range of interests in the area.

Unlike Muara Tebas with its heavy river traffic, Bako experiences less stringent regulations due to the Tabo River's limited capacity for large vessels. This allows 13.6% of the population to continue pursuing traditional fishing and agricultural activities. However, the village economy has undergone significant diversification. While fishing and farming remain a source of income, a larger portion of the workforce, approximately 15%, now finds employment in nearby factories within the Sejingkat industrial estate. In particular, nearly a third of the roughly 1,800 residents are engaged in the service sector, working as tourist guides, clerks, entrepreneurs, or marine officers. Kampung Bako's proximity to Bako National Park has significantly boosted tourism. Villagers benefit from this influx by providing boat transportation for tourists and nature enthusiasts, ferrying them from the village jetty to the National Park headquarters, a 20-minute boat ride away.
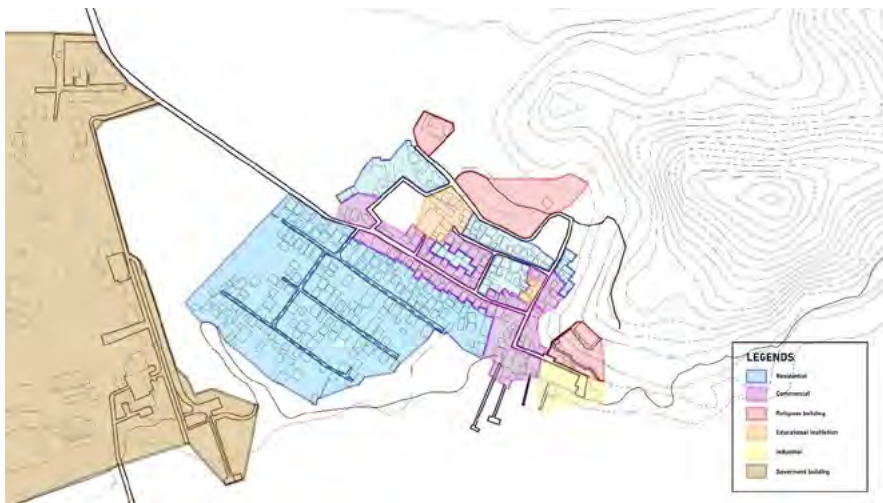
Fig. 4.   A land use map of Muara Tebas, featuring the prominent placement of the Maritime Complex and Marine Department adjacent to the highway, bordering the village.
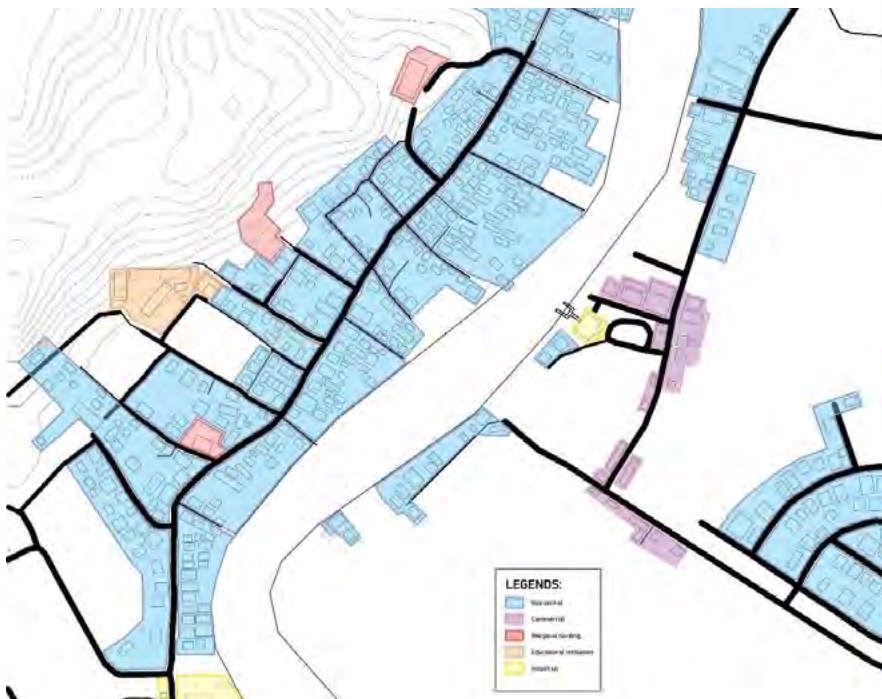
Fig. 5. A map of Bako showing current land uses. The Bako National Park jetty (in yellow), and wet market (in purple) attract local and international visitors.

The land surrounding the village has been designated for both traditional and modern forms of agriculture, with small family-run orchards coexisting alongside shrimp farms and larger plantations. Eco-tourism, the established agricultural sector, and a growing industrial presence have all contributed to Kampung Bako's expansion (Figure 3). This expansion is accompanied by the development of new infrastructure, including a jetty terminal, bus services, a mosque, a clinic, schools, and a community hall.

The newer section of Bako, located in the southeast, was formally planned and is serviced by Kampung Bako Road. This road connects the new development to the original village and onwards to the Bako Causeway, providing a direct link to the city. The village is also known for its vibrant wet market, frequented by visitors seeking fresh fish and seafood.

BUNTAL

Lying at the mouth of the Buntal River and facing the open sea, Buntal's initial development followed the coastline. However, coastal erosion necessitated a relocation of houses inland onto state-allocated land lots. To combat further erosion, a dyke now protects the coastline. Kampung Buntal Road provides access to these relocated residences (Figure 4).

Fig. 6.   Map of current land uses surrounding Buntal

Prior to the completion of the Santubong Bridge in 1986, travelling from Buntal to Kuching by boat was a significant journey which can took up to five days. Today, the proximity to the Sarawak Cultural Village in Santubong adds to Buntal's appeal. Similar to Kampung Bako, fishing remains a significant source of income for the village, with unrestricted access to both the river and the open seas. The village name itself, "Buntal," reflects the historical abundance of pufferfish in the area.

With a population of nearly 3,800, Buntal boasts a predominantly Malay community with a small Chinese minority. Chinese residents primarily operate seafood restaurants and convenience stores along the coast. While 60% of the villagers continue to rely on fishing for their livelihood, nearly a third find employment elsewhere, including some who commute daily to the city.

Eco-tourism and seafood tourism is also a growing sector. Buntal Esplanade attracts birdwatchers, while boat tours operate from Buntal Bay. The combination of the bay, wet market, and seafood restaurants has drawn visitors from Kuching since the 1980s, contributing to the village's population growth. To cater to the residents' needs, Buntal now includes mosques, clinics, community halls, schools, and even a Chinese temple. Integration into the Damai-Santubong-Buntal-Pasir Pandak (DSBP) Corridor further enhances Buntal's tourism potential. This regional development initiative was aimed to leverage the collective strengths of these areas to create a more comprehensive and attractive tourism destination.

Houses of Sejingkat village lining the waterfront.

SEJINGKAT

Sejingkat is perched on the edge of a steep hill sloping downwards to the Sarawak River and the Brooke Dockyard Engineering Works. Just two decades ago, the village's expansion followed a linear pattern westward with the construction of the road connecting it to the Bako Causeway. However, this growth faced challenges due to the hilly terrain and limited available land (Figure 5).

Sejingkat's location presents a complex situation. The village faces environmental risks of flooding and landslides. Furthermore, multiple stakeholders hold interests in the surrounding lands, including the Ministry of International Trade & Industry, Industrial Terminal and Entrepreneur Development Sarawak, the Public Works Department, the River Board, and private businesses (Figure 6). Regulations, such as the River Ordinance of 1993, have restricted traditional fishing activities. Moreover, the Demak Industrial Estate's ongoing construction of a new terminal for large, containerised vessels further limits access to the adjacent waters.

Since the 1990s, the decline of fishing and related primary activities as a viable source of income has driven villagers to seek employment in nearby factories, entrepreneurial ventures, and the service sector. Fishing has largely become a recreational activity rather than a means of subsistence. Recognizing the village's precarious situation, the state government is currently building a new housing estate to relocate residents to a safer and more stable area.

Fig. 8. A map showcasing the industrial area bordering Sejingkat village. The village itself is nestled beneath a hill on the Sarawak River, adjacent to the industrial zone.

IMPACT OF PLANNING POLICIES ON VILLAGE DEVELOPMENT

A number of observations can be made from this study of the four Kampungs. The differential growth trajectories of the villages are not solely a consequence of their topography. Rather, they are largely influenced by the sectoral planning policies that have been implemented in the lands surrounding them. Two of the villages, Muara Tebas and Sejingkat, are situated on the Sarawak River at different points along its course. Muara Tebas is perceived to be more economically successful due to its land availability, religious and food tourism. In contrast, Sejingkat is arguably marginalised and does not attract sufficient interest to be considered a priority for redevelopment. The villages of Buntal and Bako have experienced significant growth due to their popularity among nature lovers and seafood enthusiasts. The trajectories of these two villages depend greatly upon the state and national policies of sectoral planning, as outlined in the NEP.

In parallel with the growth of the industrial sector, which included planned estates such as Pending and Sejingkat, the Isthmus was constructed, effectively short-circuiting the route of cargo ships and ferries along the Sarawak River. Due to the coastal villagers being classified as Bumiputeras, they were provided with vocational training for self-development. This subsequently led to their employment in the surrounding industrial estates. The current generation has increasingly opted to pursue employment in the industrial estates, rather than continuing with their cultural fishing practices. This was because the monthly income in the industrial sector was more stable in comparison to the seasonal nature of fishing.

State-led sectoral planning and established institutions, though offering continued support for fishing activities, significantly impacted the lives of villagers. The rise of nearby industrial sectors, improved road access, and evolving socio-economic demands all contributed to this change. Villagers were forced to adapt their way of life, working beyond the primary sector. This shift ultimately led to the expansion and transformation of village settlements.

In accordance with the theory of planetary urbanisation, we posit that state regulations and centralised territorial planning in Sarawak have subordinated coastal fishing villages to port cities. This top-down approach has resulted in the transformation of these villages through infrastructure development, which connects the villages to the urban fabric and integrates them into the global value chain. Furthermore, the villages have become integrated into a system that facilitates the movement of goods, labour, and raw materials for urban consumption. The state- mediated planning decisions at a large scale have had a significant impact on social production, morphology patterns and the environment.

CONCLUSION

The studies cited above provide a foundation for an analysis of the impact of centralised sectoral planning on the growth of fishing villages in Kuching. Two key factors influence the aforementioned villages: infrastructure development and a focus on efficiency.

Large-scale projects, such as road networks in the 1980s, has resulted in the fragmentation of traditional settlement patterns in the village landscapes. This phenomenon can be observed in the case of Buntal and Bako. The traditional compact and dense settlement patterns around rivers and the coast have been replaced by a more linear and dispersed pattern along the roads. Conversely, the prioritisation of efficient resource extraction and the movement of goods has led to the prioritisation of land for industrial uses, logistics hubs and marine departments in close proximity to villages. This has resulted in a reduction in the availability of land for traditional fishing activities and village expansion. This is also true of Sejingkat and Muara Tebas.

In terms of the socio-spatial production of the village, this has had an impact on the livelihoods, social mobility and environmental impact of the villagers. While integration into the global value chain may have lifted them out of poverty, by shifting from traditional subsistence fishing to supplying large-scale markets or catering to tourism, it has resulted in a decline in traditional fishing practices and knowledge, which were more sustainable. While Bako and, to a large extent, Buntal have retained their cultural fishing practices, Muara Tebas and Sejingkat have seen a decline due to the monopoly of fishing vessels and the restrictions of waters. Furthermore, the increased shipping traffic on the Sarawak River has resulted in pollution and the degradation of the coastal ecosystems, which are vital for the fishing communities.

The significance of fishing villages as part of the broader urbanisation and operational landscape of cities in Borneo warrants further investigation. In conclusion, it can be argued that centralised sectoral planning in Kuching plays a significant role in shaping the morphology

and growth trajectory of surrounding fishing villages. Nevertheless, further research is required to analyse specific case studies and gain a deeper understanding of the diverse experiences of different fishing villages. In light of the above, it is imperative that alternative planning approaches are considered that prioritise community engagement, sustainable development and empower fishing villages to maintain their unique cultural heritage and traditional ways of life.

NOTES ON CONTRIBUTOR(S)

Azmah Arzmi is a lecturer at the Department of Architecture, Faculty of Built Environment at the University Malaysia Sarawak in Malaysia. After completing her architectural studies at the University of Kent, she has worked for architecture firms in Malaysia and Germany. She earned her double PhD in European Planning History from the Bauhaus-Universität Weimar in Germany and University of Pavol Jozef Šafárik in Slovakia, under the auspices of the Horizon 2020 urbanHIST European Joint Doctorate program. Her research interests include architectural history and comparative planning history. She is currently researching the impact of infrastructural networks on rural settlements in Sarawak.

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IMAGE SOURCES

Figure 1   Photo captured by author, January 2024

Figure 2   Land and Survey Department, Sarawak. Map adapted by Joshua Brandah, March 2024.

Figure 3   Land and Survey Department, Sarawak. Map adapted by Gabriel Nulie Lawrence, April 2024.

Figure 4   Land and Survey Department, Sarawak. Map adapted by Audrey Shalome Basen, April 2024.

Figure 5   Photo captured by author, January 2024.

Figure 6   Land and Survey Department, Sarawak. Map adapted by Maryann Maracius, April 2024.

Thinking Europe through the coasts and the differences of the four seas

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Abstract

Europe is a continent surrounded by water on three sides, with major seaports and metropolises along its coastlines. Each of these waters is different in terms of depth, water quality or role in global shipping, and their unique characteristics have influenced the planning of coastal and port city developments on their edges. Looking at Europe from the water allows us to study how people have adapted the spatial configuration of their port city territories to the characteristics of their neighbouring waters, and to identify similarities and differences in the development of port city territories on a single sea, across seas, rivers or river networks. We argue that such a historical perspective on planning offers decision-makers new insights into the complex territories at the water/land interface and the challenges for future planning in Europe and beyond. Mapping can help us overcome the limitations of historical boundaries and institutions that shape planning and act as a 'gap finder', identifying spatial, institutional or functional opportunities and challenges and where planning can be beneficial. In the context of Europe, we argue that the internal focus on nation states, national borders and European unification has distracted policy makers and stakeholders from a multi-scale and maritime perspective of the continent. Crossing borders, exploring territories from sea to land, highlights the unique role of seaports in shaping Europe, past, present and future. By exploring the conceptual and methodological underpinnings of the Port City Atlas, this presentation provides an insight into the role of mapping in planning history.

How to cite

Carola Hein, Yvonne van Mil
Thinking Europe through the coasts and the differences of the four seas

City and River
Transformation of Contemporary Riverscapes

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Abstract

The life of cities located near rivers has been linked to the river itself since time immemorial – it has served as a trade route, a source of food and water, and a defensive shield. The urban fabric of those cities has also been shaped under the influence of the nearby water body. Over time, this close symbiosis has weakened somewhat – the riverbanks of many cities have become occupied by industrial developments and powerful port infrastructures. The city seems to have turned away from the river, so today it is relevant for the two "neighbors" to rediscover each other. Nowadays, the waterfront is the new public space, and the river is one of the most important elements of the city, creating its unique identity. Examples of Western European cities clearly show that the banks of the rivers flowing through the cities can be their most attractive and lively place. There is a rather mixed pattern of activities along the river and on the riverbanks themselves, with several recreational functions dominating rather than one, etc. The authors of the presentation conducted a study in 2023. The object of the study was Kaunas – Lithuania's second largest city. The location of Kaunas is quite rare and unique – the city is located at the confluence of two rivers. These rivers have played a significant role in the life of the city for a long time, but over time that role has diminished. The analytical research seeks to rediscover the rivers: it aims to assess the natural and anthropogenic elements of the river valleys and their interrelationships, and to propose scenarios for the management of the riparian areas, considering the current socio-cultural context, the functions and the typology of the riverbanks.

Dalia Dijokiene, Inesa Alistratovaite-Kurtinaitiene
City and River

Governance Experiments in Urban Ecological Spaces

The Dynamics of Sustainability, Power, and Environmental Justice in Shenzhen's Urban Transformation

Dan Lin
Jinan University

Abstract

Against the backdrop of sustainable urbanism, urban ecological spaces present both opportunities and challenges for urban growth regimes. This paper explores how different patterns of power relations influence the governance and evolution of urban ecological spaces and their impacts on environmental justice in the context of sustainable urbanism. It adopts an integrated analytical framework that combines political economy analysis, experimental governance, social network analysis, social-ecological fit, and environmental justice, and uses three emblematic cases of urban ecological space governance in Shenzhen, China, as empirical evidence. The paper finds that different governance models and social network structures have significant effects on the evolution and environmental justice outcomes of urban ecological spaces, and that these effects are constrained and shaped by political-economic backgrounds and historical changes. The paper contributes to the literature by introducing the concept of social-ecological fit and the perspective of historical research, which address the previous neglect of the ecological science and temporal dimensions in urban political ecology, and provide a more comprehensive and nuanced understanding of the complexity and diversity of urban ecological space governance. The paper also has practical and policy implications for balancing sustainable development and environmental justice goals, promoting participation and collaboration among different social actors, and considering the long-term effects and historical legacies of urban ecological spaces.

The first book contract in Planning History

Chair: Ian Morley

Port Cities
and River Spaces in East Asia (2)

Chair: Cai Jiaxiu

Anthonie Rouwenhorst Mulder
Perspectives on Port City Planning in 19th Century Japan

Kazumasa Iwamoto
Kyoto Institute of Technology

Abstract

Anthonie Thomas Lubertus Rouwenhorst Mulder is a Dutch civil engineer involved in the design of port cities in 19th-century Japan. In 1879, as part of Japan's modernization efforts, Mulder was employed as a foreign expert under the Ministry of Home Affairs. Over his approximately eleven-year stay, Mulder contributed to the planning and design of various projects, including rivers, reclamation, and port cities. Notably, his designs for Moji and Misumi ports exemplify his work and the transplantation of European technology and ideas into Japanese port cities. This paper analysed multiple reports on Japan submitted by Mulder, aiming to clarify his perspective as an engineer. Given the absence of engineers in Japan who met European standards at the time, Mulder found it challenging to implement modern technologies such as concrete, leading him to predominantly utilize natural materials like fascines and stone. His designs not only focused on immediate engineering needs but also included comprehensive urban planning elements such as the expansion of port facilities, improvement of land transportation, and enlargement of residential areas through reclamation. These contributions highlight Mulder's role that extended beyond that of a civil engineer to that of an urban planner, significantly impacting the design of Japanese port cities.

INTRODUCTION

This paper focuses on Dutch civil engineers who, in the latter half of the 19th century, were the only foreign civil engineers employed by the Japanese government. Their technical and planning theories have been well-known for significantly contributing to the development of civil engineering in Japan[1]. This is particularly evident in the fields of river management and erosion control, where their approaches have received high acclaim. Moreover, several structures still in existence have been designated as Modern Civil Engineering Heritage by the Japan Society of Civil Engineers[2]. Additionally, in 2015, the Mikuni Port (currently Mikuni West Port), designed by Anthonie Thomas Lubertus Rouwenhorst Mulder,a Dutch civil engineer, focused on in this paper, was registered as part of the "Sites of Japan's Meiji Industrial Revolution: Iron and Steel, Shipbuilding and Coal Mining" on the World Heritage list, thereby receiving global recognition[3].

On the other hand, the technologies imported into Japan by Dutch civil engineers did not always receive positive evaluations. Historically, in "The History of Port Construction in Japan" [4] by Isamu Hiroi, the Nobiru Port construction project designed by Cornelis Johannes van Doorn, a Dutch civil engineer, is cited as an example where the selection of the site and the technologies employed were criticized. This previous study mentioned were based on analyses using historical documents and design drawings stored in Japan. In contrast, Kamibayashi discovered the personal letters by Johannis de Rijke's, a Dutch civil engineer, and other historical materials stored in the Netherlands and conducted translations and analyses of these documents[5]. As a result, he highlighted their technological expertise, particularly in river engineering techniques such as water control and fascine mattress construction, and the concept of mountain conservation. He reevaluated the impact of Rijke's design philosophy on Japan, contributing significant research findings. Kamibayashi's methodological approach provides substantial implications for this paper, indicating that discovering and analyzing documents left by Dutch civil engineers themselves can lead to a fundamentally different understanding of design philosophies and the history of technology transfer. In a time when there is a growing movement to preserve civil engineering structures designed by Dutch engineers as heritage, conducting analysis from an international perspective is a crucial research task in the field of urban planning history. In light of the foregoing, this paper attempts to explore the design philosophy of Dutch civil engineer using historical materials, including design drawings and reports by Mulder, which the author found in the Netherlands and Japan.

THE ROLE OF DUTCH CIVIL ENGINEERS AND THEIR HISTORICAL MATERIALS

DUTCH CIVIL ENGINEERS AND JAPANESE CIVIL ENGINEERING PROJECTS

Following the Industrial Revolution in the 18th century, ports played a crucial role as hubs of international economy and exchange[6]. Such technological innovations provided significant opportunities for engineers and planners. However, the construction of port cities necessi-

tated a thorough understanding of the natural terrain of the project sites, making it essential for elite planners with significant technical expertise to design the scale and function of port cities appropriately. Among these, Rotterdam in the Netherlands commenced its journey as a leading international port city with the implementation of the New Waterway project in 1872[7]. Civil engineers from Rijkswaterstaat, including Pieter Caland, made substantial contributions to this project[8]. To conduct a detailed analysis of the construction of port cities in the 19th century, focusing on civil engineers is a valuable research opportunity. It enables an international contextualization of how these engineers interacted with natural terrain and contributed to the dissemination of European knowledge through technological transfer.

During the Meiji Restoration, the newly established Japanese government, under the slogan of enriching the country and strengthening the military, employed ten Dutch civil engineers as foreign experts to modernize Japan, particularly in the field of civil engineering[9]. The Japanese government recognized the indispensable need for Western knowledge, thus prioritizing the establishment of infrastructure such as streets, railways, and ports in the Western style and hiring engineers who possessed this expertise[10]. Table 1[11] shows the positions held and the number of projects involved by Dutch civil engineers. As indicated, not all Dutch civil engineers arrived in Japan with the status of "engineer"; some, like stonemasons and bricklayers, came as "craftsmen"[12]. They played a crucial role in implementing the designs of the engineers by transferring Dutch techniques to Japanese technicians. Among them, George Arnold Escher, Rijke, and Mulder were involved in a relatively large number of projects, primarily concerning rivers and ports. A notable technique they brought was the fascine mattress method for river engineering, which was highly regarded even then[13] . Regarding port projects, the Nobiru Port construction designed by Doorn ended in failure, leading to criticisms that Dutch port engineering was not suited to Japanese natural conditions[14]. However, the Mikuni Port project saw multiple design modifications by Escher, De Rijke, and Kōi Furuichi, a Japanese engineer from the Ministry of Interior, to adapt to local conditions, ultimately referencing Rotterdam's dike design to successfully complete the project[15]. This case exemplifies a valuable instance of knowledge exchange between Dutch and Japanese engineers. Thus, not all port facilities designed by Dutch engineers resulted in failures. It has become evident that the method they introduced to Japan, which involves using fascine mattress for constructing foundations such as dikes, has taken root and become widely adopted in the country[16]. In light of the above, the focal point of this paper is the perspective of Dutch engineers on their active use of natural materials such as fascine mattress and stones in their designs. According to Kamibayashi, Dutch civil engineers were criticized by their British counterparts as provincials unaware of alternative technologies such as iron and concrete[17]. However, it has been pointed out in previous studies that they were capable of planning projects using iron materials, as evidenced in the port projects in Niigata, indicating their potential to employ modern technologies. The question then arises: why did they actively opt for natural materials. Exploring this perspective aims to examine the mindset of Dutch engineers as conveyors of European knowledge and builders of Japanese port cities, assessing their technical and philosophical approach to engineering.

THE HISTORICAL MATERIALS USED IN THIS PAPER

Regarding the previous studies and materials using Dutch historical material, the book "In Een Japanse Stroomversnelling"[18] deserves mention first. It compiles the achievements of Dutch civil engineers extensively, featuring numerous photographs and design drawings brought back by Dutch engineers and incorporates insights and materials provided by Japanese researchers. Furthermore, concerning Escher, his diary written during his stay in Japan has been translated and published as "Dutch Engineer Escher: Memoirs of Japan" which provides insights into Escher's thoughts and activities[19]. For De Rijke, there are notable studies that focus on analyzing his letters[20], as well as research that compiles his achievements in Japan using Dutch historical sources[21]. In the case of Mulder, whom this paper focuses on, Hoshino et al. have utilized some Dutch materials in their research detailing the planning and dock structures of the Misumi port construction[22]. In the materials published by the Ministry of Construction titled "A.T.L.R. Mulder's Reports and Related Documents" there are reports by Mulder written in Japanese[23]. However, the analysis of the content of these documents is scant.

In this paper, historical materials discovered in the Netherlands were primarily analyzed. These include three documents published in the "Tijdschrift van het Koninklijk Instituut van Ingenieurs" a technical journal issued by The Royal Netherlands Society of Engineers, and one document from "Tijdschrift voor geschiedenis, land-en volkenkunde" a journal focused on history and ethnology also published in the Netherlands (Table 2; hereafter, these documents are referred to as "the reports")[24].

Name	Duration of Stay	Rank (Upon Initial Arrival in Japan)	Port	River	Others	Total
Cornelis Johannes van Doorn	1872–1880	Chief Engineer	3	*3*	3	9
Isaac Anne Lindo	1872–1875	Second Class Engineer	1	3	1	5
George Arnold Escher	1873–1878	First Class Engineer	7	6	-	13
Johannis de Rijke	1873–1903	Fourth Class Engineer	9	11	1	21
Dick Arnst	1873–1880	Technician	2	2	-	3
Alphonse Th.J.H Thissen	1873–1877	Third Class Engineer	1	2	1	4
Johannes Nicolaas Westerwiel	1873–1878	Technician	1	2	-	3
Josinus Aderianus Kalis	1875–1877	Technician	-	1	-	1
Anthonie Th.L Rouwenhorst Mulder	1879–1890	First Class Engineer	9	7	4	20
Arie van Mastrigt	1879–1881	Technician	1	2	-	3
Total			34	39	10	83

Table 1.   The ranks of Dutch engineers and the number of projects they were involved in.

* When multiple people are involved in a single project, each person is counted separately, so some numbers may be duplicated.

MULDER'S CAREER AND REPORTS

Mulder's career is detailed in "A.T.L.R. Mulder's Reports and Related Documents" [25] which summarizes his life as follows. Mulder was born in 1848 in the city of Leiden, Netherlands, and in 1867, he enrolled at the Polytechnische School te Delft, the precursor to Delft University of Technology. After graduating in 1872, he joined the Rijkswaterstraat, the Dutch governmental agency responsible for public works and water management, and was assigned to Egypt. Six years later, in 1879, he came to Japan as a foreign government advisor, where he was involved in civil engineering projects until 1890 (Fig 1 and Tables 3[26]). Mulder engaged in the design and renovation of river and port projects, notably the Tone River[27] and Misumi Port[28], while also being entrusted with significant responsibilities by the government, such as investigating the failed construction project at Nobiru Port[29] and serving on the commission for the renovation proposal of Yokohama Port[30]. Additionally, he returned to the Netherlands for a brief period between 1886 and 1887, during which he contributed an article that was published in "De Ingenieur" a newspaper targeted at Dutch engineers. An excerpt from this article is presented below[31].

> *…In 1873, toen de eerste Hollandsche ingenieurs in Japan werden aangesteld, bestond er geen technisch personeel (ten minste niet bij de afdeeling Waterstaat), in staat om eene behoorlijke terrein-opname te doen, of om eene eenigszins vertrouwbare waterpassing te verrichten. Daarom moesten die werkzaamheden in den beginne door de ingenieurs zei ven worden gedaan, en eerst langzamerhand kwam daarin verbetering, toen eenige ambtenaren, als leerlingen aan die ingenieurs toegevoegd, zich met ijver op dit vak toelegden.… […When the first Dutch engineers (Doorn and Lindo) arrived in Japan in 1873, there were hardly any local experts skilled in the waterstreet division (water management). As a result, implementing projects at the time of their arrival posed a considerable challenge. However, by the time subsequent Dutch engineers (such as Escher and De Rijke) arrived, these conditions had somewhat improved.…]*

Published Journal	Title (Year of Publication)	Brief summary of the content
Tijdschrift van het Koninklijk Instituut van Ingenieurs [Journal of the Royal Institute of Engineers]	HET NEDERLANDSCHE HANDELS-ETAB-LISSEMENT TE PORT-SAID (1877) [The Netherlands Trading Establishment at Port Said]	Description and opinions related to the construction and port projects engaged in at Port Said, Egypt.
Tijdschrift van het Koninklijk Instituut van Ingenieurs [Journal of the Royal Institute of Engineers]	KORTE MEDEDEELINGEN OVER JAPAN EN MEER BEPAALD OVER DE VOOR-NAAMSTE HAVENS (1888) [Short Communications about Japan and Specifically about the Main Ports]	This report predominantly discusses projects involving Dutch civil engineers, especially focusing on port projects. It allocates significant space to the design of Tokyo Port and the survey of Noshiro Port.
Tijdschrift van het Koninklijk Instituut van Ingenieurs [Journal of the Royal Institute of Engineers]	EEN DRIETAL ZEESTRATEN VAN DEN JAPANSCHEN ARCHIPEL 1893 [Three Sea Straits of the Japanese Archipelago]	Details the specific design and survey works of Shimonoseki, Misumi, and Okayama,
Tijdschrift voor geschiedenis, land-en volkenkunde [Journal for History, Geography, and Ethnology]	EEN EN ANDER OVER HET JAPANSCHE RIJK 1895 [Some Information about the Japanese Empire]	Along with basic information about Japan's climatic conditions and population, the paper introduces the port and river projects in which Mulder was involved.

Table 2. The reports by Mulder

Year	Events
1848	Born in Leiden
1867	Enrolled at the Polytechnic School of Delft.
1872	Graduated from the Polytechnic School of Delft.
1873	Joined "Rijkswaterstaat" (a government agency responsible for public works and water management).Transferred to Egypt (until 1876).
1879	Came to Japan as a foreign government advisor.
1886	Temporarily returned to his home country (until 1887).
1890	Returned to the Netherlands.
1901	Passed away in Wageningen.

Fig. 1.   A. T. L. R. Mulder

Table 3.   Brief biography of Mulder

Mulder reported that upon the arrival of the initial Dutch civil engineers, including Doorn, Japan lacked engineers who met the technical standards required by the Dutch, making it difficult to implement projects. He also reported that the situation gradually improved as engineers like Doorn and Lindo taught their techniques to Japanese counterparts. The limited number of projects associated with Doorn, as compared to engineers like Escher, De Rijke, and Mulder, suggests that Doorn may have focused on education to improve the initial conditions, as indicated by article. Furthermore, the second phase of Dutch civil engineers who came to Japan included two craftsmen, who presumably taught local Japanese craftsmen appropriate techniques.

Before organizing the content of the reports by Mulder, it is important to first establish the chronological context of the four reports by Mulder analyzed in this paper. The 1877 report "Het Nederlandsche Handels-establissement te Port-said" [32] was written after Mulder's return to the Netherlands from Egypt, before his arrival in Japan. The next report, "Korte Mededelingen over Japan en meer bepaald over de voornaamste havens" [33] published in 1888, was compiled during his temporary return to the Netherlands in 1886-1887. The 1893 report "Een drietal zeestraten van den Japanschen archipel" [34] was written after Mulder had completed his service as a foreign government advisor in Japan and had returned to the Netherlands. Finally, the report "Een en ander over het Japansche rijk" [35] published in a specialized journal of history and ethnology in 1895, was released five years after his return to the Netherlands.

MULDER'S EXPERIENCE AND PERSPECTIVES AS SEEN IN HIS REPORTS

EXPERIENCE IN EGYPT

The report titled "Het Nederlandsche Handels-establissement te Port-said" (Table 2) which details experiences prior to his arrival in Japan, describes Mulder's work assignments in Egypt from 1873 to 1876. This report primarily focuses on his work related to the design of break-

waters and the construction of buildings situated along the waterfront. The report contains descriptions of Mulder's experiences and thoughts as follows: In August 1873, Mulder was commissioned as the designer and overseer of construction for facilities at Port Said, including residences, warehouses, and piers. In February 1874, Mulder's plans were approved, and construction commenced in June of the same year. Related constructions were completed by September 1876, as documented in the report where Mulder described the progress of his projects. The report also detailed the materials used, the functionality of the spaces, and the sources of imported materials, suggesting that Mulder possessed significant knowledge in the field of architecture (Fig2).

Mulder reported that the quality of bricks and lime produced in Egypt was extremely poor, and due to the inability to mine high-quality stone materials locally, high transportation costs were necessary. As alternatives, such as importing bricks from France, costly measures had to be taken to complete projects. Moreover, while modern technologies like concrete and mortar were used in design, the project workforce predominantly consisted of Western staff, including Dutch, Italian, Greek, and French individuals, with Egyptians primarily engaged in simple labor tasks such as carrying materials. Thus, even before his arrival in Japan, Mulder had already accumulated experience in addressing considerations necessary for realizing construction projects abroad, such as the cost of transporting construction materials and the feasibility of projects based on the availability of expert staff.

FIRST REPORT PUBLISHED AFTER ARRIVING IN JAPAN

Mulder first published his views on Japan in the report "Korte Mededelingen over Japan en meer bepaald over de voornaamste havens" (Table 2) written during his temporary return to the Netherlands. This report included an introduction on the post-Meiji Restoration trend of Japan seeking modernization through the hiring of foreign experts. It also described information about Japan's ports and geography, noting that the natural terrain significantly limits the number of ports where ships can safely anchor throughout the year, and that only a few ports are officially open for trade with foreign countries. Furthermore, Mulder provided detailed descriptions of specific port cities in Japan, highlighting their urban characteristics and natural geography. Within this context, he documented comprehensive information about port projects in Yokohama, Tokyo, Osaka, and Nobiru, including the roles that Dutch civil engineers played in their surveying and design processes. As a specific example, Mulder provided a detailed report of his perspectives on the Tokyo port construction plan. While documentation on the design aspects of the Meiji-era Tokyo port construction[36] and the discussions held by the Tokyo City District Revision Committee[37] has already been disclosed, this report includes breakwater drawings not attached to the aforementioned documents, accompanied by explanations of the plan (Fig3). From the drawings, it is evident that natural materials such as stone and fascine mattress were primarily used in the design of the embankments. Although Mulder's Tokyo port construction did not ultimately materialize, the inclusion of detailed designs and drawings indicates that he had advanced the project to a detailed planning stage.
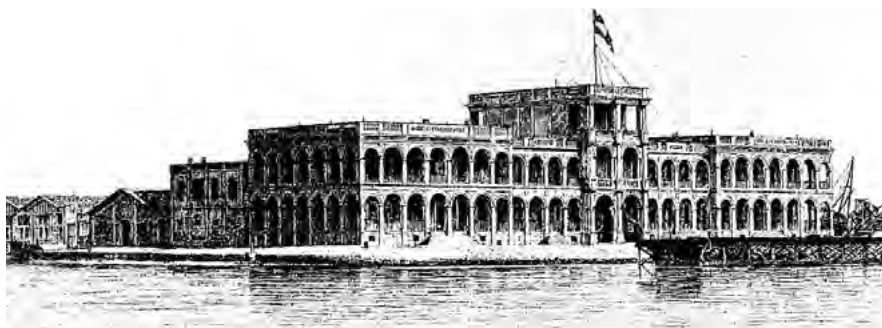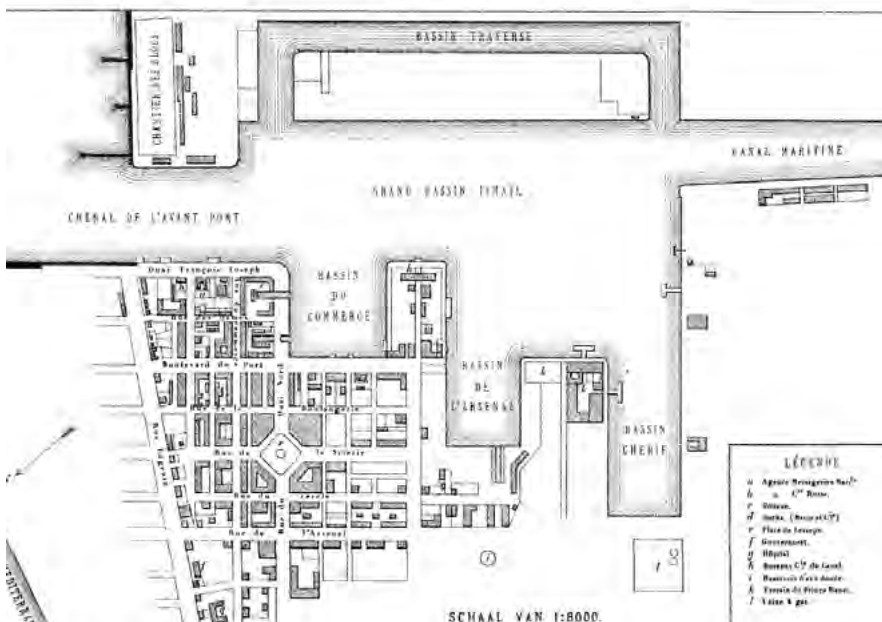
Fig. 2. The exterior of architecture and facility layout of the buildings Mulder was involved in in Egypt

FIRST REPORT PUBLISHED AFTER RETURNING TO THE NETHERLANDS

After returning to the Netherlands in 1890, Mulder published "Een Drietal Zeestraten van den Japanschen" (Table 2) in a journal. This report detailed the surveys, designs, and diagrams related to three projects he was involved in: the Shimonoseki Strait, the Misumi Port construction, and the Kojima Bay. Among the port cities mentioned in this report, there are two instances where the designs created by Mulder were realized: Moji Port in the Shimonoseki Strait and Misumi Port. Mulder provided detailed accounts of the design processes for these two locations, which will be discussed in subsequent chapters of this paper. Additionally, this paper will explore the perspectives Mulder held as an engineer designing port cities, based on his detailed reporting on these two cases.
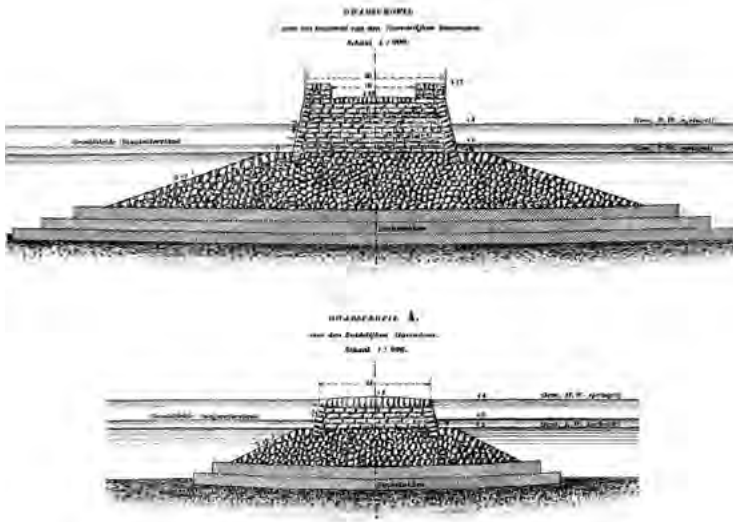
Fig. 3.   The breakwater designed by Mulder for the construction of Tokyo Port

SECOND REPORT PUBLISHED AFTER RETURNING TO THE NETHERLANDS

In 1895, five years after his return to the Netherlands, Mulder's report "Een En Ander Over Het Japansche Rijk" (Table 2) was published. Unlike the previous three reports issued by The Royal Netherlands Society of Engineers, this report appeared in a specialized journal focusing on history and ethnology. In the introduction of this report, Mulder mentioned that he was commissioned to write it with the objective of introducing Japan's geography, aquatic environments, ports, and the projects involving Dutch civil engineers. As stated in the introduction, Mulder first explained various aspects of Japan, including its geography, ocean currents, climate, types of trees, and natural disasters. Subsequently, Mulder introduced river and port projects involving Dutch civil engineers and discussed their roles. He elaborated on the position of Dutch engineers, particularly noting instances where they were tasked with river improvement and simultaneously undertook mountain conservation projects as a countermeasure. Mulder highlighted that these engineers were often constrained by limited funding and were committed to delivering high-quality results at a low cost. Among the projects he was involved in, there were instances where objections were raised due to cost considerations, and he expressed frustration over the lack of funding for projects in Japan.

Additionally, in this report, Mulder discussed the Yokohama Port renovation plan, on which he also served as a committee member. Specifically, he critiqued the proposal by Palmer, a British engineer, who had suggested using concrete for the breakwater, judging it to be too heavy and thus hazardous. Furthermore, he noted that the quality of concrete in Japan was still insufficient and inappropriate for such applications. Regarding the Yokohama Port, Mulder, as a committee member, had submitted an opinion to the government stating that Palmer's construction approach was, overall, not feasible within the budget constraints[38].

Contents	Description
Wharf	Regarding the strait connecting to Misumi Port, particularly near the northern entrance, it is planned to construct a wharf.
	The quay walls of the wharf will be constructed without using mortar, instead employing natural stone, and the seaward side will be covered with crushed stone.
	The natural stone intended for use at the wharf is anticipated to be granite, which can be abundantly sourced from near the project site, thus allowing construction to be economical due to low transportation costs.
	The seabed at the construction site of the wharf is covered with hard rock. While there are some clayey areas, these are relatively compacted, reducing the likelihood of significant subsidence after the wharf's construction.
	At several wharf walls, stone stairs will be installed down to the height of low tide, enabling small barges to dock easily. Floating piers made of wood will be constructed at the quay walls for mooring ships.
Floating Pier	Floating piers made of wood will be constructed at the quay walls for mooring ships.
	Due to significant tidal variations at the project site, the floating piers are designed with adjustable ranges to facilitate loading and unloading operations regardless of the tide level.
	To prevent corrosion, parts of the mooring facilities and the undersides of the floating piers that are frequently in contact with seawater will be covered with copper.
	In anticipation of future needs for greater area, additional floating piers can be constructed adjacent to the existing ones. Connectors and fixtures will be pre- installed on the floating piers to facilitate their expansion by linking them together.
Waterway	Drainage channels are designed to encompass the new urban areas on the landward side, ensuring effective connection with existing streams and the bay.
	Drainage channels will also be installed to efficiently channel rainwater from the nearby hills.
	In Japan, there exists a cultural practice of utilizing human excreta as compost; therefore, sewage systems will not be established. Land for the new urban area will be secured by cutting and filling the hills around the floating pirers.
Urban Area	Land for the new urban area will be secured by cutting and filling the hills around the floating pirers.
	In the future, should there be a need to expand the urban area, it will be possible to extend the quay walls as indicated by the dotted lines on the map.
	It will also be possible to construct piers in the future at Iwaya Bay, located across from Misumi Port.
Land Transportation	In addition to improving the road connecting Kumamoto, Uto, and Matsubashi to Yashiro, a road will be constructed from Mismi Port along the coast to Uto Village on the Uto Peninsula. These roads will be 36 km from Misumi Port to Kumamoto and 46 km from Misumi Port to Yashiro, and they will be constructed with sufficient width to accommodate potential future railway developments.
	A railway connecting Kumamoto and Misumi Port will be constructed.
Others	For the existing Hyakkan Port, deepening the river channel and adding multiple waterways will alter the shape of the river mouth, facilitating mooring for boats and barges. This plan can be implemented at a relatively low cost.
	A new waterway of approximately 8.5 km will be established to connect Matsubashi and Kawajiri.

Table 4. Mulder's Perspectives on Misumi Port and Associated Projects

PORT CITY DESIGN BY MULDER

MISUMI PORT CONSTRUCTION PROJECT

This chapter introduces two examples of Japanese port cities that were designed and realized by Mulder. The discussion focuses on clarifying his design perspective through the processes that led to these designs. The first port city design project that Mulder undertook in Japan was for Misumi Port, located in the Kyushu region. His design proposal for Misumi Port was entirely original and differed from the initial project he was asked to work on. The background leading to Mulder's involvement in constructing the port at Misumi is documented in his report[39] and can be organized as follows.

Fig. 4.   Design drawings for the Misumi Port construction project by Mulder

Mulder was tasked with evaluating the feasibility of constructing a modern port near a small harbor town called Hyakkan, approximately 4 kilometers from Kumamoto City, the capital of Kumamoto Prefecture. The condition set for this project was to determine whether it was technically possible to construct the port with a total project budget of $400,000. In response, Mulder surveyed the tidal levels and seabed geology adjacent to Hyakkan. His findings indicated that constructing two breakwaters, each extending at least 6,500 meters, was necessary. However, due to the soft nature of the seabed, the project would require substantial expenditures for subsidence mitigation, making it highly challenging. Consequently, he concluded that construction within the $400,000 budget was impossible. Therefore, even though it meant moving away from Kumamoto City, Mulder decided to search for another location where the port could be built within the budget.

Following Mulder's investigations, which considered factors such as water depth, tidal variations, and ground conditions, Misumi was determined to be a suitable site for port construction. However, Mulder recognized the challenge posed by Mikuni's location, 35 kilometers away from Kumamoto City. Consequently, he proposed a comprehensive project that included road improvements and railway construction. The specific details of Mulder's proposals for the con-

struction of Mikuni Port and the port city are outlined in Table 4[40] and Fig4. From these documents, it is evident that he made a comprehensive proposal covering land development and the construction of floating piers, addressing both port functionality and urban development.

As for the characteristics of Mulder's port city designs, a key feature was his consideration of using modern techniques such as mortar, though he ultimately favored the use of more traditional materials like stone. Mulder provided the following reasons for this choice:

Contents	Description
Land Reclamation	Land is to be reclaimed along the contours of 10ft (approximately 3m) and 15ft (approximately 4.5m) depth lines, ensuring that the existing tidal currents are not altered.
	Excavation of the neighboring clay-rich hills will be conducted for the purpose of land reclamation.
Ship Basin	A ship basin for small steam vessels and mooring will be constructed.
	The location of the ship basin is planned near the proposed Moji Station, currently an inlet, which allows for cost reduction in the construction process.
	The dimensions of the ship basin will be approximately 900 feet (about 274.3 meters) in length and 600 feet (about 182.9 meters) in width, designed to maintain a depth of 6 feet (about 1.8 meters) below the lowest tidal level.
	The entrance of the ship basin will be approximately 180 feet (about 54.9 meters) wide.
	Along the sides of the ship basin, it is possible to construct warehouses and lay railway tracks that directly connect to the Kokura area.
Water Depth	To stabilize the regularity of depth contours in the bay, dredging will be conducted at six locations indicated by dashed lines.
Canal	A canal, designed to connect with the planned ship basin and cross Moji Village to flow into the northeastern part of the bay, is being planned. This canal will be accessible from various parts of the village.
	Along the canal to the pier, it will be possible to construct warehouses to store goods transported by moored vessels.
Quay Walls	The quay walls will be constructed using dry stone stacking, and the stone materials can be sourced from the vicinity of Moji Village.
	The foundation stones for the quay walls will be placed by divers, and as most of the seabed consists of sand, gravel, and hard clay layers, the risk of subsidence of the quay walls is minimal.
	The ship basin and canal are designed similarly to the quay walls, including a gradient that facilitates mooring, and some areas are equipped with stairs.
Coal Storage Facilities	A permanent coal storage facility for the Japanese Navy is planned, with provisions to supply coal to ships via mooring in the future. A small ship basin is also planned to serve as a loading and unloading site for moored vessels and as a refuge during bad weather.
Pier	Should the size of vessels increase in the future, the current design may prove insufficient for trade functions. In such a case, it would be possible to accommodate by constructing a pier perpendicular to the existing facilities near Moji Station.
	The pier would enable the mooring of larger ships, and dredging would stabilize the tidal currents in the bay, minimizing their impact.

Table 5.   Mulder's Perspectives on Moji Port and Associated Projects

> …*Daar graniet van uitstekende kwaliteit, in onbeperkte hoeveelheid en in de onmiddellijke nabijheid van het werk (van een van de rotsen nabij den zuidelijken ingang der straat) verkrijgbaar was, en daar verder de arbeidsloonen in die streken) verbazend laag waren, zoo bleek de bovengenoemde constructie van den kaaimuur de meest economische, die kon worden toegepast. …* […*Because granite of excellent quality was available in unlimited quantities and in close proximity to the site (from one of the rocks near the southern entrance of the strait), and since the labor costs in that region were astonishingly low, the aforementioned construction of the quay wall proved to be the most economical option that could be implemented.*…]

In contrast to the situation in Egypt previously mentioned, the Misumi project was able to utilize high-quality natural stone abundantly available near the site, allowing for designs that did not require importing materials from Europe. Furthermore, in the Misumi project, Mulder planned a comprehensive urban design that included the construction of a new district through water channels that would later be recognized as a World Heritage site, and though it was not realized, he also planned railway construction. Notably, Mulder, considering it impossible to implement a comprehensive plan including the port construction all at once, executed the minimum necessary projects (including road construction) to enable the port's functionality. He devised a phased plan to complete the remaining projects as trade and traffic volumes increased.

MOJI PORT CONSTRUCTION PROJECT

As port cities designed by Mulder, this paper will include not only Misumi Port, as previously mentioned, but also Moji Port. A common feature of both ports is that prior to the modern era, these locations lacked trading functions, with port city constructions only taking place in the modern period. The design plans for these ports were crafted by Mulder, making them exemplary cases for examining his perspective on port city construction. Under the above perspective, the content of Mulder's reports[41] will be used as a basis to organize the design details of Moji Port as follows.

In 1887, the Minister of the Interior requested Mulder to verify the design proposal for Moji Port. Subsequently, Mulder, along with Kōi Furuichi, an engineer from the Ministry of the Interior, and other Japanese colleagues, undertook surveys of the local tidal conditions. Based on the survey results, significant technical revisions were made to the preliminary plan proposed by the Moji Port Corporation, the regional development company. The details of Mulder's proposed modifications are presented in Table 5[42] and Fig5. A notable feature of his proposal was land reclamation. Considering the impact on tidal flows, Mulder preferred not to significantly alter the shape of the bay. His design revisions were based on the survey results, limiting the reclamation to areas that would not adversely affect the currents. Additionally, he proposed the inclusion of a ship basin, an essential feature for a modern port, and a canal connecting the port to the urban area to enhance the efficiency of land and maritime transport, thereby improving the convenience for trade purposes.
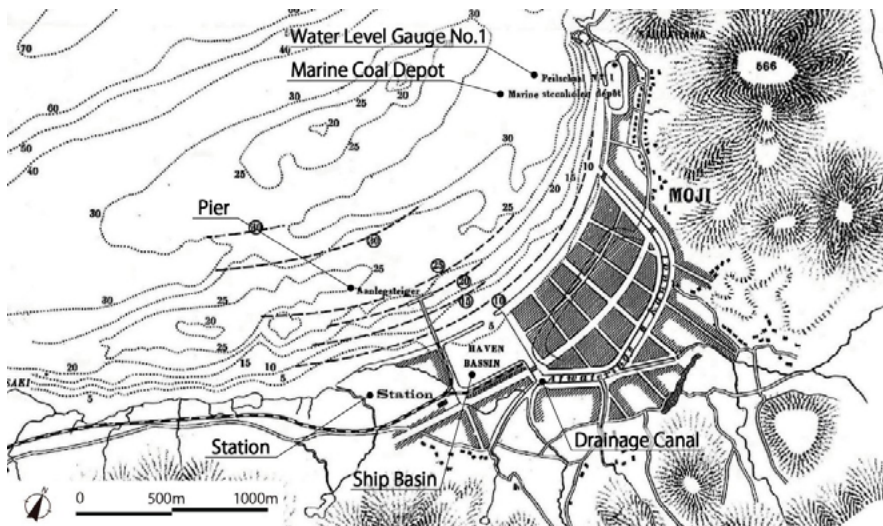
Fig. 5.   Design drawings for the Misumi Port construction project by Mulder

Furthermore, it is notable that Mulder proposed the construction of additional piers. He believed that, should the trade volume at Moji Port increase in the future, the existing ship basin might become inadequate in terms of draft depth. In such cases, constructing additional piers would make it possible to accommodate larger vessels. Moreover, the rock walls at Moji Port were designed using stonework, with materials that could be sourced from the surrounding area of the port. Thus, Mulder was designing new modern port cities considering the use of locally suitable materials while also taking into account the potential for future development.

CONCLUSION

This paper has explored Mulder's perspective on exporting European knowledge to Japanese port cities, assessing his technical and philosophical approach to engineering. It has been determined that Mulder faced three main constraints when designing port cities in Japan. Firstly, there was a shortage of engineers. When the initial Dutch civil engineers such as Doorn arrived in Japan, there were virtually no personnel who could be called engineers by their standards. Consequently, while providing on-site training to Japanese workers, proposing designs that assumed established modern technologies like concrete manufacturing was considered risky due to these educational gaps. Secondly, there was a lack of financial resources. As Mulder himself reported, projects in Japan were conducted under limited budgets. This was closely linked to the shortage of engineers and the low level of technological capability, where attempting to introduce new technologies experimentally could lead to extended construction periods and increased material costs. Thirdly, the terrain posed challenges. Unlike the Netherlands, which has many reclaimed flatlands, Japan has many

mountains and hilly areas. Moreover, the conditions of the straits resulting from these terrain differences required accurate identification of suitable locations for constructing port cities.

As described in this paper, Mulder successfully designed two port cities under the constraints of three specific conditions. In this process, it is evident that he utilized the knowledge of water control likely acquired at Delft University of Technology, as well as insights from projects he had previously undertaken in Egypt. Particularly from his experiences in Egypt, Mulder understood the substantial costs involved in adopting European materials and technologies in foreign settings. He managed to realize the construction of port cities in Misumi port and Moji port within the budget constraints set by the Japanese government. In fact, it can be inferred that Mulder was seeking feasible plans under constrained conditions, as evidenced by his opposition to British engineer Plamer's proposal to use concrete in the Yokohama port project due to budget and quality (technology) concerns. The perspective of European engineers, who engaged in the construction of port cities under such constraints, should be academically recognized as a significant achievement.

As an engineer, Mulder was capable of employing modern technologies such as mortar and iron in his designs. However, Japan was abundant in high-quality natural materials like fascine and stone, which he frequently utilized in his designs. This approach can be seen as a successful maneuver under the three constraints previously discussed. Additionally, a review of port construction projects in the Rotterdam, the Netherlands, at the time reveals that designs using natural materials were not considered outdated[43]. As demonstrated in the plans for Misumi Port and Moji Port that Mulder handled, he was not only capable of designing the functionality of the ports but also planning comprehensive schemes including new urban districts and railway layout. Moreover, his designs were not implemented all at once but proposed as phased developments, taking into consideration future growth, which is a point of particular note. Overall, Mulder should be recognized not merely as a civil engineer but as a urban planner with a broad knowledge encompassing urban design. The insights gained by Japanese engineers through his practices in Japan should be deemed a valuable contribution to the modernization of Japanese port cities.

DISCLOSURE STATEMENT
No potential conflict of interest was reported by the author.

NOTES ON CONTRIBUTOR(S)
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IMAGE SOURCES

Figure 1   Kensetsusho Okayama Kasen Koji Jimusho: A.T.L.R. Mulder no Houkoku-sho Oyobi Kankei Bunsho(Reports and Related Documents of A.T.L.R. Mulder), *Ministry of Construction, River Works Office,* 1998

Figure 2   Tijdschrift van het Koninklijk Instituut van Ingenieurs HET NEDERLANDSCHE HANDELS- ETABLISSEMENT TE PORT-SAID, 1877

Figure 3   Tijdschrift van het Koninklijk Instituut van Ingenieurs KORTE MEDEDEELINGEN OVER JAPAN EN MEER BEPAALD OVER DE VOORNAAMSTE HAVENS, 1888

Figure 4   Tijdschrift van het Koninklijk Instituut van Ingenieurs EEN DRIETAL ZEESTRATEN VAN DEN JAPANSCHEN, 1893

Figure 5   Tijdschrift van het Koninklijk Instituut van Ingenieurs EEN DRIETAL ZEESTRATEN VAN DEN JAPANSCHEN, 1893

From Warehouses to High Density Streets Study on the Evolution of Canton's Port Area along the Pearl River

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Abstract

In the late 19th century, a large number of density streets emerged on the riverside of Canton city, and some of them still remained as the urban spatial heritage today. This article is going to answer how this special urban fabric shaped in history. In the Canton System, Canton undertook the role of the only port city that open to the West between 1757-1842, and made a series of foreign trade controls. The western vessels should anchor at the Whampoa harbor that located 12 kilometers east to the city of Canton, then unloaded the cargos to sampans that paddled to the urban area. The imported cargos were stored in urban area of Canton, thus making the riverside of Peral River in the city developed to be the urban storage area. Numerous warehouses were erected along the river, with about 20 to 40 feet broad facing to the river and maximum 1200 feet long extending into the land, leading to the dense and elongated urban fabric along the Pearl River. The warehouses were built with bricks, covered by tiles, divided by several courts, and with wharfs stretched to the river in front of the doors. The exported cargos such as silk, tea and porcelains were also stored and packed in these warehouses, making the areas along the Pearl River marked with Store Houses or Pack Houses on the maps. Most of the warehouses were owned by the powerful merchants, especially the merchants of Thirteen Factories. Because of the increasingly prosperous market on the riverside, when a warehouse destroyed by fire, the owner began to build a long street extended to the river instead of the previous warehouse, and built shops on both sides of the street. After the Opium Wars in the mid-19th century, the Canton System with the rules of ship anchor, cargo transportation and storage came to the end. When the merchants planned to rebuild houses ruined in the wars, many of them preferred to rebuild a street with shops than the previous warehouse. With more and more warehouses to be replaced by streets along the Pearl River, the urban morphology on the riverside changed from dense houses to dense streets. Some of these dense streets are remained in the Canton old city today, to be the spatial heritage left by the great Canton System era. This article focuses on the urban district of Canton along the Pearl River, to reveal that the dense streets on the riverside was result from the port activities of Canton in the Qing Dynasty.

Keywords

How to cite

Stakeholders' Expectations in Port Regeneration Planning in China
A Systematic Review and Comparative Study

Yu Li
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Abstract

Stakeholder participation is crucial for the success and long-term viability of port regeneration. It facilitates a collaborative planning that incorporates a wide range of values, expectations, and concerns to achieve consensus. However, the inherent division of labor and diverse experiences among stakeholders often result in differing and sometimes conflicting expectations, which can lead to conflicts. If these conflicts are not appropriately identified and managed, they can undermine the projects' positive intentions and exacerbate social issues. In the realm of port planning, prior research on stakeholder expectations has been scattered and mainly reflects academic and governmental perspectives, paying insufficient attention to the views of social entities. In response to these challenges, this study employs a systematic review to comprehensively examine stakeholders' expectations in port planning. Taking Wuhan, a representative port city in China, as a case study, this research compares the expectations of six main stakeholder groups in port regeneration: the government, planners, developers, citizens, academics, and environmental organizations. Suggestions are tailored to each group, aiming to align their expectations with the sustainable planning and renewal strategy for port regeneration.

How to cite

"Seascape" through Urbanisation
A Case Study of the Floating Community in Causeway Bay

Miriam Lee
The Chinese University of Hong Kong

Abstract

Hong Kong as a colonial port city is situated in the maritime trade network of the British Empire between India and China. Hongkongers are familiar with the cliches of "the wide and deep Victoria Harbour" and the city's rise "from a fishing village to international economic centre" on the Far East trade route and global financial hub. For centuries there had been dozens of floating settlements along the coastline of Hong Kong. These inhabitants were mostly Tanka people who dwelled on boats and amphibious structures in the tidal zone. These communities were on the frontline of Hong Kong's maritime history and transformation of coastal land use. Yet very few research has been conducted to examine the use of space on water by these communities, and the changes in the spatial arrangements of these floating dwellings analogous to urbanisation and modernisation of the city happening on land. This paper discusses the transformation of the floating community in Causeway Bay in parallel to urbanisation on land from late 19th century to 1970s. It reviews the changes in coastal land use and hence the geographical coastline from the sprawling of Victoria City, industrialisation and commercialisation of the district, and drastic metamorphosis of the bay into the fulcrum of major cross-harbour transportation infrastructures. It explores how the sea settlers here interacted with different players through the urbanisation process of the southern coast of Victoria Harbour, and their adaptations in the use of space on water against the geographical, architecture and economic developments on land. The paper aspires to provide an alternative perspective in examining the "seascape" of coastal communities in the framework of spatial planning and evaluating the cultural values of spatial arrangements on the sea.

Miriam Lee
"Seascape" through Urbanisation

Urban Reconstruction and Response to Disasters in Japan

Chair: Toshio Taguchi

The port city of Yokohama

Its history of requisition by foreign occupation forces and redevelopment in the aftermath due to citizen–local government collaboration

Toshio Taguchi

kira Tamura Memorial – A Town Planning Research Initiative NP

Abstract

Yokohama was not a colonial port city, but foreign forces seized the city for decades after the Japan's defeat in the war. The author clarifies the historical background of the process of derequisition and its redevelopment. Since opening its port in 1859, Yokohama has developed as an international trading city. The city was destroyed by a major earthquake in 1923. Although it recovered as a modern city in the 1930s, it was again devastated in air raids during the war. After the US military seized the city in 1945, the state government had to lease land from landowners and provide it to the US, which continued to be stationed in Japan under the US–Japan Security Treaty. The city government continued to request the land's release to the original owners. The Honmoku District was seized as a residential area for US families. Due to the prolonged requisition, landowners sold their land to the state to pay taxes, and half of the district became state property. The city planned to use the state property for civic purposes. Intense negotiations between the state and the city dragged on for a long time, finally concluding in 1982.

Fig. 1.   Location of the Tokyo Metro-
politan Region in Japan.

Fig. 2.   Location of Yokohama City in the Region

INTRODUCTION RESEARCH OBJECTIVES AND PREVIOUS STUDIES

This study focuses on the acts of requisition carried out by foreign forces (the US military as an occupation force) after the Pacific War (1941–1945) in the port city of Yokohama. It examines how citizens and the local government effectively collaborated in its derequisition and subsequent redevelopment processes.

The Port of Yokohama in the south of Tokyo (Fig.1, 2) was built artificially to open the country to Western powers in 1859 by the Tokugawa Shogunate regime (Fig.3). Thereafter, it developed steadily until the Great Kanto Earthquake (1923), which destroyed the entire city in an instant[1]. Nevertheless, it was rebuilt in a relatively short period of time and returned to engaging in world trade as a modernized port city. However, during the Pacific War, the city was burnt to the ground due to US aerial bombings. The central business and harbour districts were seized by the occupation forces. Adjacent to the central business district, the Honmoku District, the subject of this study, was requisitioned as a residential area for US military families (Fig.4).

The surrendering state government (national government) had to accept all the occupation forces' demands that insisted on their foreign force's right (Fig.5) to expropriate privately-owned land for the construction of military facilities wherever they needed. Thus, the state was forced to select suitable sites to requisition from possible candidate districts. On the other side, landowners kept demanding their land be returned under their district right. In between was the local government, which defended the district right and demanded restitution from the state. Afterwards, the occupation forces became 'stationed forces' requested by the host-nation, meaning that Japan paid most of expenses under the Japan–US Security Treaty. However, the US military did not reduce their presence in Japan.

Old drawing of Yokohama Port during the Tokugawa Shogunate regime

Moreover, there was the city right regarding to where the US military facility was to be relocated. All local governments, including Yokohama City, maintained the position that they would not recognise requisition within their municipal boundaries. Although they kept demanding the return of the land, this was contradicted by the fact that if alternative facilities were to be provided outside their cities, new requisitions would be required. The state was also required to develop land and buildings at alternative facilities, which would incur huge costs. Besides these rights, there was the civic right of the local municipality in question to utilize part of the returned state-owned land for all citizens.

As explained above, the problems the landowners of the requisitioned land faced were complex, involving a wide range of administrative institutions and citizens of other local governments. Therefore, we expect it is possible to derive clues from the case of Honmoku as to how all the institutions and citizens concerned collaborated to settle requisition and redevelop their returned land with respect to their various rights. Among the various collaborations was the coordinative and crucial role of Yokohama, which this study seeks to clarify. The 1960s in Japan gave rise to the 'innovative local governments movement', which emphasized collaboration with citizens. Yokohama's Ichio Asukata (mayoral term 1963–1978) was a central figure who strongly advocated this movement.

Research papers on requisition by foreign forces are limited in Japan's academic community. Regarding the legal structural aspect, the actions of the occupation forces can be classified into requisition, (forcible exploitation of property owners) and procurement (contracts with property owners). From the overall aspects, it could be termed as requisition even after the peace treaty 1952 (Kozeki 1974)[2]. There are some papers about requisitioned villages in Okinawa highlighting its changes in folklore aspects. From the town planning viewpoint, historical analyses of city structural change caused by requisition by the occupation forces were conducted in a series of papers (Murakami 2021)[3]. As for the collaborative relationship between citizens and administrations concerned with requisition, historical analyses of the derequisition and redevelopment processes could not be found. Therefore, this study attempts to provide some insights on these issues.

Fig. 4. Districts requisitioned by the US forces after the Pacific War depicted on the old map of 1935.

REQUISITION BY OCCUPATION FORCES

The occupation forces, mainly US troops, arrived immediately after the announcement of Japan's surrender in August 1945. They started to use the port area as a logistical base for transporting supplies to the entire occupation forces, and the central business and commercial area served as the US military headquarters and barracks. The surrounding upmarket residential areas, where houses remained, were used as high-grade officers' quarters. Following this, the residents in the Honmoku District adjacent to the centre were forcibly evicted on short notice from the End-of-war Liaison Office (1945), a newly set-up state agency tasked with supporting the occupation forces, in September 1945[4]. The US military then requisitioned Honmoku District to build housing precincts for junior officer class families. Honmoku used to be an upmarket residential district from which wealthy merchants commuted to the city centre by limousine before the War. It also had a fishing village and entertainment clubs for international sailors.
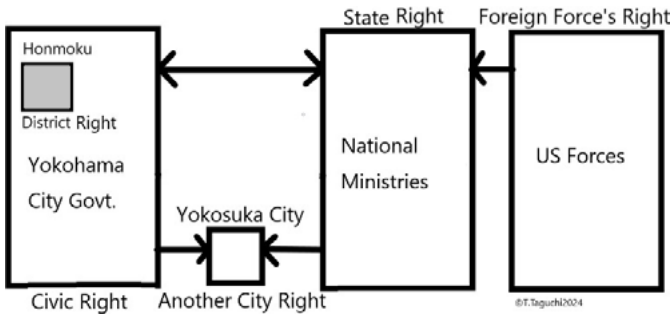
Concept of the collaboration between different institutions and people concerned

When the US forces first arrived at the enemy territory, their foreign force's right was to tame officials of the surrendered state as proxies and to plunder the enemy's reserves. Thus, the initial requisition activities seemed very forcible compared to the later ones. The requisitioned residential area of Honmoku, 88.2 hectares in space by the sea, was divided into two parts (Fig.6): District 1 on the sea side across Honmoku Street (Fig.7) and District 2 on the land side (Fig.8), including Wadayama Hill (planned hilltop park). District 2 included officers' housing, a shopping centre, a sports facility with night lighting, and a primary school[5].

While the Japanese liaison office worked for the US forces, the Ministry of Finance (MoF) acquired the land from evicted landowners who had to give their lands to the MoF in lieu of the Special Property Tax (1946-1951). In terms of the size of landholdings, there were small landowners with less than 100 square meters and large landowners with 5,000 square meters of land. As of 1982, there were 488 landowners in New Honmoku (the official name of the planned district), of which 208 were individuals, 252 were co-owners, and 28 were corporations. Of the total area, 33.2 per cent was privately owned, 48.8 per cent state-owned, 0.5 per cent prefecture-owned, and 2.5 per cent municipal land.

The legitimacy of the act of requisition at the end of the war is questionable. Under the Potsdam Declaration, which Japan accepted, its sovereignty was guaranteed. The Japanese government served as a proxy of the occupation forces in an indirect administration. For this reason, the state enacted the special law to establish a state public corporation called the 'Special Procurement Agency' (1947), which employed existing governmental networks and local administrations to find suitable sites for requisition[6]. The agency issued notifications that did not need affected owners' consent. From the viewpoint of international laws, the Hague Rules of Land Warfare (1899) exceptionally permits the seizure of military land or construction of bases when the other country has not yet surrendered and fighting is still ongoing. After surrender, looting is prohibited and the principle of respect for private property is to be observed.
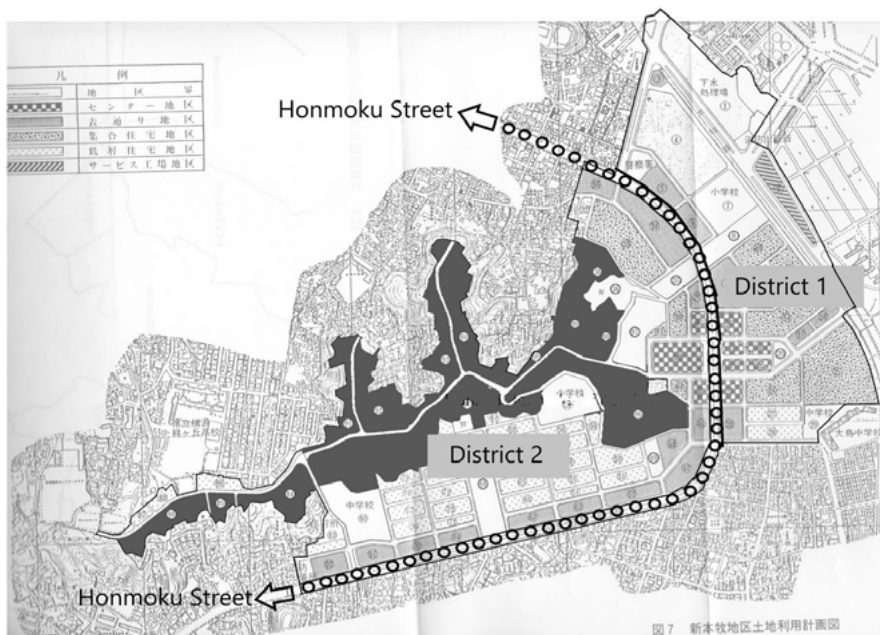
Fig. 6.   Location of Honmoku Districts 1 and 2

The requisition also stalled the reconstruction of Yokohama after the war for a long time. The occupation of Japan lasted until 1952, when the Treaty of Peace with Japan was signed, but in the same year the Japan–US Security Treaty, which permitted US forces to maintain a presence in Japan, was signed. As for derequisition by the Asukata Administration, there were 730 hectares of requisitioned land at 27 sites in 1963, with 130 hectares at 14 sites released in the 15 years leading up to 1978 at the end of its administration.

CAMPAIGN FOR THE PROLONGED REQUISITION BY THE US FORCES

In 1951, the prefectural and city governments and the local business community formed the 'Yokohama City Reconstruction Council' and launched a campaign to end Yokohama's requisition. This campaign did not allow private landowners to participate. Economic reconstruction did not progress due to the requisition of the city centre. Because of the revision of the Japan-US Security Treaty in 1960, the name of the land seized was changed from requisitioned property to property provided by the Japanese government. However, nothing changed for landowners. The Defense Facilities Agency (DFA) (1962), whose role was taken over from the Special Procurement Agency, had to conclude lease agreements with landowners until when the land was no longer needed by the US forces. If a civilian landowner did not agree to a lease contract, the land was expropriated by the DFA.

Fig. 7.   Old photo of the District 1 on the right and Japanese houses on the left

Fig. 8.   Old photo of the District 2 on Wadayama hill (planned area of the hilltop park)

In 1961, a steering committee was established in the city council to promote the lifting of requisitions, and the committee submitted written requests to the state. In 1962, US forces abruptly announced that they would not mind returning the land if alternative facilities were to be built at the Japanese expense. Hearing this, the landowners formed the "Honmoku De-Requisition Council" (120 members) in 1963 and tried to appeal their will. This was the first time the landowners of Honmoku organized their own pressure group, which continuously demanded that the Honmoku District return their land to them as soon as possible. Unfortunately, the campaign ceased. In the mayoralty election of 1963 Asukata, a socialist party member, was narrowly elected mayor by defeating conservative candidates. Following his election, he commissioned a private consultancy that produced a bleak concept of industrial development for the entire district[7].

In 1966, the DFA offered the city the disposal of state-owned land in District 1 if the city would set up an alternative facility for its relocation. When returning the leased land to the original landowners, the obligation was to return the land to its original state, as it was when leasing began. In response, the city argued that the return of the requisitioned land was the responsibility of the state government.

However, negotiations with Yokosuka City, which was considered a possible relocation site, became stacked. Yokosuka City was officially seeking to reduce the size of the US military base, so relocation was not an easy issue to accept. On the other hand, from an industrial viewpoint, the US naval base had a huge dockyard that employed thousands of local people. This is another city right. In addition, Yokohama was cautious that the separate return of District 1 could result in a freeze in District 2. The landowners formed the 'Honmoku Redevelopment Council' (500 members). In 1967, the Director General of the DFA approved the establishment of alternative facilities under the responsibility of the state government. In 1968, the Yokosuka City Council approved the relocation.
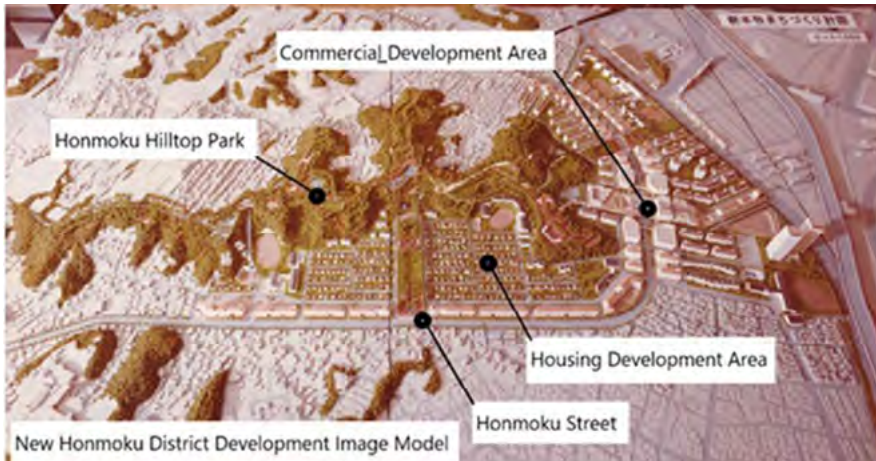
Fig. 9.   Comprehensive Plan formulated by the Urban Design Section

In 1968, planner Akira Tamura (1926–2010) joined the city administration from his private practice as the head of the Planning and Coordination Office, which was newly established for him as a control tower for all city management and planning aspects. Tamura forged a strategy of derequisition of Honmoku District and created redevelopment concepts[8].

In 1971, landowners complained to the city that a redevelopment plan for their land should be drawn up in consultation with landowners. The land to be returned from the DFA was private, and could not be used without their consent, implying Asukata's initial industrial plan. Moreover, they asked for a comprehensive development plan, as it would only be acceptable if Districts 1 and 2 were returned en bloc. In 1972, the state recognized that their one-year lease contract system could not exceed 20 years under Civil Law. In response, a campaign by landowners to refuse to renew the lease started, but this movement did not accelerate the de-requisition.

In 1972, Tamura's urban design section in his Planning and Coordination Office compiled a comprehensive plan for Districts 1 and 2 (Fig.9) that introduced the Land Readjustment Project (LRP)[9]. LRP is a common method that has been used for the last 100 years' planning history in Japan. It is based on a public–private partnership instrument, in which governments and landowners bear the redevelopment costs and benefits in places. The urban design plan was an excellent one, to which landowners did agree.

In 1972, Mayor Asukata and Tamura met the Director General of the DFA and requested that the idea of the 'Special Accounting Policy' be abandoned. Under the 'Special Account Policy Law for Specific State-owned Property Development' (1957), the costs of relocating the US forces base were to be met through the disposal of state property on the site of the base in question. Asukata said that since the land had been requisitioned for more than 25 years, the state and local governments had to take the burden of installing infrastructure and public spaces in the LRP. Thus, the city claimed to use state-owned land free of charge. Asukata expressed that if the city had to buy state-owned land, its price should be below the acquisition cost.

In 1973, the US forces proposed that the entire land would be returned if an alternative facility for District 2 was also provided. In the same year, at a meeting between the landowners and the city, the landowners inquired about the LRP's delay from the initial schedule, because they did not understand the relationship between the state policy and the LRP. The landowners then set up a 'Redevelopment Study Committee', which met frequently and began to study the process of the LRP by themselves[10].

In 1974, the city introduced the selective replotting method in relation to its LRP, which was endorsed by the Ministry of Construction (MoC) and applied for the first time in LRP history[11]. This method allowed landowners to choose their land from the various land use categories according to their future life plans. In regular LRP, land is not selective and is replotted at approximately the same location as that of the previous land. In addition, in this method, land is not used as an independent unit but as a joint construction required such as specific land uses and building plans for each plot.

In 1974, the Central Committee of State Property expressed that it would be appropriate to consolidate the dispersed state land using the LRP in Honmoku[12]. Moreover, it was acknowledged that the MoF as the biggest landowner would participate in the city's LRP. Following this comment, the landowners' study group recommended that the city strengthen its MoF lobbying to promote the relocation of the US force base and utilize state-owned land for public facilities. Thereafter, the two Landowners' Councils merged to form the 'New Honmoku Development Promotion Council (NHDPC)'.

Over time, land disposal policies by the MoF had become a popular topic. In June 1977, the city appealed to general public about the history and character of the New Honmoku Project. It expressed a need for contributions from the MoF to the LRP. Despite the fact that New Honmoku was a local issue, it needed to gain understanding and broad public support. In October 1977, the DFA finally requested that the mayor of Yokosuka agree upon the relocation of the District 2.

THE DISPUTED LAND POLICY BY THE MINISTRY OF FINANCE

The MoF intended to sell state-owned land at a high price. However, local governments countered that returned state-owned land should be disposed of free of charge and utilized for the benefit of the local community.

In 1975, the MoC, which was legally in charge of the LRP, expressed opposition to the relocation costs being raised through the disposal of state-owned land[13]. However, this was ineffective due to the power structure among the state ministries. In 1976, the Central Council on National Property fixed its policy of land disposal, 'Three Division of state-owned land system'. The returned state property was divided into three parts by area:1) for use by local authorities (local use), 2) for use by the state government or government-related bodies (state use), and 3) for the time being reserved for disposal (reserved land). The reserved land was also reserved for the formulation of a utilization plan itself to assess changes in future socioeconomic conditions.
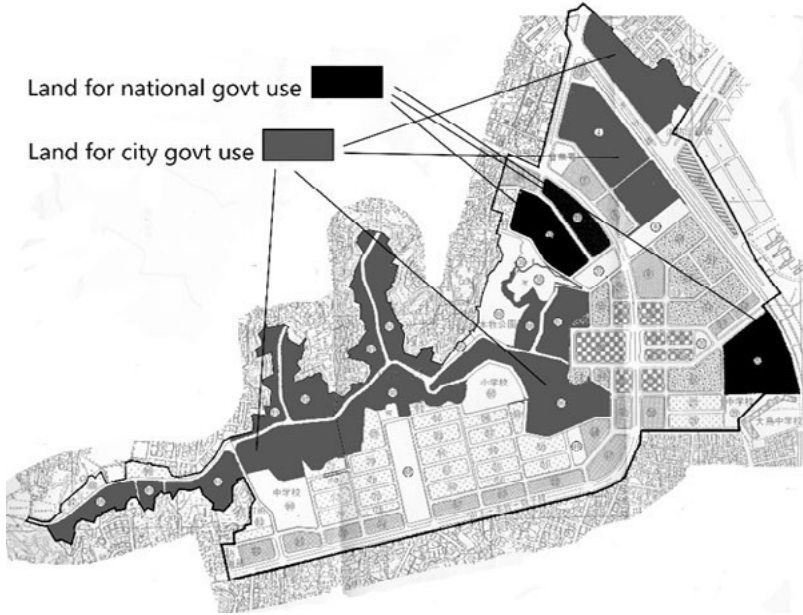
Fig. 10. Initial concept of the state land use by the Yokohama city administration
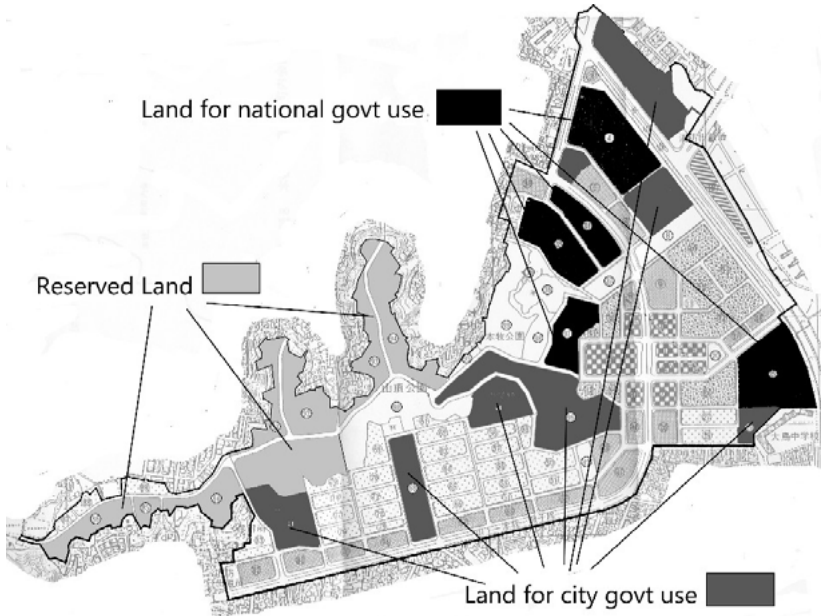
Fig. 11. Final concept agreed upon by the MoF and the city government

In 1977, it was announced that Mayor Asukata would step down midway through his term of office to take up the post of the Japan Socialist Party Chairman. Amidst the turmoil in the city administration, the New Honmoku Development Office in charge of the project hurried to begin the legal procedure of the LRP and sought the consent of the MoF. In doing so, official documents were exchanged between the city and the MoF in March 1978. Documents were based on the following principles: (1) a fair contribution ratio, (2) the principle of matching the replotting of state-owned land (flat state-owned land would not be consolidated into the hilltop park), (3) prior consultation on the replotting of state-owned land before the project plan was publicized (only the state was given special treatment and its wishes were listened to), and (4) the state would formulate a utilization plan for state- owned land (the city's plan would be ignored). Michikazu Saigo, who had served as vice-minister of the Ministry of Home Affairs, was elected as mayor in April 1978. Tamura, the director general of the Planning and Coordination Office who had been in command until then, was removed from his post by Mayor Saigo (mayoralty term 1978-1990).

Subsequent moves by the city and landowners proceeded according to the original policy, whether intentionally or unintentionally, regardless of a written agreement with the MoF [14]. In 1978, the city conducted a land-use intentional survey in which landowners were asked about their future land use. In 1979, the city presented the 'New Honmoku Development Plan' to the NHDPC, which was readily approved. This plan envisaged a hilltop park and other areas that the MoF was restricted to use (Fig.10). The MoF strongly opposed the plan.

Meanwhile, although a legal planning decision in terms of the LRP planned area was made, specific details of the

project, such as replotting, contribution ratio, and reserved land, had to be legally determined soon[15]. Termination of the requisition was scheduled in 1982. Subsequently, several amendments were made. As the MoF demanded the replacement of half the hilly state-owned land with flat land, it would increase the assessed right of flat land. Mayor Saigo accepted the disposal of land for a fee.

All new Honmoku areas had already been on the right track to be included in the planned Building Control Agreement, which would prevent the establishment of facilities on the hilltop area. Tamura used this building- control agreement as a restrictive tool for the MoF[16].

In addition, the city was obliged to help the MoF resolve the problem of illegal occupation of state property adjacent to New Honmoku. The city outsourced the civil engineering work for the LRP to the Housing and Urban Development Corporation, an affiliated state-owned corporation. The Corporation bought state-owned land and constructed housing.

In October 1981, the MoF announced that it had agreed to 25.3% for state use, 37.5% for local use, and 37.2% for reserved land (Fig.11). The media included reserved land for local use and understood it 74.7% as local use. The MoF's land disposal policy appeared to have been achieved, but the wording was used to the advantage of each administrative body. In March 1982, when all alternative facilities were completed, Honmoku Districts 1 and 2 ended its 36 years of requisition.

Fig. 12. View of the residential area in the New Honmoku in 2023

MANAGING THE BUILDING CONTROL AGREEMENT BY CITIZENS

In 1982, the NHDPC resolved the Building Control Agreement at its general meeting. Since the zoning regulations set out in the City Planning Act 1968 and the Building Standards Act 1950 are loose, it was impossible to set detailed controls covering each plot. Furthermore, there were no provisions for joint construction and no legal measures to regulate the use of land by new owners even when state-owned land was sold to them.

Circumstances emerged that required the MoF to enter into the Agreement [17]. This was caused by potential leaseholders who either rented land from the landowner and ran a tenancy business, or lived on the land themselves. Although prewar and wartime leases could be registered with the national agency, most cases did not have a formal contract with the landowners. Such tenants were called 'potential leaseholders'; among them were many latent leaseholders that had become state-owned. If they were allowed to regain their rights, they would also be rightful owners of the Agreement. The MoF would not be able to dispose or use the land without their consent.

Lawsuits restoring potential land leases began in 1982, just after the Building Control Agreement came into force. The issue was whether justifiable grounds existed for terminating the land lease between the former lessee and the MoF. In 1988, a verdict ruled that state-owned land had been converted into public facilities, with a need to utilize the land. By contrast, the plaintiff had no concrete land-use plan, and it was not its only property, as it had another place of residence. Therefore, the plaintiff was assumed to have no land requirements.

In 1985, in addition to the Building Control Agreement, the Building Control Guidelines were approved by the general meeting of the NHDPC, which covered urban design features such as sloping roofs, colouring, advertising regulations, greening, and cleaning. The Building Control Agreement was legally binding, but the set of guidelines was non-binding. A standing committee of landowners in charge of administering the agreement and guidelines was established, with a local architect as an advisor. The committee meets once a month, and only after this review is finished an application for a building permit can be submitted to the city administration. The committee is a volunteer initiative by landowners that continues to work until today (Fig.12).

Fig. 13.   View from the Hilltop Park in 2023: primary school on the left and housing below

CONCLUSIONS

Even after the US military's status was changed from an occupation force to a stationed force, it effectively met its own land needs through the act of requisition, communicating its requests to the occupied state authority and/or later independent state agency to raise their foreign force's right. During the occupation period and afterwards, the state government conducted requisition operations as a proxy agent of the occupation forces and, if they accepted, provided alternative land for the relocation of bases. The state's right was to persuade any districts of municipalities to accept what no one else wanted to take—the requisition order. During the protracted requisition, many private landowners gave up on restitution and sold their land to the state. The state cannot avoid its responsibility simply because the state authority in charge of requisition differs from the ministry in charge of state property. The landowners had their district right and continued to demand early restitution and compensation. Asukata argued that the state should not do real-estate business on their land in those districts and that their land should instead be utilized as a civic right for the benefit of the districts and the entire city. In addition, as in Yokosuka, the relocation negotiations proceeded by taking into consideration another city right. Without an alternative site, the return of the seized districts would not have been possible.

Asukata proclaimed the collaboration with the citizens to be indispensable. According to this principle, the Asukata Administration grappled with fulfilling objectives such as the collective return of the Honmoku District, the obligation to restore the land to its original condition, and the local use of state-owned land. Moreover, without the planner, Tamura, the Asukata Administration would not have been able to achieve a successful collaboration with the landowners and citizens in the restitution campaign and subsequent redevelopment project. Accordingly, the landowners did not just put forward their demands to the city but also communicated with the city closely and changed their attitude to one of thinking together and collaborating proactively.

In 2023 author conducted a survey about the ownership in the Hilltop Park that proved a successful transition of all state-owned land to the municipal possession (Fig.13). In retrospect, the example of Honmoku illustrates the importance of collaboration between citizens and public institutions for town-making.

NOTES ON CONTRIBUTOR

Toshio Taguchi is an independent scholar who studies the planning history of Yokohama. Taguchi worked at Yokohama city as an urban designer. Taguchi and other peer scholars have set up voluntary institution and conducted research activities, in a scientific and objective manner, to re-evaluate Yokohama's planning.

ENDNOTES

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Toshio Taguchi
The port city of Yokohama

Shoko Araki, Kurumi Magake, Reo Kimura, Noriko Akita
The philosophy and reality of Disaster Prevention Group
Relocation Promotion Projects in Japan before and after their establishment

The philosophy and reality of Disaster Prevention Group Relocation Promotion Projects in Japan before and after their establishment

Shoko Araki, Kurumi Magake, Reo Kimura, Noriko Akita
Paris Nanterre

Abstract

In 1972, Japan enacted the Law for Group Relocation Promotion Project for Disaster Prevention. With this project, communities damaged by a disaster can be group relocated to a location with low disaster risk. The government subsidizes 75% of the project cost. In the 32 years since the legislation, 1,854 units in 35 municipalities have been relocated, and after the Great East Japan Earthquake in 2011, 37,000 units in 27 municipalities were relocated with special supports. The same projects have been used for 50 years, but what was the philosophy at the time of the legislation? With the aim of clarifying the philosophy and actual conditions before and after the legislation, we conducted an understanding of the legislative history and an investigation of the actual conditions in each of the two targeted cases through a field survey and literature review. The first case is the Inadani area in Nagano, a pre-legislative case of this project following flooding and mudslides caused by heavy rain in 1961; the second is the Amakusa area in Kumamoto, relocated following mudslides caused by heavy rain in 1972. This disaster was the direct occasion for the legislation. We revealed the following three points. The first point is that relocation from the mountains to low-lying areas was implemented to eliminate the disaster risk of landslides. Relocation from mountainous areas to flatlands was also one of the measures to eliminate depopulation in rural areas. Second, it was determined that it was reasonable to relocate the community quickly and excitedly, instead of restoring it to its original state. The relocation project was completed in two years in the Inadani area and three years in the Amakusa area. Third, substantial livelihood assistance was provided. In both cases, factories and job placement services were provided, and the industrial structure was transformed.

Shoko Araki, Kurumi Magake, Reo Kimura, Noriko Akita

The philosophy and reality of Disaster Prevention Group
Relocation Promotion Projects in Japan before and after their establishment

Long term transformation of building locations in 8 villages along the Sanriku coast, tsunami-prone area

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Abstract

The Sanriku coastal region of Iwate Prefecture was severely damaged by the Great East Japan Earthquake of 2011. The area has been repeatedly hit by tsunamis since the 1896 Meiji Sanriku Tsunami, the 1933 Showa Sanriku Tsunami, and the 1960 Chile Earthquake Tsunami, and is therefore called a "tsunami prone area" in prior research. However, this discourse has not been verified. In this study, we quantitatively analysed spatial changes in representative 8 villages along the Sanriku coast from the 1960s to 2022. Firstly, we traced aerial photographs taken since the 1960s on GIS, and created data on infrastructure such as roads and the location of all buildings in the villages. Secondly, all residential areas in the villages were categorized into 10 types according to their formation process and whether or not they were inundated by the Great East Japan Earthquake, and the number of buildings, building density, distance to fishing ports, and elevation were calculated to reveal spatial transformations. As a result, it became clear the eight villages can be roughly classified into two groups: those absorbed the increase in the number of buildings in the district from the 60s to the 00s through gentle slope sprawl and planned residential development, and those suffered significant damage from the Great East Japan Earthquake as residential areas spread within past flooded areas. On the other hand, even within the latter, changes contributed to the reduction of damage were identified, such as the concentration around stations and along national roads, and the relocation to higher ground was planned after the Showa Sanriku tsunami. These results support the discourse tsunami prone areas have been learning from past tsunamis. The study also succeeded in extracting a desirable change, sprawl on gentle slopes during the inter-disaster period, which had not been clearly visualized previously.

RESEARCH OBJECTIVES AND METHODS

Thirteen years have passed since the Great East Japan Earthquake of 2011 caused extensive damage along the Sanriku coast of Iwate Prefecture. This area is known as a "tsunami prone area" and has been repeatedly hit by tsunamis in modern times alone: the 1896 Meiji Sanriku Tsunami, the 1933 Showa Sanriku Tsunami, the 1960 Chilean Earthquake Tsunami, and the 2011 Great East Japan Earthquake. It was said that the repeated damage was caused by people who forgot about the tsunami after a certain amount of time had passed, and repeatedly built and settled in low-lying areas. On the other hand, Aiba, using the Ryori district of Sanriku-cho, Ofunato, clarified that the housing space after World War II was not "located in dangerous places after forgetting the tsunami," but was generally located slowly in safe places, which was influenced by the convenience of urban infrastructure such as roads and railroads that were built after the war. This is due to the convenience of urban infrastructures such as roads and railways that were developed after the war. From a similar perspective, this paper analyses and compares the medium- and long-term changes in the urban infrastructure connecting the eight districts located along the Sanriku coast and in the concentration of housing within the districts. The purpose of this paper is to extract universal knowledge that can be applied to planning techniques from the reconstruction period to the post- reconstruction period or on the eve of the next tsunami through these analyses and comparisons.

In Chapter 2, we focus mainly on roads and railroads, and trace changes in the structure of each community over time due to infrastructure development. Here, among roads, the north-south road in the inland area of Iwate Prefecture is considered the "spine axis," the east-west road running directly parallel to it toward the Sanriku coast is called the "rib axis," and the infrastructure connecting villages located in the coastal area is called the "coastal axis," with particular attention to National Route 45 and the railroad in the coastal axis. The former connects villages scattered along the Sanriku coast as if they were stitched together, while the latter connects the districts relatively more smoothly through the extensive use of tunnels.

In order to compare complex and highly individualized communities along the Sanriku coast, it is first necessary to categorize the residential areas within each community according to their respective characteristics. As residential areas that have been developed in a planned manner, we can start with those developed after the Showa Sanriku tsunami (1,2). Although in some cases, such as Tarou in Miyako City, reconstruction of the original site was chosen, most of them chose to relocate to higher ground as part of a project to develop suitable housing sites. According to Okamura, 1,238 housing units were built in 36 villages in Iwate Prefecture. Some of these houses were planned to be built along prefectural roads, national highways, and other arterial roads. Relocation to higher ground was planned to avoid the inundation area of past tsunamis, but many areas were damaged by the Great East Japan Earthquake. Residential areas that were damaged are designated as 1 and those that were not are designated as 2. After World War II, planned developments by developers (3, 4) were also scattered in the area: small developments of about 10 houses, as well as large-scale developments undertaken by the Iwate Housing Supply Corporation and the Japan Workers' Housing Association. These developments were not necessarily built with tsunami risk in mind. Here, residential areas

that were damaged are designated as 3, and those that were not are designated as 4. The re-location sites (5) and land readjustment sites (6) developed through the disaster prevention collective relocation promotion project after the Great East Japan Earthquake, as well as residential areas developed by small-scale developers, are extensions of these planned residential development sites. On the other hand, in villages where there are no land use regulations, houses are developed sprawlingly. The residential areas (7,8) spread around the villages and their surroundings, mainly where they are convenient for the fishing industry. In the 1960s, seawalls were built to protect these areas, mainly against storm surges, but the tsunami of the Great East Japan Earthquake overcame these seawalls, so we can distinguish between residential areas that were damaged (7) and those that were not (8). In addition, in the latter half of the Showa period, bypassing of highways and construction of railroads opened up new possibilities for land use, and residential areas spread out in a sprawling manner in some districts. These areas can also be classified into damaged residential areas (9) and unaffected residential areas (10).

In Chapter 3, residential areas are classified into 10 categories according to their relationship with the planning intentions and past tsunami inundation areas, and their medium- and long-term changes are analysed using a geographic information system (GIS). Here, we focus on quantitative (number of buildings and density of buildings) and qualitative (elevation and distance from fishing ports) changes of buildings in the villages to enable a more precise analysis of medium- and long-term changes as described in the previous section.

The GIS data of buildings were created from GIS data in 2022 and aerial photographs taken at four points in the past (1967, 1977, 1999, and 2000). In order to determine whether past tsunamis have affected the medium- to long- term changes in residential areas in the village, we compared the rate of increase in the number of buildings in the inundated area with the rate of increase in the entire village. If the former was relatively small, it was evaluated that lessons from past tsunamis had been learned and induced changes in residential areas in a desirable direction.

CHANGES IN THE FRAMEWORK OF THE VILLAGE DUE TO IN-FRASTRUCTURE DEVELOPMENT

Iwaizumi-cho Omoto is the former center of Omoto Village, which was formed near the mouth of the Omoto River, with the Sanriku Railway station located a little further back. Buildings along the rib axis (National Route 455) along the Omoto River were damaged by the Showa Sanriku Tsunami, and a hill relocation site was built in the southern part of the village. The coastal axis (National Route 45) was constructed to access this relocation site, but the concentration of buildings along the lowland areas damaged by the Showa Sanriku tsunami was also reestablished. Around the same time, a new road, National Route 455, was built across the lowlands, connecting the Sanriku Railway Station and National Route 45 to form the framework of a new village. As a result, the concentration of villages in the lowlands increased, and the area was severely damaged in the Great East Japan Earthquake.

Fig. 1.   Past Tsunami Areas and type of residential areas of Omoto, Tarou, Funakoshi, Kirikiri 2-1. Omoto, Iwaizumi

2-2. TAROU, MIYAKO

Tarou, Miyako City, is a town that chose to build seawalls and rebuild the original site instead of relocating to higher ground after the Showa Sanriku Tsunami. The first embankment was completed in 1958, followed by the second (1956-65) and third (1973-78) embankments, completing the framework of the embankment. During the reconstruction of the original site, National Route 45 was built through the center of the site to allow for evacuation to relatively higher ground. In conjunction with the completion of the seawalls, sprawl proceeded to the low-lying areas surrounded by the first and second seawalls, and the lowlands surrounded by the first and third seawalls. The Sanriku Railway opened in 1972 at Tarou Station as the terminal station of the JNR line, and the entire line opened to Kuji in 1984, which may have influenced the formation of sprawl in the southern part of the district. Due to its long seawall, the Tarou area was known as a model for tsunami disaster prevention, but in the Great East Japan Earthquake, the tsunami overcame and destroyed the seawall, and all the districts were severely damaged.

2-3. FUNAKOSHI, YAMADA

Funakoshi and Tanohama, both located in Funakoshi, Yamada-cho, are known for their contrasting paths of planning for relocation to higher ground after the Meiji Sanriku Tsunami, with Funakoshi in the west realizing the creation of sloping land and Tanohama in the east abandoning the plan. Funakoshi has National Route 45 positioned at the eastern end of the Meiji Era upland relocation site. Later, in the late 1930s, a railroad line was built, and in the 1960s, a new Route 45 was built inside the relocated upland area. Therefore, sprawl and planned development sites spread to higher elevations, and the area suffered almost no damage from the Great East Japan Earthquake. The fact that the lowlands were developed as

Fig. 2.   Past Tsunami Areas and type of residential areas of Touni, Sakihama, Okirai, Hirota

Funakoshi Park in the 1990s may have also prevented the spread of the sprawl to the lowlands. After the Great East Japan Earthquake, the disaster prevention collective relocation site was developed to connect to the relocation site. The topography is steeper than that of the sprawl, and the development of land development technology and intensive public investment made it possible to relocate to this area. Tanohama is located along the old Tanohama route along the bay. After the Meiji Sanriku Tsunami, the area was abandoned, and after the Showa Sanriku Tsunami, the area was relocated to higher ground through a housing development project, but the relocation was not thorough, and residential areas were formed in the fishing port and surrounding low-lying areas, which were severely damaged in the Great East Japan Earthquake.

2-4. KIRIKIRI, OTSUCHI

Kirikiri, Otsuchi-cho is a district on National Route 45, but National Route 45 is being redrawn inside the district. Before the Showa Sanriku tsunami, there were two routes from Otsuchi in the south to Kirikiri: the Ando route and the Akahama route, and National Route 45 was the Akahama route. Since the accumulations on both sides were damaged by the Showa Sanriku Tsunami, a hillside was relocated to a higher level on the mountain side, and a new National Route 45 was built in the relocated area. At the end of the 1930s, a railroad line was constructed along the Ando route, and a railroad station was built on the mountain side of the relocated site. In this way, the axis was built on top of the higher areas, and residential areas spread out in the sprawl as if pulled by the higher elevations. However, National Route 45 was switched to the Ando route with the opening of the tunnel at the end of the 1960s. In Kirikiri, the previous national highway was bypassed and National Route 45 was built closer to the sea. A large area between Route 45 and the railroad was sprawled, and most of the area, including the Showa relocation site, was damaged by the tsunami of the Great East Japan Earthquake.

2-5. TOUNI, KAMAISHI

Hongo and Koshirahama, Touni, Kamaishi City, is a district along Route 45. Hongo was severely damaged by the Meiji Sanriku Tsunami, and is known for the mass relocation of residents by building housing lots on the northern slope of the district, which is higher in elevation than the inundation zone of the Meiji Sanriku Tsunami. The only access to both Hongo and Koshirahama from Kamaishi was via the seaside route through Hirata or over a mountain pass following the Kamaishi Kaido inland along the Katagishi River to Koshirahama, but access from the city center was improved with the opening of the Ishizuka Tunnel on National Route 45 in 1969. In the case of Koshirahama, National Route 45 passed through the northern slope, which is higher in elevation than the existing lowland road in the village, and subsequently, a higher elevation built-up area was developed along the road. In the case of Hongo, the prefectural road passing through the relocated area on higher ground merged with National Route 45 at the back of the village, and the internal structure of the village did not change significantly, but in 2006 the Sakura Tunnel leading to the Koshirahama area next to the west was opened, and in 2009 the Sakura-Toge Hirata Line In 2009, the Hongo bypass was constructed, passing through the lowlands to the south of the village and overcoming a tide embankment to the sea. In 1984, Touni Station on the Sanriku Railway's Minami Rias Line was built in the Katagishi district south of Koshirahama, but the concentration around the station was limited and did not have a significant impact on the two districts.

2-6. SAKIHAMA, OFUNATO

Sakihama, Ofunato City is located on the northern side of the bay near the eastern end of the Okirai Peninsula, well off National Route 45, but can be seen as a coastal axis along Iwate Prefectural Road No. 209 Sakihama Port Line extending from the adjacent Okirai District. Until now, no major road has passed through the community, but in 1967, with the opening of the Kitasato University Sanriku Marine Biological Laboratory in Yoshihama Bay on the northern side of the community, a road was opened running north-south through the community, connecting Okirai Bay and Yoshihama Bay. This road acts as a rib axis, and residences are clustered at relatively high elevations. There are no train stations in the vicinity of the district, so the opening of the railroad did not have a significant impact.

2-7. OKIRAI, OFUNATO

Okirai, Ofunato City is located at the far end of Okirai Bay, and National Route 45 runs through the base of the village, which is relatively deep. The district used to have a rib axis along the Urahama side of the road, with Prefectural Road No. 9 Ofunato Ryori Sanriku Line leading to Ofunato via Ryori on the south side. In 1960, the Rasho Tunnel was completed, leading to the Yoshihama area to the north of the district, and National Road No. 45, which directly connects to Ofunato on the southwest side, was completed. In addition, the Sanriku Station on the Japan National Railways' Mori Line was built at a relatively high elevation on the southwestern slope of the district, resulting in a concentration of residences at relatively high elevations. In addition, the gentle slopes on the north side of the area have led to the conversion of farmland to residential land at relatively high elevations.

2-8. HIROTA, RIKUZENTAKATA

Hirota, Rikuzentakata City is a district located in the middle of a peninsula wedged between Ono Bay and Hirota Bay. The district is far removed from National Route 45, which passes through Rikuzentakata at the far end of Hirota Bay. In 1999, the Nitayama Tunnel was opened between the district and Otomo, located to the north, and Iwate Prefectural Road 38, the Ofunato Hirota RikuzentakaTarouute, passes through a ridge-like high point between Hirota Bay and Ono Bay. The district is such that two districts, centered around the Hirota fishing port on the Hirota Bay side and the Mutsugaura fishing port on the north side, are located back-to-back across Route 38. The area is not affected by the railroad, as there are no stations in the neighborhood.

QUANTITATIVE AND QUALITATIVE CHANGES WITHIN THE VILLAGE

Fig. 3.   Four representative indicators (Numbers of buildings, Density of buildings, Elevation, Distance to fishing port) and their transition in each type of residential area, and Numbers of buildings in Past Tsunami Areas in Omoto and Tarou

3-1. OMOTO, IWAIZUMI

The number of buildings increased until 2000. The number of buildings in 1, which was relocated to higher ground after the Showa Tsunami, did not increase much and was damaged by the Great East Japan Earthquake. Existing village 8 was not damaged by the East Japan Earthquake and the number of buildings did not change much. 7, which was created by sprawl on farmland near fishing ports from the 1960s to the 2000s, suffered damage to more than half of its buildings. As we saw in Chapter 2, the development of National Highway 45 through the lowlands in the 1970s may have encouraged this concentration. The fishing village area that was developed around the station after the East Japan Earthquake is an extension of the sprawl from the 60s to the 00s. Because of the gently sloping lowlands throughout the district, the building elevations have changed little. The same is true for the distance to the fishing port. Since the number of buildings has increased even more in the past inundated areas

than the number of buildings in the entire village has changed, it cannot be assessed that the lessons learned from past tsunamis have been applied.

3-2. TAROU, MIYAKO

The number of buildings increased until 2000. The number of buildings is high in 1, which is the original reconstruction site after the Showa Tsunami, but the increase is levelling off, indicating that the number of buildings is increasing in sprawls 9 and 10. As seen in Chapter 2, 9 is a low-lying residential area that continued to accumulate since the completion of the first seawall in 1958 until the Great East Japan Earthquake in 2011. Looking at the change in the number of houses, 10, which was not damaged by the Great East Japan Earthquake, shows the same increasing trend as 9. This means that changes in residential areas over a long period of time did not necessarily increase damage, but also caused changes that partially improved safety. On the other hand, the 8 areas that were not damaged by the Great East Japan Earthquake were densely populated from 1968 onward, suggesting that the increase in the number of buildings could not be fully absorbed. After the Great East Japan Earthquake, the number of buildings in 5, which was relocated to higher ground, was planned to be about 1/3 of that in 1, while the number of buildings in 6, which was raised and improved, decreased to about half of that in 5. Since the number of houses in the past inundated areas has increased in accordance with the change in the number of houses in the entire village, it cannot be evaluated that the lessons learned from the past tsunami have been applied.

Fig. 4.   Four representative indicators (Numbers of buildings, Density of buildings, Elevation, Distance to fishing port) and their transition in each type of residential area, and Numbers of buildings in Past Tsunami Areas in Funakoshi and Kirikiri

3-3. FUNAKOSHI, YAMADA

The number of buildings increased until 2000. There was no change in the number of buildings in the area relocated to higher ground (2) after the Meiji and Showa tsunamis, suggesting that the increase in the number of households was absorbed by the high sprawl on the Funakoshi side (10-1), where the increase was particularly large, and the village and its vicinity on

the Tanohama side (7). The small planned development (4) is located relatively far from the fishing port and at a higher elevation. As we saw in Chapter 2, Route 45, which passed through the district in the 1960s, may have encouraged agglomeration. The density of the number of houses (2) is high and shows little change, while the other sprawl villages and their surroundings have relatively low densities. Residential area 5, which was developed as an elevated relocation site after the Great East Japan Earthquake, has a similar building density and elevation to 2, indicating that it is an extension of 2. The number of houses has not increased significantly since the Chilean earthquake because the slope sprawl absorbed a certain number of the increase in the number of houses in the entire village. Therefore, it can be evaluated that the lessons learned from past tsunamis have been applied.

3-4. KIRIKIRI, OTSUCHI

The number of buildings increased until 1999. The increase in 8, which is an expansion to the western slope, is particularly large and is thought to have absorbed the continuous increase in the number of households. The small planned development (4) is located at a relatively higher elevation. The density of buildings is higher in 1, which was planned development during the recovery period from the past tsunami. As we saw in Chapter 2, the number of buildings has increased in 8 along Route 45, which runs along the ocean side, while the number of buildings has also increased in 8, which already had a relatively high density, which partially improves the safety of the area. 8 around the station and 10, which sprawls on a gentle slope, show a similar increasing trend, absorbing the increase in the number of buildings in the village and not being damaged. Elevation increases in 4 along the national road, which is considered to have been systematically developed since the 1980s, and the same is true for the distance to the fishing port. The increase in the number of houses in the village as a whole has not been significant since the Chilean earthquake because the slope sprawl absorbed a certain number of the increase in the number of houses. Therefore, it can be evaluated that the lessons learned from past tsunamis have been applied.

Fig. 5.   Four representative indicators (Numbers of buildings, Density of buildings, Elevation, Distance to fishing port) and their transition in each type of residential area, and Numbers of buildings in Past Tsunami Areas in Touni and Sakihama

3-5. TOUNI, KAMAISHI

The number of buildings increased until 1999. 2, which is the site of the relocation to higher ground after the Meiji Tsunami, has remained stable at an extremely high density with no change in the number of buildings since the beginning. 9, located in the low-lying area of Hongo, and 7, located in the low-lying area of Koshirahama, were both damaged. It is slowly sprawling to 10 along National Highway 45. Since the number of buildings has increased in the past inundation areas more than the change in the number of buildings in the entire village, it cannot be evaluated that the lessons from the past tsunamis have been applied. However, the relocation to higher ground that was established after the Meiji Sanriku Tsunami was not damaged by the tsunami at all afterwards, so it can be evaluated as having had a certain effect.

3-6. SAKIHAMA, OFUNATO

The number of buildings has increased through 1997 but has not changed significantly. As seen in Chapter 2, sprawl 8 and 10, which spread out on a relatively gentle slope pulled by Kitasato University, located to the north, is increasing steadily. The number of buildings has not increased significantly since the Chilean earthquake because the sprawl on the slope absorbed a certain number of the increase in the number of buildings in the entire village. Therefore, it can be evaluated that the lessons learned from the past tsunamis have been applied. The number of buildings has increased through 1997 but has not changed significantly. Sprawl 8 and 10, spread on gentle slopes, have increased steadily. The number of buildings has not increased significantly since the Chilean earthquake because the sprawl on the slope absorbed a certain number of the increase in the number of buildings in the entire village. Therefore, it can be evaluated that the lessons learned from the past tsunamis have been applied.
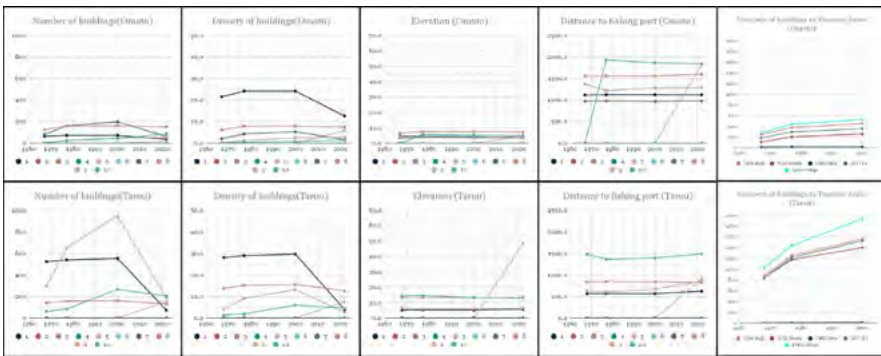

Fig. 6. Four representative indicators (Numbers of buildings, Density of buildings, Elevation, Distance to fishing port) and their transition in each type of residential area, and Numbers of buildings in Past Tsunami Areas in Okirai and Hirota

3-7. OKIRAI, OFUNATO

The number of buildings increased through 1997. The largest increase is observed at 10, which is sprawling on a gentle slope. It also increased at 7, which is closer to the fishing port, but the increase was milder than at 10, suggesting that sprawl partially absorbed the increase in the number of buildings in the village as a whole. Since the slope sprawl absorbed a certain number of the increase in the number of buildings in the entire village, the number of buildings has not increased significantly since the Chilean earthquake. It can be evaluated that the lessons learned from the past tsunamis have been applied.

3-8. HIROTA, RIKUZENTAKATA

The number of buildings increased until 2001. Major damage occurred for 7, which are clustered in the lowlands near the fishing port. No significant change has occurred from the 60's to the 00's for 8, which is spread on gentle slopes. Since the number of buildings has increased in the past inundation areas more than the change in the number of buildings in the entire village, it cannot be evaluated that the lessons from past tsunamis have been applied.

MEDIUM- AND LONG-TERM CHANGES IN THE VILLAGES AND LESSONS

As a result of the analysis of medium- and long-term changes in residential areas in the eight districts, it is clear that there are two types of districts: those that absorbed the increase in the number of buildings from the 1960s to the 2000s by sprawl on gentle slopes and planned residential development, such as Funakoshi, Kirikiri, Sakihama and Okirai districts, and those that suffered major damage from the Great East Japan Earthquake, such as Omoto, Tarou, Touni and Hirota districts, which had residential sprawl in flooded areas in the past. The former is the area that was inundated by past tsunamis. In the former, the rate of increase in the number of buildings in the past tsunami inundation area is less than the rate of increase in the number of buildings in the entire community, indicating that the community has learned from the past tsunami. The latter, on the contrary, has not learned from the past tsunamis, since the rate of increase in the number of buildings in the area inundated by past tsunamis was higher than that of the entire community. On the other hand, at the micro level, there are some changes that have worked to reduce damage in the medium- to long-term, such as the concentration around the station located at a relatively high elevation in the Omoto district, the concentration along the national highway in the Tarou district since the 1980s, and the relocation to higher ground developed after the Meiji Sanriku tsunami in the Touni district.

In this paper, we have conducted a more precise analysis of medium- to long-term changes in residential areas in tsunami-hit areas, which were previously regarded simply as "returning to lowlands," by focusing on infrastructure and using a quantitative method. As a result, it became clear that while there are commonalities in the inducement of agglomeration by infra-

structure on a macro level, the degree of influence differs greatly from one village to another. It was also found that no single settlement changes uniformly, but is a complex patchwork of various residential areas. Furthermore, we succeeded in extracting lessons from the desirable changes during the inter-disaster period, such as sprawl on gentle slopes and agglomeration near elevated stations and national highways, which was the objective of this paper. In order to elucidate the mechanism of agglomeration, it is necessary to study hard lessons, such as the planning intentions of infrastructure development at the time, and soft lessons, such as the existence or non-existence of traditions within villages.

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Planning Practices and Ideas (1)

Chair: Wolfgang Sonne

"Scale in Urban Design"
A rediscovered and reconstructed manual for urban design by Peter Grund from mid-twentieth century

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Abstract

In the same year when Le Corbusier published the functional manifest of the Charter of Athens, the German architect Peter Grund wrote an urban design handbook where he stated that the beauty of urban space would be more important than its functions. This unfinished manuscript with hundreds of plans of urban squares from existing cities was recently discovered and reconstructed in a collaborative research project. Composed during the last years of WW2 it not only contains rich material on still undestroyed European cites, but also forms a jigsaw piece of a neglected and often overseen strand of modern urban design: the tradition of creating enclosed urban spaces in a human scale for pedestrians, based on existing examples of urban design. With this aim Grund's manual stands against both a functionalist approach as promoted by the CIAM and a monumentalist approach as propagated by the Nationalsocialist government. This paper tells the reconstruction of this manual with the title "Scale in Urban Design. The City as Space", analysis its structure, content and aim, and finally puts it into a tradition of modern urban design handbooks which focus on urban space such as Camillo Sitte (1889), Werner Hegemann and Elbert Peets (1922 and 1938), Wolfgang Rauda (1956 and 1957), Rob Krier (1975), Vittorio Magnago Lampugnani (2018) and Christoph Mäckler (2022). Thus it will argue that returning to examples from history as examples of best practice is not anti-modern but part of modern urban design itself.

Keywords

How to cite

Wolfgang Sonne
"Scale in Urban Design"

Urban Density
Historicising Land Rights
and Heritage as a Planning Trope

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Abstract

Singapore's Old Kallang Airport was once Southeast Asia's finest commercial airport in the late 1930s, when international travel was at its height before the Second World War. The British identified this to be their first purpose-built civil airport and a testament of the prospects of air travel, with Singapore as a gateway between England and Australia. Within a kilometre radius from the main terminal, most adjacent buildings and sites like the open- air theme park Happy World, have been demolished and redeveloped to cope with pressures of the urban centre alongside key infrastructural works. The conservation of the buildings within Old Kallang Airport, against a slate of tabula rasa in context, questions the prospect of urban redevelopment and intensification where the site is read through the built and barren landscape, a tussle of land rights over time and space. Today, Old Kallang Airport is hoarded up and rehabilitated for posterity, while the Singapore Land Authority attempts to seek complementing interim uses to sustainably rejuvenate this urban vacuum. This paper investigates the architectural permutations in urban density, programmatic use through urban morphology and historical synapses to inform possible urban planning and design outcomes.

Keywords

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INTRODUCTION

Kallang Airport was once Southeast Asia's finest commercial airport in the late 1930s, when international travel was at its height before the Second World War, given its close proximity

to the city centre, as opposed to the Seletar Military Airbase north of the island. The British colonial government had identified this to be their first purpose-built civil airport and a testament of the prospects of air travel, with Singapore as a gateway between England and Australia, even before Singapore became a crown colony. Famed aviator Amelia Earhart even remarked how this airport was "an aviation miracle of the East" where "the barren margins of our isolated Western airports could scarcely assimilate such urban frivolities"[1]. When Kallang Airport was decommissioned in 1955, the main terminal, and some ancillary buildings were adapted for various civic and government uses such as Singapore Youth Sports Council (1955 – 1960), People's Association (1960 – 2009), Public Works Department (1960 – 1972), and the Central Manpower Base (1967 – 1972). The compound of 5 buildings and heritage structures, driveway and green lawn were conserved in 2008 by the Urban Redevelopment Authority. Notably, the circular aerodrome, which was built over reclaimed land, once inhabited by the sea-faring Orang Asli, also left an indelible mark in the city centre, genesis for the former National Stadium (1973 – 2010) and current Singapore Sports Hub and upcoming Kallang Alive Master Plan.

Since the beginning, Kallang was largely used as an industry district, with a progression of industries ranging from brick kilns, sugar plantations, saw mills and gas works for more than a century between the 1830s till 1970s. Most industries have moved out of Kallang to lower cost sites such as Sungei Kadut Industrial Estate, with the exception of those within the Kallang – Kolam Ayer Industrial Estate, hence there is a unique of a mix residential, commercial, industrial and recreation being so close to the city centre. Within a kilometre radius from the terminal building, most adjacent buildings and sites like the open-air theme park New World in 1923 and Happy World (also known as Gay World) in 1936, have been demolished and redeveloped to cope with pressures of the urban centre alongside key infrastructural works. These worlds formed the early strands of Singapore's popular culture, housing dancing halls, amusement rides and iconic cabaret girls who danced to both Malay tunes and Western foxtrot.[2] The conservation of the buildings within Old Kallang Airport, against a slate of tabula rasa in context, questions the prospect of urban redevelopment and intensification where the site is read through the built and barren landscape, a tussle of land rights over time and space. Today, Old Kallang Airport is hoarded up and rehabilitated for posterity, while the Singapore Land Authority attempts to seek complementary interim uses to sustainably rejuvenate this urban vacuum. This paper investigates the architectural permutations in urban density, programmatic use through urban morphology and historical synapses to inform possible urban planning and design outcomes.
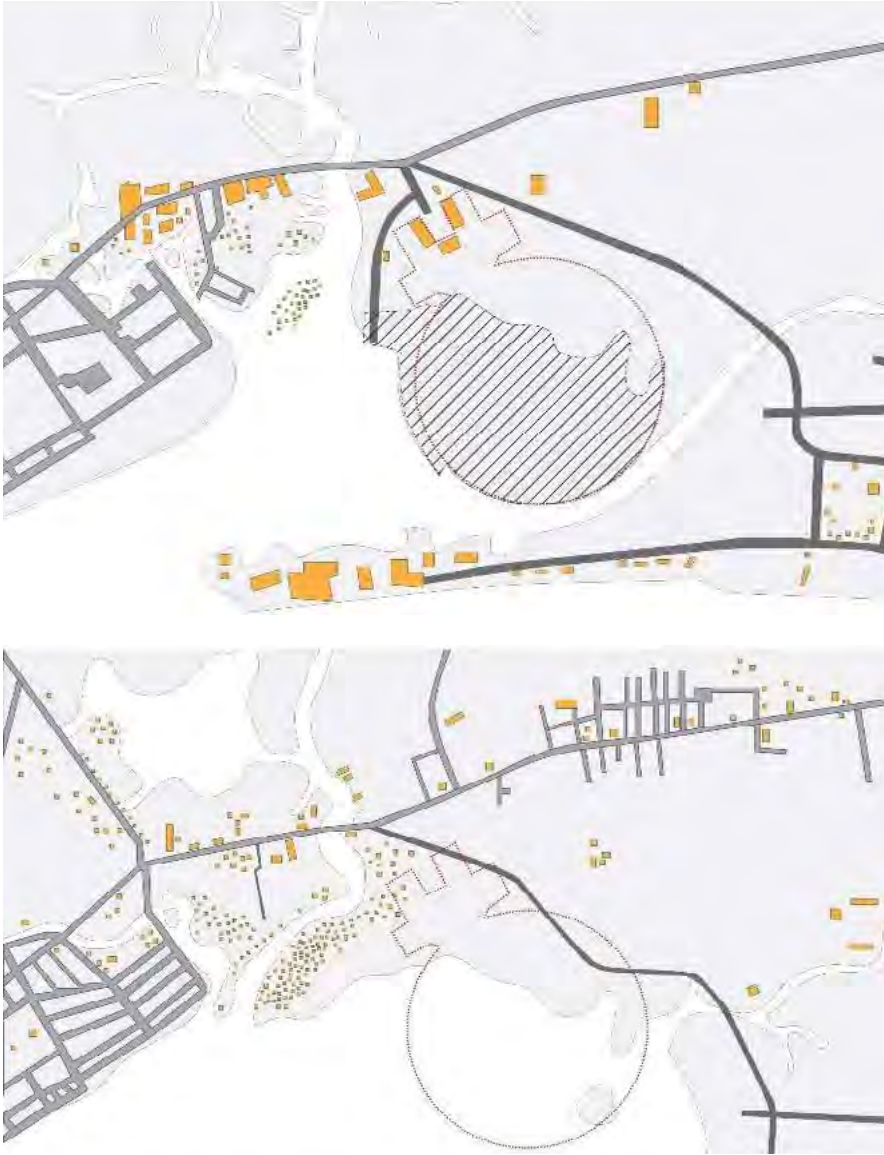
Fig. 1.   Comparison between 1914 map (Above) and 1930 map (Below) for the extent of land reclamation (339 acres) in the construction of the civil aerodrome (DPA).

Fig. 2.   View of Kallang Airport Terminal Building from ceremonial tear shaped drop off, 1940s[7]

Fig. 3.   View of crowds at Kallang Airport Terminal Building from civil aerodrome during Singapore Air Day, 1950[8]

STATEMENT OF SIGNIFICANCE (SOS)

Singapore's endearing obsession of land reclamation took place since 1822 at the south bank of Singapore River. Since then, Singapore's land area has expanded by more than 25 percent - from 57,800 to 71,910 hectares (or 578 to 719 sq km)[3]. Reclamation of Kallang Basin and Beach Road for the construction of Kallang Airport culminated to 137 hectares, or approximately 0.9% of the land reclaimed today, but close to 40% of all reclaimed land by the colonial government. Nation-states claim air, water, and land rights as well as the right to exploit geogenic resources. In the case of Singapore, a small city-state, this repetitive cycle has become an addiction, a pledge to eternal growth symbolising the country's dominance over nature's elements as well as the principles of the global economy and its political and diplomatic influence in the region.[4] The 339 acres of reclamation of Kallang Basin and Beach Road would be the last major land reclamation projects in colonial Singapore, costing 9 million Straits dollars over "the worst mosquito-infested land on the island"[5] which was undoubtedly an "audacious engineering achievement" by Public Works Deparment (PWD) Director Major R.L. Nunn. The filling operation started in May 1932 using a workforce of over 400 coolies, and shortly after the reclamation was complete in October 1936, construction of Kallang Airport commenced.[6]

On 12 June 1937, Sir Thomas Shenton Whitelegge Thomas, Governor of The Straits Settlements opened the Singapore Civil Airport; later known as Kallang Airport. The British government purported that Kallang Airport possessed three outstanding advantages: proximity to the centre of the city, free aerial approaches (albeit through an aerodrome design), and common facilities for both land and marine aircraft. What was once a tidal basin populated by the sea-faring peoples of the Malay Archipelago, commonly known as Orang Asli, had been reclaimed with seven and a half million cubic yards of earth from a hill five miles away. Another two million cubic yards of mud and debris were dredged from the sea bed to create the seaplane anchorage and channel. Such an intensive civil infrastructure was notably advocated by Sir Shenton Thomas' predecessor, Sir Cecil Clement in 1931, when the travel aficionado saw the prospects for Singapore to be a key site of international travel. Construction began in 1931 and cost the Straits Settlement Government approximately $9 million dollars. Main building works were executed by the Public Works Department over six years, with Mr. Frank Dorrington Ward as the Government Architect and Mr. R. St. George Caulfeild as the Resident Engineer

.As an urban construct, the imposing landing ground was designed with a diameter of 1000 yards, with a taxi strip that is 100 feet wide skirtig the perimeter of the landing ground in the arc adjacent to the apron head. The Terminal Building consists of offices for air transport companies, a post office, telephone booths, and the usual amenities for last minute purchases. At one end of the building there is a fully equipped restaurant and a wide roof verandah which gives unrestricted view over the landing ground. While the other end consists of passport, medical and customs offices for passengers. The first floor (second level) also contains office accommodation for the airport staff and the meteorological service. Parallel to the ceremonial tear shaped drop off are two storey annexe buildings for office, stores and workshops. Adjacent to the hangars which are 300 feet by 150 feet on plan with 35 feet clear height to fit the largest air liners yet built then. Surrounding the Terminal Building and hangars extends a concrete pave-

ment of 15 acres for the handling of mail and freight. Extending to the western perimeter of the landing ground was the seaplane slipway and wharf, connected to the main hangar. This is currently used by the Kallang NCC (Sea) Training Centre of the National Youth Sports Institute for the deployment of boats, and is regarded as a Protected Place (No. 5) Order 2014.

Kallang Airport handled all commercial air services in Singapore from 1937 till 1955. Despite improvements made by the Japanese during its Occupation and subsequent upgrading by the British after they returned, the advancement of aviation technology during the war had resulted in the production of larger and heavier aircraft that Kallang Airport was inadequate to handle.[10] At its peak, Kallang Airport was even ranked the second busiest airport in the Far East[11] handling a movement of 20 aircraft a day, which was comparable to Kai Tak Airport in Hong Kong. As the world recuperated and gained consciousness of a free world premised upon ever extensive global trade and commerce, air transport grew exponentially, prompting the government of the day to relocate the civil airport to Paya Lebar by Aug 1955. Yet in less than two decades, the airport had to be expanded several times. *No less than two airport consultants were employed to draw up and revise the master plan for Paya Lebar. In 1975, it was decided that, rather than developing Paya Lebar further, a new airport at Changi would be built to cater for air transportation needs of our Republic into the next century.* (Cheong, pV) Following the closure of Kallang Airport, the area in Kallang Basin was redeveloped to create new public spaces, including playing fields, gardens and parks.[12] The site was taken over by the People's Association (PA) in the early 1960s, and the former Terminal Building became the PA HQ building until PA moved to its current site at Tyrwhitt Road in 2009.[13] Former Kallang Airport was gazetted on 5 December 2008 for conservation by the Urban Redevelopment Authority (URA).

Fig. 4. Aerial view of old Kallang Airport after it has been decommissioned, with Nicoll Highway constructed in front of the circular control tower, 1958.9

Public encouraged to inject new ideas into old buildings under URA, SLA reinvention scheme

Fig. 5.   Digital Newspaper clipping of MND, SLA and URA's RSVP programme.[17]

Without a doubt, Old Kallang Airport needs to be conserved properly and meaningfully, given the substantial layers of history for such a prominent urban space and construct within less than a century. Yet, the periodic change of use also presents itself with its own set of challenges, especially when adaptive reuse is frequently presented as a compromise; whereby heritage properties are converted for contemporary usage, often into profit yielding enterprises in a manner which theoretically respects the history of the premises and guarantees its survival[14]. In an island city-state like Singapore where land is a scarce commodity, it is almost inevitable that the relevant authorities have to decide on strategies for the demolition and safeguarding of built heritage, some of which is associated with subjugation[15], as part of physical planning. Heritage buildings and sites such as Old Kallang Airport which have been gazetted but not prescribed National Monument status, are often placed under the stewardship of the Singapore Land Authority (SLA), which largely undertakes the maintenance, lease and tenancy of prospective private developers or public agencies who take on short term lease agreements for approved uses. It remains SLA's mission to ensure effective use of land resources and data for the economic and social development of Singapore by: optimising land and space utilisation, safeguarding property ownership, promoting the use of land and space data[16].

Most would concur that heritage can create income directly and indirectly by increasing "city liveability" and contributing to a "unique sense of place and singular urban landscapes" employed in branding and marketing to attract investors and tourists[18] (Ebbe, 2009, p1). Hence it is laudable that since 2019, SLA and URA have *jointly called for innovative proposals to transform State properties and land into places that will inject vibrancy and enhance the character of precincts under a new programme called Reinventing Spaces into Vibrant Places (RSVP)*[19]. Of the six state properties and parcels identified, Old Kallang Airport is due to be launched, and the site has garnered good attention from medium to large private developers given its rich his-

tory, prime location and urban connectivity. Aside from the timely discussion of Old Kallang Airport, where the Request for Proposals (RFP) is due to take place in the following months, it should be noted that Old Kallang Airport is the only property within the RSVP programme that consists of a conserved building within a site with a high capacity for intensification of up to Gross Plot Ratio (GPR) 3.5. Therein lies the conundrum where heritage structures are faced with land intensification and commercial pressures for redevelopment.

Singapore's first statutory master plan was completed in 1955 and approved in 8 August 1958, after the State of Singapore Act was passed which made Singapore a self-governing state. At that moment, the 1958 master plan was regarded as a highly restrictive "instrument of control"[21] with modest population growth assumptions catering for a population of two million by 1972 and the idyllic concept of town versus rural areas. Having adopted resettlement and land acquisition strategies, the People's Action Party (PAP) government also saw the need for an effective planning framework to guide development, given the inadequacies of the planning system it had inherited from the colonial administration.[22] The sanctity of property was breached through the Land Acquisition Act (1966) which "allowed the government to amass highly fragmented, prime urban land into more efficient parcels, redistributing them towards more economic uses and larger, more comprehensive development"[23] Such a high handed policy move was instrumental in the development of residential precincts and city infrastructure within the confines of the land inherited, while the post independent government planned for further territorial expansion through land reclamation.

Fig. 6. Clockwise (L-R): URA Master Plan 201920 illustrating land use for selected RSVP sites: 45 Sultan Gate (Tender Closed), 30 Maxwell Road (Tender Closed), 15 – 31 Hindoo Road (Upcoming), Old Kallang Airport (Upcoming) Instruments for Development

Fig. 7. Evolution of Master Plans between 2003, 2008 and 2014/2019 which shows the change in GPR and land use within and around the site. (Source: URA)

Over time, the 1958 master plan would gradually evolve to the 1980 and 2003 master plans which are milestone planning instruments that reflect key changes in social, economic and infrastructure, based on thorough planning across respective statutory agencies. In particular, these three master plans chronicle the change in measurement, from *Persons per Acre (PPA) to Persons per Hectare (PPHA)* and ultimately the prevailing *Gross Plot Ratio (GPR)*. The variance in these measurement scale not only translate in to minor arithmetic adjustments but effectively the urban massing of our built environment, albeit within the definition of urban density. URA continues to review the Master Plan every five years and translated the broad long-term strategies of the Concept Plan into detailed plans to guide development of land at the local and regional levels. Prior to the formalisation of URA's role in 1974, with the "responsibility and power on all matters relating to urban redevelopment, including the clearance of land, development of land and management of buildings therein"[24], Architects, planners and civil society were rallying behind independent think tanks such as SPUR (Singapore Planning and Urban Research Group) between the 1960s and 1970s. In their hallmark 1968 – 1971 publication, SPUR had rightly advocated to *Locate Airport at Changi*, despite nascent calls by government officials to expand Paya Lebar Airport due to

budgetary concerns[25]. Critical discourse by the private sector proved to be beneficial, but also suggested a shared investment in our built environment and city planning, which then Prime Minister Lee Kuan Yew once described SPUR as "critical but nonetheless dedicated"[26]. Nonetheless, it seems that global shifts in public sentiment from the "guilt and failure (that) took the place of utopian positivism" at the end of the twentieth century, "the bodies that undertook planning became those of deregulated government" while "private and quangoized public/private institutions became mechanisms of planning and development"[27].

From the 1970s onwards, planning in Singapore took on a more sophisticated and comprehensive model that allowed URA to consider a wider suite of plans beyond renewal or conservation, traversing other state authorities and agencies such as the Housing Development Board (HDB) for public residential development plans, JTC Corporation (JTC) for industrial development, Land Transport Authority for the planning of rails and roads, Public Utilities Board

and National Environment Agency for the utilities and infrastructure. Supply and demand projections were made for various types of developments to determine the types and intensity of developments for the sale sites.[28] This is also guided by the 1964 Planning Bill amendment, with the introduction of the development charge system where "developers benefiting from the granting of development permission would have to pay a development charge to the state, to ensure that "the increases in value of land brought about by community development and not through the efforts of the landowner" would accrue to public coffers"[29].

In the case of Old Kallang Airport, it is observed that this prime land is slated for high rise and high-density developments comprising of Commercial and Hotel uses at a considerable high GPR of 3.5 since 2008. The intended quantum in the 2003 master plan might have been similar to the 2008 master plan, where in the case that a site is subject to detailed planning, URA or SLA could have called for a RFP tender based on a specified land lease, or receive an Expression of Interest (EOI) from private developers with a quality fee proposal that can rejuvenate or activate the precinct and city positively. For the latter option, URA would nominally advise on the basic planning parameters, palatable land tenure model based on preliminary advice from the Chief Valuer via SLA, to guide private developers on their feasibility studies which is ultimately evaluated by URA in terms of its overall merit to urban development, place making and development charge.

Master Plan Year	Land Use	Plot Ratio (PR)	GFA	Rate	SHB Value	Total
1958	Commercial	0.18	4,346 SQM	S$500/SQM	S$2,278,000	S$2,966,425
	Community / buildings	0.025	1,376.85 SQM	S$500/SQM	S$688,425	
1980	Commercial	0.16	4,620 SQM	S$500/SQM	S$2,310,000	S$2,965,875
	Community buildings	0.024	1,311.75 SQM	S$500/SQM	S$655,875	
2008	Commercial	3.5	22,451 SQM	S$2,240/SQM	S$50,290,240	S$352,952,390
	Commercial	3.5	26,328 SQM	S$2,240/SQM	S$58,974,720	
	Hotel	3.5	39,179 SQM	S$2,450/SQM	S$95,988,550	
	White	1.5	44,576 SQM	S$2,240/SQM	S$99,850,240	
	White	3.5	21,361 SQM	S$2,240/SQM	S$47,848,640	
2014	Commercial	3.5	22,451 SQM	S$5,460/sqm	S$122,582,460	S$851,236,820
	Commercial	3.5	26,328 SQM	S$5,460/sqm	S$143,750,880	
	Hotel	3.5	39,179 SQM	S$5,740/sqm	S$224,887,460	
	White	1.5	44,576 SQM	S$5,460/sqm	S$243,384,960	
	White	3.5	21,361 SQM	S$5,460/sqm	S$116,631,060	

Fig. 8.   Estimated Development Charge based on historical master plans from 1958, 1980, and 2008 (Source: DPA)

Master Plan Year	Land Use	Plot Ratio (PR)	GFA	Rate *September 2022 Rate*	Development Baseline	Total
Present	Commercial	3.5	22,451 SQM	S$6,720/SQM	S$150,870,720	S$1.1 billion
	Commercial	3.5	26,328 SQM	S$6,720/SQM	S$176,924,160	
	Hotel	3.5	39,179 SQM	S$8,680/SQM	S$340,073,720	
	White	1.5	44,576 SQM	S$6,720/SQM	S$299,550,720	
	White	3.5	21,361 SQM	S$6,720/SQM	S$143,545,920	

Fig. 9.   Estimated Land Betterment Charge (formerly known as Development Charge) based on 2014/2019 master plan (Source: DPA)

Development charge is a tax that is levied when planning permission is granted to carry out development projects that increase the value of the land, i.e. Rezoning to a higher value use or increasing the plot ratio. These rates are reviewed every 6 months (on 1 March or 1 September), in consultation with the Chief valuer at the Inland Revenue Authority of Singapore (IRAS). While this has been superseded by the Land Betterment Charge Act with effect from 1 August 2022, the mechanism of pre-chargeable and post-chargeable valuation and difference in the previous DC system remains similar. It should be noted that preliminary calls for Old Kallang Airport's RFP is speculated to be based on a 30-year lease arrangement, where any Land Betterment Charge will be tied to a percentage of freehold value. In other words, a term of 30 years will incur 60% of the freehold value, as illustrated in the Table Showing Leasehold Values as Percentages of Freehold Value (Figure 6).

Yet even at a 30-year lease with 60% of the freehold value, estimated at S$1.1 billion, would entail a land tax of

$660 million, excluding all construction cost, Capital Expenditures and Operational Expenditures for any viable development venture. Clearly, considerable financial pressure will inevitably cast a deep shadow on any meaningful adaptive reuse to the conserved buildings within Old Kallang Airport.

INSTRUMENTS FOR CONSERVATION

On this note, Uta Hassler makes a poignant proposal where "urban transformation could be guided by using time as a tool of measurement, rather than basing on land use rights, volumetric requirements and the price of land, as in the past" given that "the morphology of Singapore's building stock generally depends on when the land was reclaimed or prepared" and "a healthy maturation of existing building stock could be tied to the age of the land" which "might further result in differentiated land-lease regimes that set different speeds for future development cycles". [30] Time, against the age of the land, posits a contrarian perspective which fundamentally requires a paradigm shift in the way we value any form of redevelopment around conserved buildings. Where land as one of the most prized commodity, *we must therefore maximize the value creation from our land*[31]. Some lament that while Singaporeans

might benefit from the constant urban redevelopment of neighbourhoods and planning pre-cincts, it is recognized that the general population is not necessarily "invited nor expected to contribute to the decision-making process, since their individual and collective territoriality does not seem to weigh much in the balance"[32] of urban master planning and land use.

**TABLE SHOWING LEASEHOLD VALUES
AS PERCENTAGE OF FREEHOLD VALUE**

Term of Years	Percentage (%) of Freehold Value	Term of Years	Percentage (%) of Freehold Value	Term of Years	Percentage (%) of Freehold Value
1	3.8	34	63.7	67	84.2
2	7.5	35	64.6	68	84.5
3	10.9	36	65.4	69	85.4
4	14.1	37	66.2	70	86.0
5	17.1	38	67.0	71	86.5
6	19.9	39	67.7	72	87.0
7	22.7	40	68.5	73	87.5
8	25.2	41	69.2	74	88.0
9	27.7	42	69.8	75	88.5
10	30.0	43	70.5	76	89.0
11	32.2	44	71.2	77	89.5
12	34.3	45	71.8	78	90.0
13	36.3	46	72.4	79	90.5
14	38.2	47	73.0	80	91.0
15	40.0	48	73.6	81	91.4
16	41.8	49	74.1	82	91.8
17	43.4	50	74.7	83	92.2
18	45.0	51	75.2	84	92.6
19	46.6	52	75.7	85	92.9
20	48.0	53	76.2	86	93.3
21	49.5	54	76.7	87	93.6
22	50.8	55	77.3	88	94.0
23	52.1	56	77.9	89	94.3
24	53.4	57	78.5	90	94.6
25	54.6	58	79.0	91	94.8
26	55.8	59	79.5	92	95.0
27	56.9	60	80.0	93	95.2
28	58.0	61	80.6	94	95.4
29	59.0	62	81.2	95	95.6
30	60.0	63	81.8	96	95.7
31	61.0	64	82.4	97	95.8
32	61.9	65	83.0	98	95.9
33	62.8	66	83.6	99	96.0

Fig. 10.   Table Showing Leasehold Values as Percentages of Freehold Value. (Source: SLA/URA)

Fig. 11.   New Possibilities for Paya Lebar Air Base (Source: URA)

We should acknowledge that there are selective cases where the general public and private sector gets involved in the planning process, such as the 800ha Paya Lebar Air Base where URA launched an open competition in partnership with the Singapore Institute of Architects and Singapore Institute of Planners in April 2021.[33] Through three themes of Concept Master Plan, Transforming the Runway and Rejuvenating Paya Lebar Airport, the call for ideas is in anticipation for the Royal Singapore Air Force (RSAF) relocation from 2030 onwards, which was unveiled by then PM Lee Hsien Loong in 2013. The relocation of Paya Lebar Air Base is noted to have a considerable impact on the real estate value of multiple estates across 8 surrounding precincts as building height restrictions are lifted for better land optimisation and rejuvenation. It is estimated that 150,000 new public and private homes can be accommodated in Paya Lebar from the move, an immense uplift in real estate for the north eastern side of Singapore. Understandably, it might be due to the sheer scale of Paya Lebar Air Base, at more than 100 times the size of Old Kallang Airport, that such a collaborative stance between URA and the masses was adopted. Quantifiably, while there is an element of heritage conservation for both sites, the discrepancy in economic yield and significance is evidently incommensurate. Where the value creation of land is almost overrepresented by commercial gains. While it is also understandable that such large swathes of land of Paya Lebat Air Base needs to be

carefully planned across agencies and sectors, the seemingly lack of planning for smaller plots such as Old Kallang Airport presupposes a certain biases in the quantifiable yield, which would logically be coutnerintuitive for a nation perpetually starved of land. In the case of Old Kallang Airport, which has categorically not seen any meaningful adaptive reuse or programmatic intervention for the last 15 years, the site runs into the risk of urban abeyance.

Old Kallang Airport might seem to be rather fortunate in its adaptability for various government uses since it was decommissioned in 1955. This is possibly due to the potentials of "how modernist buildings are evolving entities, constantly being used and reused, designed and modified through occupation."[34] Occupation, as defined by Hannah le Roux is premised upon the minimal and abstract forms of modern buildings with the potential to take on different social lives.[35] These were evident when it was Singapore Youth Sports Council (1955 – 1960), People's Association (1960 – 2009), Public Works Department (1960 – 1972), and the Central Manpower Base (1967 – 1972). Yet it is also noted that these programmatic uses are primarily administrative and recreation within the purview of statutory boards.

Further to this, Old Kallang Airport is also confounded by the lack of meaningful rehabilitation, where SLA is noted to have adopted the 'little and often approach'[36] or minimal interventionist in the restoration techniques, while waiting for its prospective tenant to take on a larger scope of further consolidation and fitting out works. Such means of preventive conservation "avoid the need for major interventions using conservation materials with high embodied energy, often from non-renewable resources such as petrochemicals, and to replace it with a holistic approach to the care of collections that manages the environment surrounding the collection, creating conditions that reduce the rate at which damaging change occurs"[37]. As of April 2023, the conserved structures were still undergoing their last phase of consolidation, to preserve the structural integrity while maintaining any additive but non-historic architectural finishes.

Fig. 12. Conserved buildings of Old Kallang Airport and their estimated Gross Floor Area (Source: DPA)

Fig. 13. Clockwise (L to R) - Level 2 of Terminal Building with exposed columns, Workers in the midst of repainting steel trusses of Hangar A, External wall of Terminal Building stripped of plaster exposing brickwork, External wall of Terminal Building stripped of plaster exposing block masonry, reinforced concrete structure and embedded piping. (Source: DPA)

Fig. 14. Guidelines for Former Kallang Airport, pg 14 (Source: URA)

Fig. 15. Guidelines for Former Kallang Airport, pg 5 (Source: URA)

As with most conserved buildings in Singapore, URA and Preservation of Sites and Monuments (PSM) will provide Planning Parameters and Restoration Guidelines (extract in Figure 9) to key defining design characteristics based on archival photographs and any historic documents or drawings available at that moment in time. Further to the conservation of Old Kallang Airport, prominent sites within the city are also controlled by Urban Design (UD) Requirements which aim "to preserve and enhance the urban character of the different planning areas" and "ensure that developments integrate well with their surrounding urban environment"[38]. Engagement with URA has unveiled preliminary UD Guidelines which focus on the following:

Provision of Continuous Elevated Link from Sports Hub
- Allow seamless, direct connection to Stadium & Kallang MRT Station
- Provide sufficient elevated pedestrian link width & vertical circulations including lifts and stairs
- Connect to Terminal & East Building at localized areas, could be integrated with new developments

Sensitive Building Heights / Form to the conserved buildings and surrounding landmarks
- Overall building heights within OKA not to be higher than the National Stadium Dome
- Stepping down of heights towards the conserved lawn / open space & Kallang River
- Development behind conserved East block should mirror the scale of the Hangar

Pedestrian Network & Public Space
- Provide comprehensive pedestrian network
- Provide public spaces

Open Space as vista corridor
- Keep the conserved lawn (open space) for public use
- Preserve view corridor between MRT to Stadium Dome

Fig. 16. Mapping of urban morphology within 1km from Old Kallang Airport (Source: DPA)

While these UD guidelines are only indicative and subject to further study, its respectful and sensitive approach to the interventions around the conserved buildings is highly commendable. Nonetheless, it can also be said that such open-ended guidelines might either enable creative interpretations or inhibit authentic conservation processes, both subject to the rigour of the public and private sector influences. In considering urban design and conservation within the ambit of urban planning, it would be apt to quote Lichfield on this note; "land planning aims at a reduction in cost both private and social and apportionment between private and social cost which is in social conscience"[39].

CONCLUSION

> *Land, like the water we drink, like the air we breathe, is a commodity that is the right of all men. In cities where it is apparent that there is a crisis in population growth and therefore a desperate need to apportion the use of land in a planned fashion, can laissez faire ownership of land continue?*[40]

Site, and by extension, space, is encountered as intrinsic to the fluid formation of group, as well as individual identities.[41] This paper has approached the site from two distinct prongs and scales, through the instruments of development and conservation, to discuss the role of the group which has thus far encompassed public agencies and private developers, with the clear absence of civil society and the general public. In the case of Old Kallang Airport, the interregnum of social memories is evident, where the site's urban morphology has distinctly changed within recent decades. While Chee astutely notes that "history is conveyed as an overarching concept of the space concerned, and disseminated as a narrative that is as easily appropriated as it is slippery and intangible. For example, architectural studies of

ethnic enclaves, state monuments and landmark sites frequently espouse the use of the aerial perspective as a means for getting into unfamiliar terrain."[42] Yet the urban scale for Old Kallang Airport necessitates a more macro perspective, observed through the social, political and economic lens, to formulate the future of this site/space.

As SLA/URA's RSVP closes its call within this year, the future of Old Kallang Airport remains uncertain, despite the fact that most of the conserved buildings covers close to 40% of the site. Henderson critically observes, "analysis of the Singapore case confirms that the significance allotted to heritage is not uniform or fixed, but diverse and fluid. It varies with individuals and the groups to which they belong, organisations and official stakeholders"[43]. Socio-cultural and economic meanings attributed to built heritage conservation differ from place to place (Rypkema, 2012), yet gentrification, a phenomenon that has in recent years been viewed as negative and problematic (Arkaraprasertkul, 2018) remains prevalent in most conserved sites and buildings which have undergone some level of rehabilitation or adaptive reuse. Yet it is almost certain that for Old Kallang Airport, gentrification is the only means to ameliorate the pressures of development and conservation. Perhaps what is also questionable is the relationship between urban density and gentrification, which is not always quantifiable or qualifiable within confines of the instruments of development and conservation. Our preliminary studies suggest that the land value and developmental right for intensification predicated in the master plan might be met with considerable inertia from private sector developers who are unable to balance their developmental cost and yield based on the current instruments of development and conservation. Therein, further entrenching the predicament and urban vacuum that Old Kallang Airport has been in for the past decades. Old Kallang Airport calls for a critical re-evaluation to the way we approach urban density around heritage sites, through a keen understanding of history, land and value.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author.

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IMAGE SOURCES

Figure 1   DP Architects Pte Ltd

Figure 2   DP Architects Pte Ltd

Figure 3   Urban Redevelopment Authority [https://www.ura.gov.sg/maps/].

Figure 4   DP Architects Pte Ltd

Figure 5   DP Architects Pte Ltd

Figure 6   Singapore Land Authority [https://www.sla.gov.sg/articles/press-releases/2023/revision-of-land-betterment-charge-rates-from-1-march-2023].

Figure 7   Urban Redevelopment Authority

Figure 8   DP Architects Pte Ltd

Figure 9   Urban Redevelopment Authority

Figure 10   Urban Redevelopment Authority

Figure 11   DP Architects Pte Ltd

Image 1   National Museum of Singapore [1996-00396-011].

Image 2   Ministry of Information and the Arts Collection [19980000824-0004].

Image 3   National Archives of Singapore [20120000764-0042].

Image 4   The Straits Times [https://www.straitstimes.com/singapore/public-encouraged-to-inject-new-ideas-into- old-buildings-under-ura-sla-reinvention-scheme].

Images 5 - 8 Urban Redevelopment Authority [https://www.ura.gov.sg/maps/].

Images 9 – 12   DP Architects Pte Ltd

From Sketchbook to Fieldbook
A Multimodal Approach to Street Market Ethnography through Field Sketches

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Paris Nanterre

Abstract

My research explores London's historic street markets as 'everyday heritage' facing global challenges such as gentrification. These markets are not merely spaces for economic exchange but also platforms for cultural heritage and community identity. Using field sketches made in two of London's historic street markets as a methodological tool, this study captures real-time dynamics, illustrating how local communities continuously adapt to maintain their unique identity. Moving beyond static records such as maps, field sketches offer an immersive, multisensory lens, capturing the fluidity of market spaces and the ever-changing rhythms of daily life. Alongside 45 interviews which provide narratives, drawing what I see in the immediate environment helps capture how various sets of temporalities enable a 'counter-mapping' (Harrison, 2011) of each market's everyday heritage. In the presentation, a multimodal approach combining character sketches, scene drawings, and vignettes will demonstrate the effectiveness of this research design. In this, sketching engages in an ongoing dialogue with field notes and interviews. This research argues for including field sketches as a valuable data source to elicit and construct rich insights, part of a 'fieldbook' that complements textual-based knowledge, offering a more comprehensive understanding of human experience in spatial and temporal contexts.

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The 1975 ALI Model Land Development Code
Development regulations as planning history

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Abstract

In 1975, the American Law Institute (ALI) published A Model Land Development Code, a 500-page tome with a deceptively simple title. The model code was anything but simple. It proposed rewriting the basic laws that govern how land is planned, designed, and developed in the United States. Development code represents the a priori rules that set the stage for the a posteriori work of planning. As such, development code is among the least visible means to regulate the built environment. Modern code is abstract and difficult to visualize in space which makes witnessing its influence challenging. The process of writing and promulgating code is rarely well documented. But because of the relationship between development code and the legal foundations of planning in the US (and other places in the world) it exerts substantial power over the practice of planning and the process of land development. ALI is an independent legal think tank comprised of attorneys and judges founded in 1921. The Institute operates far outside the experience of most planners and designers. Yet amid the urban crises of the 1960s, ALI undertook a critique of how US land development code functioned. What began as a review of existing planning and zoning regulations turned into a 12-year project to redesign the basic laws upon which decisions about the built environment had been situated since the 1920s. Though few jurisdictions formally adopted the final version of the ALI code, it proved to be influential. Hardly recognized anymore, ALI's model code helped shape 1970s and 1980s-era land use policy, at both the state and national level. The process of its production reveals important insights into how de¬signing the laws and institutions that carry out land development shapes planning history in ways that are often hidden from view. This paper excavates the history of ALI's effort to devise a new land development code. ALI's extensive archives provide an upclose view of the Institute's process of code writing and distribution and helps reveal the assumptions that undergird how development code is constructed, how it functions, and how it shapes the built environment. The paper argues that ALI's model code represents another lost chapter of planning history in the US that yet remains salient. Recognizing the quiet role of these kinds of policies remains relevant, as a new set of upheavals has again brought long buried assumptions about the built environment back to the surface.

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Carlton Basmajian, "The 1975 ALI Model Land Development Code: Development regulations as planning history." In Ian Morley and Hendrik Tieben (eds.), *International Planning History Society Proceedings*, 20th IPHS Conference, "The (High Density) Metropolis and Region in Planning History," Hong Kong, 2 - 5 July, 2024, TU Delft Open, 2024.

Japanese Cities in Transformation (1)

Chair: Naoto Nakajima

The development
of the port of Nagoya
as the timber complex hub and
the formation of its waterfront zone
Focusing on the oversea shipping routes

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Abstract

The purpose of this study is to clarify how the Port of Nagoya waterfront zone was formed focusing on the relationship between the connection of global trading networks and the formation of waterfront zone by timber industry. In the process of Japanese modernization, the timber market expanded due to demand for the construction of industrial infrastructure. The area around Nagoya has had a thriving timber industry since the early modern period, and timber was transported from mountains through rivers by rafts until the 1910s. However, once the first stage of modern port construction was completed, large volumes of timber began to be imported from East Asia and North America. It led to the rapid construction of lumberyards until the 1920s, and simultaneously overseas shipping routes increased. Some timber merchants established land development companies to operate huge marine lumberyards and develop lands around there as an offshoot of the major spatial changes in the waterfront zone. After all, the general form of the Port of Nagoya and principles for the use of the port area were defined by the timber transportation. Capturing these relationships gives an exogenous perspective to explain the formation process of the Port of Nagoya.

INTRODUCTION

After the Meiji Restoration in the mid-19th century, modern ports were built in cities such as Yokohama, Kobe, and Osaka for industrial and economic development throughout Japan. Waterfront zones, modern port and surrounding districts, were formed for the first time at this time. Nagoya, the subject of this study, was a city formed around a castle town about 10 km from the shore, and the waterfront zone of the Port of Nagoya has not developed until the port construction begun at the end of the 19th century.

Yamada et al. (2021) point out that there was a plan for sea-land communication for ships and railways, while urban planning was conceived to accommodate logistics such as roads and canals about the Port of Osaka. In Nagoya, on the other hand, the Ministry of Home Affairs did not subsidise the construction of such a large port. When considering logistics links between ports and urban centres, the large volume of timber actively traded in Nagoya was an important factor. Oda et al. (2023) show that urban structures and lumberyards location have been influenced by changes in transport regarding the well-developed timber industry. As shown in our study, lumberyards were built by timber merchants in the waterfront zone of Nagoya in response to increased timber imports. The location and design of these urban areas express relationships spanning the seas, and of local needs in response to global changes (Hein, 2011). In this regard, the perspective of the relationship between the international timber trade and the port construction is essential when we consider the industrialisation at the time.

The purpose of this study is to clarify how the waterfront zone of the Port of Nagoya was formed. We focus on the relationship between the connection of global trading networks and the formation of the waterfront zone by the timber industry in the Port of Nagoya. We describe a dynamic balanced paradigm that the port construction plans controlled private sector's development in response to industrial demand due to exogenous pressures and then made it possible for further development in the waterfront zone.

MODERN PORT CONSTRUCTION AND TIMBER INDUSTRY IN NAGOYA

Nagoya has had a thriving timber industry since the early modern period. Nagoya is in the innermost part of Ise Bay on the Pacific Ocean, where the sea is shallow. Originally, timber was transported from the mountains through the Kisogawa, and then using the Horikawa to Nagoya as assembled rafts using traditional methods. At that time, timber merchants and related facilities such as sawmills and small private lumberyards were located along the Horikawa within the city centre (Figure 1). It was common to moor timber along and on the Horikawa. Timber was shipped to various regions including Edo (Tokyo) and Osaka[1] for building material and as products.
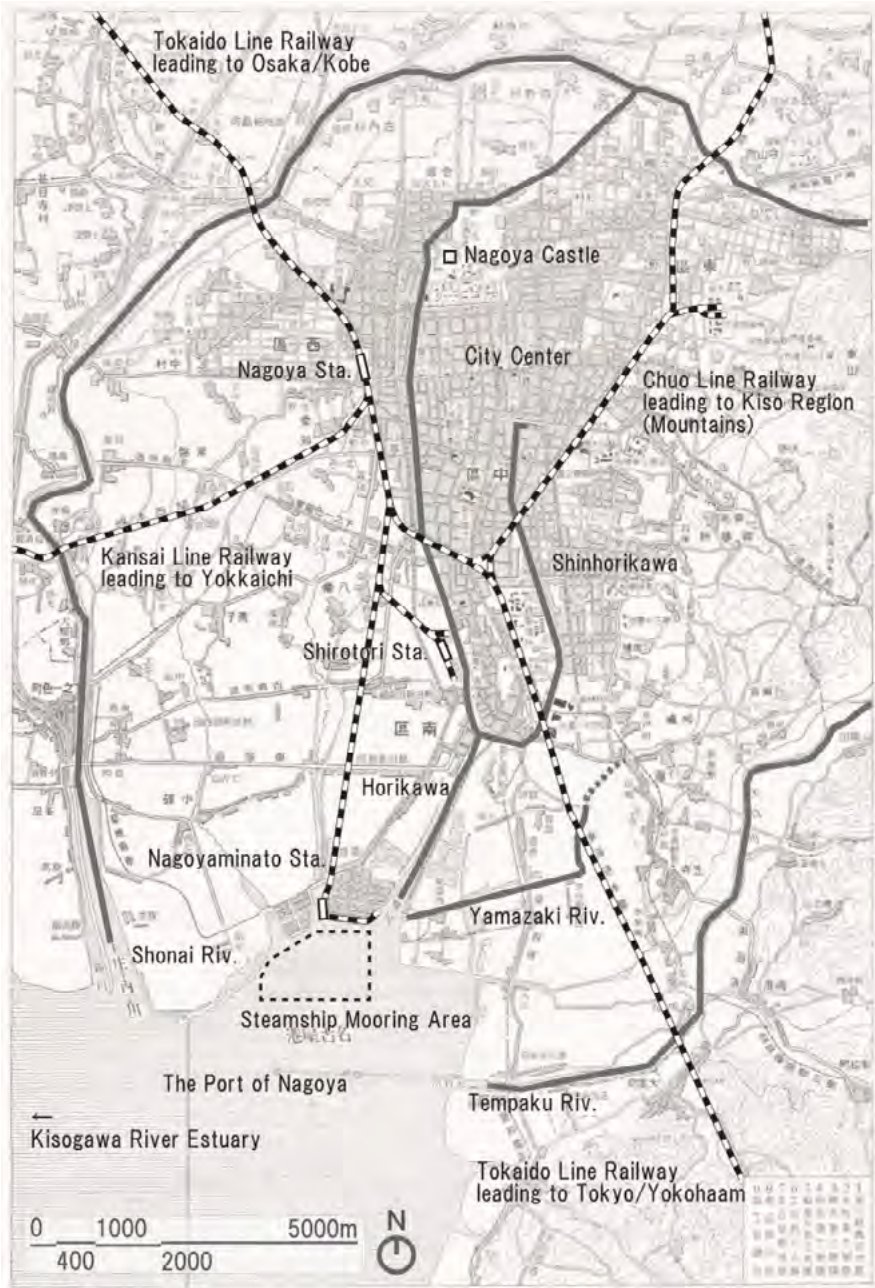
The main rivers and railways in Nagoya city around 1923. This shows the development of waterfront zone (the area between the Port of Nagoya and city centre) in progress.

In February 1896, the Aichi Prefectural Assembly passed the first construction plan of the Port of Nagoya to enhance transportation function and industries. [2] However, in 1898, the plan was revised due to the typhoon damages and financial problems. The port area was increased from around 1,520,000m² to 8,694,000m² by changing the shape of the east and west break-waters but replacing a previously planned lumberyard and not increasing the budget. The concept Prefectural Governor Kazuyuki Egi had was to moor rafts along the shore of the port area.[3] That is, he determined that a lumberyard was not necessary by substituting the port area where the breakwaters keep the sea surface calm. "The Port of Nagoya Control Regulation"[4] shows that mooring rafts for at most five days and passing through canals between reclaimed lands were allowed avoiding ship courses and the steamship mooring area. It means that handling rafts in the port area was possible by considering the arrangement of the port facilities. Eventually, the Port of Nagoya opened in 1907 as an open port, and the Aichi Prefecture Government Port Office (Port Office) completed the first construction in 1910, then started the second construction plan.

During the modernization process, timber demand in Nagoya largely increased as materials for industrial infrastructure and products. In 1927, the total amount of wood boxes, such as for petroleum or ceramics, produced domestically and internationally exceeded 10 million, [5] which accounted for a large proportion of national production and the most in the nation.[6] The same year, dispatched timber volume from Nagoya by train was also the most of six cities (Tokyo, Yokohama, Nagoya, Kyoto, Osaka, Kobe). This state indicates that there were strong demands for timber in Nagoya, which was one of the largest timber complex hubs of Japan. According to statistics from Aichi Prefecture, timber ranked second in terms of share of domestic imports from 1919 to 1939, and first to third in terms of foreign imports until 1941 in the Port of Nagoya.[7] Therefore, merchants procured a large quantity of timber from not only mountains along the Kisogawa, but also other regions.

The merchants could import timber by large steamships after the opening port from remote regions: mainly Hokkaido, Sakhalin, Russian Primorsky Krai, and North America (Figure 2, 3). Hokkaido time started to be imported around 1907 at first for the construction of the National Exhibition venue held in Nagoya in 1910.[8] At that time, forestry was economically important and a subject to resource exploitation in Hokkaido, which was being pioneered.[9] Especially, the demand was high throughout Japan for railway sleepers and as material for pulp. Until 1921, Hokkaido timber constituted most imports that used steamships. After the Russo-Japanese War (1904- 5), Japan, which controlled Sakhalin, promoted the pulp industry, and set up a forest management system, led by the Sakhalin Agency. At first, Japanese main pulp cooperations took the lead in the development with factory planning there. However, since forest insect damage by pine caterpillars occurred in 1919, the Sakhalin Agency started a government-run logging project to deal with the damage promptly, which supplied more timber in Sakhalin than its demand there. Eventually, more than 47 million tons of timber was exported to Japanese cities from 1923 to 1927 because the Sakhalin Agency decided to distribute it.[10] The Great Kanto Earthquake of 1 September 1923 (more than 100,000 victims around Tokyo) was also the primary factor to urge exports. It caused extensive damage and required large quantities of reconstruction materials. So, Sakhalin timber was transported to Tokyo via other ports such as Nagoya and Osaka, which were ranked first and second of Japanese ports that imported from Sakhalin in 1927.

Fig. 2.   The geographical information in East Asia

The USA also became one of the main timber producing countries for Japan. In the USA, westward expansion continued in the 19th century, when the establishment of railways and ports reached the west coast. Furthermore, forestry in the western region grew dramatically, with Washington, Oregon and Louisiana ranking first to third in production in 1924, instead of the eastern regions of Pennsylvania, New York, and Michigan in 1860. "History of American Lumber in Japan"[11] explains that wood demand and sawmilling capacity increased in the USA during the First World War, but on the other hand, surplus workforce and ships caused a sharp fall in maritime transport cost after the war. To adapt to this situation, the US timber industry set Japan as a sale market which was closer than the eastern coast of the USA by sea. In contrast, timber was needed for reconstruction for the Great Kanto Earthquake in the 1920's in Japan. Afterwards, by matching supply and demand, large quantities of timber were imported to Japan. Merchants in Nagoya started importing timber around 1920, a few years after merchants in Tokyo and Osaka started, and set up the Nagoya American Lumber Importers Association in 1924. The increase in supply of American and Sakhalin timber in the Port of Nagoya coincided around the mid-1920's.

LUMBERYARDS CONSTRUCTION
BY TIMBER MERCHANTS IN WATERFRONT ZONE

Timber needed large areas of land to storage it close to the Horikawa, where more than one hundred of wholesalers and sawmills were located until 1920's[12], and the Shinhorikawa, which branches off the Horikawa and opened by Nagoya City in 1910. Figure 4 shows the location of

sawmills and main lumberyards. After the opening of the port, more timber passed through the rivers, but they were narrow, impeding other ships and cargo handling.[13] This had been a consistent problem since then. However, there was no large lumberyard that stakeholders can use as of 1900; there was the Shirotori Lumberyard used only for public timber under administrative control since the early modern period. Moored timber sometimes flooded during storms, causing run-off and damages to urban areas. As a result, timber merchants embarked on the construction and management of lumberyards with the cooperation of landowners and influential businessmen since they didn't own large areas of land in waterfront zone.

The first lumberyard that merchants committed is the Nagoya Lumberyard, which located in the north side of the Shirotori Lumberyard. The Nagoya Lumberyard Co. was established in 1906 with Tsunemitsu Kumagai and Kanshichiro Harada at the helm.[14] The business purpose states to improve usage status of the Horikawa. To prepare budget for the land, they solicited purchase of shares including influential businessmen such as Tominosuke Kadono, who served a member of the Nagoya City Council, then became a member of the board.[15] After the opening of the Shirotori Station on the Shirotori Lumberyard in 1916, which bring timber from mountain regions through the Chuo Line Railway, they also handled timber there.[16] In conclusion, the Nagoya Lumberyard Co. responded immediately after the opening port to ensure proper storage and transport of timber coming through the Horikawa from the port and the Shirotori Station.

Other merchants also considered to establish a lumberyard as a competitor of Nagoya Lumberyard in the early 1910s because its capacity was insufficient. Taichi Miyaji and members of the Nagoya Timber Trade and Industry Association (Timber Association), approached Saikichi Yamada who ran a canning company and leisure facilities on the 5th reclaimed land.[17] They thought that converting the canning company's hatchery into a lumberyard is useful due to its proximity to the steamship mooring area. For co-management of a lumberyard with Yamada, merchants founded the Meiko Land Co. with the participation of other businessmen who wanted to develop waterfront zone in May 1912. The two companies opened the Meiko Lumberyard in October 1913 and completed the canal of the 5th reclaimed land in November which connect to the Yamazaki River on the south side.[18] The Meiko Land Co. expanded the lumberyard until 1921 with design assistance by Sukeshichiro Okuda, who was a port engineer from the Port Office, and then managed land and buildings around the waterfront zone. They first dealt with Kiso timber, then Hokkaido timber and Sakhalin timber, and was said to be the most prosperous until 1925.[19] After all, they ensured the lumberyard in waterfront zone and established stable management structure responding to the increasing timber.

The opening of the port influenced people in arable land behind the waterfront zone, particularly in Kafuku, which is in east of the 6th reclaimed land. The landowners formed the Landowners' Association in June 1920 to discuss development measures in the light of the changes brought about by the opening port and the deterioration in relations with the peasants.[20] On the other hand, the Timber Association were looking for a site to build a new lumberyard, as large quantities of timber were being imported since the early 1920's. In August 1922, Miyaji again proposed the Landowners' Association that the Timber Association build a new lumberyard on Kafuku by leasing,purchasing or jointly managing land. But the negotiations were inconclusive. Nevertheless, the landowners continued discussions including land development,
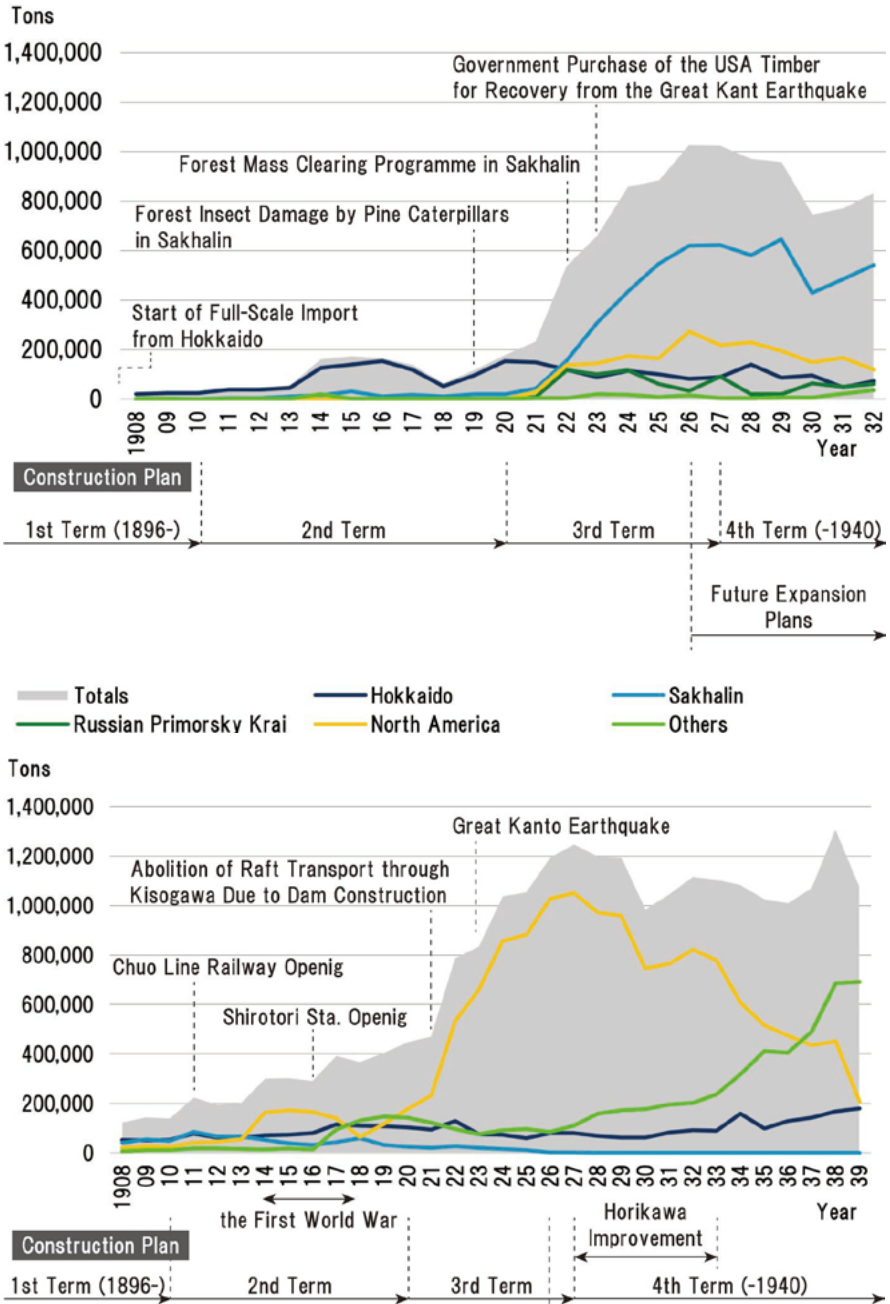
Fig. 3.   Timber imports by place of expenditure in the Port of Nagoya (above) and timber imports by mode of transport (below). The figures of "Total" on above (gray filled area) almost matches to the figures of "Steamship" on below (Yellow line).
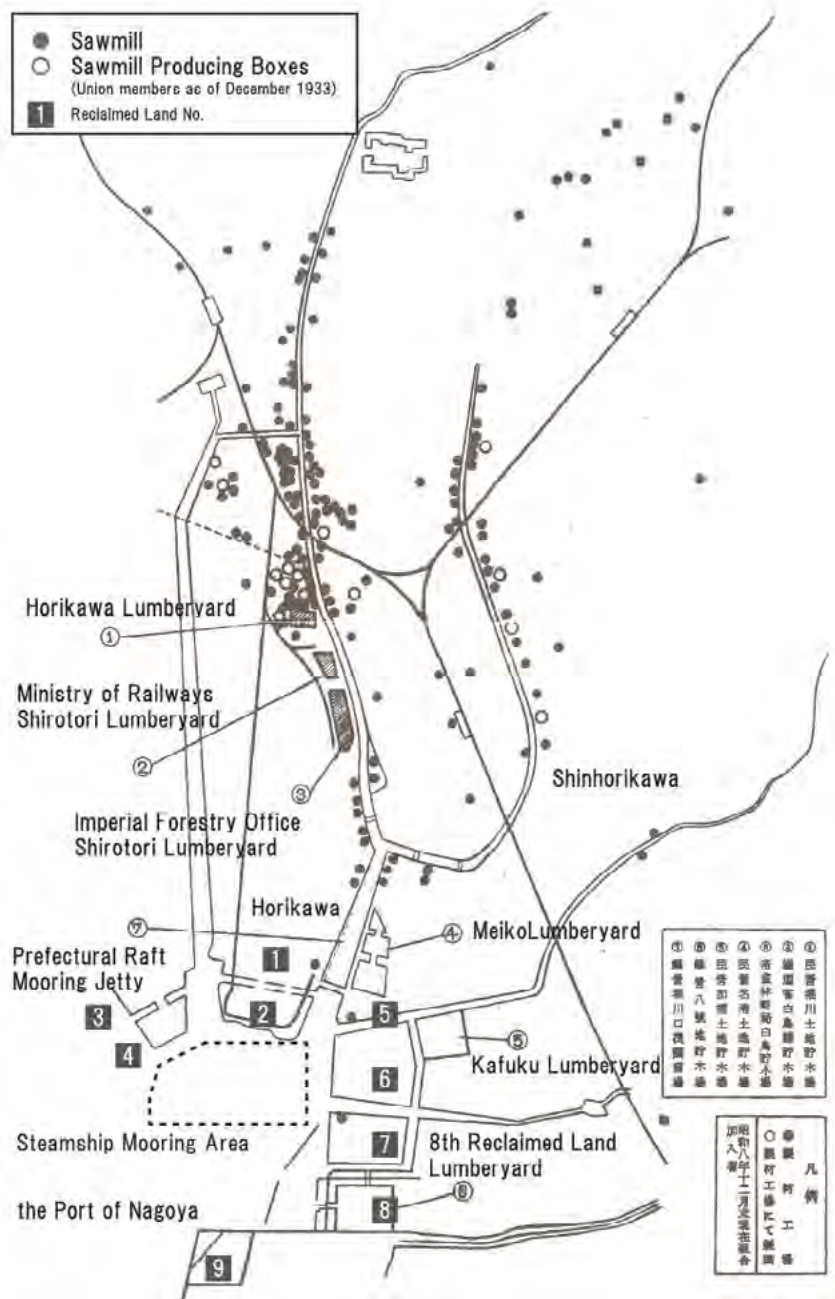
Fig. 4. The location of sawmills and lumberyards in waterfront area in1933. The Nagoya Lumberyard changed its name to the Horikawa Lumberyard in 1927. Many sawmills were located toward city centre along Horikawa and Shinhorikawa.

led by members who are familiar with timber industry. One is Rinshiro Suzuki, who was also a leading merchant of the Timber Association, and the other is Bunji Yamazaki, who was also a board member of the Meiko Land Co.. They finally established the Kafuku Land Co. in May 1923 to manage a lumberyard by themselves. The Kafuku Lumberyard opened in May 1925 with the lumberyard connecting to the Yamazaki River designed by the Port Office, and an industrial land for sawmills and related functions.[21] From the above, the opening of the Kafuku Lumberyard was achieved when the timber industry's demand matched the Landowners' Association's plans for the development of land.

From the above, the waterfront zone was gradually developed from the Horikawa towards the Shinhorikawa and the port. Similarly, the lumberyards were newly established in this order. The construction of new lumberyards, which were essential for economic activity, was of a public nature. However, Aichi Prefecture basically left the construction of warehouses related to the port construction plan to the private sector.[22] What made such risky company operations possible in the waterfront zone, which still lacks adequate social infrastructure, was that Aichi Prefecture moved forward with a series of the port construction plans, in addition to an ample supply of timber. Namely, the opening port and the completion of the first construction for the Nagoya Lumberyard and the Meiko Lumberyard respectively, and the start of the third plan, which was the first time the Government subsidised the construction, for the Kafuku Lumberyard were important supports to ensure risk.

CONSTRUCTION OF INFRASTRUCTURE BY AICHI PREFECTURE.

Aichi Prefecture organized infrastructure for timber required in waterfront zone objectively based on the plans. Timber being transported (in pieces or as rafts after being unloaded from steamships) and moored (not stored in lumberyards) became obstacles to other ships and cargo handling, which was becoming worse. When Governor Haruki Yamawaki observed the Horikawa by boat in1924, his group got stuck there.[23] This led to build the raft mooring jetties in the Horikawa estuary and west side of the 8th reclaimed land, which has been being reclaimed, to provide sufficient room for the disparate timbers unloaded from steamships to be assembled into rafts. This was the first time that a fee was charged for timber's use of the jetties and passing through the port area.[24] The fee returned to pay for the construction and maintenance of port facilities. Aichi Prefecture commissioned to the Timber Association to operate and manage the jetties, and they set up Nagoya Raft Agency Co. in March 1925, whose board members also includes Rinshiro Suzuki or Taichi Miyaji.[25]

At the same time, the Port Office had a plan to build a new lumberyard publicly on the 8th reclaimed land. Statistics anticipated that there would not be enough lumber storage capacity 30 year later even if existing lumberyards, including the Kafuku Lumberyard, come into operation because of the exponentially increasing timber.[26] However, after the Prefectural Assembly passed the agenda item to build the 8th Reclaimed Land Lumberyard, the Timber Association's leader Kojuro Hattori and some members had a meeting about its design with the Port Office in August 1924.[27] Eventually, as well as the raft mooring jetties, the new lumber-

yard was also managed by the Nagoya Raft Agency Co.. Under the contract, the company was supposed to pay a substantial annual incentive fee to the Timber Association.[28] In addition, the Nagoya Raft Agency Co. solicited the purchase of shares to all members of the association at the time of its establishment. From the above, the profits from the lumberyard and jetties were schemed to be returned to the members of the association.

CONFIGURATION AND PLANNING OF WATERFRONT ZONE FOR TIMBER TRANSPORTATION

Sukeshichiro Okuda believed that a fundamental basic plan was necessary to strategically consider the future situations to plan following port constructions adapting to the demands of the times.[29] Actually, in the year of completion of the first and second constructions, each trade performance exceeded its planned trade capacity, and the same was expected to be true for the third plan.[30] The Port of Nagoya Future Expansion Plan (Future Expansion Plan), drawn up by the Port Office with the participation of the Ministry of Home Affairs in July 1926, was an overall plan to envisage the scale of expansion of port facilities and to implement them in sequence. The Port Office also found the necessity to establish a specific area for handling timber in response to the rapid increase of timber as the need for such a plan.[31] Figure 5 shows the main facilities designed under the Future Expansion Plan. Each facility was completed by 1940 with the third and fourth constructions. Separated from the steamship mooring area, the timber loading shipyard was established on the west side of the 7th and 8th reclaimed lands surrounded by the breakwaters. Overall, facilities were concentrated in the south-east of the port area avoiding docks on the 2nd reclaimed land and the steamship mooring area.

The Future Expansion Plan assumed that 30% of the timber would be landed from the port area, while 70% would be stored once at the lumberyards and later transported towards the Horikawa.[32] The improvement of the narrow and shallow Horikawa was long desired by the Nagoya Chamber of Commerce and Industry, which had submitted motions on the river improvement to the Governor at least seven times between 1905 and 1924.[33] The full-scale river improvement project began in 1927 because it was an incidental condition to formulate the Future Expansion Plan.[34] The project ranged upstream from the junction as the first phase and then downstream as the second phase from 1933. It consisted of dredging of riverbed, expansion of river width and establishing a raft mooring area (second phase). The improvement itself intended to promote the industrialisation of the waterfront zone by enhancing transport capacity, but it was considered fundamentally necessary to address timber problems because the Future Expansion Plan (1926) envisaged more timber to be transported toward the Horikawa. Thus, Aichi Prefecture, not the private sector, had to take the lead in developing a system to link each infrastructure of the entire waterfront zone and to ensure smooth functioning. In this context, the handling of timber was a central issue.
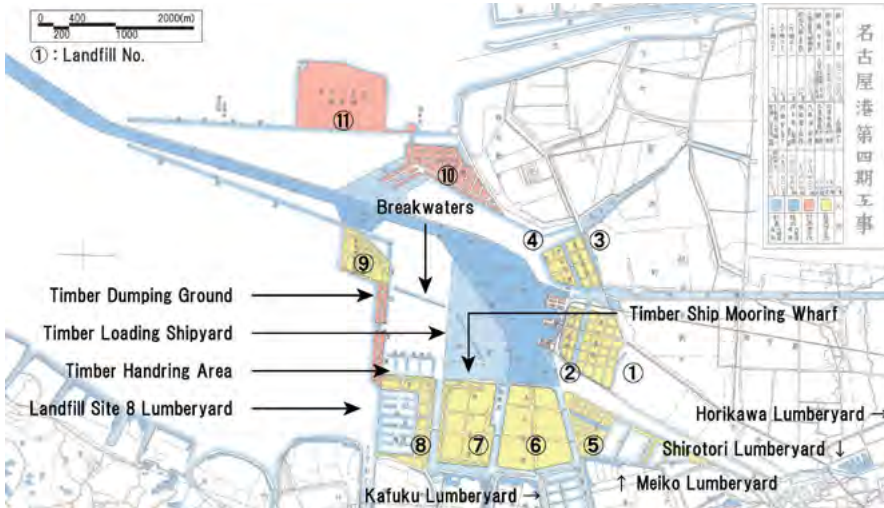
Fig. 5.   The location of the main facilities for timber in the port area around 1940.

The primary objective of the port construction was to promote economic and industrial development through international trade. It was hoped to navigate steamships and start oversea shipping routes as a means of achieving development. However, it was not until 1920 that works began on the wharves and quays that were essential for the sea-land communication, and where large ships, for instance over 6,000 tonnes, could berth. As a result, handling cargo was basically carried out by barges in the vicinity of the steamship mooring area, which was progressively extended since the first construction because it costed cheaper than wharves and quays. Correspondingly, between 1908 and 1935, the number of steamships entering the Port of Nagoya increased from 1028 to 4476[35]. Similarly, between 1927 and 1935, the final destinations of oversea shipping routes which called to the Port of Nagoya expanded their range; the number of European routes increased from 6 to 207 per year and North American routes from 142 to 302.[36], [37] Namely, the Port of Nagoya was gradually joining the international trade network and moving towards achieving its objectives through the port construction. However, regarding steamships and cargo handling around the expanded steamship mooring area, the timber transportation, which had changed because of the increased imports and timber infrastructure development, could have been an obstacle. Figure 6 shows this influence. The centralised location of the timber infrastructure in the south-eastern part of the port can therefore be seen to be of fundamental importance in avoiding such conflicts.

CONCLUSION

Nagoya developed as a timber complex hub in East Asia during the process of modernisation. After the opening of the Port of Nagoya, more timber was brought in by steamships from remote regions such as Hokkaido. Furthermore, since 1920, large volumes of timber were im-

ported from Sakhalin and the west coast of USA at the same time. The construction of the Port of Nagoya made it possible to conduct a large-scale international timber trade using steamships. Although timber merchants actively dealt with this timber in order to expand, there was no longer enough storage space along the Horikawa. this timber obstructed ship traffic and cargo handling and caused extensive damage during storms.

Merchants of the Timber Association sought lumberyards in the undeveloped waterfront areas, but they could not prepare large lands on their own. Therefore, they involved landowners and businessmen, who were looking to develop the port area, to manage the lumberyards. In addition to the growing timber market, the potential for further developments of the entire waterfront zone through the series of port construction plans led the timber industry to embark on initiatives on the public waterfront.

This background required the plan that balanced competitive international trade ability with flexible timber handling within the port area. The shape of the Port of Nagoya, surrounded by breakwaters, was determined with Governor Egi's intention of mooring and transporting timber when the first construction plan was revised. From then on, imported timber was forced to be transported to the lumberyards and sawmills located along the rivers, avoiding the steamship mooring area. However, when the expansion of the steamship mooring area and the increasing timber made this coexistence difficult, Aichi Prefecture drew up the Future Expansion Plan to solve this fundamental problem and control the entire port area. As a result, new timber infrastructure was centralised in the south-eastern part of the port, and the Horikawa improvement was implemented to facilitate communication between the individually developed infrastructure. In conclusion, the general form and principles for the use of the port area of the Port of Nagoya were defined by the timber industry.

DISCLOSURE STATEMENT
No potential conflict of interest was reported by the author.

NOTES ON CONTRIBUTORS
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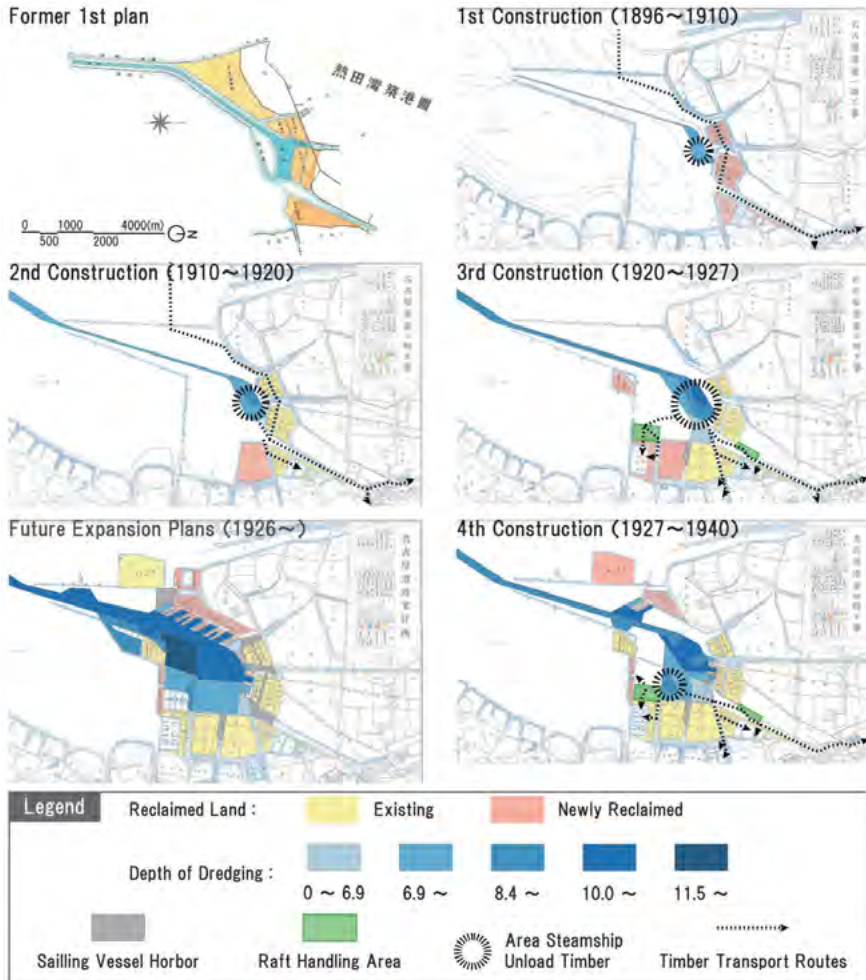
Fig. 6.   The transition of the steamship mooring area and timber transport routes in waterfront zone corresponding to the progress of the port construction and timber transport.

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(Data used for the graph below)

Figure 4   Nagoya City. "Taisho Showa Nagoya City History Vol.9", Nagoya: Nagaya Print Company, 1955.
Figure 5   Nagoya port authorities. "Nagoya port construction history", 1953.
Figure 6   Nagoya port authorities. "Nagoya port construction history", 1953. (all drawings)

Women's Expectations of Imperial Reconstruction Planning at Tokyo
A Gender Historical Approach to Urban Planning in Prewar Japan

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Abstract

This paper critically reevaluates the predominant male-centric and planner-centric narrative in urban planning history in Japan through a gender historical lens. It delves into the aftermath of the Great Kanto Earthquake (1923), examining the interplay between the women's movement and urban planning, explaining their subsequent divergence. Initially, it investigates how Mary Beard introduced urban planning issues to the Japanese women's movement post-earthquake, as evidenced by women's magazines. The paper then analyses the treatment of brothel, sangyōchi and nigyōchi (red-light district) locations as urban planning concerns within the women's movement, highlighting the public prostitution system. It scrutinizes the response of male-dominated urban planning authorities to women's movement demands, revealing a reluctance to intervene despite acknowledging the link between prostitution and urban planning. The analysis shows the alignment of interests between the women's movement and urban planning during protests sangyōchi and nigyōchi. However, the women's movement gradually shifted focus towards viewing the prostitution issue as a humanitarian concern, moving away from urban planning solutions. Finally, this paper illustrates how the convergence between the women's movement and urban planning, observed briefly after the Great Kanto Earthquake, was disrupted by political inaction from authorities and the abolitionist movement's ideology.

INTRODUCTION

An important milestone in the process of introducing modern urban planning into Japanese society was the Great Kanto Earthquake of 1923 and the subsequent Imperial Capital Reconstruction Plan. In 1919, Japan enacted its first City Planning Law and Urban Area Building Law, establishing a legal framework for modern urban planning. Only four years later, a major earthquake and fire struck the capital, causing significant damage to Tokyo and Yokohama. However, it also presented a unique opportunity to implement various urban planning methods, such as land readjustment, on a large scale, and to modernize Tokyo into an imperial capital. Consequently, a body of literature has accumulated in the history of urban planning, focusing on Goto Shinpei, who led the Imperial Capital Reconstruction Plan[1].

Of course, the portrayal of Shinpei Goto as a hero and the history of imperial city reconstruction have already faced criticism from various perspectives[2]. Goto's ambitious plans were also subject to contemporaneous ridicule[3]. However, the narrative of urban planning history, which appears to privilege a limited number of politicians and urban planners, is not confined solely to imperial reconstruction plans. Leonie Sandercock once pointed out this phenomenon, criticizing previous urban planning histories for often collectively legitimizing urban planning by emphasizing its rationality and public nature[4]. Since her critique, the position of urban planning authorities has been de-centered in urban planning history, and it has been reframed from the perspective of other actors whose practices are integral to urban planning and those who are impacted by it[5]. One of the issues she identified from this standpoint was the exclusion of women from urban planning history.

To be sure, this is not to imply that there have been no attempts in Japan to examine imperial reconstruction planning from the perspective of the people who experienced it, rather than solely from that of the planners[6]. However, by following Sandercock's argument, we recognize a lack of a gender-historical perspective not only in the Imperial Capital Reconstruction Plan but also in the broader history of urban planning in Japan.

Nevertheless, a few previous studies indicate that the women's movement became intertwined with urban planning in response to the unprecedented situation of the Great Kanto Earthquake[7]. Additionally, Yang suggests that the abolition of prostitution movement and urban planning briefly converged after the Great Kanto Earthquake, although not necessarily within the realm of urban planning[8].

On the other hand, insufficient examination has been given to how the women's movement and urban planning intersected during this period, and why this connection later weakened. To elucidate this, it is imperative to analyze the policies of the city planning and reconstruction authorities, predominantly composed of men, in addressing the demands of the women's movement, and to comprehend the interplay between the two.

From this perspective, this paper will first trace the development of the Great Kanto Earthquake and the women's movement, establishing how the issue of urban planning gained prominence within the women's movement. Subsequently, with a focus on the public prosti-

tution issue, it will scrutinize the evolution of the relationship between public prostitution and urban planning, while simultaneously unraveling how this connection weakened, drawing from insights derived from the women's movement and the urban planning framework. Finally, after organizing the analysis presented in this paper, we will assess the inaction of the city planning authorities and the constraints of the abolition of prostitution movement.

THE GREAT KANTO EARTHQUAKE AND THE DEVELOPMENT OF THE WOMEN'S MOVEMENT

MARY BEARD'S VISIT TO JAPAN

In examining the relationship between women and urban planning in Japan, Mary Ritter Beard emerges as a significant figure. She was the wife of Charles Austin Beard, an administrative scholar and historian who was invited by Shinpei Goto to advise the Tokyo Institute for Municipal Research[7].

Upon assuming the mayoral office of Tokyo in 1920, Goto established the Tokyo Institute for Municipal Research in 1922, mirroring the New York Bureau of Municipal Research, aiming to overhaul the structure of the Tokyo City Council, which was fraught with a series of dubious cases. Goto extended an invitation to Charles, who had served as a director of the New York City Council, to join him. In September of the same year, Charles, Mary, along with their daughter Miriam and son William, embarked on a visit to Japan. Mary, with a profound interest in women's labor and the suffrage movement in Japan, visited several girls' educational institutions and delivered speeches at conventions organized by women's organizations. The Beard family returned to the USA in March 1923 after a stay of approximately six months[8], just six months before the Great Kanto Earthquake struck.

On September 1, 1923, Charles and Mary received news of a major earthquake in Tokyo. At Goto's behest, they returned to Japan, where Charles engaged in discussions with Shinpei Goto regarding the reconstruction of the Imperial capital. Meanwhile, Mary witnessed the formation of women's organizations in response to the earthquake in Japan. She deepened her connections by distributing milk and bedding, thereby enhancing their social presence through relief efforts[9]. Mary was invited to a general meeting of the Tokyo Women's Federation, during which she delivered a speech on the role of women in the reconstruction of the imperial capital[10]. Of particular interest to this paper is her mention of the relationship between women and urban planning[11].

What specific points did Mary emphasize? She outlined 'considerations regarding the relationship between women and urban planning' and advocated for women's engagement with urban planning by addressing issues such as the proximity of residential areas to industrial zones, the accessibility of transportation hubs from residential areas, methods for constructing more comfortable homes, the adequacy of transportation for shopping needs, and the safety of footpaths[12]. The proposals here are closely related to the gradual progression of suburbanisation in Japanese society at the time, as in the United States. The Great Kanto Earthquake

spurred this trend, and the points made by Mary would have been matters of note to the new middle-class women who, at the time, were rationalising their lives around the suburbs. However, what Mary was seeking here was not to criticise the gender geography that was being formed - men's work in the city centres and women's housework and childcare in the suburbs - but rather to get women interested in urban planning on the basis of this gender geography.

Following the Great Kanto Earthquake, Mary published several articles in various women's magazines, consistently advocating for women's deliberate involvement in urban planning. She highlighted that urban planning had not been a focal point within the Japanese women's movement[12]. Furthermore, she emphasized that although 'the position of women is not essentially different from that of men', significant issues such as the profit- driven public prostitution system, women's labor, the right to vote, and direct suffrage remained paramount[13].

URBAN PLANNING ISSUES IN WOMEN'S MOVEMENT AFTER THE GREAT KANTO EARTHQUAKE

How, then, did the Japanese women's movement address urban planning in response to Mary's call? Contrary to Mary's awareness, there were not many discussions on imperial reconstruction plans or urban planning in women's magazines during the same period.

However, urban planning was relatively frequently mentioned in a roundtable-style article in Fujin Kōron titled 'Jyoryū Shinsai Zengo Konwakai' (Women's Discussion Group on the Post-Disaster Reconstruction of the Imperial Capital). Moderated by Yusaku Shimanaka, the head of Chuō Kōron, leading intellectuals and women's activists, including Kikue Yamakawa, Mumeo Oku, Akiko Hiratsuka, and Azuma Moriya, gathered to exchange views on the development of the women's movement post-disaster. Among them, Moriya Azuma, a member of Kyofukai (Japan Christian Women's Organization) and a prominent figure in the abolition of prostitution movement, argued for the implementation of the 'metropolis plan', even if it meant sacrificing the 'Marunouchi Building', one of the era's most representative modern structures[14].

The sentiment favoring large-scale urban planning following the earthquake was not limited to Moriya. For instance, in its November 1923 issue, Josei (Women) featured a special segment titled 'Demands from the Private Sector for the Reconstruction of the Imperial Capital'. Female intellectuals like Akiko Yosano and Kikue Yamakawa were queried about their reconstruction demands, with Yosano advocating for the abandonment of the downtown area in favor of building a new city towards the northwest suburbs, with the Meiji Jingu Shrine area as the central hub[15]. The prevailing consensus, among both men and women, was that an ideal imperial capital should be constructed at this juncture.

Of significance in Moriya's stance was her reference to Franz Adickes and her advocacy for large-scale urban planning through land readjustment. Adickes, the mayor of Frankfurt, is renowned for institutionalizing land readjustment. It was rare during this period for someone to delve into urban planning methodology and stress the importance of a reconstruction plan for the imperial capital, making Moriya's viewpoint exceptional within the women's movement. Moriya advocated for women's further cooperation in land readjustment to advance the re-

construction of the imperial capital[16]. They criticized old landowners and affluent individuals with large estates while generally supporting the expansion of roads and the creation of numerous parks as outcomes of the reconstruction plan. However, the women's movement also grappled with other crucial issues intrinsically linked to urban planning, particularly those concerning brothels and *sangyōchi* in the abolition of prostitution movement.

THE PUBLIC PROSTITUTION ISSUE AND URBAN PLANNING

THE SHINJUKU JŪNISŌ AND *NIGYŌCHI* ISSUE

The movement against brothels and *sangyōchi* did not originate solely after the Great Kanto Earthquake. Criticism of the public prostitution system began spreading from the 1910s onward, coinciding with the proliferation of *kagai* (brothels, *sangyōchi* and *nigyōchi*) in urban areas[17].

For instance, in 1922, a year prior to the Great Kanto Earthquake, Yodobashi town councillors submitted a petition for the designation of *nigyōchi* in Shinjuku. Their aim was to establish a *nigyōchi* that would attract commerce and elevate land values, thereby increasing tax revenues. However, this proposal faced staunch opposition. At the forefront of this opposition was Yasui Tetsuko, then the academic supervisor of Tokyo Women's University situated in Yodobashi, Shinjuku. In 1922, she spearheaded a campaign against the designation of Jūnisō, which were in close proximity to Tokyo Women's University, upon learning of plans to designate the area as a *nigyōchi*. Eventually, her efforts resulted in a temporary withdrawal of the designation[18].

How did this movement intersect with urban planning? During this period, Yasui visited Mary in Japan and sought her opinion on the nigyōchi and urban planning. The following exchange occurred between them:

> Mary told me that in the USA, before carrying out city planning, the women of the city would gather together the small tasks of one section of the women in their area and carry them out, so that they would be able to do this in one direction or another and finally produce an orderly city plan with great results. My friend could not help but blush when she told me that she wanted to know what the Japanese women's ideals for urban planning were. I don't have a concrete plan for city planning, but I would like to work with a serious mind and do my share of the work[19].

This account sheds light on the relationship between urban planning and the women's movement prior to the Great Kanto Earthquake. Yasui's visit to Mary and her inquiry about urban planning reflect her recognition of the designation of the nigyōchi as an urban planning concern. However, the exchange also highlights that Yasui, despite being a prominent figure in the women's movement, did not possess concrete proposals for urban planning.
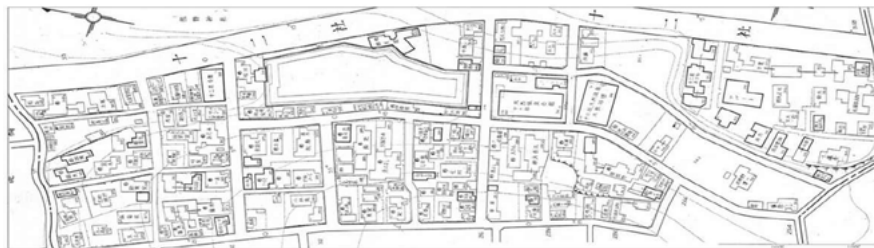
PETITIONS TO THE RECONSTRUCTION AUTHORITIES

As previously discussed, the women's movement gradually acknowledged the public prostitution issue as a matter of urban planning. Amidst this awareness, the devastation caused by the Great Kanto Earthquake, which destroyed brothels in Yoshiwara and Suzaki and claimed the lives of many prostitutes, presented an opportunity to reframe the issue of public prostitution within the realm of city planning. Notably, Mary underscored the significance of the public prostitution issue when urging women to engage in urban planning[20]. Similarly, public prostitution emerged as a pivotal topic in the aforementioned discussion groups. Akiko Hiratsuka advocated for the abolition of public prostitution at this juncture, even if private prostitution persisted. However, the authorities' stance was contrary, expressing intent to 'restore Yoshiwara and Susaki again'. In response, Waka Yamada sharply criticized the authorities, attributing their stance to their male-dominated composition[21]. The gender disparity within the reconstruction authorities was criticised through the lens of the brothel issue.

Particularly noteworthy was Azuma Moriya and Ochimi Kubushiro's visit to the Prime Minister, Home Minister, Mayor, and Superintendent on September 13, where they petitioned for 'no brothels to be established in the Greater Tokyo City Plan' and 'no geisha towns to be placed on the main street at all'. Such measures were deemed necessary for the 'reconstruction of morality'. For instance, it was considered a moral and social education concern for underprivileged girls to witness and admire well-dressed geisha[22]. In response to the petition, Home Affairs Minister Goto expressed that it would be open to consideration if public opinion was raised. Yamada countered, suggesting that Goto's approval alone could suffice, irrespective of public sentiment. Hiratsuka added that public opinion was indispensable, while Shimanaka asserted that Goto's solitary efforts would be insufficient[23]. Here, they thought that the crux of the issue lies not in urban planning itself but in the influence of 'public opinion' that shapes it.

Goto's stance, indicating a dependency on public opinion, steered the trajectory of the abolition of prostitution movement. Gradually, the movement mobilized to galvanize public sentiment, establishing a network that spanned the empire and launching a widespread petition campaign against the public prostitution issue nationwide[24].

URBAN PLANNING AND THE PUBLIC PROSTITUTION SYSTEM

But why did Goto respond that it depends on public opinion? To explore this point, it is essential to elucidate the relationship between the public prostitution system and urban planning[25]. Japan's public prostitution system underwent reorganization after the Meiji Restoration through measures such as the Prostitute Emancipation Ordinance, establishing a fundamental policy of 'enclosure of public prostitution in licensed areas = control' and 'control of private prostitution = elimination'[26].

Specifically, 'brothels' where prostitutes operated were designated by the police under the 'Regulations for the Control of Prostitutes' (Ministry of Home Affairs Ordinance No. 44, 1900). Moreover, police stations overseeing the *sangyōchi* in Tokyo Prefecture were authorized to regulate only establishments that had commenced operations during the Edo or early Meiji period, in accordance with the Regulations for the Control of restaurants, waiting teahouses and geisha shops. However, these regulations were inconsistently enforced by police commissioners, and from the 1910s onwards, additional business districts were gradually authorized[27].

While the police held jurisdiction over entertainment-related establishments, Japanese urban planning legislation also incorporated provisions regarding the location of such establishments. The former City Planning Law, for instance, in Article 10, paragraph 2, introduced a district system known as 'scenic districts' to maintain the public morals of designated areas. The purpose of this designation was 'to prevent so-called brothels, rental rooms, eating and drinking establishments, and other buildings from being scattered throughout the area without restriction'[28]. Thus, similar to the women's movement, city planning authorities believed that brothels should be regulated through urban planning and formalized this approach.

However, the implementation of the public morals districts never materialized. This is because even the basic interpretation of public morals zones was subject to disagreement, with differing opinions on whether certain buildings should be collectively constructed in 'scenic districts' (permitted zones) or prohibited within them (prohibited zones)[29]. This lack of consensus underscores the low priority given to the designation of 'scenic districts', evident in the persistence of fundamental interpretational discrepancies. Nevertheless, it was not institutionally unfeasible for the Ministry of Home Affairs, responsible for urban planning, to clarify operational policies for 'scenic districts' and implement them, especially amid the escalating movement to abolish prostitution. So, why did Goto, as the Minister of Home Affairs, offer the ambiguous response that it was 'up to public opinion'?

This is because the designation of brothels and three business districts had implications for land redevelopment and involved various interests. Historically, authority over such designations resided with the police commissioner in Tokyo Prefecture (and the prefectural governor elsewhere), fostering a strong connection between the designation of the *kagai* (*sangyōchi* or *nigyōchi*) area and the nexus of traders, politicians, and police [30] . Additionally, there were voices within the city council recognizing the tax revenues generated by brothels and *sangyōchi* as significant[31]. Consequently, the designation process was structurally complex, making it challenging for objections from marginalized genders to gain traction. Moreover, it is

noteworthy that the Imperial Capital Reconstruction Department, established during Gonbei Yamamoto's cabinet, lacked sufficient political support. The Imperial Capital Reconstruction Plan faced considerable criticism in both the Imperial Capital Reconstruction Council and the Imperial Diet, leading to substantial budget cuts[32]. Given these circumstances, the reconstruction authorities likely lacked the political leverage to incorporate the regulation of brothels, a sensitive issue, into the Imperial Reconstruction Plan.

On 22 December 1923, a 'draft proposal on the non-reinstatement of burned-down brothels' was submitted to the House of Representatives (47th Congress), yet it was not deliberated upon and was shelved. In response, the abolitionist movement shifted its focus towards suffrage advocacy rather than the abolition of the public prostitution system[34]. However, as the movement expanded and diversified, controlling the location of brothels through urban planning gradually became less prominent.

Subsequently, in 1927, when the Superintendent of Police designated several *sangyōchi* and *nigyōchi*, the Tokyo Institute for Municipal Research recommended to the Superintendent that permitting tea houses and other *nigyōchi*-related facilities in residential areas, as defined by the zoning system of the Building Regulation Law, would be unjust.

Fig. 2.   Juniso Natural Hot Springs Hall, opened in 1958. Planning Study 1971.

However, it is essential to note that the Tokyo Institute for Municipal Research did not advocate for the abolition of prostitution. Instead, it distanced itself from such considerations under the auspices of 'public morals and entertainment,' emphasizing a proposal grounded solely in the 'city planning locality perspective[335]. Even after the Great Kanto Earthquake, issues surrounding the brothels, *sangyōchi* and *nigyōchi* remained distinct from urban planning efforts. Furthermore, the Tokyo Institute for Municipal Research was not inherently supportive of the women's movement[34]. Thus, although the location of brothels and *sangyōchi* sometimes intersected with urban planning concerns, particularly regarding the preservation of residential environments in areas populated by the emerging middle class[35], authorities and urban planning experts intentionally refrained from aligning this with the abolition of prostitution movement.

CONCLUSION

How did the women's movement and urban planning converge following the Great Kanto Earthquake, and why did this connection diminish? In response to this question, this paper confirmed that there was not originally a strong awareness of urban planning issues on the part of the women's movement, but rather that the issue of urban planning was introduced by Mary Beard. Fundamentally, they endorsed urban planning initiatives even post- earthquake and held specific expectations of Goto concerning brothel regulations.

The reconstruction authorities also acknowledged the close link between the public prostitution system and urban planning. Despite the potential for systematic intervention in its spatial distribution, they refrained from active involvement due to political constraints. The political passivity of Goto and other male-centric urban planning authorities perpetuated and strengthened a distinct geography of sexuality.

It is noteworthy that the rationale behind the opposition to the new designation of brothels and *sangyōchi* in the abolitionist movement differed subtly from the demand for their zoning. While the abolition of prostitution movement critiqued the systematic sexual exploitation of women, zoning initiatives for *sangyōchi* and similar areas emphasized the moral values associated with geisha and prostitutes. Urban planning considerations regarding the placement of brothels, *sangyōchi* and *nigyōchi* encapsulated a logic reflecting pre-war Japanese society's moral values concerning sexuality in spatial contexts[3638], rendering geishas invisible through a different lens than before.

On the other hand, the women's movement, in the process of making a broad appeal to the problems of the public prostitution system, stopped pursuing it in depth as an urban planning issue. This may be because, from the perspective of the abolition of prostitution movement, the restrictions in city planning were not based on the perspective of 'humanitarian issues', but on the perspective of improving the living environment of urban spaces, and therefore did not have a strong persuasive power to keep people together in the movement. Thus, the prostitution abolition movement, which flourished during the Great Kanto Earthquake, once emerged as an urban planning issue, but as the reconstruction of the imperial capital pro-

gressed, it was eventually treated as an issue other than urban planning. The women's movement and urban planning, which came close for a moment, were separated by the political inaction of the authorities and the ideology of the abolitionist movement. As a result, the gendered issues in urban planning in this period itself disappeared.

NOTES ON CONTRIBUTOR(S)

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IMAGE SOURCES

Figure 1   Shinjuku Rekishi Hakubutsukan, *Shinjukuku no Minzoku 6: Yodobashi Chiku hen*[Folklore of the Shinjuku Ward 6: Yodobashi Area], 2003.
Figure 2   Toshi Seizu Sha, Shinhkukuku[16] Juniso Homen 1954-58 Kasai Hoken Tokushu Chizu [Shinjuku, [16] Juniso area, 1954-58 (Special Fire Insurance Map)], 1999.

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2. Fukuoka, *Tokyo no Fukko Keikaku,* Tsutsui *Teito Fukko no Jidai.*
3. Sandercock, Introduction, 2-6.
4. Ibid. 2-6.
5. Avermaete, "Death of the Author, Center, and Meta-Theory".
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8. Uemura, Mary Beard to Joseishi, 61-76.
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10. Editorial, Tokyo Asahi Shimbun,October 6, 1923, morning edition.
11. Ozeki, Seikatsu Gorika to Katei no Kindai, 56-9.
12. Beard, "Shin Toshikeikaku to Fujin," 26.
13. Beard, "What Should Japanese Women Do Now?" 58-9.
14. Fujin Koron, "Joryu Shinsai Konwakai," 114.
15. Josei, "Teito Fukko ni taisuru Minkan karano Yokyu," 171.
16. Fujin Kōron, "Joryu Shinsai Konwakai," 113-6.
17. Kagai vary from region to region, but in Tokyo, they are often referred to as 'sangyōchi' (kagai in the

narrow sense). A sangyōchi typically consists of restaurants, waiting teahouses, and geisha shops, where the geisha shop dispatches geisha to the restaurant and the waiting teahouse. In the case of 'nigyochi', most consist of restaurants and geisha shops. In Tokyo, geisha performed singing, dancing, shamisen (a three-stringed Japanese banjo), and other arts, whereas prostitutes were authorized by the state to engage in prostitution in brothels (kagai in the broad sense of the term also includes brothels). While most sangyōchi were located in the vicinity of the entertainment area, brothels were formed as closed spaces on the periphery of urban space according to the 'Regulations for the Control of Prostitutes' (Ministry of the Interior Ordinance No. 44, 1900). However, although prostitutes and geisha were formally distinguished by the presence or absence of prostitution, there were not a few geisha who engaged in prostitution. Kato, Kagai, chap. 1.

18. Takenaka, "Shufu wo Yobisamashita Huryo Gyunyu Mondai," 50.

19. Yasui, "Nayameru Fujin ni Kawarite," 35-6.

20. Beard, "What Should Japanese Women Do Now?" 59.

21. Fujin Kōron, "Joryu Shinsai Konwakai," 86.

22. Ibid. 94.

23. Ibid. 93-4.

24. Yang, "Kanto Daishinsai to Haisyo Undo," 98.

25. The relationship between the public prostitution system and urban planning has largely remained unclear, with the exception of Okamoto. Although Japanese urban and architectural history often addresses brothels and hanamachi (flower districts), studies on them have typically been confined to examining their location in urban space and the nature of their business. The relationship between these establishments and the gender order of urban space has not been adequately analyzed.

26. Obinata, Nihon Kindai Kokka no Seiritsu to Keisatsu, 290.

27. Kato, Kagai, 136-59.

28. Ministry of Home Affairs, Urban Planning Bureau, Toshikeikakuho Shakugi, 82-3.

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30. Kato, Kagai, 167.

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Towards the 'Democratization of Urban Planning'
The Realities of Social and Urban Planning Change in Japan's Post-WWII Reconstruction Period

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Abstract

After the Second World War (WWII), urban reconstruction was a common experience in war-torn European and Asian cities. However, as a defeated country, Japan's urban planning had to do more than just physically rebuild its cities; it had to update the character of urban planning for the postwar society. The central idea behind the transformation of Japan's postwar society was 'democratization'. This study aims to clarify the 'democratization of urban planning' during Japan's postwar reconstruction period. First, mainly based on articles in the magazine Fukkō Jōhō, published by the War Damage Reconstruction Agency, it is confirmed that the main issues of 'democratization of urban planning' were criticism of bureaucratic self-righteousness in prewar urban planning and private sector participation in urban planning. The practice of 'democratization of urban planning' in the Tokyo Metropolitan Government's war reconstruction plan is summarised. Finally, the contents and reality of the Urban Reconstruction Exhibition, which was conducted nationwide in major cities, are discussed. In the conclusion, it is pointed out that while these attempts were made, there was no institutionalisation of citizen participation, no mechanism for utilising private sector urban planning proposals, and in general, the 'democratization of urban planning' remained just an ideology.

INTRODUCTION

The relationship between war damage and urban planning has been the subject of numerous studies. In particular, there have been many studies on the post-war reconstruction of cities in various countries after the Second World War (WW II). For example, there are studies on Japanese cities such as Hein, Diefendorf, and Ishida (2003) and Koshizawa (2005/2014), and there are comparative studies on reconstruction in the UK. However, in Japan, a defeated country that was occupied after the war, post-war urban planning was not merely about the physical reconstruction of cities. The General Headquarters, the Supreme Commander for the Allied Powers (GHQ), who occupied Japan, expected to reform and democratise the Japanese social, administrative, and political systems. Urban planning was also subject to such reforms. The democratisation of urban planning at that time did not mean only the revision of the City Planning Law. How Japanese urban planners at the time perceived the concept of 'democratisation' and what actions they took are yet to be comprehensively organised.

The purpose of this study is to organise the discussions and actions of urban planners in post-WWII Japan regarding the 'democratization of urban planning' and clarify the characteristics of these discussions and actions. After presenting the debate that occurred regarding the 'democratisation of urban planning' in publications of the time in the first half, the second half focuses on the 'Urban Reconstruction Exhibition' organised by the Ministry of Construction, which travelled around the country from 1947 to 1948, as an important means of realising the 'democratisation of urban planning'. Freestone and Amati[1] (2014) conducted case studies from around the world on urban planning exhibitions. Cases from the 1940s and the 1950s after WW II are also covered, but only from victorious countries such as the UK and Australia. The perspective of the analysis is instructive; however, the originality of this study lies in dealing with exhibitions during the post-war reconstruction period in defeated countries that were forced to undergo social change.

DEMOCRATIZATION OF THE
WAR DAMAGE RECONSTRUCTION AGENCY AND ITS JOURNAL

After the war ended, democratic ideals rapidly permeated Japanese society. Intellectuals advocated 'democracy' and rejected prewar nationalism. They moved towards a critique of bureaucratic (and military) self-righteousness. The War Damage Reconstruction Agency (WDRA, Sensai Fukkōin), which was established under these circumstances to take charge of war disaster reconstruction projects, also welcomed a civilian, Ichizo Kobayashi, as its first president. In his opening statement, Kobayashi expected more from the private sector than from government authorities and insisted that local municipalities would play a central role in the unity between the private and public sectors[2]. The WDRA's magazine *Fukkō Jōhō* (Reconstruction Information) showed its approach to war disaster reconstruction. For example, the unsigned preface to the second issue of the magazine stated that war reconstruction must not be a monopoly or bureaucracy of the WDRA alone but a reconstruction that truly rises from the depths of the people's foundations, driven by their will[3].

The editorial policy for Reconstruction Information was set out in the editorial postscripts for the first and second issues.

> "At the wish of President Kobayashi, we have tried to avoid the rigidness of the official gazette style, and I hope to obtain contributions from the outside and from private sources and to play a lubricating role in the great task of reconstruction from war damage, with the help and encouragement of all quarters."[4]

> "We are pleased that our magazine can play a role in this new way of planning and implementing projects together with the private sector, abandoning the traditional secrecy of government offices, and publishing proposals without delay for public criticism."[5]

The WDRA's 'Outline of Administrative Reform', published in Issue 6 of *Fukkō Jōhō*, included an editorial policy which emphasized the tone of the newspapers and frank and prompt publication of opinions in response to private submissions, amongst other policies of thorough open administration[6].

After the end of the war, by criticising urban planning in the prewar period for its governmental secrecy, democracy shifted from secrecy to openness in terms of information. This was achieved by listening to opinions and responding to them, and via official production to collaboration with the private sector in terms of planning. In achieving this shift, expectations placed on urban planning media were high.

DISCLOSURE OF INFORMATION ON THE TOKYO METROPOLITAN GOVERNMENT'S WAR RECONSTRUCTION PLAN

The Tokyo war reconstruction plan is a prominent example of information disclosure. Unlike conventional planning processes, the content of Tokyo's war reconstruction plan was reported in the media right at the the early stages of its formulation, including in the *Fukkō Jōhō*. In the first issue of *Fukkō Jōhō*, the Tokyo Metropolitan Government published a 'Draft Outline of the Plan for the Reconstruction and Renovation of the Imperial Capital' in order to invite fair criticism from the public at large. In subsequent issues of *Fukkō Jōhō*, Eiyo [Hideaki] Ishikawa, who was responsible for planning as head of the Urban Planning Department, contributed the articles "Green Zone Planning in the Imperial Capital Reconstruction Plan" in Issue 5 and "Methodology of Cultural Construction City Planning" in Issue 10, in which he showed the concept to society.

Ishikawa considered ways to present the concept of the Tokyo Reconstruction Plan, which he had initiated more widely. In March 1946, *The Concept and the Construction of a New Capital* as part of the War Reconstruction Publication Series, was published in an attempt to take the opportunity to ask the masses of Tokyo citizens to obtain corrections from all sides, despite its circulation of only 1,000 copies[7]. Ishikawa himself followed up in October with *The Principles and Practice of Urban Reconstruction*, published by a private publisher, in which he discussed the concept of Tokyo's reconstruction in more detail. In the Introduction, Ishikawa wrote:

> "It was also advised that the city should seek to synthesise the opinions of the general public and build something splendid."[8]

Ishikawa also produced a film, 'Tokyo after 20 Years', which was used to publicise the war reconstruction plan. After completing these steps and completing the urban planning decisions on street network and zoning, he published a lengthy article in the January 1947 issue of *Shinkenchiku*, 'Report and Commentary on the Urban Planning for the Reconstruction of the Imperial Capital', which occupied almost an entire issue of the magazine. The article concluded with the section 'The popularisation of urban planning', which summed up the media strategy. Ishikawa wrote:

> "One of the characteristics of this plan is that it was democratised as much as possible in its formulation and implementation. The plan's basic policy was first subjected to repeated criticism from those involved in the reconstruction of the Imperial Capital and other academic experts immediately after the war. The authorities also produced pamphlets such as 'The Concept of the Construction of a New Capital' and publicised the outline of the plan through newspapers and radio from the outset."[9]

As a result of this disclosure, Ishikawa's proposal to pursue his ideals as an urban planner was criticised by Kunio Maekawa, an architect and apprentice of Le Corbusier, who will be introduced later and opposed by various quarters, particularly the landowning class.

LISTENING TO AND RESPONDING TO PRIVATE SECTOR OPINION

The policy of paying attention to the will of the people in the WDRA was embodied in the establishment of the 'Voice of the People' contribution columns in *Fukkō Jōhō*. The columns read, 'Can't you arrange for us to get even a single blanket as soon as possible? [10] Do the politicians know how we feel? If they do, why don't they do something about it?'[11] Various opinions were published, mainly criticising the WDRA.

Tadayasu Shigeta, who became Deputy Director of the WDRA in January 1946, attempted to respond to these public opinions in a series of 'Reconstruction Miscellaneous Thoughts' starting from Issue 6 of *Fukkō Jōhō*. In No.

6, he reproduced architect Kunio Maekawa's scathing criticism of the WDRA in the editorial 'The Folly of the 100m width Road', which appeared in a newspaper, and then gave a straightforward rebuttal to it. Maekawa's criticism was that the current situation, in which Tokyo's urban planning had been decided secretly in some sections of the government, unknown to all citizens, and fudged up to the last detail by officials who did not understand anything about architecture and civil engineering, was unbearable[12]. In response, Shigeta wrote that this was a misunderstanding, and that they believed that urban planning should have been decided by the citizens themselves and that it should have been democratic in today's terms [13] . He concluded that Tokyo's war reconstruction plan was not undemocratic, as it had been submitted to an urban planning committee comprising experts and members of the Tokyo Metropolitan Assembly, with full input from the Assembly[14].

Although the fundamental democratic view that the citizens were the main actors was expressed, his answers were positive about the status quo, not about reforming anything, with the viability of urban planning being guaranteed entirely through the functioning of the Assembly. The citizens who suffered from food and housing shortages after the end of the war and seeking to improve the status quo, responded further as follows:

> " The Reconstruction Agency's officials don't think this is a good idea, even with bureaucratic irresponsibility, and would like a conscientious answer to be given in terms of measures and not just words".[15]

There was a disconnect between official urban planners and citizens regarding their opinions.

WORKING WITH UNIVERSITY RESEARCHERS AND PRIVATE ARCHITECTS

Maekawa's article, introduced earlier, also called for collaboration with the private sector in the planning process. On 12 April 1946 ten days after Maekawa's article was published, the WDRA held a meeting to hear the opinions of architects on reconstruction planning, inviting Maekawa, Shozo Uchida, Toshikata Sano, Kameki Tsuchiura, Junzo Sakakura, and Gunpei Matsuda to participate. At this meeting, they stated that they requested the participation of private-sector volunteers in urban planning, as the current government structures alone were not capable of making plans, and private-sector volunteers should actively prepare and present concrete plans for reconstruction, to which government offices should provide the necessary materials and assistance. They believed that the public and private sectors should cooperate and pool their knowledge to establish an ideal city plan[16].

Immediately after the war, architects, both public and private, showed considerable passion for urban reconstruction. The WDRA and Tokyo Metropolitan Government, led by Eiyo Ishikawa, attempted to capture the passion of these architects. Two articles in *Fukkō Jōhō* No. 8 tell the story. The two articles were the 'Imperial Capital Reconstruction Plan, Shinjuku Area' and the 'Survey Report on Land Use in the War-Damaged City'.

The former was an article on the announcement of the winning entries for the 'Call for Prize Drawings for the Tokyo Reconstruction Plan', which was initiated in December 1945 by the Tokyo Commerce, Industry and Economy Association and Eiyo Ishikawa. This urban design competition targeted in other districts of Tokyo, and in *Fukkō Jōhō*, some prize-winning proposals appeared. The latter was an article on the draft of a land use plan under the WDRA commission system, which was established in April 1946, with the aim of further introducing the theories and aspirations that had been accumulated in the academic and private sectors for reconstruction planning. University researchers and private architects, including Eika Takayama, Kenzo Tange, Motoo Take and others, prepared urban planning proposals for local war-damaged cities, and reported on them a total of four times in *Fukkō Jōhō*.

However, no mechanism existed to reflect these proposals in actual urban planning, and the participation of private-sector researchers and architects in war-damaged reconstruction planning did not develop further.

Fig. 1.   Article for the Shobun Uchida's winning entry for the 'Call for Prize Drawings for the Shinjuku Area, Tokyo Reconstruction Plan' in Fukkō Jōhō (August 1946)

PEAK OF THE DISCUSSION
ON THE DEMOCRATIZATION OF URBAN PLANNING

Discussions at the April 1947 meeting of the Planner's Afternoon Meeting were published in the June issue of Shintoshi under the title 'Democratisation of City Planning'. The Planner's Afternoon Meeting was described as having a strong democratic flavour that was unique to the Society, as well as a lively atmosphere. The 12th issue of *Fukkō Jōhō* was published in December 1946, and was replaced by *Shintoshi*, the journal of the newly established City Planning Association.

都市計畫の民主化..............PAM座談會

Fig. 2. Article for the Shobun Uchida's winning entry for the 'Call for Prize Drawings for the Shinjuku Area, Tokyo Reconstruction Plan' in Fukkō Jōhō (August 1946)

The title 'Democratization of City Planning', as this discussion conveys, was given by Kan Hideshima of the Japan Association of Planners on the day of the meeting. In response to the question about the current problems in urban planning, Hideshima answered that they needed to make planning known to the people. He then added that urban planning had, till then, been connected to landowners and bosses. In his vision, urban planning should originally belong to the people and its effects have not been well understood by the people until now. He insisted that it was necessary to make housewives, children, and businessmen understand it in their own way, and that the demand for better urban planning must be made manifest in a powerful way, as the voice of the people.[17]

Kazuhiko Honjo, a member of the WDRA, followed this statement by saying,

> *"The concept of community is not mature in Japanese society. I want to create a reconstruction committee within the city so that urban planning can be carried out by the power that rises from the bottom"*[18]

He proposed a bottom-up urban planning system. In response, Hideshima agreed, saying,: *"It is important to create a mechanism that allows citizens to participate"*[19]

He was referring to a participatory urban planning mechanism that would lead to democratic urban planning.

City	Priod	Venue	Sponsor	Newspaper reports	Major Air Raids during the War
Tokyo	May 10-17, 1947	Nihonbashi Mitsukoshi department store	Urban Planning Association Construction Bureau of the Tokyo Metropolitan Government		Tokyo Air Raid (March 9, 1945)
Yokohama	May 21-25, 1947	Sakuragicho Ryoshin department store	Kanagawa Prefecture Yokohama City Urban Planning Association	Kanagawa Shimbun (May 19 and 23,1947)	Yokohama Air Raid (May 29, 1945)
Osaka	June 3-6, 1947	Namba Takashimaya department store	Osaka City Osaka City Association	Asahi Shimbun Osaka (May 30, 1947)	Osaka Air Raid (March 13, 1945)
Fukuoka	June 16-19, 1947	Iwataya department store	Fukuoka City Fukuoka Chamber of Commerce and Industry Urban Planning Association	Nishi Nihon Shimbun (June 14, 1947)	Fukuoka Air Raid (June 19, 1945)
Okayama	June 29- July 2, 1947	Tenmaya department store	Okayama Prefecture Okayama City Urban Planning Assitation	Godo Shimbun (June 28, 1947)	Okayama Air Raid (June 29, 1945)
Fukui	July 16-20, 1947	Textile Association	Fukui City	Fukui Shimbun (July 27, 1947)	Fukui Air Raid (July 19, 1945)
Hiroshima	August 4-8, 1947	-	-	Chugoku Shimbun (August 2, 1947)	Atomic Bombing (August 6, 1945)
Nagaoka	August 24-28, 1947	City Hall Tower	Unknown	Nagaoka Shimbun (August 28, 1947)	Nagaoka Air Raid (August 1, 1945)

Table 1.   The Urban Reconstruction Exhibition Touring Japan

In March 1947, the Japan Planners Association (Nihon Keikakushi Kai) was established in Japan to include urban planners in the fields of architecture, civil engineering, and landscape design. Hideshima was appointed as the secretary general of the association. The Japan Planners Association first appeared in the media in the April 1947 issue of *Shintoshi*, which contained an enclosed article describing the establishment of the association. Hideshima stated,

> *"If the city belongs to the people, we must refrain from the conventional self-righteousness of planning that is secretly determined in the corner of a government office or imposed on the people from above and democratise it".* [20]

Hideshima also insisted that it was important that the responsibility of the planners be clear and that people participate in the planning process. He went on to become an independent private urban planner, serving as an advisor to several cities and taking charge of planning large-scale housing projects for the Japan Housing Corporation.

PLANNING THE URBAN RECONSTRUCTION EXHIBITION

The Urban Reconstruction Exhibition was held for a week from 10 to 17 May, 1947, at the Tokyo Mitsukoshi department store. It was organised by the Urban Planning Association and the Construction Bureau of the Tokyo Metropolitan Government and supported by the WDRA, the Ministry of Home Affairs, the Japan Planners Association, the Architectural Institute of Japan, and the Mainichi Newspapers. The purpose of the exhibition was to raise awareness and interest in the significance of war reconstruction and the project among the people in war- damaged cities and to encourage them to rebuild[21]. As Eitaro Ishikawa of the WDRA said in the Planner's Afternoon Meeting discussion referred to above, publishing law books, holding exhibitions and lectures, and so on, were effective in making people understand the value of urban planning in the democratisation of urban planning[22]; this exhibition was also intended to educate citizens about urban planning as the first step towards democratising urban planning. After the exhibition was held in Tokyo, it toured major war-damaged cities across the country (Table 1). In many cities, exhibitions were held on the memorial date of the wartime air raids, in conjunction with memorial and reconstruction events. In other words, the exhibition was not held in isolation, but as part of various events related to the reconstruction of cities.
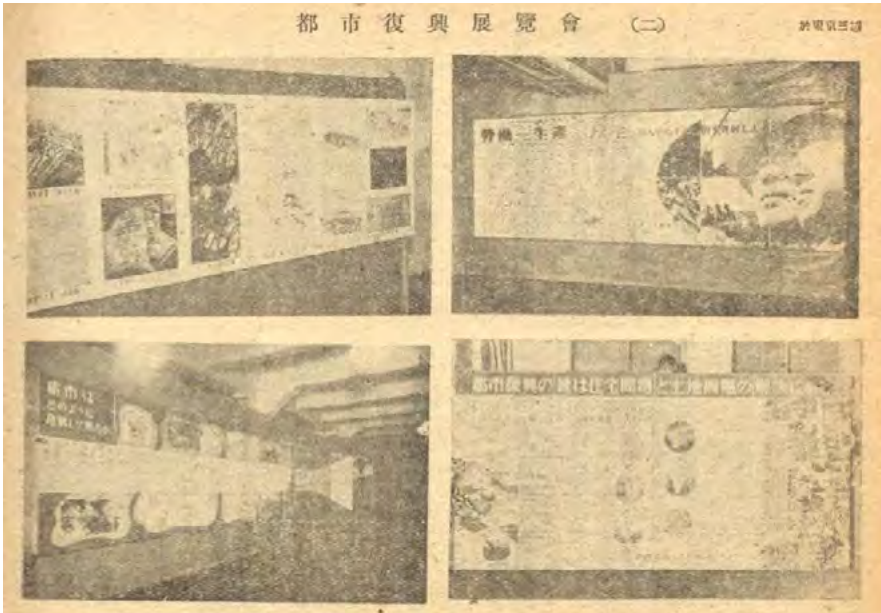
Fig. 2.   Panels of Urban Reconstruction Exhibition in Tokyo (May 1947)

The exhibition was organised by a committee established in December 1946 by the Urban Planning Association, which was an offshoot of the government's urban planning department. Committee members came from each of the organising and supporting organisations, but the exhibition planning and structure were ultimately led by two young architects: Kenzo Tange, an associate professor at Tokyo Imperial University, who had returned to his alma mater as a graduate student after working in Maekawa's design office, and Motoo Take at Waseda University.

The project was conducted by graduate students from both universities and young urban planners from the Tokyo Metropolitan Government[23].

RECONSTRUCT THE CITY FOR ALL

The exhibition included nine main panels, seven illustrations related to the Tokyo Reconstruction City Plan, and more than 20 pieces of emerging alternative materials. The first panel depicted the strongest message of the exhibition:

> *"Labour - Production - Welfare Reconstruct the city for all!*
> *People's lives are a constant activity of labour and welfare. Therefore, people need a balance of these activities. However, in cities of the past, which did not have uniform labour and welfare, life was always crowded and deprived, and this was the cause of all urban ills.*
> *Many of these cities were burnt to ash by the war. People have lost their livelihoods, and*

> *urban ills have intensified.*
> *However, defeat taught us how to move forward as a peaceful country. And the country is*
> *being renewed through democratisation.*
> *Now we are a city for all*
> *Cities where labour and welfare have parity*
> *And cities that would bring about improvements in production to make this possible. Let's*
> *rebuild these cities!"*[24]

In the second and third panels, the historical view of urban development as the transformation of feudal cities into modern cities through the development of commercial and industrial activities was presented, together with urban maps and various statistical data. In particular, it pointed out that while modern industry developed in tandem with militarism, the remnants of feudalism were a heavy burden on rural areas and small- and medium-sized industries. It then proposed a direction for increasing labour productivity in agriculture and expanding the peaceful industrial sector. The fourth panel explained the policy of land-use planning in terms of the centralisation of work activities, equalisation and integration of welfare opportunities, and differentiation and socialisation of family life. The fifth panel argued that specific urban construction projects should focus on the supply of workers' housing, development of industrial zones, and construction of industrial roads, which were directly linked to production functions. The sixth panel introduced Le Corbusier's urban vision of La Ville Radieuse, in which healthy work, efficient production, and comfortable welfare were part of the ideal city. In the seventh and eighth panels, the urban planning legal system was explained to solve housing and land problems. The ninth panel explains land readjustment projects as a concrete means of post-war reconstruction. Finally, the tenth panel was a series of drawings by architects of concrete reconstruction plans, mainly works from the urban design competitions in the Tokyo districts mentioned earlier, in which Tange, Take, and others participated[25].

As described above, the contents of the panels were based on an understanding of the current situation in Japanese cities and an explanation of specific urban planning methods and systems to ensure the smooth implementation of urban planning for reconstruction following the war, as well as unrealised proposals for the future of the city based on the specific urban vision of architects who were responsible for exhibition planning.

PEOPLE'S VOICES
IN THE URBAN RECONSTRUCTION EXHIBITION

The Urban Reconstruction Exhibition was held at department stores, city halls and other locations in the central downtown areas of Tokyo and other cities where people were likely to visit. At the exhibition sites, a Building Consultation Office was set up where citizens could consult with the administration regarding housing reconstruction. An open suggestion board was also set up at the Tokio venue where visitors could freely write their impressions and opinions. Some of the opinions expressed on the suggestion board were included in the Shintoshi. The opinions on land ownership, which may reflect the intention of the organisers, include:

'Opening up urban areas to the people', 'Opening up unnecessarily large housing estates', 'The problem is land, for that we must first establish a democratic government', 'For Japan to become democratic, urban land and housing must belong to the people'[26]. We can also see that there were opinions on urban construction in general, such as: 'Let our government build a city where people can live a life where production and consumption are managed rationally, and we will build it together with the government'[27].

One teacher who took his secondary school students to the exhibition as part of their education commented that this reconstruction exhibition was a little too upmarket for students in some respects[28]. The open suggestion board also received a comment that the exhibition showed a contrast between theory and reality[29]. In particular, the distance between the introduction of Corbusier's theoretical vision and the proposals for urban reconstruction plans influenced by it, and the labour, production, and welfare theories on which they were based, and the interests of those who were focused on immediate urban reconstruction, especially the reconstruction of their own homes, can be seen in the following recollections of Sachio Otani, an architect who was involved in the planning and preparation of the exhibition.

> "The Urban Reconstruction Exhibition at Mitsukoshi was an exhibition for enlightenment and advocacy, and not for concrete proposals. For many of the participating architects, it seems that they were more interested in the antithesis of economic recovery, or in democratic revolution and urban planning. However, I had my doubts about the way it was communicated; in other words, I felt it wasn't reciprocated."[30]

CONCLUSION

This confirms that the democratisation of urban planning was advocated and discussed during Japan's post-war reconstruction. Information on urban planning was made public through various media, and collaboration with architects was promoted in terms of private sector participation in planning. However, democratisation activities aimed at promoting the public's understanding of urban planning were always developed from an enlightened perspective and were more concerned with democratisation as an ideology than with concrete housing and urban reconstruction. It was always a democratisation movement from an enlightenment perspective and was not backed by the interests and actions of the citizens of the time. Revisions to the city planning legal system were also

considered during this period but were never actually implemented. No progress was made in institutionally guaranteeing citizen participation in urban planning. The first encounter between urban planning and democratisation in Japan ended at crossroads. The democratisation of urban planning remained an ideology that could not relate to the realities of the city. Those who were able to become aware of this point will continue to the next era of democratisation. The history of post-war urban planning in Japan will teach us once again that the democratisation of urban planning was not brought about top-down at a sudden turning point, such as in post-war reconstruction, but was gradually achieved as a sustained and continuous movement.

Fig. 3. Urban Reconstruction Exhibition scenery in Tokyo (May 1947)

NOTES ON CONTRIBUTOR

Naoto Nakajima is a professor at the University of Tokyo, Japan. He specialises in urban design, urban theory, and planning history. He chaired the 18th IPHS Yokohama Conference.

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Study on the planning process of '6 major Projects' in Yokohama, Japan

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Abstract

Since the end of World War II, most of the city center of Yokohama was confiscated by the Allied forces. Therefore, postwar reconstruction was greatly delayed compared to other Japanese cities. In order to overcome this situation, Ichio Asukata, the mayor of the Socialist Party who appeared in 1963, asked Takashi Asada, an architect and planner of Environment Development Center (EDC), to propose the future plan of Yokohama City. Asada drew up this plan with Akira Tamura, who later joind city government to realize this plan, and submitted a report in 1964. Based on this proposal, Mayor Asukata announced '6 major projects' as a Mayor's proposal to the citizens, and achieved a major shift in urban planning in Yokohama. To clarify the planning process of these six major projects, this paper conducted an analysis of survey work including projects other than Yokohama where Asada and Tamura were involved. At that time, EDC received several projects in parallel and was not in a state where it could concentrate time and effort on making proposals to Yokohama. Reflecting this situation, the proposal for Yokohama was made by incorporating the knowledge gained from the study of other projects into the Yokohama project. Among such projects, it is the survey on the coastal industrial area of Sakai / Senboku Port that seems to have affected Yokohama Project. In this study, the following points were clarified from the examination of these literature materials about projects of EDC. Firstly, the concept of the six major projects in Yokohama was based on changes in Western port plans during 1960's. Among them, Tamura focused on modernization of port logistics in New York Harbor, and integrated management system by Port Authorities of New York and New Jersey. Secondly, the information about the port plans in western countries were delivered through the Sakai / Senboku Coastal Industrial Area Project in Osaka Bay. In addition to several research institutions, architects from Metabolism groups such as Fumihiko Maki and Kisho Kurokawa participated in the planning. The appointment of such architects was unusual at the time, and it was found that it influenced the City Center Rehabilitation project and the Kanazawa land reclamation project later in Yokohama. Thirdly, not all of the 6 major projects were conceived by Asada and Tamura. Many of them were projects that the Yokohama City Hall had already considered.

Nobuharu Suzuki
Study on the planning process of '6 major Projects' in Yokohama, Japan

Port Cities

Chair: Carola Hein

Reclaiming
the port-city interface
The case of Belfast

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Abstract

At the turn of the 20th century, the city of Belfast was a global industrial centre, including linen industry, tobacco production and rope making. Its port was a home to the world's largest and most productive shipyard in the world, before slipping into under-utilized and under-valued space just a few decades later. These changes had an impact not only on the port-city interface, but on the economic relationships within the city too. This paper will present the ongoing research funded through EPSRC on the spatial practices of transformation of port-city interface with Belfast as a case study city (www.ipact.org.uk). In considering such distinct settings, it will study places where port and city interests intersect, the interrelation between the two and the overlapping scales of the port and the city over time. The paper will present how the geographies of the port were closely linked with the development of the city, its growth and decline, providing insight into how the port as a built landscape facilitated the expansion of the city of Belfast in the regional and global context. Understanding the transformations of the port-city interface can help in addressing contemporary challenges of the city and should be regarded as the basis for any future planning across different scales in Belfast.

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Ruin of the Seaport
Causes of the Abandonment of Puerto Colombia and the Loss of a Coastal Gem

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Abstract

This article delves into the primary factors leading to the closure of Puerto Colombia's Seaport, shifting international port activity to the city of Barranquilla. As the construction of the western breakwater progressed to stabilize the mouth of the Magdalena River, the closure of the pier became a logical consequence, facilitating direct access for deep-draft vessels to Barranquilla's river port. The reasons behind the pier closure seem to be political, social, and economic. The national government, aiming to establish a secure route between the Caribbean Sea and the country's interior, leveraged direct access to the Magdalena River, prompting the relocation of commerce to Barranquilla. Additionally, concerns about the rising incidents of cargo theft during railway transportation and the significant investment in the construction of the western breakwater of the Magdalena River also played a role in the decision. This inquiry sheds light on the discourse emphasizing the advantages of relocating operations to Barranquilla, inadvertently overlooking the history and consequences of such a decision on the urban and social development of Puerto Colombia. To conduct this study, primary sources and relevant texts were employed, enabling an insightful historiographical analysis of documents and narratives. This approach successfully reconstructed the perspective on the issues in Puerto Colombia and Barranquilla. The findings obtained provide a solid foundation for future research related to the impact of infrastructure on urban and social configuration, the manipulation of historical discourse, and the study of coastal populations in their relationship with the environment.

INTRODUCTION

The development of the Puerto Colombia pier's infrastructure has historically been intertwined with the growth and progress of Barranquilla, Colombia. From the 1950s to the early 21st century, this relationship has been extensively examined and debated by various authors, including Ramon Bacca, Hans Sitarz, and more recent ones such as Sergio Solano (2011), Jose Polo (2011), Carlos Bell-Lemus (2014), and Jorge Villalón (2000). However, it's surprising that there is a lack of comprehensive research addressing the genesis, peak, and decline of the municipality of Puerto Colombia, specifically in connection with the loss of its iconic maritime pier.

When exploring the reasons behind the closure of the Puerto Colombia pier and the relocation of international port activities just 20 km away to the Port of Barranquilla, the analysis often takes a perspective solely focused on the urban and business development of the latter.

As navigation became possible through "Bocas de Ceniza,"1 ships could reach the port of Barranquilla (Polo and Solano 2011). From this standpoint, the benefits that led to the closure of the Puerto Colombia pier for Barranquilla are accurately documented; however, the impact on the population and history of Puerto Colombia remains understudied and obscured.

It is crucial to question: Who or what entities truly benefited from the relocation of port operations? What were the social, economic, and cultural implications for the municipality of Puerto Colombia and its residents? These inquiries prompt us to reflect on the importance of approaching the topic from a broader and deeper perspective.

Therefore, this article aims to explore the causes behind the closure of the Puerto Colombia pier from a comprehensive perspective. It is essential to note that the objective of this research is to establish a solid foundation for further exploration and analysis of the social and economic impact resulting from the pier's closure. Additionally, the critical examination of how historical

narratives have been biased towards the perspective of Barranquilla, leading to the invisibility and marginalization of the history and experiences of the Porteños, is intended.

This article represents an effort to unveil and provide a accurate view of the events surrounding the pier's closure. It is hoped that this contribution will enhance understanding of the complex relationship between the two municipalities and reconstruct it in a historiographical manner.

The work begins with a meticulous review of secondary and primary sources for comparison, including oral testimonies and relevant historical documents. Crucial aspects such as the socio-economic context of the time, government policies, commercial dynamics, and tensions between Puerto Colombia and Barranquilla will also be addressed.

In examining the reasons behind the shift of port activities from Puerto Colombia to Barranquilla, we discover that the fate of the citizens of Puerto Colombia was compromised from the early days of the pier's existence.

During the first decade of the 20th century, Puerto Colombia lacked basic services such as water supply, drainage, telephony, and electricity, the latter limited to the maritime pier. In contrast, Barranquilla made continuous investments in basic public utility infrastructure.

To provide context, immigrants played a crucial role in the early recording of city images and the installation of services such as electricity, telegraphy, and telephony in the preceding decades. This fostered an active nightlife in the streets and entertainment venues, attracting travelers interested in local life and customs (Caballero, 2000).

As a consequence, the lack of significant initiatives for industrial or commercial development in Puerto Colombia reinforced its economic dependence on decisions made in Barranquilla. This scenario deepened the economic and social gap between the societies of Puerto Colombia and Barranquilla.

It is important to emphasize that this article does not seek to establish rivalry between two geographical contexts but rather underscores the need to recognize and value the history and individual contributions of each, which remain somewhat obscured over time.

Fig. 2.   Archive of the Romantic Museum of Barranquilla. Puerto Colombia Dock, after the concrete casing works have been completed. 1894.

Fig. 3. Deutschefotothek.de. Photograph taken by Horst Martin (Am Strand), Puerto Colombia Pier 1937. Note: The maritime pier out of use.

METHODS

Within the process of closing the mentioned pier and relocating port activities to Barranquilla, this research will delve into various contexts, companies, and individuals that influenced this decision. The study period will span from 1888 to 1936, a significant chronological stretch during which the Puerto Colombia maritime pier became the country's primary infrastructure for foreign trade and a strategic hub for Barranquilla's economic development.

The considered timeframe encompasses the creation to the closure of the Puerto Colombia pier, as well as the progress of port activities in that locality. These findings provide a significant contribution to understanding and appreciating the commercial momentum experienced by Barranquilla. This investigative effort has been carried out from a historical perspective, examining numerous documents, authors, interviews, and events that have allowed us to delve deeply into the commercial past of both cities.

This log is grounded through actions that have already examined and interpreted events serving as the basis for constructing an organized framework of Colombia's social and economic context from the late 19th to the early 20th century. Thus, a temporal construction of contents, such as newspaper articles, chamber of commerce reports, government bulletins, etc., and propositions provided by previously mentioned authors, has been undertaken. Through annotations and the categorization of events related to port activity, new interpretations have been generated, enriching historical narratives, highlighting the impact on Puerto Colombia, even though the central role of these narratives is Barranquilla.

For this research, various sources were employed, both secondary and primary. Secondary sources included history books, notable titles being "Historia Social del Caribe Colombiano" (2011), "La Industria" (1892), "Ferrocarriles en Colombia y la busqueda de un Pais" (2011), as well as written press archives, such as "Colombia mueve dragas a Puertos" (2007), "Estacion del Ferrocarrril de Bolivar, un testigo del progreso nacional" (2023), and documents issued by contemporary control bodies, for example, "Almanaque de Eventos Colombianos" (1922), and authors specialized in the history of Barranquilla and Puerto Colombia, who, in some cases, address the relationship between the two cities.

On the other hand, primary sources were consulted, including statistical bulletins, population censuses, and financial reports, providing a comprehensive and sufficient insight into the social and economic aspects of the study period. This fundamental information is preserved in specialized historical archives, such as the Historical Archive of the Atlantic located in Barranquilla, the Puerto Colombia Foundation in the city of Puerto Colombia, the Ibero-American Institute in Berlin, and the Luis Ángel Arango Library in Bogotá.

This research will approach the study object from a historiographical perspective, where the "Conceptual History" analysis proposed by the German theorist Reinhart Koselleck (2004) (2012) emerges as the suitable method for this task. To ensure precision in the inquiry, the categories of analysis to be implemented are "Synchrony" and "Diachrony," which are also original concepts introduced by Koselleck. Since the testimonies of the authors and actors who justified the transfer of the dock, between 1888 to 1936, are considered secondary sources here, they will be contrasted with a set of documents attesting to demographic, operational, economic, and social aspects of the said transfer. Given that such documentation substantially differs from what has been argued thus far, it will be studied from a hermeneutic approach as the primary source of this research.

However, although the study revolving around Conceptual History could suffice for "comparative, correlational, and argumentative instances" as typically defined by Hurtado, J. (2012), a particular combination is proposed as outlined by the Design historian Betts, M.M. (2021) in one of their investigations. Betts combines Koselleck's conceptual analysis with the stance of the British historian Quentin Skinner (2000), referred to as the "hidden intentionality in the history of ideas." Thus, the author suggests that by articulating these perspectives, not only what the authors said about a particular phenomenon is revealed, but beyond that, the true intentions that supported them in saying it are unveiled. Hence, Skinner's approach is also justified in this work.

The scope of this paper is to initiate a discussion about the intentionality behind the discourse that documented the events surrounding the closure of the Puerto Colombia pier. However, it is important to note that this document serves as a starting point for further research aimed at uncovering new angles of study within this historical context. Additionally, future investigations could explore the societal impact of such events, providing insights into the broader implications for communities affected by similar occurrences.

PUERTO COLOMBIAN CONTEXT IN 1888

The establishment of the Puerto Colombia maritime pier in 1888 was a pivotal moment for Barranquilla's connection to the Caribbean Sea. Barranquilla, strategically located at the mouth of the Magdalena River and only 18 km from the sea, has long served as a crucial hub for trade. Despite its industrial superiority, Barranquilla's centralized port and commercial activity remained distinct from Puerto Colombia's infrastructure.

On June 15, 1893, the dock underwent significant expansion and reinforcement, extending its dimensions to 4,000 feet in length and 50 feet in width. However, Barranquilla Customs maintained dominance in maritime trade despite these advancements.

Nichols (1954) highlights Barranquilla's historical connection to the sea, dating back to colonial times. The decision to relocate the port to Barranquilla's urban core in the early 20th century reflected the city's rapid growth.

Vergara and Foulquier (2012) note Barranquilla's decision to relocate its port to the urban area, where it remains today, albeit with infrastructure and urban degradation challenges.

López (1922) describes Puerto Colombia as a town with significant commercial activity and infrastructure, serving as a terminal station for the railroad and housing the National Customs House.

In conclusion, the creation and relocation of the Puerto Colombia maritime pier played significant roles in the region's port history. Barranquilla's strategic location allowed it to control national trade for decades. Despite Puerto Colombia's symbolism of progress, the evolution of Barranquilla and the need for integrated port infrastructure led to the port's relocation. Challenges persist, but the history of these maritime piers underscores their importance in connecting the country's interior with the Caribbean Sea.

THE GOLDEN YEARS OF THE PUERTO COLOMBIA PORT

The expansion and reinforcement of the Puerto Colombia pier in the late 19th century ignited Colombia's growth in international trade. While Barranquilla handled customs and domestic product flow, Puerto Colombia became the country's gateway to the world, consolidating export activities. By 1896, Barranquilla's port managed 60% of Colombian foreign trade, with 20-30 commercial houses established. Despite its railway station and docking capacity, industries favored Barranquilla over Puerto Colombia, limiting the latter's economic diversification. Between 1888 and 1920, Puerto Colombia saw migration waves, yet many immigrants viewed it as a transit point to settle in Barranquilla or the Colombian savannah.

It can be concluded, while Puerto Colombia played a crucial role in Colombia's international trade, its exclusive focus on exports hindered regional economic development. The period from 1888 to 1920 was pivotal, marking a significant era of transformation and growth in Colombia's commercial landscape, with Puerto Colombia at its forefront.

Fig. 4. Infographic by Daniel Gonzalez. la Prensa Daily. Panama. 2007. Main Ports of Colombia. Location of the Port of Buenaventura.

THE NEW COMPETITORS

Port development in Colombia has been shaped by several factors over time. The separation of Panama highlighted the importance of coastal areas as communication links with the Caribbean and North and Central America (Polo & Solano, 2011). Political turmoil hindered strategic port development, leading to a focus on Barranquilla's growth as a trade hub.

Initially a small river port, Barranquilla faced challenges due to navigational obstacles. By the late 19th century, it emerged as Colombia's primary port (Correa, 2012). However, new competitors like Buenaventura emerged, surpassing Puerto Colombia in exports post-World War I, becoming a key maritime connection for Colombia (Polo & Solano, 2011).

Barranquilla itself posed competition, with the construction of a breakwater facilitating direct sea-to-river access, diminishing Puerto Colombia's significance. This decline was accelerated by the inauguration of the breakwater project in 1936, prompting discussions about relocating maritime operations to Barranquilla since 1915.

Justifications included the Panama Canal, Pacific Railroad, and Buenaventura Port developments, redirecting trade routes away from Puerto Colombia (Bell Lemus, 2014). This shift led to reduced trade volumes and unfair competition for Barranquilla, discouraging further investment in Caribbean ports. In conclusion, Puerto Colombia's decline signaled a broader reconfiguration of Colombia's maritime infrastructure, impacting regional economies negatively.

Fig. 5.   Noches de Bohemia - Arte y Cultura Magazine. Blog. 2017. Image of Mr. Alberto Pumarejo and the Minister of Public Works César García, observing the entry of the first ship to Bocas de Ceniza on December 22, 1936.

BARRANQUILLA'S INDUSTRY AND BOCAS DE CENIZA

The historical significance of Barranquilla as a vital commercial center in Colombia's northern coast has been underscored by its strategic location at the Magdalena River's mouth in the Caribbean Sea (Polo & Solano, 2011). Conversely, Puerto Colombia, though pivotal for trade, lacked substantial industrial development, hampering its sway in national decisions (Cisneros, 1892).

Operational hurdles, including challenges in rail transport between Puerto Colombia and Barranquilla, highlighted deficiencies in the port system (Correa, 2012). The sway of Barranquilla's industrialists on government decisions favored the centralization of trade operations in Barranquilla (Bell Lemus, 2014).
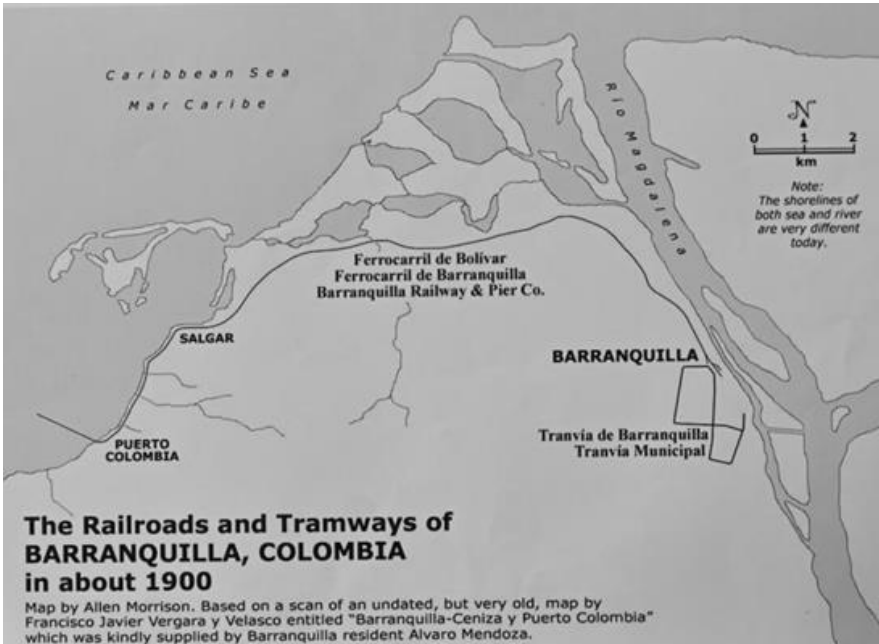
Fig. 6.   El Heraldo Newspaper. Barranquilla - Colombia. 2023. Bolívar Railroad Station: A Witness to National Progress.

Industrialists spearheaded initiatives to stabilize the Magdalena River mouth, enabling direct vessel access to Barranquilla, sidelining Puerto Colombia (Correa, 2012). The emergence of Buenaventura Port intensified competition, with Barranquilla's industrialists perceiving Puerto Colombia's pier as a trade disadvantage (Polo & Solano, 2011).

Between 1922 and 1928, Puerto Colombia's cargo and passenger transportation flourished but plummeted in 1928 due to the 1929 crisis (Correa, 2012). Government consideration for repurchase in 1933 culminated in finalization in 1934, followed by the transfer of administration to the National Railways Administrative Council until 1940 (Correa, 2012).

Barranquilla's business guild's influence galvanized resource mobilization for the Bocas de Ceniza project, securing direct ship access to Barranquilla (Correa, 2012). High freight costs and the competitive disadvantage of rail transport between Puerto Colombia and Barranquilla fueled the push for operations relocation (Bell Lemus, 2014).

The relocation from Puerto Colombia to Barranquilla was primarily driven by Barranquilla's business guild's preferences (Correa, 2012). While local factors justify the shift, considering regional impacts on the nation's economy and locality development is crucial for a comprehensive understanding of economic transformation (Polo & Solano, 2011).
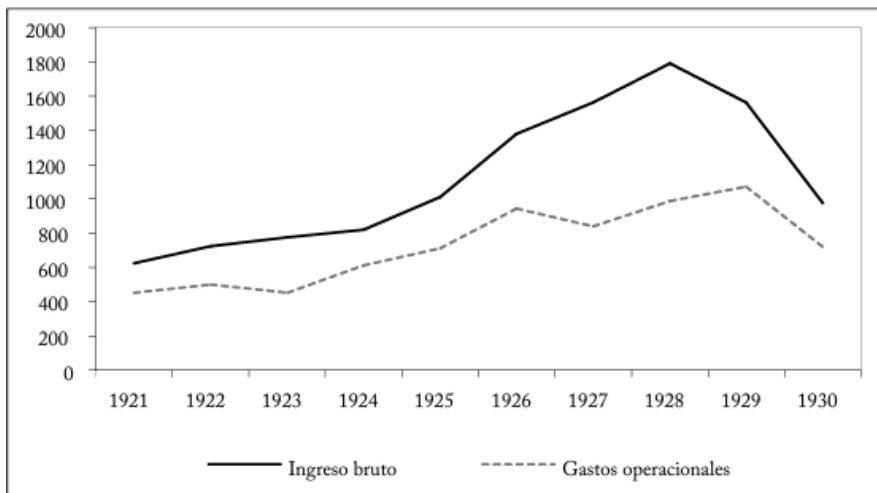
DISCUSSION

The trend among historians documenting the closure of Puerto Colombia's pier and the process of maritime development in Barranquilla on the Magdalena River has been biased due to the economic and cultural leadership exerted by Barranquilla's society along much of the Colombian Atlantic coast.

Most studies have focused on presenting the abandonment of the pier as a justified strategy to enhance the port sector in the region. However, questions arise: Who truly benefited from this shift in port operations? Why was a deep-sea port infrastructure abandoned at sea in favor of relocating the entire port operation to a river requiring constant dredging to maintain navigable conditions? Could the economic evaluation supporting the relocation decision have been unbalanced in favor of interests in the city of Barranquilla? Furthermore, the purchase of the port and railway by the Colombian government, followed by their closure in such proximity to the acquisition, raises many more questions regarding this ambiguous financial maneuver.

It is crucial to broaden the analysis beyond the logistical and economic benefits for Barranquilla and study the consequences for other communities and businesses following the closure of Puerto Colombia's port.

From a national perspective, the Colombian state lost a deep-sea maritime pier and a railway spanning over 30 kilometers, condemning the residents of Puerto Colombia and nearby communities to state abandonment.

For decades, the history of these communities has been overshadowed in favor of a more prominent and widely documented narrative: the history of Barranquilla.

	1888	1893	1920	1929	1936
	Railroad Station Opening (Baq–PtoCol)	Beginning of dock operations with reinforced steel and concrete structure	Buenaventura Seaport Opening	Beginning of construction of the "Bocas de Ceniza" jetties	Port of Barranquilla becomes operational as a maritime dock
Argumentational framework A Secondary Sources	Puerto Colombia dock is integral to Barranquilla's infrastructure	Barranquilla holds sway over all commercial activities at the Puerto Colombia dock	The emerging competition justifies the relocation	Necessary infrastructure to reduce costs and enhance competitiveness	Puerto Colombia, an outdated port with an expensive railway
	Nichols (1954) emphasizes Barranquilla's historical maritime ties, from colonial ports to the construction of the Puerto Colombia dock. It justifies the dock's abandonment due to Barranquilla's rapid urban growth by the 1950s.	Sourdis (2009) asserts that Barranquilla's geographical advantages and its role as a river port and maritime trade hub propelled its prominence. These factors attracted foreign immigrant groups, contributing to local elites and fostering industrial growth and development.	Correa (1980) suggests that competition from the port of Buenaventura led to a decline in commercial activity in Barranquilla as a leader in the country's foreign trade during that period, and not the pier was desired.	Correa (1980) suggests that the decline in commercial activity at Puerto Colombia was leveraged to compel the national government to invest in the construction of breakwaters at the mouth of the Magdalena River. This was aimed at shifting commercial operations to the port of Barranquilla, thus reclaiming market share.	Bell Lemus (2014) underscores that the relocation of maritime trade from Puerto Colombia to the port of Barranquilla was compelled by the construction of the Panama Canal, the Pacific Railroad, and the Buenaventura Port, which disrupted trade routes and diminished the significance of the Puerto Colombia pier.
Argumentational framework B Primary sources	Puerto Colombia was a well-established town, lacking customs authority	Being the country's main maritime port didn't translate into the development of its population	Competition served as an excuse to shift trade to the seaports	The Bocas de Ceniza project was unnecessary and would bring fresh new challenges	The Puerto Colombia dock and the Barranquilla port were not necessary exclusive projects
	López (1980) indicates that prior to the 1950s, the city of Puerto Colombia already had its established and organized population and social relations.	Correa (1980) states that the presence of Barranquilla as the port of Puerto Colombia was what constituted it as a leader in the country's foreign trade during that period, and not the pier was desired.	Correa (1980) suggests that competition from the port of Buenaventura led to a decline in commercial activity in Barranquilla. Due to their influence at the national government, they pushed for the construction of breakwaters for passenger and goods transportation at the mouth of the Magdalena river.	Ripoll (1999) emphasizes that Barranquilla not only witnessed commercial use of goods at the port in Puerto Colombia but also managed and maintained the railway connection from positions of power. López (1980) highlights anomalies in the cargo storage processes at the Customs in Barranquilla, where the high volume of cargo allowed the problems to be concealed.	Meisel (1994) illustrates the circumstances of their use of the dock at the port in Puerto Colombia and the use of Barranquilla.

Fig. 8.   Concept Comparison Chart and Event Interpretation Timeline. Self-Developed 2023.

The following illustrates how we contrast different perspectives on the closure of the Puerto Colombia pier. This figure exemplifies the process of comparing concepts from sources that have documented the events associated with this historical event differently.

This study represents a first step in researching the decimation of Puerto Colombia's port infrastructure and how these events impacted the urban and economic transformation of the city in the second half of the 20th century.

The purpose of this research is to contribute to the study of coastal cities, analyzing the relationship between communities and their infrastructures, and the impact altering these relationships can have on the urban configuration of the environment.

Moreover, it aims to critique how levels of social influence, reflected in the consolidation of an economically and culturally advantaged middle class, can shape a specific historical narrative and conceal events that could provide a more objective view of certain moments in history.

In summary, the historical focus on the relocation of port operations from Puerto Colombia to Barranquilla has been biased due to the dominance of the latter city's narrative. This perspective has minimized the importance of other affected communities and obscured the social and economic consequences of the pier's closure. The study calls for a reconsideration of how economic and cultural interests can shape historical perception, highlighting the need for more equitable and impartial research. Reflecting on the past from diverse perspectives allows us to learn from mistakes and successes, contributing to a more inclusive and just future for all communities in the region.

CONCLUSIONS

The intertwined history of Barranquilla and Puerto Colombia has spanned over time. Barranquilla always held the customs control, while Puerto Colombia, during its era as a maritime

port, was primarily regarded as a transit point. It served as a nexus between the Western world and an emerging nation.

The narratives about the diverse immigrant groups from places such as Germany, Italy, Austria, Lebanon, Syria, and others, as well as anecdotes about the introduction of radio, musical instruments from European factories (which were essential for the development of the characteristic sound of the early Colombian Big Bands), the first soccer ball, among others, are merely intriguing moments without a significant impact on the social growth of Puerto Colombia. These immigrants and their goods eventually moved on to other destinations where they found a home. Initially, Barranquilla was favored due to its proximity to the major maritime port, but like her, many other cities along the Magdalena River also played a similar role in this process.

Although past issues with the use of the railroad were documented, we cannot overlook the lack of attention to the recurring dredging of the Magdalena River. This dredging has been continuously carried out to maintain the necessary depth at the port of Barranquilla. As documented by López, H. (1922) in the Almanac of Colombian Events, it is stated that 'There were months when with the cargo that the railroad transported from Puerto Colombia to Barranquilla, it could have covered, perhaps even completely hidden, the deficient and not very secure warehouses that had been in service for many years'. This statement illustrates how investments in the construction of 'safer warehouses' at the customs of Barranquilla were justified. Furthermore, it indirectly raises the idea that the use of the railroad increases the chances of cargo theft.

It is then observed that the shift of maritime commerce from Puerto Colombia to Barranquilla was driven by the vested interests of a small group of entrepreneurs. This change was perceived as an opportunity to strengthen their

private businesses, without considering the impact on local social or urban growth. It is evident that they were also not interested in fostering channels of international trade, something crucial for the country's development.

Undoubtedly, it would have been beneficial for Colombia to maintain the maritime port of Puerto Colombia, simultaneously with improving the access of large vessels to the fluvial terminal of Barranquilla on the Magdalena River. This strategy would have fostered business competition, stimulating the constant pursuit of improvements and competitiveness in the ports, resulting in an increase in port capacity and hence strengthening international trade.

Among the prominent figures in literature as drivers of the commercial activity transfer between the ports are individuals such as Robert H. Parrish, who in 1933 was the legal representative of the Puerto and Terminal de Barranquilla company; Karl C. Parrich, a prominent urban developer and crucial intermediary in Barranquilla before the national government for the consolidation of works on the western dam of the Magdalena River (necessary for the stabilization of the river mouth and safe access of maritime vessels to the port of Barranquilla); and others like Víctor Dugand, owner of Banco Dugand in Barranquilla and promoter of business initiatives for the regulation of energy and water services in the city, among others.
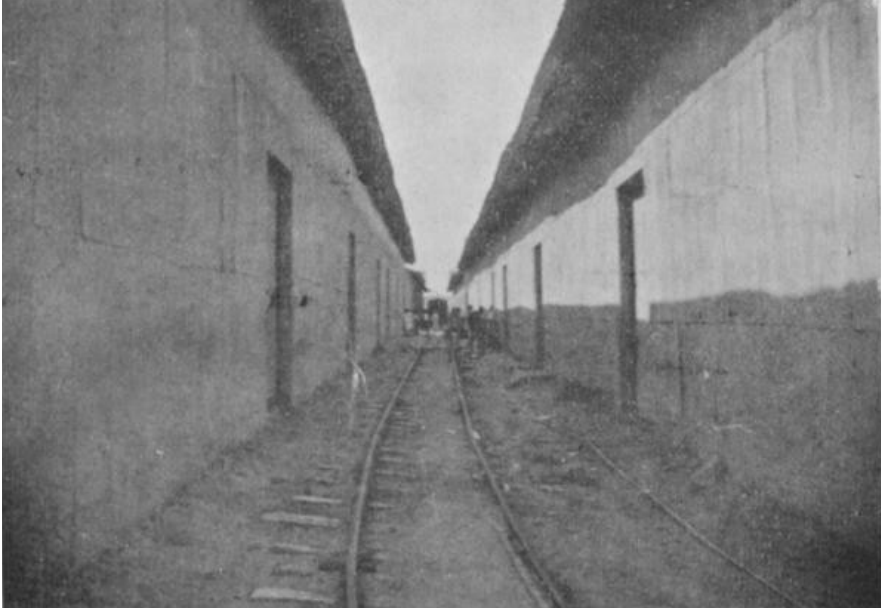
Fig. 9.   Almanaque de los Hechos Colombianos. Barranquilla, Colombia. 1922. A branch of the railway line between two of the solid buildings of the new warehouses, in the Customs of Barranquilla.

All these entrepreneurs are praised by Vergara and Baena in their book "Barranquilla, its past and its present" from 1946.

Furthermore, the strategy implemented by Karl C. Parrish and Manuel de la Rosa, which consisted of building houses and urban spaces inspired by architectural styles from countries like the United States (known as the El Prado Neighborhood), as well as the initiative led by Mr. V. Dugand in creating water and energy service companies in Barranquilla, created a conducive environment to attract foreign entrepreneurs and capital to settle in the city. Despite these urban development initiatives, Puerto Colombia was never considered to benefit from them, despite hosting the maritime port through which all these foreigners arrived. The lack of basic services such as water and energy, along with the absence of attractive urban development, made it difficult for anyone with sufficient economic capital to consider settling in the neighboring city to the port, no matter how advantageous it was for trade.

The technical lag of the city of Puerto Colombia can be attributed to those same individuals who drove the development of Barranquilla. The evidence of this lies in the fact that Barranquilla always dictated the course of Puerto Colombia, thanks to its absolute control over port trade. Not only did it maintain customs control of all goods at the Puerto Colombia dock, but it also managed and maintained the railroad locomotives from workshops located in Barranquilla, as documented by Rasch (1928) in the Commercial Directory Pro Barranquilla.

We believe this study can serve as a starting point for future research on the process of deterioration of port infrastructure in the city of Puerto Colombia and the implications of this loss

on its social and urban development. It also opens the door to new questions about how certain public investment decisions, such as improving basic sanitation services and developing urban space, impact the commercial growth of a city.

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IMAGE SOURCES

Figure 1   Map of the Location, Self-Developed [2023].
Figure 2   Archive of the Romantic Museum of Barranquilla [1894].
Figure 3   Digital Archive, Deutschefotothek.de. [1937].
Figure 4   Digital Infographic, la Prensa [2007].
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Figure 6   Digital Archive, El Heraldo Newspaper [2023].
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Figure 8   Concept Comparison Chart and Event Interpretation Timeline, Self-Developed [2023].
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In the twilight of modernism
East German port cities between remodeling and renewal 1960–1970

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Abstract

Crises are times of transition, but these phenomena are by no means straightforward and fluent processes. In Europe's industrial nations, the transition from the 1960s to the '70s is considered a critical phase of transition for economics, politics, society, and urban planning. Great societal narratives, the post-war political order, and the promise of endless prosperity were challenged, as is widely acknowledged. This raises the question of how this affected the German Democratic Republic. As Eastern Germany was part of the socialist realm, it requires a different periodisation. In this paper, I will introduce the concepts of crisis and transformation to the planning history of Eastern Germany to challenge the common narratives of technocratic utopianism that are believed to have shaped the late 1960s. The radical and emphatic designs for the remodeling of urban centres in 1960s GDR are often seen as the last manifestations of this dying world. With their radical urban and architectural vision, they are associated with blind futurism, technocracy and the supposed historical oblivion of state socialism. Examining the architectural competitions for the Northern cities of Stralsund, Rostock, and Greifswald, all of which are historical Hanseatic port towns, reveals a more dazzling image. This text discusses the discourses in philosophy, political economy, heritage conservation, and urban planning that emerged around competitions and claimed a necessary shift in urban production. This text aims to demonstrate that the architectural designs of the 1960s, which resulted from architectural competitions, should not be viewed as a product of confidence and planning euphoria. Instead, they should be understood as messengers of uncertainty and as forerunners of a post-Fordist transformation of city production. From this perspective of global entanglements, we will shed light on national planning policies and municipal representations of these phenomena.

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Contesting the toilet
Colonial discourses, elite protests, and religious sentiments on public sanitation infrastructure in Bombay city

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Abstract

Public toilets have always been an intensely politicised site. Focusing on the colonial discourses of a 'contaminated city' and its implications for public health, this paper explores the politics surrounding the construction of public toilets in colonial Bombay City. The paper relies extensively on the Standing Committee and Corporation Committee debates to examine the complex dynamics of the public space, infrastructure, governance, and urban politics. Firstly, the paper traces the development of sanitation policy in the city and highlights how offensive odours, inadequate sanitary infrastructure and urban contamination were identified as the key factors in the spread of diseases at the turn of the twentieth century. Secondly, this paper delves into the protests of city elites against the construction of public toilets in their neighbourhoods, exploring how their con cerns over the economic value of their land and the perception of public toilets as 'insanitary' spaces led them to utilize their social standing to influence urban planning and hinder the implementation of essential sanitation infrastructure. Finally, the paper investigates the contentious interplay between religious sentiments and the construction of public toilets in their vicinity, revealing how conflicts arising from the perception of sacrilege and religious sensitivities hindered effective sanitation infrastructure development and public health initiatives.

INTRODUCTION

Public toilets, which are often considered as mundane infrastructural units, have always been an intensely politicised site. They reveal a complex interplay of power dynamics, reflecting social hierarchies, power struggles, and urban governance. This paper builds on the works of Henri Lefebvre and Jurgen Habermas, two important theorists of space, society, and public discourse, to critically evaluate the politics surrounding the construction of public toilets in colonial Bombay City. Lefebvre's concepts of the 'right to the city' and 'space as a social construct', along with Habermas's concept of the 'public sphere' and his emphasis on media's role in shaping public opinion, allows us to look beyond space as a physical entity and to consider the socio-economic power dynamics underpinning the construction of public toilets in Bombay.[1]

Lefebvre's concept of the 'right to the city' is 'used in the context of practice of urban citizenship, governance, and social and political participation' and it emphasizes equitable access to urban resources, challenging the prevailing inequalities present in urban environments.[2] The concept of the 'right to the city', when used to examine the construction of public sanitation infrastructure, offers an insight into how different social and economic classes access and experience the built environment. For example, lack of adequate public toilets in congested neighbourhoods occupied by the lower-caste and lower-class populations, reflect the unequal distribution of urban resources. The construction and maintenance of public toilets, or lack thereof, reinforce prevailing unequal distribution of power. Lefebvre's work on the 'space as a social construct' allows us to understand that the location, design, and quality of the public sanitation infrastructure are not neutral decisions but rather outcomes of social negotiations and power structures.[3] For example, when the elites in the society protest against the construction of public toilets in the vicinity of their residential areas, it clearly underscore that the spatial arrangements in the city are influenced by social and economic status. The contested nature of public toilets highlights their role as markers of social division and privilege, underscoring Lefebvre's argument that urban spaces are inscribed with meaning beyond the physical realm.[4] In the writings of Habermas, the 'public sphere' can be seen as a domain of social life for rational discourse and deliberation, where all citizens engage in conversation about common interests.[5] In the context of public conveniences, the discussions in the public sphere can revolve around ideas associated with public health, hygiene and sanitation, access to public sanitation infrastructure, and urban planning. The discussions and deliberations that emerge are public opinion, and it reflects societal attitudes, cultural norms and stigmas associated with health, cleanliness, and sanitation infrastructure. Thus, the public sphere also raises critical questions about inclusivity and representation in urban planning, design, and production of public health infrastructure.[6] Furthermore, Habermas's work on the role of media in shaping public opinion is critical to examine how debates on construction of public toilets are framed, affecting the perception of the masses and policy outcomes.[7]

Focusing on the construction of public toilets in twentieth century colonial Bombay city, this paper attempts to make three important contributions. Firstly, the paper traces the development of sanitation policy in the city and highlights how offensive odours, inadequate sanitary infrastructure and urban contamination were identified as the key factors in the spread of dis-

eases at the turn of the twentieth century. Secondly, the paper delves into the protests of city elites against the construction of public toilets in their neighbourhoods, examining how their concerns over the economic value of their land and the perception of public toilets as insanitary spaces led them to utilize their social standing to influence urban planning and hinder the implementation of essential public sanitation infrastructure. Finally, the paper investigates the contentious interplay between religious sentiments and the construction of public toilets in their vicinity, revealing how conflicts arising from the perception of sacrilege and religious sensitivities hindered effective sanitation infrastructure development and public health initiatives.

IDEA OF THE CONTAMINATED CITY

For a large part of the 18th and 19th century, the spatial organization of the city clearly indicated divisions based on ideas of racial segregation, class and caste. The development of sanitation infrastructure in Bombay also reflected a strong racial bias; the colonial state focussed on safeguarding the health of the European population in the 'white town' instead of the natives, who resided in the 'black town'. It was with the frequent outbreaks of diseases such as cholera, plague, amongst others which prompted the colonial state and the municipality to focus their attention on the northern parts of Bombay. To understand the developments surrounding sanitation infrastructure in twentieth century colonial Bombay city, one must examine the contribution of two public health officials in mid-nineteenth century Bombay, Henry Conybeare and Andrew Leith. [8] Conybeare was the Superintendent of Repairs to the Board of Conservancy in Bombay during the 1850s. In 1852, Conybeare submitted a report to the Board titled 'Report on the Sanitary State and Sanitary Requirements of Bombay'.[9] In 1864, Leith, who was the Deputy Inspector General of Hospitals, submitted a 'Report on the Sanitary State of the Island of Bombay' to the Board.[10] These reports highlighted the importance of sanitation and public health in government circles and demonstrated the capacity and limitations of colonial sanitation provisions. Along with Conybeare and Leith, figures like Arthur Crawford and Thomas G. Hewlett, who served as Municipal Commissioners during that period, advocated for sanitation reform. These personalities were "deeply influenced by the public health movement gaining ground in Victorian Britain".[11] Conybeare and Leith were proponents of the belief that municipal bodies and governments had a responsibility to ensure healthy living conditions for the public. They aligned themselves with British sanitation reformers like Edwin Chadwick and John Simon, sharing similar ideals and aspirations for improving public health and sanitation.[12]

In the mid-nineteenth century, public health officials like Leith focussed on addressing sanitation by dealing with natural factors such as the low-lying nature of land, soil, tides, coast and its pollution by sewage, air, animals, groundwater, disease, fever, bodies, and especially, human water.[13] In Bombay, sanitation reformers aimed to integrate nature into urbanization efforts. This approach in sanitation linked the city with nature by focusing on what Colin McFarlane terms the idea of the 'contaminated city'.[14] The idea of the contaminated city was based on the miasma theory, according to which 'diseases were associated with poor sanitation and foul odours, and that sanitary improvements were successful in reducing disease'.[15]

These unhealthy odours were considered to be the primary reason for illnesses such as cholera, plague, and fevers. The reports submitted by Conybeare and Leith make constant references to 'cesspools', 'noxious matters', 'poisonous gases' and 'accumulated filth' in the city; and highlighted the urgent need to address filth and improve civic sanitation infrastructure due to the perceived link between environmental conditions and epidemic diseases.[16] Despite these reports highlighting the need for sanitary reforms and construction of adequate public sanitation infrastructure, the colonial state largely ignored sanitary reforms until the 1896 bubonic plague outbreak in Bombay. "The plague outbreak in Bombay confronted the colonial authorities with their worst nightmare and crystallized latent anxieties about their hold on empire."[17]

During the plague epidemic of 1896 and in the following years, two theories existed side by side: the contagionist theory, which believed that the human body was the main carrier of disease[18], and the miasma theory, which connected the disease's appearance to local sanitation conditions and asserted that certain places could "catch" the infection. Thus, the measures advocated during the epidemic targeted the urban space and ranged from disinfection to the destruction of the buildings deemed most unsanitary.[19] As knowledge of Pasteur's discoveries spread, the miasma theory was quickly refuted by the scientific community. However, the miasma approach remained very much present in the practice of the administrators, particularly because of the resistance to measures targeting the bodies during the plague epidemic of 1896.[20] The bubonic plague of 1896 thus gave rise to an intense generation of knowledge concerning urban spaces and attempts to transform them with a focus on health and sanitation.[21] It is important to note here that the ideas of 'modern town planning' that began to generate in early- twentieth century Britain also had a significant impact on urban planning in Bombay. The focus of the British government shifted from relying on 'by-laws and sanitary reform' to controlling 'land use and management of whole cities'.[22] These ideas when implemented in colonial Bombay city resulted in widespread slum clearance policies, considering the limited financial resources available at the disposal of the local governments. Slum clearance was looked at as a solution to improve the living conditions and to beautify the city. Furthermore, the elite members of the Indian population in the BMC replicated the approach of the colonial state, which resulted in the neglect of the basic health and sanitation needs of the city. Since the early years of the twentieth century, slum clearance resulted in the labouring poor being displaced and forced to seek housing in the other overcrowded and unsanitary neighbourhood of the city.[23]

CONTESTING THE TOILET

In 1866, there were a total of 80 public urinals set up in different parts of the city.[24] The recruitment of labour in the sanitation services of Bombay Municipal Corporation (henceforth BMC) was starkly defined by a hierarchical categorization that assigned tasks to individuals deemed 'polluted' within the caste structure. The BMC relied on the labour of marginalized groups, particularly the *halalkhores*[25]. The *halalkhores* bore the responsibility of removing human excrement from public thoroughfares and "dry latrines". The task of night-soil collection was carried out by *halalkhores* employing wooden carts and head baskets, eventually transitioning to iron carts.[26] (See Figure 1, 2 and 3) These sanitation workers faced immense challenges as

they grappled with the increasing volume of human waste accumulating on the streets. Subsequently, the waste was transported by train to areas like Sion and Kurla situated to the north of the island city. There, it was mixed with ash and vegetable matter before being dumped into salt marshes.[27] The *halalkhores* played a crucial role in maintaining the city's health, and the imperative of maintaining urban cleanliness further perpetuated discrimination and the existing caste hierarchies within the urban social fabric of Bombay.

Fig. 1. Old Public Latrine in nineteenth-century colonial Bombay city, erected by Mr. Conybeare in Shaikh Abdool Pack Moodia Street. It was pulled down in 1866 and replaced with an iron latrine.
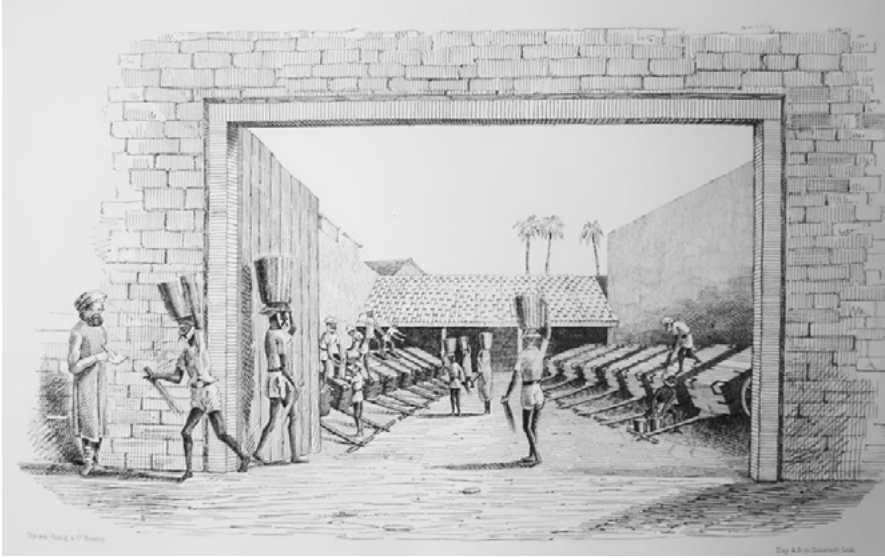
Fig. 2.   Sonapore Night Soil Cart Depot.

Fig. 3.   Sketch of a halalkhore.

When examining the state of sanitation in Bombay following the plague epidemic of 1896, an anonymous letter addressed to the editor of the Time of India in January 1898 provides a historical snapshot of the sanitation challenges faced by the urbs prima and offers a poignant critique of the state of public sanitation infrastructure in Bombay. The author expressed concerns about the state of public sanitation in Bombay and criticized the ineffectiveness of the BMC. The author argued that the BMC, primarily composed of individuals seemingly indifferent to the improvement of public sanitation, hampered any aspirations for the 'Sanitary Regeneration of Bombay'.[28] In the letter, the author also predicted the worsening of health issues in Bombay due to repeated outbreaks of diseases considering the poor sanitation infrastructure. The author highlighted BMC's failure to provide adequate number of public conveniences in proportion to the urban population, compounded by the absence of efficient sewers in the city.[29] In addition, the author also illustrated the filthy habits of the local population. While mentioning about the makeshift huts occupied by the poor in the city, the author described that the inhabitants of the huts used the surroundings as latrines, creating an insanitary and polluted environment. The letter demanded immediate construction of sufficient public conveniences to accommodate the large population of the city and suggested the need to educate the public on decency.[30]

The anonymous letter particularly highlights the structural deficiencies in sanitation infrastructure – the inadequate number of public conveniences and the absence of proper sewage systems. Taking into account the high mortality rates recorded during the plague epidemic[31] and the evolving colonial and societal perception regarding health and sanitation within the urban milieu after 1896 in Bombay, there is discernible evidence of escalated priority accorded to the establishment of public latrines and urinals by the municipal authority. Furthermore, drawing parallels to the developments back in England, "public toilets for men in particular became a desirable urban amenity in the 1880s".[32] Various legislations related to public health gave "London's municipal authorities the power to provide public toilets in or under streets".[33] Simultaneously, in Bombay, as highlighted earlier in the paper, the colonial administration exhibited a concerted commitment to mitigating the varied challenges arising from deplorable housing conditions and unhygienic localities following the plague epidemic at later the influenza pandemic in 1918. It resulted in the establishment of the Bombay City Improvement Trust in 1898 and the Bombay Development Directorate in 1920.[34] The focus of both these establishments was slum clearance and providing housing to the labouring poor in the city. At the turn of the century, the BMC with its limited funds decided to focus on providing for health and sanitation through the expansion of drainage and sewerage networks, construction of public hospitals and public toilets. This renewed emphasis on sanitation and urban hygiene is reflected in the articles published in the Times of India and in the Standing Committee and Corporation Committee Resolutions passed in the BMC. Using the cases illustrated in the above-mentioned sources, this paper attempts to highlight the agenda and nature of elite protests, and the impact of religious sentiments on construction of public latrines and urinals in twentieth century colonial Bombay city.

CLASS PRIVILEGE AND CONTAMINATION CONCERNS

A case was taken up by the BMC on 12 October 1913 to debate the proposal of constructing a public convenience on a site in Thakurdwar, which was previously a well.[35] Thakurdwar, a neighbourhood located near the local railway station at Girgaon, would see daily commuters travelling to and from work. Messrs. Nanu Hormusji and Co., solicitors, who represented the owners of the properties in front of the site, protested the erection of the public convenience. In their letter to the BMC, they stated, "that their clients owned very valuable properties just facing the site of the proposed latrines" and that their clients will hold the BMC "responsible for all damage arising in consequence of the nuisance resulting from the structure".[36] The clients further added that the public convenience will serve as a refuge for the "vagrants and vagabonds" and peace of the locality will be disrupted.[37] In his response to the letter, the Commissioner of the BMC emphasized the need for a public convenience to be erected at Thakurdwar considering the footfall, especially during the peak hours in the morning and evening. Furthermore, he added that there was no other public convenience in the vicinity which could be used by the daily commuters and stressed the importance of public conveniences for Bombay's public health and sanitation, before dismissing the objections raised in the letter.[38]

Despite the concerns raised by the Municipal Commissioner, the municipal elites continued to raise their objection. Dr. Dinshaw Master proposed an amendment to build a water cistern instead of a public convenience on the site, as a water cistern would not be considered an "eye sore" [39]. Hormasji Modi presented another amendment opposing the erection of the public toilet altogether, arguing that public conveniences should be placed in less prominent places like byways, and he believed the site was too prominent. Modi also expressed concerns about the convenience being a nuisance to temple-goers and suggested Tarwadi as a more suitable location.[40] It is imperative to highlight that Tarwadi in Mazagaon was a congested locality occupied by the lower caste population and was also too far from the site at Thakurdwar. The construction of public convenience at Tarwadi would not prove to be beneficial for the commuters travelling to Girgaon.[41] Furthermore, the opposition was primarily motivated by concerns regarding the value of the property. Also, the residents of Thakurdwar perceived the public convenience as a potential nuisance which would impact the peace and quiet of their upmarket locality.[42] It echoes apprehensions rooted in social stratification, revealing concerns pertaining to public spaces and their capacity to disrupt established privilege. In addition, to strengthen their opposition, some of the elites brought up religious sentiments, claiming that the proposed public convenience would be too close to a temple and would offend the religious feelings of the majority Hindu residents.[43] The religious sentiment argument was merely a smokescreen to hide their true motivations and concerns about the devaluation of their properties.

Cawasji Jehangir Readymoney dismissed the opposition on the religious sentiments' argument, stating that it was an afterthought. He pointed out that the opposition mainly came from Kothare, a prominent solicitor whose house was situated opposite the proposed site and suggested that Kothare's personal interests were influencing the opposition.[44] Readymoney believed the BMC should not take much notice of the opposition and claimed that such public

conveniences were not considered nuisances in England. [45] On the other hand, Pherozeshah Mehta discounted the argument that the sanitation of the locality would suffer without the public convenience, asserting that the strong feelings of Indians on religious matters should be respected, and it would be unwise to go against those feelings.[46] The members elected to the BMC found themselves divided on the issue. Vasantrao Dabholkar opposed changing the former decision of the BMC, stating that putting up a simple screen could address any religious sentiments concerns. He raised doubts about the genuine representation of the temple's community in the opposition, suggesting that most signatures were from Kothare's relatives and community members. Dabholkar believed the temple itself lacked many municipal requirements and that the agitators were not serving the temple's best interests. He, being a member of the Shenvi[47] community who owned the temple, claimed that the community at large had no objection to the public convenience being erected on the site.[48]

The Thakurdwar case study serves as an example of the power dynamics in operation within the BMC. The correspondence highlights the privileged standing of the clients, who held the expectation that their social influence and class status would shield them from potential inconveniences and any perceived detrimental impact on their properties. Furthermore, these upper-class agitators raised doubts on the efficacy of public sanitation measures, offering a critique of the BMC's assertion that a public latrine would constitute an amenity. They challenged the BMC's viewpoint by asserting that even well-maintained public lavatories in Bombay, complete with advanced flushing systems, continuous vigilance to forestall uncleanliness, were inadequate in mitigating associated health risks and unhealthy odours.[49]

BALANCING RELIGIOUS SENTIMENTS AND PUBLIC HEALTH

In November 1913, during a weekly session of the Standing Committee of the BMC, chaired by Fazulbhoy Chinoy, a series of protests against the building of a public convenience near the Dadysett Fire Temple were brought to attention.[50] A petition submitted by residents and visitors from the vicinity emphasized the temple's historical significance as the oldest fire temple in Bombay, held in reverence by the Parsi community. "The petitioners submitted that the nuisance reported of was not merely objectionable from the standpoint of sanitation but still more so as it hurt the religious feelings and sentiments of the Parsis."[51] The Commissioner, in his response on the matter, "referred the Standing Committee to a Corporation resolution dated 5 December 1912" indicating that the case had been decided after "the fullest enquiry and consideration".[52] He emphasized that no new elements, either in terms of facts or arguments, had emerged to justify revisiting the matter. The existing resolution had comprehensively addressed – first, the indispensability of a nearby urinal for public convenience and prevention of potential sanitary issues; second, the significant distance between the urinal and the fire temple premises; and third, the elimination of the unseemly practices that were offensive to the temple's surroundings.[53] Cowasji Jehangir also stressed that the individuals raising objections were indeed respectable, but they were not residents nor property owners in the vicinity of the public convenience.[54]

Similar incidence was noted in 1922, related to the presence of a night soil depot, latrines, and *kutchra*[55] carts near a mosque in Khoja Moholla.[56] A letter had been received from Sayed Gulam Mahomed Refaie and other residents of the area, drawing attention to the disturbance caused by these facilities. A subcommittee of the Standing Committee addressed the matter, proposing that three latrines adjacent to the mosque would be removed and the wall extended to the street once alternative public latrines, near the depot, were operational.[57] However, Abdul Kadar Abdulla Haji Daud suggested an amendment, insisting on the complete removal of the night soil depot, latrines, and kutchra carts from the mosque's vicinity. He argued that the subcommittee's solution was insufficient and that all sources of complaints should be eliminated. Dr. A. G. Viegas "failed to understand why there should be latrines and night-soil depots near mosques and places of religious worship" and Kanji Dwarkadas "deprecated any action on their part which would hurt the religious feelings of the Mahomedan community".[58] V. J. Patel had visited the site and had arrived at the conclusion that the BMC 'should not for a moment tolerate the nuisance' and called it "a hell on earth".[59] Salebhoy Barodawala was of the opinion that a committee should be installed to suggest solutions for eliminating the nuisance and proposed an amendment in this regard. [60] The Commissioner acknowledged the nuisance at the site and extended his support to the amendment proposed by Barodawala. At the end of the case, Mr. Daud withdrew his amendment in favour of Mr. Barodawala, which was agreed to by the municipal leaders.[61]

Amidst the increasing number of complaints against the construction of public toilets near sites of religious significance, the eleventh report of the Public Health Committee in Bombay, dated 11th February 1928, took a specific stance on the removal of public toilets in the vicinity of places of worship.[62] The decision made on the part of the BMC underscores the pressure felt by local governing body to consider religious sentiments and sensitivities in urban policy making, at the cost of public health. Thus, it becomes essential to critically evaluate the decision taken by the municipality. Firstly, considering the over-crowding at places of worship, it was crucial on the part of the governing bodies to provide for public conveniences in the vicinity. Secondly, the subcommittee that was appointed by the BMC to visit places of worship and assess the nuisance reported that all the site "were kept clean and served a real public need and there were hardly any complaints in respect of them".[63] In fact, the sub-committee merely recommended to ensure that the conveniences are kept "scrupulously clean and free from smell at all times of the day" and are regularly disinfected.[64] Considering the above mentioned points, questions emerge about the role of the BMC in maintaining a balance between respecting religious sentiments and the practical need for prioritizing public sanitation infrastructure. Additionally, the municipal records do not offer any details with regards to alternative provisions made to provide for public conveniences where removal was recommended.

The need for a balance between religious sentiment and the practical need is illustrated in a complaint submitted by Morarji Hurjiwan and others, dated 16 February 1914, regarding the fouling of 3rd Phopalwady Lane, caused by occupants of Bai Jankibai Dharmasala, a charitable institution housing a large number of religious monks. [65] The letter emphasized that the Dharamsala was located in the immediate neighbourhood of the Bhuleshwar Temple and therefore was easily accessible "to a large number of mendicants and *bairagees*[66] who flock to Bhuleshwar to seek alms".[67] Considering the charitable nature of the institution, which was

used by a substantial number of homeless people, the complainant highlighted the paucity of public conveniences on the lane and held both – the Dharamsala and the BMC responsible for the inadequacies related to public toilets and water closets. [68] In response, the Executive Health Officer acknowledged the inadequacies and proposed the "provision of additional water closets and the construction of a combined flushing urinal in the lane".[69] This case underscored the need for collaborative efforts between religious institutions, local communities and the municipality to effectively address issues related to public health and sanitation.

A BIASED DISCOURSE ON UNDERGROUND PUBLIC CONVENIENCES

In 1921, a discourse emerged surrounding the potential implications of underground public conveniences in Bombay, akin to those in London.[70] The municipal representatives, who largely belonged to elite section of the society, considered overground public toilets to be an 'eye sore' and it did not align with their vision of a 'modern up-to-date city'.[71] Champions of the underground facilities, such as P. J. Murzban and Dr. K. E. Dadachanji, contented that other metropolis, most notably London, had effectively integrated underground systems and urged Bombay to emulate their success. Murzban specifically prioritized the construction of an underground public convenience at Victoria Square (Bhatia Bagh) before the anticipated visit of the Prince of Wales in 1922.[72] Rather than prioritizing the provisioning of suitable sanitation amenities across the different city wards, they exhibited a fixation on expending substantial sums on the construction of underground conveniences and showcasing a façade of progress to the visiting royals. Notwithstanding, certain municipal councillors opposed the proposition, arguing against the substantial financial outlay and categorizing it as an indulgence. Municipal councillors such as B. N. Motiwala and Dinshaw Master raised a pertinent concern, underlining that while substantial funds were being allocated to posh neighbourhoods for the establishment of such conveniences, densely populated areas occupied by the labouring poor were being disregarded, despite their pressing need for fundamental sanitation amenities. J. A. Wadia considered the proposal "as a waste of money" and stated that "before they talked of London, they should make Bombay a London".

One of the predominant reasons for the sanitation needs of the poor and the marginalized being ignored was the fact that the labouring class, constituting a majority of Bombay's population in the first half of the twentieth century barely found representation in the BMC until the early 1930s. The BMC was dominated by the local elites, who resided in the southern parts of the island. Therefore, the nature of intervention made by the BMC towards provision of public health and sanitation infrastructure reflected the "ruling-class notions of the habits and customs of the poor and their perception of the necessary minimum at which the poor could be expected to live".[73] Burnett- Hurst, writing about the unequal sanitary infrastructure in the city, highlights that Bombay which has the highest number of sewers amongst all the cities in the East, did not have a single sewer in the 'poorer quarters' until 1925. The sewers were concentrated in the southern and wealthy parts of the city.[74] The annual administration reports of the Municipal Commissioner and the discussions held by the Corporation Committee and

Standing Committee, were silent on the representation of members from the poorer areas in the municipal politics. Richard Newman and Shashi Bhushan Upadhyay have "acknowledged that the working class was silent and that their voices could only be discerned through the representation of lawyers, journalists, social workers, civil servants, trade union leaders and police reports".[75]

IN CONCLUSION

In conclusion, Lefebvre's work on urbanism, planning and space, along with Habermas' insights into the public sphere, unite to provide a holistic understanding of how ostensibly mundane infrastructural units can emerge as contested spaces. "Urban public space is thus not simply the sum of relationships between forms and practice but is simultaneously a condition for the reproduction of urban everyday life. This space is always also filled with power and ideology."[76] With the establishment of the BMC in the late nineteenth century, while the natives had a greater decision making power, there was an evident upper class and upper caste bias visible in the decision making process. The health and sanitation infrastructure established in the late nineteenth and twentieth century colonial Bombay city mirrored existing social inequalities within the urban fabric. The labouring poor and the Dalits did not have access to adequate health and sanitation infrastructure, aggravating social and health disparities.

There is a lack of female voice in the discussions surrounding the construction of public conveniences in twentieth century colonial Bombay city. It was largely the men in the BMC who made decisions regarding the built environment. While the various archival documents mention 'latrines' and 'urinals', the discourse appears to be entirely voided of any reference to women's participation or perspective. Furthermore, doubts also emerge if the words 'latrines' and 'urinals' were used interchangeably. There is no documentary evidence that mentions of separate public conveniences for women. "City planning and infrastructure tends to invisibilize women from public spaces."[77] The lack of female voice in city planning and infrastructure not only underscores the cultural norms and stigmas but also highlights the broader challenges women faced in asserting their opinions within a patriarchal set up. While the responsibility of private well-being, nurturing physical health and moral well-being of family members rested on the women, it was the men who exercised control and dominance over the public spaces in the urban environment. The gendered production of sanitation infrastructure underlines the complexity of urban politics in Bombay city. Thus, the paper argues that public toilets were contested spaces in twentieth- century colonial Bombay city, with their planning and construction reflecting broader issues of governance, urban politics, and the reinforcement of socio-economic hierarchies.

Through the lens of public toilets, one can identify larger issues associated with urban planning and development in both colonial and post-colonial Bombay city. The modern town planning ideas that emerged in Britain had a significant impact on colonial Bombay city and have left a lasting legacy on the urban planning and development practices in independent India.[78] Slum clearance as a core solution for redevelopment of the over- crowded and unhygienic lo-

calities continues to persist in independent India. The implementation of slum clearance policies is accompanied by inadequate compensation and resettlement for displaced urban poor.[79] This has contributed to the inequitable distribution of sanitation services in present day Mumbai[80]. Even in the present times, the concentration of power at the hands of the wealthy and the lack of adequate representation for the poor and marginalized sections of the society in the municipal politics has resulted in the denial of basic sanitation and health infrastructure to the vast majority of the city's population. The absence of a long-term and inclusive urban planning framework has led to fragmented and ad hoc development. Mumbai will greatly benefit from recognizing and addressing these historical shortcomings, to develop more inclusive and effective strategies to address the public health and sanitation infrastructure challenges that the city is confronted with today.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author.

NOTES ON CONTRIBUTOR(S)

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ENDNOTES

1. Lefebvre, *The Production of Space* and Calhoun (ed.). *Habermas and the Public Sphere*.
2. Vaddiraju, "Urban Governance and Right to the City", pp. 21-22.
3. Lefebvre, *The Production of Space*, p. 27.
4. Ibid.
5. Calhoun (ed.), *Habermas and the Public Sphere,* pp. 1-51.
6. Ibid.
7. Ibid.
8. McFarlane, "Governing the Contaminated City", p. 3.
9. Dossal*, Imperial designs and Indian realities*, p. 125.
10. Ibid.
11. Ibid. Also see, Kidambi, *The Making of an Indian Metropolis.*
12. McFarlane, "Governing the Contaminated City", p. 4.

13. Ibid, p. 9.

14. Ibid, p. 10.

15. Tulchinsky et al, *The New Public Health*, p. 1.

16. McFarlane, "Governing the Contaminated City", p. 10.

17. Kidambi, *The Making of an Indian Metropolis*, p. 54.

18. Kidambi, "An infection of locality", p. 251.

19. Ibid, p. 258.

20. Ibid, pp. 263-64.

21. Parpiani, "Urban Planning in Bombay (1898-1928)", pp. 64-70.

22. Bombay Municipality, *Health Officer's Report*, 1866, p. 11.

23. *Halalkhores* are members of the Dalit community, who are traditionally associated with manual scavenging and sanitation labour.

24. Bombay Municipality, Health Officer's Report, 1866, pp. 9-10.

25. Tindal, *City of Gold*, p. 200.

26. "The Sanitary Regeneration of Bombay", *Times of India* (henceforth TOI), January 24,1898, p. 5.

27. Ibid. Note: In 1898, there was only one Drainage Engineer in the Municipal Executive.

28. Ibid.

29. Kidambi, "An infection of locality", p. 252.

30. Flanagan, "Private Needs, Public Space", pp. 265–90.

31. Ibid.

32. "Bombay Corporation: Disposal of a Well Site", *TOI*, October 14, 1913, p. 10.

33. Ibid.

34. Ibid.

35. Ibid.

36. Ibid.

37. Ibid.

38. Pradhan, *Untouchable Workers of Bombay City*, p. 6.

39. Bombay Municipal Corporation, Standing Committee Resolution No. 3624, dated September 14, 1913. Supplement to Minutes Book, Standing Committee, Vol. XXXVIII B, 29 August 1913 to 28 May 1914.

40. Ibid.

41. "Bombay Corporation: Disposal of a Well Site", *TOI*, October 14, 1913, p. 10.

42. Ibid.

43. Ibid.

44. Surnames indicate the caste status of an individual in Indian society. *Shenvi* is be a Brahmin caste of a lower status.

45. "Bombay Corporation: Disposal of a Well Site", *TOI*, October 14, 1913, p. 10.

46. "Bombay Corporation: A Question of Position", *TOI*, July 11, 1913, p. 8.

47. "Bombay Corporation: Parsi Fire Temple Protest", *TOI*, November 6, 1913, p. 5.

48. Ibid.

49. Ibid.

50. Ibid.

51. Ibid.

52. *Kutchra* is a word used for urban waste.

53. "Bombay Corporation: Prevalence of Malaria", *TOI*, June 27, 1922, p. 10.

54. Ibid.

55. Ibid.

56. Ibid.

57. Ibid.

58. Ibid.

59. Bombay Municipal Corporation, Corporation Resolution No. 14219, dated March 23, 1928. Supplement to Minutes Book, Corporation Committee, Vol. L-A, 19 September 1927 to 23 March 1928.

60. Ibid.

61. Ibid.

62. Bombay Municipal Corporation, Standing Committee Resolution No. 745, dated May 6, 1914. Supplement to Minute Book, Standing Committee, Vol. XXXVIII B, 29 August 1913 to 28 May 1914.

63. *Bairagee* means a recluse.

64. Bombay Municipal Corporation, Standing Committee Resolution No. 745, dated May 6, 1914. Supplement to Minute Book, Standing Committee, Vol. XXXVIII B, 29 August 1913 to 28 May 1914.

65. Ibid.
66. Ibid.
67. "Bombay Corporation: Underground Conveniences", *TOI*, February 15, 1921, p. 12.
68. Ibid.
69. Ibid.
70. Chandavarkar, *The Origins of Industrial Capitalism*, p. 38.
71. Burnett-Hurst, *Labour and Housing in Bombay*, p. 21.
72. Shaikh, "Translating Marx", p. 65.
73. Sharma, A et al, "Understanding Issues Involved in Toilet Access for Women", p. 73.
74. Wildner, "La Plaza: Public Space as Space of Negotiation"

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City Damage Maps, 1944
Key References for the Historiography of Urban Reconstruction Planning in Germany

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Abstract

In early 1944, Hamburg city planner Konstanty Gutschow launched an initiative to collect damage maps of bombed cities. His office developed guidelines for standardised urban damage mapping. Gutschow's collection of some 40 uniform city damage maps from May 1944 survived in the archives as part of the materials of the Nazi German Working Staff for the Reconstruction of Destroyed Cities. Although the maps are known (Diefendorf 1985), it remained unclear whether Gutschow's initiative for damage mapping in preparation for reconstruction was the only instance of nationwide damage mapping and whether damage maps were consulted for reconstruction planning. On the basis of damage maps from 6 German city archives (Enss and Knauer 2023), this paper argues that damage maps played a central role in the planning of disaster relief and reconstruction in Essen, Hamburg, Munich and Nuremberg after the end of the war. The paper advocates the inclusion of damage map analysis in the historiography of reconstruction planning. Gutschow was a visionary of controlled and economically optimised post-war reconstruction planning in Nazi Germany. He standardised the use of plan and map graphics to provide an overview of the chaotic disaster situations in cities. Damage maps showed urban areas of total damage in order to channel the opening up of dense quarters and the introduction of new arteries. Uniform maps and plans corresponded to Ernst Neufert's uniform building standards. Our research shows that Gutschow's damage mapping guidelines were used in 5 cities during and after the war, and influenced local planning strategies in the years that followed. As snapshots taken at a time of increasing demolition, Gutschow's collection of damage maps does not provide a statistical basis for the overall extent of damage in cities. Instead, the mapping guidelines are important references to concurrent planning approaches. Their use in the post-war years demonstrates the survival of Nazi planning methods beyond the end of the war. Damage mapping and reconstruction planning became iterative processes during and after the war.

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Carmen Enss
City Damage Maps, 1944

Suburban Housing Planning History for Hanoi Capital Region 1980s-2020s
Market Economy Adaptation and High-Density Environment.

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Abstract

Suburbs, defined as the areas bordering cities, play a crucial role in providing greenbelt spaces for agricultural production, cultural-recreational activities, and environmental protection. Over the past 40 years, urban planning in Ha Noi has focused on developing housing outside the city center to alleviate pressure on urban areas. Initially, there was a push for "building by people and the state," but this approach faced challenges due to limited resources. Subsequently, the state experimented with supply planning and housing management for employees, gradually integrating market economic mechanisms. Throughout the 1990s and 2000s, the state continued to play a dominant role in providing housing for priority groups. However, the early 21st century saw increased participation from various economic entities, leading to positive shifts in both quantity and quality of housing projects. Ha Noi is now committed to constructing modern, sustainable housing models with integrated social infrastructure and synchronized technological development, while preserving cultural heritage and historical sites. This approach aims to stimulate economic development, promote the knowledge economy, and ensure environmental protection and national security, while fostering regional, national, and international linkages. Through fieldwork and comparative assessment methods, this article explores and proposes policies for suburban housing development that integrate green spaces and technology, with the goal of creating an attractive and sustainable model for the future capital - Ha Noi.

INTRODUCTION

After more than three decades of reform, Vietnam has made significant strides in various areas, particularly in economic development. The dissolution of the Soviet Union and the socialist bloc in Eastern Europe led to the cessation of economic aid to Vietnam, while the US blockade and embargo further disrupted the economy. In response, the Vietnamese government shifted towards consensus policies to reconcile differing viewpoints between pragmatists and traditional communists. This shift facilitated the transformation from a centrally planned economy to a multi-sector economy, and ultimately to the current socialist-oriented market economy.

The period from 1980 to 1986 saw the continuation of old economic policies with support from Eastern European socialist countries, promoting the development of collective housing in suburban areas. The subsequent period from the 1986s-2000s marked a turning point, as the state gradually opened the market to attract foreign investment and encouraged state-owned enterprises to participate in infrastructure development and housing construction in new urban areas.

From 2000 onwards, deep international integration significantly influenced urban development in Hanoi, leading to urban expansion and adjustments in housing development policies to align with the market economy. This study delves into the context of transitioning to a market economy in developing suburban housing areas in Hanoi, examining changes in planning and the roles of public and private actors. It also provides insights on regional planning and population density adaptation during Vietnam's rapid and complex transition period.

HISTORY OF HANOI'S GENERAL PLANNING FROM 1960-2020.

THE 1960S ONWARDS

Since 1960, starting the first 5-year plan for economic development, Hanoi has built several industrial clusters, and some large architectural works such as office buildings, schools, and hospitals, addressing the need for suitable housing. Many poor working areas and villages such as An Duong, Tuong Mai, Phuc Tan have been improved living environments or new construction. Especially some dormitories such as Kim Lien, Nguyen Cong Tru … built with the model of a socialist housing subdivision.[1]

Right at this stage, the City has affirmed the need to build according to the plan and soon have the Capital General Plan to guide the construction. The Politburo has considered and issued Resolution 18/NQ-TW on the development of the Capital.

In 1961, the General Plan of the Capital with the help of Soviet experts was approved with a population size of 1 million inhabitants with about 20,000ha of construction land[2]. The direction of spatial development of Ho Chi Minh City mainly to the South and West has a part of the Northeast (Gia Lam area).

In this context, it is clear that it is necessary to reconsider the direction of development of the Capital established in the master plan approved in 1961[3]. Many options for the development of the Capital have been studied, and finally, the planning project was approved (1974) to orient the old Hanoi with a population of 400,000, developing the Capital in Vinh Yen with a population of 600,000. The concept of the Hanoi urban cluster has been implemented to connect Hanoi with surrounding areas such as Xuan Mai and Son Tay.

The victorious war against America has opened a new stage of development for the entire country and the Capital. The new requirement demands a reevaluation and adjustment of the planning[4]. Soviet experts collaborated with foreign experts to conduct a comprehensive planning study. The Government Council issued Decision No. 163/CP on July 17, 1976, approving the General Plan for Hanoi Capital until 2000, with a population scale of 1.5 million people.

The suburbs of Hanoi are green belts providing food, arranging cultural activities for rest, traffic hubs and environmental protection belts, satellite cities around Hanoi as functions of industry, agriculture and tourism services, Resort: Xuan Mai - Son Tay - Ba Vi - Vinh Yen - Tam Dao - Bac Ninh. With this orientation, in 12/1978, the Government decided to expand the boundaries of Hanoi, merging Ba Vi, Phu Tho, Thach That, Dan Phuong, Hoai Duc, Son Tay town, Ha Dong and 1 number of communes of Ha Son Binh province...[5] Hanoi has a natural land area of 2,136 km2 with a population of 3.5 million people.

During the implementation of The Second 5-year plan (1976-1980) and The Third 5-year plan (1981-1985), the Vietnamese people achieved significant accomplishments in economic and social development. They gradually overcome the severe consequences of the war, restored a large portion of the transportation, industrial, and agricultural infrastructure in the North, and rebuilt the rural areas that were devastated by the war[6]. The urban planning also underwent changes to adapt to the context of this period.

The boundary of Hanoi was adjusted and expanded for the second time during the period of 1978-1980, with a significant development and expansion towards the West. This expansion included four old inner districts (Ba Dinh, Hoan Kiem, Dong Da, Hai Ba Trung) and 11 outer suburban districts (Me Linh, Soc Son, Dong Anh, Gia Lam, Thanh Tri, Tu Liem, Hoai Duc, Dan Phuong, Thach That, Phuc Tho, Ba Vi). In which, 7 towns: Sai Dong, Duc Giang, Dong Anh, Cau Giay, Nghia Do, Cau Dien, Mai Dich, of the districts adjacent to the city were established[7]. The urban area developed towards the main road axis with new towns. By 1981, the Hanoi City Master Plan and the surrounding area plan had been approved according to Decision No. 100/TTg dated January 24, 1981, with the following main contents regarding housing issues as follows:

– Forming the central system: Hoan Kiem, Ba Dinh, West Lake and opening a large spatial axis to the suburbs, which is Hoa Lac.
– Newly constructed residential areas with the form of sub-residential areas such as Khuong Thuong, Trung Tu, Thanh Cong, Van Chuong, Vinh Ho have a height of 4-5 floors. Low-rise areas such as Yen Lang A-B, Truong Dinh have a height of 2 floors. The majority of buildings are large panel prefabricated houses[8]. A fairly large construction block has been created to promptly meet s portion of the urgent housing needs of urban residents. Large public works were also constructed, such as: Government Guest House, Hanoi Post Office, Children's Cultural House, Institute of Natural Science Research, Thang Loi Hotel,…[9]

Rural areas at this stage implemented the Resolutions of the IV and V Central Party Congresses, enhancing the construction of rural areas with the district as the foundation. The district level is reorganized for production, labor reallocation, the development of agricultural, forestry, fishery, and cottage industries. The system of public works and production-serving facilities is distributed in 3 levels: The entire district, sub-regions, economic and technical clusters and cooperatives[10].

The suburban districts were planned according to the 3-level system that created a network of district centers, sub-regional centers, and commune centers (each district has 3-5 sub-regions, each sub-region has 4-5 communes) based on the principle of subsidized central planning[11].

In Hanoi, since 1982, the approved city master plan has been implemented, along with the establishment of additional district townships and industrial towns. The planning of urban and suburban areas has been implemented in townships and district townships of Dong Anh, Sai Dong, Duc Giang, Nghia Do, Cau Giay, Cau Dien, and Trau Quy.

At this stage, the construction is planned in suburban districts with a public works system, supporting production at 3 levels: district-wide, sub-region and commune-cooperative[12]. The villages in the inner and suburban areas are planned as "green areas" and have the responsibility of serving as the food and agricultural belt of the city.

In general, during this period, there had been many changes in the master planning of the central and inner-city areas. However, there are still some shortcomings and difficulties that need to be addressed and adjusted.

In order to overcome the difficulties and address the weaknesses of the previous era, Vietnam undertook an economic campaign in 1986 to transform its economy based on central planning to a market-oriented economy. The changes in economic policy have brought certain changing effects on urban planning:

- The (former) production facilities have been downsized and converted for residential use for workers.
- Many central and local agencies in the city have simultaneously requested land allocation for the construction of housing for officials and employees in areas with vacant land that has not been synchronously invested in technical infrastructure or requested legitimate conversion of land use purposes for the construction of housing at any available and convenient location within the city (especially in collective areas, industrial production facilities, cooperatives, universities, etc...).
- Infrastructure and social infrastructure renovation and construction works are not synchronized.

Therefore, the period from 1986 to 1992 is considered the "boom" period of urban construction. In 1991, the National Assembly decided to adjust the boundaries of the suburbs of Hanoi, including 4 inner urban districts (Ba Dinh, Hoan Kiem, Dong Da,

Hai Ba Trung) and 5 suburban districts (Thanh Tri, Tu Liem, Dong Anh, Gia Lam, Soc Son)[13].

The surrounding areas of the inner suburbs have seen a transformation in land use, with agricultural fields, ponds, and lakes being converted into new residential clusters of the urban

area, such as villages like Kim Lien, Trung Tu, Khuong Thuong, Quynh Loi, Giang Vo, Thanh Cong, Nghia Do,… Traditional craft villages like Ngoc Ha, Lieu Giai, Nghi Tam, Quang Ba… have gradually declined. However, there are emerging "new villages" such as S.O.S. Children's Village, Birla Children's Village,

Vietnamese-Japanese Architecture Village, Phuong Dong Hotel (tourist village). The boundaries of the towns: Mai Dich, Cau Dien, and Nghia Do were established in 1989. In the market mechanism, agricultural land has thrived economically as well as in architectural space with a boom in construction taking place everywhere.

After the period considered as the boom of urban construction with the change of economic mechanism, the period 1993-2000 is the period of urban embellishment. After a period considered as the urban construction boom, characterized by the changes in the economic mechanism from 1993 to 2000, the urban construction restructuring phase took place. After a period of rapid development characterized by disorder, spontaneous growth, and patchwork solutions, which resulted in negative consequences for the economic, cultural, social, housing, and urban infrastructure environments. The 8th Party Congress outlined the strategy for the country's socio-economic development until 2010, focusing on industrialization and modernization[14]. National strategies such as: housing strategy, master plan for industrial development, national infrastructure, Vietnam urban master plan…

The 1998 master plan includes a central city 4.4 times the size of the existing inner city, developed on both sides of the North and South banks of the Red River. In the southern part of the Red River, there are 3 newly established districts: Tay Ho, Cau Giay, Thanh Xuan, as well as a portion of land from Thanh Tri and Tu Liem districts within the belt, which are part of the urban development belt. In the northern part, 2/3 of Dong Anh district and 1/2 of Gia Lam district will be located in the new urban area in the North of Red River. Soc Son district belongs to Xuan Hoa-Soc Son-Vinh Yen urban clusters with a population of 500,000 people, 4,500 hectares of industrial land, an expanded 815-hectare Noi Bai International Airport and various tourism, entertainment, and urban development projects to covering ¼ to ⅓ of the total district area [15].

During the period of renovation to a market economy, besides the inadequacies and influences in the planning sector, there were groundbreaking steps taken that were crucial for economic development during the era of deep international integration after the 2000s. Accompanying this was a transformation in administrative territorial boundaries and the construction of urban development in the capital city.

At the 6th Meeting of the Xth Party Central Committee, in 01/2008, after hearing the Politburo's report on the Proposal and Project on expanding the administrative boundaries of Hanoi Capital, the Central Committee discussed and issued a Resolution and concluded: Agree on the policy of expanding the administrative boundaries of Hanoi Capital on the basis of total consolidation natural area and population of Ha Tay province; adjust the entire natural area and population of Me Linh district, Vinh Phuc province; the entire natural area and population of 4 communes: Dong Xuan, Tien Xuan, Yen Binh, Yen Trung belong to Luong Son district, Hoa

Binh province into Hanoi capital.

It can be said that during the 10-year period (2000-2010), Hanoi was one of the cities with rapid development and urbanization. Many new urban areas have been and are being formed, which have changed the appearance of the Capital, contributed to economic growth, job creation, labor structure transformation, and the establishment of an urban environment with modern living conditions...

After expanding the boundaries, on 26/7/2011, the Prime Minister approved the general plan to build the Capital until 2030, with a vision to 2050. The planning has created an urban cluster model including: central urban, 5 satellite cities, 3 ecological cities, 10 towns with fixed functions... Identify spatial axes with outstanding functions such as the Red River as the central landscape axis of Hanoi City; My Dinh - Huong Son - Ba Vi economic space axis. Besides, there is the axis of traditional cultural space West Lake - Ba Vi (linking Thang Long - Dai culture); landscape spatial axis Ha Dong - Chuong My - Xuan Mai; the axis of scientific space connecting the central city with Hoa Lac; West Lake - Co Loa spiritual space axis[16].

During this period, there have also been studies on urban planning in Hanoi, addressing typical issues such as population density, economic efficiency, housing, and new urban areas...

Through the general as well as specific periods of Hanoi's planning history from the 1960s to the modern period of 2020, it is possible to see the clear transformations of the capital through each historical period. To enhance the development of the capital's position to adapt to the social environment in terms of population and economy,   step by step formulate policies and visions on the development of the capital through stages. The biggest change probably stems from the change in economic policy from a centralized subsidized economy to a market economy, since then there have been certain innovations, especially in Hanoi construction planning with specific goals and long-term vision to meet the needs of the people, adapt to the innovation economy, thereby creating momentum for future development and integration. Thereby, it is possible to divide the history of Hanoi capital planning from the 1960s to 2020 into 3 stages through the change in the economic mechanism of the state: the period of centralized economic subsidy (1960s-1986s), the period of renovation to a market economy (1986s-2000s) and finally the period of integration and development after the 2000s.

DEMAND MATTERS, LEVELS OF SUPPLY
AND LOCATION OF SUPPLY OVER PERIODS

The expansion of infrastructure projects such as highways, flyovers, and new industrial parks has led to the clearance and resettlement of a large number of people from the central area to the suburbs. This creates an urgent need for housing in resettlement areas such as Gia Lam, East England, and Hoai Duc. High urbanization and rapid population growth have led to strong migration from rural areas into Hanoi[17]. Suburban areas with lower housing prices have become ideal destinations for people looking for new housing, especially young fam-

ilies and middle-income workers. In addition, industrial parks and factories in the suburbs attract a large number of workers from other provinces, creating a large demand for affordable housing, social housing, and hostels for workers[18]. Housing developments for workers in areas such as North Tu Liem, Nam Tu Liem, and Dong Anh are being strongly implemented. Particularly for the type of social housing, it is necessary to determine the goal of building concentrated social housing areas in the direction of modernity and synchronous infrastructure to avoid the phenomenon of not attracting people and arbitrary transfer. For housing for workers in industrial parks, it is necessary to determine the right of the city to adjust the planning. Regarding resettlement housing, it is necessary to add a facilitation mechanism for displaced people in the inner city.

Developing into the suburbs gives developers access to lower-priced land, which in turn can develop more affordable housing, due to lower land costs. This is most clearly seen with urban development models linked to public transport (TODs) such as metro systems, which facilitate large-scale development and high population density along the route, making travel from suburban areas more efficient.

Connecting suburban areas to the city center, providing infrastructure and utilities to residents in a more efficient way. Affordable housing is available in other satellite areas and as infrastructure improves, the distance from these areas to the city center will be "pulled closer." The target of residential floor area in Hanoi is currently set by the city's master plans, usually ranging from 20-25 m^2 / person[19]. However, in suburban areas, this target may be higher due to the abundant land fund and lower construction density. Specifically: according to the Hanoi master plan for construction to 2030, and vision to 2050, the target floor area in urban areas is about 26-30 m^2 / person, while the suburban area is expected to reach about 30-35 m^2 / person. The level of land fund supply and housing floor area targets for the suburbs of Hanoi are being boosted to meet the increasing demand for housing[20]. With the planning and development of new urban areas, along with diverse housing projects, the suburbs of Hanoi promise to control and meet the housing needs of the city in the future.

The location of land supply in the suburbs of Hanoi in the period 1900-2000 has changed to meet the increasing housing needs of the people. The inner city area is planned and developed in the direction of expanding to the South and Southwest, while the suburban area is used for agricultural activities, handicrafts, new residential areas, industrial parks, export processing zones, and satellite urban areas. From 1900 to 1954, the downtown area including the old town and surrounding areas was planned and developed in the direction of expansion to the south and southwest. The location of residential land is mainly for households, administrative agencies, commercial areas, and public works. Meanwhile, the Northern, Northwestern, Northeastern, and Southern areas of the inner city are used for agricultural activities, handicrafts, and some new residential areas. In the period 1954 - 1975, due to the effects of the war, the pace of urban development slowed down. Residential land is mainly used to rebuild houses, schools, hospitals, and other essential structures. Meanwhile, in the suburbs, several new residential areas were built to relocate residents from the inner city to the suburbs. Residential land is mainly for households of workers, officials, and small production establishments. After the reunification of the country, from 1975 to 1986, Hanoi began to enter a

period of recovery and development. Residential land is used to build dormitories, houses for officials and employees, and some new urban areas. In the suburbs, the area of agricultural land is gradually shrinking to make way for new industrial parks, export processing zones, and urban areas. Residential land is mainly for households migrating from rural to cities and workers in industrial zones.

In the later stage, this time marked a strong urbanization process leading to an increasing demand for residential land. Residential land is used to build new urban areas, high-rise apartment buildings, and commercial and service areas. In the suburbs, the area of agricultural land continues to shrink to expand industrial parks, satellite urban areas, and ecotourism areas. Residential land is mainly for households migrating from rural areas to cities and workers in industrial parks and export processing zones. In the period 2000 - now, due to high land prices, it has become difficult to buy land in the inner city. Residential land is mainly used to build high-end projects, high-rise apartments, and modern commercial and service areas. Since then, satellite cities have developed and attracted strong interest. A large number of people have come to live. Residential land is mainly for low- and middle-income households, workers working in industrial parks, and export processing zones.

THE PROBLEM OF DEVELOPMENT MODEL (TYPE ENCOURAGEMENT) ACCORDING TO INFRASTRUCTURE SUPPLY OPTIONS (OIL SPILL, TOD, NEW TOWN) THROUGH DIFFERENT PERIODS.

The model of spatial organization of the TOD system in the central city of Hanoi consists of 3 levels of organization:

- TOD zone: defined within an urban system, where specific TODs are identified as urban center TODs.
- TOD corridor chain: defined as a sequence of TODs along an urban rail line.
- The TODs along this corridor serve as central hubs for the area.
- TOD point: defined as railway stations or important public transportation stops such as MRT and LRT stations.

3 levels of organization:

- TOD Zone:
- Integrated development: Central transfer stations have the characteristics of diverse passenger composition, coming from various regions with different travel purposes. Central stations not only create development momentum for neighboring areas but also have a positive impact on the surrounding urban areas of the station complexes.
- Urban sprawl development: In expanded areas of urban development, the structure of the sprawl model prioritizes mixed land use, focusing on various commercial and urban service activities. It serves as a secondary center that attracts pedestrians from different locations within the region.
- Hanoi-wide urban TOD system: The central city of Hanoi is developed according to the model of belt and radial routes, which includes urban railways and roads, so it is appropriate to develop the TOD system (zone) according to this model.

- The TOD area in the expanded inner city region: Based on the Hanoi public transportation network consisting of 9 routes, the expanded inner city region has a relatively dense public transportation system, which can support the development of a TOD system in this area as a TOD zone.
- TOD Urban Chain:
- The development of TOD points along the urban rail line forms the urban chain.
- The urban area develops along the extended urban railway line. This urban form mostly belongs to new urban areas, serving as a foundation for future urban cores. Here, new units will be formed around the railway station. The three basic types of TOD connecting corridors are: destination connecting corridor, commuting corridor, and intra-core movement corridor.
- TOD point: TOD point is classified into 3 categories by level:
- Type A: Urban TOD.
- Type B: Regional TOD.
- Type C: Unit TOD.

Development orientation of Hanoi TOD system.

- TOD restricted development areas, historic inner cities: Restricting high-rise development in order to protect typical landscapes, prioritize the development and exploitation of underground space; Do not develop TODs of a
- housing-oriented nature; Limiting the development of large TOD points to limit the increase in construction floors; Develop office TOD to a limited extent to reduce pressure on commuting traffic, focusing on developing TOD with commercial nature; Organize small TOD points according to the criteria of reconstruction to improve landscape, spatial and environmental conditions, increase pedestrian accessibility. Areas with potential for TOD development: Hanoi railway station, some reconstruction collective areas.
- TOD in the expanded urban area: An area that has grown to high density, with an integrated development nature, TOD is at the regional level. MRT lines: 1, 2, 3, 4, 5, 6, 8 facilitate the development of the TOD network at the regional level. For some radial and ring routes will form TOD chains. Properties: development of large urban TODs, with high densities and floors depending on location and nature. Make the most of public transport capacity. The type of TOD is considered on the basis of regional function, population control and distribution, and social infrastructure responsiveness. Modern TOD space organization, sustainable development.
- TOD new urban development: East of Ring 4. North of Red River: As a new development area under construction, the population density and construction density are not high. Newly formed centers and urban areas have a spillover impact on TOD development at the regional level. There is potential that the land bank can be developed with synchronous modern goals. It is an area with
- conditions for the development of the TOD system at the urban, regional level and TOD residential units.

Capable of forming large TOD centers to create strategic attraction, sparking new development. There are conditions for strong development of the residential unit TOD system, associated with the development of new urban areas.

Orientation of layout of TOD development areas: Based on the evaluation of criteria, scoring for each proposed location of the TOD network system of Hanoi central urban including urban TOD, regional TOD, and TOD residential units. For expanded urban areas and new development, the land fund for construction can be built close to the theoretical model, in which the road network is organized in the form of flag boxes.

The mobile phone station is located in the center, adjacent to the station square, bus station, taxi, transfer point, trees, and parking lot. Create spatial accent axes.

According to the radius from the station core area onwards, there will be commercial, office, mixed, residential, and social infrastructure functions, with a gradually decreasing density. The underground mobile phone station will make the most of the underground space for parking and commerce, the space on the ground as a square bus station. Organize the entrances up and down connecting the underground space.[21]

PROBLEMS OF URBAN CULTURE
AND PEOPLE'S MARKET WEAKNESS

Hanoi is one of the major cultural centers of the country, therefore, urban culture is a core factor in the construction and planning of the capital region. Urban areas are not only places of residence, but also places to express and create cultural values. Urban planning needs to integrate cultural values to create a friendly and livable living environment and public space, as this can generate a sense of happiness for the people and contribute to the sustainable development of the city.[22]

With its unique urban characteristics, Hanoi carries a wealth of historical, cultural, and architectural features... values; therefore, the development of urban areas in Hanoi is of significant importance, not only to the capital city but also to the overall development of the country. In general, the social structure of urban Hanoi exhibits diverse populations in terms of ethnicity, religion, education, and professions. This diversity has created a multicultural environment. However, maintaining and promoting traditional cultural values in the context of modern urbanization also presents numerous challenges.[23]

The expansion of Hanoi's inner city has brought about many changes in urban culture. The rapid urban development has put pressure on traditional culture and customs of the people. Urban culture in Hanoi is often referred to as an elegant way of life.

However, the transition to a market economy and the promotion of industrialization and modernization have transformed the lifestyle of the capital city.[24]

The civic consciousness in the expanded inner city of Hanoi encompasses various aspects. Housing is one of the major challenges for people in the expanded inner city of Hanoi. Population growth and urban development have created a significant demand for housing. During the expansion of the inner city of Hanoi, some residents have had to relocate from their homes. This has led to a shortage of housing and infrastructure for some residents, especially low-income workers. The issue of civic consciousness of the people also includes the lack of basic services such as education, healthcare, culture, and entertainment. Some newly expanded areas lack the infrastructure and services to meet the needs of the people. Citizens demand a quality educational environment, convenient healthcare services, and a variety of entertainment and cultural activities. Furthermore, there are also issues related to transpor-

tation. The rapid growth of personal vehicles has put significant pressure on Hanoi's transportation system, leading to congestion and traffic jams. The public welcomes the government of Hanoi's forward-looking planning efforts. However, alongside high-impact projects, there are still low-efficiency projects such as the elevated railway line Cat Linh - Ha Dong.[25]

In order to adapt to the changing needs of residents in the expanded suburban areas of Hanoi, it is necessary to invest in infrastructure and basic public services, including the construction and improvement of housing systems, transportation, schools, hospitals, cultural facilities, and entertainment venues. Furthermore, it is essential to ensure sustainable development and balance between economic, social, and environmental factors. At the same time, it is important to protect and enhance the living environment, guarantee social welfare, and promote the health of the population.[26]

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The Power and Politics of Place
Unfolding "Piranesi" as Pedagogy

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Abstract

This paper attempts to build a critical narrative on the trilogy of politics, power and planning history through situating a pedagogical approach based on an assemblage of spatial encounters and history of powers. "A whole history remains to be written of spaces, which would at the same time be the history of powers," says Foucault (1980: 149), "from the great strategies of geo-politics to the little tactics of the habitat, institutional architecture from the classroom to the design of hospitals, passing via economic and political installations". Inspired by Giovanni Battista Piranesi's "Il Campo Marzio Dell'Antica Roma", Campus Martius or Field of Mars of the mid-1700s Rome, the research is centred upon a first year design studio research and performative experience, in Istanbul Technical University Faculty of Architecture, by borrowing the method of representation: the iconographic plan that Piranesi used to research the city and its historical narrative. The research begins with a fascination with the political, social and philosophical consequences that develop from the relationship to the ground in Campus Martius plan. Unfolding asymmetrical power as an allegory of Piranesi's representation of past as a timelessness and by the removal of the present, the premonitions of identity, memory and heritage are reasserted for a new beginning of a possible city. In this re-montage, the research is taking intuitive patterns and scales from Piranesi maps and making an incidental collage in the mapping of power relations, while gaming the spatial power encapsulated within actors, actions and institutions in the re-thinking of planning history as a pedagogy.

Zeynep Gunay, Bihter Almac, Begum Eser
The Power and Politics of Place

Open Space Planning in East Asian Cities (1)

Chair: Fukuo Akimoto

Open-space districts in the city planning act of Manchukuo

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Abstract

Manchukuo was a Japanese puppet state that existed in northeastern China before World War II. In Manchukuo, city planning was legislated through the Town and Country Planning Act, which was drafted based on the Japanese City Planning Act of 1919 but included 'open-space districts' (later 'open-space areas'), which did not exist in Japanese law at that time. Open-space districts were the first land-use regulations for open space in Japan and its colonies. The current Japanese City Planning Act of 1968 divides city planning areas into urbanisation promotion areas and urbanisation control areas. Many studies in Japan have observed that Japanese city planning techniques and methods were almost complete in the 1930s based on the similarity of the text of open-space areas and urbanisation promotion areas. This study examined the validity of this claim through a comparative analysis of open-space areas in the Manchukuo Town and Country Planning Act and urbanisation control areas in the Japanese City Planning Act of 1968. In terms of dealing with sprawl, open-space areas and urbanisation promotion areas have the same purpose; however, the former was a spatial blockade, while the latter was a land-use guideline based on the assumption that the area would be developed in a planned manner. The latter was also a new technology that compensated for the short-comings of the former. This paper refutes the widespread claim that Japanese urban planning techniques and methods were largely perfected in the 1930s.

INTRODUCTION

Manchukuo (Manshūkoku, Wèi-Mǎnzhōuguó) was a Japanese puppet state that existed in northeastern China before World War II. Japanese bureaucrats drafted the Manchukuo Town and Country Planning Act (Toyū keikakuhō) based on the Japanese City Planning Act (Toshi keikakuhō) and Urban Area Building Act (Sigaichi kenchikubutsuhō) and included open-space districts (Ryokuchiku) and open-space areas (Ryokuchi kuiki) that had not been mentioned in Japanese law. These open-space districts were the first land-use regulations for open space in Japan and its colonies, and urban planning in these regions was greatly influenced by the emphasis on green belts to control urban expansion in regional planning theory after the 1924 International Town Planning Conference in Amsterdam. Iinuma Kazumi's *The Theory of Regional Planning (Chihō keikaku ron)* was the first book to introduce regional planning theory in Japan. He wrote, 'Regional planning and open space are inseparable. Plans that do not take open space into account should not be included in regional planning'. In Japan, the Special City Planning Act of 1946 (Tokubetsu toshikeikakuhō) introduced open-space districts; however, these districts had already been institutionalised in Manchukuo 10 years earlier. The contemporary Japanese law did not contemplate the open-space district; hence, the colonial city planning orders have been considered advanced. The open-space district was introduced for the first time in the Japanese sphere of power with the Town and Country Planning Act in Manchukuo of 1936. Japanese academics generally recognise in that the legal system in Manchukuo realised the ideal earlier than in Japan.

Koshizawa Akira argued that Japanese colonial city planning laws and regulations 'had many more advanced provisions than Japanese law as a regulatory method to control the formation of urban areas'. Here, 'advanced provisions' refer to the open-space districts of the Manchukuo Town and Country Planning Act of 1936 and the open-space areas of the same act of 1942 as pointed out by Ishida Yorifusa. Ishida stated that the division system of urbanisation areas and open-space districts in the 1942 act was extremely similar to that of urbanisation promotion areas (Shigaika kuiki) and urbanisation control areas (Shigaika chōseikuiki). Koshizawa supported this point by arguing that 'the provisions are almost identical to the "line drawing" system established in the complete revision of the Japanese City Planning Act of 1968. In other words, Manchukuo's legal system was a quarter of a century ahead of Japan's in this respect'. The line drawing system here pertains to the division between urbanisation promotion areas and urbanisation control areas. The introduction of the line drawing system signalled a qualitative shift in Japan's urban planning from a mere 'district system' to an 'area classification system'. On this basis, Koshizawa argued that Japanese urban planning techniques and methods were largely perfected by the 1930s.

This study compares and analyses the open-space districts in the Manchukuo Town and Country Planning Act and the urbanisation control areas in the Japanese City Planning Act, examining the validity of the widespread belief that Japanese urban planning techniques and methods were almost complete by the 1930s.

This study establishes facts through a survey of historical documents, which mainly consisted of reports and official journals published by administrative bodies as well as specialist jour-

nals on urban planning. In the journals, when a person involved in the planning and opera-
tion of the system contributed or commented, it was considered to reflect the views of the
relevant administrative body. In this paper, unless otherwise stated, 'Town Planning Act' and
'Special City Planning Act' refer to Japanese legislation, while 'Town and Country Planning
Act' refers to Manchukuo legislation.

OPEN-SPACE SYSTEMS
IN THE THEORY OF REGIONAL PLANNING

In his regional planning theory, Iinuma describes open spaces as 'land not reserved for build-
ing sites, such as forestry, park, roads, squares, sports grounds, botanical gardens, airfields,
agricultural land and forestry land'. There are two means of securing open space in the legal
system: 'expropriation' and 'limitation of rights'. 'Expropriation' refers to the development of
open space as an urban facility. Iinuma describes the case of park development in the United
States under the beneficiary pay system as 'parks, a type of open space'. With regard to 'right-
of-way restrictions', Iinuma suggests two methods: 'use districts as open space' and 'restric-
tions by building lines'. The 'use districts as open space' method restricts development by es-
tablishing 'open-space districts' or 'agricultural districts' as use districts. According to Iinuma,
the benefits of open space around urban areas include 'productive green space for subsistence
food production', which corresponds to agricultural districts, and 'prevention of urban bloat',
which pertains to open-space districts. Iinuma does not make a strict distinction between
agricultural districts and open-space districts as in many places he uses the term 'agricultural
districts' to describe open spaces that discourage urban expansion. Meanwhile, the 'regula-
tion by building line' method controls development by limiting the roads to which building
sites must abut. As mentioned above, Iinuma proposed three ways to legislate for open space:

1. open spaces as urban facilities
2. regulations as use districts
3. regulations by building line

Iinuma does not state their superiority or inferiority, and the three methods are equivalent.

In Japan, the Special City Planning Act of 1946, enacted after World War II, was the first to
institutionalise open- space districts covered by (ii) as use districts although the 1940 amend-
ment to the City Planning Act institutionalised (i) 'green spaces as urban facilities' in Article
16. The Special City Planning Act was enacted to realise urban reconstruction after the war.

In the Japanese colonies, open-space districts were first institutionalised in the Town and
Country Planning Act of 1936 followed by open-space districts in the Korea Urban Area Plan-
ning Order of 1940 (Chōsen shigaichi keikakurei) and agricultural districts in the Kwantung
Regional Planning Order of 1938 (Kantōshū shūkeikakurei). In Taiwan, areas not designat-
ed as zoning districts were operated as 'agricultural areas' to implement '(iii) regulations by
building line'. The Taiwan City Planning Order (Taiwan toshikeikakurei) prohibited building

on land that was not adjacent to a city planning road or a road designed by land readjustment (Articles 29 and 41). This meant that building was disallowed in areas without official planning. This is an example of how open space was implemented through the building line system. All three methods proposed in *Theory of Regional Planning* were applied in the Japanese colonies.

OPEN-SPACE DISTRICTS
AND AREAS IN THE TOWN AND COUNTRY PLANNING ACT

The Town and Country Planning Act (Imperial Decree No. 82 of 12 June 1936) was promulgated on 12 June 1936 and the Enforcement Regulation (Institutional Decree No. 38 of 28 December 1937) on 28 December 1937. The former act combined the Town Planning Act and the Building Control Act into a single law, with reference to the Korea Urban Area Planning Order. Although it was generally an improvement on the Japanese City Planning Act and Urban Area Building Act, there were some differences such as the introduction of open-space districts and the floor area ratio system. The drafter was Kenzaburo Kondo. The act was overhauled in 1942, and the Enforcement Regulation was promulgated the following year. Hideshima Kan was in charge of technical matters, while Oguri Chushichi was responsible for administrative matters.

OPEN-SPACE DISTRICTS IN THE TOWN AND COUNTRY PLANNING ACT OF 1936

Article 25 of the Town and Country Planning Act of 1936 contains provisions for open-space districts, while Article 14 of the Enforcement Regulation of 1937 lists the buildings that can be built.

TOWN AND COUNTRY PLANNING ACT OF 1936

Article 25 The competent Minister may determine the necessary matters concerning buildings and their sites in order to prevent the urbanisation of open space districts.

> *Town and Country Planning Act Enforcement Regulation of 1937*
>
> **Article 14** *No building shall be constructed in an open space area except in accordance with one of the following points*
>
> *i) where the total area of each floor does not exceed one hundredth of the area of the site; or*
>
> *ii) those necessary for agriculture, forestry, horticulture, pastoralism, fisheries, salt production, ceramics and mining and coal extraction; or*
>
> *iii) Temporary buildings, the duration of which does not exceed one year.*
>
> *iv) In addition to the above, those which the administrative authorities consider to be unavoidable in the public interest.*

In January 1936, the Manchukuo Ministry of Civil Affairs, through its Town and Country Division, Public Works Bureau, formulated the 'Policy and Objectives for the Establishment of Open Space Districts' to clarify the significance of open-space districts and the concept of their designation.

Policy and Objectives for the Establishment of Open Space Districts (January 1936)

Setting Policy

Urbanisation areas and open space districts form the town and country planning areas. First, urbanisation areas are defined according to the expected population, and open space districts are arranged in a ring around the urbanisation areas to prevent urban sprawl. The size of the open space districts must meet the following two conditions

i) Open space districts shall be at least 1 km wide.
ii) The area of the open space districts shall be at least equal to the area of the urbanisation areas.

Main Purpose

Without defining urbanisation areas, it is not possible to define plans for land use, public space, transport, water supply, drainage, etc. Open space districts are the best means of defining urbanisation areas.

(omitted)

Annex II, *Although it would be ideal to acquire open space districts and ease restrictions on private rights, it is difficult to do so due to financial resources. Initially, Harbin's policy was to acquire open space districts, but the policy was changed due to opposition from the Ministry of Finance.*
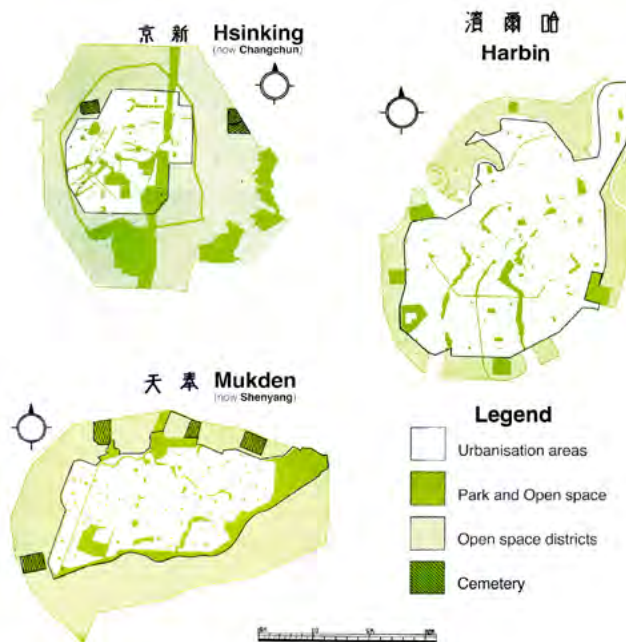
Fig. 1.   Railroad network and station locations in western Tokyo in the 1920s.

The setting policy clearly states that open-space districts aim to prevent urbanisation around urbanisation areas and limit the areas where urbanisation is allowed and control its expansion. Their main purpose is to set planning conditions in terms of regional distribution, public land, transport, water supply and drainage, among others. The descriptions of the town and country planning areas of Harbin and Mukden indicate that open-space districts are outside urbanisation areas. The planning maps of major cities in Manchukuo show open-space areas surrounding urbanisation areas (Figure 1).

According to Yamada Hakuai, Harbin's town and country planning areas are described as follows: Urbanisation areas will cover 267 square kilometres, surrounded by a green belt about 2 kilometres wide as open space, where general construction will be prohibited. To ban construction, the plan is to acquire all the land outside the urbanisation areas. Land acquisition was intended to secure open spaces as an urban facility. Annex 2 of the Policy and Objectives for the Establishment of Open Space Districts states that 'acquiring open space districts and relaxing restrictions on private rights would be ideal, however it would be difficult due to financial resources'. Although securing open space through land purchase was seen as the ideal solution, financial constraints prevented land expropriation. This history shows that the restriction of rights through the zoning system was in fact the result of a compromise.

Matsumura Mitsuma, director of the Japanese Ministry of the Interior's Planning Bureau, explained that the City Planning Act of 1940 introduced green spaces as an urban facility because it was necessary to create green belts around the city to prevent it from becoming overcrowded. The purpose of open spaces as urban facilities, which is to control urban expansion by enclosing green belts, is the same as that of open-space districts. Open spaces are considered urban facilities 'because it is necessary to implement them as an urban facility in order to secure open spaces as quickly as possible'. In Japan, open spaces were the subject of land expropriation. In Manchuria, securing open spaces through acquisition was impossible for financial reasons, and a compromise resulted in the introduction of open-space districts. Manchukuo urban planning was no more able to realise its ideals than Japanese urban planning had been.

OPEN-SPACE AREAS IN THE TOWN AND COUNTRY PLANNING ACT OF 1942

The 1942 amendment to the Town and Country Planning Act institutionalised open-space areas in place of open- space districts. Article 43 formally stipulated the division of town and country planning areas into urbanisation areas and open-space areas. Article 41 of the Enforcement Regulation of 1943 listed the buildings that could be constructed. In contrast to open-space areas, the law prohibited buildings with a floor area ratio of 1% and temporary buildings of less than one year and newly allowed structures necessary for inhabitants' living such as transport and defence, hospitals and prisons, cemeteries and crematoria, slaughterhouses and sewage treatment plants, production and storage facilities for explosives and shops and restaurants of 20 square metres or less. Open- space areas, like open-space districts, were still subject to use restrictions limited to agriculture, forestry, horticulture, animal husbandry, fishing, salt production, mining and ceramics.

Regarding the location and size of open spaces, Oguri Chushichi, a drafter of the Town and Country Planning Act of 1942, stated that the 'Guidelines for Designation of Productive Green Spaces define the location and size of open spaces'.

Guidelines for the Designation of Productive Green Spaces

In order to ensure the healthy development of the city, productive green spaces, which are special agricultural open spaces, are to be secured around urbanisation areas. These are located in the town and country planning areas and designated as open space areas. In the open space areas, agricultural management will be maintained and a system of self-sufficiency for perishable food in the city will be established. At the same time, civil health, economic and military defence issues will be addressed.

Establishment of open space areas.

1) Productive green spaces, which are special agricultural areas around the city, shall be secured and designated as open space areas in accordance with the Town and Country Planning Act.

2) Open space areas shall be established in accordance with the following standards, with the exception of large rivers, low marshy areas, mountainous areas, large parks, cemeteries and other areas unsuitable for cultivation.

a) Open space areas shall include productive green spaces of approximately 2.5 to 3 times the area of the urbanisation areas and shall be designated in a circular or radial pattern around the periphery of the urbanisation areas.

b) Forested areas shall be considered as fuelwood replenishment areas.

c) Open space areas shall be at least 1 km wide.

The Guidelines for the Designation of Productive Green Spaces require a green belt at least 1 kilometre wide around an urban area, which is similar to the Policy and Objectives for the Establishment of Open Space Districts. The difference, however, lies in the increased green belt area in line with securing productive green spaces. Hideshima Kan, another drafter of the Town and Country Planning Act of 1942, explained that 'green space districts, which had restrained the uncontrolled expansion of the city, were further developed to have the character of subzones and positive production fringe areas in urban areas'. Simply put, open-space areas represent the institutionalisation of the operational reality of conventional green districts and the strengthening of their function as productive green spaces. According to Ishida Yorifusa, green districts are a regional system for securing a narrow circular green belt, which is a park system in planning theory, and the shift towards open-space districts has qualitatively transformed them from a 'regional district system' to an 'area classification'. If open-space districts are a park system, then such a system includes productive green spaces. Besides the area of productive green spaces, no significant changes have taken place in the approach to green district and open-space designation and land-use regulation.

URBANISATION CONTROL AREAS AND OPEN-SPACE AREAS

In the major cities of Manchukuo (Figure 1), open-space plans were formulated in a form close to the ideal type that surrounded the urban area. This section examines the validity of Koshizawa's assertion that urbanisation control areas were completed with the institutionalisation of open-space areas.

SIMILARITY BETWEEN ARTICLES

Article 7 of the City Planning Act (Act No. 100 of 15 June 1968), as amended in 1968, divides city planning areas into urbanisation promotion areas and urbanisation control areas and is similar to Article 43 of the Town and Country Planning Act of 1942, which divides the planning area into two parts as well.

> **City Planning Act of 1968**
>
> **Article 7** *In order to prevent uncontrolled urbanisation and ensure planned urbanisation, urban planning areas shall be divided into urbanisation promotion areas and urbanisation control areas.*
>
> **Town and Country Planning Act of 1942**
>
> **Article 43** *In order to control the use of land, the Minister of Transport shall divide the land within town and country planning areas into two types, urbanisation areas and open space areas.*
>
> *This section analyses the process and purpose of establishing the system of urbanisation control areas and compares it with that of open space areas.*

URBANISATION CONTROL AREAS NOT JUST FOR BUILDING RESTRICTIONS

Oshio Yoichiro, director of the Japanese Ministry of Construction's Urban Planning Division at the time of the enactment of the 1968 City Planning Act, had this to say about controlling urban area expansion:

> *One strategy to deal with the high concentration of population in cities is to prevent urban concentration by developing the countryside. Another possible approach is to try to prevent the expansion of large cities through regulations such as the Green Belt. However, this approach has been effective in areas with slow population growth, such as London, but has failed in cities with high population concentration, such as Tokyo. The utter ineffectiveness of relying solely on regulation was demonstrated by the failure of the Green Belt approach in the Japanese metropolitan area.*
>
> *If urban concentration is inevitable and economically rational, it is effective to induce the planned formation of high-density urban areas in the future fringe zones of large cities. If the population can be absorbed there, urban sprawl can be prevented. This is the opposite of green belts.*

Here, Oshio criticises open-space districts under Article 3 of the Special City Planning Act of 1946, referring to them as the 'green belt concept for the metropolitan area'.

Special City Planning Act of 1946

Article 3 *The competent Minister may designate open space districts within or outside the urban areas referred to in Article 1(3), if this is deemed necessary for special city planning purposes.*

In their statement of purpose, the Japanese Imperial Diet argued that open-space districts were created to preserve open spaces secured by the Air Defence Act. Until then, the open spaces provided by the Air Defence Act had deterred excessive urban expansion, but the act was repealed, and open-space districts were formed as a new method of regulating land use. In Tokyo, the Ministry of Construction's Notification No. 17 of 26 July 1948 contained a designation for open-space districts (Figure 2). The regulations for open-space districts, as stipulated in Article 3 of the Enforcement Order and Cabinet Notification No. 31, are as follows:

Special City Planning Act Enforcement Order of 1946

Article 3 *In open space districts designated in accordance with Article 3(1) of the Act, no buildings shall be newly constructed or extended, unless they fall into one of the following categories*

buildings erected for the business or residential use of persons engaged in agriculture, forestry, stock-farming or fishing

buildings forming attached to parks or sports grounds

buildings designated by the Prime Minister, the building area of which does not exceed one-tenth of the land area.

which the Regional Director considers unavoidable in the public interest.

Cabinet Notification No. 31

The following buildings are designated in accordance with Article 3(1)(iii) of the Special City Planning Act enforcement order.

10 October 1946
Prime Minister Yoshida Shigeru

i) detached or duplex dwellings

ii) the kind of shops necessary for daily life

iii) shrines, temples and church buildings
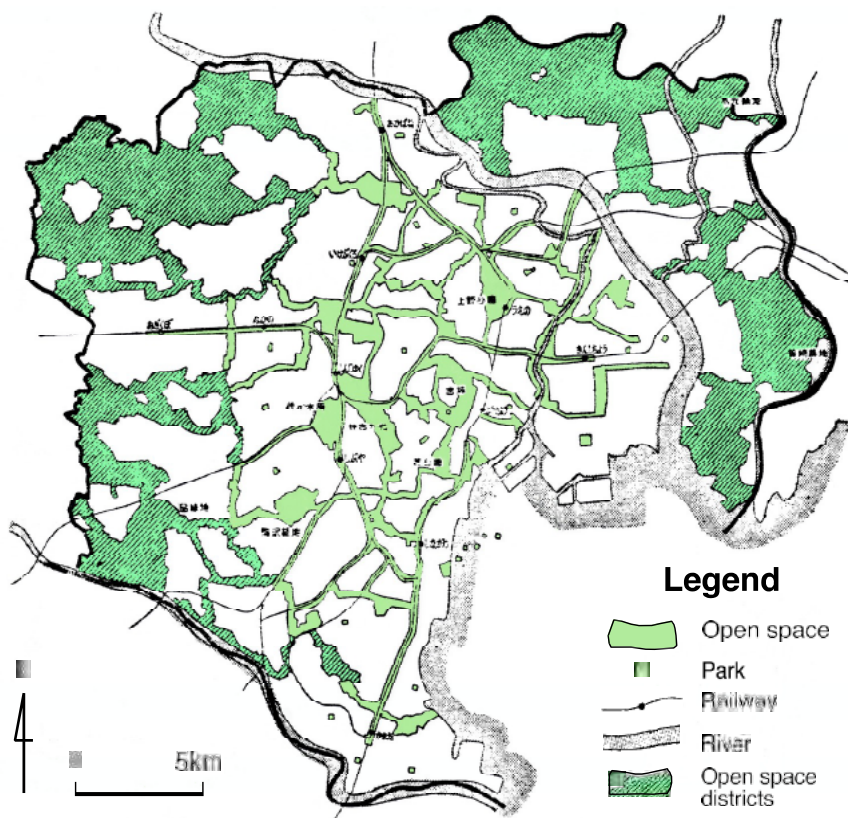
Fig. 2. Tokyo Reconstruction Open Space and Park Map of 1947.

Oshio said the case of Paris, not London, should be examined. In London, the Green Belt was a success because the United Kingdom's rural population had already been reduced to 4%, and income levels were higher than those of urban workers, so there was less population pressure on cities. In contrast, the population of Paris was growing by 170,000 a year, and urban sprawl was well underway. The political and economic weight of Paris in France is greater than that of Tokyo in Japan. Oshio focused on France's deferred development zones (zone d'aménagement différé, or ZADs), which the Minister of Construction designates at the request of the municipality, requiring the municipality to develop roads, sewers, parks and other facilities within the ZAD and also granting a right of first refusal based on a predesignation assessed value. However, the right of first refusal was granted for eight years. Oshio described the ZAD as 'the concept of a high-density urbanisation zone, the opposite of a green belt. It is a method of preventing urban sprawl by systematically building high-density urban areas to absorb population pressure, rather than blocking urban space with vacant land'.
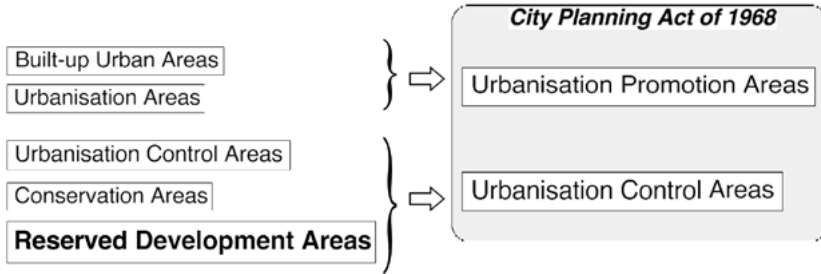
The 'urbanisation promotion areas' and 'urbanisation control areas' in the City Planning Act of 1968 are known to have resulted from the reorganisation of four areas ('built-up urban areas', 'urbanisation areas', 'urbanisation control areas' and 'conservation areas') that were originally conceived as a rough draft. However, besides these areas, 'reserved development areas' were considered within the Japanese Ministry of Construction.

Oshio stated that the reserved development areas were modelled after the French ZADs but were not included in the bill. Miyazawa Michio, Oshio's subordinate who was involved in the drafting process, said, 'Some of the urbanisation control areas will be preserved as a result, while others will be developed. At the drafting stage, it was decided to merge "urbanisation control areas", "conservation areas" and "reserved development areas" into "urbanisation control areas"'. Urbanisation control areas include the concepts of 'reserved development areas' and 'conservation areas' (Figure 3).

The open-space districts in the Special City Planning Act Enforcement Order of 1946, while allowing housing with a build-to-land ratio of up to 10%, restrict the main use of land to agriculture, forestry and fisheries, similar to the open-space districts and areas in the Manchukuo Town Planning Act. Oshio pointed out that the green belt failed not because it allowed buildings with a 10% build-to-land ratio but because it was a 'policy that relied only on regulations' with no mechanism for absorbing population pressure in a planned way. Meanwhile, the system that dared to provide for areas to absorb population pressure was the urbanisation control area.

Open-space areas and urbanisation control areas have the same goal in dealing with urban sprawl. However, the former was a spatial barrier whereas the latter was a land-use guideline based on the assumption that the land would be developed in an organised manner. Urbanisation control areas are a new technology that addresses the shortcomings of measures that solely rely on regulation and are essentially the next generation of systems after open-space areas. Therefore, the functions of urbanisation control areas were not completed during the open-space area stage.

CONCLUSIONS

This study compared and analysed open-space areas in the Manchukuo Town and Country Planning Act and urbanisation control areas in the Japanese City Planning Act and investigated whether the argument that Japanese urban planning techniques and methods were almost complete in the 1930s was valid.

The open-space districts in the Manchukuo Town and Country Planning Act of 1936 were introduced because of the financial challenges surrounding the acquisition of open space as urban facilities. It was not a realised ideal but rather the result of a compromise.

The open-space areas in the Town and Country Planning Act of 1942 signified the institutionalisation of the operational reality of the open-space districts in the Town and Country Planning Act of 1936. Although they had the same objective as the urbanisation control areas of the City Planning Act of 1968 in terms of addressing urban sprawl, the open-space areas were spatial cut-offs whereas the urbanisation control areas constituted land- use guidance based on the claim that the area would be developed strategically, and the latter was a new technology that compensated for the shortcomings of the former.

This paper therefore rejects the common claim that Japanese urban planning techniques and methods were largely perfected by the 1930s.

DISCLOSURE STATEMENT

NOTES ON CONTRIBUTOR(S)

Goto, Yasushi works for the Yokohama Municipal Government in Japan as a civil engineer and urban planner. He is a professional engineer in urban and regional planning, certified by the Japanese government. He holds a bachelor's degree in engineering from Waseda University and a bachelor's degree in law from Keio University. He also holds master's and doctoral degrees in engineering from the Tokyo Institute of Technology. His interests include the history of urban planning legislation in East Asia under Japanese rule.

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Figure 3   Author's work.

The History
of Tokyo Circular Green Belt
By contrast with London

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Abstract

This Paper is to be delivered at a proposed panel titled "Open Space Planning in the East Asia before World War Two" as attached. A circular green belt plan was proposed in London and Tokyo in the 1930s. While one was realized in London in the 1950s, the other was abolished in Tokyo in the 1960s. This paper analyzed how different their histories were and reached the following conclusions. (1) Prior to a greenbelt, a metropolitan park system was drafted in Tokyo, while a garden-city-oriented regional plan was prepared in London. (2) Tokyo was a wooden burnable city with no radar system. The Army emphasized evacuation from cities. A circular green belt was suggested to stop urban expansion against air attack. London became unburnable after the 1666 Great Fire and the Air Force introduced radar system in the late 1930s. A green belt was proposed as recreation facilities for urban residents. (3) The Tokyo green belt was productive paddy fields. The cost was twice that of London. Since purchasing the entire site was difficult, the government designated the site as air defense belts when the Pacific War began. After the war the site was zoned as the green area. However, due to rapid population increase in the 1950s land prices were sparing and numerous small landowners opposed the zoning. The green belt was canceled in the 1960s. In UK less than two thousand families with an estate of over 1200-hectare own half of England and Wales. They were content themselves with the loss of capital gain to protect traditional English values. When the Town and Country Planning Act of 1947 has nationalized development rights, they supported the green belt. (4) In 1968, Japan legalized an American style of Area Classification System to regulate urban expansion, while in Britain the government changed the green belt's purpose to urban containment in 1955, and the green belt policy spread to other parts of the country.

Image sources Figure 1: Author.

The Integration of Livelihoods, Tourism and Landscape in the Tokyo Park System

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Abstract

The Tokyo Park System was planned between 1932 and 1939. It was a wide-area park system centred on the capital, Tokyo, and covering Kanagawa, Chiba and Saitama prefectures. The 'Keienchi', meaning scenic parks, included in the park system were designated green areas in the surrounding mountains. This study clarified the planning intentions of Keienchi, based on the planning process and location. The results revealed the following: 1) The planning policy for Keienchi was to select sites rich in historical sites and natural monuments, and sites with topographical features. However, there was little relationship with them. Subsidy schemes were set up for the development of local products for souvenirs and the establishment of tourist picking orchards, with the aim of stimulating the use of natural resources for tourism and the local economy. Among these, Kanagawa Prefecture had the concept of 'Sangyo-en', meaning industrial parks, as a method of developing green areas, based on the idea that industries that utilised the local natural environment will make typical scenaries and could also be a tourism resource. 2) From the topographical features and descriptions of the Keienchi plans, places with good views were often selected, such as traditional pleasure spots, watershed mountains and hilly areas that form the edge of flat lands. From the above, it can be said that the Keienchi in the Tokyo Park System was a plan in which the emphasis was not so much on the conservation of natural areas as on the experience of going there, and that it was also considered not only from such an urban perspective, but also the effect on the interior of the rural area of stimulating the economy by attracting urban people.

The Birth of the Modern Scenic Zone and its Framework Characteristics in China

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Abstract

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Keywords

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How to cite

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How Shenzen is Planned

Chair: Richard Hu

From Imitation to Mutation
The Typology of Collective Housing in Shenzhen, China (1979-2019)

Liang Erchun
The Chinese University of Hong Kong

Abstract

The purpose of this study is to trace the evolution of collective housing types in Shenzhen from 1979 to 2019, which is based on the context of the transformation of land policy, housing reform, imagination about plot ratio in mainland China, as well as historical nexus between Shenzhen and Hong Kong from the beginning of China's Open-door policy to the present. It also explores how the various stakeholders, including different levels of government authorities, developers, professionals, and householders, shaped the development of housing types during the phase of housing commercialization in Shenzhen. The study method includes the mapping of collective housing types using archive materials, field studies and interview the different involved stakeholders. The study reviews 3 cases representing key steps in the development of collective housing typologies, which can be categorized in three periods: the coexistence period of welfare housing and housing in Hong Kong-style (1979-1998) - the localization and mutation period of housing type(1998-2014) - the period of housing standardization (2014-2019). This research will supplement the database of housing type in China and reflect the process of shaping the built environment and urban landscape of Shenzhen. It also seeks to contribute to the understanding of the inherent logic of decision-making and the power relationships among stakeholders during the housing commercialization, as well as contribute to the study of architecture and urban typologies in mainland China.

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Chinese cities and regions in transformation (1)

Chair: Cai Jiaxiu

Urban Paradigm
or Abandoned Enclave?
Assessing the Spatial Metamorphosis
of Zhengdong New District

Zhongjie Lin
University of Pennsylvania

Abstract

A discourse has persisted regarding the existence of China's "ghost towns" since 2009, when international journalists uncovered various newly constructed but largely uninhabited towns, such as Kangbashi in Ordos, Yujiapu in Tianjin, and Zhengdong in Zhengzhou. The ghost town concept remains a subject of contention to this day. While numerous scholars confirm the presence of a severe housing bubble in many Chinese cities and caution against the ramifications of the government's assertive financial policies, others argue that these so-called ghost towns are merely temporary states in the trajectory of large-scale developments. They contend that these areas will eventually be populated by residents and businesses because Chinese local governments possess the capability to "build a town and make people come." Revisiting this debate in light of the current crises in China's real estate sector provides a fresh perspective on the reconsideration of urban design and regeneration for new town projects. How well have these new towns performed economically and environmentally now? Have their urban landscapes undergone transformations since their inception? What measures have been implemented to revitalize their development? Some of these projects have experienced a gradual resurgence with the rebound of China's real estate market. Notably, Zhengdong New District has made a remarkable comeback under the government's preferential policies. It has not only become an economic powerhouse in Henan Province but has also evolved into a model city with a national reputation, showcasing cutting-edge urban planning and landscapes. Nevertheless, questions persist regarding the sustainability of its recovery and growth, as well as the replicability of such experiences in other new towns. This paper examines Zhengdong's transformation over the past decade to evaluate the new town model of urbanization. The evaluation is approached from two perspectives: empirical and quantitative. Departing from the conventional narrative centered on the ghost town phenomenon, which often emphasizes housing bubbles and governmental debt, the empirical study focuses on diagnosing Zhengdong's urban design—an intrinsic issue that not only contributed to its previous challenges but also dictates its future growth. The data analysis investigates population flows in all cities in Henan Province over the last decade. The findings reveal a correlation between the rapid growth of Zhengzhou, particularly Zhengdong, and the contraction of other cities and towns in the region. This correlation raises questions about the replicability and sustainability of this development model.

How metropolis impact the Tourism-Residence Relationship of its suburb
A case study of Naka–Uji area, Uji City, Kyoto Prefecture

Shuailing Cui, Nakajima Naoto
University of Tokyo

Abstract

Metropolis can influence populations, industries, physical space, living environment, and more of its suburbs. Suburbs serve as a buffer space between urban and towns, carrying a series of problems in urban development. Kyoto is one of the metropolises in Japan which is famous for its long history. Uji, located on the outskirts of Kyoto, has also prospered in tourism because of its long history and the World Heritage Byodoin Temple. Through historical data, ancient map surveys, and statistics, this research concludes that metropolis plays a decisive role in the tourism development of their surrounding suburbs and that their policies about the tourism development will affect the tourism activities in its suburban and then impact on the number, layout, use of buildings and living environment in the suburbs.

How to cite

Shuailing Cui, Nakajima Naoto, "How metropolis impact the Tourism-Residence Relationship of its suburb: A case study of Naka-Uji area, Uji City, Kyoto Prefecture". In Ian Morley and Hendrik Tieben (eds.), *International Planning History Society Proceedings*, 20th IPHS Conference, "The (High Density) Metropolis and Region in Planning History," Hong Kong, 2 - 5 July, 2024, TU Delft Open, 2024.

INTRODUCTION

The post-World War II era witnessed a rapid increase in population numbers in metropolitan areas, which in turn fueled the demand for suburban tourism. The development of metropolitan regions has played a favorable role, facilitating the flow of urban resources into surrounding suburban areas[1]. Globally, many suburbs situated near metropolitan areas have successfully developed their tourism industries. Examples include Versailles near Paris, Santa Monica near Los Angeles, Potsdam near Berlin, and Uji near Kyoto. These cities have benefitted significantly from their geographic locations as suburbs of major metropolises. Accessible, convenient, and sustainable tour transportation network is the prerequisite for tourists entering tourist attractions and completing activities[2].

Besides, the focus of experienced tourists is moving away from relying principally on exploiting tangible resources like historic buildings or museums and galleries, towards a concern with intangible resources, like lifestyle and image[3]. The commercialization of tourism in metropolitan areas makes it difficult for tourists to experience the authentic daily lives of local residents. However, in suburban areas, tourists are closer to the everyday lives of the locals, making suburbs a current focus of tourist destinations.

Another distinctive feature of suburban tourism is the relatively short duration of visits. Suburbs' proximity to city centers and convenient transportation options often result in tourists spending only a few hours in these areas during the day rather than staying overnight. This short-stay characteristic sets suburban tourism apart from other types of tourism, highlighting the unique nature of tourism activities in suburban regions

LITERATURE REVIEW

When searching for tourism in suburban areas, there are not a lot of research found. Most research are concerned with other subjects. Sverrild (1992) claims that "The Suburbs are at once the city's extension and its opposite"[4] . Driving tourism into the suburbans seem to demand for development of certain vital factors for the suburban destination. Suburban tourism began gaining attention in academic circles in the early 2000s. One of the earliest academic papers discussing suburban tourism was published in 2003[5]. Karkas (2012) discusses that transportation, capacity, quality, remoteness, isolation, lifestyle, authenticity, nature, service, price and exclusiveness as important factors in suburban tourism[6].Similarly, Naoto Tanaka, Masashi Kawasaki, and Maasa Moritsu researched the importance of transportation networks to suburban tourism development[7]. During COVID, Bielska(2022) states that in conditions of social distancing, rural and suburban areas can be an attractive alternative to individual short- term tourism, satisfying the need for recreation and mental and physical health restoration of urban residents[8].Overall, the suburban tourism is a complex and multifaceted issue that requires careful consideration of economic, environmental, and social factors.

RESEARCH AREA

Fig. 1.   The Location of Uji City
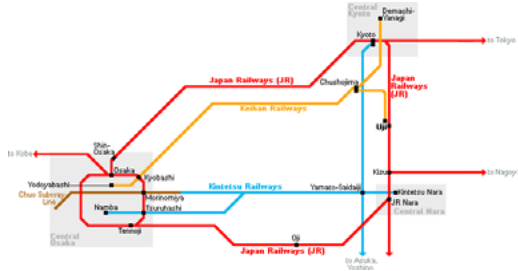
Fig. 2.   The Accessibility of Uji City

This research focuses on Uji City in Kyoto Prefecture, Japan, located between the historic cities of Kyoto and Nara. Renowned for its scenic beauty and rich cultural heritage, Uji lies along the Uji River and is celebrated for its association with traditional Japanese tea culture. The city boasts a profound historical background, prominently featured in Japanese literature and history. Uji is home to two UNESCO World Heritage sites: Ujigami Shrine and Byodoin Temple, both dating back to the Heian period (794-1185). Additionally, Uji's connection to "The Tale of Genji," one of Japan's most famous literary works, adds to its cultural significance, with several key chapters set in the city[9].

Uji is especially famous for its tea, particularly Uji matcha. The area's unique climate and geographical conditions make it ideal for cultivating high-quality tea. The city's tea culture is celebrated through various tea houses and ceremonies, offering visitors an immersive cultural experience[10].

Fig. 3.   The location of Naka-Uji area
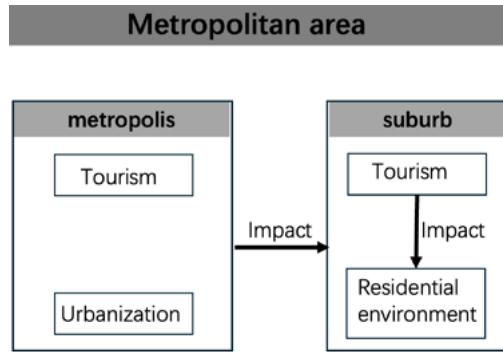
Fig. 4.   Research goal

Naka-Uji is a notable area within Uji City. One of the UNESCO World Heritage sites, Byodo-in Temple, mentioned above, is located in the Naka-Uji area. The other site, Ujigami Shrine, is within walking distance of Naka-Uji. Both sites date back to the Heian period (794-1185), reflecting the region's historical depth and architectural splendor. These landmarks are religiously significant and attract numerous tourists and scholars interested in Japan's historical heritage.

Despite its historical roots, Naka-Uji has seen considerable development, blending the old with the new. The area has benefitted from Uji City's tourism plans, particularly since the establishment of Uji's independent tourism strategy in 2001. This development aims to balance the preservation of cultural heritage with the needs of modern tourism and residential life.

SELECTION OF THE RESEARCH SUBJECT

Naka-Uji is a multifaceted area, serving as both a suburb of a metropolis and a site rich in historical and cultural resources.

Naka-Uji is centrally located in the Kinki region of Japan. It is within a 10-kilometer radius of Joyo City in Kyoto Prefecture, and within a 20-kilometer radius of Kyoto City and Otsu City in Shiga Prefecture. Furthermore, Nara City is within a 30-kilometer radius, and Osaka City is within a 40-kilometer radius. By private car, it takes up to 45 minutes to reach Naka-Uji from these cities, while the commute time by metro can take up to one and a half hours. This makes Naka-Uji an accessible suburban area for residents of these metropolises.

In addition to its strategic location, Naka-Uji boasts a rich historical heritage, being home to two important UNESCO World Heritage Sites: Byodoin Temple and Ujigami Shrine. Byodoin Temple, located in Uji City, dates back to the late Heian period and is renowned for its architectural beauty and historical significance. Ujigami Shrine, believed to be the oldest standing shrine in Japan, is closely linked to Byodoin Temple and serves as its "guardian shrine." In 1994, Ujigami Shrine, along with other shrines and temples in the Kyoto area, was recognized as a UNESCO World Heritage Site, underscoring its cultural and historical importance.

The blend of these two aspects—its strategic location near major urban centers and its deep-rooted historical and cultural significance—makes Naka-Uji a unique and attractive destination for both residents and tourists.

RESEARCH METHOD

This study aims to explore how a metropolis impacts suburb tourism development and how suburb tourism impacts the residential environment of the local community. Meanwhile, this research is trying to find out the transition of the tourism-residential relationship in suburbs under the impact of metropolises. The focus is on how suburban areas like Naka-Uji adapt and transform in response to the proximity of large urban centers. This transition is analyzed through the lens of historical context, and urban planning, with particular attention to the implementation of tourism strategies and their effects on local communities.

Although Uji City was not established until 1951, the significance of Naka-Uji dates back to an earlier period, marking the emergence of large residential areas in Japan's suburbs. The earliest map of Naka-Uji, dating to 1963, sets the starting point for this study's timeframe. In 2001, Uji implemented the independent Uji City Tourism Promotion Plan, thus dividing the study period into two stages: 1963-2001 and post-2001.

To investigate the residential environment, this study focuses on the foundations and categories of buildings in Naka-Uji. Quantitative methods are employed to analyze changes in building categories over time, providing insights into how the relationship between tourism and residential areas has evolved. This research takes the Naka- Uji area in Uji City, Kyoto Prefecture as a case study.

RESULT

THE RELATIONSHIP BETWEEN THE DEVELOPMENT OF KYOTO METROPOLIS AND THE RESIDENTIAL ENVIRONMENT IN THE NAKA-UJI AREA

FROM 1963 TO 2001

In Japan, new towns were developed in the suburbs of cities to address the population concentration in urban areas caused by rapid economic growth and to improve living standards by providing housing and public facilities. The Kinki Area Adjustment Act of 1963 facilitated the municipal government's proactive approach to transforming Kyoto into a cultural center, recognizing the city's fortunate escape from wartime attacks and consequential fires. During this period, Uji developed primarily as a suburban residential area.

AFTER 2001

In 2004, the Law for the Protection of Cultural Heritage was revised to include "cultural landscape" as a new type of cultural property. Under this system, the national government selects the most significant cultural landscapes from those protected by landscape planning areas established by the Landscape Act, providing value and support. In Uji City, the landscape planning area covers the entire city, with critical areas designated as landscape planning priority areas. The city's natural and cultural heritage and traditional industries are concentrated in these areas. On February 12, 2009, a proposal was submitted to designate a total of 228.5 hectares of the Uji city area and its surroundings, which are significant areas for landscape planning, as important cultural landscapes. This proposal was accepted, and Uji City received a selection notice from the Ministry of Education, Culture, Sports, Science, and Technology.

In 2010, the Kyoto City Tourism Promotion Plan outlined seven tourism goals aimed at improving the quality of tourists' experiences in Kyoto. The plan aimed to offer tourists an opportunity to experience life in Kyoto, make Kyoto a more equitable city, rediscover the beauty of the city, showcase the inner beauty of Kyoto, eliminate tourists' dissatisfaction with Kyoto, improve Kyoto's charm, and symbolize the acquisition of a new Kyoto. Rather than focusing solely on increasing tourist numbers, the plan aimed to enhance the overall quality of tourism experiences. To achieve this goal, Kyoto City planned to invest in and improve tourism-related infrastructure.

From 2018 to 2027, the "Tea of Kyoto" project was launched, encompassing 12 municipalities, including Uji City. This cooperation in the Kyoto prefecture has strengthened tourism relations between Uji and Kyoto.

In March 2016, the Agency for Cultural Affairs decided to relocate to Kyoto, highlighting the city's cultural significance. To further enhance tourism and promote safety and security, Kyoto City and Uji City entered into a partnership agreement in 2015, valid until 2020. The two cities, known for their historical heritage and tea culture, are committed to working together to attract tourists and boost local communities. The partnership aims to improve safety and security, and both cities will actively collaborate on various initiatives such as improving tourist facilities, sharing information related to tourism promotion, and coordinating events to promote tourism. Overall, the partnership agreement focuses on enhancing the visitor experience and ensuring the safety of tourists and local residents alike.5.2 The relationship between Kyoto City Tourism and Uji City Tourism.

In summary, Uji was primarily a suburban residential area due to urbanization and the development of the central city before 2001. After 2001, especially following the proposal of the historical and cultural landscape in 2004, the tourism industries of Uji and Kyoto became interconnected due to the Uji tea policy.

THE RELATIONSHIP BETWEEN KYOTO CITY TOURISM AND UJI CITY TOURISM

FROM 1963 TO 2001

The preservation of historical and cultural heritage in Kyoto City, an ancient capital of Japan, has directly influenced the conservation of Uji's heritage from war damage. Consequently, Uji's tourism industry has been able to recover relatively quickly. Additionally, the tourism revival plan implemented by Kyoto City post-war has aided Uji's tourism industry. With the resurgence of tourism in Kyoto City, tourists are likely to visit Uji City as well, leading to an increase in tourism activities in Uji.

According to residential maps, the post-war construction of new towns in Kyoto City resulted in a significant population increase in Uji City and the Naka Uji area. The Naka Uji area underwent construction after 1963, and the 1970 Osaka Expo provided a boost to the tourism industry in the broader Kinki region. By the end of the 20th century, following the completion of the Naka-Uji area's renovation and construction, the number of tourists in Uji City, partic-

ularly in the Naka-Uji area, saw a dramatic increase. Initially, tourism in Uji City centered on its historical resources to attract visitors, with Byodoin Temple being a key tourist attraction. Consequently, the Naka Uji area began building parking lots and establishing numerous stores to accommodate the growing influx of tourists.

AFTER 2001

Kyoto has a significant impact on tourism in Uji, particularly in the Naka Uji area. The number of tourists visiting Naka Uji is closely related to the number of tourists visiting Kyoto City. Despite the shared cultural heritage between the two cities, such as tea culture, Kyoto's wider range of accommodation options means that fewer tourists choose to stay overnight in Uji. Instead, they typically opt to stay in Kyoto, which offers more choices, and leave Uji after spending an average of three hours exploring the area.

When comparing the trends in tea culture between the entire Kyoto area and Uji City, some notable differences emerge. In the Naka-Uji area, the majority of visitors are from nearby prefectures, with 35.9% from Kyoto Prefecture, 25.7% from Osaka Prefecture, 12.5% from Nara Prefecture, and 8.4% from Kanto. In contrast, in Uji City, the largest percentage of visitors (34.3%) come from Kanto, which includes Tokyo and the surrounding areas. Regarding accommodation, a higher proportion of guests choose to stay in Uji City compared to the wider Kyoto area. Specifically, 77.7% of guests opt to stay in Kyoto, while 66.7% of guests choose to stay in Uji City.

Finally, transportation is another differentiating factor, with the majority of visitors to the entire Kyoto area arriving by car. However, visitors to Uji City are more likely to use rail transportation to reach their destinations.

RELATIONSHIP BETWEEN TOURISM ACTIVITY AND THE RESIDENTIAL ENVIRONMENT IN THE NAKA-UJI AREA

FROM 1963 TO 2001

In 1965, the Uji area still had many vacancies and two large tea fields. There were few retail stores in the entire area, and land use was relatively simple. By 1981, the tea gardens had disappeared, and more commercial buildings appeared in the Naka-Uji area, mainly along the shopping street. This street served as the main route for tourists commuting from the train station to Byodoin Temple and the Uji River. Despite the development of the tourism industry, particularly after 1981, the number of hotels in the Naka-Uji area did not increase. Naka-Uji had a strong preference as a day-trip destination, meaning tourists preferred to stay overnight in Kyoto or Nara City.

During this period, many tourists traveled in groups, and Uji had several hotels capable of accommodating large groups, which have remained popular to this day. The lives of local residents and tourists intersected primarily on the shopping street. This street, lined with shops and hospitals, offered convenient transportation and became a bustling night market that tourists had to pass through when visiting the Central Uji area. This created a space where tourists and residents could interact.

AFTER 2001

In fiscal 2001, Uji City formulated the "Uji City Tourism Basic Plan," aiming to increase the number of tourists from 4 million to 5 million within 10 years. In 2008, various events were held to commemorate the millennium of the Genji Monogatari, with information disseminated in collaboration with Kyoto Prefecture and Kyoto City. The Genji Monogatari Museum was also renewed. However, the number of tourists temporarily decreased due to the 2011 Great East Japan Earthquake, renovation work of major tourist destinations in Uji City and the Uji River, and typhoon disasters. Despite these challenges, the completion of renovation work and the increase in foreign tourists led to record highs of 5,598,000 visitors in 2015 and 5,587,000 in 2016.

Comparing the characteristics of tourists visiting Uji City between the 2016 survey and the 2011 survey, there was a decrease in the proportion of men, with an increase in men aged 70 and over and those in their 20s. The percentage of people in their 30s and 60s decreased. Regionally, the percentage of tourists from Kinki Kansai increased, and the percentage using private cars rose to 30.9%, while the percentage using JR and Keihan railways decreased to 53%.

Tourists' arrival times peaked around 10 a.m., with most returning as early as 4 p.m., indicating that daytime sightseeing was predominant, and nighttime tourist activity was minimal. The average stay in Uji was 3 hours and 34 minutes. The per capita tourism expenditure increased by 614 yen between the 2011 and 2016 surveys. A survey of 1,460 visitors to Kyoto City revealed that 43.9% (about 640 people) had also visited the Uji area.

There is now greater overlap between the daily travel of residents and the routes taken by tourists, not limited to the shopping street and Omotesando. Increasingly, tourists are interested in experiencing the local way of life, exploring residential areas to understand the daily lives and travel environments of the locals. The presence of Roji and Hokora in the Naka Uji triangle further attracts tourists, encouraging them to explore more of the local culture.

For residents, the influx of tourists into their living environment has directly affected the distribution of commercial shops. Previously, shops and souvenir stores were located along the shopping street and Omotesando. Now, more restaurants and souvenir shops are choosing to open in the interior spaces of Naka Uji, even in less geographically advantageous and accessible locations, to cater to the growing number of tourists venturing into these areas.

CONCLUSION

This paper examines two distinct categories of relationships. The first category is the relationship between Kyoto, the mother city, and Uji, the affiliated city. The second category is the relationship between tourism and residential space within Uji City.

Uji has long been a city that serves as a connection point between the ancient capitals of Uji and Kyoto. After World War II, the development of tourism in Japan was hindered due to economic restrictions. However, since Kyoto was not affected by the war, plans for tourism revival and development were initiated immediately after the war. As a result, Kyoto became the first city and area in Japan to begin revitalizing tourism during the post-war recovery. Simultaneously, the Kinki Area Improvement Act was promulgated in 1963, leading to the construction of infrastructure throughout the entire Kinki area, including Kyoto Prefecture, Osaka, and Nara. In response to the post-war population increase, many new towns were built in the suburbs to alleviate housing pressure.

Policies and tourist demand play a significant role in shaping the development of a place. The central Uji area has garnered attention due to its rich historical and cultural heritage. Additionally, the policy to develop the local tea culture has prompted many shops and souvenir shops in the central Uji area to incorporate tea-related products into their offerings. Tourists' mode of travel, activities, and demand for destinations can significantly impact the living environment of these locations. For instance, the development of tourism has created more job opportunities for the local area, meaning that tourists' activities are closely intertwined with the living environment of the residents in the tourist destination.

DISCLOSURE STATEMENT

The author declares that she has no relevant or material financial interests that relate to the research described in this paper.

NOTES ON CONTRIBUTOR(S)

Shuailing Cui is a PhD student at the Department of Urban Engineering, at the University of Tokyo. She has a master's degree in Engineering from the University of Tokyo. Her scholarly research examines the influence that tourism development brings to suburbs.

Nakajima Naoto is a Professor at the University of Tokyo, Japan. His research is designed in Planning Heritage Studies for Urban Design. Postwar Planning History, Planning Heritage, and Place Making. His publications include articles in Planning Perspective, Urban Research and Practice, and AIJ Journal of Technology and Design.

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IMAGE SOURCES

Figure 1   https://www.travel-around-japan.com/k62-00-kyoto-city.html
Figure 2   https://www.japan-guide.com/e/e3976.html
Figure 3   Edited by author based on the figure from https://www.kyoto-uji-kankou.or.jp/access-en.html
Figure 4   Made by author

Study on the resilience of historical blocks under the process of high-speed urbanization
Take the renewal of Longjin River in Shajing Ancient Fair in Shenzhen as an example

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Shenzhen University

Abstract

As the largest existing mixed historical block in Shenzhen, Shajing Ancient Fair is a mixture of historical and modern living styles. By studying the theory of urban resilience and taking the transformation of the Longjin River in Shajing Ancient Fair as the starting point, this paper analyzes the vulnerability and resilience characteristics of historical block in the process of high-speed urbanization and provides ideas for the protection and development of cultural heritage in the process of urbanization. In the process of Shenzhen's urbanization, Shajing Ancient Fair is faced with problems such as mass migration of population, changes in land power, transformation in the economic modes, deterioration of living conditions, etc., which reflects the vulnerability of historical blocks. To avoid the resilience fatigue of ancient fairs and repair the vulnerability of historical blocks, river channel transformation is used as an opportunity to improve spatial resilience, ecological resilience, economic resilience, and institutional resilience of mixed historical block in the process of urbanization. This paper focuses on the measures to improve spatial and ecological resilience in the transformation of Shajing Ancient Fair. Specific approaches include: 1) To improve spatial resilience, use the "acupuncture" renewal method to revitalize the main public space along the river; 2) to improve ecological resilience, divert rain and pollution and rebuild non-motor vehicle parking lots. By summarizing the impact of Longjin River micro-renewal, this study provides a systematic mechanism from the perspective of urban resilience for the beautification of the environment, industrial value-added, and infrastructure optimization of historical blocks.

INTRODUCTION

Historical blocks not only contain streets, buildings, and landscapes on the material level but also contain immaterial historical memories such as values, lifestyles and folk art. They are an important part of the urban context, recording the historical evolution of the city and reflecting the diversity of social life and cultural composition. However, due to the acceleration of urbanization, there are a large number of historical blocks in China with fragile ecological environments, dilapidated living space and single support industry problems and it's urgent to find a dynamic balance .Urban resilience refers to the ability of urban systems and regions to achieve normal operation of urban activities such as public safety, social order, and economic construction through reasonable preparation to buffer and cope with uncertainties and disturbances.[1] The resilience of historical block is reflected as a complex system integrating the diversity of the human environment and place spirit among which spatial resilience, ecological resilience, economic resilience, and institutional resilience are primary. From the perspective of resilience, this paper studies the protection, transformation, and utilization methods of historical blocks and evaluates the vulnerability and resilience of historical blocks by taking the Shajing Ancient Fairs as an example, to propose new possibilities for the transformation of historical blocks into new systematic blocks with adaptability and stability.

THE HISTORICAL EVOLUTION OF SHAJING ANCIENT FAIR WITH LONGJIN RIVER AS THE ORIGIN

The development of Shajing Ancient Fair is intricately intertwined with the influence exerted by the surrounding water system. Among these, Longjin River plays a pivotal role as both the foundation and driving force behind urban and rural advancement.

Since the Song Dynasty, due to the natural conditions of the abundant of salt and fresh water, the intersection of Helan Sea and Maozhou River gave birth to the prototype of Shajing Ancient Fair, which is originated and developed around the endogenous power of water system. In the middle of the Northern Song Dynasty, it was upgraded to the Guide Saltern, and in the Southern Song Dynasty, it had become one of the 13 major salterns in

Guangdong. The government office of the Guide Saltern was located near the present Yabian village in Shajing Town until it was abolished due to policy changes in Qianlong's 54th year of the Qing Dynasty. In the 13th year of Jiading in the Southern Song Dynasty, Longjin Stone Pagoda was built, which is now one of the oldest existing ground buildings in Shenzhen. The dwellings built along the Longjin River and the houses built around the stone pagoda constitute the main spatial function of the Shajing Ancient Fair.In addition, due to the economic growth brought about by the prosperity of the oyster industry, many ancestral halls emerged in the ancient fairs of Shajing during the Qing Dynasty, such as the Chen Clan Ancestral Hall in Shasan and the Great Chen Clan Ancestral Hall in Xinyang. With the de-

cline of the salt industry and the rise of the oyster industry, two commercial centers Shajing Fair and New Fair, have begun to form in the Jiaqing period of the Qing Dynasty, and the residents changed to farming and raising oysters [2]. The river banks, the fairs and ancestral halls have provided a rich social environment for residents. The Marine trade brought by the natural water system became the cornerstone of the development of Shajing Ancient Fair. The growth of population and the exploitation of resources have established the initial pattern of the ancient fairs.

Since the period of the Republic of China, Longjin River has gradually narrowed while the land area has expanded. Consequently, the pattern of Shajing Ancient Fair has become more discernible, with a complete fishbone structure formed by a street system centered around the north-south main road. The comb layout of Guangfu residential houses has extended from north to south, resulting in a denser street layout within the ancient fair. During the Ming and Qing dynasties, political instability led to a decline in population and economy along the coast, causing stagnation in urban and rural construction. As a result, settlements within the ancient ruins increased and transformed from a single-core structure centered around Longjin River to a diversified one. Towards the end of Qing Dynasty and at the beginning of the Republic of China era, profits generated from oyster farming contributed to commercial prosperity among Shajing residents as well as continuous growth in clan settlements.

After the reform and opening up, Longjin Lake continued to shrink and the land area further expanded. With the rise in land prices, a large scale of land reclamation was conducted in response to the need of rapid construction. The condition of oyster raising deteriorated because of the worsening of natural conditions and water pollution. The oyster industry began to move out, shifting to a business model of off-site farming and local processing and sales. At the same time, with the implementation of reforming and open policy, a large number of enterprises gathered in Shenzhen, bringing about an increase in industrial buildings, which changed the overall layout of Shajing Ancient Fairs. Traditional Lingnan-style residential buildings were gradually replaced by two-to five- storey bungalows built in a disorderly manner, resulting in the messy texture of the streets and lanes. In terms of demographics, original residents moved out of the area while outside tenants flooded in. The separation of property ownership and residence rights aggravated the decay inside the ancient ruins: problems like numerous dilapidated houses, traffic congestion, inadequate public facilities became increasingly serious.

Fig. 1. Map of Shajing Ancient Fair in 1930s. This map provides a comprehensive depiction of the historical pattern of Shajing Ancient Fair, encompassing their spatial extent and hydrological characteristics."

Fig. 2. The distribution of ancient fair, river and village. This map provides the interrelationships among seven clusters, rivers, and Shajing Ancient Fair are investigated, along with an analysis of the village's texture.

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THE RENEWAL AND CONSTRUCTION OF HISTORIC BLOCKS FROM THE PERSPECTIVE OF RESILIENCE

RELATED HISTORICAL BLOCK RESILIENCE RESEARCH

Resilience was originally widely used in physics, mechanics and other fields as "Engineering Resilience ". In the 1970s, Holing, a Canadian ecologist, introduced the concept of resilience into the field of ecology and proposed "ecological resilience". Later, the connotation of resilience was more abundant, and "social-evolutionary resilience" appeared. [2]In recent years, with the frequent occurrence of natural disasters and emergencies, the concept of resilience has been applied to disaster prevention and urban planning. As an important part of urban heritage, the evaluation of the effectiveness and shortcomings of historical block protection from the perspective of resilience has become one of the focuses of academic research.

At present, there are few studies on the renewal of historical blocks from the perspective of resilience in China. In the existing studies, Chang Wei et al. constructed the renewal framework of historical block from the three dimensions of "space, time and disaster prevention".[3] Cai Ning explored the social resilience, economic resilience and institutional resilience of historical blocks from the perspective of multiple participants and from the three perspectives of "public, developer and government". [4]As on the theory of " vulnerability and resilience" and combined with the disaster prevention needs of historical blocks in Tianjin, Lu Rui et al proposed strategies to improve the resilience of historical blocks by constructing a disaster prevention index system. [5]To sum up, Chinese academic circles focus more on the resilience of historical blocks from the perspective of disaster prevention and reduction, and rarely discuss from the dual perspectives of endogenous "stability" and external "adaptability", and reflect on the deficiencies of protection and utilization of historical blocks through the resilience evaluation system.

RESEARCH THOUGHT

In the opinion of evolutionary resilience, the adaptive cycle theory includes four stages: development, protection, release and renewal, which corresponds to the exploitation and construction, rapid development, decay and obsolescence, and renewal of historical blocks in the context of urbanization. In the cycle, multiple factors interact and restrict each other, and the spatial pattern, social structure and ecological conditions of historical blocks change in the process. The relationship model formed by multiple factors is the resilience renewal mechanism of historical blocks. This paper constructs the resilience of historical blocks from the perspective of internal stability and external adaptability. Internal stability, which includes spatial resilience, ecological resilience and economic resilience, lays the foundation for the development of historical blocks as the internal force to maintain their own stability. External adaptability, as the external force for historical blocks to adapt to external changes, mainly includes the institutional resilience about service and management.

Spatial resilience refers to the ability of material spatial pattern to withstand natural and man-made disturbances, which is the basis of the resilience of historic blocks, including street network accessibility and historical block identifiability. Ecological resilience is fundamental to the sustainable development of historical blocks, including the environmental quality along the river, the water quality of the river and the response in the face of urban waterlogging. Economic resilience means that in the face of urban land appreciation, historic blocks replace the original industrial space with commercial and other consumption. (Figure3)
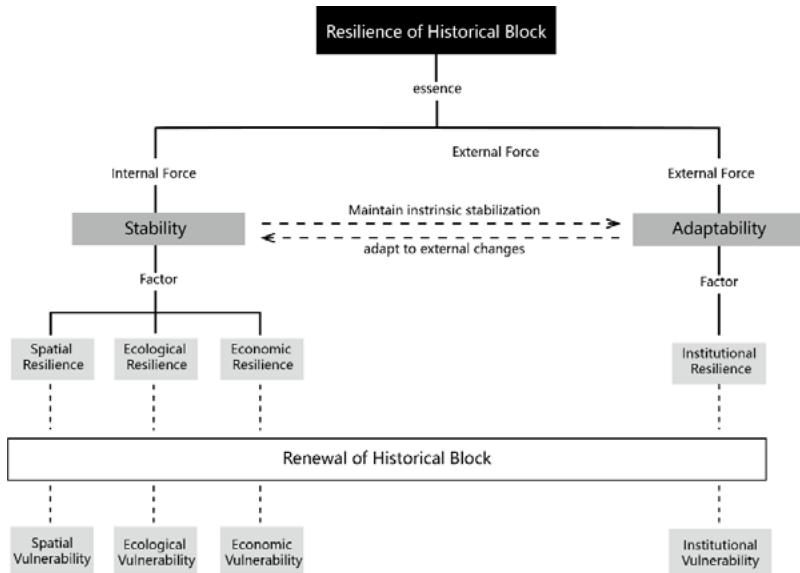
Fig. 3.   Resilience mechanism model of historic blocks . It illustrates factors that influence the resilience of historic blocks.

VULNERABILITY

SPATIAL VULNERABILITY

Road identifiability within the block: Shajing Street on the east side retains part of the style of arcade street, with a large number of businesses distributed. The north-south continuity and road identification is able to meet the demands. The important roads in the block, Xin 'an Road and Xin Bian Road, also have important public space nodes and typical oyster industry. The important roads intersect with the source of the Longjin River and extend in the downstream direction, while many public spaces such as ancestral halls, ancient wells and seats along the river, etc. are connected in series along the Longjin River from north to south. However, starting from Longjin Stone pagoda, the road along the river is interwoven with old and dilapidated houses, resulting in a decline in the publicity of the road, and extending to the west to the main road, while the northern section of the North-South main road runs through the self-built houses, forming a unique waterfront style. In the intersection of urban villages and the north part of road, the road along the river completely disappears, so the main road along the river presents a certain extension from the south to the north, and its identifiability is weakened by some high-density buildings and strengthened by some public spaces. (Figure4)

Fig. 4. Distribution and accessibility of road infrastructure. The alleyways in the village are intricate, with numerous cul-de-sacs that significantly impact road accessibility.

Road accessibility within the block: Before the Republic of China, as a market dominated by fishing and salt economy, the Longjin River undertook most of the transportation functions of Shajing ancient market. With the decline of the salt trade in the ancient market and the gradual accessibility of the road network, the mode of transportation gradually changed from water transportation to land transportation, and the transportation function of the Longjin River gradually declined. With the advancement of Shenzhen's urbanization, the number of buildings in the ancient market of Shajing increased, and the road network in the ancient market was dense. The main roads in the site are north-south roads -- Shajing Street (about 7-8m in width) on the west side and non- motorized road (about 2m in width) along the Longjin River. Among them, the width of the pedestrian roadway is 1-2m, and some streets are only wide enough for one-way traffic. The main roadway is mainly distributed along the east-west pattern of comb pattern, and the east-west accessibility is better; The north and south secondary laneways are mainly distributed in the interior of the style area, about 50m apart from each other. The roads on the south and north sides of the site are sparse and mostly end roads. Motor vehicles are unable to pass inside the block, therefore, the vulnerability of road accessibility is mainly reflected in the parking problem caused by the conversion of traffic modes. At present, electric vehicles park and walk in the ancient village, while the parking lot is only concentrated in the south of the site, according to the straight-line distance of about 500 meters, making different traffic road conversion nodes under great pressure.

ECOLOGICAL VULNERABILITY

Environmental quality along the river: With the continuous development of the city, the Longjin River, which once carried the functions of culture, trade and shipping, had gradually shrunk, and its water system pattern also declined. Remarkable changes took place in the environment along the river. Since the reform and opening up, with the rapid economic development and population growth of the area, the pollution problem of Longjin River has become increasingly serious. There were many reasons leading to the black odor of Longjin River, including the direct discharge of construction sewage on both sides of the river, the imperfect drainage system in the surrounding area, and the bad habits of residents dumping garbage and sewage into the river. (Figure5) In addition, the road on one side of the Longjin River seriously squeezed the area of the river, resulting in a serious phenomenon of "road competing for river".

River quality pollution: Longjin River is one of the tributaries of the Maozhou River. Since the Qing Dynasty, Maozhou River and Heran Sea influenced the original water system of Shajing Ancient Fair, which nurtured the ancient fair towns. There are 18 tributaries of the Maozhou River basin in Baoan area, flowing through 4 streets and 40 communities. Since the 1990s, the Maozhou River basin has experienced rapid economic development and population growth, rapid urbanization, mass aggregation of industrial enterprises. A large number of pollution sources have been poured into the river, resulting in poor water quality.

Fig. 5.   Longjin River before the renovation. The Longjin River prior to the renovation exhibited black and malodorous water.

Fig. 6.   Cooktop next to Longjin River. Based on the remaining wood and its configuration, it can be inferred that this artifact served as a cooktop

Through investigation, it is found that before renewal, the environmental vulnerability of Longjin River mainly existed in the following points:

1.   The diversion of rain and sewage was not complete, and stormwater layer was polluted;

2.   Water source was insufficient with strong seasonal runoff.

After the 1980s, the industry in industry has developed rapidly, the scale of factories and enterprises increased, and a large number of migrants poured in. They began to spontaneously build village houses, causing larger scale of villages. With the rise of land prices, the river has been continuously filled by local residents to construct buildings. Residents' awareness of environmental protection was weak: toilets, cooktops and other environmentally unfriendly spaces are set closed to the shore. (Figure6) The direct discharge of sewage and the random dumping of domestic garbage were common. The water is greatly polluted, and the Longjin River gradually became a narrow, black and smelly water body. (Although the comprehensive water environmental improvement project in the Maozhou River Basin had been carried out, residents' awareness of water protection didn't enhance, and it is still a common phenomenon to throw garbage into the river. After the gradual development of tourism in recent 5 years, many tourists also throwed garbage into the water.

In the comparative investigation in unchanged areas between February and May, it is found that there is a big difference in the runoff of Longjin River. The runoff of May is obviously less than that of February, almost in a dry state. In the comprehensive water environment improvement project of Maozhou River Basin (Baoan Area), considering the problems of water consumption and water quality, the design of reclaimed water replenishment scale was 1000m³/d, and the water change period was 5d. The situation showed that there was still a problem of seasonal water shortage.

Fig. 7.   Façade of border buildings along the Longjin River after renovation. The walls are adorned with frescoes crafted by artists.

Urban waterlogging: Longjin River flows through many urban villages in Shajing Street. During the rainstorm season, urban waterlogging was serious. The main carrying capacity of rainwater and sewage between the buildings was limited; 2. The drainage capacity declined after the reconstruction of channel.

After the reform and opening up, the density of the city, especially in the urban village area, became higher, and the water quality of the river deteriorated seriously after the low-cost rain and pollution diversion method was adopted from 1990 to 1999. In 2003, the construction of the combined flow interception box culvert system began, but it was still prone to problems such as sewage overflow and river backfilling. Due to the dense construction and limited hardware conditions, the carrying capacity of the drainage ditch was limited in the face of heavy rain disasters: the rainwater collection and sewage discharge were not timely, leading to urban waterlogging.

In addition, due to the diversion of rain and sewage in Longjin River, the area of the section was reduced after reconstruction, and the drainage capacity was reduced. According to statistics, the drainage capacity after the reconstruction basically met the drainage demand of defensing against once-in-three-year flood. However, in the face of emergencies, Shajing Fair was still hard to correspond disasters in time. For example, in 2018 Shenzhen heavy rainstorm, the waterlogging of Shajing was serious: the block was unable to evacuate water. At present, with the progress of urban renewal and demolition, the catchment area of Longjin River has been reduced. In the case of limited bearing capacity of river hardware conditions, the unit drainage capacity has been increased to reduce the problem of urban waterlogging in urban villages.

RESILIENCE ENHANCEMENT MEASURES

In 2020, the renovation of Maozhou River basin with Longjin River renovation as the core was carried out smoothly, comprehensively improving the water environment of Shajing Longjin River. At the same time, under the commission of Shajing Street Office and China Resources Land, ARCity Office planned and designed a group of landscape/architecture/interior design micro-renovation projects and planned the "Time Drift -Shajing Relic Reborn urban site-specific exhibition". As the experimental pilot project of the follow-up renewal of Shajing, the renewal of Longjin River and Shajing Ancient Fair focuses on the improvement of spatial resilience and ecological resilience.

Fig. 8.   Post-renovation assessment of road conditions.

SPACE RESILIENCE

Facade reconstruction, public building redesign: The buildings on Shajing Street were mainly built in the period of Republic of China the period before and after the founding of the People's Republic of China. Due to the different construction times and the lack of planning and management, the forms of the building facades are not unified, with various materials, including blue brick, red brick, terrazzo, concrete, Mosaic, etc. The transformation of the opposite side of the project is mainly reflected in the façade artistic processing. The facade was painted and transformed by artists, so that the facade of the building along the river can become a new and popular landmark, and enhance the recognition of the road along the river.[6](Figure7) ARCity also readjusted the road: the road width of the design area was adjusted to about 2m, and the parking places for electric vehicles were scattered along the road to easing traffic congestion.(Figure8)

ARCity also focused on the value of daily life embodied by the space from the perspective of authenticity and discussed the possibility of the organization form of residents' spatial image. From the two-way dimension: personal space + social space, objective space + subjective space; and 4 sections: site, place, scenescape and field, ARCity constructed the value evaluation system of daily life scene. The renovation of different locations can respectively represent the authenticity of a class of intervals: the renovation of Longjin River and the riverbank landscape represent the release and restoration of the site; the renovation of the gable house and the old house video museum represent the enhancement and purification of the place; the renovation of the ruined garden and the Longjin Water Pavilion represent the strange and

Fig. 9.   Update scope of Shajing Ancient Fair by ARcity studio. They have successfully completed a total of seven projects, including the Longjin stone tower, an old house restoration, a mural preservation project, the construction of a public stage, the creation of the Longjin waterside pavilion, restoration work on the guide salt Yamen building, and the development of a ruin garden using acupuncture renewal method.
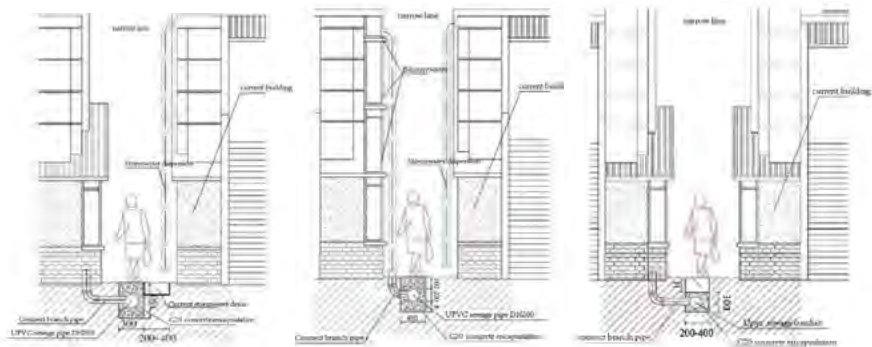
Fig. 10.   Reconstruction of gutter systems: A comprehensive analysis of three approaches.

estranged scenescape; and the renovation of the stage represents the media and activation of the field. (Figure9) In their design, the way of preserving the characteristics of the site and simplifying the complexity were adopted. While respecting and protecting the local culture, it provides more public activity Spaces and facilities to promote the interaction of residents and the development of the community and enhances the spatial resilience of the site from the perspective of roads and public activity Spaces.

4.3 ECOLOGICAL RESILIENCE

The restoration of the Longjin River involves several stages to improve its ecological resilience. This includes enhancing water quality, regulating flow, and beautifying the river land-

scape. The comprehensive water environment improvement project in the Maozhou River Basin (Baoan Area) is focused on addressing issues related to water quality improvement and flow control. Under the background of the "Action Plan for Water Pollution Prevention and Control" issued in 2015, the Maozhou River, the upper mainstream of the Longjin River, started a comprehensive basin improvement project, which mainly includes rain and pollution diversion pipe network project, river regulation project, area drainage project, water ecological restoration project, water replenishment project, and image improvement project. The Maozhou River Basin (Baoan Area) water environment comprehensive renovation project uses three drainage ditch transformation methods, which are respectively applicable to three categories of building intervals> 1m, < 1m with sewage discharge on both sides and < 1m with sewage discharge on one side. (Figure10) [7]Part of the Longjin River renovation project involves separating rainwater and pollution in the river. The lower part of the Longjin River has been transformed into a sewage box culvert, and the upper part is a rainwater channel to solve the black and odour problem of the water body. At the same time, the Longjin River storage tank has been designed and built, with an effective volume of 356m^3, which is mainly used for intercepting and storing the initial polluted stormwater around the Longjin River, to reduce the operating pressure of the sewage treatment plant. Based on interviews with residents, it has been over a decade since they encountered road flooding, providing evidence of the successful implementation of the renovation project that effectively diverted rainwater and mitigated pollution. [8]This signifies a substantial enhancement in the ecological resilience of the Longjin River, thereby alleviating frequent waterlogging issues and bolstering disaster reduction and prevention measures.

The subsequent Shajing Ancient Fair renovation project focuses on improving the river landscape by constructing landscape seating, ecological green belt, and stone steps on and along the river to enhance the river's vitality. Considering the fragmented and complex microenvironment of urban villages, the project emphasizes the improvements of the renewal of roads, green landscapes, and public spaces around the river based on the stratification of rain and pollutants. It improves ecological resilience by reshaping the riverside scene. (Figure10)

CONCLUSION

LIMITATIONS AND REFLECTIONS ON MEASURES TO IMPROVE RESILIENCE

Poor identifiability of unrenovated area: In the renovation project of Shajing Ancient Fair, the "acupuncture" renewal was carried out on the riverfront area from Longjin Stone Pagoda to Guanyin Temple, which achieved remarkable results in improving the area's identification. Firstly, clear road signs have been added along the riverbank and on Shajing Street, enhancing the area's identification. Secondly, in collaboration with artists, "Time Drift -Shajing Relic Reborn urban site-specific exhibition" injected new vitality into the ancient village through a series of innovative art forms such as building facade renovation, art installation, and wall graffiti. These artistic creations not only beautified the environment of the ancient village but also highlighted important landmarks along the river like the Longjin stone pagoda, stage, and Jingle Chen Clan Ancestral Hall.
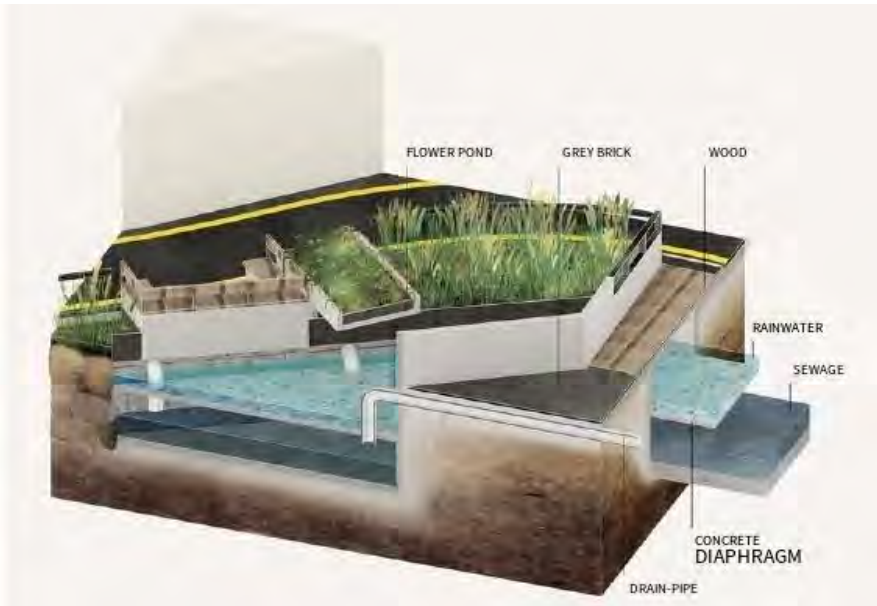
Fig. 11.   Sectional perspective of fluvial landscape.
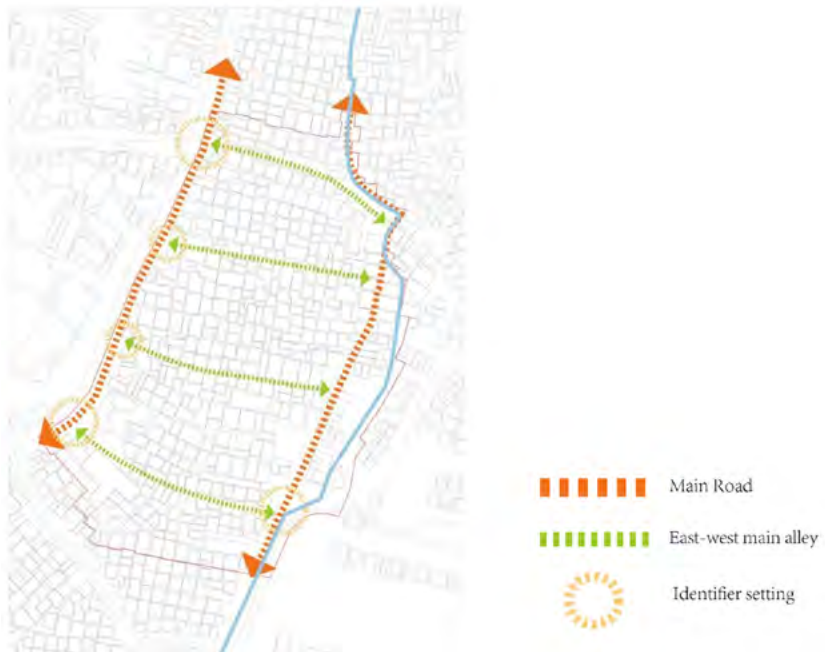
Fig. 12.   Improved strategies for enhancing road accessibility and visibility

However, the current renovation work is limited to the coastal area from Longjin Stone Pagoda to the government agency site of GuiDe Salt Field. Nevertheless, the unrenovated area still presents challenges such as mixed building types and narrow and intricate streets. As a holistic entity of the Shajing Ancient Fair, it is imperative to approach both the renovated and unrenovated areas from a systematic perspective, ensuring synchronized spatial breadth and renovation depth while drawing practical insights from successful restoration endeavors.

Although the renovation project has somewhat enhanced the identifiability and orientation of certain areas along the Longjin River, there is still a need to reinforce connectivity between the renovated and unrenovated areas, improve public transportation convenience, and refine the guidance system. As depicted in the figure above, it is recommended that while reinforcing the original "one river and one street" pattern, the ancient fair should be divided into four clusters based on the ancient scale. Additionally, enhancing the accessibility of east-west alleys between these clusters and s trengthening signage systems at their intersections with main roads are suggested. (Figure12)

Landscape quality: In the renovation project of Shajing Ancient Fair, the designer ingeniously employed a cost- effective strategy to achieve rainwater and sewage diversion, effectively enhancing the natural ecological environment of the river. However, because of the rainwater and sewage diversion project, the upper water body primarily receives rainfall, leading to significant seasonal fluctuations in river runoff. (Figure13 and 14) As depicted in the figure below, during the rainy season, the river experiences an increase in water level up to ankle depth, creating a recreational space for children and fostering the proliferation of aquatic flora and fauna. Conversely, during dry seasons, the river essentially desiccates with only a few remaining pools that lose their functionality and aesthetic value. In contrast, within unrenovated areas where runoff remains relatively stable, thriving populations of aquatic grasses and fish groups can be observed, indicating a superior ecological environment.

Fig. 13 & 14. Comparison between the renovated and unrenovated runoff

Fig. 15. The identification of optimal sites for new green spaces.

Furthermore, the implementation of natural ecological engineering techniques, such as constructed wetlands and biological retention ponds, should be considered. These facilities can effectively capture and purify rainwater, ensuring a consistent water supply for the river while reducing the need for maintenance of the riverside green belt. By utilizing the storage functions of the river, enhancing both sides' green belts, and designing wedge-shape. green areas within blocks to form a continuous landscape belt, we can enhance the self-sustaining capacity of the river ecosystem and minimize long-term maintenance costs, leading to an economically and ecologically beneficial outcome. (Figure15)

DISCLOSURE STATEMENT

Take the renewal of Longjin River in Shajing Ancient Fair in Shenzhen as an example, submitted in the 20th International Planning History Society Conference is completed under the cooperation of all participants. There is no plagiarism in this paper and involved no legal interest of any third party.

NOTES ON CONTRIBUTORS

Ziwei Zhou, Linzhen Ding and **Yuqi Fu**, majored in Architecture and Urban and Rural Planning, are undergraduates from the School of Architecture and Urban Planning in Shenzhen University. Based on our study and researching experience, we are all enthusiastic about the renewal of urban village and historical blocks in Shenzhen, which has been a problem demanding prompt solution in the process of urbanization. We are hoping to understand the fundamental problems of urban renewal during our research.

IMAGE SOURCES

Figure 1   Land Survey Bureau of Guangdong Province, Digital Archive
Figure 2   Draw by authors
Figure 3   Draw by authors
Figure 4   Draw by authors
Figure 5   The former "stink ditch" gorgeous turn to punch the scenic spot! The "secret" behind Baoan's water control is..., https://www.sznews.com/news/content/2021-03/28/content_24082501.htm
Figure 6   photograph by author
Figure7   Draw by authors
Figure 8   Rejuvenation of Shajing Ancient Fair, https://www.gooood.cn/rejuvenation-of-shajing-ancient-fair- project-arcity-office.htm?lang=cn
Figure 9   Rejuvenation of Shajing Ancient Fair, https://www.gooood.cn/rejuvenation-of-shajing-ancient-fair- project-arcity-office.htm?lang=cn
Figure 10   Shao Yuhang 邵宇航, Lou Shaohua 楼少华, Tang Yindong 唐颖栋, et al, "Shenzhen shi Maozhouhe liuyu mou xiaowei shuiti zhili fangfa yu shijian" 深圳市茅洲河流域某小微水体治理方法与实践 [Method and Practice of a Miniature Water Body Management in Maozhou River Basin of Shenzhen], Zhongguo jishui paishui 中国给水排水,2023,39(14):134-140.
Figure 11   Draw by authors
Figure 12   photograph by authors
Figure 13   photograph by authors
Figure 14   Drawn by authors

ENDNOTES

1.   Shao Yiwen 邵亦文, Xu Jiang 徐江, "Chengshi renxing: Jiyu guoji wenxian zongshu de gainian jiexi" 城市韧性：基于国际文献综述的概念解析 [Understanding Urban Resilience: A conceptual Analysis Based on Integrated International Literature Review], Guoji Chengshi Guihua 国际城市规划 2015,30(2):48-54.
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"Tuocheng Creation Plan"
A Contemporary Development Path of the Millennium Ancient Town in China's Underdeveloped Regions

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Abstract

Nowadays, the resilience of the Earth, humanity, environment and ecosystems are still under severe pressure. The philosophy of "making no one lag behind" in the "The 2030 Agenda for Sustainable Development" should be the target for universal participation across regions. This study selects Tuocheng Ancient Town, which is founded in 214 BC and known as the "Millennium Ancient Town", as our research object. Being located in the water sources for major metropolitan cities, such as Hong Kong and Shenzhen, Tuocheng Ancient Town has long been an underdeveloped region due to its backward structure of industries. Meanwhile, currently, the ancient dwellings, ancestral halls and temples in Tuocheng Ancient Town are facing the problems of space declining and cultural elements' losing. In the context of China' Rural Revitalization and "Typical Town Construction" initiated by Guangdong Province, with multiple problems and obstacles, what are the futures plans for Tuocheng Ancient Town? With little prior research support, firstly, based on the five comprehensive local field surveys, we released the "Tuocheng Creation Plan" originally from the community empowerment perspective. This plan emphasizes the dominant role of the local residents and aims at the development of regional diversity. Secondly, through continuous field surveys, we made efforts to excavate and utilize the original regional resources of Tuocheng Ancient Town, including the local people, culture, land, industry and scenery. And we also carried out some community empowerment practices on the basis of these resources of Tuocheng Ancient Town. Finally, we proposed three fundamental pathways for improvement in line with the contemporary development of Tuocheng Ancient Town: 1) Talent cultivation, aiming at nurturing the local new generation of youth; 2) Community co-construction, aiming at promoting the sustainable development of the town; 3) Civil participation, aiming at boosting the implementation of "The 2030 Agenda for Sustainable Development". In summary, this practical research significantly sheds light on the development of underdeveloped ancient towns in China.

THE BACKGROUND OF "TUOCHENG CREATION PLAN"

China has experienced a rapid economic development after the participation in the Word Trade Organization (WTO) in 2001, which drives China becomes the world's second-largest economy in nowadays. However, the COVID-19 pandemic from 2020 to 2022 has caused significant impacts on the global economy and China was no exception. In order to response to this challenge, the Chinese government proposed a new development pattern characterized by the domestic circulation as the mainstay and the mutual promotion of domestic and international circulations. This strategic transformation not only demonstrates the resilience of the Chinese economy but heralds a new trend of integrated urban-rural development in the future as well[1].

FROM "ENDOGENOUS DEVELOPMENT" TO "COMMUNITY EMPOWERMENT"": AN URBAN– RURAL DEVELOPMENT IN A GLOBAL PERSPECTIVE

As early as 1961, the United Nations adopted the resolution of "The United Nations Development Decade", which recognized that although the transfer of manufacturing industries in developed brought about more than 5% economic growth to the underdeveloped countries, developing countries or the third world countries, it also resulted in significant economic disparities between urban and rural areas and crucial issues such as unequal distribution of economic growth. This economic growth model, which introduces manufacturing factories to drive local employment, is a typical "outward-oriented" economic development pattern. In 1975, E.F. Schumacher proposed another development pattern, which includes five principles respectively are need-oriented, endogenous, self-reliant, ecologically sound and based on structural transformation. In 1976, Japanese scholar Kazuko Tsurumi first coined the term "endogenous development", she holds the view that endogenous development is based on local cultural traditions and utilizes external knowledge, technology and institutions in order to autonomously create a development model that is suitable for the local natural ecosystem[2]. In 1981, the town of Mishima-machi in Japan initiated the "traditional craftsmanship movement", which emphasizes both learning from Mishima- machi's traditional culture and actively applying it to modern life. Subsequently, various regions in Japan began to undertake practices of "endogenous regional revitalization". In 1994, drawing from the practical experience of endogenous regional revitalization in Japan, as well as the concepts of the "Community Architect" in the Uk and the "Community Design" in the US, Taiwan developed the new concept of "community empowerment", which underscores the holistic nature of culture, industry, environment, education and public administration[3].

THE EXPLORATION OF "COMMUNITY EMPOWERMENT" MODE IN CHINA

In China, the similar explorations began with the rural civilian education experiment conducted by Yan Yangchu (1890-1990) in Ding County, Hebei Province, in 1926[4]. This experiment emphasized basic surveys, governance research experiments and the promotion of governance schemes. Meanwhile, during the same period, the educator Liang Shuming (1893-1988)

believed that mass education was a crucial avenue for transforming Chinese society. He believed that only by adapting mass education according to local conditions and the prevailing circumstances could we better address China's societal issues and promote social development[5]. Subsequently, for instance, Chinese artist Qu Yan's "Xucun Project" in 2008 and the "Bishan Project" by Ou Ning and Zuo Jing in 2011, they have been initially dedicated to revitalizing rural traditional culture and awakening the intrinsic vitality of rural residents through various means such as culture, art and education[6]. These projects not only focus on the preservation of material cultural heritage but emphasize the transmission of intangible cultural forms at the same time.

In recent years, the "Songkou Model" in Songkou Ancient Town, Fuzhou City, Fujian Province, has taken the "community empowerment" to new heights. By introducing the "Taiwan Open-dashilar", this model has achieved integrated implementation of "planning design + architectural renovation + community construction". Since 2014, after a decade of sustainable development, this model has gained attention and recognition at the national level and has been promoted and introduced nationwide.

In summary, under the dual impact of globalization and the COVID-19 pandemic, China is actively exploring a new model of integrated urban-rural development with "community empowerment" at its core. This model not only emphasizes economic development but also places strong emphasis on cultural heritage, ecological conservation and social harmony. Therefore, this study selected Tuocheng Ancient Town as the research site, which is a millennium-old town and located in the underdeveloped region with limited financial resources in northern Guangdong Province, China. Building upon the previous domestic and international community construction experiences , aiming at prioritizing the agency of locals, the "Tuocheng Creation Plan" has been proposed. By conducting extensive field surveys and listening to residents and the local overseas Chinese of different age groups, occupations, and cultural backgrounds, we try to propose ideas for the future and development of the ancient town, and summarize contemporary development paths for millennium-old towns in underdeveloped areas of China.

THE PRESENT SITUATION AND DILEMMA OF TUOCHENG ANCIENT TOWN

HISTORICAL CHANGES OF THE PATTERN IN TUOCHENG ANCIENT TOWN

Tuocheng Ancient Town can trace its history back to the Qin Dynasty (221 BC-207 BC) and has a history of over 2,230 years. Prior to 1949, Tuocheng Ancient Town served as the political, economic and cultural center of Longchuan County. In 1991, Tuocheng Ancient Town was recognized as a historical and cultural town of Guangdong Province. In 2009, it was further recognized by the China Division of the United Nations Group of Experts on Geographical Names as a "Millennium Ancient Town" of China's geographical and cultural heritage. (See Figure 1)
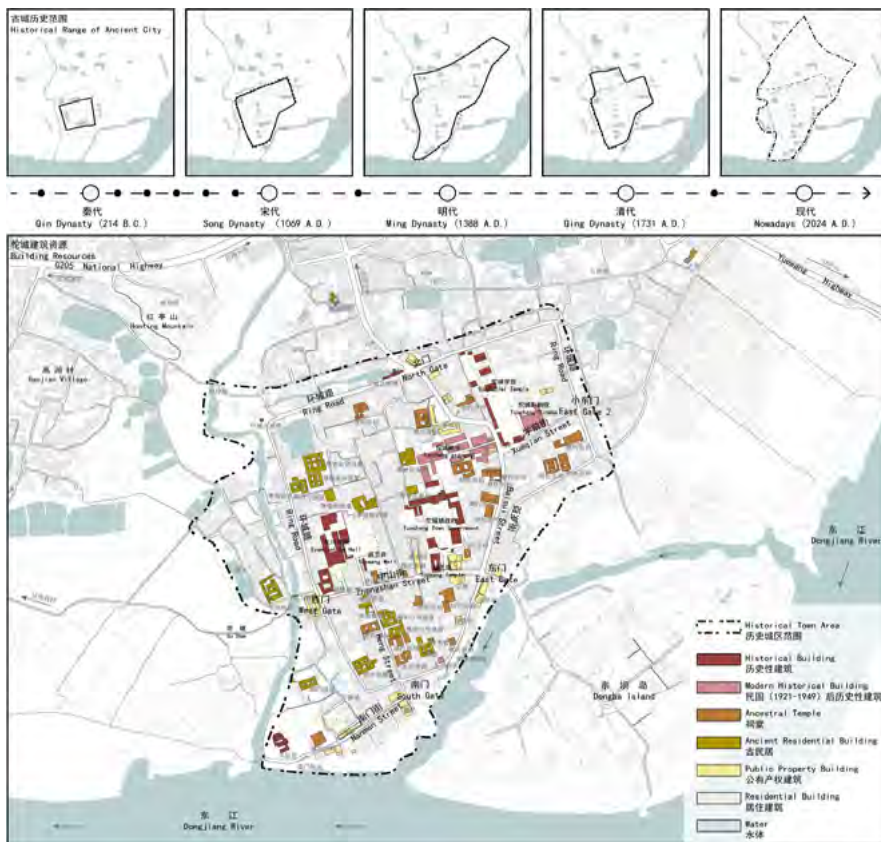
Fig. 1.   Historical changes of Tuocheng Ancient Town pattern

GEOGRAPHICAL LOCATION CHARACTERISTICS
OF TUOCHENG ANCIENT TOWN

Tuocheng Ancient Town is located on the southwest side of Longchuan County, approximately eight kilometers from the county center. Currently, Tuocheng Ancient Town covers an area of 36.88 hectares with a population of 8,700 people. Due to its location along the Dong River, where is a water source for major cities such as Hong Kong and Shenzhen, Tuocheng Ancient Town has historically faced limitations in industrial development and is remaining at an economically underdeveloped level. In 2021, the "Longchuan West Station" high-speed railway station commenced operations, which is situated only about 2 kilometers from Tuocheng Ancient Town. According to the "Overall Plan for Land and Space of Longchuan County (2021-2035)" (Phase Results), Longchuan County plans to develop new construction land in the northern part of the county to create a "New Happy City" and leverage the Longchuan West Station to develop a "High-Speed Rail New City" within the Tuocheng Ancient Township area to the southwest.

Fig. 2. Spatial planning diagram of Tuocheng Ancient Town, high-speed railway new town and new happy city in Longchuan County

With the further advancement of urbanization in Longchuan County and the construction of the high- speed rail new city, the original "two-city synergy" pattern will be evolved into a pattern of three cities effectively linked. Additionally, it takes only one hour and 16 minutes from Longchuan West High- Speed Rail Station to Shenzhen. Therefore, the protection and development of Tuocheng Ancient Town not only align with the overall spatial plan of Longchuan County, but represents an essential factor in the new development stage of the ancient town as well, which integrates effectively with the economically developed Greater Bay Area of Guangdong, Hong Kong and Macau (See Figure 2).

ANALYSIS OF PAST IMPLEMENTATION PROJECTS IN THE PROTECTION AND DEVELOPMENT OF TUOCHENG ANCIENT TOWN

Since 2010, the local government of Tuocheng Ancient Town has been continuously promoting the protection and development of this ancient town, but some projects have some serious problems.

We will take "Sudi( )" in Tuocheng Ancient Town as an example. As historical and cultural landscape, it is recorded that Sudi( ) was built during the Song Dynasty (960 AD - 1279 AD) by the official and literati Su Zhe for the purpose of flood control. Currently, along the Sudi(
 ), due to the local government's temporary response to China's policy in the protection of 1.8 billion mu of arable land, the vegetable gardens were previously managed freely by the ancient town residents have been requisitioned by the local government and converted into paddy fields with new irrigation facilities. This behavior has resulted in severe damage to the historical and cultural landscape of the Sudi( )[7].

Fig. 3.   Previous wrong case of "Sudi(   )" in Tuocheng Ancient Town

During our field investigations, our research team identified this issue and promptly reported it to the Longchuan County Housing and Construction Bureau of Tuocheng Ancient Town, the higher-level administrative unit of Tuocheng Ancient Town. We recommended that they should immediate stop all construction projects within a 50-meter radius of the "pavilion" (a historical resting and tea-drinking area for passersby) on the Sudi(   ). Additionally, we suggested that they have to invite heritage conservation experts to conduct a current assessment of the Sudi(   ) and propose specific conservation measures. Although our recommendations have been adopted by the county government, the landscape damage already incurred cannot be entirely restored (See Figure 3).

This case shows many problems. First, it reflects a lack of in-depth investigation and research by the planning and design team regarding the project's location, thus, they overlooked the local historical and cultural characteristics, folk beliefs and other local features. Second, it also highlights the issues in supervision, communication and coordination among local governments, planning and design teams, and construction parties. Third, Furthermore, the government failed to actively involve local residents neglecting the principle of "people-oriented" in governance. This erroneous case serves as a reminder that the protection of Tuocheng Ancient Town requires comprehensive consideration of various factors to ensure scientific planning and effective implementation.

PRACTICE AND THEORETICAL SYSTEM CONSTRUCTION OF "TUOCHENG CREATION PLAN"

In response to the national "Rural Revitalization"[8] strategy and the "Hundred Million Project"[9] of Guangdong Province, Tuocheng Ancient Town urgently needs to address the main issue of how to balance the protection, development and utilization of local resources while guiding local residents' participation and fostering enthusiasm among youth and other talent

resources to contribute to hometown construction. It is crucial for this town to introduce a development approach of "multi-subject co- construction and sharing" involving enterprises aligned with sustainable development goals.

This study is based on regional revitalization practices carried out in various countries and "community empowerment" projects undertaken at different times in China. It employs continuous on-site field investigations to unearth local resources and explores a "community empowerment" model suitable for the integrated urban-rural development of underdeveloped areas in China. Through the pilot project implementation, the aim of this study is to foster talent development and community co-construction in the long run.

CLARIFICATION OF THE OVERALL GOAL OF "TUOCHENG CREATION PLAN"

During the initial phase of our field investigation, it is essential to clarify the overall objectives of implementing "Tuocheng Creation Plan" in Tuocheng Ancient Town. Our objectives encompass the following five aspects: 1) Empowering local residents as active participants; 2) Restructuring the network of local resource relationships; 3) Revitalizing the "material+immaterial" landscape tourism ecological system of traditional local pilot projects; 4) Establishing a mechanism for heritage conservation at the local level; 5) Promoting the orderly inheritance of local cultural heritage. Based on these five objectives, our aim is to foster talent development and facilitate the ecological co-construction of the community in the future.

THE CONSTRUCTION OF CORRESPONDING EVALUATION MECHANISM FOR THE RESOURCES OF "PEOPLE, CULTURE, LAND, PRODUCTS AND LANDSCAPE"[10]

Tuocheng Ancient Town is an "energy complex" constructed from the five elements i.e. "people, culture, land, products and landscape". This study established a basic objective evaluation mechanism for implementing field investigations and local resource surveys in Tuocheng Ancient Town (see Table 1). Through comprehensive survey, we make the effort to identify, understand and assess various potential resources in this local area. On the basis of these undertakings,, by taking external knowledge, technology, systems etc. as reference, we try to gradually activate the network of resource relationships and create a development approach which is suitable for the local natural ecosystem. We summarize this development approach in three steps: "current regional status -comprehensive regional survey - regional activation".

OVERVIEW OF THE 9 FIELD INVESTIGATIONS IN TUOCHENG ANCIENT TOWN

The key to the development of culture or civilization lies in three aspects respectively are "region", "history" and "symbiosis with the nature", they are all inherent in traditional ways of people's daily life. Since August 2023, our research team has conducted 9 continuous on-site field surveys in Tuocheng Ancient Town, and we identified a large number of potential resources there.

Target evaluation mechanism model of "Tuocheng Creation Plan"		
"Culture is life"	**"Community empowerment" practice goal**	**Overall effect**
• "Bricolage" • Emphasis on thinking patterns that inspire imagination and creativity • The culture of the region is born in the everyday life	• Centered on residents and inhabitants • Pursue the activation of latent local resources • Aim for the participation of the entire region and all residents • Propose initiatives related to basic needs • Enhance natural ecology • Aim for cultural independence • Promote a sense of overall identity within the local community • Rooted in skills that local residents can engage in	• Starting point: Regional life and cultural survey (utilizing all five senses) • Transform the concept of "having nothing" into "having everything" (resources = treasures) • Regional revitalization is "for ourselves", never "for external visitors" • "Endogenous creativity" is the foundation of regional revitalization • It's crucial to fully utilize the region's identity • Develop "short-term, mid-term, long-term" development plans

Table 1.   Evaluation ideas of the basic goals of endogenous "Tuocheng Creation Plan"

Through investigations into historical architectural resources, intangible cultural resources and natural ecological resources, we believe that despite the abundant potential resources within Tuocheng Ancient Town, there are currently numerous issues within the resource co-ordination and local governance mechanisms. We summarize these issues as follows: 1) The present urban appearance of Tuocheng Ancient Town fails to showcase the profound cultural heritage of this thousand-year-old ancient city; 2) There are barriers between the historical building identification mechanism and the implementation of protection measures; 3) The excavation and activation of both material and intangible cultural resources throughout the entire area are not prominent; 4) Local public participation needs to be strengthened and guided; 5) Local characteristic resources have yet to meet the demands of the cultural tourism market; 6) The collaboration mechanism among the government, experts, enterprises and local residents is not robust enough; 7) Ecological environment management along the Dong-jiang River and the quality of daily water supply for residents in the ancient town are difficult to guarantee.

CO-CREATION: INITIATED "TUOCHENG CREATION PLAN"

Regarding to how Tuocheng Ancient Town can achieve sustainable development with a focus on local characteristics while also considering cultural tourism, based on the perspective of "endogenous community empowerment", our research team proposed the "Tuocheng Creation Plan" and outlined ten phased objectives. Currently, the "Tuocheng Creation Plan" has been incorporated into the scope of protection and development by the Longchuan County Government, which indicates that local governments are beginning to recognize the need to shift from the previous "outward-oriented" development model relying heavily on rapid introduction of external capital to a development approach focused primarily on endogenous regional development (see Figure 4).
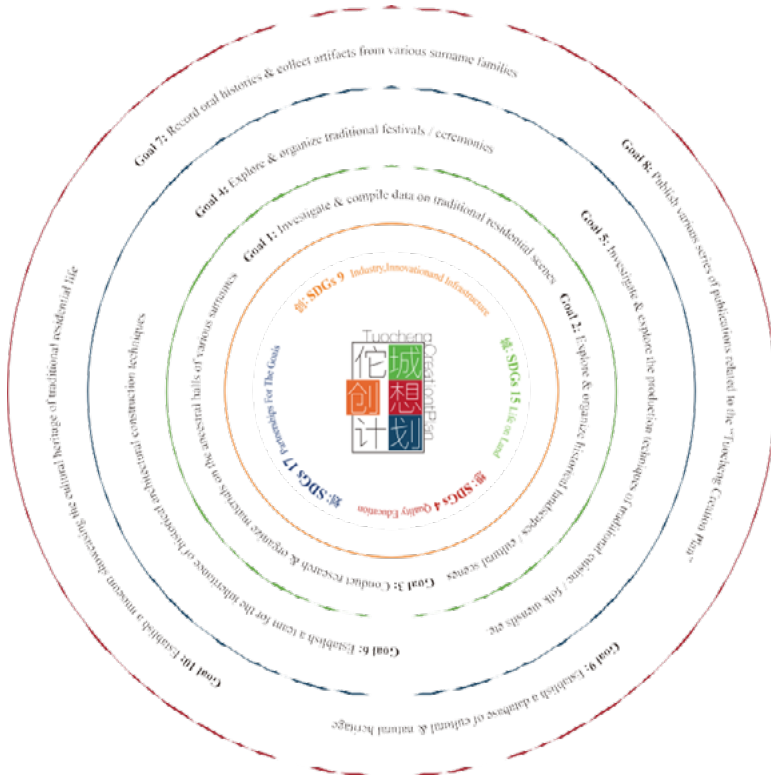
Fig. 4.   The logo and ten stage objectives of "Tuocheng Creation Plan"

RECASTING THE LOCAL RELATIONSHIP NETWORK

Based on the basic objective evaluation approach of "endogenous community empowerment", our research team designed the "Longchuan Eight Scenic Cotton Bag" series of cultural and creative products at extremely low cost. Through this product, we aim to present a conceptual framework of utilizing local resources and integrating various types of resources among different stakeholders, such as the local government officials and local youth. The elements of the "Longchuan Eight Scenic Cotton Bag" present eight cultural and natural landscapes that have been beloved by local residents in Longchuan since ancient times, which can be used to serve as a medium to guide tourists in exploring these places. The development model of this series of cultural and creative product has the potential to reshape the network of local resources encompassing "people, culture, land, products and landscape" (see Figure 5).

In addition, our research team also concurrently advanced the following initiatives: 1) Facilitating the development of study tour programs for local returning youth; 2) Assisting local governments in collecting old photos and artifacts; 3) Uncovering the stories of owners' families of ancient dwellings to promote their restoration and revitalization; 4) Providing

first-hand materials for the production of the documentary "Oral History of Overseas Chinese Families"; 5) Recommending stories featuring old street shops and handicraft workshops in Tuocheng Ancient Town to local television stations.

We believe that the aforementioned methods can continuously activate the cultural resources of Tuocheng Ancient Town. Simultaneously, throughout the process of nationwide participation, we continuously listen to and record suggestions from local residents regarding the current living conditions in Tuocheng Ancient Town and their expectations for future development, which presents a "bottom-up" participatory planning approach.

"TUOCHENG CREATION PLAN": THE DRIVING FORCE OF THE PARTICIPATORY URBAN DESIGN OF TUOCHENG ANCIENT TOWN

In China, urban planning and design are often controlled by the government and with insufficient involvement from the local residents. Tuocheng Ancient Town faces a similar issue, especially under the current development plan of the tri-city layout in Longchuan Countythe, i.e. "Happiness New City - High-Speed Rail New City - Tuocheng Ancient City". The sustainable conservation and development of Tuocheng Ancient Town is an urgent need.

According to the target evaluation mechanism model of the "Tuocheng Creation Plan", our research team selected pilot projects to guide resident participation. We have established a coordination model between the government, enterprises and the public, facilitating efficient two-way communication of information from both the top-down and bottom-up perspectives. This practice aims to balance multiple factors such as the historical and cultural heritage of the ancient town with modern life, urban-rural integration, human resource integration, introduction of high-tech technologies alongside ecological conservation, government policy formulation, and the real needs of local residents.

This model not only stimulates the "energy complex" characteristics of Tuocheng Ancient Town but also highlights the significant role of "Tuocheng Creation Plan" as a participatory urban design approach in the sustainable development of this ancient town. We firmly believe that it provides a new path for the contemporary development of millennium-old towns in underdeveloped areas in China and facilitates genuine multi-party participation and win-win outcomes (see Figure 6).
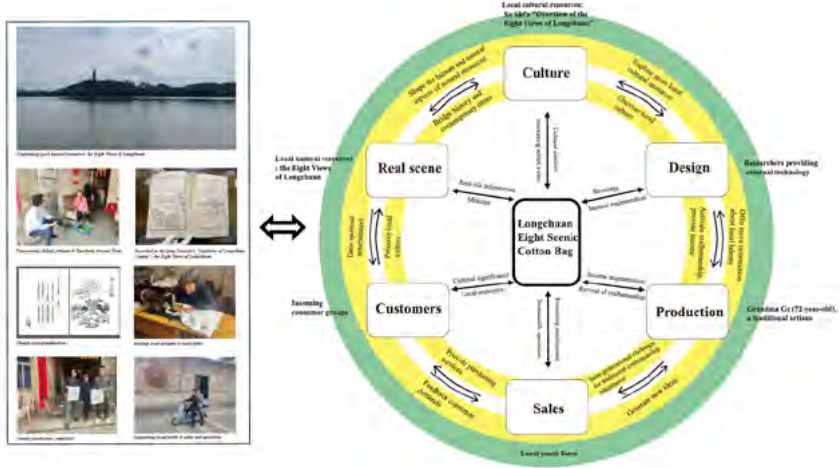
Fig. 5.   Integration model of local resource mining for "Longchuan Eight Scenic Cotton Bag"
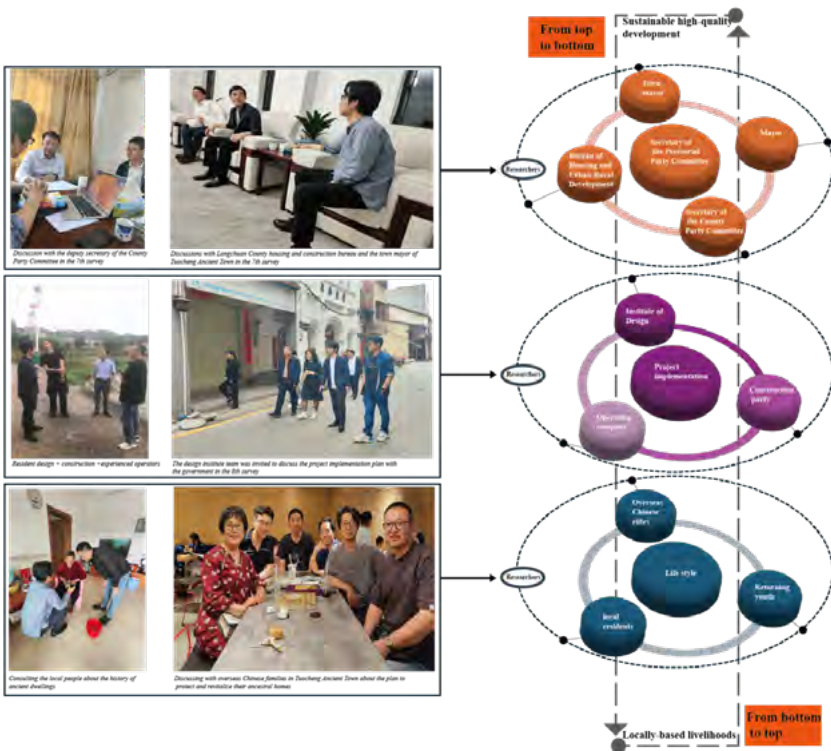
Fig. 6.   Structural model of important relationships

CONCLUSION

This field investigations and practical projects fully reflect the significant importance of adopting the "endogenous community empowerment" model for the protection and development of Tuocheng Ancient Town where is located in the underdeveloped areas. Under this model, as key facilitators, the researchers have successfully established a three-tier efficient linkage mechanism between the government, enterprises and local residents. This mechanism tries to transform China's previous government-dominated governance approach into a multi-party collaborative and progressive model led by "government guidance and assistance from local talents", with "expert guidance and citizen participation" as the main thread, and "enterprise investment and operational management" as the support. The above-mentioned are the core values to be echoed and constructed by "Tuocheng Creation Plan".

Through the practice of this model, this research summarized three fundamental paths for the contemporary development of Tuocheng Ancient Town: firstly, emphasizing talent cultivation and actively nurturing a new generation of youth in the ancient town in order to inject fresh vitality into it; secondly, strengthening community empowerment to promote the sustainable development of the ancient town and to ensure the continuation of its historical context; finally, promoting public participation which can support the implementation of the 2030 Agenda for Sustainable Development.

In summary, this research and practical case of Tuocheng Ancient Town not only provide strong support for its sustainable development but also offer significant reference value for the development of ancient towns in other underdeveloped areas in China.

DISCLOSURE STATEMENT

The content of this study is based on field investigations, and the figures and tables in the article were drawn by the authors' team.

NOTES ON CONTRIBUTOR(S)

Professor **Xiaochun Yang** has long been being committed to the protection and revitalization of urban and rural historical architectural heritage in high-density metropolitan areas. Dr. Jianming Wang, during his study abroad in Japan, he was mainly focusing on the research field of "endogenous regional revitalization", especially on on-site field investigations and practices. He is a postdoctoral fellow at Shenzhen University at present. Dr. Mengxi Niu is a young scholar majoring in international cultural communication, she is responsible for the English writing of this research.

ENDNOTES

1. Accelerate the construction of a new development pattern with domestic circulation as the main body and domestic and international dual circulation promoting each other (studying and implementing the spirit of the Fifth Plenary Session of the 19th Central Committee of the Communist Party of China), People's Daily Online. http://politics.people.com.cn/n1/2020/1125/c1001- 31943814.html

2.   Kazuko Tsurumi. Endogenous Development Theory. Tokyo: University of Tokyo Press, 1989.

3.   Kiyoshi Miyazaki. The Flower of Human Heart. Chiba: Published by Kiyoshi Miyazaki Research Office, 1996.78

4.   Ding Hongrui, Wang Xuan. Exploring the path of Chinese path to modernization rural construction from Yan Yangchu's experience. Journal of Mount Huangshan University, 2022. 70-74

5.   XIANG Deping, ZHANG Kun. Theory and Practice of the "Rural Construction School" and Its Inspiration for Rural Revitalization. Beijing: Journal of China Agricultural University (Social Sciences Edition), 2023.138-151

6.   Yan Qu. Art Rural Construction: The Third Path of Rural Construction in China [J]. Guangxi: Ethnic Art, 2020.14-19/ Yuan Sui. "Bishan Plan" and Art Rural Construction[J]. Beijing: Minyi, 2020.37-41

7.   In the second year of the Yuanfu era of the Northern Song Dynasty (1099), Su Zhe was exiled to Huazhou as a Beijia and went to Xunzhou (with its capital in Tuocheng). He once lived in Dongshan Temple and later lived in the west of Baiyun Bridge in Aohu. He closed his door and wrote the"Brief Records of Longchuan". During this period, he led the people to build a levee in the east of Aohu Lake to fight against drought. Later generations named this levee Sudi(   ) in memory of him. Longchuan County Local Chronicle Compilation Committee, Longchuan County Chronicle, Guangzhou: Guangdong Provincial People's Publishing House, 1994. 37

8.   In 2021, the Opinions of the Central Committee of the Communist Party of China and the State Council on Comprehensively Promoting Rural Revitalization and Accelerating Agricultural and Rural Modernization. https://www.gov.cn/zhengce/2021- 02/21/content_5588098.htm.

9.   In 2022, Decision of the Guangdong Provincial Committee of the Communist Party of China on Implementing the "High Quality Development Project of Hundred Counties, Thousand Towns, and Ten Thousand Villages" to Promote Coordinated Development of Urban and Rural Regions. http://www.gd.gov.cn/gdywdt/gdyw/content/post_4100997.html

10.   Honorary Professor Kiyoshi Miyazaki of Chiba University in Japan summarized and proposed the basic idea of community building around local resources of"people, culture, land, products and landscape" in the long-term"endogenous regional revitalization", and summarized the corresponding evaluation goals. Kiyoshi Miyazaki. The Flower of Human Heart. Chiba: Published by Kiyoshi Miyazaki Research Office, 1996.9

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IMAGE SOURCES

Figure 1   Painted by Yerui Yin.
Figure 2   Drawing by Ke Li.

Xiaochun Yang, Jianming Wang, Mengxi Niu, Ke Li, Yerui Yin
"Tuocheng Creation Plan"

Planning and Heritage (1)

Chair: Robert Freestone

Histories in heritage
What futures do we care for?

Loes Veldpaus
Newcastle University

Abstract

The way we 'do' heritage planning, at least in the European settings I am familiar with, however well meant, is often quite literally a practice of re-inscribing patterns of belonging and thus un-belonging. It is reproducing history, it is selective, prescriptive, and excluding, it is mobilising only some pasts and not others. Heritage has become a catalyst in regeneration for economic development, as well as a means towards an ever-widening variety of ends. Heritage planning as a field however seems rather unwilling to address that these mobilisations of history are ideological and political. That history is used as a tool, it is operational, it is being produced, and as such it produces in- and exclusions. In this paper, I will explore the possibilities for 'care ethics' to be a conceptual reframing and reclaiming of heritage, by redrawing the ways heritage planning – the planning of historic environments - can be understood, when seen as a practice of care. Thinking both from history and towards history, by asking the question who is (not) being cared for, in the past, present or future, through caring for this or that history? What relations, to people in the past, present, and future, are being reinforced and reproduced, erased, and dispossessed in the heritage process? Illustrated by various internationally known cases, such as the Benin Bronze, and the Colston statue, I will show how care can foreground different questions and relations, and thus different histories, and why I think care can be a term to think with, in heritage planning policy and practice, in an attempt to make the heritage field more sensitive, plural, inclusive and just – not less ideological, but more aware of its ideology.

New construction vs heritage
in the context of Lithuania
Creating a relationship
in the urban structure of the city

Inesa Alistratovaite-Kurtinaitiene, Dalia Dijokiene
Vilnius Gediminas Technical University

Abstract

A key feature of the city's historical urban development has been the constant transformation of its image, which has been directly influenced by changes in economic activities and technology. Despite the tendency of cities to change and transform constantly, the city and its inhabitants should not be left without signs of historical memory, because they are significant for the local identity and the identification of the inhabitants with their place of residence. The most culturally and historically valuable area in the city is its historic part, but at the same time it poses significant challenges in finding a balance between conservation and development. The paper presents the case of Lithuania's port city of Klaipeda, object of two research studies related to the development of the city's identity and analyzing the relationship between cultural heritage and adjacent new construction, so as not to lose the intrinsic qualities of cultural heritage and establishing principles for complementing the cityscape. Although both heritage sites and heritage areas are identified in the city of Klaipeda, the relationship between new construction and the heritage is still not clear. In the 13th century, the old town of Klaipeda was planned as a military camp, and in the 17th century, a barrier was formed around the then city as a defensive fortification. For several centuries, Klaipeda had the reputation of an impregnable fortress. The preservation and respect of this defense system, including the castle, in the urban fabric is a key challenge for the development of both the inner urban fabric and the city's silhouette. In this research a methodology has been developed for assessing the relationship between the new construction and the characteristics of the external cityscape of the historical parts of the city.

Towards a spatial history in heritage?
A case study of South Melbourne, Victoria, Australia

Cael Leskovec, Murray Herron
City of Port Phillip

Abstract

In Victoria, Australia, the protection of local heritage places is the responsibility of the relevant local government. Places assessed to be of local heritage significance – either individual places (a single property) or precinct places (a grouping of properties) – are protected through the application of a heritage overlay (HO) in the local government's planning scheme. A heritage citation – a document that details what, how and why the place is significant – must be prepared alongside the application of the HO to prove heritage significance. The information required to prove heritage significance has grown over time, leading to longer heritage citations, which practitioners have identified has increased time and costs for local government. Importantly, these longer citations have recently been criticised for containing too much historical information. There is a clear need to explore more efficient ways for heritage citations to provide the necessary historical context. Using the Emerald Hill Residential Precinct (HO440) in South Melbourne as a case study, this research seeks to determine whether spatial history is one such way. It does so by undertaking a spatial historical analysis of the use and development of property with the HO440 boundaries and then comparing the results with the historical description found in the existing HO440 heritage citation. It finds that while the citation contains much of the same information found in the spatial historical analysis, it is presented in a convoluted way. Rather than replace one with the other, it is recommended that spatial historical analyses be used to complement heritage citations, using the outcomes to spatially communicate historical context and reduce word count. This research has implications for the way in which heritage assessments are conducted moving forward.

Ancient Cities

Chair: Yi Chen

Discourse on the cultural significance and renewal strategies of high-density urban villages under shared faith
A case study of the "Pujing" in Quanzhou Ancient City

Xinjie Shen, Hong Jiang
Southeast University

Abstract

Quanzhou's "Pujing" system, a unique management approach based on shared beliefs among residents, established a traditional community network during the Ming and Qing dynasties. And this traditional community has transformed into a high-density urban village in contemporary times. On one hand, the convergence of Quanzhou ancient city's historical development and its own cultural background generates a multidimensional cultural value. On the other hand, this form of regional community is inevitably influenced by contemporary construction and tends to deteriorate amidst overall urban construction, transforming into a dilapidated urban village. Therefore, in the subsequent construction of Quanzhou ancient city, it is imperative to consider how to effectively execute its construction and transformation while simultaneously preserving its cultural connotation as much as possible. This paper examines the significance of community "Pujing" in both spatial and social dimensions, contending that influenced by shared beliefs, it serves as not only a historical and cultural spatial asset at the urban level but also as a field fostering stable community relations. Furthermore, it advocates for its construction and development through the integration of diverse stakeholders from both top-down and bottom-up approaches. Thus, renewal strategies for high-density urban villages are presented based on this foundation. With the premise of preserving residents' shared faith, this paper intervenes in the renewal and transformation of urban villages from three perspectives: distinctive spatial elements, social structure, and multi-party participation and coordination. This approach aims to enrich the cultural significance of Quanzhou's ancient city while addressing deficiencies in regionalism and distinctiveness during modern urban development.

How to cite

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Planning Historiography in the Neo-Assyrian Empire
A Preliminary Study

Yi Samuel Chen
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Abstract

Planning at varied scales was evidently practised in early Mesopotamian cities according to a variety of sources already from the fourth millennium BC to the second millennium BC. Though textual sources from the Pre-Sargonic period (2700–2350 BC) and the Ur III period (2112–2004 BC) started to detail the process of planning for urban development, clear and elaborate philological and historiographical evidence for planning only seems to emerge in textual sources from the Neo-Assyrian state (911 BC–609 BC) which represents the most ambitious city-building empire during its time. This preliminary study seeks to collate and analyse the evidence from relevant textual sources dealing with a variety of urban development projects during the Neo-Assyrian period. This study aims to shed light on the nature and process of planning in the Neo-Assyrian Empire and the socio-economic and political factors involved.

Urban green space management in ancient Chinese capitals
Case studies of Chang'an, Lin'an and Beijing

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Abstract

Urban green spaces are crucial for the sustainable development of cities, not only in terms of planning and construction, but also in terms of management frameworks. This exists not only in modern cities, but also in ancient cities, especially in ancient Chinese capitals with high density. However, existing research on green spaces in ancient Chinese cities focuses predominantly on their spatial distribution and morphology as results of planning and construction, while neglecting the underlying and ongoing process of management. This research adopts an integrative case study methodology, selecting three representative high- density ancient Chinese capitals: Chang'an in the Tang Dynasty (618-907), Lin'an in the Southern Song Dynasty (1127-1279), and Beijing in the Qing Dynasty (1644-1911). It systematically examines their green space management, including developmental contexts, institutional frameworks, focal objects, leading forces, and management effectiveness. Through comprehensive analysis and comparison, it is revealed that while ancient Chinese capitals consistently prioritised and institutionalised urban green space management, their distinct historical contexts shaped specific focuses within management practices. Moreover, the nature of administrative agencies and the degree of public participation significantly influenced the long-term efficacy of urban green space management.

INTRODUCTION

Over the preceding four decades, China has undergone a high-speed process of urbanisation,[1] generating numerous cities and metropolitan regions with high density.[2] While the agglomeration of population and industries in urban areas has contributing positively to regional economic dynamism, social advancement and culture vitality, it has simultaneously engendered a multitude of environmental concerns, exerting considerable pressure on regional ecological systems.[3] Hence, the significance of environmental sustainability has been emphasised in high-density urban regions. Constituting a crucial facet of urban sustainable development,[4] urban green spaces embody all natural, semi-natural and artificial ecological systems with and around a city capable of providing ecosystem services,[5] which encompass not only the regulating functions of ecosystems such as air purification, climate conditioning, stormwater regulation and biodiversity preservation but also derived human benefits spanning recreation, aesthetics and social interaction.[6]

High-density cities are not an occurrence exclusive to modern society. In ancient China, despite the enduringly limited level of urbanisation, a succession of large-scale and densely populated cities emerged, propelled by the combined forces of politics, military and commerce. A significant proportion of these cities served as imperial capitals, often with the population exceeding one million.[7] Similar to contemporary high-density metropolises, these ancient capitals were confronted with ecological repercussions resulting from intense human activities, compelling them to implement rigorous measures for the preservation and management of urban green spaces. While urban green space management of ancient Chinese capitals has obtained attention in the fields of environmental history[8] and urban history,[9] research in planning history remains predominantly focused on the spatial distribution and morphology of urban green spaces, with a tendency to neglect their underlying and ongoing management. The existing literature presents two primary shortcomings. Firstly, it tends to analyse the morphology and management measures of green spaces in isolation, failing to contextualise these spaces within broader urban frameworks to explore their intricate interdependencies. Secondly, it is inclined to fragmentedly examine green space management within specific cities and periods, overlooking the continuity of urban green management practices across ancient Chinese.

In such a context, this research adopts an integrative case study methodology, selecting three representative examples of high-density ancient Chinese capitals: Chang'an in the Tang Dynasty (618-907), Lin'an in the Southern Song Dynasty (1127-1279), and Beijing in the Qing Dynasty (1644-1911), which stood as the most populous cities during the 7th, 13th, and 18th centuries respectively.[10] With the divergence of historical eras and geographical locations, these cities encountered analogous challenges concerning urban green space preservation and implemented effective management measures. Under this precise, the green space management of each capital is delineated in a systematic manner, spanning their developmental background, institutional frameworks, focal objects, lead forces, and management efficacy. Subsequently, comprehensive evaluation and comparison are conducted to identify systemic parallels and principles. The study reveals that while ancient Chinese capitals demonstrated

a continuous prioritisation and institutional framework for urban green space management, urban spatial-demographic structures formed in divergent historical contexts had led to nuanced focuses in the objects of management. Additionally, the nature of administration and the degree of public participation also had significant impacts on the effectiveness of urban green space management in the long term.

URBAN GREEN SPACE MANAGEMENT IN CHANG'AN

In 618, the Tang Dynasty was founded under the leadership of Li Yuan (Emperor Gaozu of Tang). The former capital of the Sui Dynasty, Daxing, which was constructed at the end of the 5th century, was renamed Chang'an, continuing as the capital. At that time, Chang'an was one of the most expansive cities globally, comprised of the Palace City, the Imperial City, and the Outer City, with an expanse of 84 square kilometres.[11] The population of Chang'an was considerable, earning it the description of "no less than a million" in the poetry and prose of the Tang Dynasty.[12] Contemporary studies assert that the population of Chang'an during the Tang era at least ranged from 500,000 to 600,000, and possibly as high as 1.7 to 1.8 million.[13]

The intensified economic and social activities within Chang'an posed a significant threat to the regional ecosystem, particularly the forest vegetation. Since the construction materials of ancient Chinese buildings were predominantly wood, substantial timber resources were necessitated for the construction of large-scale palaces, governmental edifices, temples, and residential buildings within Chang'an.[14] Moreover, the daily activities of the city's vast population relied heavily on charcoal, which further exacerbated the strain on forest resources. Statistical data indicates that 200-400 square kilometres of forestland could barely satisfy the charcoal requirements of Chang'an for a single year.[15]

In the early stages of ancient Chinese, there had already been a recognition of the ecological functions of trees, as evidenced by ancient classical texts like *Guanzi* and *the Book of Han*. *Guanzi* recorded that "planting thorns, used to solidify the soil; intermingled with cypresses and poplars, used to prevent the collapse of dykes."[16] And in *the Book of Han* it is written that "destroying hundreds of zhang[17] of the land, pinning the essence of the yin-chi[18], the ground would be empty, not capable of containing the gas and forming the clouds. Chopping down trees is not forbidden all year around, and droughts and floods may result from this."[19] These arguments in the Qin and Han dynasties demonstrated an awareness of the importance of forests in soil and water conservation, flood mitigation, and climate regulation. Given the imperative of preserving forest resources, the government of Chang'an in the Tang Dynasty placed a high priority on tree planting and conservation endeavour within the city, and thereby street greening emerged as a pivotal aspect of urban green space management in Chang'an.

In the Tang Dynasty, the administrative structure known as the "Three Departments and Six Ministries" included the Ministry of Gong [the Ministry of Engineering], under which the Ministry of Yu responsible for the management of natural resources. The Ministry of

Yu's remit embodied "to be in charge of the planting of the streets and lanes of the capital city, the mountains and rivers, the grass, trees, charcoal, and the supply for hunts."[20] These responsibilities presented the extensive and meticulous approach to green space management during the Tang Dynasty, spanning a broad spectrum of vegetation and water resources. The prominent placement of urban street planting in Chang'an at the forefront of these duties underscored the critical importance of street greening. In addition to the Ministry of Yu established by the central government, it was the city's chief official, Jinzhao Yin [the Minister of Capital], and his subordinates who were actually engaged in the daily management of street greenery.

The distribution of street greenery in Chang'an was very extensive. Implementing the "li-fang" system, Chang'an had eleven major roads in the north-south direction, and fourteen in the east-west direction, dividing the city into 109 fang [residential neighbourhoods] and two shi [market districts]. There were walls at the boundary of the fang, and the roads outside the fang were adressed "streets", while the roads inside were called "alleys". According to *Tang Hui Yao [Institutional Compilation of Tang]*, "on the 14th day of the first month of the second year of Yongtai (766), Ligan, the Jingzhao Yin, said that all the streets in the capital should be planted." It showed that the twenty-five streets in Chang'an were planted with street trees (Figure 1). There was also a strict requirement for the species of street trees, primarily acacia. In 788, "due to a shortage of official street trees, elm trees were planted as substitutes. Wu Cou, the Jingzhao Yin, insisted that 'elm is not suitable to the official streets', urgently ordered to change with acacia trees."[21]

The management of street greenery in Chang'an was predominately controlled by the city government, who oversaw the planting of street trees as well as allocated the necessary funds. *Tang Hui Yao* recorded that, "in the ninth month of the first year of Guangde (763), it was decreed that neither officials nor citizens were allowed to plant trees on the streets at will."[22] "By the ninth month of the ninth year of Taihe (835), additional trees were planted along the streets. The left and right street officials were appointed to oversee the planting, funded by the Prefecture of Jinzhao."[23] Strict regulations were also enacted to protect the street greenery, prohibiting private felling and punishing even minor damage. *Quan Tang Wen [Complete Prose of Tang]* recounted an incident in which an individual was impeached by the Jinwu [Patrolman of Chang'an] for cutting the galls from a street tree, with the intention of making tribute pillows.[24]

The street greenery management of Chang'an attained positive outcomes, not only fulfilling ecological functions but also cultivating a distinctive urban culture. The extensive planting of acacia trees on both sides of the streets led to "acacia" becoming a prominent image in Tang poetry and the "green acacia street" evolving into the epithet of Chang'an's street. The famous poet Bai Juyi vividly described the urban landscape, writing, "A long way across the green acacia street, eight or nine fangs away between us,"[25] which illustrating the pivotal role of street greenery in the city's cultural identity. Nevertheless, the continuity of street greening management in Chang'an fluctuated over time, as evidenced by repeated governmental directives to plant street trees, which suggested instances of deforestation or neglect.[26]
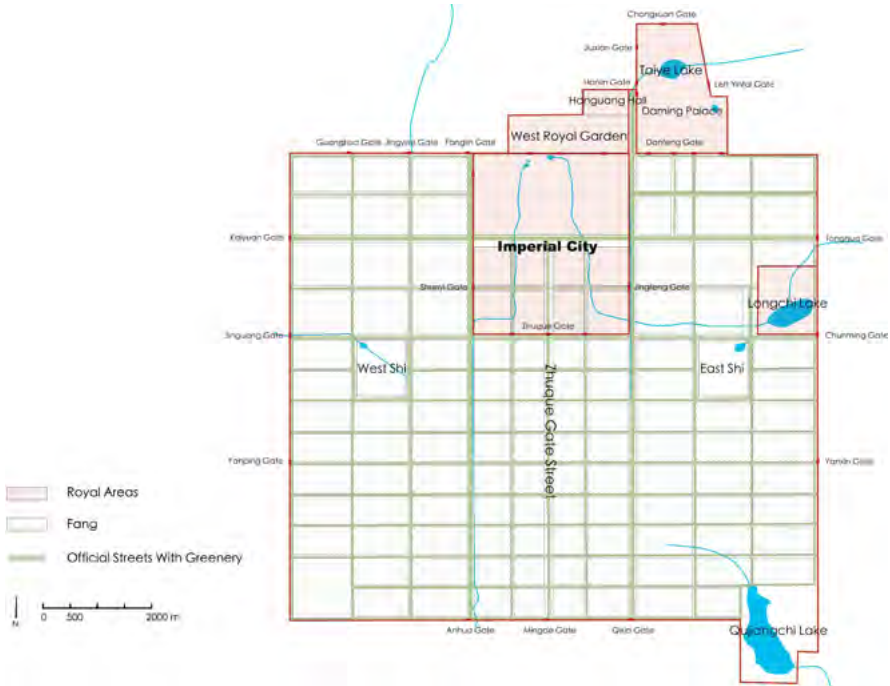
Fig. 1.   Distribution of Street Greenery in Chang'an. All the twenty-five main streets in Chang'an were planted with street trees in the Tang Dynasty

URBAN GREEN SPACE MANAGEMENT IN LIN'AN

In 1127, Dongjing, the capital of the Northern Song Dynasty, was seized by the Jin army, culminating in the capture of Emperor Huizong and Qinzong. Subsequently, Zhao Gou (Emperor Gaozong of the Song Dynasty) ascended the throne in Yingtian, marking the inception of the Southern Song Dynasty. Due to successive military setbacks, the Southern Song Dynasty was compelled to relocate its capital on several occasions during its formative years. It was not until the eighth year of Shaoxing (1138) that Emperor Gaozong formally decreed Lin'an as the capital. Compared to other ancient Chinese capitals, Lin'an in the Southern Song Dynasty was a modestly sized city of about 15 square kilometres, but attributed to the influx of immigrants from the north and the unprecedented rise in the city's political and economic influence, Lin'an's population swelled rapidly, with the urban area overflowing beyond the city walls. It is estimated that the population of Lin'an in the Southern Song Dynasty ranged from 800,000 to 900,000 within the city and over 400,000 outside the walls, indicative of its remarkable population density.[27]

Lin'an in the Southern Song Dynasty basically continued the urban structure of Hangzhou in the Northern Song Dynasty. Prior to its designation as the capital, the city still had a surplus of space. However, during the Southern Song era, the population surge led to a boom in the demand for housing, resulting in an increasingly scarcity of urban land. In order to satisfy the

demand for land, urban residents encroached upon public spaces such as streets, green land, and water areas, which combined with crowded living conditions and the random dumping of household waste posed a pervasive threat of pollution and shrinkage to Lin'an's water bodies. [28] There were initially four rivers and canals in Lin'an: the Maoshan River, the Yanqiao Canal, the Shihe River, and the Qinghu River, and by the end of the Southern Song Dynasty, three of them had silted up resulting from encroachment by residents. [29] Additionally, lakes in the city were also confronted with the occupation by the rich. [30]

During the Song Dynasty, there was a relatively systematic understanding of the ecological and economic functions of urban water bodies such as reservoirs and ponds. The renowned litterateur in the Northern Song, Su Shi, while serving as the governor of Hangzhou, composed the prose *Hangzhou Qi Dudie Kai Xihu Zhuang [Request to Dredge the West Lake in Hangzhou]*. In this work, he identified the five essential functions of the West Lake: providing habitats for fish and birds, supplying urban water, supporting agricultural irrigation, feeding canal systems, and supplying materials for brewing, underscoring the necessity of dredging to prevent the lake from silting up and transforming into land. [31] For Lin'an in the Southern Song Dynasty, the West Lake with "the circumference of 30 *li*" [32] was undoubtedly the most significant urban green space (Figure 2). In the context of the widespread threat to ponds and canals, the protection and management of the West Lake became the paramount concern in the management of Lin'an's urban green spaces.

The Song Dynasty inherited the "Three Departments and Six Ministries" system in the central government, establishing the Ministry of Gong, which included the Ministry of Yu and the Ministry of Water to manage green spaces such as mountains, lakes, gardens, rivers, canals, and ponds. [33] Nevertheless, the management of the West Lake was not directly overseen by the Ministry of Yu and the Ministry of Water. Throughout the 150-year history of the Southern Song Dynasty, there were seven large-scale rehabilitation projects for the West Lake, all presided over by the city's chief official, the Lin'an Zhifu [the governor of the Prefecture of Lin'an], with his subordinate officer, the governor of Qiantang County. A professional organization composed of two hundred soldiers was formed under the command of the governor of Qiantang County. In the eighteenth year of Shaoxing (1148), a military officer was appointed for daily supervision, while the organisation was equipped with boats and buildings for the exclusive use of dredging the West Lake. [34]

Lin'an's management of the West Lake took the prevention of lake siltation and the treatment of water pollution as its main goals, and implemented three measures. Firstly, the dredging of connected water bodies was undertaken. Since the West Lake was linked to the inner city through the six wells excavated during the Tang Dynasty and a series of canals, the rehabilitation endeavours ought to begin with dredging these wells and canals. Secondly, the occupation of the lake for cultivating was prohibited. Residents along the lake had occupied parts of the lake to cultivate aquatic crops such as wild rice, water chestnut, and lotus root, which contributed to the siltation of the lake. Additionally, the use of manure fertilizers for these crops caused severe water pollution. Thirdly, the strict control on sewage discharge was conducted. *Meng Liang Lu [Mengliang Records]* ever recorded that an official "occupied the ponder, building houses and washing dirty horses," resulting in the pollution of the West Lake, and ultimately was "demoted and dismissed", the house was also demolished. [35]

Fig. 2.   Water System in Lin'an Region. The West Lake, connected to the city through rivers and canals, is one of the most important water bodies surrounding Lin'an.

While the management of the West Lake in Lin'an was reliant on the government similarly, authorities increasingly emphasised the mobilisation of the common people given the extensive labour requirement. For example, in the fourth year of the Qiandao (1168), Zhou Cong, the *Lin'an Zhifu*, oversaw the dredging of the canal linked to the West Lake, allocating 300,000 wen[36] of currency and 16,000 hu[37] of rice in order to recruit the "wandering people" to participate in the project.[38] In the process of managing the West Lake, the government and the people realised an active interaction. Those administrators who made contributions to the rehabilitation of the West Lake and served the public interests were often rewarded with accolades and commemorations from the populace. For example, in order to commemorate the achievements of the governor Zhao Yuchou in the management of the West Lake, the people of Lin'an addressed the dyke he built the "Zhao Gong Dyke".[39]

After a successive of rehabilitation projects, the West Lake of Lin'an in the Southern Song Dynasty sustained a favourable ecological environment, evolving into a premier destination for public leisure and recreation, and greatly facilitated the flourishing of the West Lake culture epitomised by the renowned "Ten Scenes of West Lake" (Figure 3). Nevertheless, despite the existence of specialized agencies and official regulations, these institutions and laws were subject to subsequent neglect. The absence of a sustainable long-term mechanism necessitated periodic large-scale interventions every 10-30 years to preserve the lake's ecological functions.[40]
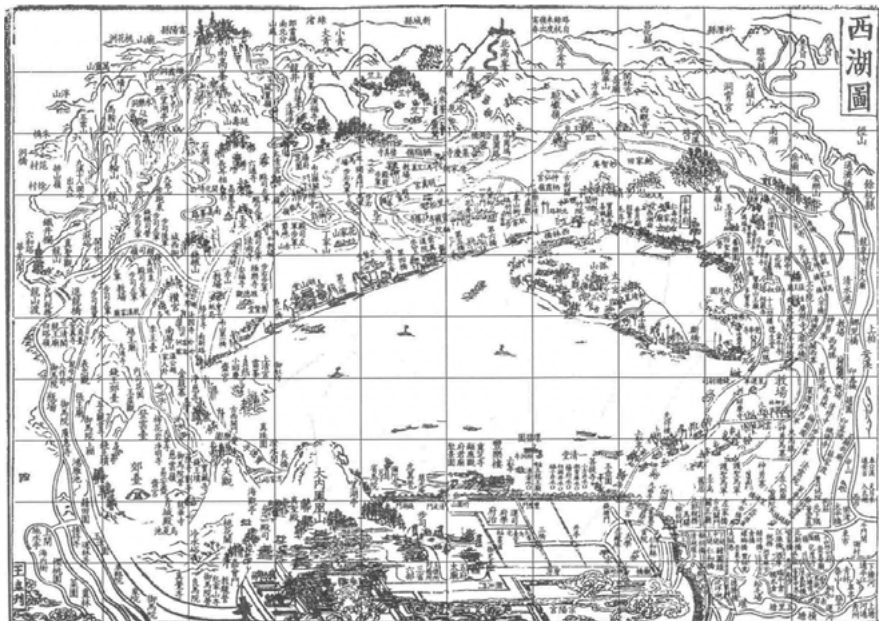
Fig. 3. Xihu Tu [Picture of West Lake] in Xianchun Lin'an Zhi [Lin'an Gazetteer in Xianchun Era]. This picture painted in the Southern Song Dynasty depicts the close spatial and functional relationship between the city of Lin'an and the West Lake, which featured expansive waters and numerous cultural landscapes.

URBAN GREEN SPACE MANAGEMENT IN BEIJING

In 1648, the Qing army captured Beijing, culminating in the establishment of the final dynasty of the Chinese Empire by the Manchus, who inherited Beijing as its capital. The urban configuration of Beijing in the Qing Dynasty entirely followed that of the Ming Dynasty, consisting of two principal sections: the Inner City and the Outer City. The Inner City, situated to the north, encompassed an area of 35.6 square kilometres, whereas the Outer City, located to the south, covered 25.5 square kilometres. Enclosed within the Inner City was the Imperial City, at the heart of which lay the Forbidden City. The tumultuous wars at the end of the Ming Dynasty had resulted in a reduction in Beijing's population. However, with the advent of the Qing Dynasty, the population began to rise steadily. By the forty-sixth year of Qianlong (1781), the population of the Inner City had increased to 541,000, while that of the Outer City had reached 235,000.[41]

While the spatial configuration of Beijing witnessed no significant alteration, the segregation of the Manchus and the Han Chinese was introduced in the Qing Dynasty, denoting that the Manchu officials were confined to the Inner City, while the Han Chinese were compelled to move to the Outer City.[42] Consequently, the Inner City, predominantly occupied by the Manchus, had a limited productive population but a substantial consumer base.[43] The in-

habitants, distinguished by their relatively high social status and cultural literacy, exhibited a pronounced demand for leisure and recreational activities.[44] Urban green spaces are the principal venues for providing the functions of leisure and recreation in the city. In Beijing, especially within the Inner city, although many green spaces existed, the majority were within the restricted precincts of the Imperial City and therefore inaccessible to the general public. The Shichahai Lake, located to the north-west of the imperial city, as the sole extensive water area accessible to the residents of the inner city, naturally evolving into a significant space for leisure and recreation (Figure 4).

During the Qing Dynasty, specialised agencies were established in the central government to manage green spaces, including the Yuheng Qingli Si [the Agency of Natural Resources] and the Dushui Qingli Si [the Agency of Water], both under the Ministry of Gong. The Shichahai Lake, however, designated as a royal garden, was thereby administered by the Fengchen Yuan under the Ministry of Court responsible for the management of the royal gardens and rivers.[45] The Fengchen Yuan appointed two deputy officials to oversee the Shichahai Lake, whose duties included the supervision of the river banks, planting trees, and cultivating lotus flowers.[46]

During the Qing Dynasty, since the Shichahai Lake was regarded as part of the royal garden, it was subject to rigorous oversight by the Fengchen Yuan. Despite the absence of formal ramparts enabling access for the public, individuals were prohibited from utilizing its waters without explicit permission from the emperor.[47] Furthermore, residences adjacent to the Shichahai Lake were forbidden from having front doors facing the lake, restricted to admiring the scenery merely from the rear entrance.[48] The Fengchen Yuan enforced strict regulations, reserving the waters of the Shichahai Lake solely for royal use and leased its shoreline for the cultivation of lotus and rice to acquire revenues.[49] Nevertheless, the Shichahai Lake remained a favoured gathering spot for merchants and literati from the Inner City, particularly in June. When lotus blooms drew crowds of tourists, teahouses and bazaars flourished around the lake, enhancing recreational options. However, the Fengchen Yuan consistently opposed recreational activities at the Shichahai Lake. In 1874, during Emperor Tongzhi's funeral rites, the sale of tea along the lake's shores was prohibited, resulting in a subdued atmosphere (Figure 5). Despite initiatives by officials and citizens in the late Qing Dynasty to transform the lake into a city park, these efforts were thwarted by vehement opposition from the Fengchen Yuan, preventing their realization.[50]

The rigorous management of the Shichahai Lake in Beijing during the Qing Dynasty, while effectively curbing disorderly encroachment by urban residents and preserving the ecological balance, regrettably overlooked the recreational and leisure functions of this urban green space, depriving the populace of economic and social benefits derived from the protection of the lake. Consequently, around the collapse of the Qing Dynasty, the ecological environment of the Shichahai Lake suffered severe degradation due to the sudden relaxation of governmental oversight, partly attributed to the approach to urban green space management.
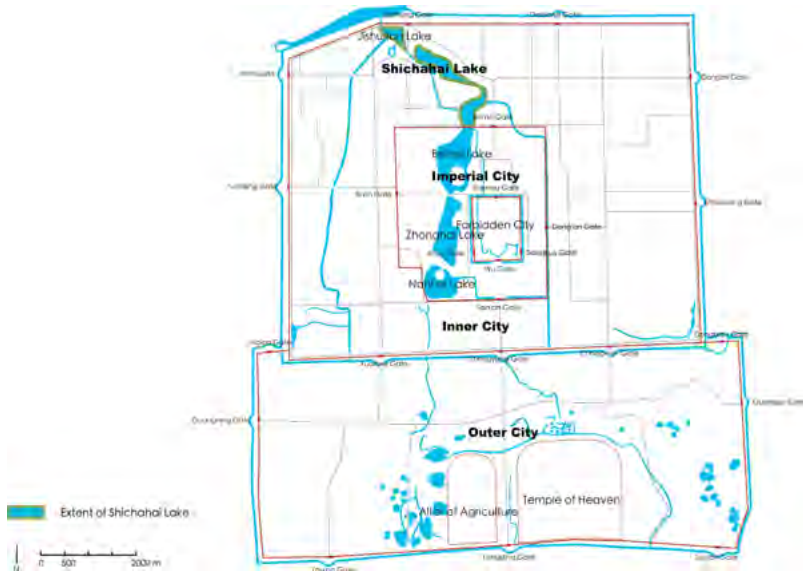
Fig. 4. Location of Shichahai Lake. The Shichahai Lake comprised of three connected parts is situated in the north-west of the Inner City, serving as the widest water area outside the Imperial City.

Fig. 5. Photographs of Shichahai Lake in Late Qing Dynasty. From top to bottom, from left to right, these photos respectively display the lake surface in winter and summer, tea tents on the lakeshore and a well adjacent to the lake

CONCLUSION

Through delineation of three ancient Chinese high-density capitals, Chang'an in the Tang Dynasty, Lin'an in the Southern Song Dynasty and Beijing in the Qing Dynasty, the continuity in the urban green space management of ancient Chinese capital cities is revealed. In terms of the historical contexts, all three cities gathered a large population in a certain period, imposing burdens on the environment and social development, and thereby great importance placed to the management of key urban green spaces. While the Ministry of Yu, operating under the Ministry of Gong, served as a specialised agency for green space management, its limited capacity often necessitated direct oversight by city governors or the royal court. Management practices were characterized by strict regulations, with individual encroachments and polluting behaviours facing severe penalties.

Nevertheless, notable distinctions existed in the management of urban green spaces across the tree cities. Firstly, despite their shared characteristic of high density, the three capitals were featured with divergent demographic- spatial structures, resulting in varied requirements and challenges pertaining to green space management. For instance, in the influence of the disruptive wars, Lin'an's urban planning significantly lagged behind its rapid urban expansion, causing severe urban congestion, and thus the management of green spaces such as lakes and canals, which were susceptible to encroachments by the inhabitants, became a pressing concern. Beijing stood out uniquely due to the segregation of the Manchus and the Han Chinese, which generated a sizable leisure class in the inner city, engendering a heightened demand for recreational amenities provided by urban green spaces. Secondly, the nature of the management agencies and the degree of popular participation affected the effectiveness of management. In Chang'an and Lin'an, the management of urban green space was implemented by the chief governor of the cities, who relatively emphasised the coordination of diverse functions including ecological regulation, political symbolism, and public recreation, providing the populace with more benefits, which facilitated the integration of urban green space management into the urban culture. However, this comprehensive institutional approach often relied on intermittent corrective measures and was susceptible to entering a cycle of "management- neglect-management." On the contrary, urban green space management in Beijing was predominantly conducted by palace institutions, accountable solely to the imperial family, thereby exhibiting an excess of strictness in management but a deficiency in openness. Although green spaces received rigorous preservation under the strong royal authority, the populace derived limited benefits from it, thus failing to cultivate a positive culture of conservation. Once political power weakened, it could lead to extremely adverse consequences.

Contemporary management of urban green spaces can derive insights from the experiences of ancient Chinese capital cities. Primarily, the varied contexts of modern cities pose distinct challenges and requirements for green space management, thus it is imperative for management strategies to holistically consider the demographic-spatial structure of the urban area, in order to cope with diverse ecological threats stemming from human activities and meeting the multifaceted needs of the public. Secondly, urban green space management must em-

brace a more comprehensive and participatory framework, integrating multiple functions and stakeholders to foster public participation and cultivate the urban culture of ecological preservation, which are crucial for facilitating the long- term and sustainable conservation of urban green spaces.

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DISCLOSURE STATEMENT

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NOTES ON CONTRIBUTOR(S)

Haoran Zhang, Master Degree Candidate in Urban and Rural Planning at Tsinghua University, contributed to this paper. His research focuses on the history of urban and regional planning in ancient China.

ENDNOTES

1. Liao, Wu, Wong, and Shen, "Provincial Perspective Analysis," 138964.
2. Ouyang, Tang, Wei, and Li, "Spatial Interaction," 105587.
3. Chen, Wang, and Zeng, "Impact," 106964.
4. Wang, Zhang, Zhang, Song, and Ye, " Spatio-Temporal Trends," 106598.
5. Haaland and van den Bosch, "Challenges," 760-71.
6. Aronson, Evans, Goddard, Lerman, MacIvor, Nilon, and Vargo, "Biodiversity," 189-96.
7. Skinner, *The City in Late Imperial China,* 29-31.
8. Shi, "Han Tang Chang'ancheng," 5-22; and Cui and Zhou, "Tang Chang'an," 166-171.
9. Zhang, *Chengshi Fazhan*; Liang, "Nan Song Chengshi," 254-316; and Lin, and Yin, "Nan Song," 698-704.
10. Zhang, Tang Du, 11 (cited in the foreword); Xu, Nan Song, 26 (cited in the foreword); and Skinner, *The City in Late Imperial China*, 31.
11. Seo, *Chang'an*, 45.
12. According to Han Yu's prose on the *Suspension of the Imperial Examinations this Year* (803), "The population of the capital city is now not less than one million, and the number of those who take part in the Imperial Examinations is but five or seven thousand, which, together with his servants, is not more than one per cent of the total population of the capital city." (Dong, *Quan Tang Wen*, 586-587.)
13. The mainstream view believes that the population of Chang'an in the Tang dynasty was one million, but there are some different views: Xianwen Zheng insists that the population of Chang'an in the Tang dynasty was 500,000-600,000, Gengwang Yan estimates that the population of Chang'an reached 1.7-1.8 million, and Tatsuhiko Seo believes that the population of Chang'an was 700,000 in the first half of the 8th century. For a specific discussion of the population of Chang'an see: Zhang, *Chengshi Fazhan*, 37.
14. Cui and Zhou, "Tang Chang'an," 166-171.
15. Gong, "Tang Chang'ancheng," 137-153.
16. Liu and Jiang, *Guanzi*, 376.
17. "Zhang" is a unit of length in ancient China, and one zhang equals ten-thirds of a metre.
18. "Yin-qi" is a Chinese philosophical concept, represents the nature of the land.
19. Ban and Yan. *Hanshu*, 3074.
20. Liu, *Jiu Tang Shu*, vol. 43, 1841.
21. Wang, *Tang Hui Yao*, 1576.
22. Wang, *Tang Hui Yao*, 1575.
23. Wang, *Tang Hui Yao*, 1575.
24. Dong, *Quan Tang Wen*, vol.984, 101832.

25. Bai and Xie. *Bai Junyi Shiji*, 586.
26. Zhang, *Chengshi Fazhan*, 132.
27. Regarding the population of Lin'an in the Southern Song Dynasty, there have been many different opinions and there is no definite conclusion yet. Wu Songdi's conclusion is adopted here, see: Wu, *Zhongguo Renkou Shi*, 574.
28. Liang, "Nan Song Chengshi," 254-316.
29. Qian, *Xianchun*, vol. 4, 1271.
30. Naide Weng, *Ducheng Jisheng*, 18.
31. Su and Li, *Su Shi Wenji*, vol. 30, 169.
32. Qian, *Xianchun*, vol. 4, 1175.
33. Gong, *Song Shi,* 181-182.
34. Lin, and Yin, "Nan Song," 698-704.
35. Wu, Zimu. *Meng Liang Lu*, 321.
36. "Wen" is a unit of money in ancient China.
37. "Hu" is a unit of volume in ancient China.
38. Zheng, Jin. *Hangzhou*, 76.
39. Zheng, Jin. *Hangzhou*, 80.
40. Zheng, Jin. *Hangzhou*, 83.
41. Han, *Beijing Lishi*, 110.
42. Social Science Federation of Xicheng District, Beijing, *Yuan Ming Qing Ji Minguo*, 115.
43. Wu, *Beijing Chengshi*, 109.
44. Yin, and Wu, *Beijing Chengshi*, 39.
45. Yin and Wei, *Beijing Chengshi*, 303.
46. It is recorded in *Da Qing Hui Dian Shi Li* (vol. 1171).
47. Zhao, *Shichahai*, 16.
48. Zhang, *Beijing Shichahai*, 4.
49. It is recorded in *Da Qing Hui Dian Shi Li* (vol. 1171).
50. Ha, "Guangxu," 56-57.

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Planning and Infrastructure

Chair: Stephen Ramos

From the City to the Shopping Mall and Back Again
Design and Control in the Memphis Mid-America Pedestrian Mall

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Abstract

Victor Gruen viewed the shopping centre as a perfected form of the city, one which brought together commercial, civic, and social activities without the undesirable aspects of the downtown central business district. The privately owned shopping centre offered an alternative to congestion and scarce parking, its highly regulated spaces omitted panhandlers, protestors and unruly youth. In response to the loss of business effected by suburban shopping malls, cities across America transformed their downtowns by installing pedestrian malls that closed streets to vehicular traffic and instead provided landscaping, fountains, and benches to create a more pleasant shopping environment. While the urban designers of pedestrian malls often cite historic European cities as their dominant influence, this paper investigates the extent to which their design and regulation was in fact shaped by the suburban shopping mall itself. Examining the Memphis Mid-America Mall designed by Gassner, Nathan and Browne and constructed in the mid-1970s, I reveal how the city sought to impose the spatial order, aesthetic regulation, and behavioural restrictions first developed in the shopping mall on the urban pedestrian mall in an attempt to curtail the freedoms associated with public space in favour of the restrictions of what legal scholars describe as quasi- or pseudo-public space.

INTRODUCTION

The development of the shopping mall as we know it today began a century ago, with the establishment of branch department stores and shopping centers in areas outlying the city center and its traditional commercial downtown. Lizabeth Cohen has argued that the growing suburbs, with their outsized wealth and purchasing power, spurred the creation of regional shopping malls by the mid-1950s.[1] Suburban shopping malls appealed to newly auto- mobile consumers, with their plentiful parking and easy access from newly constructed freeways. Replacing aging downtown commercial centers, with their lack of parking, chaotic visual field, and perceived lack of safety from vagrants, shopping malls offered a similar density of commercial offerings while eliminating many of the drawbacks of the urban shopping experience. Richard Longstreth defined the regional shopping center in terms of its "acres of space for cars," "inward-looking" pedestrian spatial organization, and its visual and behavioral orderliness.[2] As Cohen explains, "centrally owned and managed" malls "offered an alternative model to the inefficiencies, visual chaos, and provinciality of traditional downtown districts."[3] Mall management ensured a healthy mix and distribution of shops, ensured visual harmony through the regulation and standardization of signage, and maintained public order through rules of conduct enforced by hired security guards.

Although early mall designer Victor Gruen imagined that the suburban shopping mall would serve as a community hub as well as a space of commerce through the inclusion of civic and recreational programs, Cohen points out the malls "aimed to exclude from this public space unwanted urban groups such as vagrants, prostitutes, racial minorities, and poor people."[4] They did so through a number of passive methods of market segmentation. Geographically, developers located malls in the largely white suburbs, and demographically they appealed to the white middle class through their selection of stores, merchandise, and price-point. Finally, access to the suburban shopping mall was difficult for those without automobiles. Bus service, if there was any, tended to serve the nearby suburban housewife rather than the inner-city, low-income consumer. In this way, Cohen argues, the shopping mall styled itself as an "idealized downtown" that retained the pleasurable and convenient aspects of the pedestrian shopping experience while eliminating its nuisances.

Ironically, the very man credited with developing and popularizing the shopping mall, Victor Gruen, was also a leading exponent of the downtown pedestrian mall, described. By Harvey Rubenstein as a "street or plaza in central city business areas oriented toward pedestrians and served by public transit."[5] After creating the suburban alternative that helped accelerate the decline of the downtown commercial zone, Gruen argued that recreating the mall in the city could cure its ills.[6] Kelly Gregg has argued that Gruen and others viewed pedestrianization, plentiful parking, and a pleasant, well-landscaped environment as a formula that ensured commercial success whatever the context.[7] She showed how Gruen translated his design for the Northland Shopping Center in Southfield, MI (1954), a shopping mall that arranged stores around a landscaped exterior courtyard (later enclosed), to his 1959 design of Kalamazoo, MI's pedestrian mall, the first to be built in the United States. The sea of parking surrounding the shopping mall became a proposal to build parking structures and a ring road around down-

town, and Gruen transferred Northland's use of planters, trees and sculptures to the Kalamazoo streetscape, where he installed fountains, benches, and large areas of grass and trees. In both cases, Gruen supplemented the primary retail function with a park-like atmosphere designed to provide a sense of community and leisure.

Extending Gregg's work, in which she demonstrates the circularity of influence between modernist urban design, suburban mall design, and the downtown pedestrian mall, I will show how cities borrowed further from the shopping mall in an effort to entice crowds and their consumer dollars back to downtown. Towards this end, I will show how business groups and downtown authorities attempted to exert some of the same kinds of control exerted by the shopping mall over the pedestrian mall. Through an examination of the Memphis, Tennessee Mid-America Mall in the latter half of the 1970s in the months and years after it opened, I will show how the mall-ification of downtown didn't end with the construction of the pedestrian mall, but continued through various ordinances regulating the behavior of both merchants and visitors, increased policing, and even the selection of tenants where the city had such discretion.

THE MEMPHIS MID-AMERICA MALL DESIGN & DEVELOPMENT

The Mid-America Mall was a 10-block-long pedestrian mall built on the north-sound Main Street of Memphis in the mid-1970s and designed by local modernist architects Gassner, Nathan and Browne. The city commissioned the project in 1973, and it was constructed between 1974 and 1979. The Mall was part of a suite of efforts aimed at downtown Memphis in the early 1970s, which included the development a bicentennial park on Mud Island and the construction of the Cook Convention Center.[8] Extending from the Beale Street blues district at the southern end of the mall to the Memphis Civic Center Plaza at the northern end, the Mid-America Mall was intended to connect the city's new Convention Center and government center with its most important entertainment district with a pedestrian-only space traversing the heart of its historic retail center, sitting just two blocks east of the bluffs overlooking the Mississippi River in the westernmost part of the city. The Mid-America Mall was a relatively late entry in the twentieth century period of pedestrian mall-building in North America. The typology proved popular with city governments, particularly as many of them were underwritten by federal urban renewal funding. During the years between 1959 and 1985, approximately 140 pedestrian malls were built throughout the United States, and today only about a third of them remain in existence.[9]
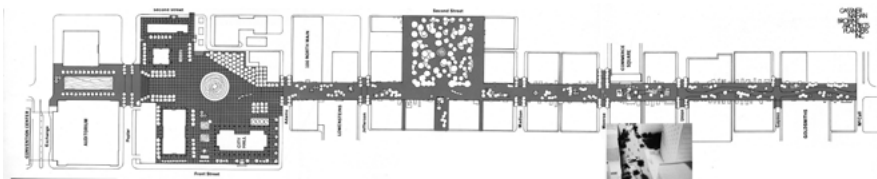
Fig. 1.   Mid-America Mall plan, Gassner, Nathan and Browne, untitled brochure (1974).

The factors that motivated Memphis to construct the Mid-America Mall are essentially the same factors that underwrote the late-twentieth century fascination with mall-building as a whole. After World War II, the creation of freeway systems allowed automobile-owning workers to live farther and farther outside of the city, driving the creation of new suburbs and suburban shopping centers, thus draining the central business district of its traditional consumer base. Suburban sprawl was also driven by racial conflict in many American cities, with whites fleeing the city first as Black populations swelled with newcomers arriving as part of the Great Migration,[10] and second in response to Black communities' demands to end to segregation were affirmed by the Supreme Court and gradually enacted in schools, public transit systems, and lunch counters across the nation. Urban renewal projects of the 1950s and 1960s further weakened the urban core, clearing so-called "blight" but without ensuring adequate replacement housing or commercial space. The situation was exacerbated in Memphis and other cities by aggressive annexation policies that incorporated new suburbs into the city, only to decentralize the city's population and assume responsibility for their infrastructural improvements to the detriment of older parts of the city.[11]

The resulting shift in white middle- and upper-class families to the suburban periphery had devastating consequences for urban cores nationwide, and Memphis was no exception. As of the mid-1970s, greater downtown Memphis was described as "an area of crumbling warehouses and industrial districts; a maze of obsolete railyards, large public housing projects, the home of many of the city's black population; and the man-made deserts implicit in fast urban renewal projects."[12] Main Street, Memphis' historic commercial core, suffered from dwindling numbers of shoppers, workers, and visitors. Washington D.C.-based planning consultants Marcou O'Leary, and Associates (MOA) completed a study and plan for downtown Memphis in 1973, and found downtown to be "old, unkept, and generally unattractive," with an "exaggerated and pervasive community image of downtown as crime-ridden and unpleasant."[13] This view of downtown was inflected by the White community's segregationist attitudes and distrust of African- Americans. As Black residents shopped downtown in greater numbers, Whites avoided it in equal measure. The closure of all downtown hotels and the slow corporate exodus to the suburbs led to office and retail closings, all contributing to a feeling of desolation on the once-bustling streets. Shoppers complained about the inconveniences of patronizing downtown merchants, particularly the expense and inconvenience of parking, the dispersal of shops over several blocks, the lack of direct freeway access, and the run-down streetscape, pointing out that nothing was available downtown that couldn't be had more easily and pleasantly in new suburban shopping malls that lined the east-west arterial of Poplar Avenue.

The idea to introduce a pedestrian mall into downtown Memphis originated with the city's Downtown Association and Chamber of Commerce in the late 1960s. The gradual decline of the urban core at mid-century prompted business leaders to intervene in collaboration with the city government to address the main complaints that shoppers leveled at the worsening downtown experience. Moreover, they sought to build on the momentum of the city's own new investment in downtown Memphis: the creation of a new Civic Center built in the mid-1960s. Inspired by Minneapolis' Nicollet Mall and the Fresno Pedestrian Mall, Downtown Association leaders came to believe that a pedestrian mall would draw shoppers back to downtown retail establishments.[14] Using private funds, they hired MOA to study downtown's existing buildings, parking, traffic, and economic outlook, and to develop a plan for a Main Street Mall as well as a framework plan for the larger Downtown area.

Fig. 2.   Scenes from Mid-America Mall, 1976-1982. *Memphis Press-Scimitar* newspaper morgue, Special Collections Department, University of Memphis Libraries.

The city hired Gassner, Nathan and Browne to develop MOA's plan for the Main Street Mall into an implementable design in 1973. Their scheme, developed by architect Louis Pounders, removed vehicular traffic from Main Street, but retained a meandering undelineated pathway by which emergency and delivery vehicles could access the right-of- way. Utilizing an 8"x8" dark grey brick as the predominant material of the ground plane and major forms, GNB transformed the street into an abstracted cubic landscape of fountains and platforms, accented by benches, planters, and kiosks in raw concrete and wood. GNB's design stacked the square brick into cubic platforms that were interspersed with fountains and water jets, and opened up pit-like rectilinear pools sunk into the ground plane. These were interspersed with trees, conventional wood benches, concrete and timber kiosks, and decorative flag poles to lend variety to an otherwise austere streetscape.

DOWNTOWN MEMPHIS AS BLACK SPACE

Not only did the city and the Downtown Association pin its hopes on GNB's design of the mall to reverse the economic fortunes of its historic commercial zone, but they also hoped it could overcome negative White public perceptions of downtown that were uniquely colored by the city's racial animosities and its recent history of civil rights actions centered on Main Street. In the mid-1960s, Memphis was considered to be a city that had largely avoided the violence and upheaval of civil rights protests that occurred in cities across the region, including Birmingham, Little Rock, and Selma. Instead, during this time, Memphis desegregated schools, libraries, and other public spaces gradually and quietly in the hopes of keeping the peace among city residents. Memphis, however, took on greater importance in the late 1960s as the movement transitioned from one focused on overturning de jure segregation (that underwritten by law) to one that targeted de facto segregation and the economic inequality that often underpinned it.[15] Memphis' downtown Main Street became the backdrop for two important civil rights campaigns: the 1968 Sanitation Workers' Strike and the 1969 Black Monday protests, the latter of which fought for Black representation on local school boards.

The Sanitation Workers' Strike mounted frequent, sometimes twice daily, protest marches in downtown Memphis for nearly a month and a half, often originating at the Clayborn Temple

south of Beale street, proceeding up the length of Main Street, and concluding at the Civic Center Plaza where Alfred Aydelott's Brutalist design for the Memphis City Hall made for an imposing and symbolic backdrop for their demonstrations. When the city refused to bargain with the sanitation workers' union, the NAACP organized a boycott of downtown businesses. The organizers believed that business owners were well positioned to influence the mayor and city council, and they recognized that many government officials also had ownership stakes in downtown businesses or buildings. The Strike gained national attention when Dr. Martin Luther King, Jr. joined the cause. Protestors numbers swelled as they carried the famous "I am a Man" signs, in response to which Memphis Mayor Loeb declared martial law and called in 4,000 National Guard troops. Tragically, Dr. King was assassinated on April 4, 1968, the day after he delivered his "I've been to the Mountaintop" speech in support of strikers. Protests and violence erupted in cities around the country. In Memphis, a massive demonstration of more than 20,000 people took place on April 8, during which marchers followed the well-trodden path to the Civic Center surrounded by National Guard troops and tanks. The Black Monday protests, in the fall of 1969, similarly mobilized mass protests downtown, boycotts, and vandalism in support of equitable school desegregation and power-sharing of school leadership positions.

Historian Beverly Greene Bond has shown that at mid-century, Black and White Memphians might interact in public spaces but lived essentially segregated lives: "They lived in separate neighborhoods, attended separate schools and churches, created and supported separate businesses and professionals, and were buried in separate cemeteries."[16] With the development of the new suburbs and shopping centers of East Memphis, White Memphians essentially ceded the historic downtown commercial core to Black communities that remained—something accelerated by the two major protests downtown. In the vacuum created by white flight, the city's Black population came to constitute the majority of shoppers still patronizing downtown establishments. In newspaper accounts, White residents explicitly cited the Black presence there as the reason for their hesitance to visit:

"The niggers have just took [sic] over. I don't have a thing against them. I am not trying to down them...If they could move the colored people out somewhere else, then maybe we would [go] down if we could be safe down there,' one man said. [...] 'You can see colored girls standing on the streets asking for anything. There's just too much junk,' a woman said."[17]

An editorial published in 1969 during the Black Monday protests explicitly described them as a form of harm done to downtown:

"What Negro protesters and streetmarchers do in the way of damage to the heart of Memphis, they do automatically to all of us – and that includes most prominently the very people doing the protesting. The heart of Memphis is downtown Memphis, and it is being damaged. Do Memphis Negroes want downtown Memphis to be a Negro ghetto? Demonstrations, within constitutional limits, are proper when they seek to express a point of view. When they seek to FORCE a point of view by intimidation and boycotts, demonstrations become anarchy."[18]

By the early 1970s, downtown was economically depressed, with a consumer base largely made up of lower-income African Americans, as Whites felt the twin pull of the suburbs and push of the protests causing their perception of downtown as unsafe and undesirable.
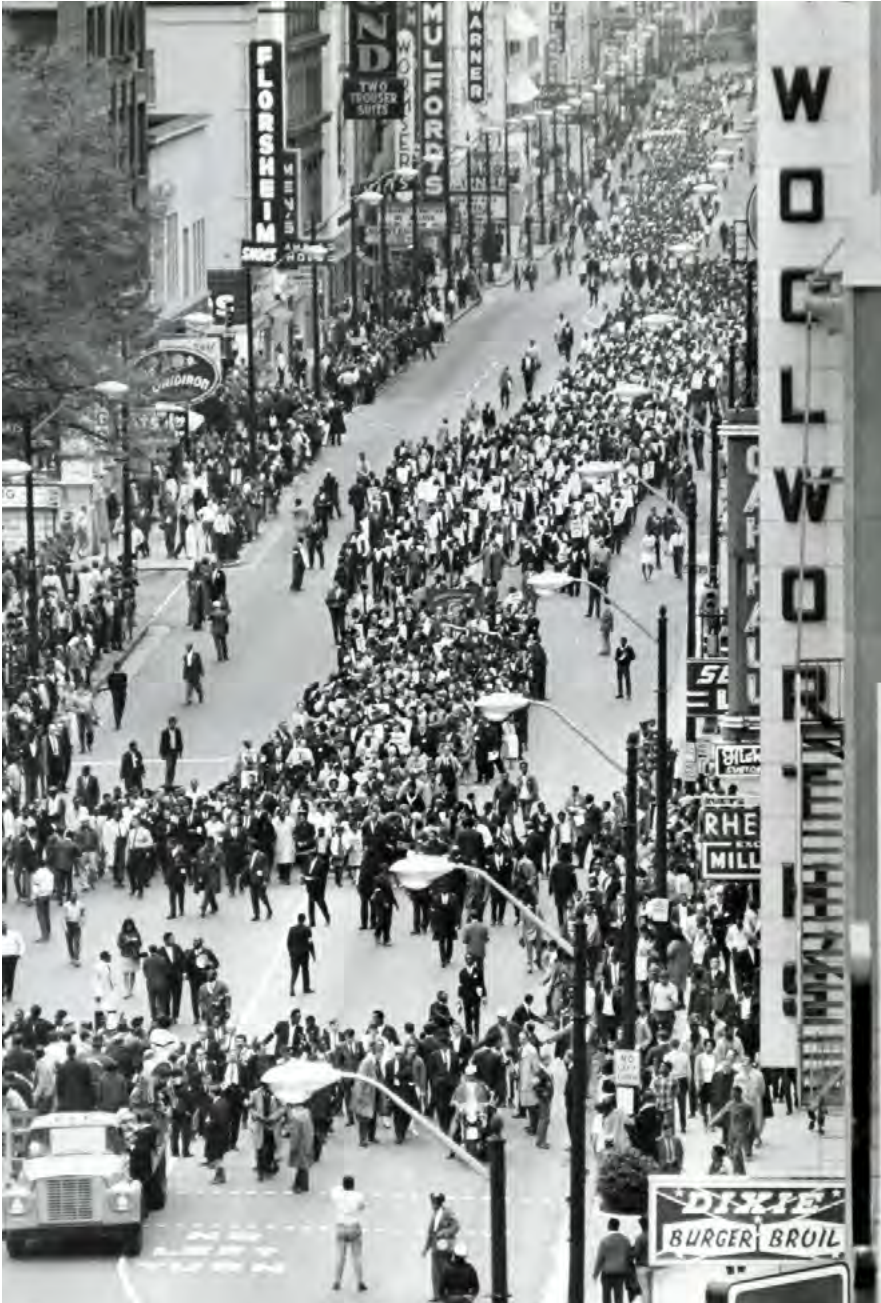
Fig. 3. Mid-America Mall plan, Gassner, Nathan and Browne, untitled brochure (1974). Dr. Martin Luther King, Jr. Memorial March, North Main Street, Memphis, April 8, 1968. Photograph by Barney Sellers. *Commercial Appeal* newspaper morgue, Special Collections Department, University of Memphis Libraries

BEYOND DESIGN: REGULATORY STRUCTURES AFTER CONSTRUCTION

In the wake of late 1960s protests, downtown authorities undoubtedly desired to avoid any replay of mass marches that they viewed as damaging the reputation of downtown Memphis and harmed businesses located there. In response, GNB's mall design filled up the street with benches, trees, poles and columns. It dissolved parts of the street with fountains that were little more than unprotected rectangular holes in the ground. As GNB designer Louis Pounders admitted, the Mall did not facilitate the assembly of large crowds, because there was "too much in the way" for large processions.[19] Moreover, the design proposed large areas of the mall to be filled with massive "fortress"-like aggregations of blocky forms of varying heights that were difficult to climb, particularly by a crowd moving en masse.[20] By occupying the street with objects easily negotiated by individuals or small groups, but that were significant barriers to large groups, city officials and designers effectively eliminated the possibility for it to be used as a place of protest.

Kelly Gregg has pointed out the error in planners' assumptions that the pedestrian mall would pull traffic back to downtown commercial centers simply by virtue of their physical improvements, noting that the centralized ownership and management of the shopping center meant a single entity maintaining its facilities, establishing consistent hours for all retail tenants, managing the mix of purveyors, and controlling the visual aesthetics of the storefront.[21] During the construction and early years of Mid-America Mall, the city government and the merchants associations realized that additional regulation and supports would be required to create the shopping atmosphere they sought than simply its physical design.

First, even before Mall construction was completed, the city began to consider passing an ordinance to regulate signage on the buildings fronting the Mall. Citing the need for a more attractive, cohesive presentation of the mall to the public, the city sought retailer support for an ordinance that would limit the "size, number, shape and type of signs" as well as their projection, and would curtail the use of flashing lights and open flames.[22] Moreover, the ordinance created a Business District Design Review Board that would identify non-compliant signage and review proposed replacements. The goal, according to the city's chief administrative officer, was to "make the street more attractive by making signs brief and precise. (...) The signs should be compatible, blend and be in harmony with the surroundings."[23] In other words, the city sought to reduce the visual chaos of the downtown streetscape (the "anarchy of advertisement") and replace it with much less signage that was also more homogenous—thereby effecting a degree of visual control found typically at the shopping mall.[24] By October 1975, the ordinance had been passed into law. Beyond the retail signage, the mall also featured large flags held aloft by substantial masts placed in the middle of the pedestrian space. These colorful, abstract flags served to provide a visual coherence and a sense of branding to the mall without explicitly advertising it as such.

Second, drawing upon the centralized management concept of the shopping mall, the Business District Advisory Board instituted regulations for the use of seven kiosks built as part of the mall design. The kiosks were small modernist structures placed within the pedestrian

mall. Composed of concrete columns, wood beams supporting flat roofs, and floor-to-ceiling glazing systems, the kiosks provided smaller businesses access to the coming crowds of shoppers. In order to reduce competition with existing businesses, the board decided to limit the types of operations to newsstands, food vendors, and florists.[25] The regulation also prohibited businesses from operating outside of the kiosks, in an effort to prevent the consequences of an earlier decision to allow hot dog purveyor "Ollie's Trolley" to set up shop in a brightly painted model trolley on the Civic Center Mall, just to the north and continuous with Mid- America Mall—something Mall architect Francis Gassner criticized, likening it to "placing a jukebox on stage with a symphony orchestra."[26] In this way, the city attempted to control the mix of businesses found on the mall, to the extent that they were able to do so.

Finally, a year after the Mid-America mall opened, the city sought to impose greater control over the behavior of its visitors, particularly the activities of panhandlers, vagrants, street preachers, and street harassers, as well as young bicyclists riding recklessly through the mall. Unlike the shopping mall, which feels like a public space but is in fact privately owned and policed, the police maintaining order on the mall were stymied by the liberties guaranteed by law in public space. Indeed, the city's loitering law had been struck down as unconstitutional in 1971 because it made "an individual's presence on a public street conditioned upon the permission of a policeman."[27] A police legal advisor explained that "Being ill-clothed, ill-shaven or having an ill odor does not constitute a violation of the law. [...] A person can say whatever he wants to unless he accompanies it with threats or tries to incite a riot."[28] Despite these limitations, street harassment grew serious enough that the city's Police Director ordered a four-day undercover operation in which female officers in plainclothes waited for men to approach them, then arrested those that touched or propositioned them. By the end of operation, police had arrested over seventy men on charges of disorderly conduct, public drunkenness, and assault and battery. The men were largely between the ages of 18-25, and the papers accused them of purposefully roaming the mall during lunch time when the mall was crowded with workers.

Although the papers assiduously avoided mentioning the race of the men arrested, a photograph published in one story showed four Black men who had been arrested in the sweep. The City Court chief public defender protested the low bar for arrest, reporting that some men had been detained after simply speaking to a plainclothes officer without any physical contact or profanity. Believing that the arrests were racially motivated, the defender asked rhetorically, "Is it a crime for a black man to speak to a white woman?"[29] Despite the fact that judges dismissed many of these arrests and let many others off with a moderate fine, the undercover police operation and the fruitless search for laws that might constitutionally bar "undesirables" from the mall can be understood as attempts to impose the behavioral constraints easily enacted in the privately owned space of the shopping mall.

CONCLUSION

Historian Kenneth T. Jackson has outlined the essential differences between the center city business district and the suburban shopping mall, pointing out that "the former is by defini-

tion open to all people at all hours. The latter is private property, owned and operated by a single corporation, and thus subject to coercive, centralized authority. The theme of their design is enclosure, protection, and control. Litter, panhandlers, vagrants, suspicious characters, protestors, and even cold winds are not tolerated."[30] David Smiley went further, suggesting that the aesthetic and spatial ordering of the consumer experience in the shopping mall was a central vehicle of the dissemination of American architectural modernism, both aesthetically and ideologically.[31] In this way, we can understand the urban design of the pedestrian mall as an attempt to modernize the American downtown, scraping its streets of honking noisy cars, and its buildings of their visually chaotic sign-scape. Extending Kelly Gregg's argument that the development of shopping mall and pedestrian mall *design* was reciprocally influentially on one another, I argue here that the *management techniques* of the shopping mall, particularly its aesthetic regulations, policing, and tenant selection, were also adopted by cities for their pedestrian malls to reinforce and perhaps even complete the modernization project. In so doing, creating a quasi-privatized space out of a traditionally public one.

Anthony Maniscalco, in his study of the applicability of First Amendment protections to the context of the privately owned shopping mall, argues that public space in America is defined by "openness and accessibility to users; support for community practice; visibility and revelation; diversity tolerance, and accommodation; and authenticity and unexpectedness."[32] The imposition of sign ordinances, loitering ordinances and other forms of policing, and the state selection of businesses for the mall negated several of these characteristics. It reduced the openness and accessibility of the mall to exclude the poor and marginalized, it foreclosed upon the possibility of the established community practice of protest, it reduced the ability of merchants to advertise in traditional ways and express an established commercial culture, and it certainly reduced the diversity of users and their activities to those deemed palatable to merchants and consumers, for example by excising bicycling from the mall. What was retained and even heightened by the mall was unexpectedness of a sort. While Maniscalco understands "authenticity and unexpectedness" to mean unanticipated communal activities, the complexity of GNB's design provided opportunities for individuals and small groups to experience public space in a new way, inviting visitors to participate in public space differently by presenting the opportunity to negotiate unfamiliar forms and risky physical conditions. The design of the mall certainly presented an aesthetically and spatially unexpected landscape to visitors, but in seeking to the deny the possibility of larger political aggregations, it utilized the veneer of spectacularity to cover over its imposition of order.

DISCLOSURE STATEMENT

NOTES ON CONTRIBUTOR(S)

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ENDNOTES

1. Cohen, "From Town Center to Shopping Center," 1052.
2. Longstreth, *City Center to Regional Mall,* xiv.
3. Cohen, "From Town Center to Shopping Center." 1056.
4. Ibid. 1059.
5. Rubenstein, *Pedestrian Malls, Streetscapes, and Urban Spaces*, 21.
6. Gruen argued that pedestrianization alone was not enough, but rather cities had to invest in improved vehicular circulation and parking capacity. Gruen, *The Heart of Our Cities,* 222-223. Cited in Gregg, "Conceptualizing the Pedestrian Mall," 560.
7. "Conceptualizing the Pedestrian Mall."
8. "Progress Downtown," 4-5.
9. Amos, "Understanding the Legacy of Pedestrian Malls."
10. While the New Great Migration is best known for large shifts in Black populations from the rural south to cities in the industrial northern United States, some southern cities like Memphis also received significant Black in-migration. Bond, "Taylor-Made: Envisioning Black Memphis at Midcentury," 111.
11. Biles, "Epitaph for Downtown," 279.
12. Weiler and Riker, "Are Memphis Blues Fatal?"
13. Marcou, O'Leary and Associates, *Where Do We Go from Here*, 44.
14. In the late 1960s, the Downtown Association brought in speakers, such as Canadian planner Vincent Ponte, and organized trips to cities like St. Louis, Atlanta, and Minneapolis to generate ideas for the revitalization of downtown Memphis. These activities were widely covered in the *Memphis Press-Scimitar* and *The Commercial Appeal,* and collected in the University of Memphis Special Collections, Memphis Press-Scimitar morgue file 1081.
15. For the distinction between de facto and de jure segregation, see Rothstein, *The Color of Law,* vii-xv.
16. Beverly Greene Bond, "Envisioning Black Memphis at Midcentury"
17. Joseph Weiler and Jefferson Riker, "Are Memphis Blues Fatal?"
18. "What's happening in Memphis?"
19. Louis Pounders (architect, ANF Architects, and project designer of the Mid-America Mall with Gassner Nathan and Browne), interview with the author, October 7, 2021.
20. Carol Coletta (President and CEO, Memphis River Parks Partnership, formerly community relations manager, Center City Commission, Mem-phis), interview with the author, October 19, 2021.
21. Gregg, "Conceptualizing the Pedestrian Mall." 568.
22. "Ordinance would regulate signs at mall"
23. "Proposed city ordinance would regulate signs at mall"
24. "New view for the mall"
25. "Kiosk policy adopted for mall"
26. "Architect attacks placement of fast food outlet on mall"
27. "Caution is urged on loitering law"
28. "Police still seeking laws controlling activities on mall"
29. "Constitutionality question on some of arrests on mall"
30. Jackson, "All the World's a Mall," 1118.
31. Smiley, David J., *Pedestrian Modern*
32. Maniscalco, *Public spaces, marketplaces, and the constitution*, 6

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Promoting Cycle-friendly Transit-Oriented Development in the Netherlands through Urban Design

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Abstract

The Netherlands is no exception to the current pressures of unsustainable urban development: megastores, office parks, and urban sprawl. Strong global evidence shows that car ownership is highly correlated with urban sprawl, and if not considered from the onset, market-driven housing development projects run the risk of privileging car ownership over non-motorized transport. It is important to take stock of the urban factors that promote walking and cycling, and more specifically, how to maintain bicycle-oriented friendliness of newly developed areas around public transport nodes such as train stations. This research builds on a long tradition of planning transit-oriented development in the Netherlands, of which cycling forms a major part of people's daily commute. The global literature in planning and design is rather consistent: density, land use mix, and street connectivity encourage walking and cycling. However, the extent to which urban design indicators (UDI), such as building depth, street interface, bicycle infrastructure, urban green, and other qualitative indicators, relate to cycling behaviour for commuting is less clear. The research aims to understand the planning of new developments and their connections to transit nodes and strategies that promote cycling along these connections. We compare and evaluate a selection of developed areas from different planning regimes around existing train stations across the province of Noord Brabant. The article also explores possible spatial strategies to promote cycling, assessing their relevance with the UDI's found in the different environments. In summary, our contribution provides a retrospective view of the planning of new developments, a method to connect those environments with UDIs, and a first step towards a set of patterns that promote cycling under site-specific conditions. We discuss the benefits and challenges of using UDI's in planning practice and provide recommendations for future research and policy.

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Urban Expressways
Analysing the Legacy
of the Hershey Conference

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Abstract

In June 1962, Hershey, Pennsylvania, hosted the conference 'Freeways in the Urban Setting.' This gathering took place six years after the enactment of the 1956 Federal-Aid Highway Act, which provided the financial foundation for the Interstate Highway System in the USA. Amidst growing public discontent and a series of contentious debates, the conference convened with a singular aim: to address the challenges posed by urban expressways, considered in isolation from the broader highway network. The conference's discussions focused on two main objectives: the strategic design and placement of urban expressways. This paper aims to delve into the Hershey Conference within the broader context of urban planning history. Specifically, it will analyze the conference proceedings against the backdrop of two pivotal events, the 1959 45-49 Resolution in San Francisco and the implementation of the 3C Planning Process, an executive procedure stemming from the 1962 legislation signed by President Kennedy. By contextualizing the Hershey Conference within the larger narrative of urban planning evolution in American cities, this study seeks to shed light on its legacy and contribute to the broader discourse on urban development strategies.

INTRODUCTION

In June 1962, Hershey, Pennsylvania hosted the conference "Freeways in the Urban Setting." The gathering occurred only six years after the enactment of the 1956 Federal-Aid Highway Act, which laid the financial groundwork for the Interstate Highway System in the USA. Amidst mounting public discontent and a series of contentious debates around the construction of the System, the conference convened to deliberate on '(t)he location and design of urban freeway projects (as distinct from rural freeways in the open country) in such manner as best to serve present and future planned land use, aesthetic values, and traffic demands…'[1]

The Hershey conference marked a third chapter in a series of gatherings focused on the challenges posed by the Interstate Highway System, particularly in its critical intersections with urban areas. Preceded by the conferences in Hartford in 1957 and Sagamore in 1958[2], the new gathering focused on exploring direct courses of action and the fundamental aspects of implementing the System within urban contexts, which accounted for 45% of the overall cost[3] of the biggest public work project in American history. While the findings of the Hershey conference were not completely new, highlighting the systemic disregard of the Interstate Highway System for the urban environments and its misalignment with other federal, state, or local initiatives, the proceedings still serve as a testament to two fundamental realities. First, they reveal the impact of a specific institutional framework rooted in democratic principles, grappling with the challenges posed by rapidly evolving physical and social urban landscapes. Second, they note the state of both planning as a discipline and as an institutional apparatus, underscoring the need for concerted efforts to strengthen both aspects amidst the evolving urban milieu. This paper argues that the Hershey conference and its concise yet highly strategic proceedings deserve further consideration as representative of a turning point in the history of urban highways. It serves as a precise lens through which to understand the evolution of American cityscapes permeated by disciplinary, institutional, and political discussions and it clearly marks the beginning of a second phase in the history of urban highways one in which the established conjunctures operating in the city were critically reassessed.

A MUCH-NEEDED REVISION

In the tumultuous backdrop of the 1960s, a period marked by an unparalleled confluence of intellectual and societal upheaval, the events of June 23, 1959, represents a significant turning point in urban history. On this date, Resolution 45-59, enacted by the San Francisco Board of Supervisors,[4] emerged as a pivotal manifestation of the intellectual and popular sentiments within the city. This resolution officially opposed the construction of seven out of ten urban expressways delineated in the San Francisco Master Plan, thereby rejecting a federal allocation of $280 million designated for their development. Beyond its immediate and massive implications for the city of San Francisco, the measure was a tipping point in the implementation of the Interstate System within urban contexts, one that would reverberate across the country as the start of a new era. The historical significance of this event transcends mere opposition to

a particular piece of infrastructure; it also represents a decisive assertion of local autonomy and a critical examination of certain practices predominantly influenced by federal and state structures.

At its inception in the 1930s and during the initial phases of its implementation, the highway system program was lauded as a symbol of modernity and a beacon of a promising future for an emerging superpower, enjoying substantial public support.[5] However, beginning in the 1950s, concerns regarding its impact on urban areas began to crystallize around two primary issues. Firstly, the public started to critically analyse the highways' promised role in facilitating advancements in urban development, a narrative largely championed by public officials and stakeholders affiliated with the program. Secondly, close attention turned to the program's remarkable financial and institutional autonomy in its execution, especially as it often happened at the expense of other local, state, or federal initiatives impacting the built environment. By 1959, late in his second term as president, Eisenhower ostensibly alarmed by the growing opposition to the urban ramifications of the Interstate Highway Program[6] and the evolving financial landscape that posed a potential threat to the program's continuity, convened a committee tasked with scrutinizing the system's shortcomings. Directed by the retired Major General and Special Assistant for Public Works Planning John S. Bragdon, the final report prepared by the committee made strong recommendations in relation to the financial situation of the program,[7] and emphasized the need to create an agency to coordinate interjurisdictional affairs linked to the execution of the System. In addition, the document recommended the elimination of 1700 miles (2735 km)[8] of urban highways, and the delay of the program[9] to allow for the development or urban plans in areas affected by expressways within its urban fabric.[10] The final report was submitted in January 1961, a few days prior to the inauguration of the new president, John F. Kennedy.[11] Despite the impracticality of implementing its recommendations at the outset of a new administration, the report served as tangible evidence of a project that required a thorough analysis of its objectives and operational methods as well as an official recognition of its deficiencies. Hershey undertakes the critical points of the current reality to establish the foundations of the gathering: the re-evaluation of the system, the necessity for intergovernmental and interdisciplinary collaboration, and the need to strengthen urban planning concepts.

OPTIMISTIC TIMES

The Hershey conference was convened in a moment of newfound optimism, given the sudden interest in the political arena and the apparent desire of President Kennedy to reform critical points of the 1956 bill and its implementation. On February 28th 1961,[12] in one of his first speeches to Congress,[13] Kennedy expressed the urgent need to modify the law while firmly assuring the strategic importance of continuing the construction of the system. Although a significant part of the speech was centred on a new plan to finance the highway, the fourth section of the text focused on the thorny issue or urban development and the need for coordination with other programs: 'A Federal Highway program of this scope cannot be isolated from other programs for social and civic improvement,

particularly our progress in urban renewal and planning.'[14] However, raising the issue as a national objective was just a well-intentioned jumpstart. The most difficult obstacle would be how to reconcile political leadership, a consolidated and powerful federal-state institutional structure, and professional expertise.

In this emerging landscape, seemingly propitious for cities, the conference acknowledged the conflict arising between the State Highway Departments' previously predominant role in Interstate System planning and development, and the new mandate for cooperation with other agencies and stakeholders. Echoing the environment of professional confrontation surrounding the System construction among engineers, architects, urbanists, and others, the proceedings reflect that 'among these groups were important differences in points of view and approach, and that these differences constitute a handicap to orderly progress in the urban communities' [15] later recommending 'The necessity for compromise among conflicting philosophies and design objectives often must be recognized in urban and freeway design.'[16] If at the time of its definitive inception in 1956 the highway program was seen fundamentally to be circumscribed to the expertise of engineering, by the dawn of the 1960s there was a shift in intention to re-cast the program to address a wider array of issues. The emergence of new urban dynamics had exacerbated social inequalities, spatial disparities, and economic challenges.[17] While not solely attributed to the system, its presence often amplified or exposed these issues, particularly as a consequence to its highly specific objectives in planning and financial status relative to other programs.

In addition to navigating the intricacies inherent in transitioning from a program of specific objectives, such as the Interstate, to the multifaceted nature of the envisioned and more comprehensive project such as the Interstate in the urban setting, there existed another layer of complexity: the institutional framework operating within the principles of federalism. As Eldridge Lovelace[18] expressed in his statement during the conference, '(t)he major difficulty with the freeways is the same as it is with other physical components of the urban area. It is simply that we have too many single-purpose agencies - federal, state, and local - operating in our cities... Each of these single-purpose agencies is charged with blindly and narrowly going down its own path to the achievement of its own limited objectives... We cannot and we are not ever going to bring about desirable urban areas so long as we follow this method of governmental organization.'[19] Federalism, predicated on a tripartite structure comprising the federal, state, and local levels, delineates administrative jurisdiction and resource allocation. Aligned with a specific democratic ethos, this model's challenge lies in its horizontal logic and the autonomy of programs emerging from each of those levels. In addition to disciplinary conflicts, there was a challenge concerning intergovernmental organization. In this context, Hershey 'was arranged to bring together representative leaders of these groups and professions[20] in an effort to work out guidelines for more effective participation by all of them in the design of urban freeways.'[21] In this melting pot of representational diversity and varied disciplinary expertise in conjunction with the particularities of the federal system,[22] it was unclear if it would be possible to establish a transversal mode of operation.

Fig. 1.   Some of the conference attendees: Healy (Executive Director, American Municipalities Association), Appleyard (Department of City and Regional Planning, MIT), Lotzenheiser (Chief, Highway Standards and Design Division, U.S. Bureau or Public Roads), Barton (Barton-Aschman Associates)- P. Johnson (Highway Research Board), Duba (Commissioner, Department of Urban Renewal), Hayes (Assistant Commissioner for Programming Development, Urban Renewal Administration), Holmes (Director of Planning, U.S. Bureau of Public Roads), Mattson (President, Automotive Safety Foundation), Winter, Platt (Planning Research Engineer, Department of Highways and Traffic), Conway (Deputy Administrator, Housing and Home Finance Agency), Ranells (Acting Assistant for Planning and Finance, National Capital Transportation Agency), Wild (Deputy Secretary, Planning and Programming, Pennsylvania Department of Highways), Hoppenfeld (Urban Designer, National Capital Planning Commission), Smith (Satterlee & Smith), Robinson (Traffic Engineering Division, Automotive Safety Foundation), Owens (Urban Highway Engineer, Automotive Safety Foundation), A. E. Johnson (Executive Secretary, American Association of State Highway Officials), Gravelle (President, Institute of Traffic Engineers), Michaels (Research Psychologist, U.S. Bureau of Public Roads), Simonson (Chief of the Roadside Branch, Office of Engineering), Voorhees (Alan M. Voorhees & Associates), Rivard (Highway Planning Engineer), Baxter (Assistant State Highway Engineer, California Division of Highways), Harriss Executive Director, American Society of Landscape Architects), Zantzinger, Stelling (Landscape Architect), Lovelace (Partner, Harland Bartholomew & Associates), Gibbons (Public Relations, Automotive Safety Foundation), Rockwell (Director of Division of Public Services, American Institute of Architects), Scheick (Executive Director, American Institute of Architects), D.S. Johnson (Director of Planning and Design, Connecticut State Highway Department), Swanson (Regional Engineer, U.S. Bureau of Public Roads).

A frequently overlooked facet of the Hershey conference was a change of the language employed within its proceedings. Contrasted with the preceding conferences,[23] tailored and specific to the disciplines engaged in the gatherings, the 1962 assembly adopted a notably pragmatic and quite specific tone, probably in relation to the diversity of its attendees and to counteract the extreme complexity of the issue at hand in addition to make the document one accessible to all audiences.[24] This approach likely reflects an intent to enhance public participation and accessibility to information, which was, by no coincidence, one of the recurrent issues discussed in both, the political stage and society. The document issued is quite succinct but its brevity might have also proved effective. Divided into a 'background' to illustrate the current situation and two main sections—'findings' and 'recommendations'— it presents straightforward considerations that faithfully summarize the prevailing and optimistic environment.

THE SLIPPERY ISSUE OF PLANNING

The first recommendation of the conference touches upon a critical issue, the notion of planning, asserting that 'urban highways cannot be intelligently developed for the unplanned or the inadequately planned cities. The cities and their planning agencies must accept a

positive responsibility to accelerate basic city planning as a prerequisite to the development of a sound freeway system.'[25] The concept of positive responsibility arises from the prevalent characterisation of designers and planners as lacking tools and a proactive engagement. During those years, engineers and public officials frequently noted the lack of concrete proposals from the fields of planning and urban design in response to the System's detractors.[26] Even prior to the 1960s, Robert Moses was vocal about the apparent deficiencies among planning professionals. This sentiment was highlighted in an article titled "Mr. Moses Dissects the 'Long Haired Planners'".[27] The article embodies a stance that prioritizes pragmatism over theory, favours executive capacity over individual criticism, and emphasizes an institutional framework for achieving results — values that Moses deemed essential for navigating the complexities of urban development, which, according to him, planners lacked. Despite attempts to ignore or deny these accusations, an undeniable truth remained. Planning, both as a discipline and as a practice capable of functioning within the complex environment of the 1960s, was grappling with two primary issues: institutional professional legitimacy and a shortage of trained professionals.

Since the 1940s, planning had been in a process of dramatic transformation. Disciplinary fragmentation emerged from urban renewal policies, a variety of federal and state programs, racial and social tensions, an increasingly unequal society, and the advent of private investments and their own processes. The emergence of social planning, policy planning, financial planning and others shifted the profession's original, and main focus, of comprehensive land use study[28] to a variety of outlets and objectives. Short-term needs arising from the complexity of actors and events involved in city-making and the diversity of expertise often overrode the possibility of developing long- term comprehensive plans.[29] One of the central assertions of the conference, aligned with the emerging political agenda and social demands of the time, was the necessity for comprehensive planning as a catalyst to integrate the objectives of the Intestate program with those of cities. The background section of the document asserts that 'the concept that urban highway systems should be planned in conjunction with comprehensive community planning is now generally and widely accepted.'[30] Adding later in the recommendations that '(t)he democratic city need not be a formless one,'[31] reflecting on the need to integrate the diverse range of approaches operating at the time. The conference advocated for the activation of the planning profession while also calling attention to the city's form, at a time when decisions were primarily driven by the indisputable legitimacy of numbers, statistics, and financial projections.

While the solution to the problems posed by the highway system may seem clear on paper, what was less evident was how planners would navigate and, ideally, collaborate with the existing or proposed highway systems, whether urban or otherwise. The Interstate had behind a relatively simple albeit extremely efficient institutional structure established on various tiers. In general terms, the American Association of State Highway Officials (AASHO) constituted the professional body delineating the physical embodiment of highways and their intended performance through highly specific disciplinary knowledge, developed by working on highways since 1916.[32] At the state level, the highway departments delineated the routes and managed the financial and operative aspects of their implementation. At the federal level, the Bureau of Public Roads (BPR) established policies and oversaw the plans and expenditures

of the funds provided by the central government. In contrast, planners were still struggling to find an institutional organization as sophisticated and efficient as the one previously described. The political fragmentation and functional specialization of metropolitan areas required the creation of planning institutions capable of operating in such bureaucratic and disciplinary complexity.[33] In pursuit of this objective, various efforts were made, including a proposal for the establishment of a State Department of 'Urbiculture' by a California senator,[34] elevating certain existing programs to federal department status,[35] and the repeated proposal by Kennedy for the enactment of a Department of Urban Affairs[36] to name a few. However, none of these initiatives succeeded. Despite the evident need for planning and a specific recommendation by a federal advisory committee in 1961 to create institutions capable of addressing it, the responsibilities for such planning were typically assigned to ad hoc official commissions, councils, non-governmental voluntary associations, and consortia.[37] This resulted in a complex and confusing landscape, putting planning efforts at a clear disadvantage compared to the more streamlined and organized highway institutions.[38]

DISCIPLINARY VALIDITY AND PROFESSIONAL TRAINING

Additional to a certain institutional orphanhood, planners also struggled with the imperative to develop a comprehensive theoretical foundation and subsequent practical methodologies capable of effectively harmonizing the diverse and segmented focus of attention involved in city planning. Among these crucial domains were land use, social sciences, urban design, and landscape architecture, each charged with its own set of objectives and tools.[39] Professionals within these distinct fields typically operated within different institutions and varied in their level of engagement with the situation at hand. For example, land-use specialists, especially since the mid-1950s, often worked for state highway departments with limited capacity to influence projects beyond linking their field with already established traffic models. On the other hand, urban designers frequently undertook specific public or private commissions and conducted research in academic institutions, with the aim of exerting influence and potentially participating in discussions related to highways within urban contexts. Among the diverse range of disciplinary profiles of the conference attendees was Donald Appleyard, who, together with Kevin Lynch and John Myer was developing a methodology at the Massachusetts Institute of Technology (MIT) to relate the motorist's experience with an aesthetic dimension of driving.[40] Rather than rejecting the highway outright, they sought to re- evaluate its inherent conditions of motion, space, and view, imbuing them with a new purpose and thereby initiating an additional urban agenda within the established system. The influence of Appleyard during the conference is visible in the proceedings, which on more than one occasion refers to the "image" of the city and of the underestimated possibilities created by the expressway: 'Visual aspects of freeway location and design should be considered... Pleasing or significant views and panoramas often are possible for user of the freeway; a sequence of views, especially of outstanding landmarks, permits the individual to orient himself in the urban area'[41] Appleyard and his partners aimed to develop a theory and a methodology to introduce fresh perspectives and design methodologies proper of urban design into the traditionally insular realm of engineering. Their efforts were representative of similar initiatives emerging from

academia, private practice, and private institutions,[42] and were symptomatic of an intent to establish disciplinary validity.

The multiplicity of visions emerging from the design field and the segmentation of disciplinary focus and expertise also mirrored a deficiency in professionals distinctly trained in planning accordingly to the professional environment and expertise required at the time. The Hershey conference clearly reflected on this issue stating that '(T)he number of people who have the talent and experience to cope adequately with these problems is limited. Educational and in-service training problems are needed to develop the required personnel. The development of guides on urban planning and design for the various professions, universities, and highway departments in-service programs should be encouraged.'[43] The discourse surrounding the education of planners, including the curriculum content and its differentiation from architecture and engineering, has been a focal point of discussion since the early 1920s[44]. As part of this trend, Harvard University established the first City Planning program in 1928, followed by similar programs at other institutions such as in Cornell in 1935 and in Columbia in 1937. By 1957, a total of twenty-five programs had been established.[45]

However, the multiplication of programs to train planners, made evident the difficulties of such an endeavour due to the still slippery definition and scope of planning. Each school delineated a distinct curriculum; therefore, some schools centred their programs around large-scale planning, others focused on state and federal policies, while some concentrated on housing planning.[46] To make things even more complex, some schools were strongly linked to the school of architecture, while others to the school of engineering, in each case indisputably influencing the structure and perspective of the curriculum. In that context, the most interdisciplinary program was inaugurated in 1947 at the University of Chicago, named "Education and Research in Planning." It featured prominent professors such as Harvey Perloff, a strong advocate for a program independent from architecture schools and an active thinker of planning education.[47] Perloff later published the book *Education for Planning: City, State & Regional*,[48] outlining a multidisciplinary approach as an essential foundation for a comprehensive planning education. The program was cancelled in 1956, precisely coinciding with full funding for the Interstate Highway System and increasing political and public interest in comprehensive planning.

The multifaceted nature of planning, even from its training, contrasted sharply with the highly-specialized training of the engineers overseeing the system, exposing the uneven influence both disciplines had on the most significant transformation in urban history. In the following years, as the demand for planners grew, new university programs for planning education were established across the country. Additionally, private funding became increasingly available to support student scholarships, faculty research, and other academic activities, reflecting the rising importance of planning education. [49] Despite these educational advancements, the proliferation of planning graduates failed to match the swift pace of development and construction associated with the Interstate Highway System. The high demand for trained professionals pushed planning offices to enter the agency of a guild, accepting professionals of varied origins—architects, sociologists, economists, and others—with the hope that they would acquire wisdom through practical lessons. [50] The contrast between the slow growth

in planning professionals and the fast progress of the Interstate construction underscored the need for a more integrated approach as Hershey claimed. The problem at hand was institutional, professional but also political.

THE WORD AND ITS INTERPRETATIONS

On October 23rd, 1962, President Kennedy signed the law 87-866[51], known as the Federal-Aid Highway Act of 1962. The law stipulated that beginning in 1965, no project would be approved if it did not meet certain criteria. A pivotal requirement for securing Federal funding, colloquially termed the '3C Planning Process,' draws its abbreviation from the initials representing fundamental procedural principles. These include continuity, denoting a capacity for ongoing reassessment; cooperation, involving federal, state, and local agencies; and comprehensiveness, indicating the integration of ten quite specific planning elements within the process.[52] The legislation, ratified four months after Hershey, definitively recognized the Highway System as more than just an engineering solution for traffic and mobility. Instead, it acknowledged the project as a multifaceted endeavour, incorporating social, spatial, and economic variables into its objectives. This aim aligns with the findings at Hershey, which emphasized that highways 'will provide unprecedented opportunities to help shape and structure the urban community in a manner which meets the needs of the people whole live, work and travel in these areas.'[53] This coincidence is likely not coincidental, considering that the bill was already in the House by April, and it is feasible that its text and discussions were well known by at least some of the attendees. The conference was aligning its actions with governmental discussions, perhaps proactively considering the possibility of influencing the legislative measures that were expected to be introduced in the future.

The legislation aimed to foster intergovernmental cooperation between previously disconnected state and local agencies by encouraging collaboration across planning realms. Although the law was warmly received as the start of a new era, several issues undermined its original intentions. In response to the law's mandates, there ensued a frenzied pursuit of comprehensive transportation and land use planning. However, these endeavours were frequently overseen by established institutional frameworks, often affiliated with highway departments, rather than the envisioned interdisciplinary and intergovernmental bodies that were still in the process of formation. [54] Furthermore, the legislation neglected to specify its implications for highways approved in 1955. This omission unintentionally safeguarded them as pre-existing commitments, compelling planning agencies to accommodate them while assuming their rationale and location.[55] Moreover, the Act mandated a series of studies for projects proposed in 1965 but did not specify the responsible parties for conducting them. Consequently, many of these studies were carried out by ad hoc planning commissions, often initiated by the departments of highways rather than permanent agencies. These commissions tended to prioritize the departments' interests.[56] Also, although the law required location assistance to displaced families and businesses, as they did not take effect until 1965, many communities were left unprotected from the already established dynamics of the implementation of the System.[57] The law, which was intended to produce a significant

shift in events, was rendered less effective than intended, primarily due to the broad range of interpretations of its objectives[58] and the strong muscle of state highway engineering organizations.[59]

A TOTAL DESIGN QUESTION

In the last item of Hershey's findings, there was a call for a 'total design concept.'[60] Advocating for an integration of all aspects of design of highways[61] emphasized the idea that '(d)esign which is simple and natural'[62] would provide the long-sought solution to the harmonious and mutually beneficial coexistence of the highway and the city. There was, and likely still is, a persistent difficulty in defining design as either a tool capable of simultaneously meeting a wide range of divergent demands or as a measure of disciplinary proficiency and competence. In addition, the notion of "total" challenged the issue of time, and the ability of fixed plans to survive the perpetual transformation of the city. In this context, the notion of a "total design" unveiled itself simultaneously as a problem and as a solution. If the solution was a total design, despite the complexities described above, the problem was how diverse expertise—with a variety of institutional background and decision-making abilities in conjunction with the ever-entangled political and democratic institutions—could agree on what total design truly meant.

While the Hershey conference may be seen as the latest instalment in a series of gatherings, I argue that its true value extends beyond its recommendations. It rather serves as a panoramic lens facilitating the observation and interconnected understanding of the diverse and contingent disciplinary, institutional and political conditions surrounding urban highways and their complex nature. Viewed through this lens and against the backdrop of its time, the concept of total design may not be seen merely as a proposal but rather as a compelling question aimed at ushering in a new era in the relationship between the highway and the city. Hershey's legacy endures.

DISCLOSURE STATEMENT
No potential conflict of interest was reported by the author.

NOTES ON CONTRIBUTOR(S)
Romina Canna holds a Ph.D. in Urbanism from the Polytechnic University of Catalunya (UPC) in Spain. She received the UPC Extraordinary Doctoral Prize for her dissertation "Expressway Ends: Construction and Evolution of Urban Highways in the United States 1900-1967". She holds an Architecture degree from the National University of Rosario in Argentina. Prior to joining IE University, she has taught at the Illinois Institute of Technology in Chicago and at the Universidad Nacional de Rosario. She has also been Guest Professor at the Master in Advanced Architecture, Landscape, Urbanism, and Design in the Polytechnic University of Valencia (UPV) in Spain.

ENDNOTES
1. Automotive Safety Foundation, *Freeways in the Urban Setting: The Hershey Conference*, n.p.
2. Canna, "A Battle in Three Rounds," 369.

3. Automotive Safety Foundation, n.p.

4. The San Francisco Board of Supervisors was created in 1856 and it is the legislative branch of the city and county of San Francisco.

5. Ellis, "Professional Conflict Over Urban Form," 392.

6. It is widely agreed among historians that it is highly unlikely President Eisenhower was unaware of the specific locations of the Interstate Highway System and its extensions into urban areas. In 1955, the Office of the President and Congress received a report titled "General Location of National System of Interstate Highways Including All Additional Routes at Urban Areas," commonly known as the Yellow Book due to the color of its cover. This document was a collection of maps showing each city directly served by the system. Additionally, the Interregional Highway Report, prepared by the Bureau of Public Roads in 1944, also proposed the system's penetration into cities. Both documents were in the president's possession prior to the signing of the Federal-Aid Highway Act of 1956.

7. Mertz, "The Bragdon Committee."

8. DiMento and Ellis, *Changing Lanes*.

9. This suggestion echoes a proposal made by Lewis Mumford during the Hartford Conference in 1957, which advocated delaying the design and construction of the urban section of the system to allow for the development of urban plans for cities.

10. The argument, for a delay in the Interstate program, had already been discussed at the Hartford Conference of 1957, and particularly emphasized by Lewis Mumford in the conference closing remarks.

11. Mertz

12. Kennedy was invested president on January 20th, 1961.

13. Kennedy, "Special Message to the Congress on the Federal Highway Program."

14. Ibid

15. Automotive Safety Foundation, n.p.

16. Ibid

17. Netherton, "Intergovernmental Relations Under The Federal-Aid Highway Program," 29.

18. Eldridge Lovelace attended the conference representing the American Society of Landscape Architects. He was also a partner in Harland Bartholomew and Associates.

19. Lovelace, "Important Factors in the Location, Design and Amenities of Urban Freeways," 79.

20. Among the attendees, there were representatives of private firms such as Rogers, Taliaferro, Kostrisky and Lamb (RTKL), Harland Bartholomew & Associates, Alan M. Voorhees & Associates, Inc. and Satterlee & Smith; others representing professional associations such as the American Institute of Architects (AIA) and the Institute of Traffic Engineers and the American Society of Landscape Architects; the American Association of State Highway Officials (AASHO); academic institutions such as MIT; advocacy groups such as the Automotive Safety Foundation; and a wide range of federal, state and municipal agencies: federal such as Housing and Home Finance Agency (HHFA), the Bureau of Public Roads (BPR); state such as the Pennsylvania Department of Highways, the Connecticut State Highway Department, the California Division of Highways, and municipal such as the Chicago Department of Urban Renewal or the American Municipal Association (AMA) among others.

21. Automotive Safety Foundation, n.p.

22. Netherton, 31.

23. We are referring to the Hartford conference (1957) and the Sagamore conference (1958).

24. Also, to counteract the language used by its predecessors of Hartford and Sagamore, aimed to a more specific audience of experts and professionals.

25. Automotive Safety Foundation, n.p.

26. This was a point raised by Federal Highway Administrator Bertram Tallamy during the Hartford conference in 1957. In his speech, Tallamy called for active participation and the proposal of concrete projects to complement the Interstate initiative. However, Tallamy was not the only one emphasizing this issue; other forums of debate also highlighted the lack of concrete proposals.

27. Moses, "Long Haired Planners."

28. Boyer, *Dreaming the Rational City*, 274-279.

29. Ibid, 280.

30. Automotive Safety Foundation, n.p.

31. Automotive Safety Foundation, n.p.

32. Weingroff, "100th Anniversary - An Evolving Partnership."

33. Scott, *American City Planning Since 1890*, 580-581.

34. Ibid, 549.

35. Ibid, 559.

36. Blessing, "The Architect and the Planner," 87.

37. Scott, 558.

38. In his speech during the conference, Eldridge Lovelace , representing the American Society of Landscape Architects asserted "Until each urban area has a central design agency with authority over the design of all public and all private projects within the urban area, until we have this type of a planning agency, then we will continue to make a hash of our cities. As the school people put the schools where they want, as the highway people go from Point A to Point B in the most direct route, as the private builder pretty much does as he pleases, we will continue to have these difficulties. The original concept of a city plan commission was that such a commission would be such a central design agency." In "Important Factors in the Location, Design and Amenities of Urban Freeways," *Landscape Architecture Quarterly 53*, no. 1 (1962): 79.

39. Ellis

40. At that time, Appleyard, Lynch and Myer were working on the publication of the book The View from the Road, published in 1964.

41. Automotive Safety Foundation, n.p.

42. We could mention the studies developed by Louis Kahn for Philadelphia between 1953 and 1962, or, although much later, the work commissioned by the Ford Foundation to Paul Rudolph for the Lower Manhattan Expressway. Both, although from different times, represent efforts by the disciplines of architecture and urbanism to integrate with the highway project in the city.

43. Automotive Safety Foundation, n.p.

44. Scott, 265-269.

45. Scott 468-469.

46. Scott, 366

47. The planning programs at the University of Michigan and the Massachusetts Institute of Technology operated under their respective Departments of Architecture.

48. Perloff. *Education for Planning: City, State, & Regional*.

49. Scott, 636.

50. Scott, 542

51. H.R. 12135. Statute 76. Public Law 87-866, 2nd Session, 1962, https://www.govinfo.gov/app/details/STATUTE-76/STATUTE-76- Pg1145/summary

52. The elements were: Economic factors affecting development; population; land use, transport systems; including mass transit; movement patterns; terminals and transfer services; traffic control; zoning ordinances. regulations for the subdivision of land, and building codes; financial resources; and factors related to social and community values, such as the preservation of open spaces, parks and recreation areas, the preservation of sites and buildings of historical value; environmental factors; and aesthetic values.

53. Automotive Safety Foundation, n.p.

54. Scott, 585.

55. Schwartz, "Urban Freeways and the Interstate System," 217.

56. Morehouse, "The 1962 Highway Act: A Study in Artful Interpretation," 163.

57. Mohl, "The Interstates and the Cities: Highways, Housing, and the Freeway Revolt."

58. Rose, *Interstate. Express Highway Politics 1939-1989*, 96.

59. Kemp, "Aesthetes and Engineers The Occupational Ideology of Highway Design," 797.

60. "Freeways in the Urban Setting."

61. The document list nine items to consider for achieving a total design concept: a) Public transport but also the street as a conduit for vehicular and pedestrian transport, parking lots, and terminals. b) The necessary coordination of the expressway with existing, planned and future land use policies. c) The consideration of the visual aspects of the expressway from the point of view of the driver and the urban-dweller. d) Landscape design of the service spaces as a tool to mitigate sound and environmental pollution. e) The consideration of making design standards more flexible in order to take local conditions into consideration. f) The avoidance of using public spaces for the expressway system. f) The control of land use adjacent to the interchanges, in order to guarantee safety and the possibility of introducing uses and services. g) Automotive Safety Foundation, n.p.

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IMAGE SOURCES

Figure 1 Freeways in the Urban Setting, Conference Proceedings, Transportation Library, Northwestern University.

Romina Canna
Urban Expressways

Planning Ideas & Knowledge Transfer in East-Asia

Chair: Naoto Nakajima

Global planning knowledge transfer
Retrospective evidence from China's oversea planning practice since the 1990s

Kang Cao
Zhejiang University

Abstract

The transnational transfer of planning ideas and experiences has been a research hotspot in recent years, especially since the early 2000s, against the trends of increasing interactions, closer tie between globalization and planning (Afshar and Pezzoli 2001; Parnreiter 2011), and Europeanization (Tölle 2013; Jakola 2016). Scholars with different research interests, such as planning history, transnational planning study, and planning education, have approached this hotspot through diverse perspectives. In terms of the current state of the art of transnational transfer of planning ideas and experiences, we endeavor to study how China has transferred its planning experiences, or what we call practical planning knowledge (PPK) through a retrospective study. China has been exporting its planning ideas and experiences to other countries. Such 'knowledge exporting' has taken on new characteristics since the 1990s. Introducing a perspective of planning knowledge transfer, we investigate the global transfer of China's practical planning knowledge (PPK). Employing semi-structured interviews and data crawling, we deal with the PPK transfer mechanisms, division of knowledge transfer stages and its characteristics, as well as overall trends of knowledge transfer. We argue that although China's PPK's transfer is still in a development stage, it has stepped up its efforts to go abroad, and the effect of PPK's external transfer has been highlighted. We propose transfer mechanisms of PPK with activities of planning making and implementation, and of exchange of learning for core. In addition, the key events and changes of China's Opening-up lead to three distinct stages of China's PPK external transfer from the 1990s. Furthermore, China's oversea PPK transfer has three general trends: multinational participation and multiple types, rich tacit knowledge, and localization of knowledge. We hope to provide a basis for understanding the global transfer of a special practical-oriented knowledge and add new perspectives to the study of innovation and knowledge.

Keywords

How to cite

The Influence of the French "Espace Libre" Concept on Modern Green Space Planning in Japan

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Abstract

In the development process of green space planning in modern Japan, the concept of "espace libre" published in 1903 by Eugène Hénard of France was introduced to Japan in 1921 by Hiroshi Ikeda, who became the first head of the Urban Planning Division of the Ministry of Home Affairs in modern Japan in 1918. At the time, Paris was struggling with a plan to sell the fortresses surrounding the city center, and Eugène Hénard argued for the formation of public spaces of parks and green areas, using the expression "Espace livre" to describe how the site should be used. On the other hand, Hiroshi Ikeda traveled to Europe and the U.S. from 1913 to 1914 to observe the green space policies in Europe at that time. He was responsible for drafting Japan's first city planning law in 1919 and was one of the most important representatives of modern city planning in Japan. In his 1921 book on urban planning, he referred in parallel to the garden city and Espace livre as urban planning tools for dealing with urban overcrowding and expansion. He devoted 40 pages to explaining "espace livre" and was particularly passionate about the development of this new concept. However, after the Great Kanto Earthquake of EspaceHiroshi Ikeda retired from the field of urban planning policy. Later, when Japan's first modern green space plan, the Tokyo Green Space Plan, was formulated in 1939, the term "free space" also disappeared from Japanese urban planning. Despite Hiroshi Ikeda's idea of free open space was converted into the concept of zoning and green belts, which have been inherited by modern Japanese green space planning. This presentation will show how the early modern French concept of "espace livre" has been reflected in modern Japanese green space policy.

Planning Idea Generation and Dissemination Paths Study through Key Figure Tracking
Ningbo of early modern time as the case

Panpan Jin, Naoto Nakajima
the University of Tokyo

Abstract

The period of the 1840s is commonly viewed as the beginning of modern China, for several cities were forced to open their ports to trade after the Opium War (1839–42) and the Treaty of Nanjing (1842), starting modernization of the governance, education and commerce systematically. However, it is unfair to conclude that modernization in China is totally brought from outside. To advocate a more holistic view of Chinese history, this paper explores the early planning idea generation and practice of Ningbo City, one of the first port cities listed in the Treaty of Nanjing, and thus, the first punch to meet foreign planning ideas and practices, and to start urban spatial modernization within China. Ningbo established the foreign settlement in the 1860s, followed by the modern municipality construction. However, for the Jiangbei area, where the foreign settlement was located, and the old city, where the traditional government institutions were located, the modern city constructions were started by different agents and followed different development paths. Focused on the early planning idea and practice generation of the two areas separately, this paper hopes to illustrate both the planning ideas generation, including the international and regional dissemination in early modern China. Based on archive research, key figures, including the foreign consuls, local gentries and businessmen, and local government, are explored to find the introduction and transplantation of planning ideas.

How to cite

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Fangning Wu, Fei Chen
Knowledge mobility of X-Minute City and its influences on planning
strategies and implementation supports in Melbourne and Shanghai

Knowledge mobility of X-Minute City and its influences on planning strategies and implementation supports in Melbourne and Shanghai

Fangning Wu, Fei Chen
Paris Nanterre

Abstract

In 1962, the Danish capital Copenhagen started to put the concept of walkability into practice by vacating parts of the vehicle traffic from its streets. It echoed Jane Jacobs's book the Death and Life of Great American Cities, where the concept of walkability was alluded to as part of a critique against urban expansion and the traffic-oriented practice of modernist city planning. Better walkability and less car traffic seem very reasonable concepts, as a paradigm in urban planning, walkability was translated into a range of urban planning (or design) projects undertaken in Europe, North America, and Asia, which could vary significantly in their benchmark, ideology, standard, and degree of community participation. The walkable city was widely related to other planning concepts, such as the X-minute city, in both land mixing and social integration, with the appearance of knowledge mobility of walkability among cities. The concept of 15-Minute City became a hot topic worldwide after it was introduced by Paris mayor Anne Hidalgo in a plan to implement the 15-minute city concept during her 2020 re-election campaign. Originating from Portland, the 20-Minute Neighborhoods made their way into strategic city planning in Melbourne in 2017. Also, Shanghai, China put forward the "Planning Guidelines for Shanghai 15-minute Community Life Circle" in 2016. These international concepts all aim to substantially shorten residents' daily travel distances and promote active transport, especially walking. Therefore, the international knowledge mobility on walkability in specific contexts needs to be further explored. This presentation discusses the knowledge mobility of X-minute city, taking Melbourne and Shanghai as examples. It analyzes the planning strategies and implementation supports to improve the walkability and quality of life in two different contexts.

How to cite

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Fangning Wu, Fei Chen
Knowledge mobility of X-Minute City and its influences on planning
strategies and implementation supports in Melbourne and Shanghai

Chinese cities and regions in transformation (2)

Chair: Shu Wang

Reshaping the New Capital
Influence of The City Plan of Nanking on the Practice of Urban Planning in Modern China in 1930s

Li Zhao, Tong Mengfei
Shandong Jianzhu University

Abstract

The article takes The City Plan of Nanking, an important planning practice at the beginning of the development of modern urban planning in China, as the object of study. Using methods such as historical documentary information extraction, comparative research, and statistical data, the study explores the important role the plan played in the exploration of modern urban planning practice in China. The City Plan of Nanking was learnt and imitated as a construction standard by municipal governments all over the country, greatly changing the direction of the preparation and development of urban planning in China. The provisions of relevant systems and laws in the content of the plan laid the foundation of the urban planning system and regime. The City Plan of Nanking, published by the National Government of the Republic of China in 1929, was the beginning of the road towards "scientific rationality" in modern urban planning practice in China. It demonstrated a new planning ideology that was goal-oriented and design-driven. The urban spatial planning concepts constructed in the plan, integrating nationalism, scientific rationality and the integration of East and West, were the best embodiment of the spatial concepts and planning techniques of the time.

INTRODUCTION

The capital city is the symbol of the national social and political system, and the planning and construction of the capital city is the best expression of the spatial concept and planning technology of the era.[1] At the same time, the planning of the capital city is often imitated by the local city planning and construction. This is most obvious in the ancient cities, and the modern period also follows this law.[2]

As the capital city of the Republic of China (1927-1949) in the legal sense, Nanjing's urban planning practice activities, especially *the City Plan of Nanking* formulated by the American architect Henry Killam Murphy (1877- 1954) in 1929, as the most important planning document in the modern history of Nanjing and even China, have been the focus of attention of researchers on the history of modern urban planning in China. Scholars such as Wang Chun-hsiung, J. W. Cody, and Wang Yanan, etc., have all done relevant research. However, most of these studies have focused on the content and characteristics of *the City Plan of Nanking* itself, its impact on the modernization and transformation of Nanjing, and Murphy's personal research, while the impact of the Capital Plan on the development and construction of modern Chinese urban planning practices, regulations and institutions in the context of the times has been missing. The paper formally explores the historical value of the urban planning document from this perspective again.

SOCIAL BACKGROUND OF PLANNING

On 18 April 1927, the government of the Republic of China was formally established with Nanjing as its capital. After more than half a century of war, China finally entered a rare period of stable construction in modern history, and the period 1927-1937 has been described by historians as the 'golden decade' of China's modernization and development. In 1927-1937, the construction of a modern state and the building of cities had begun to take shape, the domestic and foreign situations were becoming more stable, and the government and social elites were full of ambition to build a new urban state. Urban modernization became the prelude and the way to the modernization of the country. All over the country, the establishment of municipal governments was the starting point of construction, because it was clear that the development of the city had an important relationship with the progress of the country.

Within the national government, the group of foreign students represented by Yang Du, Wang Jingwei, and Hu Hanmin, who had studied in the accelerated course of the Legal and Political Science Academy in Japan in the early 20th century, transplanted the concepts of the state learnt in the Legal and Political Science Academy to China through top-down design; while the group of foreign students in municipal science represented by Sun Ke, Lin Yimin, Lin Yungai, Cheng Tiangu, and Shen Yi, who had studied in the United States, transformed knowledge and theories of municipal science and architecture, engineering knowledge and theories into bottom-up local practices. These two currents started from different directions and together shaped the formation of China's modern state and urban concepts, providing brand new 'ideo-

logical resources' and 'conceptual tools' for China to accept Western knowledge and theories, disseminate modern political, economic and municipal ideas, and even the transformation of China's modern state and society. It became an important factor influencing the government and intellectual elites in the municipal system to step out of tradition, criticize authoritarianism, pursue constitutionalism, and implement autonomy.

THE BEGINNINGS
OF MODERN PLANNING IN CHINA BEFORE 1929

Although there was some localized urban renewal and municipal construction in China during the timeframe of the late 19th century and the first two decades of the 20th century, the practice of urban master plan only began in 1921 with the establishment of Guangzhou, the first constituted city in China's history.

On 15 February 1921, the Guangzhou Municipal Bureau was established and promulgated the Provisional Regulations of Guangzhou City, which defined the scope of the city's administrative area, marking the official start of China's modern municipal system. The Guangzhou municipal system was used as a model for the establishment of municipal institutions such as the municipal government, municipal halls, municipal preparatory offices, municipal councils, etc., in order to maintain the municipal function under local self-government. The focus of municipal construction was on the management of the city, including administration, finance, police, public works, public utilities, etc. The practice of municipal planning was not yet independent of the overall municipal structure. The Public Works Bureau under the municipal government was in charge of public works and was responsible for urban construction. Municipal engineering planning was based on improving the appearance of the city, and continued the engineering and construction contents of urban renewal in various places before 1921, mainly including the demolition of city walls, construction of roads, urban zoning, and construction of public infrastructure. Influenced by Western modern urban planning ideas, urban planners began to tentatively apply the theory and method of zoning system, the construction of exemplary residential area in the theory of idyllic city, and the design of city beautification pattern to urban engineering planning, and formed a preliminary planning content and expression paradigm.

The content of municipal planning was based on land use planning, road and infrastructure construction, which belong to the scope of engineering planning, and its connotation was close to that of construction planning, i.e. "the planning process for the effective organization of urban construction and the completion of construction tasks". In terms of content, more emphasis was placed on determining and implementing the specific construction content, scale and mode of construction in accordance with certain standards and norms in order to achieve the desired end result. That is, the real problem-oriented, problem-solving as the goal of engineering design. The ultimate goal of governments and planners is to achieve a comprehensive transformation of the nature, functions and lifestyles of cities through municipal planning.
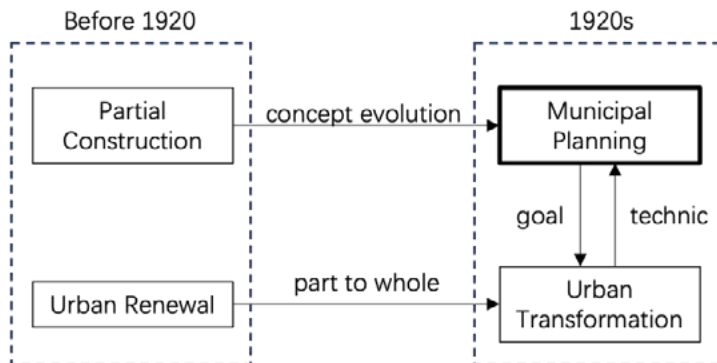
Fig. 1. The beginnings of modern planning in China before 1929 Construction background of planning

In November 1928, Sun Ke, the eldest son of Dr Sun Yat-sen, the father of the nation, drew up the *Draft Construction Programme*, in which a preliminary top-level design was made for the national urban system, to build 'the national capital, five new large cities and ten new medium-sized cities', and to drive the development of large and medium-sized cities by the construction of the national capital. As the capital of the national

government, the government naturally attached great importance to the construction of the cityscape, with the intention of building Nanjing as a 'model city of the country, and enough to compare with the famous cities in Europe and the United States'; at the same time, the government also hoped to consolidate the status of the national government and the KMT as the national leadership centre by promoting the modernization of the capital city of Nanjing.

After the promulgation of the Municipal Organization Law in 1928, municipalities began to regulate the size and structure of municipalities under municipal administration, as well as issues of municipal construction, and

\construction entered a new phase. At the same time, the pluralistic urban pattern of many cities, such as Shanghai's "three quadrants", Tianjin's "nine-country concession", Hankou's "six-country concession", etc., where each area often had its own independent municipal administration and construction organizations, and the construction of urban infrastructure such as roads, water, electricity, light and gas had long been carried out separately. These cities also urgently need a citywide master plan to coordinate modernization and industrialization within the city limits.

FORMULATION AND CONTENT OF THE PLAN

By 1928, the population of Nanjing had risen from 360,000 to nearly 500,000, and this significant increase in population made the development of a new urban planning programme an urgent necessity for the government.

Fig. 2.   Henry Killam Murphy (1877-1954)

After a series of twists and turns regarding the setting up of a special agency for the plan, the national government finally established the Office of the Technical Commissioner for the Design of the National Capital on 1 December 1928 to take charge of the formulation of the capital plan under the impetus of Hu Hanyin, Dai Jitao, Sun Ke.

In the Draft Construction Programme drawn up by Sun Ke in 1928, it was clearly stipulated in the first chapter 'Principles' that 'the national government should employ foreign specialists in order to realize the construction programme.' He also took the opportunity of formulating the capital plan to work with Murphy again to make up for the failure of the Guangzhou planning in 1922. In addition to Sun Ke (the leading technical officer), Murphy (the leading architect), and Lin Yimin (responsible for administrative coordination), the actual participants in the planning included three American engineers, E. Goodrich, C. Moller, and T. McCroskey, as well as Chinese engineers, such as Huang Yuyu and Lu Yanzhi.

Fig. 3.   Cover and some of the contents of the City Plan of Nanking

On 31 December 1929, the Office of the Technical Commissioner for the Design of the National Capital under Sun Ke announced the City Plan of Nanking, which can be regarded as an epoch-making urban planning practice in terms of its content, structure and expression, demonstrating a new goal-oriented and design-led planning mindset.

In ' the City Plan of Nanking - Submission to the Capital Construction Committee', Lin Yimin argued that the lack of urban planning was one of the reasons why China was lagging behind the West, and that comprehensive urban planning was a necessary means of developing the country. [3] Together with the municipal system, urban planning became the two arms of building a modern country in the eyes of political elites and technical experts.

The capital plan, which was undertaken by American architects, engineers and Chinese officials who had stayed in the United States, naturally inherited the main planning procedures of the so-called 'instrumental rationality' of American urban planning practice at the time. The main working method of American urban planning included two steps: investigation and planning, after which the investigation was followed by the delineation of the plan's scope, land zoning, street system, park system, other infrastructures, annual plans and financial plans, etc. In the actual development process, the capital plan was indeed prepared in accordance with the American-style planning logic.
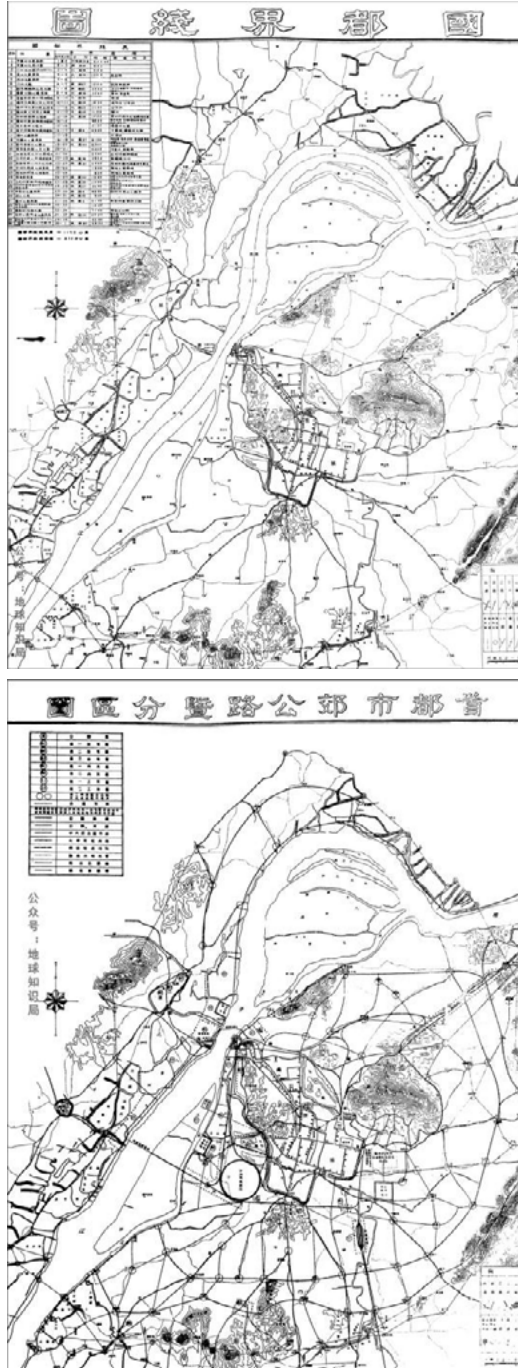
Fig. 4.   Selected drawings in the City Plan of Nanking

The Capital Plan was drawn up in accordance with the idea of investigation - planning, in which the substantive planning part was divided into six parts, namely, land zoning use plan, transport plan, infrastructure plan, related business plan, ordinance and tool plan, implementation procedures and financial plan, including a brief overview of Nanjing's history and land, Nanjing's future 100-year population projections, the capital boundaries, road system planning, draft capital zoning regulations, draft zoning enabling law, implementation procedures, etc. A total of 28 chapters were included in the Plan. The plan contains 28 chapters, including the historical overview of Nanjing, the population forecast for the next 100 years, the capital city boundary, road system planning, the draft capital city zoning ordinance, the draft zoning authorization law, and the implementation procedure, etc. It is described by foreign scholar as the first 'international standard comprehensive land use plan' in China'. The plan changed the previous method of municipal engineering plan to take the urban area as the urban planning scope, but included the undeveloped land in the peripheral areas of the city into the municipal administrative area, which was very similar to the 'metropolitan tradition' planning method in the United States at that time, especially 'New York Regional Planning Association' in 1921-1920. 'New York City'. This is very similar to the 'metropolitan tradition' of planning in the United States at the time, in particular the New York Regional Planning Association's Plan of New York and its Neighborhoods, which was carried out from 1921 to 1929. The concept of urban spatial planning constructed by the Capital Plan, which combines nationalism, scientific rationality, and the use of Chinese and Western styles, played an important role in the exploration of modern urban planning practice in China.[4]

For the capital plan, Sun Ke, Lin Yimin, Murphy had high expectations, 'This plan is not only related to the capital city, but also for the domestic municipalities to carry out the design of the initiative. The impact will be far- reaching   All the programmes are designed for a hundred years, not just for a short period of time.' The course of history had also confirmed their confidence. Since then, the City Plan of Nanking as the preparation of a sample version of the 'Tianjin Special City material construction programme' 'Guangzhou City Design Outline Draft' as the representative of the city planning and construction of imitation and learning, greatly changed the modern urban planning and practice of the development of the direction of the preparation and development. The system and regulations expanded on the basis of the planning content of the capital plan laid the foundation of China's modern urban planning system and system.

EXEMPLARY ROLE
FOR URBAN PLANNING PRACTICE IN 1930 S CHINA

The principal designer of *the City Plan of Nanking* was the American architect H.K. Murphy, who had designed the campuses of Changsha's Yale University in 1913, Nanjing's Jinling Women's University in 1923, and Beijing's Yanjing University in 1926, and who, in the process, had become so familiar with traditional Chinese design styles that he was able to respond to the rising tide of nationalism, and thus was at the height of his popularity in China.[5]

In 1928, Murphy was again hired by Sun Ke to develop the capital plan for Nanking. Both Murphy, an architect from Yale University, and Goodrich, an engineer from the University of Michigan, were deeply influenced by the American city beautification movement and the landmark Plan of Chicago by D. H. Burnham and E. A. Bennett in 1909. It can also be said to be the source and blueprint of the 'scientific instrumental rationality' paradigm of modern urban planning in China.

The formulation of the capital plan was the beginning of large-scale urban planning for cities in China, and it was learnt and imitated as a standard for construction by municipal governments in various parts of the country. Since then, the capital plan has been imitated and learnt from as a model for the preparation of city plans, represented by the *Tianjin Special City Physical Construction Programme* and the *Guangzhou City Design Outline Draft*, which greatly changed the direction of the development of municipal planning and urban design in modern times. The procedure of compiling according to the American-style planning logic gradually became the consensus of planners in the process of compiling the city plans of major Chinese cities in later years. Through statistical comparison, it was found that in the *Tianjin Special City Physical Construction Programme and Guangzhou City Design Outline Draft*, which were compiled in the years following the capital plan, the structure of the planning text and the high-frequency keywords of the planning content were extremely similar to those of the capital plan. In the *Tianjin Special City Physical Construction Programme*, there are also chapters such as 'Draft Zoning Ordinance of the City' and 'Draft Design and Zoning Authorisation Law of the City', which are very similar to the structure of the capital plan, and even directly listed as 'Standard Pavement of the Capital City by Nanking'. The standard pavement of the capital drawn up by Nanking' was even listed as a direct reference.

At that time, this kind of urban plan was often called 'urban design' or 'city design'. This conceptual change also marked the beginning of urban master planning to leave the scope of 'municipal' construction and enter a new stage of urban 'design'.
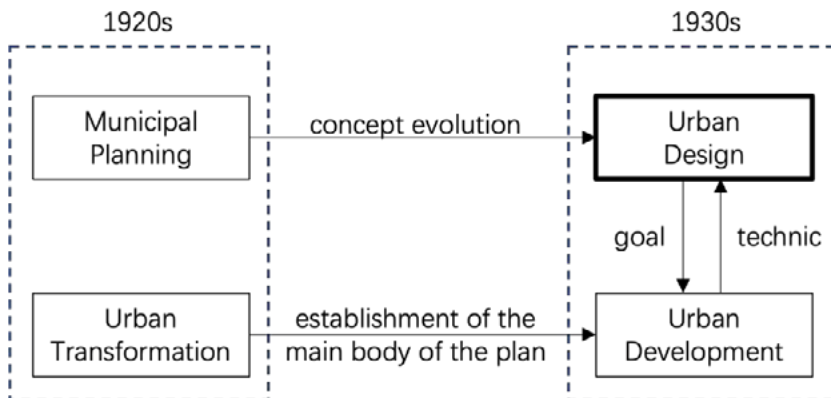
Fig. 5.   Transforming Urban Planning after the City Plan of Nanking

INSPIRED THE DEVELOPMENT
OF THE FIRST URBAN PLANNING ACT

The most important contributions to the development of urban planning practice in the City Plan of Nanking are section XV, 'Draft Urban Design and Zoning Enabling Act', and section XVI, 'Draft Capital Zoning Ordinance'.[6]

To 'New York City 1916 version of the Zoning Ordinance' as a blueprint, in 1924, the U.S. Secretary of State Hoover assigned the 'Architectural Planning and Zoning Advisory Committee' to draft the 'Standard State Zoning Enabling Act Model'; in 1928, the U.S. Department of Commerce of the Federal Government promulgated the 'Model Town Planning Enabling Act' for the U.S. government at all levels of land use control provides a legal basis and reference standards. The Department of Commerce promulgated the Model Urban Planning Enabling Act in 1928, which provided a legal basis and reference standard for the implementation of land use control at all levels of government in the United States. In May 1930, 856 cities in the United States had formulated zoning plans and announced their implementation.

Judging from the time, the content of the first two drafts in the City Plan of Nanking (in the text of the modern Chinese city planning programme has been consulted, never before similar content), obviously by the United States not long before the enactment of the zoning laws and regulations of the direct impact. but we do not know whether this was Sun Ke's persistence, or American Murphy's advice, or the result of the two people hit the nail on the head. This speculation can also be confirmed by the content of the reply from the Jiangsu Provincial Construction Department to the letter from the Capital Construction Committee, such as 'I would like to check that the draft Urban Design and Zoning Enabling Act prepared by the Office of the Commissioner of the National Capital Design and Technology is modified with reference to the United States Enabling Standards Act, in order to be suitable for the national conditions of our country'. At the same time, as the earliest document with the nature of urban planning regulations in China, the Draft Urban Design and Zoning Authorization Law was considered to be the predecessor of the Urban Planning Act enacted in 1939.

Draft Urban Design and Zoning Enabling Act was conceived by Sun Ke when the Nationalist government succeeded in the Northern Expedition and settled in Nanking, hoping to set up a national legal basis for the planning of new cities. Overall, the Urban Design and Zoning Enabling Act had basically the structure of a complete urban planning law, while the Draft Capital Zoning Ordinance draws on New York's zoning system, for the first time providing detailed planning controls on building forms, building setbacks, and street scales within each zoning district.

After the 1930s, with the gradual improvement of the municipal establishment and the vigorous development of urban planning practice, many municipal experts and scholars had called on the government to enact urban planning laws as soon as possible. After nearly two decades of searching and accumulating after 1921, especially after the City Plan of Nanking revealed a preliminary awareness of planning regulations and a definition of the content and scope of planning practice. The National Government officially announced the Urban Planning Act on 8 June 1939, which was penned by the Director General of the Department of Construction, Mr. Ha Xiongwen, and was the first main law on urban planning in the area ruled by the National Government.

The City Plan of Nanking 1929	Article 10 of the Urban Planning Act 1939
Overview of Nanjing's history and geography, and projections of Nanjing's population in the next hundred years	Current state of urban area
borderline of capital	Plan area
Draft Urban Design and Zoning Enabling Act, draft zoning regulations for the capital city, location of the central political district, location of municipal districts	Zoning use of land
Plan of Pukou Area	public land
Road system planning, pavements, suburban road schemes, watercourse improvements, inner-city transport equipment	Road system and waterway traffic
Parks and boulevards, railways and stations, harbour plans, airport station locations, water supply plans, power plant locations, canal plans, power lines and street lighting plans, public housing studies, plans for schools, industries	Utilities & Water & Sewerage
Implementation procedures	Implementation procedures
Mobilization of funds	funds
Choice of building form	other

Table 1. Compare between the plan and Act

The Urban Planning Act sets out the basic elements of urban planning practice, such as article 10, which clearly defines what an urban plan should cover: 'The urban plan shall indicate the matters listed: I. The current state of the urban area. 2.Plan area. 3.Zoning use. 4.Public land. 5.Road system and waterway traffic. 6.Utilities and water and sewerage. 7. Implementation procedures. 8. Funding. 9. others.' From the content of these provisions, it can be seen that the Urban Planning Act was in fact a summary and distillation of the practical work of city government-led urban master planning since the 1920s, especially since the publication of the City Plan of Nanking.

CONCLUSION

It can be said that the preparation and implementation of the City Plan of Nanking in 1929 marked the beginning of modern urban planning practice in China towards 'scientific rationality'. Although many scholars have carried out in-depth research on the plan, this study re-examines the City Plan of Nanking and its text on the basis of existing research. Through multiple perspectives and new methods of re-excavation and sorting, we can find that this most important object of planning research in the modern period of China still has its re-consideration of historical value.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author.

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IMAGE SOURCES

Figure 1   Drawn by the author.
Figure 2   Cody J W. *Building in China: Henry Murphy's K, Adaptive Architectural,1914-1935*. Hong Kong: The Chinese University Press, 2001.
Figure 3   Murphy H K. The City Plan of Nanking. Nanjing: Nanjing Press, 2006.
Figure 4   Murphy H K. The City Plan of Nanking. Nanjing: Nanjing Press, 2006.
Figure 5   Drawn by the author.

ENDNOTES

1. Hall. *'Cities of Tomorrow'*.
2. Sonne. 'Capital City Planning'.
3. Murphy. *'The City Plan of Nanking'*.
4. Anonymous. *'Nanking, Cina'*.
5. Cody. *'Building in China'*.
6. Anonymous. *'Planning for China'*.

Constructing
the New Capital City
Chinese Architects
and the Urban Plan of Nanjing
during the Republican Era (1927–1949)

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Abstract

Based on ongoing postgraduate (MPhil) research, the conference presentation discusses features of modernization, identity, and nationhood within the narrative of Nanjing's urban planning during China's Republican Era (1927-1949) . It accomplishes this through attention to native architect-planners, e.g. Lu Yanchi （吕彦直）, Doon Dayu （董大酉）, and Robert Fan （范文照）. They were assistants of Henry Murphy, the chief consultant of the Capital Plan. The presentation will utilize primary Chinese sources such as newspapers, manuscripts, archives, documents, and old photographs, and so intends to analyze the works of the young Chinese architect-planners together with the political intentions and intellectual influences upon how the built fabric was shaped and meant. As the capital city of Republican China, Nanjing was to become the symbol of 'the modern country'. Its form and density were to be affected by considerations about the nature of the citizenry, the contemporary political atmosphere, Chinese traditional and modern culture, and financial funding. Collectively, these elements affected the development of Nanjing during the Republican Era and contributed in different way to its plan's successes and failures.

INTRODUCTION

Through an examination of representative architects of the first generation of Chinese architects, such as Lu Yen- chi（吕彦直）, Doon Dayu（董大酉）, and Robert Fan（范文照）, this paper will explore how the first generation of Chinese architects constructed Nanjing, the new capital of Republican China, under the impact of modernity and the wave of nationalism. By analysing the plans and architectural designs of the above Chinese architects who served as Henry Murphy's assistants or were influenced by his urban planning and architectural design concepts, the author hopes to delve deeper into the plans and perspectives of Chinese architects for the capital city of Nanjing in Republican era. This paper will explore Chinese architects' deeper understanding of Nanjing's urban planning through case studies of the macro city planning, monumental, governmental and public architectures.

These case studies will involve representatives of the first generation of professional architects in China, Lu Yen-chi, Doon Dayu and Robert Fan. Lu Yen-chi received his Bachelor of Architecture degree from Cornell University in 1918. After graduated from Cornell University, he was invited by Henry Murphy[1] to join his architectural firm (Murphy & Dana). In 1918, he was directly involved in the planning and design of the academic buildings and school buildings of the Ginling College for Girls (金陵女子大學) and Yanjing University (燕京大學) and was responsible for the architectural manuscripts. He was also responsible for drawing architectural plans. [2]Doon Dayu worked in Henry Murphy's architectural firm during his doctoral studies at the Graduate School of Fine Arts and Archaeology at Columbia University and graduated in 1927. [3] In 1930, in the name of the architectural firm, Doon worked with Henry Murphy, on the foundation and structural detailing of the Memorial Pagoda for the Martyrs of the National Revolutionary Army (renamed Linggu Pagoda after 1949). Robert Fan graduated from the University of Pennsylvania, Department of Architecture in 1922. As one of the Chinese architects under Henry Murphy's tutelage, much of his architectural work in Nanjing was influenced by the 'Chinese Renaissance' style. Despite their different educational experiences, they all returned to Republican China for further career development.

After Nanjing was elected as the capital, the National Government formulated four urban planning plans for Nanjing.[4] However, except for *the Capital Plan and the Adjustment Plan for the Capital Plan*, other plans did not receive adequate time and funds to put into practice. In the past, most studies on Nanjing's urban planning in Republican era focused on the influence of political factors and the views of senior officials. This article will start from the perspective of architects and aim at investigating Nanjing's urban planning during the Republic of China period from a micro perspective through the narratives of Nanjing's urban planning and architectural design styles by Chinese architects.

LU YEN-CHI AND THE DRAFT OUTLINE OF THE PLAN FOR THE CONSTRUCTION OF THE CAPITAL CITY

Lu Yen-Chi was one of the most important Chinese architects in the planning and construction of Nanjing during the Republic of China period. During his studies in the Department of Architecture at Cornell University, Lu received a Western academic architectural education. He thus initially understood and mastered the design concepts and methods of Chinese Renaissance architectural style, which combined traditional Chinese architectural styles with modern Western technology. The Chinese Renaissance style of architecture combines traditional Chinese architectural styles with modern Western techniques. As one of the most prominent Chinese architects in Murphy & Dana, Lu worked closely with Henry Murphy.[5] He assisted to collate large numbers of architectural motifs for the Forbidden City in Beijing while working as Henry Murphy's assistant.

As a Chinese architect with a passion for building a new capital and a new nation, Lu left behind a city plan for Nanjing in addition to the design and construction of the Sun Yat-sen Mausoleum. He directly involved in the city planning of Nanjing and formulated the Draft Outline of the Plan for the Construction of the Capital City(《建設首都市區計畫大綱草案》), planning the central government district and downtown area of the capital city of Nanjing, as well as the buildings of the national government.[6] These posthumous works are vivid embodiments of urban planning ideas.

A year before the *Capital Plan* was launched, Lu made a clearer proposal for the location of the central political zone in the capital Nanjing. He drafted two works, 'Planning Scheme for the Two Districts of the Capital City (Central Government and Urban Area)' (首都都市兩區（中央政府和市區）規劃方案) and 'Aerial View of Architectural Design of the National Government (Including the Five Institutes)'（國民政府（包括五院）建築設計鳥瞰圖）. Lu's conception of Nanjing was a manifestation of his hopes for the new modern capital city, as well as for the future of the nation. The Draft Outline of the Plan for the Construction of the Capital City is the most intuitive manifestation of Lu's thoughts on the planning and architecture of Nanjing. Lu's posthumous works showed the genius of this legendary architect's planning vision for Nanjing. [7]

In the overview, Lu divided Nanjing into three parts: the central government area, the capital city area, and the national park area. Regarding the location of the central government area, Lu located it at the site of the Ming Imperial Palace, so that it was 'suitable for the position of the centre.' Lu's plan for the Nanjing metropolitan area already had the zoning concepts of modern urban planning. However, as a Chinese architect, Lu's urban planning for Nanjing was still inspired by the concept of traditional Chinese urban layout. The placement of the central administrative district in the centre of Nanjing was still a continuation of the traditional Chinese urban construction concept. Regarding the location of the central political district, Lu's plan considered the traditional Chinese concepts and put it in the Ming Palace.

Fig. 1.   Proposed Plan for Nanking, China's National Metropolis. Mr. Lu Yen Chi's last piece of work.

The Propsel Plan for the Buildings of the Five Yuan of the National Government. (Work of the late Mr. Lu)

Fig. 2.   The Proposed Plan for the Buildings of the Five Yuan of the National Government. Mr. Lu Yen Chi's last piece of work.

In terms of the city walls of Nanjing, Lu argued that although they were products of the feudal dynasties and hindered the modernisation of Nanjing. Nevertheless, it would be inappropriate to dismantle all of them due to the special historical and cultural value of the Nanjing city walls. He advocated the demolition of the eastern and southern sections of the Nanjing city walls to meet the needs of expansion. The western and northern sections of the city walls should be preserved, not only to isolate the smoke and noise from the industrial area, but also to protect the historical monuments. In the planning of the national park area, Lu only made a brief plan in his manuscript, placing the national park area in the northeast of Nanjing, with the Sun Yat-sen Mausoleum as the core area.

The removal of the eastern and western city walls of Nanjing and the expansion of the metropolitan area to meet the requirement of placing the central political district in a 'neutral position' emphasised the need for other parts of the metropolitan area to be built to serve the construction of the central political district. [8] This demonstrates Lu's keen insight as a Chinese architect mastered the design concepts and methods of Chinese Renaissance architectural style of China and the West. This proves that the Chinese architect also had a founding sense of national identity and urban layout in the planning of Nanjing. His life came to an end before he had the chance to plan the rest of Nanjing, but these manuscripts are still a powerful attempt by a Chinese architect to draw up a blueprint for Nanjing's urban planning.

DOON DAYU AND THE MEMORIAL TOWER FOR THE MARTYRS OF THE NATIONAL REVOLUTIONARY ARMY

Doon Dayu was an architect who left a number of inspirations and works for the urban planning of Nanjing during the Republican period. Although his main area of practice was in Shanghai, he was involved in a number of important project competitions in Nanjing under the auspices of the Nationalist government,[9]After the National Government returned the capital to Nanjing in 1947, he served as the head of the Metropolitan Planning Commission and the Planning Department.

The Memorial Pagoda for the Martyrs of the National Revolutionary Army (國民革命軍陣亡將士紀念塔) is an essential part of the National Revolutionary Army Martyrs Cemetery (國民革命軍陣亡將士公墓) . Its design is modelled on the glazed pagoda of the Linggu Temple (destroyed during the Taiping Heavenly Kingdom Movement), showing a traditional Chinese architectural style. The tower is octagonal in shape, with a diameter of 30.4 metres at the base and surrounded by carved stone railings. There are granite stone steps on the front of the tower, which connects with the passageway. The top of the tower is 200 feet high (about 60 metres), an antique pavilion-style stone tower with nine floors and eight sides, a cast-in-place reinforced concrete structure, and the tower façade is plastered with granite. [10] The eaves of the tower are covered with green glazed tiles, which are gradually contracted upwards from the bottom, and the tower is surmounted by a spiral escalator going around the central stone pillar, [11] The exterior is decorated with Jinshan stone.[12] The memorial tower is characterised by a distinctive Chinese national style, with a beautiful, elegant and dignified shape, and it is the tallest surviving traditional pavilion-style tower in Nanjing. [13]
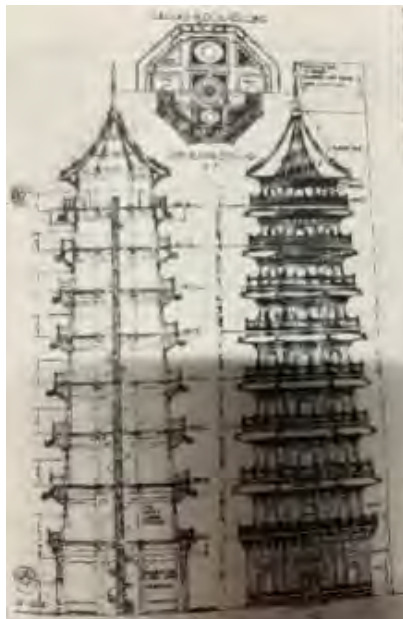
Fig. 3.   Section, elevation, and ground floor ceiling plan of the Pagoda-Tower at Linggusi. Designed by Henry Murphy and Doon Dayu.

It is worth noting that, although the Memorial Tower for the Martyrs of the National Revolutionary Army exhibits traditional Chinese characteristics in its architectural style, the function is different from that of a traditional Chinese 'tower'. As a complementary building to the 'Cemetery for Heroes of the Revolution', it has the nature of a memorial in the sense of the modern national identity. The change in the function of the building can still be seen as a 'combination of Chinese and Western' on the form and function of the building. As it is a memorial building, Doon has reflected the stronger elements of traditional Chinese architecture in its design. This is also a reflection of the national government's requirement in the city planning of Nanjing that monumental buildings and government offices be designed as 'inherently Chinese architecture'. On another level, this is an interpretation and embodiment of the national identity. The restoration and design of the 'Zhengqi Hall', the memorial hall of the National Revolutionary Army Cemetery, was also a collaboration between Doon Dayu and Henry Murphy. It is also the only architectural conservation project of Henry Murphy in China.[14]

ROBERT FAN AND HIS REPRESENTATIVE BUILDINGS IN NANJING

Robert Fan also left several notable architectural works in Nanjing. He held significant positions in the urban plan of Nanjing during the Republican period. In December 1928, he was employed as a special member of the plan for the Sun Yat-sen Mausoleum. Moreover, he was a member of the Nanjing Capital Design Committee from 1929.

[15] His most significant architectural works in Nanjing include The Ministry of Railways of the National Government （國民政府鐵道部） and The Central Health Facilities Experimental Office （中央衛生設施試驗處）. The former was an official residence of the national government, and the latter was used as a public building.

The Ministry of Railways of the National Government was one of the first buildings designed and constructed in the 'Chinese Inherent Style' after the official implementation of the Capital Plan in 1929. The Ministry of Railways was personally supervised by Sun Ke, the first Minister of Railways of the National Government, and designed by Robert Fan in collaboration with Zhao Shen. [16]

The Ministry of Railways was divided into three parts: the Office Building, the Staff Residence, and the Minister's Residence. The office building was built in the traditional Chinese palace style, in keeping with the 'inherent Chinese form' called for in the Capital Plan. The building is a reinforced concrete structure under a heavy hipped roof, and the building plan is long and rectangular. The main body in the centre is three storeys high, and the annexes on both sides are two storeys high. The arch, beam square and frieze used as decoration are all painted. [The staff dormitory at the back of the office building is in the 'Chinese Renaissance' style, in line with the office building. The eaves have a large slope and are of the single eave overhanging hill style. The dormitory is two-storey high, with simple doors and windows. The minister's residence has a different appearance from the staff quarters, with red brick walls. [17]

The Central Health Facilities Experimental Office （中央衛生設施試驗處） (later renamed the Ministry of Health of the National Government), located at the corner of Huangpu Road, Zhongshan Road, Nanjing, was commissioned by the Director General of the Department of Health, Liu Ruiheng, in March 1931 to carry out the design and drafting of the building by Robert Fan. The original design was a three-storey building in the shape of the Chinese character 'mouth', but due to the 'Mukden or Manchurian Railway Incident' and the 'Shanghai incident of 28th January 1932', the project was shelved. Only a part of the building was constructed due to the urgent need to use it. The Central Sanitary Facilities Experimental Office was completed in September 1933, and the main body of the building is the Central Sanitary Facilities Experimental Office.

The main part of the building is in the shape of a zigzag, and the design is simple and Western modernist in style. The building has a flat roof (changed to a sloping roof after 1949) and is three storeys high, with the main entrance in the centre slightly raised above the two sides of the building. Under the influence of Bauhaus art, Van Wentzel only differentiated the colours between the floors. The base of the building is white, the main body of the building is brownish yellow, and the floors are accented with white stripes. The Central Health Facilities Experimental Office (later renamed the Ministry of Health of the National Government) is the only modernist work left by Fan in Nanjing.[18] The styles of the above two architecture can reflect Fan's approach to different functional buildings. His design for the Ministry of Health of the National Government demonstrates the modernist turn in his architectural preference.

Fig. 4. A photo of the Ministry of Railways of the National Government, taken in 1937. This building was designed in the style of traditional Chinese style architecture.

CONCLUSION

The planning of Nanjing during the Republican period was also the result of a combined effort of mainly Chinese architects. The efforts of Chinese architects and their designs of Nanjing during the Republican period also reflect the process of political, social and emotional demands in the shaping and construction of physical space. At the micro level, the plan and architectural design are stylistic. However, they were 'seeking modernity while retaining Chinese characteristics' in the final analysis. Lu pursued the embodiment of national and ethnic identity. Doon's architectural work in Nanjing is predominantly eclectic, combining Chinese and Western styles, which suggests that his understanding of the capital city of Nanjing is more oriented towards a national identity. Fan's architectural works in Nanjing build up the momentum of his later transformation into modernity. It can be seen that the plans and concepts of Chinese architects for the new capital Nanjing, though modern, were still influenced by traditional Chinese concepts.

It is worth noting that Chinese architects' conceptions of Nanjing's urban planning during the Republican period rarely involved the planning of civic neighbourhoods. Although there was a prediction of Nanjing's population growth over the next hundred years in the *Capital Plan*, the term 'high density' for Nanjing in the 1920s and 1930s was probably far from the case for residential areas.[19] Even in 1928, Nanjing's population increased from 360,000 in 1927 to 479,000, and as the capital, its population size was still small in comparison to that of Shanghai.[20] The *Capital Plan* was the product of a group effort of Chinese architects and officials, advised by two foreign advisors, Henry Murphy and Goodrich. The projections of the total population of Nanjing one hundred years later were clearly influenced by European and American urban planning, but the extent to which Chinese architects were involved in this part of the planning remains open to further study due to material limitations.

Fig. 5.   A photo of The Central Health Facilities Experimental Office, this public building is more modern in its structure and uses traditional Chinese elements in its decoration.

Architecture is the language of narrative for architects. For Nanjing's urban planning in the Republican era, Lu made a macro-level attempt to plan the Nanjing metropolitan area. After this pioneer of first generation of Chinese architects passed away, architects such as Doon Dayu and Robert Fan were involved in the design of monumental and governmental buildings in Nanjing's urban planning. Nanjing's urban planning during the Republican period was not only supported by the government but was also shaped by a generation of Chinese architects' vision and practice of working together to build a new modern capital. From the master plan to the design of specific buildings, they demonstrated their hopes for Nanjing as a new capital and their desire to build a modern nation. Unfortunately, this dream of Nanjing, woven by the first generation of Chinese architects, came to an end with the outbreak of the Anti-Japanese War before it could be put into practice on a large scale.

DISCLOSURE STATEMENT
No potential conflict of interest was reported by the author.

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[6]《文化建設》(Cultural Construction),1934 年第 1 卷第 1 期(Vol.1,No.1,1934)。

[7]《時事新報》(The China Times),1930 年 12 月 5 日(December 5th,1929)。 [8]《良友》(The Young Companion),1929 年第 40 期(No.40,1929)。

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ENDNOTES

1. Henry Murphy was an American architect who first came to China in 1914 and began a practice there for more than twenty years. Prior to his role as chief consultant for the Capital Programme in Nanjing, he was represented in China by Tsinghua College (清華學校，1914), Yale-in-China College (長沙雅禮大學，1914), Ginling College for Girls (金陵女子大學，1915), and Yanjing University (燕京大學，1921-1926). He was also involved in the city planning of Guangzhou from 1921-1927. He was fond of traditional Chinese architecture and believed that he could find inspiration for his designs in traditional Chinese architectural styles. Henry Murphy's architectural style and philosophy had a profound influence on the first generation of Chinese architects, and Lu Yen-chi, Doon Dayu, and Robert Fan worked as his assistants in Murphy& Dana Architectural Firm.

2. Yin Lixin, The Architect Lu Yen-chi (Beijing: China Architecture Industry Press, 2019). 67.

3. 《Republic of China Daily》(民國日報) ,1929.03.23, *Continuation of Lu Yen Chi's Story.*

4. They were (The four city plans formulated after Nanjing became the capital are the Great Plan of the Capital (《首都大計畫》，1928), the Capital Plan (《首都計畫》，1929), the Adjustment Plan for the Capital Plan (《首都計畫的調整計畫》，1930-1937) and the Nanjing Metropolitan Plan Outline (《南京市都市計畫大綱》，1947).

5. Cody, Jeffrey W, Nancy Shatzman. Steinhardt, and Tony. Atkin, *Chinese Architecture and the Beaux-Arts,* (Hong Kong: Hong Kong University Press, 2011).210.

6. Wang Xiaoxi, *The Great Craftsmen Building Traces: Representative Professional Architects of Nanjing and Their Works in the Republican Period,* (Nanjing: Southeast University Press,2014). 157.

7. According to scholar Huang Jiande, there are many discrepancies between the Draft Outline of the Plan for the Capital City District published in the first issue of Capital Construction in October 1929 and Lu's manuscript, for example, the replacement of the word 'country' with 'party state'. For example, the word 'state'（國家）was changed to 'party state'（黨國）.

8. The location and planning of the central political zone in *Capital Plan* were more for the protection of the built-up urban area of Nanjing, especially the area within the city walls. Therefore, the central political zone was chosen to be located at the southern foot of Zijin Mountain in the north of Nanjing. However, this plan was abandoned by the Nanjing National Government either due to political disagreement or the high cost of the construction budget.

9. The main project competitions in which Doon Dayu was involved were: the design competition for the central political district of the capital (August 1929, the prize for excellence); the design competition for the memorial tower of the Zhongshan mausoleum (November 1930, the fifth prize); and the design competition for the National Central Museum (1935)]. Competition (November 1930, Fifth Prize); Design Competition for the National Central Museum (1935)] as Henry Murphy's assistant in the design of the Cemetery Complex for the Martyrs of the National Revolutionary Army (also called the Chinese Arlington).

10. Nanjing Local Records Compilation Committee, *Nanjing Architectural Records,*（Beijing: Fangzhi Publishing House, 1996）.224-225.

11. Wang Xiaoxi, *The Great Craftsmen Building Traces: Representative Professional Architects of Nanjing and Their Works in the Republican Period,* (Nanjing: Southeast University Press,2014). 80.

12. Xu Chunning, *A Biography of Henry Murphy,* (Nanjing: Phoenix Publishing House, 2019).49.

13. Pan Guxi, *The Architecture of Nanjing,*(Nanjing: Nanjing Press, 1995).3.

14. Xu Chunning, *A Biography of Henry Murphy,* (Nanjing: Phoenix Publishing House, 2019).47.

15. Lai Delin,Wang Haoyu,Yuan Xueping,and Si Chunjuan, *A Record of Modern Philosophers - A Directory of Important Architects and Architectural Firms in Modern China,* (Beijing: China Water Conservancy and Hydroelectric Power Publishing House, Intellectual Property Publishing House,2006).31.

16. Sun Ke personally supervised the construction of the Ministry of Railways, and his request was to show the nationalistic elements in the building. Fan also responded to his request by applying the traditional Chinese palace form to the design of the Ministry of Railways of the National Government. Cited in Wang Xiaoxi, *The Great Masters of Architecture: Nanjing's Representative Professional Architects and Their*

Works in the Republican Period, (Nanjing: Southeast University Press,2014) .86.

17. Wang Xiaoxi, *The Great Masters of Architecture: Nanjing Professional Architects in the Republican Era*(Nanjing: Southeast University Press,2014),87.

18. Ibid,86.

19. As a result of the Taiping Rebellion and the wars of the early Republican period, the population of Nanjing was relatively small before it became the capital. *The Capital Plan*, (Nanjing: Office of the Commissioner for Design Technology of Capital), 1929,p 17.

20. According to the customs survey data in the Capital Plan, the population of Shanghai had increased to over 2.6 million in 1928. *The Capital Plan*,(Nanjing: Office of the Commissioner for Design Technology of Capital), 1929,p 19.

From Company Towns to 'Technopolis'

Understanding the Evolution of Industry–Driven Urban Development in Hong Kong

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Abstract

The concept of the company town, once a key driver of urban development and vehicle for progressive town planning ideas, has been studied for its utopian and dystopian outcomes, and economic and social vulnerabilities. Given its dense population and post-colonial background, Hong Kong has a legacy of company town development that spurred its initial economic growth as a manufacturing hub, followed by property developer-driven urbanization in later stages. Presently, the city is actively striving to diversify its economy and develop its technology industry and is planning several new industry-driven New Town developments. In this context, it is helpful to re-examine the company town model and explore sustainable employment-driven urban planning for future Hong Kong. This research study has begun with categorizing and classifying historic company towns' operational models and types through a critical literature review. It then analysed the development of the company town in Hong Kong through three cases that represent different historical periods. It examined land use, urban morphology, and live-work patterns at the district scale. By investigating the historical context and challenges of company town development, the study contributes to understanding the role of industry-based urban planning in shaping Hong Kong. It offers valuable insights for the design and planning of future Hong Kong, particularly in creating balanced living-working environments and promoting sustainable development.

INTRODUCTION

Hong Kong has a rich history of economic growth, which is closely related to its urbanization process. Its legacy can be traced back to the colonial period under British rule when Hong Kong emerged as a significant, prosperous, and modern manufacturing centre.[1] The city witnessed significant transformations in its industrial and urban landscape, marked by expanding industry-led urban areas on Hong Kong Island, Kowloon, and the New Territories.

During the late 1950s to the 1970s, a significant influx of individuals migrated from the People's Republic of China. This period witnessed a consistent population growth of approximately one million every decade until the 1970s, primarily driven by China's Open-door Policy. As a result, a surging demand for residential and industrial land development emerged. The local industry underwent substantial progress, encompassing various sectors such as basic cotton textiles, woollen manufacturing, and man-made fibres. Furthermore, the industry zones produced clocks, toys, plastics, and other products, which contributed to Hong Kong's overall economic growth.

Since the establishment of the Shenzhen Special Economic Zone, Hong Kong industries have relocated to Shenzhen because of the relatively cheap labour prices, rent, and markets in mainland China. By the mid-1980s, the relocation trend peaked; over 80% of the factories had been relocated.

With the sovereignty transfer of Hong Kong from the United Kingdom to the People's Republic of China in 1997, the city became a gateway to mainland China. Newly formed cross-border relationships significantly informed the industrial and economic collaboration between the two territories.[2 & 3]

However, in the last two decades, developments in Hong Kong have signalled a shift in the motivations driving urban development, with short-term land property investments becoming a driving factor. This shift can be attributed to the relative profitability of establishing commercial or real estate zones over technology zones, which are highly valued considering Hong Kong's limited land resources.

In the knowledge-based industry era, innovation and technology represent the potential for a city's future competitiveness. With the development of a new policy framework to promote technology and innovation, Hong Kong has initiated various programmes to promote university-industry synergy and foster entrepreneurship. Aiming to diversify Hong Kong's industry and promote technology development, plans are underway for multiple industry-oriented developments in the northern metropolis region.

The integration of industry and community has long been a topic of interest, with the traditional model of the Company Town representing 19th-century and early 20th-century conceptions of this integration. This research revisits the company town model to guide future industrial zone design by reconsidering the underlying driving forces and spatial features of industry-driven urban development.

In the context of these changes, this study focuses primarily on understanding the historical development process of the company town. Based on this model, we classify the evolution of Hong Kong's industrial districts through a critical literature review presented in Section 2. Section 3 offers in-depth research into Hong Kong's industrial development in different historical phases, illustrated by urban morphology studies, to understand the spatial structure, building use distribution and live-work patterns.

This research explores industry districts' underlying urban development motivations by exploring the mechanisms that have shaped the city's urban development in different historical phases. The historical development process of company towns serves as a framework for understanding the past and potential future evolution of Hong Kong.

LITERATURE REVIEW

Company towns, historically described by archaeologists and historians, typically consist of a single company dominating the manufacturing life of an often geographically isolated community.[4] The company owns the land, constructs housing, provides services and public utilities, and influences the community's commerce. These towns flourish within the framework of capitalist logic in open-market societies, primarily pursuing profit and production as the Industrial Revolution impacts.[5] It was once a primary driver of early urban development in some resource- based geography regions, like mining and lumber towns. Although some of the company towns were pre-planned spatially, many were developed gradually in parallel with the development of the enterprises.

Following a top-down approach, the company town model reflects a capitalist framework where manufacturing, residential, and recreational areas are segregated and strictly aligned with the production process. This framework has incorporated diverse social infrastructures into the towns, fostering communities where labourers could reside and work in a single town.[6] To maximize profits and minimize costs, companies provided amenities like housing, schools, and recreational facilities, providing both support and control over their workforce. One of the earliest examples of this principle was Pullman Town in Chicago, implementing amenities aimed to instil loyalty within the workers at a time when workplace protections were severely lacking.

As the company town model often established social order and segregation as an operational necessity, it controversially shaped spatial and social structures. For instance, miners in the Copper mine in Falun, Sweden, experienced lamentable working and living conditions.[7] The sugar mill town of Aguirre, Puerto Rico, used separate living areas for its white Americans, leading to labour strikes against the industry's structured racial segregation and substandard wages.[8]

Most famously, Pullman Town applied paternalistic labour policies, ending in labour emancipation actions in 1894. The carefully designed architecture and landscape layout underscored the disparity in social classes (Figure 1). Unskilled workers undertook the longest walks across the community to workplaces, while executives residing in terrace houses only had to cross the street.[9] Such historical experiences serve as a reminder to approach future new town plan-

ning projects with a more equitable social and spatial organization, as spatial segregation remains a pressing issue in planning research today.[10]

After the Great Depression (1929–1939), company towns experienced a notable decline. While factory workers still suffered from income inequality and substandard living conditions,[11] improvements in national infrastructure and services helped to alter the relationship between workers and corporations. With enhanced access to healthcare and education beyond employers' provisions, companies have less control over the employees. This evolution eventually disrupted the monopoly held by company owners, significantly shifting the social and economic dynamics within such communities.

In recent years, scholars have shown a renewed interest in the company town model. Google, Amazon, and Walt Disney are developing the "future company town" and shaping communities and services around their business model needs.[12]&[13] Some scholars argue that the future of the company town is technology and amenities-rich, with the aim of increasing employee satisfaction and quality of life. Their goal is to improve the retention levels of skilled workers and international talents in the longer term.

In summary, the evolution from traditional company towns towards a technology-driven urban development signifies integrating innovation needs with sustainable urban design. This transformation mirrors the current status of Hong Kong, where innovation and collaboration are needed to foster sustainable industry-driven urban development in the future.
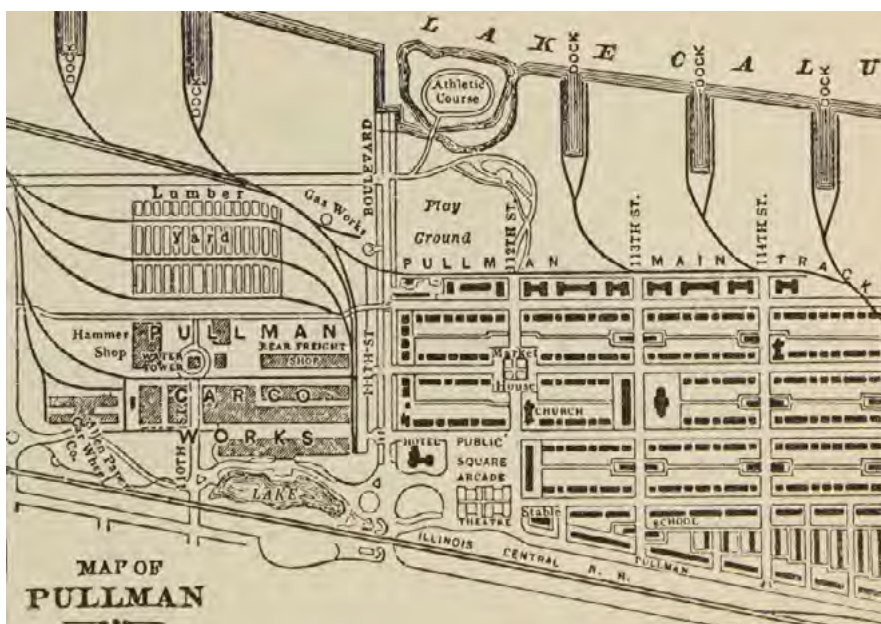
Fig. 1. Planning Map of Pullman 1885. Building types for production and community were carefully designed to emphasize the social disparity. The employer residences were strategically positioned around vital public spaces and facilities such as the central market, church, theatre, and public square.
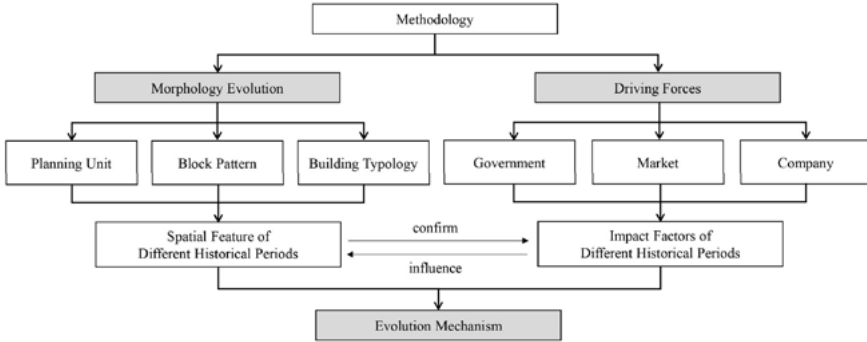
Fig. 2.   Methodology Framework. Different driving forces are analysed to confirm the spatial features of different historical periods and interpret the evolution mechanism of urban morphology.

METHODOLOGY

This study focused on three case study investigations, the Taikoo sugar refinery, Kwun Tong industry district, and Cyberport, representing three distinct periods of economic development in Hong Kong's history. To investigate industrial urban development in different historical periods, the case studies represent three urban typologies: colonial company towns, local industry clusters, and science and technology parks.

The main research method employed in this study is an urban morphology evolution study, which aims to compare the historical processes and spatial distribution of residential and industrial land use across different cases. As a methodological approach, urban morphology mapping examines physical elements and interprets the mechanism underlying urban development. However, when analysing the motivation behind the evolving process of urban form, the multiplicity of factors increased the difficulty of interpreting evolution mechanisms. Therefore, urban morphology evolution theory is introduced as a benchmark.

Urban morphology studies mainly utilize historical maps to analyse and explain the factors and mechanisms contributing to urban environment changes. One of the leading scholars in this field[14] has demonstrated forms of conceptual and analytical research through morphology studies and town planning analysis. Urban morphology studies contribute to research into urban environment and social development processes by examining several scales of urban patterns, including planning units, block patterns, and building patterns.[15] Relevant theories primarily involve economic, social, and political perspectives. For instance, Conzen[16] utilizes social structures and economic and cultural activities to interpret development forces. Applied to the evolution of industry-driven urban morphology, these driving forces include the government, the market, and the company (Figure 2).

For this study, we thoroughly analysed, measured, and compared historical map data sourced from HK Maps.[17] The choice of comparison points followed a detailed understanding of each

location's evolution, considering factors such as infrastructure development, land reclamation, and new government policies. Through this process, the study aims to gain insights into the historical development of each case and understand the driving forces that play significant roles in shaping the urban environment.

1884-1970: TAIKOO SUGAR REFINERY

The Industrial Revolution in Great Britain sparked a major social transformation, marked by the declining need for agricultural labour and an explosive demand for industrial workers, influencing the transition in urban development. This change incorporated a divided workflow system and the successful implementation of machinery in Cromford town in the 1770s. The first model of planned industrial housing for skilled and unskilled workers was established as a typical company town, later replicated globally, including the context of Hong Kong.

The process of industrialization in Hong Kong began in 1842 when the British assumed control of the area and established it as a free port. Instructions and guidelines regarding land governance and the constitution of the Legislative Council were received from London, shaping the administration of the territory. To boost export activities, the government issued licenses of monopolies for land, enabling the establishment of resource-based industries such as mining and sugar companies. These licenses were auctioned off to maximize revenue generated from land leasing. The Taikoo Sugar Refinery was one such company that operated as a monopoly during this period.

As the first phase of colonial industrialization, Taikoo Sugar Refinery was a company that witnessed the history of Hong Kong's early industrial development. It is one of the pioneers of company towns that, for almost a century, produced some of the world's highest quality refined sugar and, even nowadays, is still a household brand in many parts of Asia. In the prosperous day of the town's development, the refinery enterprise at the Quarry Bay area was once a typical company town (see Figure 3) that owned a combination of industrial production, freight terminals, shipyard, workers' and managers' housing, recreation, and education.

The urban development of Taikoo Sugar Refinery flourished and transformed with a rich natural landscape, industrial advancements, and market necessities in different historical periods. Originally, local villagers in this area made a living on fishing and utilized the bay for deep-water shipping. Based on the opportunities of the natural landscape, this site was chosen for a sugar refinery and shipping site by British entrepreneurs Butterfield and Swire.

Taikoo Sugar Refinery started its business in 1884, using modern technology in its industrial plant and buildings, deep water docks and piers for ships, warehouses, and process buildings. Transportation and logistics infrastructure was upgraded to collect and transport sugar from Taiwan, Mainland China, and the Philippines, which was sold to global markets. Exports to China, Canada, Australia, the United States, India, and the Middle East have enabled the company to produce a high volume of sugar products.
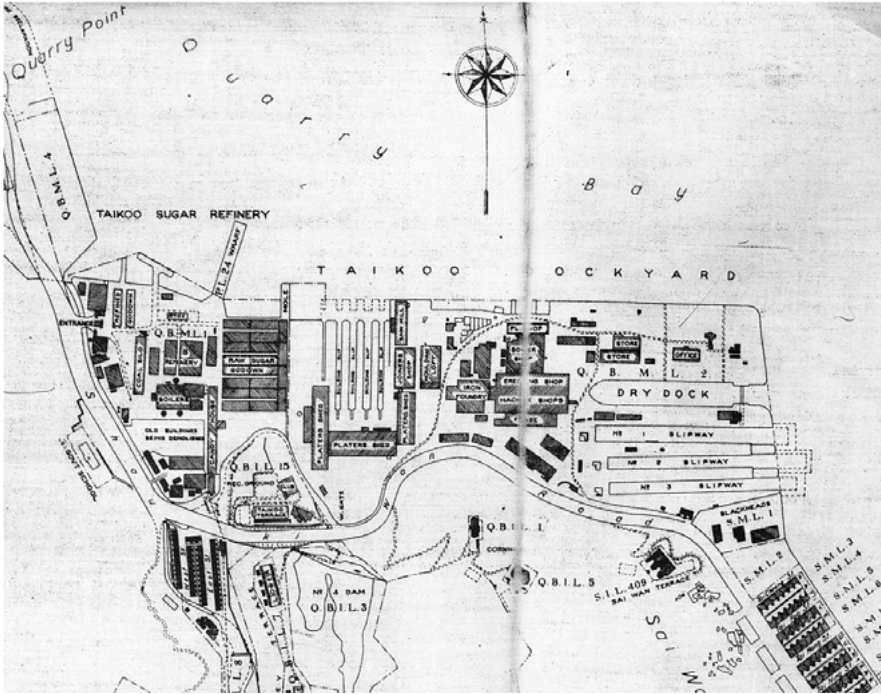
Fig. 3.   Map of Taikoo Sugar Refinery and Taikoo Dockyard in 1928, showing several components of a company town, including stores, residences, clubs and production-related buildings.

Government-led development of land reclamation and public roads along the seafront occurred in the early 20th century. As a result, more space was available for larger-scale sugar refinery and dockyard construction. More manufacturing buildings, housing units, and amenities were also constructed in this period.

Although the sugar company was once dominant in its market, it ultimately did not adapt to market changes and fell behind its powerful international competitors. The sugar company was transformed into a private property developer, Swire Properties, in 1972. A significant development containing high-rise private housing and a modern shopping mall, known as Taikoo Shing, was built at the site of the original sugar refinery town.

1 URBAN MORPHOLOGY EVOLUTION

The urban morphology evolution of the Taikoo Refinery town reflects the transformation of its production and social organisation over time. The mapping of the company's spatial elements, configuration, and growth focus on production processes and efficient worker housing (Figure 4).
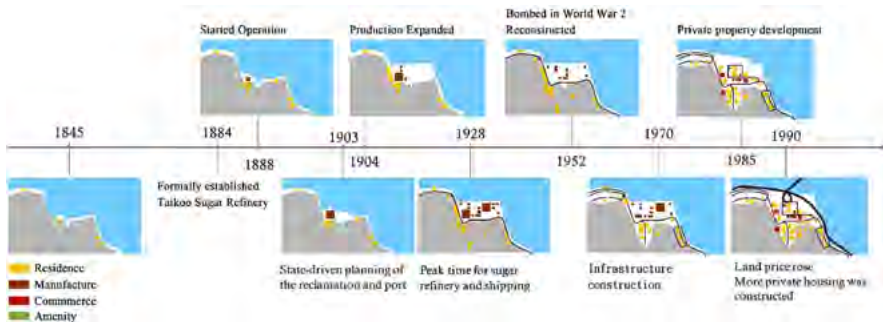
Fig. 4.   Urban evolution of Taikoo Sugar Refinery site

In 1881, the Quarry Bay land auction allowed Butterfield and Swire to secure a substantial site where they intended to create a company town.[18] Over the two decades, the government-directed phase of land reclamation finished, stabilizing the town's planning area. As the company planned the construction of factory facilities and workers' housing, the area was subdivided into blocks to accommodate a residential community.

The evolution of block patterns reflects the company's growth tracks and the influence of significant events such as war. In 1884, the factory only comprised a dormitory and basic refinery manufacturing infrastructure. As sugar manufacturing production grew, the infrastructure expanded to include recreational facilities and schools. Despite the devastation caused by bombing during World War II, the government-built railway line supported a booming property market that fuelled the town's post-war reconstruction.

The transformation of building types mirrored the industry-community integration and highlighted disparities in social classes. Employers resided in terrace houses in the mountains, while workers were accommodated in low- cost housing near the production facilities and port. While the spatial distribution differentiated residents based on nationality, race, and employment position, all were provided with relatively advanced and clean living conditions following English design principles and environmental standards.

2 INTERPRETATION OF DRIVING FORCES

In the case of the Taikoo Sugar Refinery, the force driving the evolution was fundamentally tied to the company's decisions and prosperity. The planning of spatial constructs and building fabrics were designed with a functionalist view, prioritizing the company's profit goals. Government infrastructure and facilities laid the groundwork for development, and the creation of reclamation projects, railway lines, and roads significantly enhanced production and logistics. However, the company's rigid internal structure prevented it from adapting to market changes and finally forced it to transform into land property development.

Taikoo Sugar Refinery represents the evolving urban morphology as a typical company town model. It underscores the transformative impact of production and settlement shifts over time. The spatial adaptations mark the company's growth and resilience across two world wars. At the same time, the differentiation in housing for workers and employers indicates the integration of industry and community, revealing disparities among social classes. Taikoo Sugar Refinery's legacy symbolises the symbiotic evolution process between industry-driven companies and the urban environment as the company and site transitioned towards property development.

1901–2020: KWUN TONG INDUSTRY CLUSTER

As industries and enterprises multiplied on Hong Kong Island and the Kowloon Peninsula, Hong Kong swiftly emerged as a prominent manufacturing hub. The surge in population and industrial activities consequently escalated the demand for both residential and industrial spaces in the New Territories. This led to a significant influx of immigrants and entrepreneurs from mainland China who sought to establish their businesses in the burgeoning district of Kwun Tong. Recognizing the need for expansion, the government formulated plans in the 1960s to develop new industrial areas in this district, further facilitating the growth of the industrial sector.

As one of the first large-scale industrial clusters in Hong Kong, Kwun Tong has experienced several transformation phases and is currently in the process of becoming the second CBD of Hong Kong. Its original operational strategy was informed by the principles of company town planning, and the area was gradually developed into a dynamic industrial zone featuring high-density industrial buildings and large-scale public housing.

From 1901 to 1911, Kwun Tong was a small company town for quarry mining. Located on an underdeveloped shoreline opposite Hong Kong Island, the company's operation follows the traditional company town, with land leases and housing provisions controlled by the company. In 1911, introducing hydraulic accumulators led to a significant labour force displacement. The innovation increased operational efficiency and expanded the quarry industry, but concurrently, it reduced areas designated for workers' habitation and manufacturing.

World War II was a key moment in the industrial transformation of Kwun Tong, facilitating advancements in transportation but simultaneously causing a downfall of the quarry industry. Following the sizeable post-war influx of Chinese immigrants and Hong Kong's rapid economic expansion, a government-led reclamation and industry zone program was implemented in Kwun Tong.

Throughout the 1960s, Kwun Tong experienced momentous growth, becoming a hub for various local industries, including textile, paint, and large enterprises such as Crocodile Garments. These significant manufacturers established in-house residence facilities for their employees, paralleling the government's efforts to meet the increasing housing demand by allocating land to build worker dormitories. The phased construction of infrastructure, such as the first metro line in 1979, attracted a sizable working class to Kwun Tong and aided Hong Kong's speedy economic ascension on a global scale. This evolution also promoted industrial

synergy, ensuring that the industrial structure of Kwun Tong was no longer dependent upon the mono-industry company town development model.

Public housing estates were initially constructed as part of land clearance operations and the regeneration of housing, offices and commercial buildings. Consequently, Kwun Tong ceased to be merely an industrial zone, evolving into a densely populated, industry-driven, mixed-use neighbourhood offering amenities such as hotels, retail outlets and other services that fostered its residents' diverse work-life experiences.

URBAN MORPHOLOGY EVOLUTION

The urban morphology evolution of Kwun Tong is characterized by the gradual expansion under government policies on infrastructure, reclamation, and land leasing, which promote industry synergy and high-density development (Figure 5).

The evolution of the planning area in Kwun Tong was a shift from direct resource-based monopoly development to a more structured, grid-based system that paved the way for successful land leasing for industry entrepreneurship. In the early stage, the urban unit of the mining town was resource-centred, closely tied to the quarry, and progressing organically alongside manufacturing operations. Following extensive landfill and land reclamation activities, a grid system layout underscored by road networks was designed as the primary planning unit, which was subsequently adopted for land auction programs and was the first attempt to impose use limitations on each industrial site. The land instruction system implemented in Kwun Tong was localized and designed to be simple and easily adaptable to British law. It closely resembled the land system that the local inhabitants, including immigrants from the mainland and former villagers governed by the Qing Dynasty, were already familiar with.19 Companies could buy and design the factories and housing for each planning unit as part of a competitive and evolutionary eco-system. When companies no longer adapted to the market, original industrial buildings were either adapted or replaced with new buildings.

Fig. 5.   Urban evolution of Kwun Tong

The evolution of the Kwun Tong industrial area has shown significant growth and synergy among companies, resulting in improved quality of life for local employees. Worker dormitories resembled the company town model but with a conceptual shift from managerial monopoly to supporting employees' preferences and conveniences. Amenities such as parks, theatres, and hospitals were also constructed to enhance the workers' quality of life.

Kwun Tong's building typologies show an evolutionary regeneration process, reflecting the synergy and increasing complexity of companies' manufacturing operations and the land planning process. The singular resource extraction model of the quarry town was replaced by an industry cluster, with growth stimulated by later land leasing policies and land use planning during the 1990s, generating a transition from single industry building to mixed use of industry and office. As a result, the building types began exhibiting increased diversity and a mixture of functions and companies. The specially designed plots can hold numerous small industrial concerns that do not require much space within each rented floor.[20] This shift led to the vertical integration and division of the manufacturing process within a single building, with retail facilities emerging on the ground floor, enhancing the urban environment. Currently, Kwun Tong is no longer an industrial zone but a high-density industry-driven mixed land-use area that offers hotels, retail, and various options for working and living lifestyles.

INTERPRETATION OF DRIVING FORCES

In the evolution of urban morphology in Kwun Tong, governmental interventions have been instrumental in fostering the adaptation to market trends amongst various companies. Contrary to the historical company town operation, mainly controlled by entrepreneurs, the government planned this area as the first satellite city and industry zone to depopulate residents and meet the demand for enterprise development after World War II.

During the immigration period, there was a significant surge in demand for industrial buildings as entrepreneurs recognized the economic opportunities associated with establishing their businesses in the Kwun Tong area. This market-driven process encompassed the development of manufacturing buildings, warehouses, markets, and logistics facilities, catering to the growing needs of the expanding industrial sector. Land lease controls were governed by long-standing policies that offered the possibility of industrial regeneration within the site to adapt to market changes, through building adaptations, demolition or reconstruction. Nevertheless, rising land prices rendered the Kwun Tong region less appropriate for industry development over time.

Kwun Tong began transforming as the government and corporations collaborated to bolster liveable amenities. Workers from all walks of life could use these amenities, dismantling the monopoly of the company-town model. Housing was initially provided for factory workers, but industrial production was gradually replaced with emerging businesses in international commerce and service industries.

Although Kwun Tong is not a typical company town, it followed the guidelines of many company towns' original intentions, like Pullman, which addressed workers' housing problems and pro-

moted amenities. Government policies, infrastructures and support for the operational models of companies and industries have made Kwun Tong a driving force within the broader regeneration of Hong Kong. It is now a town under continuing industrial and social transformation, offering new housing, shopping destinations, and balancing the relationships between life and work.

1998-PRESENT: CYBERPORT

Since its return to China as a Special Administrative Region in 1997, Hong Kong has largely retained its metropole urban development and planning system that is distinctly top-down and market-driven. [21] The government continues to rely on land property land sales and transactions to sustain its financial stability, which is influenced by the market mechanisms. This dependence was evident in the financial decline during the 1997 Asian economic crisis when there was a shortage of land sales at the luxury end of the market.

In the wake of the economic crisis, the 1998 Hong Kong Government embarked upon an initiative to foster growth in rapidly emerging sectors ranging from biotech to information technology. The administration appointed Richard Li, entrepreneur and second son of magnate Ka-Shing Li, as the developer for this project. Bolstered by government finance, the Cyberport venture was initiated and sited in the southern region of Hong Kong Island, an area already equipped with basic community infrastructure. Meanwhile, land reclamation was still being processed. It was Hong Kong's initial attempt at conceiving an urban design for a science and technology hub, mirroring the blueprint of Silicon Valley.

The development of the project was conducted in five stages. During the first phase of the initial decade, shopping complexes and the first two office towers were erected. Subsequently, hotels and phases three and four were constructed. At the dawn of this century, the offices and supplementary facilities intended to foster high-tech corporations were accompanied by a large-scale luxury residential development motivated by the substantial profit derived from real estate development. From 2000 to 2010, construction was predominantly focused on luxury housing units, whereas only one-third of its investment was focused on the technology sector.

In the recent decade, despite the construction of the Cyberport Institute within the Cyberport Learning Centre, leading companies such as IBM and Cisco Systems left the offices due to the unsatisfactory operation of the technology sector ecosystem. Contrastingly, the luxury residential sector thrived, attracting residents and transforming this area into a high-end community, far from its original vision of serving as a platform for innovation.

URBAN MORPHOLOGY EVOLUTION

The evolution of the planning area was consistent with the plan of the industrial park released by the government. Cyberport is a single-company development with a holistic urban design. The subdivision into land plots is based on a road system as the primary access to the different buildings.
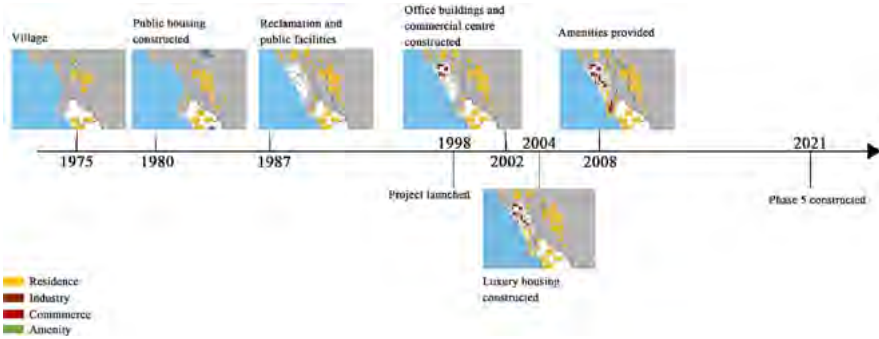
Fig. 6.   Urban evolution of Cyberport site

The main office building for innovation and technology is designed to surround the shopping mall and public space. Unlike the traditional company town model, the rich infrastructure and amenities provided in Cyberport are aimed at serving and attracting talents and companies and their high-end residents. Cyberport constructed a self- sustaining community with facilities that meet high-tech occupants' daily requirements. It is the hub of the place where the Cyberport International School, shopping malls, and hospitals are located. Aesthetically designed amenities, including parks, pools, and gymnasiums, also offer lifestyle enrichment to the residents and workers. However, it is still remote and inconvenient for its employees to commute, considering the scarce public transport system compared to Hong Kong Science and Technology Park.

From the building typology perspective, big-scale office blocks and smaller-scale luxury housing create a strong sense of division. Functional and social separations are emphasised in the company town. The top-down design of large-scale office buildings constructed in different phases has proven to be inflexible when meeting market demands and resulted in the departure of leading enterprises.

2 INTERPRETATION OF DRIVING FORCES

As a top-down government initiative taken over by a private company, the mixed success of Cyberport demonstrates how Hong Kong promoted itself into the post-colonial complex by participating in globalization and developing its technology-driven urban development.

The government of Hong Kong has been facing mounting criticism over the secretive way it struck a deal with an influential private company to build the high-tech industrial park since its launch. When investing in land property was much more profitable than developing technology and innovation, there was no doubt that the developer would prioritise private residential development. However, the government has not given sufficient financial support when investing in the Cyberport project, resulting in the private company developing luxury land property to fund the construction and operational gaps for technology and innovation

development. For the companies that rent offices in Cyberport, the innovation ecosystem was ineffective due to the management and marketing being conducted by a property development company. There have been criticisms that most improvements in the urban design and facilities in the area were for residential purposes rather than serving the development of technology.

These phenomena demonstrate the difficulty of mixing residential and leisure development purposes with a technology-based ecosystem and the challenges of balancing community development and high-tech-oriented facilities. The failure of the Cyberport Project as an industry hub highlights the essentiality of effective collaboration between government and private enterprises while planning technology park projects. It proved that leasing such a significant development to a single developer may not be appropriate for developing an incubator and innovation hub. Ultimately, this case underscores the complexity and challenges of mixing residential, recreational, and technology-based development within a single community, as well as the need for sufficient funding and policy support from the government.

In the last two decades, the city has sought to redefine itself in the global landscape by shifting from traditional industries to high-tech development while grappling with its colonial past, as evidenced by projects like Cyberport, Hong Kong Science and Technology Park and the newly planned Technopole in the north metropolises. By launching these mega-industrial urban projects, Hong Kong is actively promoting itself into the hierarchy of the global urban order by moving forward with a more 'entrepreneurial' urban culture into the globalization process that continues to be heavily influenced by the West.

COMPARATIVE ANALYSIS
OF CASES IN DIFFERENT HISTORICAL PERIODS

During various historical phases, the evolution of urban morphology in Hong Kong's industry-driven urban development has been influenced by three primary driving forces, as outlined in Table 1. It is evident that the main driving force and several sub-domain forces interact and impact the resulting urban morphology. Therefore, it is necessary to classify the degree of influence in the table to define the principal characteristics of the domain force.

The government's driving force mainly contributes to the scale of planning areas, street systems, and land use policies. During the colonial period, land was divided by the government and sold through public auctions. These auctions facilitated private investment and company involvement, stimulating the early development of Hong Kong. The planning units were considerably large, resembling self-sustaining company towns responsible for their internal business and development. Following World War II, there was substantial development in reclamation, road networks, and metro lines, resulting in the establishment of a basic grid structure of urban morphology. As exemplified in Kwun Tong, the land became privately owned and structured as long, continuous building blocks to maximize street frontage. Strategic initiatives and policies, such as the satellite city plan and industrial zone, envisioned

and developed Kwun Tong as a light industry cluster. Particular building typologies planned, such as the Industrial/Office building, also contributed to the functional mix within a single industry-oriented structure. Public facilities such as residences, parks, hospitals, and public transport systems were constructed to enhance the quality of life for local labourers. In the past decade, Hong Kong has shown strong support for the development of the technology industry. Consequently, different collaborations and operations between the government and Hong Kong have resulted in disparities in urban morphology. For instance, Cyberport exhibits larger building blocks than the Hong Kong Science and Technology Park.

Companies exert influence on building scale in terms of intensity, with the nature of a company town being a direct outcome of extensive product manufacturing. The scale of a company evolves in tandem with the production scale, leading to distinct segregation of manufacturing, residential, and recreational areas. As production methods and lifestyles have evolved over time, so too have the treatment of employees and the spatial distribution and features of residential and production buildings. The industry-residence ratio varies depending on a company's position. For example, Cyberport provides high-end residences to support industry development. Embracing vertical and horizontal distribution of functions, including office spaces, residences and dining establishments has become an urban design principle for innovation projects. Greater emphasis is placed on providing abundant amenities to attract future talents.

Market forces constitute another significant catalyst for urban form transformation. The increased land value resulting from favourable locations stands out as one of the primary drivers behind Hong Kong's urban transformation. Notably, the Taikoo Sugar Refinery was eventually redeveloped as Taikoo Shing. Additionally, Cyberport has also become a short-term land property investment project. Moreover, the rapid increase in the floor area ratio in Kwun Tong's industrial estates reflects how industry-driven urban development responds to a thriving economy. The regeneration of old industry estates and the demolition and reconstruction of outdated structures also exemplify how urban morphology has evolved in line with market trends.

In summary, the evolution of urban morphology in Hong Kong's industry-driven urban development has been shaped by three main driving forces: government influence, company features, and market forces. The government has been instrumental in determining the scale of planning areas, street systems, and land use policies. Company influence has been evident in the scale and mixture of manufacturing, residential, and recreational areas, with a shift towards providing amenities and attracting talent. Market forces, including increased land value and economic growth, have driven transformations in urban form, such as the redevelopment of industrial estates and the adaptation of spaces to meet market demands. Understanding the interplay between these driving forces is crucial for comprehending the main characteristics and trends in the evolution of urban morphology in Hong Kong's industry-driven urban development.

Historical Stages	Driving Force Characteristics			Urban Morphology Evolution
	Category	Key Feature	Influence	
1840s–1970s: Colonial Industry	Government	British urban design concepts and principles	Weak	Planning units, street structure, infrastructure
	Company	Company town development, profit- oriented	Strong	Massive construction of manufacturing buildings, provide amenities
	Weak	International and local trade market	Medium	Port development
1900s–2010s: Industry Cluster	Government	Policy implementation	Medium	rid system structure, infrastructure, function mix land use, public facility
	Company	Industry cluster and synergize	Weak	Mix industrial building with dormitory, restaurant Market
	Market	Thriving economy and local manufacturing	Strong	Dynamic development, high density, demolish and rebuild to adapt to the market
1990s – present: Science and Technology Parks	Government	Strategic concept design	Strong	Institute, labs and well-prepared infrastructure, regional collaboration
	Company	Different development models	Strong	The ratio of residential to industrial land use and the scale of the enterprise determine the building type
	Market	Technology sector outweighs manufacturing	Medium	Incubator, start-ups, medium and leading enterprises within flexible land leasing zone

Table 1. Driving force characteristics in different historical stages and their influence on urban morphology evolution

DISCUSSION AND CONCLUSIONS

Hong Kong has experienced diverse transformations over centuries—from a colonial company town during its initial industrial phase into a regional industrial cluster and subsequently evolving into a global finance and technology hub. While Hong Kong has followed a historical model of top-down planning methods and reliance on market forces, it also reflects the influence of town planning models influenced by the UK New Towns Act of 1946 and the Country Planning Act of 1947. Notably, examples such as Port Sunlight and Telford New Town demonstrate improved living quality and amenities.[22] As a result, sustainable and healthy town planning principles have gradually become embedded in recent industrial urban development in Hong Kong. This shift towards a more 'entrepreneurial' urban culture, [23] which emphasizes inclusive approaches to small-scale enterprise scale and human-centred industrial town design for the context of Hong Kong industry development, is evident in initiatives undertaken in the last two decades, such as Cyberport, Hong Kong Science and Technology Park, and the planned Technopole in the north metropolises. This shift aligns with the ongoing globalization process, which continues to be heavily influenced by Western ideals.

By examining Hong Kong's trajectories and understanding its colonial past and post-colonial complex, we gain insights into the city's ongoing efforts to redefine its industrial position in the global landscape. In recent decades, Hong Kong has actively sought to redefine itself within the global urban order by embracing high-tech development and confronting its colonial legacy.

These changes have been shaped by evolving government policies, company features, market changes, and broader global trends. Despite the unique challenges at each stage, Hong Kong's resilient capacity to adapt and reimagine its industry-driven urban design in response to shifting socio-economic contexts has remained constant.

The government's expanding influence has been pivotal in providing the necessary support for developing industrial regions. Under policy support, the development of these regions became increasingly mixed and adopted for land auction programs with planning and design limitations implemented. Although the construction of factories is being left entirely to private enterprises, the government and public companies have played an increasingly important role in providing facilities such as educational facilities and mobility equipment further to facilitate the integration of industry, academia and research and foster cross-regional cooperation, within the Shenzhen-Hong Kong Greater Bay Area.

Industry transition and diversification have become the defining features of the current era and are the driving forces behind companies' internal development and upgrading efforts. Technology is now leading the development of the industry and directing the way businesses work. Enterprises now engage in design, R&D, prototyping and manufacturing within their own industry chains.

Companies emphasise attracting talent with unique characteristics instead of viewing workers according to standard profiles. They invest in diverse facilities to attract young people, expressed in a company's spatial form and architectural features. Smaller enterprises often cluster together in shared business areas with communal spaces and facilities, emphasizing the social role of shared public spaces.

In conclusion, as we envisage the future of cities, it is vitally essential for urban planning and developmental policies to consciously consider technological advancements along with human-centred spatial planning, sustainability, and social equity to create a balanced, liveable city. As illustrated by this study, re-evaluating the concept of a company town and its historical context can offer valuable insights to inform future urban development. Overall, Hong Kong's journey exemplifies how a city can adapt its urban morphology in response to changing circumstances and industry demands while still ensuring the welfare of its residents.

Going forward, urban design and development policies that consciously integrate technological advancement with human-centric spatial design, sustainability, and social equity will be key to achieving future balanced, liveable, smart cities. As this study demonstrates, revisiting the company town concept and its historical context can ensure that it provides valuable lessons to inform future urban development.

NOTES ON CONTRIBUTORS

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IMAGE SOURCES

Figure 1	The Pullman State Historic Site, Digital Archive
Figure 2	Author's own illustration
Figure 3	Courtesy of Swire Archive, SOAS, University of London
Figure 4	Author's own illustration, base map from New HK Maps
Figure 5	Ibid
Figure 6	Ibid

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Planning Politics in East-Asian Cities

Chair: Melody Yiu

Garden City as a Techno-Spatial Assemblage under Wartime Urban Regime
A Case of Jhongsing New Village, Taiwan

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Abstract

Based on the 1950s-history of East Asian Cold War geopolitics, this paper illustrates how the idea of Western Garden City was techno-spatially reassembled by the Republic of China (R.O.C.) Government exiled to Taiwan to assist its wartime urban regime for enforcing air defence-evacuation strategy. We use Jhongsing New Village (JNV) – the seating of Taiwan Provincial Government – as a case owing to its status as not only the earliest detail new town plan in postwar Taiwan, but also a specific local (re)assemblage of hybrid planning legacies, new planning technology, and martial spatial politics – the Britian Garden City utopia, air raid experience and revanchist deployment of the Nationalist technocrats, and Japanese planning legacy in Taiwan – to shape a regional warfare evacuation town. JNV provided a place for experimenting cold war city through spatial components with variegated modernity threads, planning culture genealogies, and national contexts. Integrating the 1950s-historical materials of Taiwan's spatial planning with the viewpoints of urban policy transfer and regime theory, we propose the concept of "wartime urban regime" (WUR) to scrutinize the influence of the Martial Law on Taiwan's municipal governance. Connecting the Japanese colonial planning legacy and modernity imagination inherited by the planning technocrats, we explore the planning concepts, geo-strategic intentions, and institutional reassembling process of JNV and argue that, as a spatial device projecting WUR, JNV is a remixed product of cold war spatial planning providing a contested lab for multiple planning ideas – fulfilling air defence evacuation, compromising Japanese legacies and technocrat ideals, and learning new planning knowledges.

INTRODUCTION

As large human settlements, cities are closely related to war. Historically, one of the earliest urban functions was to provide defence to its inhabitants when enemy attacked. However, the relationship between city and war has received few explorations in urban studies and military science[1]. With the advancement of aircraft, since the late 19th century, as air-raid has gradually become emergent threats to cities. During the two world wars, air raid was used as a strategic instrument to destroy important military objectives while hitting the morale of enemy civilians[2].

Cold War is a pivotal event changing postwar geopolitics. Its tension has caused confrontation among East Asian countries since the 1950s and still influences contemporary international order, urban-rural pattern, techno- social configuration, and spatial governing regime. Since 2000, several studies have explored Cold War urban experiences but seldom paid attention to East Asian cities except for a few works[3]. Even if some studies have focused on the importance of urban air defence-evacuation and resulting decentralized urban form in the face of bombing, most rarely touch on East Asian cities. East Asian counterpart is worthy of scrutiny because this region had ever encountered the most intensive confrontation during the Cold War and left some 'forgotten wars' determining current strained geopolitics across Taiwan Strait and Korea Peninsula.

In the Cold War context, this paper illustrates how the concept of 'Garden City' was techno-spatially reassembled by the exiled Republic of China (R.O.C.) Government (named as the Nationalist Government hereafter) to execute air defence-evacuation under wartime urban regime (WUR). We use Jhongsing New Village (JNV) – the seating of Taiwan Provincial Government – as a case owing to its status as not only the earliest detail urban planning in postwar Taiwan, but also a techno-spatial (re)assemblage of hybrid institutional legacies, new planning technology, and martial spatial politics – the Britian Garden City utopia, air raid experience of the Nationalist technocrats, and Japanese planning legacy in Taiwan – melding a warfare dispersal town. JNV provided a place for experimenting Cold War city through variegated modernity threads, planning culture genealogies, and national contexts. Integrating the 1950s-archivals of Taiwan's spatial planning with the viewpoints of urban policy transfer and regime theory, we propose the concept of "wartime urban regime" (WUR) to scrutinize the influence of the R.O.C. Martial Law on Taiwan's municipal governance. Connecting the Japanese colonial planning legacy and modernity imagination inherited by these planning technocrats, we explore the planning concepts, geo- strategic intentions, and institutional reassemblage of JNV and argue that, as a spatial device projecting WUR,

JNV is a remixed product of Cold War spatial planning providing a contested lab for multiple planning ideas – fulfilling air defence-evacuation, compromising with Chinese technocrat ideals over Japanese legacies, and learning new planning knowledges.

SEP 21, 1948	NOV 1, 2020
Taiwan Province Urban Planning Commission Organisation Regulations	Urban Planning Commission Organization Regulations at All Levels
● Chair: Director of the Provincial Department of Construction	● Chair: the leader at respective levels – Ministry Interior, local governments, or township/country; in the municipal or county(city) government, its vice mayor or heads of responsible authorities may be appointed as chair.
● 12 committees are assigned by the Provincial Government Chairman from the following personnels:	
1. Director of the Department of Civil Affairs	● Vice-chair: chair appoints one from all committees.
2. Director of the Department of Transportation	● All-level Urban planning committees are assigned by leader at corresponding level from following personnels:
3. Director of the Department of Agriculture and Forestry	1. The head of responsible agency or its accountable unit.
4. Director of the Department of Sanitation	2. The head of related agency, its accountable unit, or representative.
5. Director of the Land Administration Bureau (Dept. of Civic Affairs)	
6. Director of the Railway Management Bureau (Dept. of Transportation)	3. Experts with professional experience
7. Director of the Water Resources Bureau (Dept. of Construction)	4. 2 citizens concerning public welfare
8. Chief Staff Officer (Garrison Command)	● Except for the Urban Planning Committee (Ministry of Interior), committees from the item 1. And 2. Should not exceed one-half of the total number of members.
9. 2 Provincial senators	
10. 1 representative assigned by the Central	● Expert committees assigned by ministry of Interior and municipality government should be urban planning, urban design, landscapes, architecture, or transportation academics.
11. 2~4 Academics/ professionals	

Table 1.   Comparison of Urban Planning Commission: 1949 vs. 2020.

AIR DEFENCE– EVACUATION UNDER WARTIME URBAN REGIME

MARTIAL LAW AND THE RISE OF WARTIME URBAN REGIME

Urban regime is broadly used to analyse how a governing coalition is formed to achieve effective municipal agendas; it concerns not pursuing economic growth alone but consolidating regime compositions with varied policy goals and diversified interests[4]. Even if regime theory originates from the American liberal-democratic tradition, many new approaches have been used to illustrate regime formation with different socio-political backgrounds since the 1990s[5].

Variegated urban regimes enlighten us to reconsider Taiwan's WUR and its impact on urban planning in the early 1950s. During 1949-1987, Taiwan Provincial Martial Law was enforced by the Nationalist Government, which lost its mainland territory in the Chinese Civil War. Worrying about further invasion of Chinese Communist Party (CCP), the Nationalist Government imposed military regulation on Taiwan. In this moment, stabilizing society and state security were prior to other policies. With burst of the Korean War in 1950, the US Government renovated cooperation with the 'R.O.C.' while ordering that the 7th Fleet cruised Taiwan Strait to prevent further warfare expansion[6].

The East Asian warfare circumstances and martial control in Taiwan provided a garrison-state condition establishing WUR. Several historical planning regulations/documents reveal the specific municipal governance which prioritises military garrison and social security while practicing the goal of national defence through urban planning to assist the island martial regulation. For example, the organization of Taiwan Provincial Urban Planning Commission in the early 1950s, compared to current institution, was ordered to include military members. All committees were assigned by the Provincial Government Chairman while excluding civil-

ians concerning public affairs (Table 1). Over 1950s/60s, several terms of Taiwan Provincial Chairmen had military backgrounds or concurrently served as garrison positions (Table 2). Ministry of National Defence (MND) also forcefully directed urban planning based on air defence projects; moreover, MND was actively involved in reviewing urban plans and even required provincial municipalities for revising their urban plans to meet air defence standards[7].

Provincial Government Chairman	Related Garrison Positions	Military Background
Kuo-Chen Wu Dec 21, 1949-Apr 16, 1953	Concurrently serving as Commander-in-Chief of the Taiwan Provincial Garrison General Headquarters	
Hung-Chun Yu Apr 16, 1953-Jun 7, 1954	Concurrently serving as Commander-in-Chief of the Taiwan Provincial Garrison General Headquarters	
Chia-Kan Yen Jun 7, 1954-Aug 16, 1957	Concurrently serving as Commander-in-Chief of the Taiwan Provincial Garrison General Headquarters	
Chih-Jou Chou Aug 16, 1957-Dec 1, 1962	Concurrently serving as Commander-in-Chief of the Taiwan Provincial Garrison General Headquarters (Aug 17, 1957-Jun 30, 1958; Secretary General of National Defense Council (Jul 1, 1954-Aug 8, 1957)	√
Jie Huang Dec 1, 1962-Jul 5, 1969	Commander-in-Chief of the Taiwan Provincial Garrison General Headquarters (Aug 15, 1958-Nov 30, 1962); Minister of Defense (July 1, 1969-Jun 1, 1972)	√
Da-Qing Chen Jul 5, 1969-Jun 8, 1972	Commander-in-Chief of the Taiwan Provincial Public security Headquarter (Dec 1, 1962-Jun 30, 1964); Chief Commander of the Taiwan Provincial Public security Headquarter & Taiwan Army Control District Command (Jul 1, 1964-Jun 30, 1967); Minister of Defense (Jun 1, 1972-Jul 1, 1973)	√

Table 2. The Personnel Background of Taiwan Provincial Chairmen in the 1950s-60s. Source: 1. Taiwan Provincial Administration Information Hall; 2. Army Force Reserved Command Website: https://afrc.mnd.gov.tw/AFRCWeb/Unit_en.aspx?MenuID=6102&ListID=2101

AIR DEFENCE–EVACUATION AND URBAN DISPERSAL PROJECT

Throughout 1950s, cross-strait rivalry propelled the state strategy towards air defence-evacuation and urban dispersal decentralising political, economic, and administrative functions from Taipei to satellite subcentres. The atmosphere of martial control empowered the MND intervening in urban planning through air defence regulations. The Nationalist Government enacted Air Defence Act in 1937. In its 1948-Amendment, the Article V ordered that local air defence agencies, along of related military and state-owned-enterprise authorities, would be responsible for designing and improving urban construction for completing local air defence projects. In 1953, MND, together with the Ministry of Interior, issued the 'Guidelines for Urban Construction in Concert with Air Defence', which ordered that new/old urban development coordinated with local air defence agency even if Taiwan Provincial Government expressed several practical difficulties and legal contradictions with Urban Planning Act and Building Technology Regulations[8].

In 1953, the 354th Executive Yuan Meeting enforced 'Taiwan Province Air Defence-Evacuation Implementation Regulations' on June 3 while, on July 29, discussing the 'Planning Outline for Evacuating Central Authorities from Taipei City' drawn up by the MND. Owing to fearing the possible bombing from CCP, the Nationalist Government formulated scenarios dispersing central agencies from the capital Taipei to surrounding suburban areas[9]. During the first cross-strait crisis (1954-55), the Nationalist Government signed the 'Sino- American Mutual Defence Treaty' with the US but lost

Zhejiang's Yijiangshan and Dachen islands due to the restricted air-force assistance from Taiwan. In 1955, the 398th Executive Yuan Meeting determined a dispersal project of central and provincial agencies – the *'Dispersal Project for All Agencies in Taipei City'* and instructed Taiwan Provincial Government relocated to central Taiwan. Considering uncertain warfare situation and bombing risk at any time, the meeting decided that Taiwan Provincial Government should instantly complete relocation to central Taiwan within six months while Chia-Kan Yen, the provincial chairman, suggested a step-by-step principle – to disperse several central and provincial agencies to suburban Taipei at the outset, then to vertically decentralise all agencies to assigned evacuative areas, and, if necessary, to transform provincial administration into wartime regime[10].

In the context of East Asian Cold War, garrison-centred personnels of provincial administration and municipal legislation that favours urban air-defence over urban planning led to the emergence of WUR. Encountering the cross-strait warfare situation, WUR dominated Taiwan's municipal governance in the 1950s. To secure civilian safety and reduce the loss of state agencies, it is the Cold War geo-strategic consideration that legitimised the air defence thread of urban planning and fast transfer of foreign planning experiences. Throughout the 1950s, the most typical planning case reflecting this geostrategy is projected into the provincial government's relocation project, which is the JNV planning case that will be discussed in the next section.

PLANNING THE PIVOTAL AGE – THE BUILDING PROCESS OF JHONGSING NEW VILLAGE

Threatened by the tense warfare situation, the 1950s was the 'pivotal age' determining the survival of 'R.O.C.' Before enforcing the evacuation project, provincial government had prepared several primitive dispersal schemes: constructing (1) 8 dugouts, (2) one joint administrative office in suburban Taipei – Waishuangshi, and (3) some classroom-type evacuation offices separating on the public schools in Beitou, Hsinjuang, Shulin, Yingge, Jingmei, Shindian, Tucheng, and Mucha during 1950-51[11]. With the national decision to disperse Taiwan Provincial Government to central Taiwan on April 28, 1955, "all provincial-level agencies will move their offices to the central area within six months. Several agencies highly related to the function of central agencies, such as Financial Bureau, Police Department, and Grain Bureau, will remain all or partial offices in Taipei" [12] . Meanwhile, "provincial government would actively establish a formal wartime regime while searching for an ideal location…because the dispersal would be long-term"[13].

Following this national decision, provincial government established 'Taiwan Provincial Planning Commission for Dispersing to Central Area' responsible for evacuation missions. Dong-Ming Hsieh, the Chief-Secretary of Taiwan Provincial Government as well as the commission convener, assigned Yung-Mao Liu, the Deputy-Director of Construction Bureau, as the Chief-Engineer to seek for a suitable location among five central counties – Taichung, Changhua, Nantou, Yunlin, and Chiayi. Finally, provincial government determined to settle Taiwan Provincial Provisional Council, Education Bureau, and Public Health Bureau in Wufeng, Niulangong, and Kengkou of Taichung County as the first evacuation districtand rest agencies to Yinpankou of Nantou County as the second evacuation district (the seating of JNV)[14].

The planning of JNV was based on two major principles – (1) the idea of 'ruralising urban area and urbanising rural area' addressed by President Chiang Kai-Shek to reduce urban-rural disparity and (2) the 'mode of British new town development combing "neighbourhood units" with "low-density development"' advocated by Professor Mei-Shin Wu for air defence-evacuation [15] . For implementing urban planning, the committee also set up a temporary group, 'Evacuation Housing Engineering Office (EHEO)', in the Department of Construction, in which Ching-Rong Chang, the chief of the Civil Engineering Section, served as the director, Chi-Ming Gao and Shi- Huai Ni of the Urban Planning Group were responsible the 'detailed plan', and Hsiao-Yi He of the Construction Group enforced the 'construction plan'.[16]

Before constructing JNV, the Chief-Engineer Yung-Mao Liu launched a pilot-project called Guangfu New Village (GNV) in the first evacuation district. It was a community-scaled plan resettling the staffs and their families of Education Bureau and Public Health Bureau. GNV was an experiment to testify engineering feasibility of office buildings and sewage treatment plant and later to enlarge the scale in the formal project (JNV)[17] (Liu's oral record).

Type of Zoning	Major Buildings and Facilities
Administrative Building Zone	Government buildings: Provincial Government Building, Civil Affairs Offices, Financial Office, Construction Office, Agricultural and Forestry Office, Transport Office, Accouning Office, and Social Affairs Office; public sevices: postoffice, telcommunication office, and Taiwan Bank
1st Neighbourhood Residential Zone	Guanghua Elementary School and 1st Market
Village Centre Zone	Living facilities: Jhongsing High School, Centre Market, Jhongsing Hospital, Jhongsing Civic Hall (including hall, library, luonge, swimming pool), and playground; public services: police station, village joint office, water plant, electricity plant, postoffice, newspaper office, sewage treatment plant, and park; housing: single staff/labour dorms, and staff dependents dorms
2nd Neighbourhood Residential Zone	Living facilities: Guangrong Elementary School and 3rd Market; Housing: staff dependents dorms; Government buildings: Provincial Government Archival Offices
3rd Neighbourhood Residential Zone	Preserved area for following-up projects including an elementary school, a market, and a district for commercial use, as well as high-rise and low-rise dorms

Table 3. The Zoning Division, Major Buildings and Facilities in JNV. Source: EHEO, The Comprehensive Report, 23-24.

The blueprint of JNV was drawn up in 1955. Its planning area was 441.90 hectares. Deducting agricultural and protected areas, the usable area reached 253.62 hectares, which planned to accommodate around 17,700 to 24,700 people. Its per capita land area of JNV is approximately 102 to 143 m^2 [18]. The planning schemes were following principles: (1) JNV is mainly focused on politics, supplemented by industry, commerce, and mining. A long-term construction plan will be implemented according to possible development trends. (2) The scope of the current plan need not to be too large. It is mainly based on the political needs of the provincial government and the daily needs of the evacuees. The neighbourhood allows for commercial activities and is linked to nearby urban planning to enlarge future development. (3) The plan should implement the construction of transportation and public facilities to attract immigrants and industrial and commercial prosperity in the future. (4) Government agencies should induce and support investment in surrounding area to exercise industrial and commercial development[19]. This plan also introduced the concept of zoning, including 7 zones – one administrative building zone, one village centre zone, and five neighbourhood residential zones (Table 3). Until 1960, administrative building zone, village centre zone, 1st neighbourhood residential zone, and 2nd neighbourhood residential zone was completed, and the 3rd neighbourhood residential zone were preserved for following-up development in the future. As for the 4th and 5th neighbourhood residential zones remained unacquired due to no emergent need for development currently.

The most significant feature of JNV is to remix multiple planning and design schemes. Taiwan Provincial Government had ever issued an English publication summarising the planning characteristics of JNV – zoning, provision of public facility, road network, and the neighbourhood unit[20]. Except for the concept of neighbourhood unit, the EHEO applied multiple detailed community planning techniques such as green belts, road functional level, superblock with cul-de-sacs (Photo 1- Right), loops, crook1ed routes (U-shape or T-shape) (Figure 1) to reduce unnecessary traffic through communities while established adequate life facilities (Figure 2; Photo 1- Middle) widely adopted in the first generation of new towns in post-war Britain to support the self-sufficiency of daily life (Bureau of Construction Ministry of Interior, 1979: 61). Besides, the underground electric wires, water supply pipes (Figure 3) and sewage treatment systems

(Photo 1- Left) were the most prospect new techniques "rarely seen at that time even in foreign cities"[21] (Hsiao-Yi He's oral record). Unlike the traditional engineering habit to complete road engineering construction and then the sewer and pipe construction, the specificity of JNV is that sewer system was finished and then the road construction was approved for implementation[22].

A NEW TOWN NARRATING URBAN GARDENING AS A WARTIME TECHNO-SPATIAL ASSEMBLAGE

Founded by Sir Ebenezer Howard, 'Garden City' is renowned in the discipline of urban planning. Although his thought is often labelled as utopian planning, it has profound influence on planning theory and practice around the world. Indeed, his ideal was practiced in the UK and has been seen as a pioneering thought inspiring the rise of new town movement[23] emulated by advanced and developing countries. Postwar Taiwan was no exception. JNV was planned to resettle agencies, personnels, and their families of Taiwan Provincial Government from Taipei. According to official statement, it was the first state-planned new town in postwar Taiwan[24]. It is also regarded as a new town paradigm of 'urban gardening' achieving international construction level[25] although the blurred terms, 'new town' and 'Garden City', maybe result from misunderstanding of local technocrats at that time[26].

Photos. The Hole-Cover of Underground Sewer (Left); Civic Hall and Sports Ground (Middle); Cul-de- sac Design in a Neighbourhood Unit (Right). (Photographed by Cassidy I-Chih Lan)
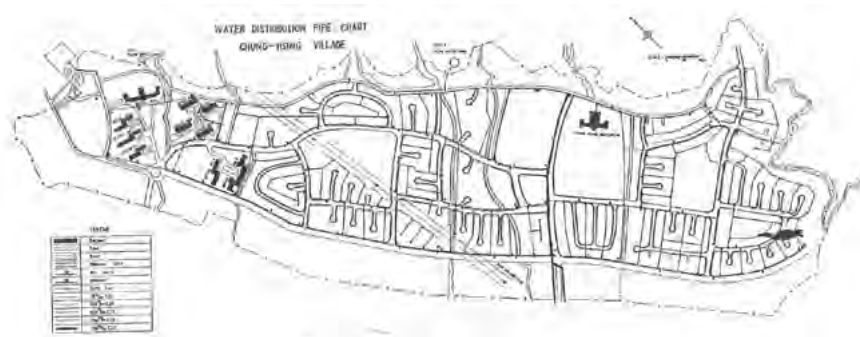
Fig. 3. The Underground Water Distribution Pipe Chart of JNV Urban Plan. Source: EHEO, The Comprehensive Report, 89.

Transplanting foreign planning cultures are normal exchanges of cross-national planning experiences. Learning/emulating advanced planning practices is common for developing countries lacking sufficient professionals and matured knowledges[27]. Planning culture is not an unchanged cultural essentialism but a hybrid evolving process which is driven by complex political, socio-economic, and internal/external factors[28]. In each place, any adoption of exotic planning techniques never abruptly emerges; instead, the transporting process must have a specific historical-geographical path the place inherits[29]. In the case of JNV, even if senior planning technocrats mentioned the reasons for adopting the idea of Garden City – it is a well-known planning case in the UK[30], the process of absorbing and applying the experience may have a far-reaching historical frontier.

PLANNING KNOWLEDGES CULTIVATED IN THE R.O.C. MAINLAND PERIOD

Although some studies indicate that planners responsible for JNV project seldom had complete professional background of urban planning[31], we argue that whether received orthodox planning education did not affect the emulation of Garden City because several ideas have been introduced and applied in Chinese cities during the mainland period.

American planning thought, first, had been adopted by the Nationalist Government and the most typical case was Nanjing's Capital Plan in 1929. The chief American architect – Henry Murphy – and his colleagues had applied advanced planning and design practices – zoning, road network, and neighbourhood unit – popular in the then US[32]. After the World War II (WWII), decentralising modes had ever been proposed in some major cities[33]. Planning technocrats in the late 1940s tried to combine several Western ideas relating new town into planning drafts despite most projects were partially realized owing to postwar financial scarcity and consequent Nationalist- Communist struggle. In other words, planning experiences during 1945-49 revealed that interrelated concepts, including zoning, open space, road network, and neighbourhood unit had been introduced diversely into decentralised urban patterns narrated as organic decentralisation, satellite city, or Garden City[34].

Second, municipal works have been regarded as the cornerstone of national modernization since the early Republican years[35]. By then, civil engineers and architects were actively involved in projects for cityscape beautification, infrastructure works, and urban design. Even if urban planning as an independent profession was never systematically established in the mainland era, it was seen as a subtopic of civic engineering or architecture. Many of these 'taken-for-granted planners' had ever studied abroad. Facing the chaotic urbanization and socio- economic changes after the birth of R.O.C., they tried to take municipal works as a social solution and considered the city as a place to examine Western knowledge. Covering traditional, eclectic, and modern ideas, the thought diversification, remixing, and debates for architectural design and urban planning were the typical feature of municipal governance during the mainland era[36]. This socio-political context resulted in a milieu that technocrats tended to either diversly introduce, learn, and imitate advanced planning ideas or adapt foreign experiences to solve urban questions in the Chinese context pragmatically.
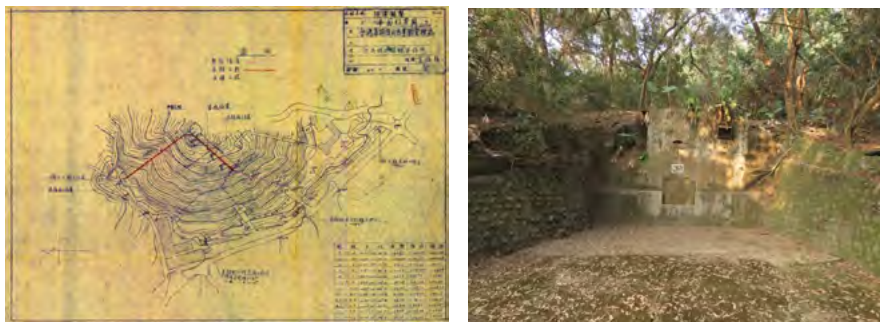
Fig. 4.   The Hushan Air Raid Shelter Topographic Layout and its Current Remain of No.39-Exit. Source: Left – National Yunlin Technology University, The Cultural Assets Assessment, 6-26; Right – Photographed by Cassidy I-Chih Lan

Third, some technocrats and scholars with planning experience moved to Taiwan with the Nationalist Government after 1949 and played the role as successors to mediate and adapt their inherent planning expertise in Taiwan. In addition to the pragmatic spirit inherited from the intellectual genealogy in the mainland era, they tackled urgent urban problems brought by civil war refugees and driven by peasant immigrants with postwar urbanisation. Urban planning in Taiwan had a mature foundation in the Japanese colonial era. However, Japanese experts were expatriated after taking-over Taiwan by the Nationalist Government and lacked professionals to implement local planning practices. These Nationalist technocrats attempted to merged former colonial system and survey contemporary urban problems on the one hand while popularised planning knowledge and introduced new international expertise on the other[37]. Two important publications in 1952, "*Urban Planning Speech*" and "*Urban Planning*", represented these expert's attempt to spread urban planning ideas to the locals. The former was one of the "Modern Citizen Basic Knowledge Series" edited by Yi-Kui Chou, a land management professional and the principal of Taiwan Provincial Administrative College. The latter was the reprinted edition based on the second edition in 1939, the only Chinese self-compiled urban planning textbook during the mainland period[38]; its author was Xun-Xuan Chen, a civic engineer studying in France and the senior manager of Taipower Corporation. Both books introduced the concept of Garden City and the latter, extraordinarily, detailed for the relationship between air-defence and urban planning owing to the bombing experience during the WWII.

GARDEN CITY AS A STATE INSTRUMENT FOR URBAN AIR-DEFENCE

Among the technocrats moving to Taiwan, several planning experts having experiences of urban air-defence in the mainland era kept on claiming the importance of urban air-defence, which was asserted in the "*Taiwan Provincial Municipal Works Group Investigation Report*" in 1954. Based on the preliminary achievements of farmland reform and resultant economic growth, the report aimed at promoting urban land reform and preventing land and social questions from speculative urbanisation. However, it also proposed several concrete sugges-

tions about urban air-defence by using multiple ideas – organic decentralisation, neighbourhood unit, green belt, regional planning, and satellite city/federal cities – which are elements used in new town planning to disperse population and industries from congested urban centre[39]. Some ideas were also adopted in the planning reports for mainland cities during 1945-1949. In addition, Yi-Kui Chou and Xun-Xuan Chen were also group members. As for the group convener, Yu-Chun Lu, a prestige architect studying in France, had ever published several papers to discuss the importance of urban air-defence in the mainland era[40]. Meanwhile, the paper, "*A study on the issues for the postwar reconstruction of cities and towns*", Lu published in 1945 had many ideas consistent with the "*Taiwan Provincial Municipal Works Group Investigation Report*" to analyse how to implement postwar reconstruction, urban planning, and air-defence projects[41].

The authority of leadership cannot be ignored. To legitimise his ruling in Taiwan and the political status of the 'R.O.C.' as orthodox China, President Chiang Kai-Shek announced the "*Two Editions to the Principle of People's Welfare: Education and Entertainment*" in 1953. One of his statements about urban planning is the concept of 'ruralising urban area and urbanising rural area'. This notion focuses on "*the balanced urban-rural development to provide enough space and healthy environment for each household[42]*". Chiang also asserted that "*our town and country planning should obey 'ruralising urban area and urbanising rural area' as the basic principle. For urbanising rural area, the most important mission is to deploy convenient public utilities in countries. For ruralising urban area, the central mission is to enjoy country scenery in cities*"[43]. Chiang's claim about balanced urban-rural development is seemingly like Howard's argument about three magnetics of town-country relationship (Howard, 1902/2010: 21). It is reasonable to postulate that Dr Sun Yat-Sen's thoughts to found R.O.C. were also inspired by Howard's assertion of Garden City[44]. In the context of authoritarianism, opinions from the leader, as an ideological foundation of state governance, were often seen as important guidelines. New town planning in Taiwan is without exception. The fact is reflected in the oral history record of JNV senior retirees that "*one of the principles for this engineering project forty years ago was to equally concern both peacetime and wartime. The other is to develop a new town based on the noble principle – ruralising urban area and urbanising rural areas*" (Mu-Du Lee's oral record[45]).

Scrutinising the plan implementation, policy documents, and historical archives related to JNV project, we can apparently find that the local technocrats played the key agent to introduce, remix, and adapt various planning techniques from advanced countries. We do not argue that foreign actors were not important. Indeed, foreign experts might play a minor role in the planning process. According to Yung-Mao Liu's oral record, except for the health officials of WHO, two American engineers, Joel I. Connelly and A. Dale Swisher, were invited to visit JNV for engineering investigation[46] and "offered many useful suggestions"[47]. In 1957, they published a short review in the journal Public Health Reports with the title of engineers of the United States Operation Mission, Taipei, briefly describing the visit of Taiwan's technicians to Japan to inspect sanitary sewers and sewage treatment equipment[48]. Judging from this information, we can reasonably infer that the American consultants and WHO expertise should be targeting the underground sewer pipelines, water supply systems, and the sewage treatment plant – appearing in Taiwan for the first time even though no more information about these consultants can be found. These public health engineering matters also met Yung-Mao Liu's profession.

Facing the warfare situation in the early 1950s, the strategic guideline of the state leader and inherited wartime experience forced planning technocrats to learn new planning concepts from abroad on the one hand and tried to calibrate new techniques following their past knowledge and background on the other. Most of the officials and bureaucrats had ever undergone Japanese air-raids in Chongqing, the second capital of R.O.C. during the WWII[49]. This historical context enabled the founding of Defence Corp and Hushan Air-Raid Shelter (Figure 4). First, the origin of Defence Corp can be traced back to the burst of the Second Sino-Japanese War. The Nationalist Government of R.O.C. announced Air Defence Law and established Air Defence Command in Nanjing in 1937 and then ordered each province to organise provincial civic defence command[50]. Taiwan Provincial Government initiated Air-Raid Defence Commission in 1951, which can be seen as the predecessor of Defence Corp[51]. Its office and simple air-defence equipment in JNV was formally set up in 1957. Most members were transferred from military, police, or intelligence agencies due to its special mission[52].

Second, Hushan Air-Raid Shelter was not developed until 1959 and its stage-1 project was finished in1965. The construction was mainly carried out by the military while the structure of shelter was designed by experts with experience in building large dugouts in Chongqing. Referencing the engineering of Chongqing during WWII, the shelter in JNV was equipped with exhaust fans, wireless telephones, meeting rooms, a wartime command centre, and bathrooms. Air-defence drills were held regularly every year. Provincial government employees had to cooperate with the drills to take refuge in caves. Staffs at the level of section chief or above could hold cave entry passes and had to enter the shelter to work during the drill[53].

ASSEMBLING JHONGSING NEW VILLAGE TECHNO-SPATIALLY

From these historical-geographical clues, we can find that these local technocrats attempted to introduce Garden City as an ideal settlement to demonstrate a paradigm for modern urban life, but they also had to calibrate the concepts to meet the dispersal requirement of WUR and the strategic guideline from the state leader. The main promoter of JNV, unlike the public-private cooperative that Ebenezer Howard advocated in Britian, was Taiwan Provincial Government, which was responsible for financing, land acquisition, urban planning, building design, and construction. Frankling speaking, JNV was a state-led project whose main function was public administration and accompanying housing for civil servants and their dependents; that is JNV was an administrative community, lacking diversified industries that primary Garden City in Britian emphasised[54] . In addition to the above geopolitical considerations, the complex historical, political, social, and institutional factors faced by Taiwan at that time prompted multilateral knowledge circulation and learning paths, consolidating JNV as a unique techno- spatial assemblage.

First, the narrative, "New Village", was not the invention of postwar Taiwan even if many military-dependents- quarters (*Juan-Cuns*;   )[55] in Taiwan were called "new villages". As early as 1939, the term 'new village' was used in the '*Dispersal and Construction Plan by Chongqing Dispersal and Construction Committee*' to express the resettlement of government agencies, civilians, and industries in the suburban dispersal districts surrounding Chongqing. The basic

mechanisms for building agents, financing and pricing regulation, land acquisition, planned population for accommodation, and lost security were also announced in this plan; in addition, the plan also required that air-raid shelters and Defence Corps had to be established in each dispersal districts[56]. In the mainland era, establishing Juan-Cuns has become a scheme in some Nationalist troops as early as 1932 to accommodate military dependents and even to offer schools and military dependent factories but was not a unitary and systematic institution until the Nationalist Government moved to Taiwan in 1949[57]. In general, JNV was not characterised as a military-dependent-quarter but could be seen as a broadly defined *Juan-Cun*.

Second, the assembled process of planning technique was selected contingently. The reason to adopt Garden City as the planning concept for evacuated settlements was, on the one hand, knowledge that had been well-known in the disciplines of architecture and urban engineering in the mainland era and had been applied in some urban planning cases; on the other hand, it is an accident encounter. Yung-Mao Liu's oral record pointed out that in 1952, he used the funding from the U.S. aid to visit the UK for an inspection. The main purpose was to learn the mode of tap water management. Coinciding with the central government's instructions to evacuate the provincial government, he stopped by to visit the British Garden City cases. Meanwhile, engineering talents who used US aid to study in the United States, such as Shi-Huai Ni majoring in urban planning, Xiao-Yi Ho inspecting national housing, and Min-Ching Chen learning water supply and sewage treatment engineering, etc., returned to Taiwan one after another[58]. These young technocrats, cooperating with some architects and scholars moving to Taiwan, assembled each part needed for carrying out JNV project – urban planning, building design, housing construction, transportation network, and water and sanitary systems. These planning knowledges, taken as engineering technologies due to the historical background, were seen as the latest parts learned from advanced countries. Just as the comment of Liu's interview, *"our planning in JNV was to learn the experiences of the UK and other countries and to complete the project by our native talents"*[59].

Finally, we cannot ignore the past education and experience shaping the personality of these experts that were influential on their selection of planning assemblage. A common personality trait among architecture and urban planning experts in the mainland era is that:

> *"They were influenced by the social responsibility concepts of modernist architects in the international environment…and tried to intervene in social improvement with professional skills… The national, political, and social emotional states and needs are reflected from the material space…Based on the special historical transformation background of modern times … [They] faced an extremely complex practical environment, especially between modern scientific concepts and traditional Chinese thoughts and systems. Under the collision, blending and compromise, how to combine subjective agency and passive adaptability to cope with the conditions and requirements of the times fully reflected their wisdom"*[60].

From the planning experience of JNV, it is not difficult to discover that these technocrats moving to Taiwan, facing the pivotal era, still reflected this personality trait – the complex process of mixing national strategy, leaders' will and existing knowledge as well as absorbing new foreign techniques to transform local planning practice. Among them, planning technology will not be fully

applied to local experience, but will be compromised with geopolitical pressure, the guideline of the national leader, considerations of local conditions, and past urban air-defence experience to form the unique techno-spatial assemblage with constant adjustment, eclectics, compromise, and collision. These technocrats formed transborder knowledges and completed the techno-spatial assemblage transferring the British version of Garden City into Taiwan's cold war urbanism.

CONCLUSIONS

For renovating national modernization, it is a common practice for urban planning in various countries around the world to refer to advanced foreign planning experience. However, transplanting planning knowledge is never about filling the vacuum of a given region with "advanced models", but about subtle negotiations and choices on both import-export sides of technology transfer. The formation of Taiwan's postwar planning knowledge and system, and even its specific practices, were closely linked to local needs, political and economic intentions of importers, and the strategic goals of exporters. This techno-spatial assemblage has contributed to the formation of contemporary planning system and even the dilemma of urban and regional governance.

It can be seen from the case of JNV that the formation of Taiwan's early postwar planning system was not a one-way export-import technology transfer, but involved geopolitical struggles under the Cold War context, national air-defence requirement, the definition of local urban questions, inherited knowledge of mainland era, and the influence of existing Japanese planning legacies. At least, in the early postwar period, we would say that it was not just a simple proposition that Taiwan's urban planning institution solely relied upon the former Japanese colonial system and the incapable state governance during the Cold War urgently needed to introduce foreign advanced planning techniques; instead, the learning, adjusting, imitating, and implementing practice was a complex techno-spatial assemblage.

The JNV project was not just a transplantation or mimicry of British Garden City. It was assembled from the modernization experience of municipal movements and war reconstruction in the mainland era, the review and renovation of Japanese colonial urban planning legacy in Taiwan, and the "advanced" perspective of US aid-funded experts learned from abroad. The resulting planning practice was hybrid. The socio-technological history of planning practice in JNV was a modernising path towards continuous transplantation, adjustment, and rectification of cross-national assembly components with diverse historical-geographical depth, thereby driving the transborder constitution of paradigm shift performing the planning techniques in early postwar Taiwan.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the authors.

NOTES ON CONTRIBUTOR(S)

Cassidy I-Chih Lan and **Jinn-Yuh Hsu** are human geographers at the Department of Geography, National Taiwan University, Taiwan. They are interested in the studies of economic geography, urban socio-technology history, special zone development under East Asia Cold War geopolitics, geographies of policy transfer, and spatial political economy.

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33. For example, Chongqing was the secondary capital of R.O.C. during the WWII. For postwar reconstruction, the municipality, assisted by American experts, drew up the '*Draft Plan of Ten-Year Secondary Capital Construction*' in 1946. In this report, the new spatial structure was reorganized as 12 satellite cities, 18 satellite towns, and 18 reserved satellite towns. Meanwhile, Shanghai Urban Planning Commission issued the '*Draft Report for Greater Shanghai Urban Master Plan*', which mixed several latest ideas – organic decentralisation, neighbourhood unit, Garden City, satellite city, and zoning and subdivision control – as the basic socio-economic organisations.

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46. Ibid. 25. In Liu's oral history record, the names of the American consultants were mistakenly listed as 'Joe Conrnally' and 'Dale Suisher'.

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49. Committee of Taiwan Provincial Archive, *The Oral History Records*, 20. According to the oral history records, "Based on the national situation, the central government had determined the core state strategy as 'constructing Taiwan to supress rebellion and recover lost land'. The state concerned for Taiwan's security and took air defence-evacuation as the main policy, so the state decided to evacuate the provincial government to central Taiwan" (Du-Mu Lee's oral record;); "Using the word evacuation allows us to understand what it means. The background was associated with the WWII because China was heavily bombed by Japan; the intention of evacuation was air-defence to move government agencies if the war occurred" (Ke-Shiu Chiu's oral record).

50. Chi-Dai Chung, *Jhongsing New Village Studies*, 293.

51. Taiwan Historica: Collection No. 0040120013150001

52. Chi-Dai Chung, *Jhongsing New Village Studies*, 293.

53. Ibid. 293-294.

54. Bureau of Construction Ministry of Interior, *Exploring the Direction of New Town*, 63.

55. Military-dependent-quarters can be defined as accommodation settlements "approved by the military responsible authority and built in state designated areas. The quarters are allocated to the spouses of officers and soldiers or direct blood relatives to live in while a military residence management agency is set up to manage them." (cf. History and Politics Compilation Office, Ministry of National Defence. *From Bamboofence to Mansion: A History of Armed Forced Military Dependent Quarters*, (Taipei: History and Politics Compilation Office, Ministry of National Defence, 2005), 1.)

56. Chongqing City Archives: Collection No. 00670001003360000021

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The Historical Change of the Perception of Greater Colonial Seoul (1920-1935)

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Abstract

A century ago, Colonial Seoul's (Keijo in Japanese) population surpassed 250,000, resulting in rapid urbanization exceeding 5,000 people per square kilometers. This led to challenges related to housing, hygiene, and traffic congestion. This study examines how Colonial Seoul residents' perception of the city's extent changed in the 1920s-30s and how authorities responded through urban planning based on newspaper articles and official urban planning documents. Through this investigation, the following implications can be derived: First, just a decade after Japan's annexation, colonial Seoul's expansion was accepted by residents as an imminent future, corroborated by the Keijo Urban Planning Research Group's activities, although led mainly by Japanese capitalists and bureaucrats with limited Korean input. This transformation to Greater Keijo provided an opportunity to address not only the positive metropolis vision but also urban problems like poverty, insufficient utilities, and transportation. Secondly, through chronological analysis, the purpose and underlying demands supporting expansion gradually changed. Discussions until around 1930 aimed to resolve urban problems and promote growth. But after 1931's Manchurian Incident, the emphasis shifted to strengthening the war effort and enabling better functioning within the Japanese economic bloc.

INTRODUCTION

Several studies have traced the historical changes in Colonial Seoul's urban spaces by focusing on the urban spaces of the time as depicted in media reports and literary works. Kim and Jeon analyzed the areas surrounding colonial Seoul that were perceived as sub-urban at the time by extracting articles containing the word 'suburban' from the daily newspaper Dong-a Ilbo published in the 1920s and 1930s.[1] Kim and Yoo conducted an analysis of the landmarks in various areas of Seoul mentioned in the serialized column "Naedongni-Myeongmul" (洞里名物; Landmarks of my hometown) published in the daily newspaper Dong-a Ilbo in the mid-1920s.[2] Jung and Han traced the spatial perception of Keijo's suburbs at that time based on suburban exploration articles serialized in Chosun Ilbo and Mainichi Shimpo during the 1920s and 1930s.[3]

As Kim and Jeon have already pointed out, this research method has limitations in that it is difficult to accurately represent the voices of colonial Koreans during the colonial period, when the illiteracy rate was higher than it is now and the class that could access the newspaper medium was limited.[4] However, compared to administrative documents such as the official gazette of the Japanese Government-General of Korea and the journals of professional technicians' associations, it is worth noting as a material that can relatively read the voices of the people of that time. Furthermore, it can also provide clues as to the social background behind the expansion of colonial Seoul, which is hard to find in official documents.

Therefore, in this section, referring to previous studies, we performed a task of examining which specific place names outside of pre-expansion Keijo were mentioned in articles related to the expansion of Keijo or urban planning (Keijo town plan) in the newspapers of that time, before the official expansion of Keijo in April 1936.

The task of extracting which areas were mentioned as expected incorporation regions before the official administrative expansion of Keijo was carried out as follows. First, the newspapers referred to in this survey were a total of 8 daily newspapers, including Chosun Ilbo and Dong-a Ilbo, which were representative Korean-language newspapers in colonial Korea and are still published today, and 6 old newspapers (Mainichi Shimpo, Chosen Shimbun, Keijo Nippo, Chosun Choongang Ilbo, Chosen Jihou Chung-oe Ilbo) provided by the old newspaper archive of the National Library of Korea.

The period of analysis was set from 1920, when discussions on urban planning for colonial Seoul and Greater Keijo first began, to April 1936 when the official expansion of administrative districts took place, and until 1940, after which it becomes difficult to find newspaper articles due to media censorship. To extract the expected incorporation regions, keyword searches were conducted for the urban planning-related concepts of expansion (擴 張) and Greater Keijo (Greater Gyeongseong; 大京城), which have not been covered in previous studies.

Through such extraction work, the number of media reports on Greater Keijo (Greater Gyeongsong) investigated, excluding advertisements, was totaled at 2,741 cases. Among them,

editorials reflecting the individual newspaper's stance totaled 248 cases. In contrast to most articles that solely introduce urban planning policies pursued by the Keijo Municipal Government and the Government-General of Korea, along with subordinate public reactions, individual newspaper editorials reflect more proactive and autonomous opinions on the contemporary policies and socioeconomic circumstances, rendering them more noteworthy than news articles. Consequently, this section will primarily examine these editorials, while concurrently referring to news articles from that period as supplementary materials, to explore how the perception of Greater Keijo evolved during the colonial era.

THE CONCEPTION OF GREATER KEIJO: EMERGENCE AND EXPANSION

The term "Greater Keijo" first appeared in an August 1920 Mainichi Shimpo article about flood control and city construction plans in Yongsan. In May 1921, the concept of "Greater Keijo (Gyeongseong in Korean)" first appeared in a Korean-based Chosun Ilbo editorial. A summary of the key editorials and articles related to the concept of Greater Keijo identified from the 1920s to the early 1930s is as follows:

– In July 1921, a Dong-a Ilbo editorial mentioned Greater Gyeongseong while criticizing discriminatory streetcar fares, recognizing Mapo and Cheongnyangni as part of the same 'city' as Keijo. The editorial emphasized setting non-discriminatory fares for Greater Gyeongseong's future expansion.

– In 1923, a Dong-a Ilbo editorial had a critical tone towards "Greater Gyeongsong," reflecting the situation where colonial Seoul's economic initiative had shifted from Koreans to Japanese after annexation.

– In October 1922, a Dong-a Ilbo article reported the Municipal Government secretly surveying areas like Cheongnyangni for incorporation into Gyeongseong, pointing out the overcrowded reality forcing impoverished Koreans outside old city walls.

– In December 1925, a Chosun Ilbo editorial compared colonial Seoul's size to New York and London, arguing "Greater Gyeongseong" was excessive but expecting its true emergence as residents dominate the country's thoughts.

– In August 1929, Chosun Ilbo published an exploration series introducing Sindang-ri as a poor population-dense area adjacent to Greater Gyeongseong, emphasizing it should function as Greater Gyeongseong's eastern development center.

– An October 1932 Dong-a Ilbo editorial emphasized Greater Gyeongseong's formation should not be limited to external expansion, pointing out suburban population increases were due to seeking affordable housing, not commercial/industrial development anticipation.

– In January 1933, a Chosun Chungang Ilbo column analyzed the impending Greater Keijo reality through statistics covering nearly all urban issues, suggesting the literate colonial Korean class firmly recognized Greater Keijo's reality even before its physical formation.

In addition to these editorials, from the late 1920s to the early 1930s, suburban exploration articles targeting areas expected to be incorporated into Keijo in the future were published, mainly in Chosun Ilbo, Dong-a Ilbo, and Mainichi Shimpo.

In the study by Jung and Han, which investigated suburban exploration articles, the suburban areas of Keijo were found to be connected not only to the physical recognition of being adjacent districts but also to the traditional perception of suburban areas that had been carried down from the Joseon Dynasty.[5] In the traditional eastern and southwestern regions (to be discussed later in section 3.2), which had been perceived as suburbs since the Joseon Dynasty, streetcar lines were opened early on, allowing the potential for development as suburbs. However, from the early 1920s, as the housing shortage in Keijo intensified, impoverished colonial Koreans began to migrate to these areas. Consequently, local residents demanded urbanization that organically connected these areas, adjacent to the city center of colonial Seoul, with Keijo, but it took more than a decade for the administrative ruling class, represented by the Keijo Municipal Government and the Government-General of Korea, to put this into action.

In the study by Kim and Jeon, which examined residents' perceptions of suburban areas at the time through the extraction of the keyword 'Suburban,' it was shown that the perception of suburban areas decreased as most of the places recognized as 'suburban' areas until the early 1920s and 1930s were incorporated into Keijo through the administrative district expansion in 1936.[6] Furthermore, by categorizing the characteristics of the spaces perceived as 'suburbs' during this period into recreational areas and 'areas to be developed' as urbanized and residential areas, the study demonstrated how colonial Korean citizens in Keijo at the time perceived the areas near Greater Keijo. This study also confirmed that the eastern and southwestern regions, which traditionally had a connection with Hanseong-bu of the Joseon Dynasty, were perceived as 'areas to be developed,' a fact that is also supported by the research of Jung and Han's study.[7]

Based on the news articles and editorials reported in contemporary newspapers as mentioned above, the following implications can be drawn.

Firstly, it is evident that from the early 1920s, both colonial Koreans and Japanese, who were the primary residents of colonial Seoul at the time, were cognizant of the concept of Greater Keijo. While it is unclear precisely who conceived the notion of Greater Keijo and when, at the very least, news articles and editorials confirm that by the early 1920s, newspaper readership envisioned Greater Keijo as the future form of colonial Seoul.

Next, while the concept of Greater Keijo was discussed as an anticipated future phenomenon in the early 1920s, a noticeable change occurred in the late 1920s when the physical formation of Greater Keijo through the expansion of Keijo became more visible. During this period, reports emerged regarding field surveys and investigations of areas expected to be incorporated into Greater Keijo. This suggests that within a span of less than a decade, the perspective of residents surrounding Greater Keijo shifted from a hopeful or prophetic viewpoint to one that acknowledged its tangible existence. This transformation can be interpreted as evidence that colonial Seoul was not only physically becoming a metropolitan area but was also conceptually accepted as such by the public.

SUBSUMPTION OF THE CONCEPTION
'GREATER KEIJO' BY COLONIAL AUTHORITY

This section aims to investigate the changes in the areas expected to be incorporated into Greater Keijo, as envisioned by the Government-General of Korea and the Keijo Municipal Government, through a chronological examination of urban planning survey reports and urban plans produced from the 1920s until the issuance of the Keijo Town Plan Act in 1936. The reports and plans to be analyzed in detail are as follows.

- Keijo Urban Planning Area Designation Document (京城都市計画区域設定書) (1926)
- Keijo Urban Planning Document (京城都市計画書) (1930)
- Keijo Administrative District Expansion Analysis Report (京城府行政区域拡張調査書) (1932)
- The actual expansion of the administrative districts of Keijo (enacted on April 1, 1936)

The 1926 Keijo Urban Planning Area Designation Document holds significance as the first official document to express the discussions on Greater Keijo that began in the early 1920s. Notably, this 1926 document is the initial instance where specific candidate neighborhoods for incorporation were expressed on a map. Remarkable points about this document include the foundation for the administrative district expansion that was actually carried out in April 1936 being nearly completed in this document, excluding the area south of the Han River. Additionally, it emphasized that the focus was on the 'future potential' rather than actively incorporating surrounding areas, stressing that it was the 'establishment of a future urban planning area.' Another notable feature is that almost all the areas considered appropriate to be incorporated into Greater Keijo (Gyeongseong), as reported in the media in the early to mid-1920s, such as Cheongnyangni, Mapo, Ahyeon, and Sindang, were included in the future urban planning area. Particularly, the Cheongnyangni, Mapo, and Ahyeon areas had already been functioning as a single urbanized city connected by the Seoul streetcar (tram) even before the Japan-Korea Annexation. As previously examined, these areas were being accepted as parts of colonial Seoul, especially by colonial Koreans.[8]

The 1930 Keijo Urban Planning Document, prepared by the Civil Engineering Department of the Government- General, holds the following significance. First, while the 1926 document presented the possibility of colonial Seoul's expansion in the east-west direction in the area north of the Han River, this 1930 document considered the area south of the Han River, including the Yeongdeungpo area, as part of the future colonial Seoul. In this regard, it can be called a de facto draft of the great expansion that was actually realized in April 1936. Since the Yeongdeungpo area was rarely included in the previous administrative district expansion plans prepared in the 1920s, it can be considered that with this 1930 document's plan as a starting point, the incorporation of Yeongdeungpo into colonial Seoul effectively became a foregone conclusion. Additionally, while the 1926 document presented the future areas to be incorporated (urban planning areas) but focused on explaining the urban planning areas, reviewing the tax system and land readjustment methods as prerequisites for administrative district expansion, and analyzing the current situation of Keijo at the time, the 1930 document significantly proposed a concrete plan, in other words, a vision of Keijo's future when the administrative district expansion would be carried out

and the urban planning area would be established. Specifically, the document included plans for road networks, water supply and sewerage systems, intracity streetcars, suburban railways, subway proposals, park arrangements, and zoning regulations for land use districts and zones, which can be evaluated as a plan envisioning the realization of a complete urban entity, 'Greater Keijo,' rather than merely the expansion of colonial Seoul.[9]
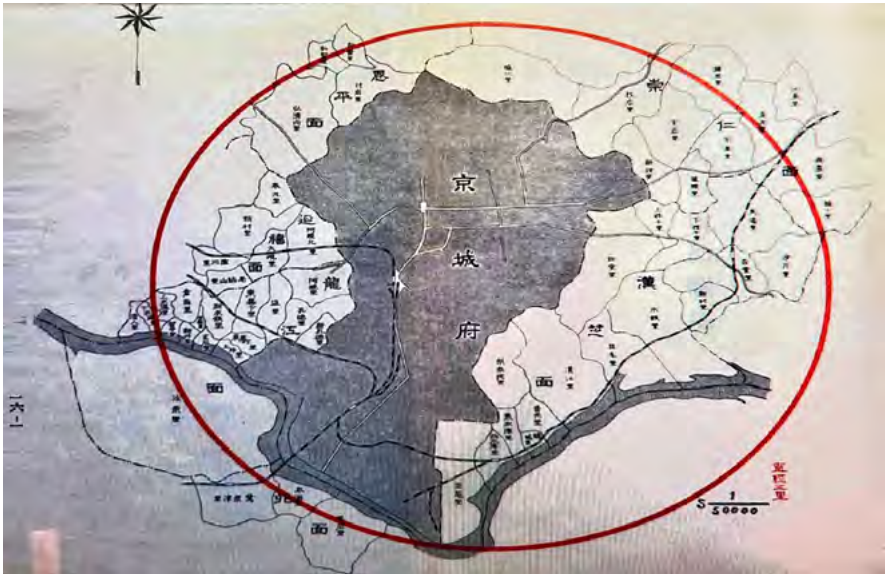
Fig. 1.   Map of regions planned for administrative expansion in 1926.

Fig. 2.   Public transportation planning map included in Keijo Urban Planning Document, 1930.

The 1932 Keijo Administrative District Expansion Analysis Report bears the distinctive feature of excluding the Yeongdeungpo area, which was then opposing incorporation, reflecting the friction surrounding the incorporation of neighborhoods into Colonial Seoul at the time. The expected incorporation areas north of the Han River, excluding the Yeongdeungpo area, show almost complete alignment with those in the 1926 document and the 1930 document. This implies that the opinions of colonial Seoul's residents, as reflected in media reports in the early to mid-1920s, and the results of investigations conducted by the Keijo Municipal Government and the Keijo Urban Planning Research Group at that time, persisted unchanged for several years. This suggests that these areas possessed a strong justification as targets for incorporation. Additionally, it should be noted that this document was published with the same table of contents and composition for not only colonial Seoul but also Busan, Pyongyang, and Daegu, which is evidence that there was a movement by the Government-General of Korea in the mid to late 1920s to establish urban planning in major cities of colonial Korea outside of colonial Seoul.[10] Yum evaluated this document as a plan that combines the technical skills of the civil engineering bureaucrats of the Government-General of Korea in the late 1920s, and although it was not a document intended for immediate implementation, it is a resource that can further clarify the development process of urban planning discussions in colonial Korea during the 1920s.[11]

Through the series of plans mentioned above, the actual expansion of the administrative districts of Keijo (enacted on April 1, 1936) encompassed all the incorporation areas mentioned in 1926, 1930, and 1932, resulting in a wide- ranging administrative district expansion. Originally, the target date for the expansion of administrative districts was not April 1936, but 1935. According to an article in the Chosen Shimbun in January 1935, the formation of Greater Keijo was referred to as an 'urgent matter for the future of colonial Seoul, which was nothing less than a forward base for the Japanese Empire's continental policy.' This can be considered evidence that the establishment

of Greater Keijo was closely linked to the Japanese Empire's war effort. However, the expansion of administrative districts was delayed by about half a year due to the coordination of interests with adjacent areas. The center of the controversy was the Ttuk-to area. The residents of the Ttuk-to area and Gyeonggi Province, which had jurisdiction over the area, continuously demanded that Ttuk-to, which was adjacent to Keijo's urban area, had railways and streetcar lines passing through, and functioned as a supply source for vegetables and coal for Keijo, be incorporated into Keijo. However, the Keijo Municipal Government took a stance of gradually monitoring the situation, as incorporating the Ttuk-to area into Keijo's administrative district would require substantial financial resources for the installation of infrastructure and land readjustment. From July to October 1935, a movement demanding the incorporation of Ttuk-to into Keijo actively took place, but due to the strong opposition stance of the Keijo Municipal Government, the expansion of administrative districts, excluding the incorporation of Ttuk-to, was carried out as of April 1, 1936. This was the opposite case compared to Yeongdeungpo, which was incorporated into colonial Seoul despite opposition. The determining factor for the inclusion or exclusion of Yeongdeungpo and Tuk-to ultimately depended on whether it would aid the war effort. As such, this outcome can be interpreted as reflecting the geopolitical reality that colonial Seoul, the future Greater Keijo, faced at that time.

CONCLUSIONS

By examining urban planning reports and documents published before the Greater Keijo Expansion of April 1936, we have confirmed how the spatial perception of the extent of Greater Keijo (Gyeongseong), as revealed through media reports at the time, was reflected in the official plans of the Municipal Government and the Government- General of Korea. The significance derived from the examination in Chapter 3 can be summarized as follows.

First, it is significant that the expansion of colonial Seoul was accepted by the residents of that time as a natural future, just a decade after the Japan-Korea Annexation. This perception of the public at the time is also corroborated by the activities of the Keijo Urban Planning Research Group, which began in 1921. However, since the group's activities were mainly led by Japanese capitalists and administrative bureaucrats, it is difficult to say that the spatial perception of Greater Gyeongseong, which was actively discussed among colonial Koreans, was sufficiently reflected. As the transformation of colonial Seoul into Greater Keijo (Gyeongseong) came to be accepted as an imminent future, it is also significant in that it provided an opportunity to more clearly reflect on and recognize not only the positive future vision of a metropolis but also the various urban problems that colonial Seoul was experiencing at the time, such as the poverty of colonial Koreans, insufficient water and sewage facilities, and transportation issues.

Next, through a chronological analysis, it was revealed that the purpose, intention, and the underlying demands of the era supporting the expansion of colonial Seoul gradually changed over time. The necessity of Greater Keijo discussed from the 1920s until around 1930, and the administrative district expansion plans discussed in reports and documents, were primarily aimed at resolving urban problems in colonial Seoul and promoting the city's growth. However, following the outbreak of the Manchurian Incident in 1931, as the geopolitical significance of colonial Seoul was emphasized, the expansion of colonial Seoul, or the formation of Greater Keijo, discussed thereafter came to be recognized as one of the means to strengthen the Japanese Empire's war-conducting capabilities and enable colonial Seoul to function better within the Japanese Empire's economic bloc.

Furthermore, it is noteworthy that while considering the expansion area of Greater Keijo, comparisons with Western metropolises and Japan's six major cities were carried out early on. Mentions of comparing Keijo with metropolises outside colonial Korea can be found not only in newspapers, which can be said to have represented the opinions of the educated class of Koreans at the time, but also in documents published by the Keijo Municipal Government. In the mid-1920s, Keijo's population was still only 300,000, but as the political, administrative, and economic center of colonial Korea, it is possible to interpret that both residents and the government recognized that Keijo's status was higher than its physical size. Moreover, the fact that both residents and the government perceived colonial Seoul (Keijo) as a 'future metropolis' implies the emergence of a demand for the installation of essential infrastructure necessary for its functioning as a metropolis.

I would like to express our deepest gratitude to curator Haejin Hwang of the Seoul Museum of History for helping us research the original materials.

DISCLOSURE STATEMENT

NOTES ON CONTRIBUTOR(S)

Youngjoon Kim is a doctoral program student at the University of Tokyo, since October 2020. His main research theme is colonial urban planning in Seoul, during the rapid growth period from the mid-1920s to the 1940s.
Naoto Nakajima is a professor at the University of Tokyo, since April 2015. He has conducted research about post- war planning history, urban planning heritage, and placemaking (machizukuri). He also served as a conference convenor at IPHS 2018 Yokohama Conference.

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IMAGE SOURCES

Figure 1   National Assembly Library of Korea, Digital Archive [MONO3198004691].

Figure 2   Makoto Saito Memorial Hall (photographed in December 2020).

ENDNOTES

1. Hana Kim and Bonghee Jeon, "1920-30 nyeondae Dong-a Ilbo gisae natanan Gyeongseong-ui Gyooe (Keijo's suburbs as de-picted in Dong- a Ilbo articles in the 1920s and 1930s)", *Journal of Architectural History*, no. 17 (2008): 47-58.

2. Hae-Kyung Kim and Joo-eun Yoo, "Landscape Cognitions of Seoul Citizens During the Japanese Colonial Rule Displayed in 'Naedongrimyeongmool'", *Seoul and History*, no. 87 (2014): 211-247.

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Study on the Formation Process of Street Stalls around Tainan West Market in Colonial Taiwan, 1920-1945

Masaya Sammonji, Naoto Nakajima
The University of Tokyo

Abstract

Street stalls in Asian cities have existed since ancient times and have now become a distinctive element of Asian cities. Today, street stalls and their clusters, such as night markets, are once again attracting attention in Taiwan as an important commercial and tourism resource. How have these management and regulatory systems changed, and how have street stalls changed and survived in Taiwanese cities? This study analyzes the formation process of street stalls near the Tainan West (Tainan Nishi) Market during the Japanese colonial period from the 1920s onward, focusing on the process of gradual accumulation of street stalls inside and outside the market in the 1920s, focusing on the relationship between the renovation and construction plans of the market itself, urban planning, and the social relations behind these changes. By referring to the discourse on amusement areas called "sakariba" in Japan during the same period, it is also clarified why the cluster of stalls near the West Market was represented as an ideal and exemplary "sakariba" from the 1930s, together with an analysis of the location of nearby facilities such as public bathhouses, theaters, and red-light districts. For the analysis, historical documents such as newspapers and magazines and various laws and ordinances from the Japanese colonial period were used in order to chronologically organize the actual situation. This study aims to clarify the process of establishment and management of street stalls in Taiwanese cities from the perspective of urban planning theory, providing new discoveries in the planning history of Asian cities, and offering suggestions for street stalls' policies and "sakariba" in the future.

Planning Practices and Ideas (2)

Chair: Clement Orillard

Loup Calosci
The Architectural, Urban, and Landscape Influence of Tapiola
and its Designer Heikki von Hertzen on American New Towns

The Architectural, Urban, and Landscape Influence of Tapiola and its Designer Heikki von Hertzen on American New Towns
The Cases of Columbia (Md) and Reston (Va)

Loup Calosci
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Abstract

This proposal seeks to delve into the urban and architectural influences stemming from the transatlantic relations between the United States and Finland. This exploration is centered around exchanges between three pivotal figures and their urban creations: Heikki von Hertzen with the Garden City of Tapiola in Finland, and Robert E. Simon, Jr. and James W. Rouse with Reston (Va) and Columbia (Md) in the United States. These interactions occurred against the backdrop of American "fennophilia" that emerged in the early '50s, initially with furniture and decor, and later with architecture, notably through the contributions of the Saarinen family in North America. The Garden City of Tapiola, initiated in 1951, was introduced to the American audience years later, primarily through journalists and notably via the 1967 R. S. Reynolds Memorial Award for Community Architecture, sponsored by the aluminum company. This accolade provided its creator with prestigious recognition and the opportunity to travel globally, including visits to the United States, where he engaged with the masterminds behind the American new towns of Reston (1961) and Columbia (1963). These interactions, sustained throughout the evolution of these new towns, often transcended mere architectural and urban inspirations. They positioned Heikki von Hertzen as a frequent consultant for numerous urban projects in the United States. For this research, our primary sources will be the archives of the city of Reston, located at George Mason University (Va), and the Columbia archives located at the Columbia Association (Md). These archives offer a rich collection of promotional materials and correspondences between the various stakeholders of the new towns.

How to cite
Loup Calosci, "The Architectural, Urban, and Landscape Influence of Tapiola and its Designer Heikki von Hertzen on American New Towns: The Cases of Columbia (Md) and Reston (Va).." In Ian Morley and Hendrik Tieben (eds.), *International Planning History Society Proceedings*, 20th IPHS Conference, "The (High Density) Metropolis and Region in Planning History," Hong Kong, 2 - 5 July, 2024, TU Delft Open, 2024.

Loup Calosci
The Architectural, Urban, and Landscape Influence of Tapiola
and its Designer Heikki von Hertzen on American New Towns

Renewing the Past
I. M. Pei in Oklahoma City (1964–66) and Kenzo Tange in Baltimore (ca. 1973)

Joss Kiely
University of Cincinnati

Abstract

The scale and ambition of the masterplan doesn't fit neatly in either architecture or urban planning, and therefore, the history of master planning as a practice, its aesthetics, and its ethics have long existed at the margins of both disciplines. Reading visionary, aestheticized images of growth as singularly powerful political-economic tools, this paper considers masterplans designed by I. M. Pei and Kenzo Tange created at a time when the discipline of urban design began to coalesce into a distinct practice with its own expertise and techniques. Many such proposals were produced in the years immediately following the 1956 Urban Design Conference at Harvard University, at a time when architects were still often called on to compose these grand plans. Such proposals envisioned exciting futures for center cities, in part to combat early trends in suburban outflow prompted by a postwar housing boom. The paper considers two proposals in the U.S. that leverage spectacularly persuasive imagery as a powerful, yet ultimately flimsy, driving force: coastal Baltimore and petroleum-rich Oklahoma City. Both projects are indebted to Victor Gruen's plan for Greater Fort Worth (1956), which imagined the symbiotic relationship between large-scale pedestrian-only precincts and automobile-oriented transit and was broadly influential for downtown revitalization efforts across the country. One of its offspring was I. M. Pei's dramatic proposal for Oklahoma City which, despite its optimism and promise of re-densifying an urban core with sleek, modernist buildings, today serves as a cautionary tale of the limitations of visionary urban renewal. Further east, Kenzo Tange's URTEC proposed a megastructural mesh of bridges and towers for Baltimore's Inner Harbor that arrived after the moment of such radical master planning had passed. In its place arose more incremental, tactical forms of urban transformation that have prevailed in the decades since. Despite this shift, the use of persuasive imagery to rally support for such urban visions pervaded throughout the 20th century, furthering the problematic "genius architect" complex.

San Francisco's 1972 Urban Design Plan
Revisited More Than Half a Century Later

Richard Hu
University of Canberra

Abstract

In 1972, San Francisco was the world's first city to adopt an urban design plan, which has been in effect until today. This plan is both historical and contemporary. It occupies an important position in the history of modern urban design. Philosophically and mythologically, it was representative of an urban design paradigm shift from modernism to postmodernism at the time of its birth. More than half a century later, it incurs a critical question: is this plan still relevant to addressing the urban problems today? In this paper, I examine the plan's innovation and legacy and discuss its adaptability to the new urban environment. I argue that while the plan's postmodernist principles and approaches are still important, it is time to debate on the validity and applicability of the plan—and what it represents in the urban design discipline and profession—to explore new directions of urban thinking for a changing urban environment.

Keywords

How to cite

The French Institut d'Urbanisme and its Chinese Students During the Interwar Period
A First Hypothesis

Clement Orillard
Paris Nanterre

Abstract

This proposal stems from an astonishment: the large number of Chinese students at the Institut d'urbanisme de l'Université de Paris (IUUP) between the two world wars. This is part of two wider research projects: one about foreign students at the IUUP led with Laurent Coudroy de Lille and another about the circulation of planning expertise from France to China until today led with Carine Henriot. The IUUP was then the only place in France specialised in urban planning education. It was a graduate school recruiting students from different disciplines which achieved a strong reputation worldwide. Between 1928 and 1931, the Chinese were by far the largest group of foreign students. Based on the cross-referencing of secondary sources, a study of the origins of some students for whom data has been found allows us to make a first hypothesis, which remains to be confirmed: the existence of two paths of arrival at IUUP for Chinese students. The first, and more usual, comes from architectural studies, like for many of their French and foreign classmates. This is the case of two architects who played an important role in their homeland after their return: YU Binglie [虞炳烈], whose French education was studied by Judi Loach, and WU Jingxiang [吴景祥]. A second route, more original, seems to be through law studies. At least three students from the IUUP went on to obtain a doctorate in law studies in other French universities. Two elements can explain this specific route. On the one hand, law studies have played a key role in the foundation and development of the Institut d'urbanisme. On the other hand, the authorities and elites in China had identified French jurists and law studies as a source for modernisation.

Housing & Planning

Chair: Laura Kolbe

Public Housing Melbourne
The influence of international perspectives with public housing in the 1950's and 1960's

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Abstract

Australian town planning in the 20th century was influenced through multiple pathways, from visits by international experts through to public exhibitions of overseas trends. These interventions injected new knowledge into domestic town planning theory and practice, resulting in myriad changes in legislation and development templates. One such intervention involved 'synthetic borrowing,' typically via international architectural or town planning tours (Ward, 2000). Through this mechanism, external ideas could be progressively 'filtered' and integrated into local contexts. These tours would be conducted by a select group of officials or consultants with the purpose of gaining first-hand knowledge of the built environment – by visiting key sites, gathering relevant literature, and taking photographs. This material could then be used to inculcate and inspire local planners, serving as an exotic accelerant for the realisation of an imagined future. The local Antipodean impact of such overseas tours has been previously noted in the literature. Freestone and James (2019), for example, traced the ephemeral influence of a 1915 fact finding mission by the architect J. C. Morell to the northern hemisphere that resulted in a report and three presentations complete with slides on overseas town planning. But more than this, we suggest that the recorded content of such tours can also be interpreted from the perspective of those visited and the visitors: not only did tour content reflect the way the architects and planners in each country preferred to present themselves to international audiences, it also provides insights into the preoccupations and priorities of the touring party. The aim of this paper is to bring these multiple interpretive perspectives to an overlooked but highly consequential international tour undertaken in the post-Second World War reconstructive period. This tour set the scene for the modernist redevelopment of Melbourne's inner suburbs, which had been dominated by detached, semi-detached or terrace row houses. In 1958, the Victorian Housing Commission Deputy Director, J.P. Gaskin, and Chief Technical Officer, R. Burkit, traversed the globe comparing public housing in Europe, the USA, and New Zealand. The tour covered numerous housing developments, with a particular focus upon apartment building typology and construction methods – most notably those utilizing concrete precast manufacture. Unusually, this report included over 600 35mm colour slides which formed a 'valuable adjunct' (Gaskin & Burkit, 1958). While never used for public dissemination, it is likely these slides formed a library of images with which to inform a cad-

re of Victorian government bureaucrats about the latest forms of high-modernist planning. From 1958 to 1973, the Victorian Housing Commission constructed 45 high rise buildings, amounting to 7834 apartments. To this day they represent a significant component of the Victorian Government's public housing stock. The same period also saw a notorious and unprecedented level of slum removal (Shaw, 1965). These public projects represented the culmination of decades of concern with the condition of housing in Melbourne. The Victorian Housing Commission itself had been created in 1938 following a State Government report which identified thousands of inadequate 'slum' housing in the inner urban areas of Melbourne (Housing Investigation and Slum Abolition Board, 1937). Adding to the pressure for new housing were the post-war restrictions on materials and labour, as well as the massive increase in European migration. As a set, the 1958 tour photographs represent a contemporaneous cavalcade of global modernist pride, with the catalogue of each country exhibiting some indigenous features that are by turns characteristic, curious, and amusing. These photographs also allow us to get inside the mind of the tour leaders, cryptic clues as to how they interpreted their brief and what they hoped to achieve. More prosaically perhaps, the contrast between these images and what the Housing Commission would subsequently build would provide a hard lesson in path dependency. The Victorian Government had taken over a former munitions factory at Holmesglen for precast concrete manufacture. The way the economics of this facility lent itself to high-density high-rise would override the more radical and progressive thinking represented by the many photographs of the latest 5-6 story apartment designs in Europe. With the benefit of hindsight, this tension can also be discerned in the photographic collection itself, as if they were torn between a high-density European and US East Coast social housing future and a low-density US West Coast one – a tension that remains to this day.

Keywords

How to cite

Wicked Problems and low-income housing in Latin America
Two acts on participatory design

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Abstract

Planning problems are Wicked Problems. They differ from those of science and engineering, as they rely upon the designer's political judgment. Proposed by Horst Rittel, this idea disrupted previous notions of the Design Methods Movement, concerned with optimising the design process based on post-WWII scientific developments. In addition, Rittel called for second-generation Design Methods, in which designers were part of a broader set of equally knowledgeable stakeholders. In this presentation, I compare two takes on Rittel's ideas by architects who designed low-income housing in Latin America. Cornelia and Eduardo Vargas met Rittel in Ulm, Germany. From 1960 on, they planned a series of medium-density villages in the port city of Valparaíso, Chile. Working face-to-face with the planners, future dwellers self-constructed 2,000 units using prefabrication, which was funded by a cooperative system. As head of the regional housing office, Eduardo promoted the construction of 30,000 houses and led the reconstruction after the earthquake in 1965. Running the biggest Chilean television channel, he also sextupled the number of homes with television, stimulating its educational potential. In turn, Argentinian architect Raúl Di Lullo met Rittel in Berkeley in the 1970s, where the "systems approach" was at its peak. He proposed an evolutionary housing system for future dwellers to flexibly change and expand their dwellings as living necessities develop. This was applied, for example, in the design of a Latin American historical tenement typology, providing a high-density model for central but dilapidated areas of colonial urban tissues. These cases shed light on how Rittel's thinking nurtured an epistemological shift from the previous bird's-eye view of Modernism, highlighting the right of people to co-design their housing environment. Even more, this analysis of primary sources and interviews challenges centre-periphery narratives of modern design, as these Latin American designers materialized what until then had been theoretical speculation..

Large influx of refugees and introduction of new public housing in a high-density historical urban fabric

A case study on the admission of Ukrainian refugees to Cracow in 2022

Barbara Matelowska, Naoto Nakajima
University of Tokyo

Abstract

With the events of the Russian invasion of Ukraine in March 2022, Europe is experiencing one of the largest migrations of the 21st century. With over 3 million refugees arriving in Poland, the country has become the primary destination for Ukrainian nationals seeking emigration. Cities like Warsaw, Cracow, and Wroclaw have welcomed the majority of asylum seekers, with the population of Cracow now comprising in 19% of Ukrainian nationals. This has posed a significant challenge for management systems, either absorbing the immigrants into the existing infrastructure or introducing new spatial structures within the urban fabric. This study investigates the capacity of refugee admission system in Lesser Poland Voivodeship, focusing on the analysis of the abrupt influx of refugees into the dense urban tissue of a historical city of Cracow. The research explores transfer of housing responsibility from structured systems (government actions) to non-structured systems (community help and self-help), as well as housing pathways of individual cases. The methodology employed encompasses on-site volunteering work, interviews with refugees and social welfare workers, correspondence with government units and NGOs. The study further speculates on the development of a new management system for admitting a large number of migrants to a dense urban area within a short period, and a potential merit in allocating refugees to future planned development areas to activate these zones. The research discusses the discrepancy in the time span between typical long-term development planning and the rapid process of emergency shelter housing implementation. It explores potential solutions to this discrepancy, such new planning approaches like incremental housing or temporary-to-permanent housing. This research addresses the overlooked issue of introducing new public housing and community spaces within a dense historical urban fabric in a timely manner and in liaison with long-term development projects and regard for the historical context.

From Garden Cities
to Liveable Cities
Housing development in South West
England 1920-2020

Clare Maudling
University of Exeter

Abstract

In the first part of the 20th century, the UK was facing a severe housing shortage with an esti-mated deficit of 800,000 dwellings by 1920, rising to over 1million by 1945. It was recognised that this need could not be met by private building and required direct public intervention. A massive programme of municipal building was launched, which built over 6million homes by 1970. The majority of these homes were built at low densities, following 'garden city' prin-ciples. The UK is now facing a similar housing crisis, with housing charity Shelter placing the housing need at around 1.4million 'affordable' dwellings. This paper examines the 20th century response to housing crisis in the south-western cities of Bristol, Exeter and Plymouth alongside their current plans to tackle the modern shortage and considers the limits created by the lack of public housing provision in the 21st century. It draws parallels between the two eras in terms of planning ideals, comparing the modern 'liveable city' concept to the garden city principles. It also examines the shift from the low-density designs of the twentieth cen-tury to the high-density plans of the twenty-first century. Design concepts from housing and estates of the twentieth century are examined for elements which could improve modern, high-density estates to better meet the housing challenges and needs of the 21st century.

International Comparative Analysis of Suburban Housing Planning
Lessons from New Towns in the London Capital Region, UK

Hoai Duc Vu, Kieu Trang Nguyen, Thanh Thao Nguyen, Van Tien Dinh
Paris Nanterre

Abstract

This paper elucidates definitions and analyzes planning cases in suburban housing planning systems, particularly New Towns in the London Capital Region, UK. Drawing on the planning history of the London Capital Region, UK, it identifies key concepts, perceptions, and exemplary housing planning models for housing planning. Geeking at the advantages, helping workplaces avoid unemployment, plus ensuring economic stability; otherwise, the idea of new towns has captured the imagination of urban planners. The UK has been at the forefront of both theory and practice, especially during the early years of town planning and the golden age of new town development from the post-World War II era to the mid-1970s (Forsyth & Peiser, 2020; Wakeman, 2016). However, limitations exist, such as low-density development leading to car dependence and cheap bus services. Additionally, in areas surrounding London, there is a significant demand for affordable housing, which the housing construction planning in New Towns in the London Capital Region fails to provide because of shortcomings in housing construction in New Towns. Meanwhile, this paper is clarified by data collected through interviews, surveys, observations, and experiments, using domestic and international data. Plus comparative analysis with suburban housing planning models worldwide. Clearing research and analysis of suburban housing planning cases, highlighting gaps in the ideal model system for suburban housing planning in New Towns in the planning history is also a big step. After a series of increasing challenges, the UK's new town program has come of age called "the maturation period". The planning of the town has been successful administratively, socially, and financially. However, despite opportunities for design innovation, the residential areas overall lack in many abovementioned ways. Studying and analyzing housing in New Town areas in the planning history of the London Capital Region, UK, to clarify the development history of suburban housing in the world, applied from the model New Towns of the UK, plus learn and compare historical planning processes and proposed categories. Since then, the experience of housing planning has been received by Vietnam and the world in general.

Keywords
Suburban Housing, New Towns, London Capital Region, Urban Planningm, Comparative Analysis

Planning and Heritage (2)

Chair: John Pendlebury

Adaptive reuse
of the industrial built heritage
in the Merchant City, Glasgow
The conservation-based
planning approach

Xiaohan Lu
Mackintosh School of Architecture

Abstract

This research explores the morphological changes within Glasgow's urban landscape since the 1980s, with a particular emphasis on the integration of the city's industrial legacy into the framework of modern urban planning. The analysis intertwines adaptation theories, urban physical regeneration, and planning history. The morphological conservation approach has been influenced by a series of historical factors, processes, and decisions: the transformation from comprehensive redevelopment to urban rehabilitation; the revitalization of the inner city through engagement with the private sector; the re-evaluation of industrial built heritage since the 1980s; the shift in city images after deindustrialization, which transformed the core of heavy industries into a services centre; and, within the neoliberal planning framework, the shift from urban managerialism to urban entrepreneurialism. To illustrate these consequences related to building heritage conservation in Glasgow, this paper draws on evidence from the adaptation of existing Victorian industrial buildings. The associated conservation approach has been subject to criticism for legislative rigidity and material inauthenticity in the built heritage. Consequently, this paper also examines the development of preservation policies and the interpretation and application of authenticity in built heritage in response to morphological shifts.

INTRODUCTION

In Glasgow's planning history, the conservation-based planning in Merchant City exemplifies a model of post- industrial regeneration within historic city centre. This approach is representative of broader trends in the city's planning history and highlights a somewhat contradictory aspect within built heritage management and practices. The narrative can be traced through the major transition in regeneration strategies, epitomizing a paradigm shift from comprehensive redevelopment to conservation-led revitalization. Initially, in response to the urban agenda of regeneration stemming from industrial decline and the associated issues of physical, social, and economic decay, the city adopted a modernist urbanism approach. This approach was characterized by 'tabula rasa' development plans, which advocated for extensive clearing and rebuilding. By the 1950s, the City Council had implemented strategies for managing population overflow beyond the city limits. In 1957, the City's Development Plan (DPR) identified 29 areas, including the city centre, as Comprehensive Development Areas (CDAs).[1] Accompanied by this establishment, a series of implements were conducted: slum replacement, high-rise flats construction, and turning marginal spaces into usage and dispersal of population to peripheral estates; re-arrangement of the transportation system with setting up the new M8 Motorway.[2] However, over 100,000 people were still on the city's housing waiting list in 1960, and the physical decline issues were not well-solved. Furthermore, the urban expansion brought new social and economic issues.[3] As Florian Urban concluded this redevelopment, 'attempt to convert an ailing industrial city into a flourishing decentralised metropolis was largely unsuccessful.'[4]

The turning point of Glasgow's regeneration brought from the launch of the Glasgow Eastern Area Renewal (GEAR) in 1976, the project announced by the Secretary of State for Scotland and supported by the Scottish Development Agency and the City Council. The GEAR scheme marked the beginning of the new urban policy. The project aimed at environmental, physical and economic renewal, and it contributed to a far more traditional way of city regeneration, refocused on the inner city. Glasgow is initiating conservation-led regeneration instead of comprehensive redevelopment from this moment.

Accordingly, Glasgow's revitalisation strategy has predominantly aimed at channelling development towards the city centre, emphasizing the importance of ensuring access to various advantages and facilities.[5] The revitalization of Merchant City forms the central strategy of this procedure, aimed at transitioning the district from a predominantly industrial quarter to a service-based centre. Historically, the Merchant City area has been the commercial heart of the mid of 18th century in Glasgow, well known for the tobacco and sugar business. During the 1960s, this area was used by wholesale trade warehouses, manufacturing factories and public buildings. The government moved the industrial activity to suburban areas and demolished outdated buildings for new roads. The deindustrialisation and comprehensive factors such as the rearrangement of traffic and the end of retail price maintenance caused the dramatic decline of properties in this area.

By 1980, about a third of the property in the area was vacant, and Glasgow City Council owned a third of the property, including two-thirds of the vacant property. [6] The situation arose from

a confluence of factors, including the unsatisfactory conditions of existing buildings for modern demands, major road proposals afflicting the eastern edge of the area, and the OCDA[7] proposals, which resulted in additional areas of land in Merchant City coming into public ownership.[8] Therefore, marketing industrial built-heritage assets received significant attention from city authorities. Moreover, since local authorities held most properties at that time, the first stage of regeneration was launched through cooperation between Glasgow City Council and the Scottish Development Agency (SDA). Most scholars define the regeneration strategy of this area as housing-led revitalization, which converts old buildings into residential use and housing projects.[9] This implementation aimed to attract young, middle-class individuals to live, work, and invest in this area, thereby stimulating economic activity in the city centre.

For the SDA-supported projects in the area, the provision of 10.5 million in public funds attracted a total investment of around 51 million: showing a leverage ratio of 4.87 per pound allocated by the development agency.[10]

In this process, the City Council provided approximately 5000 pounds per house for conversion support, and SDA also offered great funds for the development, including later in supporting the private sector investment.

RE-EVALUATION OF FORMER INDUSTRIAL- BUILT HERITAGE

Re-evaluation and rearrangement of the former industrial-built heritage could be seen as the consequences of the implementation discussed above. However, the task of assessing the historical value of these industrial structures within the designation framework is fraught with challenges. This difficulty arises not only from the subjective nature of heritage values but also because heritage conservation is often viewed as an effort to preserve relics from a pre-industrial past.[11] Industrial heritage remains relatively underestimated and neglected compared to other types of heritage. This is largely due to the persistent negative associations and memories with the process of deindustrialization, which continue to overshadow its cultural and historical significance.

In fact, the industrial landscape is closely linked to late 20th-century city redevelopment in most post-industrial cities in Europe. Unless there was significant demolition, the industrial-based transportation, buildings, and infrastructure fundamentally shaped the urban context. In 1983, a reassessment of Glasgow's industrial buildings was undertaken, revealing that only 300 of the 1,100 structures recorded in the 1974 database remained, largely due to extensive redevelopment and urban regeneration initiatives.[12] Still, large-scale warehouses were preserved and restored from the 1980s, especially in the Merchant City area.

The situation of re-evaluation the former industrial buildings in Merchant City is complex and contentious due to the architectural diversity and historic significance of its former industrial buildings. These buildings showcase a remarkable variety of styles including Free Classical, Renaissance, Art Deco, Glasgow style, Edwardian Renaissance, Edwardian Baroque, neo-Egyptian, Edwardian Freestyle, and Italianate, most of which date from the mid-nine-

teenth century.[13] The uniqueness of these structures can largely be attributed to the contributions of renowned local architects such as Alexander "Greek" Thomson (1817-1875), who left a significant mark on the area with designs like the famous Egyptian Hall.[14] Furthermore, Glasgow distinguished itself as one of the first cities to incorporate cast iron into its industrial buildings, a pioneering move in street architecture during that period. An early newspaper review celebrated this innovation, noting that unlike the great masonry structures seen in the Albert Dock, Liverpool, or St Katherine's Dock, London, Glasgow opted for bold facades in glass and cast iron, which were unique in Britain at that time.[15]

The reality is that although these historic industrial buildings are distinguished by various styles, scale, and historic significance, most of them were classified as B-listed, with the majority being designated during the redevelopment of the area in the 1970s and 1980s.[16] The revitalization of historical quarters and the revaluation of former industrial buildings were established concurrently. This classification, it appears, does not derive exclusively from their historical values; rather, the listing system serves principally as a mechanism for urban historic environmental management within the Merchant City area.

CONSERVATION PLANNING

The establishment of conservation areas under the 1967 Civic Amenities Act represents a key manifestation of conservation-based planning within heritage preservation policies. The definition highlighted the importance of heritage surroundings, "areas of special architectural or historical interest, the character or appearance of which it is desirable to preserve or enhance."[17] This legislation aligns with the modern conservation movement and the evolving concept of international heritage, which extends the conservation scope from individual monuments to peripheral areas, ultimately aiming to unify entire regions under conservation directives. This approach ensures any development or change within the boundaries respects and retains the historical integrities. Despite the drive towards scientific conservation, the regulations are frequently critiqued by both practitioners and scholars for the constraints they impose on physical practices and management.[18]

Furthermore, the concept of conservation-based planning is propelled by the recognition of heritage value in contemporary society. A more nuanced interpretation of heritage value and authenticity has emerged, extending beyond the original focus on materiality. The evidence is found in the international charters. While the Venice Charter (1964) primarily associates heritage authenticity with tangible aspects, the Nara Document on Authenticity (1994) expands on this framework. It introduces the concept of 'progressive authenticities,' which recognizes that historical modifications to sites over time are both reasonable and intrinsic to their authenticity.[19]

John Pendlebury employs the concept of assemblage to describe a provisional unity across the field of conservation planning in the UK, linking diverse actors, narratives, and legal and policy frameworks into a complex, dynamic social entity. [20] In light of the above, Glasgow embodies this approach, from legislative frameworks to the recognition of heritage values, the

central objective of conservation appears to be the management of former industrial buildings for modern purposes. This strategy, underscored by the specific contextual circumstances of the 1980s, was aimed at facilitating the regeneration of areas.

MORPHOLOGICAL TRANSFORMATION AND INTERIOR MODERNISATION

During the 1980s, besides the development of preservation regulations, urban policies in Glasgow were recalibrated to rejuvenate the city's economic landscape. This period saw the implementation of a series of neoliberal urban policies. The Scottish Development Agency initiated 'Glasgow Action,' a business-led venture designed to enhance private-sector participation in urban development. [21] In this context, urban planning consequently adopts a more cooperative posture with market mechanisms, prioritizing investment attraction and adaptation to emergent developments over directive regulatory control. The expansion of the retail sector in the city centre evidences this transformation, reflecting a general movement towards market-driven urban development strategies.[22]

Methodologically, the influence of follow-up planning on conservation practices predominantly focuses on controlling exterior design to cater to the demands of a postmodern retail environment. [23] As a result, the adaptations of these former industrial structures typically involve preserving the exterior façade while modernising the interiors. Especially for street buildings used for retailing, this process is also intertwined with ongoing aesthetic transformations, iterations of window display, the programming lifespan of the buildings, and the renovation of architectural materials. Despite Glasgow City Council's statutory protection covering both the interiors and exteriors of all listed buildings, the exterior-centric preservation policies can still be observed within the regulatory framework and practices of built heritage consultants.[24] A detailed examination of preservation regulations and design guidance for street architecture in conservation areas reveals that 13 sub-articles emphasize limiting modifications to building exteriors. These include specific regulations on features like 'Basement Light Wells' and 'Signs and Advertising,' which constitute the main portion of the guidance. [25] Compared with the detailed sub-articles dedicated to exterior preservation, there are only three sub-articles concerning interior modifications, which are relatively brief and primarily focus on layout considerations. Additionally, frequent alterations in building programming, driven by shifts in business dynamics, retail competition, and changes in ownership, lead to rapid interior iterations. These changes are particularly pronounced in buildings frequently used as mixed-use and retail spaces at street level. As a result, a discernible historical discontinuity emerges, manifesting not only within individual historic buildings but also across the broader streetscape. Specifically, from an architectural perspective, there is a clear visual distinction between the street level and the upper levels of the buildings, highlighting a separation in function and design. Likewise, from a broader street and area viewpoint, the adaptations made to the first floors of these historic warehouses collectively contribute to a contemporary streetscape that diverges from the historical context. This creates a distinct split between the new, modernized uses at street level and the traditional architectural elements preserved above.

Fig. 1.   Argyle Street.

Taking Argyle Street as an example, beginning with the Renaissance-style warehouse constructed by William Spence in 1873,[26] there is a clear 'line' between the modernised shop on the first floor and the upper level: large display window panels and a black paint frontage on the street level are contrasted with richly decorated ashlar facades with unique motifs on the upper level. In addition to this, the Ionic attached, masque keystones, and the pleasing proportion of entablature, all the details mark a clear boundary with the surrounding buildings; however, despite these distinctive upper-level features, the modernized ground-floor shops blend seamlessly with adjacent units due to similarities in materials and design. (Figure 1)

The homogeneous phenomenon of adaptation emerges as a consequence of conservation-oriented planning and mixed-use development. These policies, while aimed at macro-level control, often sacrifice the historical significance at the individual building level. Moreover, this phenomenon reflects the regulatory challenges inherent in balancing the diversification and authenticity of historic properties at both the street and area levels.

BLOCK-LEVEL ADAPTATION

As previously discussed, navigating the complexities of modernization while preserving historical integrity in the city centre poses significant challenges for both planning practices and conservation policies. The renovation of Merchant City exemplifies an eclectic approach that

addresses the evolving comprehensiveness of heritage policies and the adaptability required in urban governance. This strategy involves the adaptive reuse of entire historic blocks, moving beyond conventional individual building conservation to embrace an assemblage concept. The associated intervention includes enclosing historical blocks with new constructions and creating intermediate courtyards. Such an approach was innovative during that period, impacting both conservation planning history and adaptive reuse methodology. In the context of subdivision planning, adaptations at the block level effectively mitigate the restrictions imposed by area conservation efforts, which could otherwise hinder developmental progress. Additionally, this method not only aligns with the local topographical features but also arises from negotiations between public and private stakeholders.[27] These projects signify a shift from modernist planning to a more integrated theme of placemaking.

INGRAM SQUARE

Ingram Square's transformation marks the first block-level adaptation project in Glasgow's Merchant City. Initiated in the 1980s, this redevelopment serves as a seminal case study for integrating historical preservation with contemporary urban needs through collaborative efforts. This project also stands as a pioneering example in urban regeneration and planning history, marking the first initiative in the region to incorporate a collaborative relationship between public and private sectors. It involved key public entities such as the Scottish Development Agency and the District Council, alongside private partners like Kantel Ltd. It illustrates a transition toward more participatory and inclusive urban governance.

The proposed area originally contained 14 buildings, including three former warehouses and a department store with separate vacated sites. Most are abandoned, and only one was used as a furniture store. Among these, the most notable is the Baronial-style Houndsditch warehouse, situated at the corner of Brunswick and Ingram Street. This building serves as a prominent landmark, occupying nearly one-third of the block. The warehouse was designed by John Baird and Robert William Billings. Billings was specifically responsible for the eccentric façade. (Figure 2)

The entire adaptation encompasses the processes of refurbishing the existing host structure, inserting new buildings to enclose the courtyard, and redeveloping the semi-public space. The conservation efforts commence with the rehabilitation of existing buildings that remain in acceptable condition, such as the former fruit warehouse and the commercial building (Nova) at the corner of Wilson and Candleriggs Street. The alterations focus on updating the energy system and interior finishes, with minimal structural changes to the host buildings. The intervention adheres closely to the buildings' original design prototypes.

The primary challenge of the adaptation process was managing the large-scale host structure, exemplified by the Houndsditch building's adaptive reuse. This project involved reconfiguring the historic layers to harmonize the façade with contemporary housing requirements. The final decision was to retain the façade while constructing three new floors aligned with the

existing elevational network, incorporating two mezzanine levels. To fully utilize the unusually high ceilings, four additional floors were set back above an elevated ground floor. This intervention preserved the block's overall rhythm while providing spatial flexibility. The interior layout was systematically redesigned, with bathrooms, kitchens, and staircases reconfigured to integrate the new floors, ensuring both functionality and the preservation of historical integrity. Accompanying the conservation process was the construction of new buildings; one notable mention is the corner building at Wilson and Brunswick Streets. This structure featured contemporary design elements, such as protruding steel railings and a penthouse, which visually engage with the historic streetscape and provide a modern contrast to the older buildings. While Ingram Square's project integrates historical aesthetics with modern functionality, it also invites scrutiny into how heritage narratives are constructed.

The enclosing form with the courtyard is the pivotal design concept in this adaptation project. This form intrinsically defines space both physically and in terms of genius loci—the spirit of the place. It facilitates the creation of new circulation patterns and semi-public spaces, enhances natural ventilation and daylighting, and improves air quality and energy efficiency. Additionally, it contributes to acoustic comfort and the thermal regulation of spaces,[28] which are essential for new residences in the crowded city centre. In turn, the sense of enclosure also contributes to the placemaking process by establishing community focal points and enhancing connectivity. The entire project offers a methodological blueprint for examining similar regeneration efforts and provide a practical demonstration of how contemporary urban challenges can be addressed through innovative planning solutions.

Fig. 2.   Left: Facade Designed by Robert William Billings; Right: Newly Formed Courtyard of Ingram Square.

VIRGINIA COURT

Virginia Court is another exemplary case of block-level adaptive reuse, with new planning extending from a collection of diverse historic buildings, including the former Stirling's Library, to encompass a large Renaissance- style warehouse built in 1877 at 70 Miller Street.[29] The developer, Credential Holdings' master plan aims to integrate these areas into a cohesive shopping district.[30]

The project was completed in 2008 and is renowned for its adaptation featuring an alley courtyard. The intervention in this area is akin to curating an exhibition: the general layout was preserved except for the addition of a rear building. The conserved scenario atmosphere exhibits a strong aesthetic synergy with the medieval old town. Benefiting from the preservation of the former industrial buildings, the site offers a unique visual experience. Upon entering through the larger gate, visitors encounter a continuous warm-grey textural layer that subtly shifts upon closer inspection. As one approaches, the juxtaposition of different layers of textured walls and roofs creates an artistic collage visible from the entrance. The intervention's delicately and expertly rendered materialization and detailing of textural could observed from the alley gate in Miller Street. The new rear building shaped the courtyard in a route-oriented form, with two arch gates enhancing the sense of spatial rituals. The large arch at the alley gate imparts a ceremonial feel to the space and the state of obsolescence imparts a distinctive ruin-like aesthetic to the site. (Figure 3)

Fig. 3.   Entrance Views and Renovated Courtyard of Virginia Court.

Both cases demonstrate that block-level adaptations are instrumental in redeveloping areas by supporting sub- infrastructure and addressing evolving programmatic needs. [31] These adaptations, which involve a process of reorganizing spatial relationships within and around the block, enhance interactions with public and semi-public spaces such as streets, pavements, inner courtyards, and gardens, thereby improving the block's walkability and connectivity. Hence, block-level adaptations simultaneously addressing the rehabilitation of historic built heritage and the development of public realms. This approach not only preserves architectural legacies but also enhances community spaces, embodying the principles of conservation-based planning.

CONCLUSION

This case study examines the morphological transformations in Glasgow's urban landscape, specifically focusing on how the city has woven its industrial heritage into the fabric of contemporary urban planning. The signifier and signified of industrial-built heritage and the associated values reflected in the planner and city authorities' decision through conservation-based planning. The critical questions about the extent to which alterations can be made before the historical and architectural integrity of these buildings is compromised. Glasgow's case presents eclectic solutions through addressing its industrial past while simultaneously forging a new identity.

The development of preservation policies and the practical application of regulations and urban policies from the 1980s signalled a transition to conservation-based planning. Beyond urban management associated with built heritage conservation, this period is unique in planning history due to its multidimensional approach, influenced by various historical processes and factors such as economic decline from deindustrialization, social issues like housing problems, and challenges related to government funding. Changes in planning legislation that encouraged public-private partnerships also significantly impacted the decision-making process for the reuse of former industrial built heritage. Consequently, the homogeneity observed in the adaptive reuse of historic street buildings and integrated block-level interventions reflects the effort to balance neoliberal planning principles with historic environmental preservation.

Block-level adaptation also represents a context-specific approach within the discourse of built heritage adaptation in the Merchant City. These cases exemplify critical aspects of urban physical regeneration, heritage conservation, and the socio-economic revitalization of historic urban districts. Although critics often argue that overly rigid policies can stifle the ability to respond to contemporary urban demands, block-level adaptations serve to alleviate the constraints of area conservation, which might otherwise impede development within a subdivision planning context. However, challenges remain in balancing material authenticity and aesthetic continuity, as block-level interventions often blur the boundaries between individual heritage assets. Such adaptations also raise issues regarding architectural integrity and initiate discussions about potentially incongruous designs with the introduction of new

constructions within historic contexts. Although mixed-use development has been a common strategy among planners to enhance diversity in urban landscapes, this postmodern approach can paradoxically lead to the standardization of streets within historic environments and diminish the historic significance.

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IMAGE SOURCES

Figure 1	Photograph taken by the author.
Figure 2	Ibid.
Figure 3	Ibid.

How high can we go?
Exploring the history of Macau's urban density (1557) 1987–2024 (2049)

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Abstract

Sustainable futures are being led by cities, which are being designed to be socially inclusive, better integrated and connected, and spatially compact (UN-Habitat World Cities Report 2022; SGDs Goals UN 2023). Compactness and diversity have been stated as essential indicators of social and spatial sustainability (Haupt & Pont 2020, Ahfeldt & Pietrostefani 2017, Dempsey et al 2011, Hillier 2009, Grazi et al 2009, March & Steadman 2021, Newman 2005). Densification has been regarded as the key solution against space consumption and to arrive at a more sustainable city form, and since the 1990s a main planning strategy (Pont & Haupt 2020). Yet, the solution is not as simple, and density trade-offs might be the urban problems of tomorrow. Thus, we need the ability for simultaneously articulating quantity and quality, and this calls for further evidence-based knowledge (Pont & Haupt 2020), which this paper aims to contribute by looking at the case of Macau in China. Until 2021, the Special Administrative Region of Macau (MSAR) was the densest place in the planet with a 20 806 Km² population (World Bank 2021). The territory is defined by a low to medium rise urban setting in a small land area of 33.3 Km² (peninsula and two islands). In short, extremely compact, and with a fixed territorial border so it continues to expand by land reclamation and densification. Also, it is demographically hyper-diverse (Vertovec 2023, 2007; Tasan-Kok, Tuna, et al 2014). This makes Macau a unique case study of urban form and density in China, and at large. One that provides evidence to the counterintuitive fact that high-density need not to produce high-rise settings (Steadman 2003; Martin & March 1972), and that diversity can be sustainable and does not constitute a threat to an imagined social order (Amin 2002; Tasan-Kok, Tuna, et al 2014). Therefore, this paper explores the relationship between urbanisation, density and planning by looking at the history of Macau's urban transformation from 1987 (Sino-Portuguese Join Declaration) until now by defining morphological periods (spatial orders) entwined with the state projects of deterritorialization and reterritorialization (Morais 2017, 2014). Up to the handover, urban transformation occurred under a laissez-faire planning system and a divided ethno-power political economy. Since then, the MSAR is being redesigned and rescaled to integrate the Greater Pearl River Delta (PRD) City-region by 2049 under the 'One Country, Two Systems' formula so it is vital to discuss further densification and how sustainable its future may be. How high can we go? This is a qualitative morphological study, based on a historico-geographical approach (Conzen 1960; Whitehand 1977) that builds up on prior publications, and a long-term research on Macao's urban transformation and politics of territorial identity (1557-2009/2049) (Morais 2017, 2014).

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The Survival of Rituals and Traditional Culture
Practicing United Temples in Singapore's Community Planning

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Abstract

This paper explores the challenges and innovative approaches to preserving traditional cultural heritage with rapid urbanization, through a comparative analysis of temple management and urban planning in Singapore and coastal cities in China such as Putian and Macau. Singapore's model of united temples demonstrates the potential for effectively protecting heritage within urban planning frameworks, while coastal cities in China face evolving urban landscapes and challenges in heritage preservation. The concept of "roof-top temples" emerging in Putian reflects dynamic responses to urbanization pressures, integrating traditional culture with contemporary urban functions. Community engagement and government policies play crucial roles in safeguarding cultural heritage and promoting sustainable urban development. By drawing on best practices from Singapore and coastal cities in China, pathways toward inclusive and sustainable urban development can be formulated for cities like Putian, ensuring the flourishing of rich cultural heritage amidst changing urban landscapes.

Temple Name	Yu Huang Tian Combined Temple (玉皇殿联合宫)
Location	76 Jurong West Street 76 (裕廊西街 76 号)
Year Established	1996
Composition	Yu Huang Tian (玉皇殿), Fuan Temple (福安庙), Ci Shan Tan (慈善堂)
Temple Types	Yu Huang Tian and Ci Shan Tan are deity-related temples (神缘性寺庙), while Fuan Temple is a geographic temple (地缘性寺庙) from Anxi County, Quanzhou City, Fujian Province, China (原乡中国福建省泉州市安溪县)
Adjacent Temple	Tou Tian Gong (斗天宫)
Composition	Tou Tian Gong and Chwee Long Tow Pek Kong Temple (水廊头大伯公)
Temple Types	Both are deity-related temples (神缘性寺庙)
Adjacent Facilities	Supermarket (Mart), cultural center, commercial and public buildings

Table 1.   The Introduction of Yu Huang Tian Combined Temple and .Tou Tian Gong

INTRODUCTION

In previous studies, it was found that there are about 25,000 temples in Fujian, with more than 3,000 in Putian alone, indicating a vast number[1]. As urbanization progresses and rural land is converted to urban use, these spatially laid-out temples face demolition due to low land utilization rates. Notably, in Putian, some villages have combined several temples onto rooftops to preserve them as much as possible[2] (Figure.1). This clearly shows an effort to retain these temples. Meanwhile, Putian's urban planning also faces the dilemma of whether to demolish the numerous large and small temples. If demolished, how should traditional culture be preserved? If not, in what form should they exist? This issue seems to find potential reference in Singapore's urban planning, which might offer valuable lessons for integrating cultural preservation with modern urban development.

Singapore is an immigrant nation. From the early 19th century to the first half of the 20th century, a large number of immigrants from southeastern China settled in Singapore. During the resettlement process, these immigrants formed the organizational structure of the Chinese community, in which ancestral gods and temples played a crucial role. These temples and deities transcended social classes, helped unify and integrate the community, strengthened connections between locals and overseas Chinese, and enhanced the continuity and dissemination of traditional culture. Therefore, the importance of studying temples in Singapore cannot be overstated. Since Singapore's independence in 1965, the government has initiated urban planning efforts. In 1966, the Land Acquisition Act was enacted, granting the government the legal power to acquire land at low costs, leading to the demolition of temples. With the emergence of urban planning, united temples were formed. This article primarily explores two issues regarding united temples in the context of planning history: firstly, the evolutionary history of temples from their original villages, crossing borders through "branching" to settle in Singapore and eventually uniting; secondly, the development of united temples themselves

and their application in important public housing planning within Singapore's planning history, offering insights for urban planning strategies in Fujian and Putian inspired by united temples.

The study of united temple complexes in the context of urban planning history cannot be separated from original village communities, religious rituals, and planning policies. In the study of temples in native communities, Zheng Zhenman uses the Jiangkou Plain in Putian as an example to provide a brief overview of hydraulic infrastructure and community development. His research examines various levels of temple systems and festival organizations, discussing relevant theoretical issues and revealing the significant role of temple systems and festival organizations in the process of community restructuring. From this, it is evident that temples play an extremely important role in the "re-socialization" process of local Chinese communities[3]. In the study of local religious rituals, Zeng Ling uses the Penglai Temple in Singapore as a case study. Zeng describes the process of cross-border "incense division" from ancestral gods originating from their native regions and their resettlement in Singapore. This process illustrates how Singaporean Chinese used the worship of ancestral gods and ancestral identity to achieve close communication with their native Chinese communities and promote the dissemination of traditional culture. The temples, serving as the new "homes" of these ancestral gods in Singapore, became inviolable sacred sites. The new Penglai Temple, in fact, emerged from the integration of ancestral gods and architectural spaces of several surname-specific temples during urbanization[4]. In the field of immigration history, scholars like Kong Feili have conducted extensive research on the history of modern Chinese immigration. In his work on the changes in the social structure of overseas Chinese communities, Kong confirms the cohesive role of local temples in Southeast Asia[5]. Similarly, Wang Gengwu, in his research on Chinese immigration, explains the fundamental reasons early Chinese immigrants established temples in local communities: to sustain survival and develop businesses. By holding religious activities and worshipping common deities, they strengthened group cohesion and built confidence. Moreover, constructing temples with connections to the coastal regions of China enabled these immigrant communities to form large-scale organizations, which were eventually recognized by the government, leading to chain migration and providing the social motivation for the emergence of united temples[6]. In urban planning research focused on architectural heritage preservation against the backdrop of urbanization, Heng Chye Kiang analyzes Singapore's urban planning and development after the 19th century. Heng suggests that urban heritage preservation reflects Singapore's uniqueness in urban planning and management. Using Chinatown (Niu Che Shui) as an example, Heng details the participation and effective management of Singaporean society and government in urban heritage preservation within urban planning[7]. This broader environment has facilitated the emergence and development of united temples.

Based on the traditional research mentioned above, Singaporean scholars have started to focus on the changes of temples under urban planning policies. In the study of united temple rituals, HUE, Guan Thye analyzed the ceremonies that take place after temple mergers. He noted that the process of merging temples often involves phenomena of "absorption," where some temples, while retaining their names, combine their rituals to collectively worship deities[8]. Furthermore, HUE, Guan Thye classified united temples from the perspective of the

subordinate temples, dividing them into three categories: deity-related temples, ancestral temples, and geographic temples[9]. This classification provides a framework to understand the different origins and bases upon which these united temples are formed and how they function within their communities.

The study of temples extends beyond national-level urban planning to include architectural studies focusing on ritual spaces and architectural forms, as well as anthropological research on rituals, ethnicity, and communities. Inspired by the aforementioned research, this article takes united temples as the subject of observation to explore the significant impact of urban planning processes on their formation in Singapore. It specifically analyzes the application of united temples in community planning in Singapore. Additionally, the study integrates the author's research on united temples in Putian, Fujian, China, exploring how the application models of united temples in community complexes can offer insights for urban planning and renewal in cities with existing temples, such as Putian and Macau.

BACKGROUND

URBAN PLANNING HISTORY OF SINGAPORE

Singapore, as an island nation with limited land area and a dense population, faces the challenge of efficiently utilizing its land, making urban planning a top priority. As early as the colonial period, in the early 19th century, Sir Stamford Raffles, the British founder of Singapore, proposed comprehensive planning when establishing Singapore Harbor. Through the organized layout of streets, different ethnic and social groups were segregated, serving the political agenda of the colonizers while laying the foundation for subsequent urban planning in Singapore.

Fig. 1.   Temples on the rooftops. Putian, Fujian province, China. Three temples of villages were built on the rooftop of the bungalow together, the function in the bungalow is commerce.

Fig. 2.   Fivefold united Temple (Wu He Miao, 伍合庙）.Fivefold united Temple is composed of Jutian-gong (聚天宫), Shanzuyuan Fudeci (山竹园福德祠), Tongxing gang (通兴港), Zhaoyingci (昭应祠) and Wu-jinggong (无极宫).

Before the mid-20th century, Singapore experienced rapid population growth due to the booming port industry and massive immigration, leading to overcrowding and insufficient infrastructure and housing space. However, in modern times, Singapore's urban planning has benefited from the government's clear understanding of urban development. In fact, Singa-porean urban planning is closely intertwined with its economic structure, industrial types, and other factors.

Since the establishment of the current government regime in 1965, Singapore's urban planning has undergone four main phases. In the 1960s to early 1970s, labor-intensive industries were the focus of development. With the establishment of the Economic Development Board, large-scale industrialization began, leading to the transformation of traditional urban areas into central business districts (CBDs). In terms of housing, the Housing and Development Board (HDB) was established to build public housing estates, known as HDB flats, within 8 kilometers of the city center, with accompanying facilities to reduce residents' reliance on the city center.

From the mid-1970s to the mid-1980s, Singapore experienced rapid economic growth, prompt-ing the redevelopment of the city center. In the early 1970s, the government formulated a new urban concept plan to rejuvenate the city center. Land acquisition laws and land sales programs were used to reorganize and sell land, while the Urban Redevelopment Authority ensured the overall urban image. Besides the city center, efforts were made to develop urban infrastructure across the entire island.

By the late 1980s, urban and architectural conservation became prominent. Rapid urban de-velopment, surplus space, and economic downturn in the mid-1980s prompted the Urban Redevelopment Authority to propose new urban planning schemes, strengthening the pro-tection of historic neighborhoods while promoting public or private participation through enhanced publicity.

Fig. 3. The surrounding facilities of Yu Huang Tian Combined Temple and Tou Tian Gong. With Yu Huang Tian Combined Temple and Tou Tian Gong as the center, combined with surrounding supporting facilities, it has become the core of public housing community planning.

Since the mid-1990s, the aging population has become a significant issue, posing challenges to the living environment with the influx of immigrants. Under the framework of developing extensive rail transport, new town planning introduced the Transit-Oriented Development (TOD) concept to optimize existing facilities, improve greenery in a more ecological and sustainable manner, and introduce new green spaces and recreational areas[10]. As urbanization progresses, the development of Singapore's community complexes since 2000 has evolved alongside the iterative development of town centers and neighborhood center functionalities, becoming the spatial carriers of a new generation of comprehensive community services in high-density residential areas in Singapore[11].

Fig. 4. The surrounding facilities of Beeh Low See Temple（1935）. As a Buddhist temple, it is integrated into community planning and serves as a symbol of the Bukit Timah community.

THE ORIGINS AND RESETTLEMENT OF TEMPLES

Mentioning united temples inevitably brings to light the crucial social functions temples undertake. In the early 19th century to the first half of the 20th century, a large number of Chinese immigrants from the southeastern coastal regions migrated to Singapore, bringing along their regional religious beliefs and fervently constructing temples. This period of immigration coincided with various stages in Singapore's entire planning history. Among these, the social functions fulfilled by ancestral temples from their places of origin played a significant role. Take Putian, for instance. Due to a scarcity of freshwater resources and intense competition for water resources in some coastal cities of southeastern China, regional alliances

were formed. Through the worship of deities and ceremonial rituals, people aspired to gain advantages in this competition. Gradually, the management of water facilities and the distribution of resources became intertwined with sacred spaces, and community power centers also consolidated[12]. With the disintegration of community organizations related to sacrificial activities during the Ming Dynasty and the formation of temples, the community power of temples reached its peak. They not only managed water systems but also played the role of "China's second government," responsible for the daily affairs and community economy of residents, dedicated to local economic development, including the improvement of village roads, electricity, irrigation facilities, and public health facilities. They also supported local cultural activities, such as establishing scholarships and founding senior activity centers[13]. Consequently, these temples shoulder important social functions, enhancing residents' territorial identity and further strengthening community cohesion.

Temples play a crucial role in integrating and bonding immigrant communities. During the 19th century migration process, as the imperial court did not permit women to leave their families, most immigrants were men who left their wives and children behind to venture overseas. To survive in their new environment, they began to utilize religious activities to build communities, strengthening group solidarity and confidence through the worship of common deities. They also established temples with connections to famous coastal temples in China, including both Buddhist and Taoist deities. These immigrant communities further developed into large-scale social organizations recognized by local governments. The presence of temples and deities allowed for mutual support within the community, especially in business endeavors. This practice persisted until 1893 when the imperial court finally abolished the ban on overseas travel and allowed male immigrants to bring their families abroad in the early 20th century, gradually replacing the previous pattern[14]. The temples constructed by ancestors who migrated south played a significant role in the "settling down" process of Chinese immigrants in Singapore.

TEMPLE DEMOLITION IN URBAN PLANNING

In the planning phase from the 1960s to the early 1970s, the Land Acquisition Act stipulated provisions regarding the scope of land acquisition:

> "5. —(1) Whenever any particular land is needed — (a) for any public purpose; (b) by any person, corporation or statutory board, for any work or an undertaking which, in the opinion of the Minister, is of public benefit or of public utility or in the public interest; or (c) for any residential, commercial or industrial purpose; the President may, by notification published in the Gazette, declare the land to be required for the purpose specified in the notification." (AGC 2005)[15]

This means that, to maximize public interest, the Singapore government may, for specific purposes, issue acquisition or requisition notices for any specific piece of land at any time and provide reasonable compensation under the Land Acquisition Act: first, for any public purpose; second, if deemed beneficial to the public welfare, utility, or interest by the Cabinet Minister due to the needs of any individual, company, or statutory body for any work or undertaking; third, for residential, commercial, or industrial purposes.Such broad definitions of public interest essen-

tially granted the government significant powers of land acquisition. Utilizing a "low-in high-out" approach, the government acquired privately owned land at low prices and then resold land use rights to private developers at higher prices, as long as such actions were deemed to serve a "public purpose" under the Singapore Planning Act and were supported by clear development plans. This empowered the government to acquire any private land for optimizing national land use[16]. In the two decades following the enactment of the Land Acquisition Act, the Urban Redevelopment Authority (URA) cleared and reclaimed approximately 184 hectares of land under the "land sales" policy. This included many private residences, historical and cultural sites, and Chinese temples, all demolished under the "urban redevelopment" policy[17].Until the late 1980s, the government became increasingly aware of the importance of architectural and urban conservation.

Fig. 5.   Yueh Hai Ching Temple. 1826. Yueh Hai Ching Temple is located in the city center. This temple was originally the Chaozhou Mazu Temple and Laoye Temple. In 1826, it was merged into Yueh Hai Ching Temple.

However, during this planning phase, conflicts between the government and temples escalated. The temple's followers vehemently resisted relocation, yet most of the land had already been acquired by the government for public housing development, making relocation an inevitable reality. Initially, Singaporean law allowed these traditional temples to continue existing, but they were required to sign 30-year lease agreements with the government, paying rent. After the 30-year period expired, the government could reclaim the land without compensation. These temples then needed to relocate to new premises for another 30-year lease, significantly increasing the cost of relocation. In such circumstances, the merging of local temples became inevitable. Taking the first united temple in Singapore, the " Fivefold united Temple," as an example (Figure.2), it was built in 1974 in Toa Payoh Lorong, Singapore. It was formed by the merger of five temples belonging to four different Chinese immigrant dialect groups. However, the establishment of Fivefold united Temple was not easy. In the late 1960s, the government acquired the Toa Payoh area for urban housing development. The dispersed and independent temples initially refused to move, but the government's stance on acquisition and demolition was resolute, forcing the temple's followers to accept the fact that their long-standing temples would be demolished. Due to the high costs of relocation and reconstruction, independent temples were financially strained. Therefore, they negotiated with the government to purchase a plot of land collectively and merge the five temples into one to reduce costs. In 1970, the five temples pooled together sufficient funds and unitedly proposed to the Housing Development Board (HDB) of Singapore to buy land. Eventually, Fivefold united Temple was built, maintaining the independence of each temple in terms of ceremonial activities, worship space, and spatial sequence. Subsequently, due to the practices of Fivefold united Temple and the temples' long history, the government agreed to sell a portion of the land to the temples for their selection as temple sites, thus officially giving birth to united temples in Singapore[18].

THE MODEL OF UNITED TEMPLES IN CITIES

DEVELOPMENT OF UNITED TEMPLES AND COMMUNITY PLANNING

As urbanization progresses rapidly, the government in Singapore has introduced management and sale regulations for religious land use, leading to the swift proliferation of the united temple model. In this way, various temples were peacefully brought together. However, due to the diverse backgrounds of the constituent temples within united temples, originating from different regions of China and worshiping different deities, they must consider the timing of their respective ritual activities to minimize disruption to other temples within the united complex. Additionally, each temple contributes funds from its devotees as operational funds for the united temple while maintaining the independence of each temple and its respective temple committee. However, the form of united temples determines that the process of "merging" is not always smooth. Some temples encountered conflicts during the merging process, leading to cases of "absorption," where smaller temples were taken over by larger ones, retaining only the name but no longer holding separate rituals, or even complete "takeovers," where both the name and rituals were lost. Consequently, some cases of disharmony arise in

united temples. For example, some temples may resist the outcome of the merger, leading to internal conflicts within the merged temple[19]. Over the 50 years since immigration ceased, the form and content of united temples have become more complex, with collaborations emerging between temples from different countries and different religious denominations, engaging in mutual worship and cooperation.

In the 1960s to 1970s planning phase, a large number of public housing — HDB flats — emerged, accompanied by the construction of supporting facilities. This initiative alleviated housing pressures and solved citizens' housing problems. In the late 1980s, the Urban Redevelopment Authority's urban master plan, focusing on architecture and urban preservation, incorporated united temples into the planning. Given the significance of temples in the daily lives of community residents, assuming certain social functions, integrating temples with public housing construction became an optimization measure.

With the continuous increase in public housing, the government of Singapore, mindful of the diversity and convenience of citizens' housing needs, began integrating more amenities and public services into public housing estates. Singapore's public housing development has gone through five stages, primarily including the new town centers in the 1960s and 1970s, neighborhood centers in the 1980s and 1990s, and the formation of community complexes after 2000. Essentially, Singapore's community complexes integrate various functions, including public services provided by community clubs managed by the People's Association, commercial services in new town centers and neighborhood centers planned and constructed by the Housing Development Board, and public facilities provided by relevant government agencies in the vicinity[20]. This design optimizes land use efficiency.

PRACTICING UNITED TEMPLES IN COMMUNITY PLANNING

In this context, the forms and roles of united temples in urban planning in Singapore also vary. Here, this article takes the Yu Huang Tian Combined Temple, Tou Tian Gong, Ang Chee Sia Ong Temple, Beeh Low See Temple, and Yueh Hai Ching Temple as examples to illustrate this point.

The Yu Huang Tian Combined Temple is located at 76 Jurong West Street 76 and was completed in 1996. It is formed by the union of Yu Huang Tian Temple, Fuan Temple, and Ci Shan Tan. Among them, Yu Huang Tian Temple and Ci Shan Tan are deity-related temples, while Fuan Temple is a geographic temple originating from Anxi County, Quanzhou City, Fujian Province, China. Just one street away to the south, the Tou Tian Gong Combined Temple consists of Tou Tian Gong and Chwee Long Tow Pek Kong Temple, both of which are deity-related temples. From the image, it can be observed that the Yu Huang Tian Combined Temple and Tou Tian Gong Combined Temple are built together, with commercial buildings such as supermarkets and cultural centers in the same plot (Table.1). Zooming out to a broader perspective, these two combined temples are integrated with community parking lots, as well as amenities such as community hotels, food courts, gyms, and boxing arenas, serving as the central hub of the entire housing estate. Although the two combined temples are independent entities, their co-location implies a form of "unitedness" in planning. Daily

ritual activities of both temples are likely to be coordinated in time and space, forming a larger united temple at the community level, which holds significant practical significance for community planning (Figure 3).

The Beeh Low See Temple, a Buddhist temple located on Jalan Jurong Kechil in Singapore, was founded by Venerable Xue Shan in 1935. Originally named the San Bao Old Folks' Home, it provided shelter for many homeless elderly individuals. Today, it is situated in the western part of Singapore, near the Bukit Timah Community Center. In addition to weekly prayers, they also organize prayer events for special occasions such as New Year blessings. They further celebrate festivals like the Mid-Autumn Festival by hosting feasts and various performances open to everyone[21]. Similar to the planning approach mentioned earlier regarding combined temples, the Beeh Low See Temple serves as a community center integrating surrounding public facilities, albeit with one difference: the Yu Huang Tian Combined Temple and Tou Tian Gong Combined Temple are surrounded by more than one community, serving as the central hub for multiple housing estate neighborhoods, whereas the Beeh Low See Temple serves as the central hub for the Bukit Timah community. This indicates that the size of the central temple is correlated with the size of the community (Figure.4).

Similarly, using the Ang Chee Sia Ong Temple as the centerpiece and integrating facilities such as nursing homes, medical centers, food courts, and hawker centers as the core of the planning, HDB flats are arranged around it. The Ang Chee Sia Ong Temple is strategically located at the intersection of the main thoroughfare and river in the community, offering convenient transportation and a pleasant environment. It is a combined temple of Taoism, Mahayana Buddhism, and Confucianism, situated on the west coast of Singapore. The main hall is dedicated to the Lord Green Dragon (Chinese: 青龍爺), also known as Ang Chee Sia Ong (Chinese: 安濟聖王).

Unlike the temples mentioned earlier in the community, the Yueh Hai Ching Temple, also known as the Wak Hai Cheng Bio Temple, holds a unique position. It is situated in the heart of Singapore's Central Business District (CBD), the busiest and most vibrant area in Singapore. The Yueh Hai Ching Temple, colloquially known as the "Temple Street," is the oldest Taoist temple in Singapore and served as the earliest gathering and meeting place for the local Teochew community, managed by the Yiyin Company. Located on Phillip Street, it originates from the Teochew region of Guangdong Province, China. Originally established as separate temples dedicated to Mazu and local deities, they were merged into the Yueh Hai Ching Temple in 1826[22]. Sandwiched between surrounding high-rise buildings, the temple has been preserved since the inception of urban planning in Singapore's city center, highlighting its significant architectural heritage value. Its preservation holds crucial planning significance for the continuation of traditional culture in the modern urban landscape of Singapore (Figure.5).

THE IMPLICATIONS FOR URBAN PLANNING IN COASTAL CITIES IN SOUTHERN CHINA

BACKGROUND OF CITIES' PLANNING IN CHINA

Apart from Singapore, certain coastal cities in southern China, such as Putian in Fujian Province and Macau, also face the issue of traditional temple survival. Macau, similar to Singapore, has been deeply influenced by colonization and has a high degree of urbanization. On the other hand, the process of urbanization in Putian, Fujian Province, has just begun. The main differences between the two cities lie in their levels of urbanization, population density, and urban land capacity, with Macau being closer to Singapore. However, both cities face challenges in urban planning regarding the future of temples and the form they should take in a modernized urban environment.

China's current urban planning is based on the socialist system with Chinese characteristics, where urbanization and urban development are directly related to national governance. Urban planning and construction are closely linked to the capacity of urban governance. As early as 2019, the Chinese government issued guidance on central city development, urban-rural integration, and spatial planning, demonstrating high importance for the future of urban planning[23]. Additionally, in 2014, the National Development and Reform Commission proposed reform measures on how to protect and inherit historical and cultural heritage in the context of new urbanization:

> *"Facing unprecedented rapid urbanization in human history, China's architectural cultural heritage and traditional features accumulated over thousands of years are facing significant challenges. The 'National New Urbanization Plan' proposes actively protecting and promoting traditional excellent culture in urban construction and development renewal, continuing urban historical context, which clearly requires the protection of urban and rural historical and cultural heritage.[24]"*

Currently, some Chinese cities are in a planning phase similar to Singapore's in the 1980s to 1990s, such as Shanghai and Beijing. For cities like Putian, Fujian, where population density and land constraints are not as severe as in Singapore but richness in traditional culture is comparable, China has put forward more advanced planning concepts. Therefore, Putian's urban planning is relatively clear. In areas undergoing rural revitalization, traditional temples are preserved to maintain the local and continuous traditional culture. In areas facing unavoidable urbanization, the united temple model is employed to preserve traditional culture. In fact, Putian's planning adopts the concept of "green heart," relocating villages from the central urban area to restore the ecology around the Mulan River. However, there are still some questions regarding whether temples will be preserved in the current planning. Therefore, the significance of this research lies in providing valuable references for urban planning in culturally rich cities like Putian.

THE FORM OF UNITED TEMPLES WITHIN URBANIZATION

In fact, urbanization in Putian has led to the occurrence of temple consolidation, which the author referred to as "Rooftop Temples" in previous research. Due to urbanization and the conversion of rural land into urban use, three villages faced relocation, including their village temples. Residents moved from traditional villages to modern high-rise residential buildings, resulting in increased land utilization. However, the village temples could not be independently rebuilt. In response, the local government intervened to combine the temples of several villages, integrating them with commercial spaces.

Temples were placed on the rooftops, preserving the layout of the original village temples, including the main temple structure, stage, and square (Figure.6). After consolidation, certain rituals and deities were integrated, and community residents who came to worship would worship together with other deities. This achieved the significance of unity, continued traditional culture in a modern urban environment, demonstrated the resilience of traditional culture, and allowed community residents to enjoy the convenience of modern life[25].

THE ACTIONS OF VARIOUS PARTS IN SOCIETY

From Singapore's overall urban planning, we can see the high level of societal participation in heritage conservation, combined with various policies and regulations formulated by the government for urban conservation. This synergy has maximized the effectiveness of heritage preservation efforts. In contrast, in Putian, most temples are still located in rural areas and have not been affected by urbanization. The "Roof-Top Temples" mentioned earlier, situated at the boundary between urban and rural areas, are the most representative. The change in temple form reflects changes in people's lifestyles. Similar to community planning in Singapore, the ground floor of the Roof-Top Temples serves commercial purposes, with surrounding amenities forming part of the community. This planning approach wasn't influenced by prior knowledge of Singaporean planning strategies but rather emerged from practical convenience in daily life.

COMMERCIAL   TEMPLES

Fig. 6. Rooftop Temples. 2023. The rooftop temple is located in the community entrance square. From the functional distribution map, the temple is on top and the business is on the bottom. The two are spatially integrated.

By combining strategies for temple conservation from Singaporean urban planning, Putian can enhance public awareness and participation through publicity efforts. Leveraging Putian's unique circumstances, temples can continue to play their traditional role in community management within modernized neighborhoods.

CONCLUSION

In conclusion, the examination of temple management and urban planning in both Singapore and select coastal cities in China, namely Fujian's Putian and Macau, underscores the multifaceted challenges and innovative approaches in preserving traditional cultural heritage amidst rapid urbanization. The comparative analysis reveals nuanced differences in urban development stages, population densities, and land use capacities between these regions.

While Singapore's experience showcases the efficacy of united temple models within urban planning frameworks, offering insights into community cohesion and heritage preservation, the evolving urban landscapes in China's coastal cities present unique opportunities and dilemmas. China's urban planning strategies, rooted in socialist principles and geared towards heritage conservation, provide a forward-looking framework for reconciling tradition with modernization.

The emergence of united temples, symbolized by the concept of 'roof temples' in Putian, reflects a dynamic response to urbanization pressures, integrating traditional cultural symbols with contemporary urban functions. Furthermore, community engagement and government policies play pivotal roles in safeguarding cultural legacies and promoting sustainable urban development.

In light of these observations, there is potential for cross-cultural exchange and mutual learning between Singapore and China's coastal cities, fostering innovative solutions to preserve heritage while embracing urbanization. By leveraging best practices from both contexts, cities like Putian can chart a course towards inclusive and sustainable urban development, ensuring that the rich tapestry of cultural heritage continues to thrive amidst the evolving urban landscape.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author.

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Li Jie is a Wuhan University and National University of Singapore unitedly training master's student. His research focuses on the changes in temples and rituals under the background of urbanization. By exploring the form of the United Temple, he discovers the resilience and future sustainability of traditional culture.

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Table 1 Made by author according to the content of the literature

Figure 1 Photo by author, in Putian, Fujian province, China

Figure 2 From an illustration in the article: HUE, Guan Thye. "The Evolution of the Singapore United Temple: The Transformation of Chinese Temples in the Chinese Southern Diaspora." 159

Figure 3 Base image from website https://www.streetdirectory.com/sg/ang-chee-sia-ong/ 131-west-coast-drive-128014/ 289_9112. html and https://earth.google.com/web/search , modified and illustrated by the author.

Figure 4/5 Ibid.

Figure 6 The left one is drawn by the author and the right one is from the website: https://earth. google. com/web/search

Planning and Heritage in East-Asian Cities (1)

Chair: Thomas Chung

Planning history research and urban heritage conservation
Interrelations, barriers and future directions

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Abstract

It is argued that the planning history field has existed since the 1970s[1], and research in planning history mainly encompasses thoughts, regulations, and ideas of urban planning. Research in planning history not only enriches an understanding of the influence that urban planning exerts on places that we live in, but also provides a basis and direction for future planning practices. From a planning perspective, urban heritage conservation can be seen as the process of maintaining and transmission of cultural heritage assets in a way that causes significant messages to remain intact and accessible to future generations. Therefore, close linkages between respective theoretical explorations are discerned. It is mainly because urban heritage conservation can be achieved through planning practice, and academic research in planning history lays some theoretical basis for heritage planning work. However, planning history research is rarely conducted nowadays, and mostly by higher- education academics; and the significance of planning history research is not widely recognised by heritage planning and conservation practitioners. This paper aims to explore the interrelations between planning history research and urban heritage conservation practice, and suggest the approaches to better integrating them.

INTRODUCTION

Planning is a multi-disciplinary subject, and historians view it from various perspectives[2]. According to Elliott[3], 'planning history' "provides insight into current planning practice as it evolved from past practice". Academic research in planning history encompasses all phases and aspects of the urban planning process such as theories, regulations, approaches, principles of urban planning. It also studies comprehensively and intensively about what has happened in the places (e.g. urban areas, towns) that we live in, and what people have done to improve our living conditions. Hence, research in planning history helps enhance a depth of knowledge of the past planning practice, and the experience or legacy that they left also lays a solid foundation for future planning practices.

'Urban heritage' normally refers to older or historic elements located in urban areas (e.g. archaeological vestiges, and historic buildings), and the city itself can be seen as heritage, which is a special type of cultural property (e.g. neighbourhoods, urban centres, and historic cities)[4]. Urban heritage conservation here could mean the approaches to "extending the life of urban heritage while strengthening transmission of its significant heritage messages and values", when applying UNESCO's definition of cultural heritage conservation[5].

Therefore, as can be seem from the definitions of planning history and urban heritage conservation only, there are close interrelations in between, the main reason is that heritage is not able to be discussed without concerning historical impacts. However, research in urban heritage conservation or its practices seems solely vested in conserving the historic elements or enhancing the aesthetics of the city. The significance of planning history research is ignored by heritage planning and conservation practitioners. This paper aims to propose feasible approaches to incorporating research findings from planning history research into urban heritage conservation practices. This paper will first examine the meanings of the two terms 'planning history' and 'urban heritage conservation' as well as the interrelations in between, and then discuss the gaps between academic research in planning history and heritage conservation practice, finally suggestions on better integrating these disciplines will be made.

UNDERSTANDING THE CONCEPTS OF 'PLANNING HISTORY' AND 'URBAN HERITAGE CONSERVATION'

The emergence of the planning history field can be dated back to the 1970s, when people started to write about the history of planning, and its theories and practice[6]. However, the field of planning history itself still remained to be written or researched on around that time[7]. The early achievements of planning history focused on what happened in history, for example, the events that occurred in urban spaces and the key stakeholders involved in these events. With the planning history field became more and more interdisciplinary and international, it was increasingly recognised as the discipline that inspire ideas and thoughts or provide effective advice on future planning practice. For instance, knowledge in planning history helps

delivering a better understanding of the historic environment as well as the impacts that the past planning practice on it, as Carola Hein put: "planning history provides an opportunity to understand the motivations for planned interventions and serve as a foundation for future interventions"[8].

Elliott[9] sees planning history as 'an applied discipline' as it "emerges out of social conditions and the practice solutions we have developed over time", and it can also be codified as 'a professional activity' which "originally transmitted by practitioners via apprenticeships". Thus, planning history enriches a deep understanding of current planning practice, and precisely the progress of how past practice evolved. Furthermore, planning history studies things happened in all phases of the whole planning progress, hence it becomes the only discipline that studies all details of planning practices, which gives us opportunities to reflect upon. The four main phases of urban planning include 'identification and description' (e.g. collecting information of aims, stakeholders, documentation of description), 'assessment and analysis' (e.g. taking stock of cultural significance or values, physical condition, management context), response or making decisions (e.g. establishing purpose and policy, setting objectives, developing strategies, synthesising and preparing plan), periodic review and revision[10].

When it comes to discuss 'urban heritage conservation', this paper prefers to define this concept by separating it into 'urban heritage' and 'conservation'. Since the word 'heritage' literally means what is handed down from the past, 'urban heritage' can be understood as what is handed down from the past in urban areas. The concept of urban heritage has two meanings: it can refer to the list of heritage elements located in urban areas (e.g. archaeological vestiges, historical buildings, vernacular architecture, historical gardens, social practices, rituals, and festive events, among others); it also sees the city itself as heritage, which means the city is a special type of cultural property that is mainly associated with neighbourhoods, urban centres, and historic cities[11]. Thus, heritage is not only just an architecture as it is prone to be understood as, it could also be spaces at any larger scale. The term 'conservation' can be interpreted as 'heritage conservation' here, it is mainly to do with transmission of cultural heritage, as Sir Bernard M. Feilden, the former director of ICCROM, put: "The fundamental purpose of conservation is to ensure the transmission of our cultural heritage to those who follow us, its significant messages intact and accessible to the greatest degree possible". Hosagrahar[12], the Deputy Director for the World Heritage Centre at UNESCO, elaborates on the interface between heritage conservation and urban planning, she thinks "Heritage conservation, an organised effort to protect cultural heritage, is deeply intertwined with modern city planning", but she also argues that their meaning is contrasted with each other. It is because heritage conservation is more on conserving and preserving the past or what remains from the past, while the purpose of urban planning is mainly on setting development goals and finding feasible approaches to achieving these goals. Even the contradictions exist, these two subjects are still closely interrelated with each other, in other words, their interrelations outweigh their contradictions.
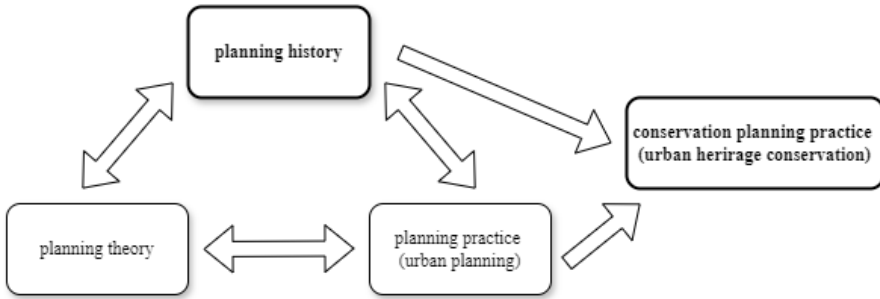
Fig. 1. Interrelations and interface among planning history, planning theory, planning practice, and heritage conservation

INTERRELATIONS BETWEEN 'PLANNING HISTORY' AND 'URBAN HERITAGE CONSERVATION'

The links between 'planning history' and 'urban heritage conservation' seem not very straightforward. However, since conservation planning is involved in general urban planning, the indirect connections between them do exist. Carola Hein clarified the role that planning plays in "the historical transformation of cities and regions", she argued that "planning history can also help us understand the downsides or shortcomings of historic planning practice and the needs for novel approaches"[13]. Thus, planning history helps us or gives us an opportunity to reflect upon past historic planning practice that also includes conservation planning practice. In addition, planning history enriches a comprehensive understanding of resilient planning system for the future and potential challenges, while taking lessons from the past into account[14]. As resilience is much to do with sustainability, planning history can therefore become an effective tool to conceptualise the goals of sustainable development, one of which definitely concerns heritage conservation.

Furthermore, when discussing about planning history, it is hard to avoid mentioning 'planning theory'. While 'planning history' "provides insight into current planning practice as it evolved from past practice", 'planning theories' "provide insight into the processes and practices that underlay our profession"[15]. Thus, 'planning history' is more to do with planning practice, while 'planning theory' is more focused on how planning practice is implemented. For example, planning theories help with a deep understanding of how cities and regions work, how planning could or should be conducted, and how the planning itself can be an approach to activating and engaging its core functions and values[16]. There are close associations between planning theory and planning practice because theories also learn and inform practice, as Elliott[17] argued. Therefore, planning history helps to construct planning theory, and planning theory can inform future planning practice. Heritage conservation can be achieved through urban planning, or in other words, urban planning is an approach to conserving heritage or conservation planning. Theories that obtained from planning history research can also be the legacy that we can learn for our current planning or conservation practice. The

theories here are not limited to planning theories from early time, they also include theories that the planning discipline that emerged from other disciplines such as geography, sociology, history, and so forth. The interrelations and interface among these terms can be explained by Figure 1.

For example, the place-making theory was vastly promoted during the urban renaissance time of UK. The origin of this theory can date back to 1953, when the 'artistic tradition' got popular; theorists proposed the concept of place-making to capture the complexity of cities, which focused more on the public space between buildings. In 1988, Francis Tibbalds further clarified the connotation of place creation, namely humanised design, aiming at promoting complexity and pleasure in the built environment. During the urban renaissance time, Sheffield's urban development focused on 'the making of urban places', it built a number of public spaces around its city centre. For instance, the seven public spaces on the golden route not only create an impressive gateway space for visitors and provide quality public space for people's social activities, but also reconnect Sheffield railway station with the city centre and ensure a clear and an unobstructed pedestrian route[18]. Every public space has its own characteristics, while also exhibits similarities in design elements (see Figure 2) such as flowing water, highly crafted metal and Pennine sandstone. These design elements well indicate Sheffield's unique city character because the seven rivers that pass Sheffield, Sheffield's metal manufacturing industry (e.g. steel manufacturing), and the local natural material in Yorkshire. For example, the Peace Garden, which is just behind Sheffield Town Hall, is now a popular place for people to carry out all sorts of social activities (see Figures 3&4); its materials and design are all 'made in Sheffield'. Since one principle of place-making is to emphasis the place's unique identity in its design, this theory is well applied in the design of public spaces in Sheffield. Therefore, learning from planning history and the theories obtained from planning history, can help delivering better urban development.

Fig. 2.   Stone water feature in Peace Garden, Sheffield

Fig. 3 & 4. People relax at Peace Garden in summer

BARRIERS OF APPLYING FINDINGS FROM PLANNING HISTORY RESEARCH TO URBAN HERITAGE CONSERVATION PRACTICE

Nowadays the field of 'planning history' and its academic research, including their significance, is not much elaborated in the planning discipline and also heritage conservation work. In terms of urban heritage conservation, it tends to focus solely on an historic building and restoring its aesthetic aspects, rather than taking account of the whole area where it locates. Thus, it is often to see that the historic building itself is well maintained, whereas the surroundings are in unpleasant condition. Moreover, nowadays conservation planning, as well as urban planning, both prioritise economic development in practice. To clarify, much urban heritage conservation work will not be proposed until it proves it will bring economic benefits. For instance, urban heritage in prosperous cities is normally well conserved, it is mainly because those cities are more likely to obtain funding and the finished conservation work is able to attract more visitors.

The city of Yantai is located in the East of Shandong Peninsula, adjacent to the Yellow Sea and the Bohai Sea, it faces the Liaodong Peninsula, Japan and South Korea across the sea (see Figure 5). Since July 2013, Yantai has become the 122nd national historic city. Now there are 142 in total. In July 2023, the Shandong Provincial Government formally approved the '*Conservation Plan for the Historic City of Yantai 2021-2035*', which aims to Improve and enhance the awareness of historical and cultural value and historic city conservation, fully demonstrate the unique charm of Yantai and so forth. This city originates from a coastal city, Qishan Wei-suo City, which belongs to Fushan County. At that time, the regional central city of Jiaodong Peninsula is Dengzhou prefectural city.

In August 1861, Yantai was officially opened as a port, becoming the first treaty port in Shandong and one of the first three cities in the north (Tianjin, Niuzhuang, Yantai). By 1932, a total of 16 countries had established consulates in Yantai Hill and its surroundings, among which 14 consulate buildings survived to this day (see Figures 6&7). There is an abundance of natural and cultural heritage that the period of opening has left. Now there are a few designated 'historic conservation areas' around the city of Yantai, and a number of well-preserved

buildings (e.g. taxation office, foreign firms, and business houses) that present high historical and cultural value. The work on urban heritage conservation in Yantai is generally going well, however, it still faces some challenges. There is an uneven focus on urban development which focuses more on well-preserved architecture, and also more on the Yantai central urban area, not the historic city agglomerations. The urban heritage of Yantai includes traditional counties (e.g. Penglai, Mouping) as well. Moreover, there are issues with current historic city conservation planning strategies. Current strategies do not help to show unique characteristics of Yantai as a historic city and Chinese coastal cities, and they do not take account of Yantai's own planning heritage (e.g. planning thoughts, planning system, planning approaches, etc.)[19].

In addition to the issues with conservation planning, obstacles of conducting planning history research could also be a reason. Although there has been more and more research activity and publication on the history of planning, this area is still not as large as other subfields within planning. Many planning historians do not think they belong to the planning field, they might think they belong to other academic disciplines (e.g. history, geography, architecture, landscape architecture and art history)[20].

FUTURE DIRECTIONS ON BETTER INTEGRATING PLANNING HISTORY RESEARCH AND URBAN HERITAGE CONSERVATION PRACTICE

Sheffield is a city that was built on seven hills, 61% of the entire area is green space; one-third of the city is located in the Peak District National Park. Because of its central location in the UK, it has excellent rail and road links. Sheffield's unique geographical location provides the city with excellent steelmaking conditions. Nowadays Sheffield is famous for the names 'the steel city' and 'the greenest city' in the UK. Sheffield has a rich heritage, most of which are important historic buildings located in the city centre; although these buildings might look a bit plain, they are still of considerable significance as witness to its industrial past[21].

In the 1940s and 1950s, the post-war 'positive' planning by the public sector was swamped by private-sector redevelopment. Sheffield was replanned in 1945, then the city underwent another four major plans before 2000. In 1999, the Lord Rogers' Urban Task Force report promoted the urban renaissance in England, then the general quality of urban environments and the urban design dimension became the utmost important aspect of planning work. As mentioned earlier, with the application of the place-making theory or approach, many places with high- quality designs were planned and delivered such as the seven public spaces on 'the Gold Route'. Now the city has transformed successfully from an industrial city in history to a liveable and vibrant city. Sheffield City Council made lots of efforts to maintain and promote the city's distinct industrial status. It is noteworthy that the making of development plans of Sheffield is based on a thorough analysis of the city's history, including its planning history. These plans do not confine to local plans for the whole city, they also include development plans at other city scales.

Fig. 5. Location of the city of Yantai

Fig. 6 & 7. Former British Consulate; Former East Customs Tax Department

From studies on Sheffield's heritage conservation experience, there are a few things that can be suggested on better integrating planning history research findings and heritage conservation work. It is more important to conserve the wider area than just a building when designating development plans. For example, the Sheffield City Centre Strategic Vision 2022[22] shows a plan of the city centre, illustrating six city character areas around the city centre (see Figure 8). In these character areas, the historic sites and cultural quarters are defined. Hence, urban heritage is conserved within the wider area that they are in. In these defined character areas, there are a number of good practice examples of urban heritage conservation such as the Kelham Island Industrial Conservation Area[23]. Kelham Island is one of Sheffield's oldest manufacturing sites and therefore proudly shows the city's industrial history, is now transformed into a vibrant and modern neighbourhood that presents an abundance of historic elements.

Fig. 8. A plan of Sheffield City Centre illustrating the location and boundaries of the 6 city character areas and the 23 neighbourhoods

When undertaking the heritage conservation work, all stakeholders should at least have a basic knowledge of the area's planning history before starting doing their role, especially for plan makers. Prior to the start of conservation, the team might want to consult researchers or academic researchers in planning history or those who have substantial knowledge of the place's development planning experiences. Their knowledge in planning history helps to identify the goals of conservation work, most of which are prone to enhance the place's historic character. Plan makers need to be aware of the place's unique historical and cultural value, evolution process, spatial pattern, and so forth. The Historic Urban Landscape (HUL) approach can also be applied where appropriate in the conservation work, in order to reinforce the unique city identity and character, and also balance urban development and life quality on a sustainable basis. Since heritage stands for emotional connections between people and the physical environment, one goal of the conservation work is to facilitate 'relationship building', as Steve Brown, special advisor to GML heritage suggest, "for me, heritage is about relationship building, facilitating connections between groups who may value places and practices differently. Relationship building creates a better and more respectful future for everyone."[24]

In 1982, the State Council of China announced the first batch of 24 historic cities, and China began the historical and cultural conservation work at the urban space level. Now it has been 40 years since the historic city conservation work was in place, thus an abundance of experience in conserving these historic cities is now obtained.

It is important to reconstruct the unique historical and cultural spatial structure of historic cities[25]. The conservation work of China's historic cities is significantly different from that of

general cultural relics and monuments. Urban space conservation is characterised by integrity, hierarchy, and extensiveness, while cultural relics and monuments conservation is characterised by independence and quantification. Conservation planning of historic cities could start from the recognition of its authenticity, conducting holistic conservation, and defining the local or unique character of its urban space. Then it needs to explore the multi-dimensional and structural interaction between historic cities and natural landscapes, spatial functions, administrative governance, and urban-rural relations, in order to reconstruct the consistency and continuity of urban spatial structures in history. With regards to the current situation where the urban-rural spatial relationship is weakened or even disintegrated, the conservation, restoration, and development of the historical and cultural spatial structure of historic cities are of vital importance for the whole city's development planning[26].

SUMMARY AND CONCLUSION

From what has been discussed above, there are close interrelations between planning history research and heritage conservation practice, and acquiring a deep knowledge of planning history helps with the continuity of history in conservation practice. Planning, as well as heritage conservation, are both tasked with setting goals and using knowledge and action to achieve these goals. As mentioned earlier, urban heritage can mean a bigger urban area such as a historic district and the city itself can be heritage, hence conservation work is involved in planning process, and planning work must take account of heritage conservation. In other words, planning can be an effective approach to delivering heritage conservation achievements.

Academic research in the planning history field not only enriches an understanding of the influence that urban planning exerts on places (e.g. urban areas, regions) that human beings live in, but also provides a basis and direction for future planning practice. Amongst the three types of theories (normative theories, disciplinary theories, procedural or process theories) that Elliott established in 2023, clearly a deep and broad understanding of 'planning history' contributes to the construction of procedural or process theories, which mainly examines the action of planners[27]. Such examination of planners' actions therefore become the experience that planners can learn for future planning practice.

Although their interrelations are recognised, there are still a number of obstacles in applying the research findings of planning history to heritage conservation work. It is not only because current conservation planning is more prone to focus on a historic building or a monument only, rather than on a wider area, it is also because planning history seems to be an ignored field in the urban planning discipline. It is important to recognise the value of planning history research at first place, and all stakeholders working in conservation should have a basic knowledge of the place's planning history. It is not easy to ensure all urban heritage is conserved well in all places due to differentiation in economic circumstances, at least preserving it still helps. Urban heritage tells a whole story of the city and facilitates connections between the city and its residents, having a good knowledge of planning history and applies it to conservation work, will help with narrative or story-telling of urban heritage.

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IMAGE SOURCES

Figure 1 Made by author.
Figures 2 & 3 & 4 Photos taken by author.
Figure 5 Made by author.
Figures 6 & 7 Photos taken by author.
Figure 8 Sheffield City Council. *Sheffield City Centre Strategic Vision*. (Sheffield: Sheffield City Council, 2022).

Xia Bolun, Wang Yan
Research on the Protection and Utilization of Urban and Rural
Heritage in the Plateau Valley Area of the Yellow River Basin

Research on the Protection and Utilization of Urban and Rural Heritage in the Plateau Valley Area of the Yellow River Basin
Take Hainan Tibetan Autonomous Prefecture as an Example[1]

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Abstract

In the eastern valley of the Qinghai-Tibet Plateau, there exist numerous historical towns and settlement heritages. Over time, they have been enriched and evolved against the backdrop of the compact natural landscape of the valley, creating a unique, dense living space where nature meets humanity and history merges with modernity. Herein, taking the Hainan Tibetan Autonomous Prefecture as example, this study presents a comprehensive solution to the challenges of urban-rural development and heritage preservation in the region. At the macro level, GIS technology is employed to analyze the historical evolution of spatial distribution patterns of settlements. This helps elucidate the historical factors contributing to the coexistence of modern settlements with ancient sites. At the intermediate level, a segmented approach to development is proposed, taking into account both natural environments and human settlements. At a micro scale, based on the interplay between contemporary living spaces and heritage sites, urban-rural settlements are categorized into nested, overlaying, overlapping, adjacent, and distant types, and distinct developmental trajectories for heritage preservation and utilization are delved into. Furthermore, a coordinated development strategy is mapped out for the Yellow River source area, which includes both the safeguarding of cultural heritage and the development of urban and rural construction.

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Research on the Protection and Utilization of Urban and Rural
Heritage in the Plateau Valley Area of the Yellow River Basin

INTRODUCTION

Since the inclusion of canal heritage and cultural route heritage in the "Operational Guidelines for the Implementation of the World Heritage Convention" in 2003, the protection of basin cultural heritage has emerged as a significant and increasingly popular area of research in academia. Related research mainly focuses on basins of varying sizes, with the goal of achieving sustainable preservation and utilization of the historical and cultural heritage within these basins. The research demonstrates the characteristics of interdisciplinary integration. Following this development trend, the construction of a national historical and cultural space system based on river basins has become an effective way to protect and inherit cultural heritage in the new era.

Hainan Tibetan Autonomous Prefecture is a typical area in China characterized by a multi-ethnic population and the confluence of various cultures. There are numerous river systems, including the sources of the Yellow River, running through it, forming a north-south and east-west corridor. A network-like spatial system has been established to facilitate the formation, migration, integration, and development of the Chinese nation. Along this system, countless towns and villages have evolved, persisting to the present day, and have left behind rich historical and cultural relics. However, the rapid economic construction in recent years has led to the increasingly prominent contradiction between urban and rural development and heritage protection in the region. Historical and cultural heritage have either been protected in isolation, or has been entirely sacrificed to urban and rural development needs. This has resulted in a reciprocal constraint between the preservation of ancient sites and the advancement of urban-rural construction. Therefore, integrating the protection and utilization of ancient sites with urban and rural construction under the ecological background of the source of the Yellow River is an urgent priority. It is imperative to promptly devise practical strategies that facilitate the adaptive protection and utilization of heritage resources to meet the needs of contemporary social life.

At the same time, research on the evolution of settlement spatial patterns in Hainan Prefecture is still blank, and there is a lack of comprehensive understanding of the urban and rural development context of the Yellow River headwaters plateau valley area represented by Hainan Prefecture. To this end, this study, from a historical perspective, summarizes the spatial distribution characteristics of rural and urban settlements in the region. The results shed light on the fundamental reasons for the multi-layered superposition of ancient and modern settlements in the plateau valley area of the Yellow River, also forging a historical foundation for sustainable protection and utilization of heritage resources in this area.

OVERVIEW OF THE STUDY AREAS

The Yellow River originates from the Bayan Har Mountains in Qinghai, with a total length of 5,464 kilometers, flowing through nine provinces (autonomous regions). Hainan Tibetan Autonomous Prefecture is located in the upper reaches of the Yellow River and the northeastern

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corner of the Qinghai-Tibet Plateau, characterized by an average altitude exceeding 3,000 meters. The Yellow River mainstream in the prefecture is 411.3 km long and flows through all five counties in the prefecture. Despite the harsh natural environment and climate, archaeological sites such as Hongshanzui and Layihai demonstrate that human activities in the upper Yellow River region, where Hainan Prefecture is situated, could date back to the Middle Pleistocene Paleolithic Age. This indicates that this area is the birthplace of the culture in the upper reaches of the Yellow River.

Upon transitioning into the feudal society, this region continued to maintain its status as the core of the culture in the upper reaches of the Yellow River, largely due to its geographical advantages. On the transportation front, the Silk Road and the Tang-Tibet Ancient Road intersected and extended along the northern bank of the Yellow River in the area around Riyue Mountain. Historically, Hainan Prefecture witnessed many historical events such as the alliances, peace treaties, and the "tea-salt trade" and "tea-horse trade"; From a military perspective, this region held an extremely prominent strategic position in history. It was once a key battleground where central dynasties fought against minority ethnic regimes in western regions for control. Frequent wars significantly hastened cultural exchanges, rendering making Hainan Prefecture one of the most typical areas of multicultural integration in China. Geographically, this area serves as a crossroads between agricultural and pastoral zones in Qinghai Province. It is a place where Han, Tibetan, Mongolian, and Islamic cultures peacefully coexist, with multiple ethnic settlements intertwined throughout the region.

MACRO LEVEL – SPATIAL DISTRIBUTION OF SETTLEMENTS IN THE HISTORICAL PERIOD

The historical stages of Hainan Tibetan Autonomous Prefecture can be divided into 5 stages according to its historical and cultural characteristics: the Stone Age (3800 B.C. - 2000 B.C.), the Bronze Age (2000 B.C. - 220 B.C.), the Qin, Han, Wei and Jin Dynasties(220 B.C. - 589 A.D.), the Sui, Tang, Song and Jin Dynasties(589 A.D. - 1234 A.D.), and the Yuan, Ming and Qing Dynasties(1234 A.D. - 1911 A.D.). In this study, the settlement sites in prehistoric and historical periods were compiled based on literature such as The Atlas of Chinese Cultural Relics, Research on Ancient Cities in Qinghai, and Investigation Report on the Ming Great Wall Resources in Qinghai Province, totalling 664 settlement sites in various periods.

STONE AGE (3800 B.C. – 2000 B.C.): A MULTI-CLUSTER LAYOUT WITH THE GUIDED BASIN AS ITS CORE.

The Yellow River culture in Hainan Tibetan Autonomous Prefecture can be traced back to the late Neolithic period around 3800 BC, represented by the Zongri culture. There are a total of 195 ancient settlement sites of various sizes, including ancient civilizations such as the Majiayao culture, Zongri culture, and Qijia culture concentrated in this area, forming a vast belt of ancient primitive settlement sites.

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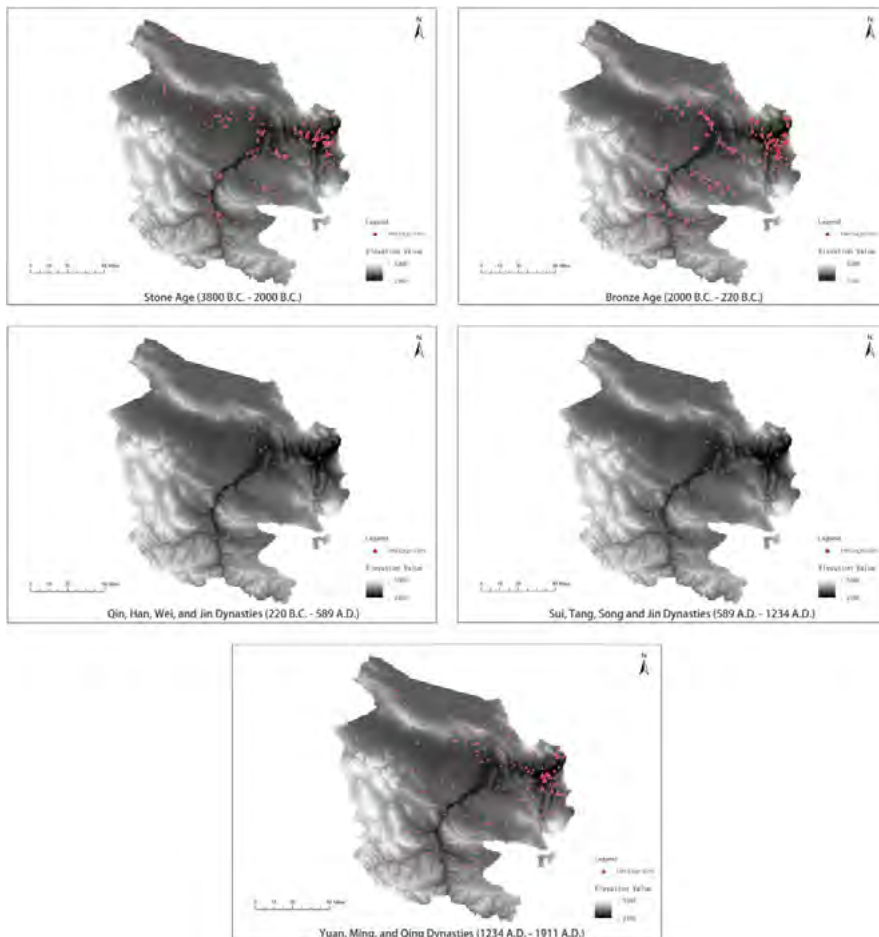
Fig. 1. Evolution of Settlements Distribution in Hainan Prefecture

From a regional perspective, the distribution of settlements during this period formed a spatial pattern with the Guide Basin as the core cluster, with other sites scattered along the main stream of the Yellow River and its tributaries. The spatial distribution pattern of the primitive settlement site with a "single central nucleus radiates to multiple scattered clusters" indicated that the Gonghe-Guide Basin in Hainan Prefecture had become a population gathering place at the source of the Yellow River on the Qinghai-Tibet Plateau during the primitive society period.

BRONZE AGE (2000 B.C. – 220 B.C.):
THE EXPANSION OF THE FOUR LINEAR SETTLEMENT BELTS CONTINUES UNABATED

Approximately 4000 years ago, the region now known as Hainan Prefecture entered the Bronze Age. During this period, ancient sites represented by the Kaya Culture site existed, and

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their existence coincided with the Western Zhou period in the Central Plains region. Judging from the artifacts unearthed from this period, the cultural characteristics of the Tibetan ancestors, i.e., the ancient Qiang people, gradually emerged. The number of ancient sites from the Bronze Age increased significantly, with a total of 301 ancient sites recorded.

The Bronze Age sites in Hainan Prefecture carried on the basic spatial distribution pattern of the Stone Age sites, with concentrations on the terraces flanking multiple tributaries of the Yellow River. Settlement sites within the Guide Basin continued to spread to surrounding areas. During the Neolithic Age, clusters of sites emerged along the valleys of the Yellow River's tributaries, resulting in four linear belts of site distributions. This demonstrated the valley areas as the optimal settlement locations within the context of the ancient plateau environment.

QIN, HAN, WEI, AND JIN DYNASTIES (220 B.C. - 589 A.D.):
A DISPERSED LAYOUT REPRESENTED BY THE CAPITAL CITY.

Before the Qin Dynasty, the region now known as Hainan Prefecture was home to the Qiang and Rong peoples. During the Han Dynasty, there was an increase in interactions and connections among various ethnic groups in the Yellow River and Qinghai basins. The Qiang people began to migrate inland, while Han Chinese from the interior regions began to migrate into Qinghai for military service and land reclamation. Some areas of Hainan Prefecture were incorporated into the administrative system of the central dynasty for the first time. In the early 4th century AD, the Xianbei people migrated into Hainan Prefecture and established the state of Tuyuhun, which lasted for over 300 years. During this period, a total of 20 physical sites and historical structures were recorded.

During this period, the distribution of sites predominantly remained in the Yellow River valley, with two minor clusters emerging along the banks of the Qiabuqia River and Shagou River. At the same time, Shudun City and Fuxi City served as royal cities during different periods of the Tuyuhun regime. The substantial scale of these cities indicated that the Hainan Prefecture region held a strategic position in controlling the entire northeastern part of the Qinghai-Tibet Plateau at that time.

SUI, TANG, SONG AND JIN DYNASTIES (589 A.D. - 1234 A.D.):
MILITARY SETTLEMENTS EVENLY SCATTERED ALONG THE RIVER VALLEY

Starting from the Sui and Tang dynasties, this area became the forefront of mutual conquests between the Central Plains Empire and Tibetan Empire. During the Northern Song Dynasty , the Tsong-Kha regime dominated by Tubo established Xige City in Heyin Town of present-day Guide County. Throughout this period, numerous military settlements sprang up due to warfare, with military defense emerging as their most important functional attribute.

In this phase, a total of 41 ancient sites and historical structures were recorded. Military settlements predominated as the main form of settlement in Hainan Prefecture, mostly situated in strategic locations such as river valleys with local topographical advantages. This further underscored the significant influence of military defense on settlement locations.

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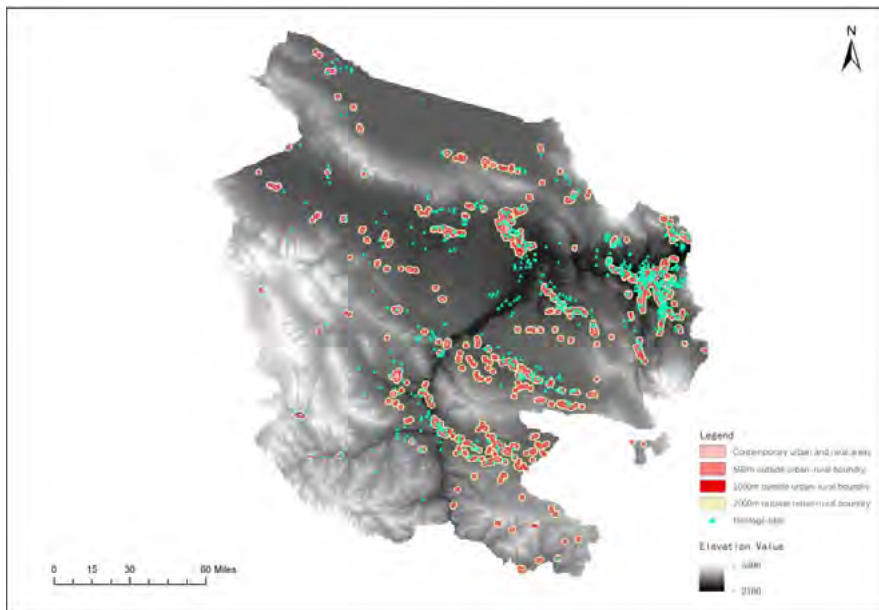
Fig. 2.   Analysis of Spatial Coupling Between Contemporary Settlements and Heritage Sites

YUAN, MING, AND QING DYNASTIES (1234 A.D. – 1911 A.D.): INTEGRATION AND COEXISTENCE OF MULTI-ETHNIC SETTLEMENTS.

The Yuan Dynasty achieved unprecedented unity in China, transforming the region where Hainan Prefecture was located from a border area to an inland area. The Yuan Dynasty established Guide Prefecture in this area, which was subordinate to the Tubo Pacification Commissioner. The stability of the political situation laid the foundation for cultural dissemination. Following the Yuan Dynasty, religion became the core factor driving the development and evolution of settlement clusters. A group of settlements centered around Tibetan Buddhist temples was formed. The stability of the political situation also accelerated the concentration of resources such as population towards the regional center, making the Guide Plain once again the center of this region.

During this stage, more than 100 sites of various types were surveyed. The distribution of settlements during this time was centered around the Guide Basin and sporadically scattered along the banks of several river valleys. The types of settlements shifted from military settlements in the previous stage to religious settlements as the main focus. The Guide Basin exhibited significant features of cultural integration, with multiple ethnic settlements coexisting, while the Saizong Mountain area demonstrated pure Tibetan Buddhism cultural characteristics, with Tibetan Buddhist temple settlements as the main type of settlements.

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Spatial Relationships	Spatial Distance between Settlements and Heritage Sites	Number of Settlements
Overlaying	0	25
Adjacent	500m	102
Neighbor	500-1000m	110
Other	1000-2000m	181
	2000m	286

Table 1. Classification and Statistical Table of the Relationship between Urban-rural Settlements and Heritage Sites

CONTEMPORARY URBAN-RURAL SETTLEMENTS OVERLAPPING WITH HERITAGE SITES

Hainan Tibetan Autonomous Prefecture comprises 5 counties, 36 townships, and 426 administrative villages (including over 700 natural villages). it can be observed that there is a significant overlap between ancient and modern settlements within Hainan Prefecture, by inputting heritage resources and current urban-rural settlement spaces into the ArcGIS platform and establishing spatial connections (Figure 2). This is attributed to the absolute advantage of living conditions in the valley area compared to other regions of Hainan Prefecture, making it a

high-density distribution area for ancient and modern settlements. Analysis (Table 2) reveals that there are 25 places where modern urban and rural settlements directly overlay with heritage sites, while nearly 400 instances have relatively close proximity between modern urban and rural settlements and heritage sites, accounting for approximately 60% of all modern settlement locations in Hainan Prefecture. The analysis uncovers a highly complex interplay between ancient and modern settlements in this region. Thus,it is imperative to designate strategies for the sustainable conservation and development of heritage resources at the micro level, based on the different spatial relationships between urban-rural settlements and heritage resources, which will promote the organic integration of urban and rural development and heritage conservation..

MESO LEVEL - SEGMENTED DEVELOPMENT STRATEGY BASED ON NATURAL GEOGRAPHY AND HUMAN SETTLEMENT ENVIRONMENT

It is suggested that this river section could be further divided into several river segments, considering of the spatial distribution and its natural geographic characteristics of the settlements along the banks of the Yellow River in Hainan Prefecture. Then, tailored planning strategies will be proposed for each river segment to address the main challenges in particular area.

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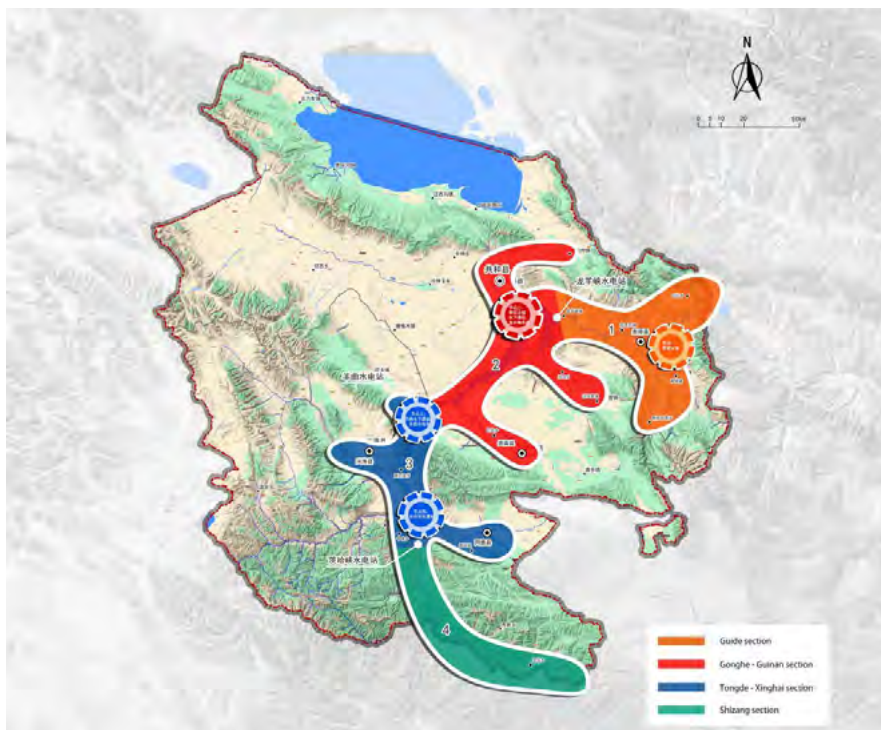
Fig. 3.   Segmented Planning of The Yellow River in Hainan Prefecture

The Guided section represents the most densely concentrated area of ancient sites in Hainan Prefecture, and spatially overlaps with the contemporary Guided County. In terms of conservation, it is imperative to comprehensively protect the historical environment pattern characterized by "three rivers encircling the city" and to enhance the connectivity between Guided Ancient City, Yellow River (north side), and Nanhai Temple (south side). This will contribute to establishing an integrated "river-city-mountain" spatial corridor while regulating building heights along this pathway. With regards to development, distinctive cultural elements such as cultural worship, ancient city sightseeing, and ethnic customs should be highlighted through integration of "cultural tourism content," thereby serving as a model for preserving and utilizing this renowned highland city.

The Gonghe - Guinan section hosts China's largest photovoltaic power generation base and the largest artificial reservoir in the Yellow River Basin. The construction of the Longyangxia Reservoir has not only propelled regional economic growth but also led to the submersion of numerous historical and cultural sites. Advancements in technology have made it feasible to conduct underwater archaeology at Longyangxia using deep diving equipment and to develop underwater archaeological tourism. Planning for this area can involve establishing a digital and virtual heritage exhibition and experience center, fostering the development of new industries associated with digital heritage conservation.

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Sections	Length of the Yellow River Main Stream	Human Settlement	Natural Geography
Guide section	87.9km	Dense	Broad river valley plain
Gonghe - Guinan section	98.3km	Normal	Vast expanse of water
Tongde - Xinghai section	67.3km	Dense	Stepped valley terrace
Shizang section	152.8km	Sparse	River valley

Table 2.   Segmentation and Characteristics of the Yellow River in Hainan Prefecture

The Tongde - Xinghai section is an area characterized by a dense distribution of rural settlements and heritage resources, with the presence of several hydropower stations. The objective is to capitalize on the spatial connection between the hydropower stations and historical sites, by developing a "heritage + hydropower" tourism cluster. This initiative is designed to boost the economic growth of nearby rural regions and to promote a synergistic approach where rural revitalization is integrated with the preservation and utilization of cultural heritage.

The Shizang section features a narrow channel, with minimal distribution of villages and towns along its banks. Nevertheless, the area is intersected by several national-level nature reserves and national parks, showcasing abundant and distinctive natural landscapes. The strategy entails prioritizing ecological preservation while fostering eco-cultural tourism. It includes integrating historical and cultural assets such as Shizang Temple to establish an ecological tourism demonstration zone that amalgamates natural landscape exploration with immersive experiences of sacred mountain culture.

MICRO LEVEL – CLASSIFICATION DEVELOPMENT STRATEGY BASED ON THE RELATIONSHIP BETWEEN ANCIENT AND CONTEMPORARY SETTLEMENT SPACES

URBAN AND RURAL SETTLEMENT DEVELOPMENT POSITIONING

Due to the constraints of the terrain and landforms in the Plateau Valley Area, urban-rural settlements and historical-cultural heritage in Hainan Prefecture exhibit various juxtaposition relationships within a limited space. In general, it can be divided into three categories, including "Included", "Overlayed", and "Separated". It can be further divided into five categories, including "Nested", "Covered", "Overlayed", "Adjacent", and "Distant" (Table 3). Given the varied interactions between urban and rural settlements and cultural heritage spaces, along with disparities in public service facilities among these settlements, it is of considerable significance to implement distinct development strategies tailored to the unique "settlement-heritage" combinations.

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Spatial Relationships		Figures	Features	Development Paths	
				Urban settlements	Rural settlements
Included	Nested		Basically no tangible remains, or scattered fragments embedded in modern spaces	Integrating heritage into everyday life through information labeling	Leveraging intangible cultural heritage to drive rural development
	Covered		Heritage area including modern area, with a wide distribution range	/	Great site museum, Rural cultural and tourism complex
Overlayed	Over-layed		Modern space overlapping with the cultural heritage space	Coexistence of the past and the present, Zone guidance	Coexistence of the past and the present, Rural cultural tourism
Separated	Adjacent		Heritage area and the modern area being close in distance	Construct interactive channels, Undertake advanced supporting facilities	Construct interactive channels, Undertake basic supporting facilities
	Distant		The distance between the site area and modern area being relatively far	Transit supply	Feature positioning

Table 3. Differentiated Protection and Development Framework

Urban settlements have significant advantages in infrastructure and supporting services, mainly undertaking high-level supporting functions such as transportation and accommodation. For the Nested urban settlements, due to limited physical remains and historical records, it is necessary to excavate contextual information based on the limited material remains and historical literature. At the same time, while respecting the current status of the urban built-up area, limited restoration projects should be carried out, focusing on mentioning historical information in a symbolic way and integrating cultural heritage into the daily life of citizens. For the Overlayed settlements, where urban areas overlap with archaeological sites, a reciprocal relationship is established: urban areas offer essential facilities to the sites, while the sites enhance the urban economy by generating tourism revenue and creating jobs for residents. Regarding superimposed areas, the key lies in sorting out historical patterns and creating historical scenes, injecting interactive experience projects centered on folk culture. Non- superimposed areas play a more supportive role in providing ancillary services. For the Adjacent settlements, urban settlements leverage their well-equipped facilities to create a cluster of service facilities and establish interactive channels between the settlement area and the archaeological site. Additionally, urban settlements that are distant from historical and cultural resources primarily fulfill roles as transportation hubs, lodging centers, and supply bases.

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Rural settlements possess significant advantages in terms of natural and landscape resources, as well as open space. For the Nested rural settlements, it is imperative to leverage limited material foundations and historical literature for extracting cultural heritage information and creating employment opportunities for villagers through the exploration of unique intangible cultural heritage. For the Covered settlements, a model emphasizing large-scale site protection should be implemented to establish a comprehensive site park or archaeological museum complex that integrates sightseeing, archaeology, research, education etc. Meanwhile, emphasis should be placed on promoting community participation in daily management and encouraging villagers to engage in site protection and restoration efforts. For the Overlapped settlements historical and cultural resources can be utilized to develop rural tourism which incorporate tourism sightseeing, inns, and other amenities, aiming to achieve coexistence between rural settlements and sites. For the Adjacent settlements with close spatial proximity to heritage resources, interactive channels between settlement areas and heritage sites should be established, and rural settlements should be fully utilized to provide essential support services for these areas. For settlements far away from heritage resources, although the possibility of direct interaction between the site and the settlement is relatively small, they can still combine their own characteristics to create cultural and tourism industries such as homestays, farmhouses, and outdoor exploration etc. , thereby attracting spillover tourism resources from the core tourism areas.

INNOVATIVE INTEGRATION AND DEVELOPMENT STRATEGIES OF CONTEMPORARY URBAN-RURAL SETTLEMENTS WITH HERITAGE SITES

The strategy of symbiotic development between Urban & Rural Settlements and heritages is further proposed at the architectural level, based on the principles of sustainable preservation and development of urban and rural cultural heritage. By formulating construction design strategies with diverse overlay relationships in urban and rural contexts, the interaction between historical and cultural heritage and modern life is shifted from a binary opposition to one of mutual symbiosis. (Table 3)

Faced with the existing overlap between urban spaces and heritage sites, the previous strategies of either isolating preservation or ignoring them altogether have been abandoned. Instead, efforts are being made to reassess the potential for three-dimensional urban development. This involves repurposing existing buildings in built-up areas through methods such as overhead spaces, sunken spaces, and glass display covers to create exhibition space for heritage sites. This fosters a three-dimensional symbiosis between the city and its historical landmarks. Regarding waterfront heritage in river valley cities, consideration is given to connecting multiple sites with linear heritage sightseeing routes along water systems and facilitating interactive water tours. Additionally, urban waterfront parks are being developed to invigorate public spaces by revitalizing the use of heritage resources.

In response to the current situation of rural space and heritage overlay, an open-space strategy is also employed to address diverse overlay relationships with varied spatial patterns. This includes promoting the coexistence of agricultural and heritage spaces using methods such

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as three-dimensional agriculture and ecological landscapes. While safeguarding the supply of agricultural products and boosting the income of farmers, heritage conservation initiatives are being woven into the rural landscape. This involves creating exhibition spaces that seamlessly blend community public services with the preservation of heritage sites. For underwater heritage, consideration is given to establishing underwater heritage museums or diving bases. By enhancing community education and guiding villagers in participating in site preservation and management, the exhibition and interpretation of these sites can serve as a catalyst for rural revitalization. This approach can stimulate the development of rural infrastructure and elevate the living standards of the villagers.

Table 3.   The Symbiotic Development Model of Heritage and Modern Living Environment

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CONCLUSION

This paper proposes a systematic approach to heritage conservation and sustainable development in the upper reaches of the Yellow River valley using Hainan Tibetan Autonomous Prefecture as a case study. At the macro level, historical data and diverse sources are integrated to summarize the spatial distribution characteristics of settlements across different historical periods in this region. It also points out the reason for the dense coexistence of ancient and modern heritages in the region of Hainan Prefecture is the absolute advantage of production and living resources in the river valley area , by using Arcmap for the spatial connection between modern Urban & Rural Settlements and Historical & Cultural Heritage. At the same time, it proposes the necessity of classification, protection and utilisation for the diverse scenarios of spatial overlap. At the meso level, distinct segments along the Yellow River section within Hainan Prefecture are identified based on natural geography and settlement distribution, indicating segmented planning positioning. At a micro level, considering variations in urban-rural settlement relationships with historical cultural heritage spaces and disparities in urban- rural infrastructure conditions, classifications for urban-rural settlements are established. Based on these classifications, innovative strategies for cultural heritage protection and utilization are proposed. Collectively, this systematic, multi-level approach that merges historical research with planning design offers a beneficial framework for guiding future studies and initiatives in this domain.

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IMAGE SOURCES

Figure 1,2,3 Author's own drawing.
Table 1,2,3 Author's own drawing.

ENDNOTE

Ancient Chinese Cities (1)

Chair: Yi Chen

From Capital to Metropolis
Urbanization and the Transformation of Market Spaces in Late Ming Nanjing

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Abstract

The transformation of Nanjing from a political capital to an economic and cultural center in the 14th and 16-17th centuries is well recognized. However, there has been limited focus on the changes in market spaces that were closely linked to urbanization and economic activities during this period. This article first examines the historical development of markets in Nanjing before the Ming Dynasty, analyzing the characteristics of market formation under the influence of urban layout. It then delves into the markets under state management and construction in the early Ming Dynasty, highlighting that the distribution and form of early Ming street markets were consistent with the government's political intentions. Finally, it explores how urbanization in the later Ming Dynasty led to the reorganization of market spaces, reshaping the cityscape of street markets and infusing them with greater urban significance.

INTRODUCTION

The market is an integral part of ancient Chinese cities and a space closely linked to the urban economic condition. The term "market" referred to specific commercial areas within cities from the Qin and Han Dynasties to the Tang Dynasty[1]. Abundant research indicates that the urban revolution during the Song Dynasty transformed market forms from enclosed areas to open street markets. This urban revolution also marked the beginning of China's market-oriented urbanization. However, the development of markets was not autonomous; ancient Chinese cities, especially the capitals, always maintained a certain degree of control and management over market spaces.

Nanjing, a city with a rich history, has been a prominent metropolis in the middle and lower reaches of the Yangtze River region throughout various historical periods. Particularly in the mid to late 16th century during the Ming Dynasty, Nanjing experienced significant changes in its urban development. The substantial economic transformations during this time are sometimes called the "sprouts of capitalism," reflecting profound and widespread shifts in population, agricultural production, commerce, and wealth across China[2]. It can be said that during the Ming Dynasty, Nanjing evolved from a political center to an economic and cultural hub, signifying the ascendancy of commercial forces[3].

Research on Nanjing during the Ming dynasty has received significant attention, primarily within the realm of economic and cultural history. Fan points out that the economic development of Nanjing during the Ming Dynasty can be divided into three stages: early Ming, mid-Ming, and late Ming. In the late Ming period, Nanjing's economy entered its peak era[4]. Wu considers Nanjing markets in the late Ming to be consumption spaces, discussing changes in shopping streets and suggesting that consumer demand was one of the driving forces behind urban development during the Ming and Qing dynasties[5]. Wang focuses on urban scrolls from the late Ming period, exploring the urban concepts these images convey[6]. Fei argues that urbanization in Ming Nanjing was not merely a byproduct of commercial development but was influenced by the institutional framework and cultural trends, emphasizing the significance of urban space construction for urbanization[7].

The relationship between urbanization, commercial development, and market space is noteworthy. However, there is a dearth of research on market spaces during the Ming Dynasty. This prompts the question: What were the distinguishing features of market space distribution and forms in Ming Nanjing? Specifically, during the latter part of the Ming Dynasty, how did market spaces evolve and transform as Nanjing transitioned from a political center to a cultural and economic hub?

THE FOUNDATION OF MARKET DEVELOPMENT: HISTORICAL LAYERS PRECEDING THE MING DYNASTY

NATURAL DEVELOPMENT AS THE MAIN DRIVER: THE FORMATION OF MARKETS IN JIANKANG CITY DURING THE SIX DYNASTIES

It is generally believed that in 229 AD, Sun Quan established his capital at Jianye, initiating the construction of Jiankang City during the Six Dynasties period and thus bringing Nanjing onto the historical stage as the capital of southern China. Before Sun Quan moved the capital to Jianye, most city residents lived along the Qinhuai River, with the densely populated area primarily on the southern bank, especially in Greater and Lesser Changgan regions. After establishing the capital, Sun Quan founded the "Grand Market" (Da Shi) and the "Eastern Market" (Dong Shi). The Grand Market was established in front of Jianchu Temple, Nanjing's earliest Buddhist temple, located in Lesser Changgan. The exact location of the Eastern Market remains unknown. At this time, however, the palace city was situated north of the Qinhuai River, quite a distance from the markets, not conforming to the Zhouli system of having the court in front and the market behind. In fact, the initial market layout of the city was constrained by the terrain and built upon the foundation of already-developed markets.

Starting in 331 AD, the Eastern Jin government commenced large-scale construction of Jiankang City. In addition to building the palace city and a series of urban facilities, the government established the Douchang Market on the southern bank of the Qinhuai River. Later, the Northern Market was also established during the Liu Song period. These markets were clearly documented and government-regulated. Records indicate that numerous smaller markets existed around the Grand Market in Jiankang City[8]. Furthermore, Jiankang City saw the emergence of specialized markets distributed on both sides of the Qinhuai River.

The above shows that the markets in Jiankang City were unlike the specific commercial zones typically built within cities from the Qin and Han Tang dynasties. Instead, they exhibited a naturally developed and scattered distribution. Market formation depended on transportation, particularly water transport in ancient Chinese cities, and transportation nodes such as bridges were more likely to become market sites. Additionally, market formation required population concentration, with densely populated residential areas and temple vicinities being more likely to develop markets. The market layout in Jiankang City followed these natural development patterns.

It is also noteworthy that due to the terrain and rivers, the residential areas in Jiankang City likely did not feature the orderly, high-walled enclosed wards found in other regions, nor did they have the curfew system that closed ward gates at night, differing significantly from the closed ward system of the Central Plains cities[9].

THE DEVELOPMENT OF MARKETS FROM THE SOUTHERN TANG TO THE SONG AND YUAN PERIODS UNDER THE INFLUENCE OF NEW URBAN LAYOUTS

After the Six Dynasties period, another peak in Nanjing's urban development occurred when it served as the Western Capital of Jinling Prefecture for Yang Wu (902-937) and later as the capital of Jinling City for the Southern Tang (937-975). During this time, the capital and palace city underwent several large-scale constructions, making Jinling the most important political, economic, and cultural center in southern China.

Overall, the urban layout placed the palace city at the capital's center, further south than Jiankang City of the Southern Dynasties. More importantly, the commercial and residential areas on both sides of the Qinhuai River were incorporated into the capital for the first time. The avenue from the palace's southern gate to the capital's southern gate, known as Imperial Street, became the north-south central axis of the southern part of the capital. Various government offices lined both sides of Imperial Street, and an east-west avenue in front of the palace divided the capital into northern and southern parts. The main street between the northern and southern gates of the capital could only be situated west of the palace, forming a north-south avenue from the present-day Beimen Bridge (originally the northern gate of the Southern Tang capital) to Shengzhou Road during this period.

The new urban layout and the reconfiguration of the water system and streets influenced the distribution and development of markets. Near the northern gate of the capital, Qinghua Market emerged. South of the north-south avenue, a street spanning a river featured the Da Bridge, around which a bustling market developed. Important bridges also lined the east-west avenue between Longguang Gate (west gate) and Baixia Gate (east gate). The area around Doumen Bridge to the west, close to Longguang Gate and near the intersection of the north-south and east- west roads, had an advantageous transportation position, facilitating the formation of a market documented as a fish market. The east-west roads connecting Imperial Street with the inner Qinhuai River were also crucial traffic routes. Since this area had been heavily populated since the Six Dynasties, several specialized markets emerged, such as banking, flower, and silk.(Figure1)

During the Song and Yuan periods, although Nanjing served as a provincial or circuit capital rather than an imperial one, it remained an important city in the southeastern region, retaining the urban layout of the Southern Tang capital. As the city developed during the Southern Song period, its population increased, leading to more residential wards. Nanjing during the Southern Song had four quarters and twenty wards, with residential areas concentrated along Southern Tang's Imperial Street, the streets east of Longxi Gate, and both sides of the east-west avenue. The markets continued the distribution pattern established during the Southern Tang. Market distribution saw little change in the Yuan Dynasty's Jiqing Road city. However, specialized markets no longer restricted themselves to specific trades, with some, like the banking street, becoming general merchandise hubs.

Through the steady development during the Song and Yuan dynasties, the number of wards in Nanjing continued to grow, and the city became known as the Metropolis, indicating significant commercial development. This market distribution laid the foundation for market development in the Ming Dynasty.
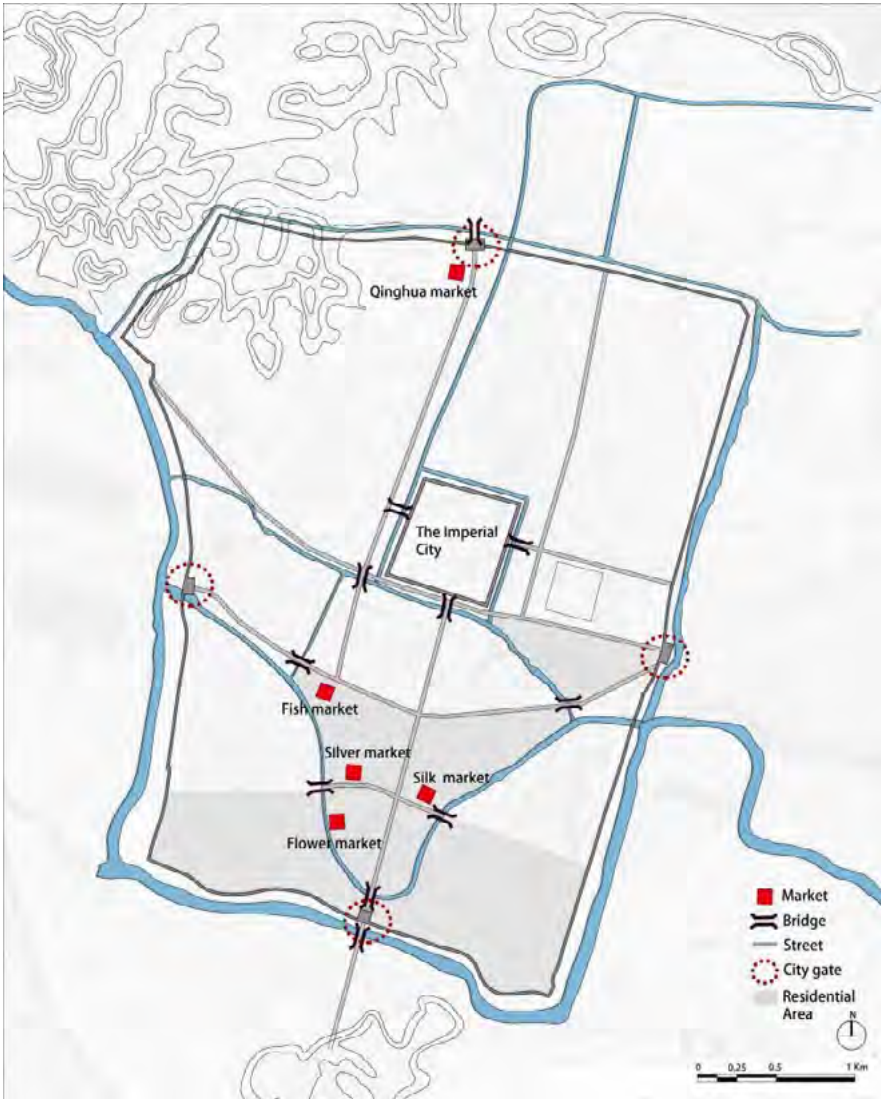
Fig. 1. Market Distribution in Jinling City of the Southern Tang Dynasty (self-made)

THE PLANNING AND CONSTRUCTION OF MARKETS AND STREETS IN THE EARLY MING DYNASTY

In the first year of the Hongwu era (1368), Zhu Yuanzhang, the founding emperor of the Ming Dynasty, ascended to the throne. Nanjing served as the capital of the Ming Dynasty for 56 years until the 21st year of the Yongle era (1423), when Zhu Di officially moved the capital to

Beijing. Although Nanjing was the capital for only half a century, this period of capital construction gave Nanjing a new physical form. It transformed the city's population composition and urban-rural relations. Zhu Yuanzhang's capital construction plan expanded the city walls and relocated the palace to the eastern part of the expanded capital. The new capital was divided into the northwest military zone, the central old city, and the eastern palace district.

CHANGES IN MARKET LOCATIONS IN EARLY MING

In pre-Ming local records, "streets" and "markets" were listed separately, even though many markets were actually located along streets. The recorded number of "streets" was minimal, whereas large and small markets were numerous and widespread. However, the "Hongwu jingcheng tuzhi" presents a different picture of streets and markets. Perhaps because many markets were clustered at key transportation nodes such as bridges, "streets," "markets," and "bridges" became interconnected elements in terms of spatial location, thus categorized together in the "Streets and Bridges Map."[10] Here, "streets and markets" included both streets and markets distinct from them and residential wards. The map indicates three specific markets: Dashi Street, Nei Bridge Market, and Chang'an Market, while the text lists thirteen markets, including three explicitly named "streets and markets": Dazhong Street Market, Sanshan Street Market, and Laibin Street Market. [11]

Most of these markets developed on the foundations of existing markets in the old city. For instance, Sanshan Street Market was formed by Doumen Bridge and Xinqiao Market by Xinqiao Bridge, both of which had been market areas since the Southern Tang period. Dashi Street was named after the Grand Market, which was originally outside Tianjie Temple, a market that formed around the temple. Although Tianjie Temple was damaged in the early Ming, the market function outside the temple continued, becoming a major hub for goods. The market at the Beimen Bridge near the old city's northern gate was also preserved.

New markets emerged in response to changes in urban layout and transportation routes. For example, Nei Bridge was located on the main north-south axis of the old city, highlighting its significance in terms of transportation. Since the former Song-Yuan palace was no longer used, a market formed south of the old palace at Nei Bridge, known as Nei Bridge Market. Baixia Bridge outside the old city's east gate was renamed Dazhong Bridge within the new city's Tongji Gate. Dazhong Bridge became a key transportation node between the city's central and eastern palace areas, with Chang'an Market forming to the east of the bridge and Dazhong Street Market to the west.

Specialized markets also formed near the capital's gates or outer city walls. For instance, Longjiang Market outside Jinchuan Gate focused on fuel trade, Jiangdong Market outside Jiangdong Gate was a gathering place for merchant ships, and Laibin Street Market outside Jubao Gate dealt in bamboo, wood, and firewood.

Notably, several markets on the northern bank of the Qinhuai River in the old city disappeared due to the political construction of the capital. To support Nanjing's large-scale construction and development, the Emperor ordered the relocation of numerous artisan households to the

city. These artisans were settled in specialized areas named after their trades, such as "Silver fang," "Iron fang," and "Craftsmen fang," reflecting their residential and professional zoning[12]. This method of assigning living areas based on professions altered Nanjing's existing residential structure, particularly in areas like Zhenhuai Bridge and north of Jubao Gate, which became densely populated with various tradespeople. The new residential structure had a high proportion of artisans, turning the urban area into a large complex of craft workshops[13]. However, this functionally zoned urban layout, created by decree, was not naturally formed and could change if the enforcement of orders weakened.

THE IMPACT OF OFFICIAL CONSTRUCTION AND MANAGEMENT ON THE SHAPE OF STREETS AND MARKETS

In the early Ming period, the residential areas for military personnel, civilians, artisans, and households in Nanjing were subject to unified planning. Besides the aforementioned wards, in the tenth year of the Hongwu era (1377), the Emperor ordered the construction of official housing for residents. Initially, the capital was crowded, and the government provided the military and civilian residences, with continuous rows of corridors and no vacant land. This included dwellings specifically for officials, such as the order to the capital guards to build military barracks and officials' residences, as well as dwellings designated for civilian use: Orders to establish civilian dwellings at Longjiang Yifeng Gate and Zhongfu Gate, with the government providing timber for those able to build their own dwellings." The construction projects spanned over ten years, likely carried out gradually as the city developed and its population increased. Luo believes that the official corridor dwellings, meaning buildings constructed on government land, were government properties but used by many people, including officials, soldiers, civilians and artisans. Initially, the dwellings built during the Hongwu period were primarily for residential purposes. Still, those located along main streets gradually turned into shops, giving rise to names like "Bookstore Corridor" and "Silk Corridor."[14]

The scope of the official corridor dwellings was extensive, covering the main streets that connected the important city gates. Early Republican era scholar Chen (1873-1937) wrote, "From Cheng'en Temple Street to Guozi Lane, the imperial path of the Ming period ran through here, with corridor houses on both sides, such as Bookstore Corridor, Silk Corridor, and Black Corridor, all covered with tiles. Pedestrians could walk along these corridors, sheltered from the sun and rain, which was very convenient."[15]

Both sides of the official streets were likely lined with single-story corridor dwellings, presenting an orderly appearance of the market streets. According to Qing dynasty scholar Gan Xi: "In the early Ming capital, the streets were wide and accessible, presenting a grand sight. From east to west, from Huoxing Temple to Sanshan Gate, from Dazhong Bridge to Shicheng Gate; from south to north, from Zhenhuai Bridge to Nei Bridge; from Pingshi Street to Mingwa Corridor; from Gaojing to Beimen Bridge. The official streets were extremely wide, accommodating nine tracks, and lined on both sides with official corridors to shield from wind and rain."[16] (Figure 2)
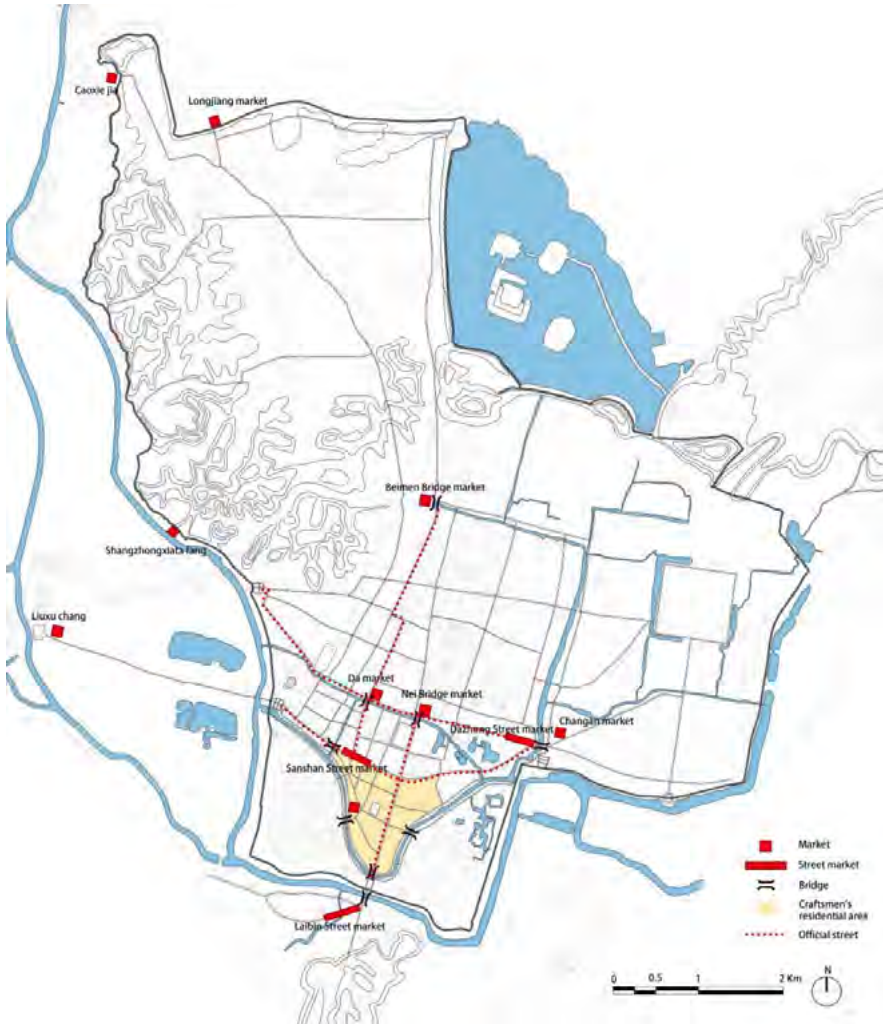
Fig. 2. Market Spaces and Official Streets in the Early Ming Capital of Nanjing (self-made)

The government collects usage taxes for the official corridor dwellings, manages residents, and obtains certain economic benefits in this manner. Additionally, people engaged in commercial activities were strictly regulated through a series of commercial management systems. These measures indicate that the early Ming emperor attempted to establish a city primarily focused on agricultural production, with other industries under strict control. This intention was also reflected in the form and cityscape of the market streets.

THE TRANSFORMATION OF MARKET SPACES AND FORMS IN THE MID -TO-LATE MING DYNASTY UNDER URBANIZATION

In the nineteenth year of the Yongle (1421), Emperor Chengzu of the Ming Dynasty moved the capital from Yingtian Prefecture(Nanjing) to Shuntian Prefecture(Beijing). Nanjing was thus downgraded from the capital to the secondary capital. Although Nanjing retained the political institutions of the early Ming period, the city's functions evidently changed. The relocation of the capital resulted in a significant migration of artisans and residents from Nanjing, causing the population within the city to be halved. This change in political status greatly impacted the city's economic development.

CHANGES IN MARKET SPATIAL DISTRIBUTION

The population decline initially caused a temporary setback in market development, but the markets soon revived. Although the records from the Zhengde period (1506-1521) indicated that the number of markets remained largely the same as in the early Ming period, the types of goods traded in the markets became more distinct. For instance, the "Nanji Gazetteer" recorded: "There are twelve types of stalls in the market: flower stalls, drum stalls, fan stalls, bed stalls, hemp stalls, watch stalls, handkerchief stalls, headscarf stalls, incense stalls, raw medicine stalls, paper stalls, and old clothes stalls." [17]The items traded were predominantly handicrafts, closely tied to the significant development of local handicrafts at the time. Industries such as weaving, fan-making, book printing, and dyeing and coloring thrived and gained considerable fame. The prosperity of market trade was also reflected in the variety of stalls. During the Zhengde period, Jiangning County alone had 104 types of stalls, with their business activities closely related to the residents' daily lives. This diversified stall format indicated that Nanjing's economic development had shifted from the strictly regulated trade methods of the early Ming period to more ordinary everyday life.

By the Wanli period, the "Shangyuan County Gazetteer" recorded nine markets, six of which were newly established, indicating a significant increase in the number and variety of markets. Meanwhile, the policies of controlling commercial activities and population movement from the early Ming period had also changed[18]. The most direct impact of these changes was to alleviate the burden on merchants and facilitate the development of commercial activities. The government's reduced control over urban industrial and commercial activities eliminated previous regional restrictions on artisan concentration, leading to increased fluidity and freedom in commercial activities. According to "Kezuo zhuiyu," the distribution of street markets during the Wanli period deviated significantly from the early Ming layout, with former artisan workshops becoming mere place names devoid of substantive significance[19]. In the middle and late Ming periods, numerous street markets were scattered throughout the regions, with specific industries concentrated in different areas, but most were specialized markets. Only a few could truly be considered "general merchandise markets," such as the Guozi Hang in the Sanshan Street area, which served as the comprehensive market. (Figure 3)
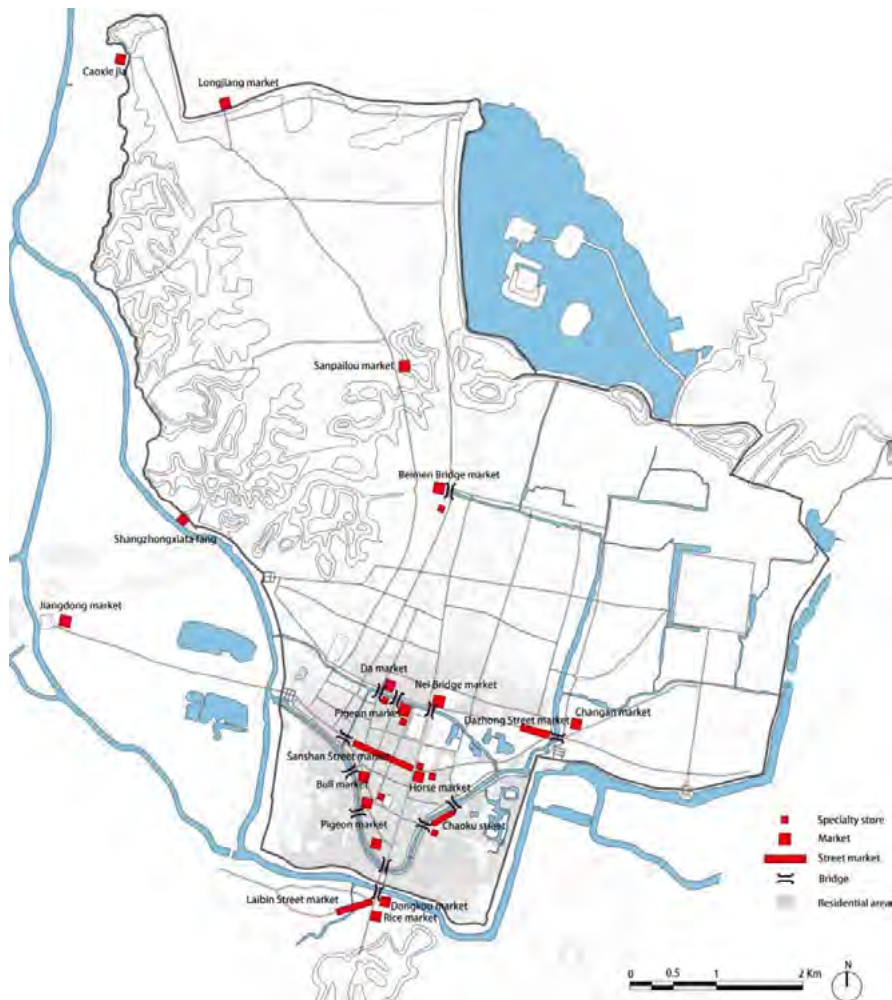
Fig. 3. Distribution of Market Spaces in the Late Ming Dynasty (self-made)

TRANSFORMATION OF STREET FORMS: FROM OFFICIAL STREETS TO LIBERALIZED MARKETS

In the early Ming period, most street markets were within the scope of official streets, with commercial and construction and managed by the government. However, by the later Ming period, the loosening of official control allowed some street markets to break free from their previously regulated forms.

A series of urban images from the late Ming period provide us with a diverse and rich portrayal of street landscapes. Two representative images are "Shangyuan dengcai tu(Shangyuan Festival Lantern Scenes) " and "Nandu fanhui tu(The Prosperous Scene of the Southern Cap-

ital).” Both scrolls include depictions of the street market scene in the Sanshan Street area, with a degree of realism. The street market goods and trade depicted in “ Nandu fanhui tu “ are considered consistent with the economic prosperity and social changes of late Ming Nanjing. Similarly, “ Shangyuan dengcai tu” illustrates a thriving antique market, corroborating historical accounts of Sanshan Street.

In contrast to the single-story dwellings that characterized early Ming street markets, “ Nandu fanhui tu “ depicts several multi-story pavilions in the core market areas. Each pavilion hosts different commercial activities or functional attributes, all facing directly onto the street. This scene had not appeared in earlier urban scrolls. Along the sides of the streets are closely arranged single-story shops representing traditional stall-based businesses.(Figure 4)

Unlike the generalized depiction of various trades in “ Nandu fanhui tu” “ Shangyuan dengcai tu “ focuses on the diverse antique trade and includes book trading, highlighting Sanshan Street's role as an important book market. The streets in “ Shangyuan dengcai tu “ are lined with contiguous multi-story pavilions. This scroll is unique in Ming urban imagery, depicting all street market buildings as multi-story buildings. The arrangement of street- facing multi-story pavilions is highly varied and flexible, presenting a distinctively rich street interface. (Figure 5)

These two scrolls depict urban spaces for hosting festive events and public gatherings, reflecting the city's character from a market perspective. Of course, the content of the scrolls is carefully considered; official buildings symbolizing power are placed in the corners of the paintings, while temples and mosques, which exist in reality, are omitted. The scrolls reflect the author's attitude towards depicting urban life and praising urban life, which is primarily centered around various commodity trades and leisure activities. Although urban scrolls depicting market landscapes appeared before in the Song Dynasty, in the late Ming period, scrolls emphasizing the street market scenes in Nanjing became particularly unique. Wang compares the urban scrolls of Nanjing during this period with other renowned metropolitan cities such as Suzhou and Hangzhou. These cities tend to portray their unique natural scenery when expressing urban impressions through painting. This renders the depiction of street market scenes in Nanjing during the late Ming period quite distinctive, reflecting contemporary understandings and concepts of the city and further expressing the intent to construct urban imagery through scrolls. [20] This urban concept differs from economically developed rural areas and results from urbanization in the late Ming period.

BEYOND COMMERCIAL SPACE: THE CULTURAL SIGNIFICANCE OF LATE MING MARKETS

The formation of new street markets in the late Ming period transcended the mere concept of commercial spaces. By the late Ming, the area from Yinhong Bridge to Wuding Bridge, including the vicinity of the Jiuyuan and Chaoku Street, had developed into an extremely prosperous market district. This prosperity was closely related to its unique location: the north bank, opposite the Jiuyuan, gathered scholars from several southeastern provinces, while the area near Wuding Bridge was home to renowned figures and officials with their gardens. Since the mid- Ming period, the Jiuyuan has become a gathering place for celebrated scholars and a hub of cultural activity in Jiangnan.

Fig. 4.   The representative painting scroll "Nandu fanhui tu" (partial) from the late Ming Dynasty reflects the street market conditions in Nanjing, showcasing the trade activities around the Sanshan Street area.

Fig. 5.   The "Shangyuan dengcai tu" (partial) from the late Ming Dynasty, which rarely depicts the details of street market buildings and human activities, features a bridge believed to be the "Nei Bridge," indicating that it also portrays the market area around Sanshan Street.

The mutual promotion of the Jiuyuan's and the market's prosperity was evident. By the late Ming, the old courtyard market had evolved into a commercial district offering a variety of refined consumer goods. Late Ming literati also recorded the commercial activities around Chaoku Street, noting the elegant taste of the goods offered in the market. Chaoku Street was also known as a famous area where courtesans resided, with the courtesan Li Xiangjun from the great Chinese drama "The Peony Pavilion" living there. These residences of famous courtesans were living spaces and venues for late Ming literati socializing and gatherings.

Notably, the image of Chaoku Street was also depicted in the "Jinling tuyong.". This city guide was published in the early 17th century and featured illustrations of various scenic spots with accompanying text. Research indicates that the late Ming period saw increased tourist guides due to economic prosperity and cultural development. However, the uniqueness of "Jinling tuyong" lies in its presentation of popular tourist landscapes and urban spaces as part of the scenery, with one illustration depicting Chaoku Street as part of the scenery along the Qinhuai River. (Figure 6) The formation of the Chaoku Street market is partly due to its unique geographical location, serving as a gathering place for the literati. Additionally, the prosperity of Chaoku Street itself reflects the allure of Nanjing as a cultural hub. As a result, Chaoku Street, alongside the Qinhuai River, Confucius Temple, and Gongyuan, constitutes a composite cultural and commercial space (Figure 6). This distinctive market space is embedded in the proactive practices of literati in constructing Nanjing's urban space, playing a role in promoting the shaping of Nanjing's urban culture.
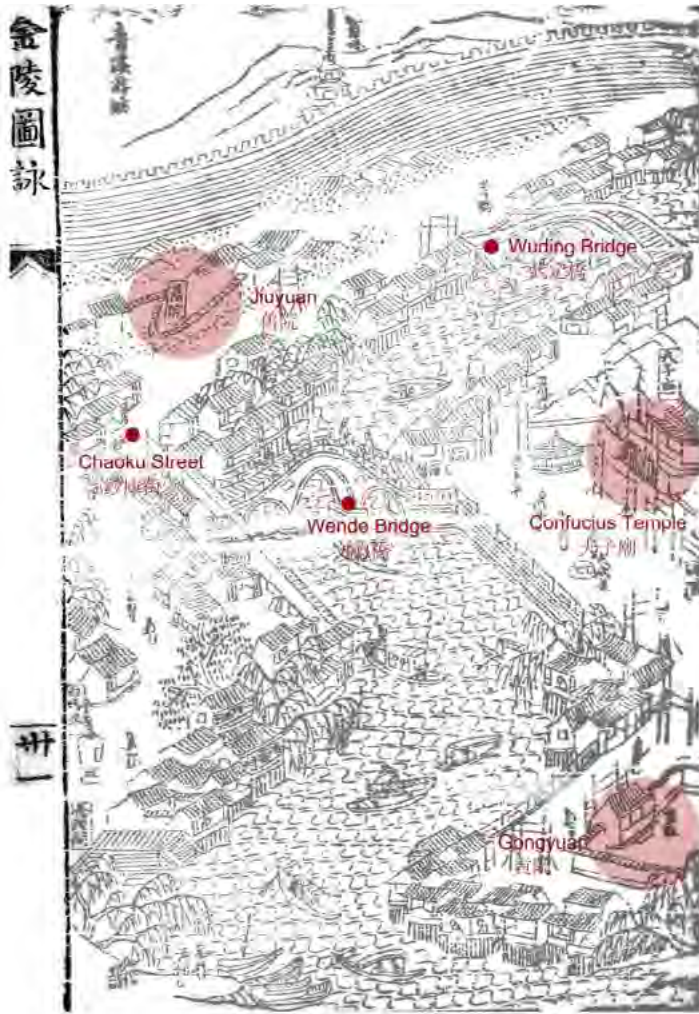
Fig. 6. The representative painting scroll "Shangyuan dengcai tu" (partial) from the late Ming Dynasty reflects the street market conditions in Nanjing, showcasing the trade activities around the Sanshan Street area.

CONCLUSION

Unlike ancient Chinese capitals influenced by ritual regulations in planning market locations, the distribution of markets in southern capitals and metropolises downstream of the Yangtze River was more noticeably affected by natural geographical conditions such as rivers. The historical development of market spaces in Nanjing demonstrates that the distribution of mar-

kets, to some extent, changes with urban development, but markets remain closely linked to residential areas. When the urban area was rebuilt as a new capital in the early Ming Dynasty, the construction and development of markets still relied on the historical scope of residential agglomerations. The state intended to organize urban spaces, including markets, in an orderly manner by dividing residential areas, reflecting the will of management and planning. However, the impetus of urbanization led to the reorganization of market spaces in the Ming and later periods, altering the landscape of street markets. These changes promoted economic development and contributed to the city's cultural construction, ultimately forming the unique urban culture of the late Ming period.

Reexamining the development changes of Nanjing from capital to metropolis through the transformation of market spaces no longer considers market spaces as singular products of planning or grassroots development. The change mechanism in historical market spaces involves multiple political, economic, and cultural influences. Markets in the late Ming Dynasty continued to develop into the Qing Dynasty, and some spaces are still used as markets today. This indicates that the historical study of specific urban spaces remains relevant when examining the history of urban development and planning.

DISCLOSURE STATEMENT

NOTES ON CONTRIBUTOR(S)

Yang Wantian is a PhD candidate at Southeast University's School of Architecture. Her research is on ancient Chinese urban and architectural history, focusing on the historical development of urban spaces and urban buildings in historic districts.

ENDNOTES

1. Shufen liu, *Liuchao de chengshi yu shehui*,142.
2. Frederick W Mote, *The Transformation of Nanking*,156.
3. Xiaoxiang Luo, *Pei Jing Shou Shan*,198.
4. Jinmin Fan, *Nanjing jingji*,76-93.
5. Jen-shu Wu, *You you fang xiang*,20.
6. Zhenghua Wang, *Guoyan fanhua*,38-39.
7. Si-yen Fei. *Negotiating Urban Space*, 262-264.
8. *Jingding jiankang zhi*, 359.
9. Guo husheng, *Zhonghua gudu*.156-157.
10. *Hongwu jingcheng tuzhi*.39-48.
11. Ibid.
12. Qiyuan Gu, *Kezuo zhuiyu*,52.
13. Bing Xue, *Nanjing chengshi shi*.133.
14. Xiaoxiang Luo, *An Examination of the Dwellings*,64-75.
15. Yifu Chen, *Zhongnan Huaibei quyu zhi*,376.
16. Xi Gan, *Baixia suoyan*,20.
17. *Nanji zhi*
18. Jinmin Fan, *Nanjing jingji*,76-93.
19. Qiyuan Gu, *Kezuo zhuiyu*, 21.
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IMAGE SOURCES

Figure 1-3   Self-made.
Figure 4   National Museum of China.http://www.chnmuseum.cn
Figure 5   Private collection of Jung-Fu Hsu, Guan-Chin Art Centre, Taipei.
Figure 6   Zhu Zhifan, *Jinling tuyong*.

Zhang Yidan
Research on the Interactive Relationship between the Spatial
Evolution of Handicraft Production and the State Form in the Pre-Qin Capital1

Research on the Interactive Relationship between the Spatial Evolution of Handicraft Production and the State Form in the Pre-Qin Capital[1]

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Abstract

The period from pre-Qin to Han Dynasty in ancient China was an important stage of the transformation from "kingdom" to "empire". The research on the productive space that served and supplied the power subjects in the capital cities of ancient China with the theocratic system was a part of the previous capital research which was less noticed. Meanwhile, the research value of the handicraft workshop space in the economic archaeology has not been taken into account. In this study, 16 major capital cities with relatively abundant archaeological data from the Three Dynasties to the Qin and Han Dynasties were selected, and the layout, location, attributes and spatial form of the handicraft workshops in these cities were compared and summarized by using the published archaeological reports and other materials related to handicraft workshops through the classification and time-sharing analyses of the relic information. It was found that, as time passed, the evolution of the handicraft workshops space in the pre-Qin capital city showed several features, such as the marginalization of the spatial location, the hierarchization of the industrial categories, and the scalization of production areas. The handicraft production space expanded to the outer region of the capital city, which was gradually far away from the palace area space over time. Craft production space area was gradually scaled up, with the emergence of a centralized handicraft production area. There were hierarchical differences in handicraft industry categories, manifesting the spatial distribution differences between ceremonial and practical handicraft locations. During the Three Dynasties, the demand for the spatial production of ceremonial articles represented by bronzes was higher than the practical demand, and after the Spring and Autumn Period and the Warring States Period, the demand for practicality gradually began to increase over that for ceremonial products. The change of the state form was a decisive factor in the spatial layout of handicraft production. In the early capital cities, the important government-run handicraft production space was part of the "state apparatus" and belonged to the power space. The military ideology and the way of war were the secondary most important factors affecting the spatial layout of the production, especially in the Spring and Autumn and Warring States Periods. Generally speaking, the status of productive space is declining with the enhancement of state power.

Zhang Yidan
Research on the Interactive Relationship between the Spatial
Evolution of Handicraft Production and the State Form in the Pre-Qin Capital1

INTRODUCTION

The greatest achievement of mankind has always been the city she created, and the city displayed and released the desire of human creativity [1]. The core role in the creation of the ancient Chinese capital city was the subject of theocracy, and such a feature was particularly strong in the early Chinese capital city. In ancient Chinese capital city, the related industrial space system that provided production, supply and services for the theocratic space system was also enormous.The study of ancient capital planning depends on the results of archaeological excavations, while the previous archaeological excavations usually focused on the palace and temple areas first. The study on the industrial space was much less than that of "theocratic space". The evolution of this part of the space can reflect the change of the planning concept of the capital city from another perspective. The study of ancient capitals should be based on the spatial study to "see people through things", and the specific analysis of space should be upgraded to an in- depth observation of "people" and the evolution of civilization in their era.

OVERVIEW OF THE SPATIAL EVOLUTION
OF HANDICRAFT PRODUCTION

The handicraft industry in ancient China originated from primitive society. The Jade Age brought about a new understanding of copper, tin, gold, silver and other metal ores[2], and the discovery of copper undoubtedly had an unprecedented impact on the handcraft industry.

The Bronze Age is archaeologically a stage in the development of human culture marked by the use of bronzes, one of which is characterized by the important position of bronzes in people's production and life [3].Soon after the beginning of the Eastern Zhou Dynasty, the emergence of ironware had a profound impact on Chinese culture and society. Bronze tools began to first overlap with the use of iron. As pig iron was relatively cheaper, it was suitable for manufacturing large quantities of iron tools[4]. After the Spring and Autumn Period and the Warring States Period, the demand for trade increased, and the government-run handicraft industry that appeared at the same time as iron smelting also included coinage, etc.[5]. At this moment, coinage was independent from the copper casting handicraft industry [6].

In this study, 16 major capital cities with relatively sufficient archaeological data from the Three Dynasties to the Qin and Han Dynasties were selected for classification and time-sharing analyses, and the layout, location, attributes, and spatial forms of handicraft workshops in the capital cities were compared and summarized. Including Taosi[7,8,9],Erlitou[10,11,12,13,61],Zhengzhou Shang Dynasty City[14,15,16], Yin Ruins in Anyang[17,18,19,20], Zhouyuan[21,22,23,24,25], Yongcheng[26,27,28,12,9], Jinan City of Chu State[30],The city site of Lu State[31,32],Lingshou City of Zhongshan State[33,34,35,36],Handan of Zhao State[37,38],Xintian Ancient City of Jin State[39],Xiadu of Yan State[40,41,42],Linzi City of Qi State[43,44],The city site of Zheng and Han States[45,46,62], Xianyang of Qin State[47,48,49],Chang'an of Western Han Dynasty[50,51,52,63].

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Evolution of Handicraft Production and the State Form in the Pre-Qin Capital1
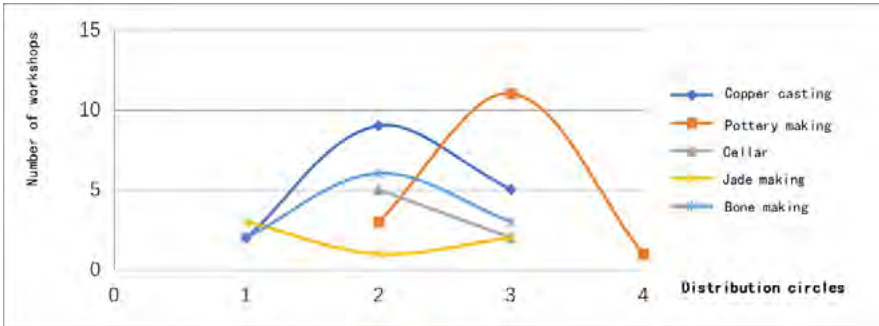
Fig. 1.   Distribution curves of handicraft workshops in different circles of the capital city during the Three Dynasties period. (Source of images: the author's own production based on statistics)

The capital cities were classified into four circles according to their spatial distance relationship with the palace area or the imperial city. Circle 1 was within the palace area, Circle 2 was within a closer distance outside the palace area, Circle 3 was farther away from the palace area but within the city walls, and Circle 4 was outside the capital city or outside the city walls. (The subsequent illustrations are marked with numerical serial numbers, and the name of each workshop in the table is abbreviated with the tools it produced).

It should be noted that since the archaeological excavation of the ruins of ancient capital cities cannot be equated with the evolution of the capital city in the real historical process, the current data results cannot support precise spatial measurement, but rather reflect the spatial characteristics and evolutionary trends.

EVOLUTIONARY CHARACTERISTICS OF HANDICRAFT PRODUCTION SPACE

MARGINALIZATION OF THE SPATIAL LOCATION OF HANDICRAFTS PRODUCTION: "OUTER ROTATION" WITH THE PASSAGE OF TIME AND GRADUALLY DISTANCING ITSELF FROM THE SPATIAL RELATIONSHIP OF THE PALACE AREA

The handicraft space should have been set up with planning intentions from the site of Taosi. Copper casting workshops in early capitals often coincided with city walls and palaces (such as Zhengzhou Mall), and some copper casting sites in the palace areas were built earlier than the ancestral temples (Yin Ruins), indicating that the early handicraft production space had a high position.

From Xia and Shang Dynasties to the Western Zhou Dynasty, the workshop with the largest number of inner Circles1 in the palace area was the jade casting workshop, followed by the copper casting workshop.

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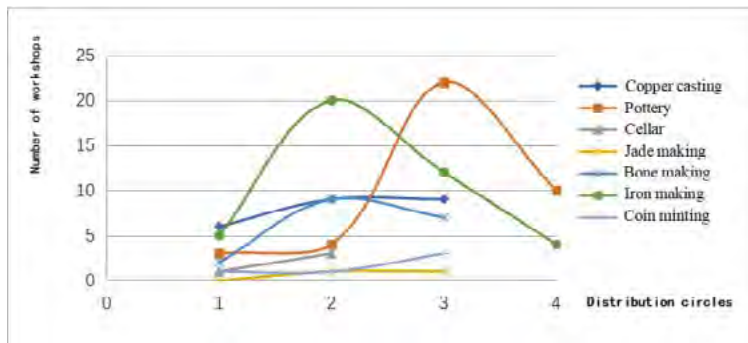
Fig. 2.   Distribution curves of handicraft workshops in different circles in the capital cities during the Spring and Autumn Period and the Warring States Period. (Image source: The author made them based on the statistics)

The largest number of the workshops in Circle 2 was also copper casting workshops, followed by bone making workshops. At this time, pottery and cellars were not yet present in the inner circles of the palace area. At this stage, Circle 2 outside the palace area was the circle with the highest total number of workshop distribution, followed by Circle 3 far from the palace area and Circle 1 inside the palace area, while Circle 4 outside the city wall.

Compared with the Three Dynasties period, there were more kinds of handicraft workshops in the Spring and Autumn Period and the Warring States Period, such as pottery making, iron casting and coin casting workshops, and bronze cellars. The large st number of workshops in Circle 1 of the palace area was still bronze casting, followed by iron casting. (But this data was affected by Linzi City of Qi state, because only iron casting workshops of Linzi City among the Eastern Zhou capitals was within the palace area. There were also relics of copper casting in the palace area in the city sites of Zheng and Han states, while the cellar of Yongcheng in the capital of Qin State was also in Circle 1). In Circle 2, the largest number of workshops have changed from copper casting to iron casting, and the number of jade making workshops was decreased. It is worth noting that the curvature of the distribution curve of copper casting workshops became smaller in the Spring and Autumn and Warring States Periods, and the quantitative distribution in Circle 2 and Circle 3 was close to each other, suggesting that a number of copper casting workshops were migrated into Circle 3. In this period, the total number of workshops in Circle 3 was the largest, followed by Circle 2 and Circle 1, and only iron casting and pottery workshops appeared outside city wall.

During the period of Empire, bronze and iron casting workshops were withdrawn from the interior of the palace area, but appeared in Circle 2 and Circle 3. There were almost no handicraft workshops within the palace area, and only temporary pottery workshops once appeared within the palace area of Chang'an in Han Dynasty. They were abandoned after being used, and the arsenal was within the palace area. The distribution curve of the pottery workshop was similar to those of the previous two periods, with the largest distribution in the Circle 3 far away from the palace area. At this time, the workshops for making jade and bones disappeared.

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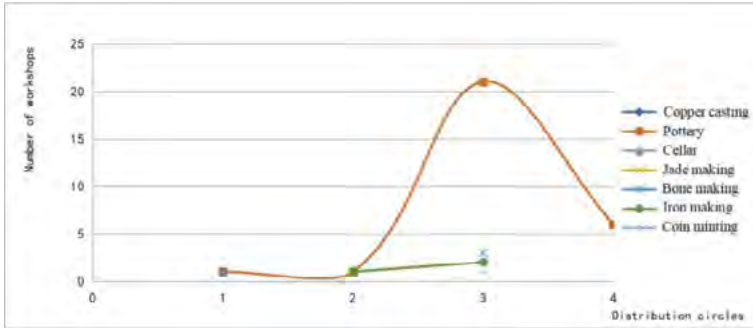
Fig. 3.   Distribution curves of handicraft workshops in different circles in the capital during the Qin and Han Dynasties. (Image source: The author made them based on statistics)

It can be seen from the curve diagrams of the distribution of workshops in the above three periods that with the passage of time, the circle with the largest total number of workshops has moved from Circle 2 close to the palace area to Circle 3 far away from the palace area.

The handicraft production space gradually rotated outward from the initial position of placing the most important workshops in the palace area and adjacent to the palace area.

By the time of the Empire, the handicraft industry space was highly confined to a specific space with the finalization of the government-run market, and gradually became distant from the space of the palace area, and was progressively isolated.

SPECIALIZATION OF HANDICRAFT PRODUCTION SPACE: THE EMERGENCE OF LARGE-SCALE HANDICRAFT PRODUCTION AREAS

With the increase of handicraft categories, the handicraft industry space gradually tended to be large-scale and specialized, and the prototype of "the specialized handicraft production area" appeared in Yuntang of the Western Zhou Dynasty. During the Spring and Autumn and Warring States Periods, many countries began to set up a separate area for specialized handicraft production, such as the pottery and metal smelting production areas in Chu State, which were located on the north and east sides of the palace area respectively. In these cities, such as the city sites of Zheng and Han States, the ancient city of Lingshou in Zhongshan State, Handan City in Zhao State, and the Houma Capital City of Jin State, many different types of handicrafts were centrally arranged in the specialized areas. There were also the scattered handicraft workshops in several capitals, such as Yongcheng in Qin State, Xiadu in Yan State and Linzi in Qi State.

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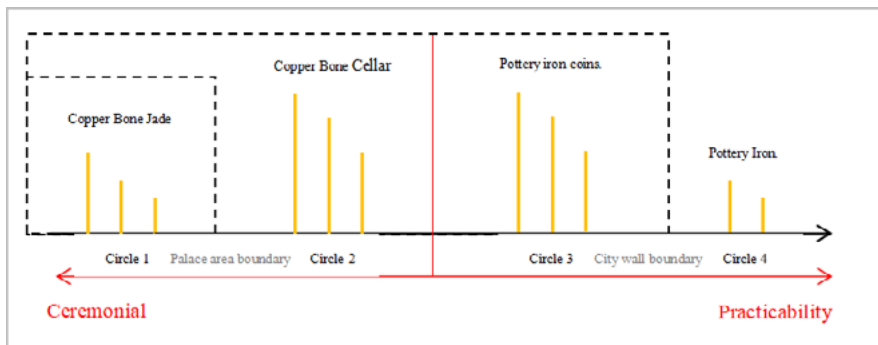
Fig. 4. Statistical schematic diagram of the frequency of handicraft types in each circle of the capital from the Three Dynasties to the Qin and Han Dynasties. (Image source: The author made them based on statistics)

THE HIERARCHY OF HANDICRAFT PRODUCTION SPACE: THE SPATIAL DISTRIBUTION DIFFERENCE BETWEEN CEREMONIAL AND PRACTICAL HANDICRAFT LOCATIONS

According to the statistics of the frequency of different kinds of handicraft workshops in the capital city and each circle in each period, the three kinds of handicrafts with the highest frequency in each circle were shown in Fig. 4. Handicrafts could be divided into two categories: ceremonial handicrafts and practical handicrafts. Copper casting and jade making could be classified as ceremonial handicrafts. Although bronze was also used in the production of weapons, its proportion was less than that of bronze ceremonial (containment) ware. Coin minting, iron making, pottery and bone making could be classified as practical handicrafts, among which bone making workshops were more considered to serve copper casting in the early days. In addition, the raw materials for making bones were divided into animal bones and human bones, and the workshops using human bones as materials were for the service of the power class. It could be seen that the ceremonial workshops and those serving the ceremonial handicrafts were distributed closer to the palace area, and appeared more in Circle 1 and Circle 2; Practical handicraft workshops were more often located far from the palace area or outside the city, appearing more often in Circle 3 and Circle 4. During the Three Dynasties period, the ceremonial demand was higher than the practical demand, and after the Spring and Autumn Period and the Warring States Period, the practical demand began to gradually exceed the ceremonial demand.

The spatial location of metal production, represented by copper, occupied the most important position in the Bronze Age. With the end of the Bronze Age, the importance of this spatial location gradually declined in the layout of the capital, and the pottery and stone workshops were dispersed to the surrounding settlements very early, indicating that handicrafts of different nature had a hierarchical tendency in spatial distribution from the very beginning.

On the whole, during the period from the Third Dynasties to the Qin and Han Dynasties, copper-casting workshops were distributed certainly close to the palace area, and their frequency

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was the highest within the palace area and near Circle 2 in the palace area. Copper casting workshops and bone making workshops often appeared together, and the curves of their distribution in the four circles were close to each other, which might be more convenient to obtain and manage the bone tools in the process of copper casting production. Before the Spring and Autumn Period, the jade workshops were closer to the palace area, especially in Zhouyuan Site in the Western Zhou Dynasty. The nearest workshop outside the Young Phoenix Palace area was a jade-making workshop. The iron casting workshops was mainly distributed in Circle 3. Except for Linzi of Qi State, almost no iron smelting workshops were arranged inside the palace area, and most of them were outside the palace area, or set up separately in the handicraft industry gathering area. This distribution was similar to that of copper casting workshops in the same period. However, compared with the status of the copper casting workshops relative to the palace area in the early stage, the spatial status of the iron-smelting workshop was declining. Pottery workshops were the most widely distributed in all four circles. The government-run pottery workshops were often distributed near the palace area for convenience, but the number of circles with the most distribution of pottery workshops is Circle 3.

IV THE INTERACTIVE RELATIONSHIP BETWEEN THE SPACE OF HANDICRAFT PRODUCTION AND THE CHANGE OF STATE FORM

THE CHANGE OF STATE FORM WAS THE DETERMINING FACTOR IN THE SPATIAL DISTRIBUTION OF HANDICRAFT PRODUCTION

(1) The space for bronze production in the Kingdom period triggered the early urban planning

The ancient capital cities were premised on the formation and existence of states (including kingdoms and empires) or dynasties [52], and the Central Plains, where the earliest bronzes appeared, was the first region in the East Asian continent to see the emergence of a wide area of royal power. It can be said that the emergence and production technology of bronze ritual vessels were synchronized with the earliest "China" [53], and the concept of "Chinese Bronze Age" was almost interchangeable with the ancient Chinese civilization [54].

Mr. Zhang Guangzhi once proposed that "Urban planning in China started at the same time as the Bronze Age, and it was a necessary feature of the society in the Bronze Age [55]". So can it be further deduced that the bronze production space in the early capital cities "triggered" the ancient urban planning? Compared with other kinds of handicraft spaces, the important government-run handicraft space represented by the bronze production had a strong "exclusivity" and was a parallel unit of the "theocratic space".

Taosi site, as the original capital of "China", belonged to the civilization of the city state [56]. Subsequently, in the Erlitou period, the bronze workshops were spatially located with the turquoise workshops at one end of the main axis of the palace area, with the sacrificial area at the other end, which had a high spatial status. The spatial layout required for the production

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of bronzes was put in an important location on the periphery of the capital palace area, and this capital planning concept continued until the end of the Bronze Age. The production of bronzes mobilized the political power intentions of the early capital city planners, and the release and expression of power was carried out on the production space of the capital city.

As the kingdom was replaced by the empires and the state apparatus became more powerful, reflecting the transformation from consanguineous politics to geopolitics, one of the most prominent changes in the space of the capital city was the decline in the status of the ancestral temples. The mode of mixing the layout of production space with the palace area and the city of Xianyang in Qin Dynasty basically maintained the characteristics of the Warring States period, and this urban layout where officials and citizens mingled reflected the cultural "lag" of the capital architecture at that time [57].

Since Chang'an in the Western Han Dynasty, the production space, like the ancestral temple space, was arranged outside the space far away from the great dynasty, so that the production space was further specialized and marginalized.

MILITARY IDEOLOGY WAS THE SECONDARY
IMPORTANT FACTOR AFFECTING THE LAYOUT OF PRODUCTION SPACE

Macro-military strategy had an extremely strong force on the city wall system, thus having a direct impact on the industrial spatial layout. Some scholars have described the defense facilities of China's capital cities during this period as the mainstream of "the metropolis without a city" [58]. After careful analysis of the capitals of Shang Dynasty and Western Zhou Dynasty, it was found that that there were many differences. Although the latest archaeological findings showed that there was a closed city wall in the late Zhou Dynasty, the coverage area of the city walls was far less than the whole area of the Zhouyuan site, which was a kind of self- confident and ideal military ideology with political overtones [59]. Under the influence of the idea of "building walls to defend the people" in the Western Zhou Dynasty, the production space was opened.

During the Spring and Autumn period, with the development of wars, countries continued to strengthen their defense systems in the capital city, and it could be observed that the city walls often stood side by side or the capitals were completely independent. The production space was divided, except for some important government-run handicraft workshops within or close to the palace area, and the rest of the handicraft workshops were often arranged in the independent areas, which was supposed to be related to the high military tension.

THE ENHANCEMENT OF STATE POWER
TRIGGERED THE DECLINE AND CONTRACTION OF PRODUCTION SPACE.

State power refers to the power and ability of the state to dominate and control the whole society [73]. There was a process of gradual growth of the state power in ancient China [60].The power composition and operation of the capital determined the organization of the capital's

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residential life, and further projected into the spatial pattern of the city. In the periods of Xia and Shang Dynasties, the production space of the early capital city was more manifested in the absolute possession of the production space, especially the space of government-run handicraft workshops of the important categories, such as copper casting and jade making. When the Western Zhou Dynasty entered the new kingdom stage, the reorganization of social order led to the enhancement of the state power. The production space of the capital city of the Western Zhou Dynasty accommodated multiple social groups, showing the macro dominance of space under the system of "industry and commerce eating government". In the Spring and Autumn and Warring States period, the diversification of urban forms and the collapse of the ritual system, as well as the high sensitivity of the military situation had a direct impact on the location of the production space. However, at this time, the control of state power over industrial and commercial economic resources, especially private handicrafts, was limited, and the control of state power over the production space was more manifested in the government-run handicraft space, and reflected the pluralistic characteristics in different capital cities. After entering the imperial period, the handicraft management system in Qin Dynasty was directly transitioned from "industry and commerce eating government" to a powerful government-run system. The state power had already annexed the society at this time, showing a strong dominance over the production space. The production space showed more characteristics in the service of the state power, and was no longer an important part of the "state apparatus" in the early capital city.

Throughout the period from the Kingdom period to the Imperial period, the role of production space was changed from possession to domination, and at the same time, its role was also changed from a "state apparatus" to a "state service vessel". Although the distance between the production space and the theocratic space became larger and the independence of the space was increased, the overall control of the state power over the space never disappeared, and it was not always out of the control of the state power.

The important government-run workshops in Chang'an of the Western Han Dynasty, such as coin minting and iron casting, were all located in the most important western market.
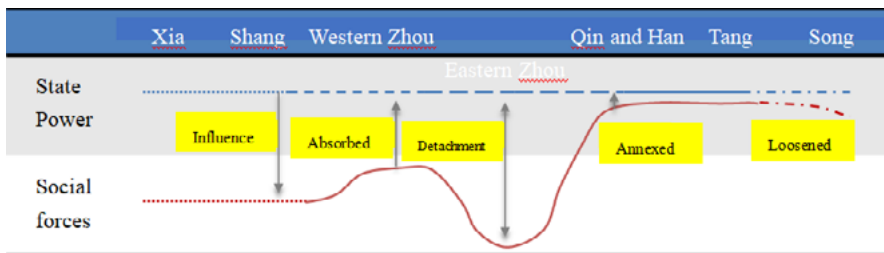

Fig. 5.   Schematic diagram of spatial location evolution of important government-run handicraft workshops in different circles of the capital city. (Chart source: author-made)

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From the perspective of the relationship between space and power, the spatial location was related to the strength of the state power, and the openness of the handicraft production space showed a reverse effect on the power strength. In the stages of Western Zhou and Qin-Han Dynasties when social power was absorbed or annexed by the state power, the more confident the military ideology and defense strategy became, the more open the layout of the city wall system was. The important handicraft space was also in a distributed layout, not in the closed space of defense facilities, and the more alienated from the palace area. In the stage when the state power was far from or separated from the social power, such as Xia and Shang Dynasties and the Spring and Autumn Period and the Warring States Period, it was the closed layout stage of the city wall system. The important handicraft space was in a closed layout, mostly within the control of defense facilities, such as city walls and trenches, and it was closer to the palace area.

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Changes of Geopolitical Landscape of Fujian Coastal Cities in
Ming and Qing Dynasties under the Comparison between Chouhaitubian and Fujianhaianquantu

Changes of Geopolitical Landscape of Fujian Coastal Cities in Ming and Qing Dynasties under the Comparison between Chouhaitubian and Fujianhaianquantu

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Abstract

The change of geopolitical landscape in Fujian is a vital topic for understanding the ideas of coastal urban planning in the Ming and Qing Dynasties. The study compares two ancient maps, Chouhaitubian (an illustrated book on coastal defence) in the late Ming Dynasty and Fujianhaianquantu (a coastal map of Fujian) in the early Qing Dynasty. It combines them with ArcGIS software for visual analysis to obtain the status of geopolitical landscape changes in the coastal cities of Fujian during the Ming and Qing Dynasties. The comparison of the two maps reveals that: Finding 1. The Wei-Suo system of the Qing Dynasty tended to be demilitarised and gradually disintegrated, and a new defence system based on the Folk Fortress was formed. Finding 2. Under the influence of the Seafaring Prohibition Policy, the coastal defence system was moved inward along the ancient postal route. Finding 3. Due to Zheng's rule of Xiamen and Jinmen, new port clusters were formed in the coastal areas of southern Fujian. Changes in the geopolitical landscape of the Ming and Qing Dynasties were closely related to the above events and policy changes, resulting in changes in the economic and trade patterns of Fujian.

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Ming and Qing Dynasties under the Comparison between Chouhaitubian and Fujianhaianquantu

INTRODUCTION

In addition to textual records, maps serve as crucial illustrations of ancient geographical environments. Their cartographic logic and modes of expression reflect the socio-economic development of their time. "Chouhaitubian" (*CHTB*) is a monograph on Ming Dynasty maritime defence, geography, and history, containing extensive geopolitical information about coastal cities in Fujian. Joseph Needham, a British expert on the history of Chinese science and technology, regards it as an authoritative work on coastal geography in China. "Fujianhaianquantu"(*FHQT*), created in the early Qing Dynasty and currently held in the National Diet Library of Japan, is the first long scroll map discovered in Fujian from the early Qing period, providing valuable historical materials for studying coastal defence deployment and military institutions in late Ming and early Qing Fujian. Researchers like Gongzhong Li, have explored the coastal defence ideology reflected in "Chouhaitubian," while Jie Tong has delved into the historical value of "Chouhaitubian" based on its cartography and historical records. Shoujia Wang has investigated Ming Dynasty relations with Japan based on historical materials from "Chouhaitubian,". Scholars like Zhizhong Li researched the versions and authors of "Chouhaitubian," determining details about its various editions and authors. There has been relatively limited research on "Fujianhaianquantu," with Han Xue's work, "A Study on the Compilation Time of the *Fujianhaianquantu* Held in the National Diet Library of Japan," providing insights into the creation time of the map. Although these studies encompass military science, geography, and history, research comparing the geopolitical landscape changes in Fujian coastal cities during the Ming and Qing Dynasties using CHTB and FHQT remains scarce. Therefore, this article employs geographic and historical methods such as visualisation analysis and historical place name comparison to delve into the societal, political, and economic changes in Fujian's coastal cities during the Ming and Qing Dynasties.

BRIEF DESCRIPTION OF MAPS

CHTB compiled during the Jiajing reign of the Ming Dynasty by the Governor of Zhejiang, Zongxian Hu, and authored by the military strategist Ruozeng Zheng, is an official work on coastal defence against Japanese pirates. This work covers military, geographical, and historical aspects and has been published in three editions during the Ming Dynasty. It includes 112 maps of coastal terrain and prefectures, fifty-nine illustrations of warships and weaponry, two maps of Japan, and one map of the invasion routes of Japanese pirates. The scope of these maps ranges from Guangdong in the south to the Yalu River in Liaoning in the north, spanning the entire Chinese coastline. In the early Ming period, there were few incidents of Japanese pirate harassment along the southeast coast. However, due to insufficient attention to coastal defence, these incidents escalated into large- scale Japanese piracy during the Jiajing reign (1522-1566), prompting the creation of CHTB. The coastal defence maps of Fujian in this book can be divided into two parts: the first volume focusing on the Fujian region and the fourth volumes covering the entire scope. The first volume emphasises coastal defence elements such as Patrol Division Towns and beacon towers in Fujian coastal areas, while the fourth volumes broadly cover various areas with city information prominently marked.

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Fig. 1. - The cartographic differences between Chouhaitubian(CHTB) and Fujianhaianquantu(FHQT) are significant, particularly in their respective styles of illustration.

FHQT, a pictorial map currently housed in the National Diet Library of Japan, has been dated to 1679, during the Kangxi reign (1662-1722) in the Qing Dynasty. This map utilises the unique Chinese technique of landscape painting in scroll format, vividly depicting the river courses and island topography along the Fujian coast. The division between land and sea is represented with the land at the top and the sea at the bottom, offering a perspective from the ocean towards the land, oriented towards the direction of enemy incursions. The map's geographical scope extends from Chaozhou in Guangdong in the south to Pingyang in Zhejiang in the north.

Differences in the depictions of the two maps are illustrated in Figure 1. Both maps are coastal defence maps and include conventional elements such as garrison towns, mountains, and islands. However, their overall cartographic logic diverges significantly due to their different focuses: CHTB emphasises coastal defence information, while FHQT highlights urban and coastal defence information. The differences in drawing logic and toponymic annotations between the two maps reflect multiple geopolitical landscape changes from the Ming to the Qing Dynasties.

COLLATION OF CHANGES IN PLACE NAMES DATA ON TWO MAPS

The Wei-Suo Defence System was the overarching maritime defence system during the Ming Dynasty, with each defence area primarily comprising a Water Fortress, Garrison City(*Wei*), and a variable number of Fortified Towns(*Suo*) and Patrol Division Towns. A Garrison City was

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established with 5,600 soldiers, a Thousand- Household Fortified Town(*Thousand-Household Suo*) with 1,120 soldiers, and a Hundred-Household Fortified Town with 112 soldiers(*Hundred-Household Suo*), while the number of Patrol Division Towns varied depending on the situation. The transmission of information within the Wei-Suo system was facilitated through beacon towers and postal routes. (Figure 2)

The Water Fortress was the first line of coastal defence in the Ming Dynasty and was a key fortified site. Only one fortress is marked on the original site of the Tongshan Water Fortress in the FHQT, with no supporting defence facilities in the vicinity, not in the form of Water Fortresses in the Ming Dynasty. The remaining four Water Fortresses are not labelled, three of them without identifying the same place name. The Water Fortress in the Qing Dynasty disappeared. During the Ming Dynasty, five Wei were constructed alongside Water Fortresses, and there were fourteen Suo, totalling nineteen Wei-Suo locations. By the Qing Dynasty, the number of Wei-Suo locations had been reduced to eleven, a decrease of nearly half. This reduction in Wei-Suo locations was also reflected in the sharp decline in the number of Patrol Division Towns. In the two volumes of the CHTB, ninety- nine Patrol Division Towns were marked. However, in the FHQT, there was no label of any Patrol Division Towns, but among the twenty-three locations with identical names and positions. As a defensive facility, beacon towers were extensively marked in the CHTB, but no such mark appeared in the FHQT, despite the presence of locations with identical names. The CHTB records over 200 beacon tower sites densely distributed along the Fujian coast. In contrast, the FHQT depicted beacon towers are mainly situated in areas far from the coastline. The FHQT indicates that coastal lookout facilities disappeared in the early Qing period.
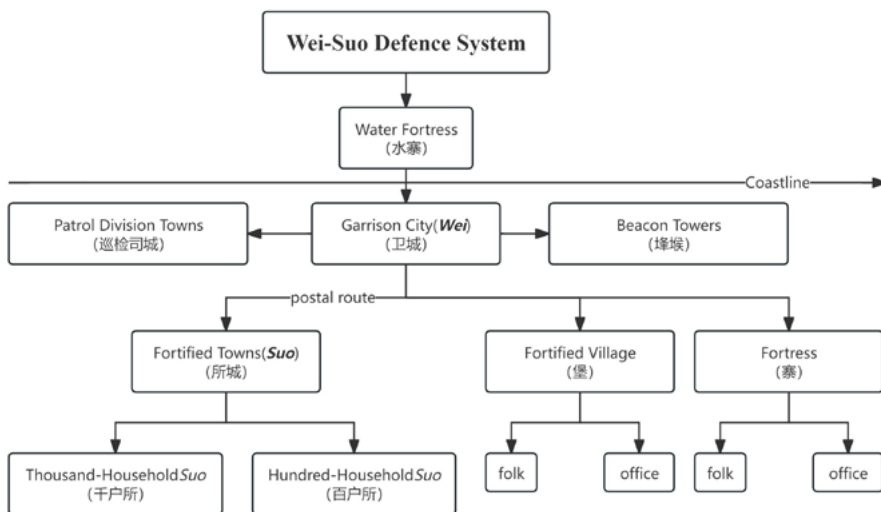

Fig. 2. The positions and hierarchical relationships among the Water Fortress, Garrison City (Wei), Fortified Twon (Suo), Patrol Division Town, and beacon towers, this figure shows that the Water Fortresses are located outside the coastline, while the other defence structures are positioned inland from the coastline.

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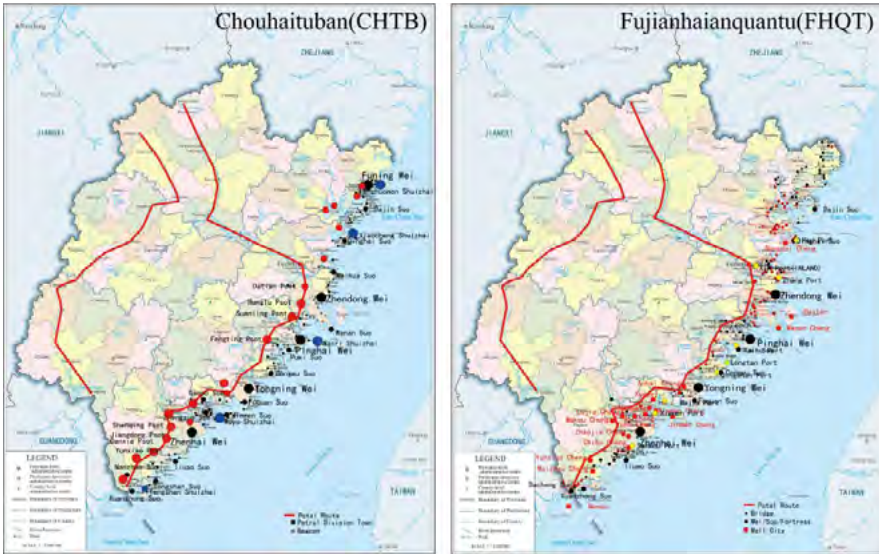

Fig. 3.   Overlay map. This map was created by extracting and superimposing the coastal defence elements from the two maps.

The CHTB marks twenty-one Fortresses. In contrast, the FHQT marks 101 Fortresses, with some locations overlapping in name but differing in scale from those in the CHTB. Regarding Fortified Village, the CHTB does not label any related names, whereas the FHQT marks thirty-seven Fortified Village, some of which have the same names and positions as Patrol Division Towns in the CHTB. Compared to Fortresses and Fortified Villages, Wall City represent larger settlements. The CHTB marks only one Wall City, while the FHQT marks seventeen, of which fourteen are located in southern Fujian.

The postal routes of the Qing Dynasty saw little change compared to those of the Ming Dynasty, with the number of post stations remaining unchanged and eight new express post stations added along the route. Maritime traffic, however, underwent significant changes. In the Ming Dynasty, the CHTB shows that all marked ports were concentrated in the northern Fujian areas of Fuzhou Prefecture and its subordinate Funing County, with no ports marked in Xinghua Prefecture in central Fujian, and only one port in Zhangzhou Prefecture in southern Fujian. In contrast, the FHQT shows that in Qing Dynasty, the ports were mainly distributed in the southern Fujian region, with only two in northern Fujian and one official port in Xinghua Prefecture in central Fujian.

CHANGES IN FUJIAN COASTAL CITIES

The comparison of the two maps reflects the comprehensive abolition of the Wei-Suo Defence System in its early years. All five major Water Fortresses were abandoned at the beginning of the Qing Dynasty, and the number of Wei and Suo decreased by 42%. The Wei and Suo that

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remained in use were no longer garrisoned and incorporated into the administrative system of prefectures and counties. Taking Quanzhou Prefecture as an example, the Fortified Towns of *Fuquan Suo* and *Chongwu Suo* were disbanded and incorporated into the *Yongning Wei*, while Wei and Suo, without military organisation, gradually evolved into towns and villages. Similarly, the Patrol Divisions under the Wei-Suo Defence System were also completely abolished. The dramatic changes in the coastal defence system revealed by the two maps represent the collapse of the integrated defence system between the sea and the coast at the end of the Ming Dynasty and the initial manifestation of the disappearance of the Wei-Suo defence system in the Qing Dynasty. (Figure 3)

During the late Ming and early Qing periods, there was a significant increase in the number of Folk Fortresses and Wall City along the coastal areas of Fujian, gradually forming a fortress system along the ancient postal routes. FHQT indicates 121 more Fortress and Fortified Towns, as well as 16 additional Wall Cities, compared to the CHTB. Despite the gradual decline in national strength towards the end of the Ming Dynasty, the Seafaring Prohibition Policy persisted. External threats, such as Japanese piracy, and internal disturbances caused by bandits, coupled with economic decline and deteriorating social conditions, led to the resurgence of family-based armed forces. Consequently, a large number of Folk Fortresses and Folk Fortified Villages were constructed, serving as strongholds for these family-based armed forces. During the late Ming and early Qing periods, Pinghe County in Zhangzhou Prefecture had approximately 140 Fortresses, with 108 of them collectively built by families, accounting for 78% of the total. Pinghe County serves as a microcosm of the surge in Folk Fortress construction in Fujian.
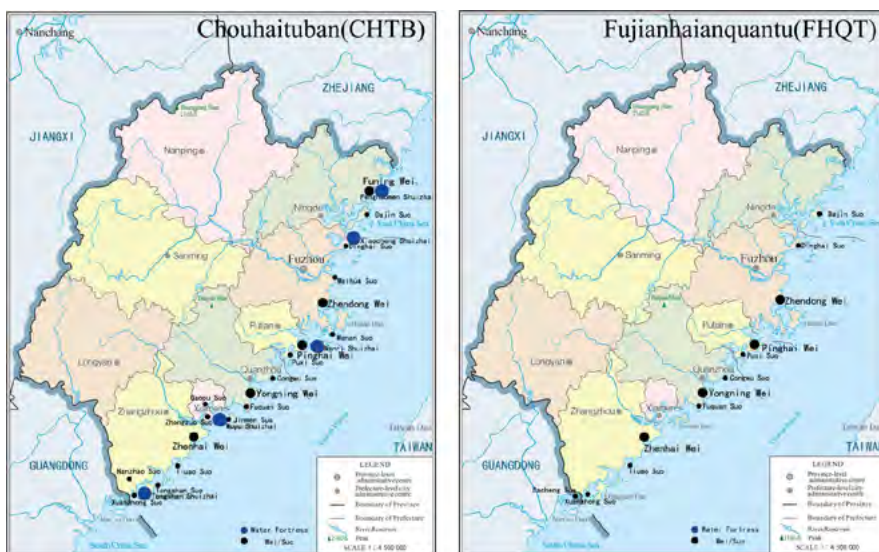

Fig. 4. Distribution map of Water Fortresses, Wei and Suo in the Ming and Qing Dynasties. All Water Fortresses were abandoned in the Qing Dynasty, and the number of Wei-Suo was halved.

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At the beginning of the Qing Dynasty, the maritime shipping centres in Fujian shifted from the northern to the southern region. A comparison of port distributions reveals that during the Ming Dynasty, the primary shipping centres were located in the Fuzhou Prefecture in northern Fujian. In contrast, during the Qing Dynasty, the centres shifted to the Zhangzhou and Quanzhou Prefectures in southern Fujian. According to the CHTB, the only officially designated trade port in southern Fujian during the Ming Dynasty was Yuegang in Zhangzhou Prefecture. This limitation was largely due to the prolonged seafaring prohibition, which led to severe economic pressure and rampant smuggling. In the 40th year of the Jiajing reign (1561), the famous "*Rebellion of the Twenty-Four Generals*" broke out in Yuegang. To quell the rebellion, the Ming government opened Yuegang as the only legal civilian trade port in southern Fujian. Additionally, Anhai and Xiamen ports served as military ports for Chenggong Zheng's forces, laying the groundwork for the revival of foreign trade in southern Fujian ports in later years.

THE SHIFT FROM WEI-SUO COASTAL DEFENCE TO POLICIES OF TAIWAN RECOVERY AND SEAFARING PROHIBITION

In the Qing Dynasty, the defence focus of coastal areas in Fujian shifted from the sea to the land, transitioning from the Ming Dynasty's policy of the Wei-Suo Defence System for coastal defence to the Qing Dynasty's more stringent policies of Taiwan recovery and seafaring prohibition. Figure 4 shows a comparative diagram of coastal defence between the Ming and Qing dynasties in Fujian. As the first line of defence at sea, Water Fortresses served as stationed and supply points for maritime infantry forces, greatly thwarting the incursions of Japanese pirates. However, following the corruption of the Ming government after the Zhengtong reign(1436- 1449), Wei, Suo and other military units faced difficulties in provisions. The five major Water Fortresses in Fujian had to reduce their forces. In 1442, Hong Jiao, a deputy envoy, led the relocation of Xiaocheng Water Fortress inland due to rough sea conditions. After the relocation of the last water fortress, Nanri Water Fortress, to Jiliao County in Xinghua Prefecture in the fourth year of the Chenghua reign (1468), this action signalled the disappearance of the maritime defence line established by the five Water Fortresses without encountering any battles. The second line of defence consisted of Wei and Suo and their affiliated facilities, which became virtually non-existent by the end of the Ming Dynasty and completely disappeared with the abolition of the Wei- Suo Defence System in the Qing Dynasty.

In 1659, the remnants of Chenggong Zheng's forces of the Ming Dynasty attacked Nanjing in an attempt to reclaim the former capital of the Ming Dynasty and overthrow the Qing Dynasty, but they were defeated and retreated to Xiamen in southern Fujian. In 1661, Zheng defeated the Dutch colonists and regained control of Taiwan, prompting fear in the Qing government. To sever the connection between the remaining forces of the Zheng family in southern Fujian and Taiwan, the Qing government implemented stricter seafaring prohibition measures in the coastal areas of Fujian and stationed troops to seize the opportunity to recover Taiwan. From the Ming Dynasty to the Qing Dynasty, the complex geopolitical environment of Fujian prompted the coastal areas to transition from Wei-Suo coastal defence to policies of Taiwan Recovery and Seafaring Prohibition

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Fig. 5. Comparison map of foundational defence facilities between CHTB and FHQT. The new defence facilities added during the Qing Dynasty are located near the postal routes.

THE TRANSITION FROM OFFICIAL DEFENCE TO CIVILIAN SELF-DEFENCE

The sharp increase in the number of fortresses during the late Ming and early Qing periods represented a transition from official defence to civilian self-defence. The trend in coastal Fortress construction, as depicted in Figure 5, illustrates that the defensive lines of the Wei-Suo Defence System along the coastal shoreline during the Ming Dynasty shifted towards the ancient postal route. Along this line, numerous Folk Fortresses were constructed, supplemented by beacon towers, forming a system of civilian self-defence during the late Ming and early Qing periods.

The decline of the Wei-Suo Defence System in the late Ming period was directly reflected in the disbandment of military forces in various regions. For instance, in Quanzhou Prefecture, where there were originally 1,650 archers, only 166 remained by the end of the Ming Dynasty, with a reduction and desertion rate of up to 90%. During the Jiajing reign (1522-1566) of the late Ming period, the coastal area of Fujian was ravaged by Japanese pirates, and the inadequate military strength of the Patrol Division Towns led to a decline in their ability to defend against attacks, often resulting in destruction without timely repairs. To cope with this situation, many Patrol Division Towns relocated to Folk Fortresses: for example, the Yanting Patrol Division Town moved to Xiahu Fortress, and the Gaoluo Patrol Division Town moved to Lvxia Fortress. The Ming government initially restricted the construction of Folk Fortress due to fears of local powers forming armed groups around them, but later encouraged the self-construction of Fortresses by civilians. In the early Qing Dynasty, considering the situation in Fujian, the Policy of Seafaring Prohibition was continued. A document titled "*Prohibition of Sea Migration*" ordered residents within ten kilometres of the coast to relocate inland. At this time, many Wei and Suo in Fujian had already evolved into non-military urban settlements with a large population. Consequently, many coastal residents became displaced, leading them to choose to construct fortresses along the ancient postal route near the sea for the convenience of trade. This further promoted the construction of Folk Fortresses. The tense situation along the Fujian coastal area at the end of the Ming Dynasty and the implementation of policies in the early Qing gradually transformed the defence policy of the coastal areas of Fujian from official defence to civilian self-defence.
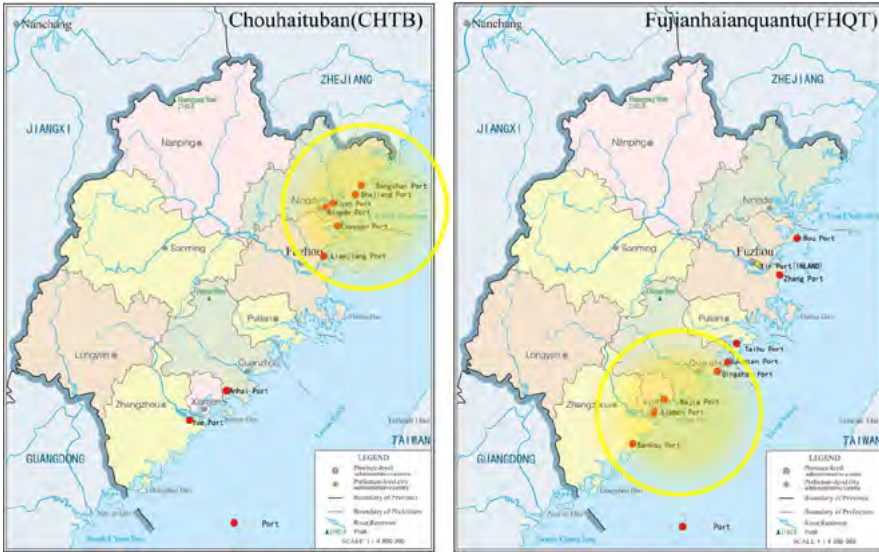
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Fig. 6. Comparison map of port centres in the Ming and Qing Dynasties. The economic centre shifted from Northern Fujian to Southern Fujian.

THE ECONOMIC CENTRE SHIFTED FROM NORTHERN FUJIAN TO SOUTHERN FUJIAN

The transition depicted in Figure 6, from the Ming Dynasty's concentrated ports in northern Fujian as illustrated in the CHTB, to the densely distributed port clusters in southern Fujian in the FHQT, subtly signifies the rise, fall, and resurgence of ports in southern Fujian. It also serves as a tangible manifestation of the shifting economic centre of Fujian.

Since the Song and Yuan Dynasties, southern Fujian has been one of the centre of maritime trade in the South Sea, with Quanzhou's Citong Port being hailed as the "largest port of the Song and Yuan dynasties." However, with the promulgation of the Ming Dynasty's seafaring prohibition, the Quanzhou Maritime Trade Office was abolished and relocated to Fuzhou to receive tribute from Ryukyu and other countries. Consequently, trade between Fuzhou and Ryukyu flourished, and many ships only docked in Fuzhou, leading to the decline of Quanzhou Port and the rise of Fuzhou Port. The opening of Yuegang in Zhangzhou Prefecture as the only legitimate foreign trade port at the end of the Ming Dynasty was just the beginning of the revival of southern Fujian ports. Zhilong Zheng, the father of Chenggong Zheng, developed maritime private armed forces during the turbulent period at the end of the Ming Dynasty. In the first year of the Chongzhen reign (1628), Zhilong Zheng was recruited by the Ming government, dominating southern Fujian. Using Anhai Port and Xiamen Port in Quanzhou Prefecture as bases, he significantly expanded private trade and collected taxes from ships travelling to and from Taiwan. After Chenggong Zheng assumed office, he established a Fortified city in

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Anhai. The presence of Anhai City on the FHQU. Although the Ming government only designated Yuegang in Zhangzhou Prefecture as a legal port, the Zheng family opened additional ports, such as Anhai and Xiamen, some of which served as martime trade ports. They traded not only with the Nanyang Islands, including Luzon, Thailand, Cambodia, Vietnam, and Indonesia, but also with Japan and Korea, leading to increasing prosperity throughout southern Fujian due to the opening of these ports. The shift in port clusters between the two maps directly reflects changes in the maritime trade centre. Southern Fujian, stabilised by the Zheng family at the end of the Ming Dynasty, experienced a resurgence in ports that were no longer restricted by the Seafaring Prohibition Policy.

CONCLUSIONS

By comparing place names from two maps and analysing existing locations, along with historical records, this article summarised the changes in the geopolitical landscape of coastal cities in Fujian during the Ming and Qing dynasties. The study visualised the changes in coastal cities in Fujian during these periods, revealing the shifting trends of coastal settlements and ports. It interprets these shifts in terms of military, political, and economic factors, revealing that the alterations in the coastal geopolitical landscape of Fujian are a material reflection of policy changes during the Ming and Qing dynasties. Although there are certain micro-level limitations in using maps for research, maps as a medium to interpret history can indirectly and authentically reflect the processes and reasons behind urban changes, providing an irreplaceable tool for studying ancient cities.

DISCLOSURE STATEMENT
No potential conflict of interest was reported by the author.

NOTES ON CONTRIBUTOR(S)

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IMAGE SOURCES

Figure 1   CHTB is from Chouhai Tubian, published by Beijing Zhonghua Book Company in 2007. FHQT is from the collection of the National Diet Library, Japan.

Figure 2   The analysis chart was completed by the author.

Figure 3   The original map was compiled by the Fujian Provincial Institute of Cartography and supervised by the Fujian Provincial Department of Natural Resources. The analysis map was completed by the author.

Figure 4   The original map was compiled by the Fujian Provincial Institute of Cartography and supervised by the Fujian Provincial Department of Natural Resources. The analysis map was completed by the author.

Figure 5   The original map was compiled by the Fujian Provincial Institute of Cartography and supervised by the Fujian Provincial Department of Natural Resources. The analysis map was completed by the author.

Figure 6   The original map was compiled by the Fujian Provincial Institute of Cartography and supervised by the Fujian Provincial Department of Natural Resources. The analysis map was completed by the author.

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Planning & Transport Infrastructure in East-Asian Cities

Chair: Jeroen van Ameijde

Rails, Properties, Plans, and Politics
Kobayashi Ichizo and Transit Metropolis in Japan

Yudi Liu
Paris Nanterre

Abstract

Kobayashi Ichizo (1873 – 1957) is known for pioneering the Japanese rail corridor development (ensen kaihatsu) practice through diversified businesses in transit operation, land development, retail, leisure, and more. As a railway baron, a land speculator, an industrial leader, an economic policymaker, and an urban planning director, Kobayashi's roles were so multifaceted that a study of any single sector could hardly capture a holistic view of his influence on the creation and reinforcement of entrepreneurial transit metropolises in Japan. Fortunately, his yet another role as a commentator provided plenty of archival materials to the National Diet Library (of Japan), allowing a synthesis of the power relationships and ideational influences behind his multisectoral engagement. The research applies a historical institutionalist approach to examine historical episodes throughout Kobayashi's career(s). It accepts the precedent idea that Kobayashi Ichizo stood for economic liberalism and corporate interest with a pragmatic concession to the public interest, adding to explain that he represented an endogenous force against regulation and public ownership in transportation, land development, and other industries proposed by conservative reformers or socialists. Kobayashi practiced the stance in his state leadership in economic policymaking and reconstruction planning to preserve the logic of suburban growth in Tokyo and Osaka, consisting of private commuter rails, fragmented landownership, loose land use regulation, and sporadic privately supported public projects. The path dependent self-reinforcement of his practical paradigm, often cited as Japanese Transit-Oriented Development (TOD), brings insights into understanding the institutional configuration of contemporary urban development in Japan and beyond. The study suggests that synthesizing historical agency and contemporary action is indispensable in understanding recent institutional changes, such as the continuous privatization and deregulation of transportation and development entities.

Planning and Designing the Belgian Tramway in Treaty Port Tianjin

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Abstract

The nineteenth century saw the invention and dramatic spread of urban public transportation. By the mid-twenties of the twentieth century, the electric tramway system, providing faster, cheaper, and more comfortable service, dominated public transportation in almost all European and American cities. In mainland China, Tianjin was the first city to establish an electric tramway system in 1906, paralleling Western industrial cities. The Belgian tram company, Compagnie de Tramways et d'Éclairage de Tientsin (CTET), founded the tramway. The treaty port Tianjin, opened after the Second Opium War in 1860, developed one of the most complex urban environments in China, housing up to nine foreign concessions in one urban space. The Chinese city of Tianjin also experienced colonial administration by the Eight-Nation Alliance after the Boxer Uprising in 1900. The two years of colonial rule prompted rapid urban transformation and produced the opportunity to develop modern urban transportation in Tianjin. This paper looks specifically at the planning and design of the electric tramway in treaty port Tianjin, which was led by foreign engineers of the private company. The research is based on the archival documents collected in the State Archives of Belgium. Three engineering reports, respectively made by the British and Belgian engineers in 1901 and 1902, reveal the Westerners' understanding of the Chinese habits in transportation, how they conducted surveys on Tianjin's urban conditions, and most importantly, how they designed the tramway mainly serving the Chinese population. It argues that the initial design of the tramway in Tianjin was very economic-oriented and pragmatic to ensure profits for the foreign private company that was independent of imperial control. This paper aims to offer insights into the Western city planning in semi-colonial China.

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Abstract

This study seeks to explore a high-quality development model of symbiotic governance that balances and mutually enhances green ecology, societal humanities, and economic industries, framed within the historical dynamics and modern urban planning principles. With an emphasis on the municipalities along the Chinese Eastern Railway, which have traditionally relied on heavy industries, this paper addresses how these areas are now experiencing a slowdown or even stagnation in development pace due to ongoing urban contraction. This trend is further exacerbated by geographical marginalization and a sharp population decline, making the need for sustainable urban development strategies increasingly critical. Leveraging advanced unmanned aerial vehicle (UAV) remote sensing technology and comprehensive multi-source, multi-dimensional spatial big data, the research precisely measures the contraction status of these municipalities. It also conducts an in-depth analysis of the changing patterns in urban contraction spaces and the key influencing factors behind them. By employing scientific methodologies such as the rational allocation of production factors and adjustments to urban spatial layouts, the paper proposes targeted and intelligent strategies for urban spatial development control. This endeavor aims to provide robust theoretical and practical support for the revitalization of the Northeast region and the high-quality development of similar municipalities nationwide, and it has become a topic of considerable scholarly interest in the field of urban and rural planning theories and methodologies amid the intensification of Chinese reforms and rapid market economic development.

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INTRODUCTION

The Northeast region of China, historically a pivotal base of heavy industry, has played a crucial role in the nation's economic advancement. However, the deepening economic reforms and the maturation of the market economy have seen the decline of heavy industry, leading to a deceleration in the region's economic progress and causing it to lag behind the more dynamic eastern coastal areas. This shift reflects significant transformation in the internal and external conditions for regional development. Amid China's modern urbanization drive in the new century, there has been a noticeable population migration towards larger central cities, while smaller cities and towns, especially those on the geographical periphery with a homogenous industrial makeup, are experiencing contraction. The Northeast faces severe urban challenges including population loss, economic downturn, and resource depletion—a focal point of societal concern and a key issue addressed in the nation's "14th Five-Year Plan" (Oswalt et al., 2006).

Despite its importance, research on urban shrinkage in the Northeast has been limited and fragmented, often focusing narrowly on individual cities or provincial issues without a comprehensive exploration of regional characteristics, their distinctive features, or driving factors. Through the lens of symbiosis, this study aims to quantify and analyze the extent of shrinkage across the region, investigating the patterns and determinants of urban spatial contraction and informing strategic policies. Moreover, the historical trajectory of urban development in this region, influenced by industrialization, political upheavals, and economic reforms, has imbued the current urban landscape with a complex legacy. This paper connects these historical developments with modern urban planning challenges, advocating for adaptive, symbiotic governance strategies to address the intertwined issues of economic dynamics and urban spatial contraction.

HISTORICAL BACKGROUND OF URBAN SPACES ALONG THE CHINESE EASTERN RAILWAY

The Chinese Eastern Railway served as a catalyst for industrial and urban development along its route, fundamentally transforming the Northeast region of China. This railway not only facilitated economic expansion but also ignited a profound reshaping of the urban landscape. Large-scale factories and worker accommodations emerged, setting a new urban aesthetic that prioritized industrial functionality over traditional urban planning considerations like communal spaces and environmental considerations. This era of development introduced by the railway was further influenced by foreign dominations, particularly during the periods of Japanese and Russian control, each leaving its unique mark on the urban fabric (Smith & John, 2012).

The Russian influence during their period of administration brought Eastern European architectural styles and an extensive expansion of the railway itself, integrating local towns into broader industrial and commercial networks. This integration fueled a distinct pattern of ur-

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ban growth, intertwining local Chinese characteristics with Russian industrial strategies. The subsequent Japanese occupation focused on extractive industries, which tailored the infrastructure toward supporting resource extraction and processing(Lee et al., 2015). The legacy of these occupations profoundly affected the structural and economic landscapes of towns along the railway line, embedding complex layers of foreign architectural and industrial practices into their development.

Transitioning into the late 20th century, the economic reforms initiated in 1978 under Deng Xiaoping's leadership marked another pivotal change. These reforms introduced a new paradigm of decentralization and market liberalization across China, propelling towns along the Chinese Eastern Railway to gradually dismantle their monopolistic industrial structures in favor of a more diversified economic model. This shift presented both significant challenges and opportunities for urban redevelopment, encouraging planners to rethink and transform urban spaces from state-dominated to market-oriented entities(Chen et al., 2016).

Today, the historical imprints of Russian and Japanese periods are pivotal in shaping contemporary urban planning along the Chinese Eastern Railway. The modern transformation initiatives focus on converting old, historical industrial infrastructures into vibrant cultural centers, technology hubs, and green spaces, making these towns emblematic of resilience and adaptability. This repurposing strategy acknowledges and utilizes the historical layers of industrialization and foreign influence as foundational elements for driving modern urban regeneration. By embracing a strategy that integrates respect for its complex historical tapestry with contemporary innovative urban planning approaches, towns along the Chinese Eastern Railway are not only preserving their unique historical character but are also spearheading sustainable development and urban revitalization that reflect a harmonious blend of past and present influences. This approach exemplifies a sophisticated understanding of how historical factors can inform and enrich present-day urban development strategies, ensuring that these towns remain relevant and dynamic players in the broader regional and national context (Kimura & Yoko, 2017).

SYMBIOSIS THEORY IN URBAN DEVELOPMENT

The concept of symbiosis was initially introduced by German biologist Heinrich Anton de Bary, who posited that different species of organisms must coexist for survival, depending on and supporting each other, ultimately forming a relationship of mutual existence and co-evolution (Liu, 2018). Since then, the theory of symbiosis has extended into various disciplines, and over the past few decades, its application in urban development has also evolved.

Urban spatial development is a complex system encompassing ecological and green development, social and cultural structures, and economic and industrial growth. Therefore, the symbiotic concept here includes three aspects: ecological and green development, social and cultural structures, and economic and industrial development. The focus of ecological and green development symbiosis lies in balancing human activities with the ecological environment of urban spaces in the Northeast, guiding how to protect the natural environment to

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promote sustainable ecological development. Social and cultural structures emphasize addressing issues such as population and cultural loss through technological means, injecting new vitality into the development of shrinking urban spaces in the Northeast (Long, 2016). Economic and industrial development involves leading with science and technology in agriculture, introducing new high-tech industries, upgrading traditional industries, achieving agricultural intelligence, and restoring local economic sustainability.

In this research topic, the symbiotic concept is applied to expound the symbiotic relationships between these elements, starting with the symbiosis between ecological green development and the economy, which refers to President Xi's recent proposition that "lucid waters and lush mountains are invaluable assets." Restoring the ecological environment and developing green industries are means to promote the economic development of urban spaces in the Northeast. The symbiosis between economic and industrial development and social structures refers to the fact that humans are the primary productive force. However, the Northeast region faces severe population loss, and by vigorously developing smart technology to compensate for the labor shortage caused by population loss, we can alleviate the developmental constraints brought about by urban shrinkage. Finally, the symbiosis between social and cultural structures and ecological green development refers to the use of technological means, such as drones for pesticide spraying and big data for air quality monitoring, to scientifically intervene in local ecosystems, thereby enhancing ecological and green development and creating a healthy and green living environment while maintaining a balanced and stable natural environment.

REVIEW OF DOMESTIC AND INTERNATIONAL RESEARCH

INTERNATIONAL RESEARCH

There has been limited research on the characteristics of urban shrinkage globally, with most studies describing shrinking cities in terms of temporal trends and spatial distribution. Urban shrinkage began earlier abroad than in China. In the 1960s, urban shrinkage was mainly seen in a few old industrial cities in developed industrialized countries represented by the United Kingdom and Germany (Oswalt P, 2005). By the end of the 20th century, with the dramatic changes in Eastern Europe, former socialist countries in Eastern Europe became major hotspots for shrinking cities, with more than 70% of large cities in Eastern Europe experiencing significant population decreases (Mykhnenko et al., 2008). By 2007, over one-sixth of the world's cities had experienced population loss (UN, 2010). From 1960 to 2003, over half of the 220 medium and large cities in Europe showed noticeable population declines (Wiechmann T et al., 2015), and from 1960 to 2010, cities like Cleveland, Buffalo, and Pittsburgh in the United States saw a population shrinkage rate of over 50% (Hollander et al., 2011) (Howe et al., 1998) (Wiechmann et al., 2012). Studies have found that internationally, shrinkage mainly occurs in regional centers and cities, such as the Greater Detroit area in the United States and the Greater London

area in the UK, due to reasons like deindustrialization and suburbanization, leading to significant population shifts from central urban areas to the periphery and resulting in the hollowing out of city centers (Liu & Yang, 2017) (Zhao, 2006).

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RESEARCH IN CHINA

Looking at China's population trends, the national population growth rate has decreased from 2.2% in 1962 to 1.12% in 2010 (Liu, 2019), indicating a slowdown in population growth; between 2006 and 2011, the population growth rate of small cities with urban populations below 200,000 was -17.34% (Wei, 2014). Additionally, some scholars have focused on regional analysis. Since the year 2000, urban population changes in Guangdong Province have generally shown growth with localized shrinkage, with some cities exhibiting clear population shrinkage for over 15 years (Du et al., 2019). Examination of population data from the three northeastern provinces between 2010 and 2014 reveals that the ongoing population shrinkage in the Northeast region is continuing and is unlikely to stop in the short term (Liu et al., 2018). Other scholars have used data from the 2000 and 2010 population censuses and the 2008 and 2014 statistical yearbooks, with indicators such as permanent population, registered population, and year-end total population, to examine urban shrinkage in the Northeast region, showing that nearly one-third of prefecture-level cities in the Northeast experienced urban shrinkage between 2000 and 2010, and nearly eight-ninths experienced shrinkage between 2008 and 2014 (Fan Jiahui, 2018). In the study of the Jing-Jin-Ji region, it was found that the number of shrinking districts and counties increased from 73 in 2000 to 107 in 2010, with a noticeable rise in the shrinkage ratio (Wu et al., 2015). Exploring the spatial distribution of shrinking cities, urban shrinkage in China exhibits clear spatial characteristics, occurring mostly in the Northeast region and the Yangtze River basin (Liu & Zhou, 2019) (Zhang et al., 2018), especially in the Northeast, where there is a significant loss of population, rising unemployment, and severe urban shrinkage issues (Sun et al., 2019). Gansu, Chongqing, Hubei, as well as the northern parts of Liaoning and Heilongjiang, have shown clear signs of population shrinkage (Zhang et al., 2016). Some scholars have used spatial econometric methods to further explore the spatial distribution of urban shrinkage in China, forming a very distinct spatial pattern of "one core, two belts, and two zones" (Deng& Liu, 2018). The "one core" refers to the significant population shrinkage region centered on eastern Sichuan Province, Chongqing, Hubei Province, and Guizhou Province, with the outer layer mainly characterized by mild population shrinkage; the "two belts" consist of the eastern population shrinkage belt formed by Shandong Province, Jiangsu Province, Anhui Province, Zhejiang Province, and Fujian Province, and the northwest population shrinkage belt formed by Gansu Province and the Ningxia Hui Autonomous Region; the "two zones" are the population shrinkage zone composed of eastern Inner Mongolia Autonomous Region, Liaoning Province, and northern Hebei Province, and the population shrinkage zone composed of northern Inner Mongolia Autonomous Region, Jilin Province, and northern Heilongjiang Province (Deng & Liu, 2018). From the literature review, it is evident that the Northeast region of China is a severely shrinking urban area.

In summary, currently domestic and foreign areas are not addressing the problem of urban shrinkage with a balanced approach, such as only focusing on population or developing green cities. This project, integrating the governance model based on symbiotic concepts, will attempt to establish a set of measurement indicators for "quality" and "quantity" of urban spatial development and a comprehensive evaluation system, aided by big data acquisition and UAV remote sensing technology, image recognition technology, and other means. Through precise and scientific quantitative analysis, the study will paint a portrait of urban develop-

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ment, extract the spatial archetypes of urban growth, and on this basis, formulate intelligent targeted models for high-quality urban development (Tayloret al., 2020).

SIGNIFICANCE OF THE STUDY

The study offers both theoretical and practical significance. Theoretically, it enriches the understanding of urban shrinkage and its implications for urban and regional planning. Practically, it provides actionable insights and strategies for policymakers and planners to address the challenges of urban contraction in the Northeast.

Theoretical Significance: This research provides a comprehensive analysis of urban shrinkage in Northeast China, examining factors such as population decline, economic downturns, and urban land use intensity within the context of resource-exhausted city development. It delves into the characteristics of urban shrinkage from multiple perspectives— population, economy, and land use. By exploring the distinctive shrinkage traits across various functional types of cities, the study develops a sophisticated measurement indicator system that categorizes and investigates the formation mechanisms of resource-depleted shrinking cities in the region. This approach not only aims to enrich the theoretical understanding of transformation in China's resource-exhausted cities but also integrates the conservation of historical assets along the Chinese Eastern Railway into this framework. This innovative linkage utilizes historical lessons from past transitions influenced by foreign rule and industrial shifts to enhance current urban planning theories. By incorporating the preservation of historical heritage, the study not only addresses the challenges of modern urban shrinkage but also enriches the theoretical base, providing valuable insights and typological research outcomes that holistically consider urban planning within historical contexts (Yang et al., 2015).

Practical Significance: this research emphasizes the practical significance of employing a symbiotic governance model to address urban shrinkage across various resource-exhausted city types in Northeast China, ranging from coal to iron ore industries. It carefully assesses population loss, economic decline, and the extension of construction land, highlighting the specific challenges and contradictions in the economic, social, and spatial development of these cities. Integrating the concept of smart shrinkage, adapted from Western models, the study explores the application of this approach within the spatial context of Northeast China's resource-exhausted cities, evaluating its urgency and practicality while proposing tailored development paths and regulatory measures. Furthermore, the research contextualizes smart shrinkage to account for the conservation of historical heritage, drawing lessons from the resilience and adaptability shown by towns along the Chinese Eastern Railway amidst historic transformations. This approach offers a balanced strategy for urban planning that not only seeks sustainable growth and the integration of modern urbanization efforts that coordinate "people and land," but also underscores the importance of preserving and integrating historical landmarks and cultural heritage into the urban fabric. Such detailed analysis provides a pathway for the healthy development of new urbanization in China, furnishing scientific evidence and offering practical guidance grounded in historical continuity and innovation (Zhang & Wei. 2018).

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RESEARCH METHODOLOGY

This study employs a multi-faceted research methodology to analyze urban contraction and develop high-quality development strategies. The methodologies include:

Spatial Mathematical Statistical Analysis: Utilizing statistical, imagery, and UAV remote sensing technologies, combined with multi-source data such as POI and GPS, to evaluate and measure urban space quality and quantity. This approach provides a comprehensive assessment of urban contraction and growth patterns.

Typological Comparative Research Method: Establishing a theoretical framework for the spatial development of shrinking towns, conducting horizontal and vertical comparisons, and deriving decision trees for quality development paths. This method helps identify best practices and tailor development strategies to specific contexts.

Interdisciplinary Theoretical Methods: Integrating urban and rural planning, sociology, economics, geography, and other disciplines to propose an intelligent targeting system for high-quality urban development. This interdisciplinary approach fosters innovation and ensures that development strategies are holistic and effective.

RESEARCH OBJECTIVES

This paper aims to achieve the following goals from the perspective of integrated urban and regional development, focusing on the interaction and integration of cities and regions:

To construct a theoretical framework for the restructuring of regional urban space: In light of the current state of regional urban space research in China, the study will scientifically define the concept of regional urban space. On this foundation, it will analyze the restructuring of regional urban space and functional optimization, such as the greening and commercialization of abandoned industrial land, while delving into the driving mechanisms behind the restructuring of regional urban space. The goal is to build a theoretical framework for regional urban space restructuring research based on China's national conditions, contributing exploratory research findings to the perfection of China's regional development theory (Hao, 2006).

To propose feasible paths for the restructuring of urban space in the Northeast region: Considering the existing conditions in the Northeast region, such as functional homogeneity of central cities, loose structure of city clusters, weak competitiveness of regional central cities, and slow progress in regional spatial cooperation and integration, the study will follow the mechanisms of regional urban space restructuring. It aims to propose feasible paths and safeguard measures for the restructuring of urban space in the Northeast region, providing strategic support and scientific evidence for optimizing the urban space system in the area.

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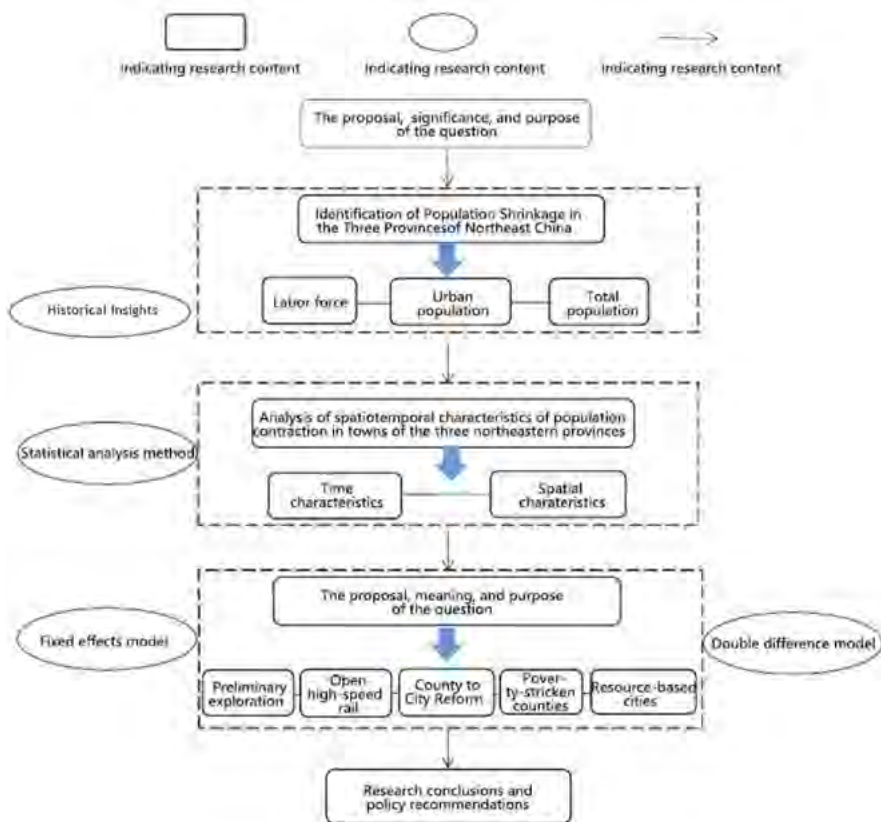
RESEARCH FRAMEWORK

Fig. 1. Research Framework. By combining historical insights with advanced analytical techniques and interdisciplinary approaches, this research framework aims to create sustainable, high-quality urban development strategies that are informed by past experiences and tailored to contemporary challenges.

RESULTS FROM STUDY

The Results from this study illuminate the complex patterns of urban contraction along the Chinese Eastern Railway, and provide a framework for deploying significant, high-quality urban development strategies, with particular attention given to historical heritage conservation. Organized through three distinct methodological lenses, the findings underscore the urgency of tailored development approaches.

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1 SPATIAL MATHEMATICAL STATISTICAL ANALYSIS RESULTS:

- Urban Space Quality and Quantity: Decline in both quality and quantity of urban spaces is notable in regions historically dependent on dwindling heavy industries, with high-resolution imagery and UAV data highlighting extensive land abandonment and infrastructure erosion.
- Contraction Hotspots: Spatial analysis identifies critical zones of intense population decline and economic stagnation, primarily located in areas with limited accessibility and advanced environmental deterioration.
- Potential Growth Areas:** These are pinpointed as regions near transport hubs or emerging industry sectors, marked by superior infrastructure and enhanced quality of urban spaces.

2 TYPOLOGICAL COMPARATIVE RESEARCH METHOD RESULTS:

- Typologies of Shrinking Towns:This categorization based on industrial foundation, geographic setting, and demographic trends aims to inform targeted development strategies.
- Horizontal Comparations: Across different municipalities, commonalities include industrial fallouts and infrastructure issues, though particular contraction influencers vary, necessitating bespoke strategies.
- Development Decision Trees: These trees provide strategic pathways catering to each town typology, highlighting avenues for economic diversification, infrastructural refurbishment, and enhanced community participation.

3 INTERDISCIPLINARY THEORETICAL METHODS RESULTS:

- Holistic Development Strategies: Leveraging insights from multiple disciplines, these strategies address the complex nature of urban contraction through sustainable growth, social inclusion, and economic reinforcement.
- Intelligent Targeting System: A data-driven system to optimize intervention prioritization and resource distribution, aiming to rejuvenate areas with high redevelopment potential.
- Policy Recommendations: The interdisciplinary perspective informs policy suggestions such as encouraging new industrial sectors, improving public services, and fostering environmental restoration.

4 STRATEGIES FOR HISTORICAL HERITAGE CONSERVATION:

- Assessment and Documentation: Systematic recording of historical sites to gauge their condition and significance.
- Integration into Urban Planning: Harmonizing new development initiatives with the conservation of historical sites, ensuring these landmarks are preserved and incorporated into the city's evolving landscape.
- Community Engagement and Education: Encouraging local communities to engage with and take pride in their heritage, fostering a collective responsibility towards its conservation.
- Financial and Policy Support: Implementing financial incentives for conservation projects and establishing protective legislation to safeguard historical sites against potential encroachments by modern development pressures.

These results and strategies collectively frame a comprehensive blueprint for addressing the multifaceted challenges faced by towns along the Chinese Eastern Railway, enhancing their capacity for sustainable and culturally respectful development.

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DISCUSSION

HISTORICAL CONTEXT AND CONTEMPORARY LINKAGES

The development of the Middle East Railway and its surrounding urban areas dates back to the early 20th century, driven by both strategic and economic imperatives. This railway facilitated the movement of resources, people, and goods, bolstering the industrial capacities of the Northeast. Cities along the railway thrived as industrial hubs, attracting workers and fostering urban growth. However, this growth was heavily dependent on industries that have since declined due to various factors, including resource depletion, technological changes, and shifts in global economic patterns.

The historical reliance on heavy industries has left a legacy of environmental degradation and socio-economic challenges. The contraction of these urban spaces is not merely a contemporary issue but a continuation of historical trends exacerbated by modern economic dynamics. For instance, the shift from a planned economy to a market-oriented economy has exposed the inefficiencies and unsustainability of the region's industrial base. Moreover, the migration of populations to more prosperous regions underscores the need for a reevaluation of the Northeast's urban development strategies.

LESSONS FROM HISTORY FOR CONTEMPORARY PLANNING

Analyzing the historical evolution of the Northeast's urban spaces can provide valuable lessons for contemporary planners. One significant lesson is the importance of economic diversification. The historical dependence on a narrow industrial base has proven to be a vulnerability. Contemporary strategies should focus on diversifying the economy, promoting high-tech industries, and leveraging the region's cultural and natural assets to attract tourism and service-oriented businesses.

Another lesson is the need for sustainable development practices. The environmental degradation resulting from historical industrial activities calls for a concerted effort to restore ecological balance. This includes implementing green technologies, promoting renewable energy, and integrating ecological considerations into urban planning processes. Sustainable development not only addresses environmental concerns but also enhances the quality of life for residents, making the region more attractive for potential returnees and new settlers.

A SYMBIOTIC GOVERNANCE MODEL

The proposed symbiotic governance model emphasizes the integration of ecological, social, and economic dimensions in urban development. Key strategies include:

1. Ecological Restoration: Implementing projects to restore and protect natural environments, enhancing green spaces, and promoting sustainable land use.
2. Societal Engagement: Strengthening community networks, cultural heritage preservation, and improving public services to foster social cohesion and resilience.

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3. Economic Innovation: Supporting innovative economic activities, such as technology-driven industries and creative sectors, to stimulate economic growth and job creation.

CONCLUSIONS

This paper emphasizes the critical importance of understanding the historical context of urban development in Northeast China to inform contemporary planning strategies. By adopting a symbiotic approach that balances ecological, social and culture, and economic dimensions, the region can address the challenges of urban contraction and achieve sustainable development.

The historical analysis reveals that the region's dependence on heavy industry has led to economic vulnerabilities and environmental degradation. Contemporary planners must learn from these lessons by promoting economic diversification, sustainable development practices, and the integration of advanced technologies. These strategies can revitalize urban spaces, attract new residents and businesses, and ensure long-term prosperity.

The study's findings highlight the necessity of a multi-faceted approach, utilizing spatial mathematical statistical analysis, typological comparative research, and interdisciplinary theoretical methods. This comprehensive methodology provides a robust framework for understanding urban shrinkage and developing targeted, high-quality development strategies.

Ultimately, this research offers valuable insights for policymakers and urban planners, not only in Northeast China but also in other regions facing similar challenges. By drawing on historical lessons and employing innovative, symbiotic governance models, these regions can overcome the limitations of their industrial past and pave the way for a sustainable and prosperous future.

NOTES ON CONTRIBUTOR(S)

Yipeng Zhang, a graduate of the University of Melbourne, where He earned both my bachelor's and master's degrees in landscape architecture. Currently, he is a first-year PhD student at Harbin Institute of Technology, specializing in urban and rural planning under the mentorship of Professor Zhao Zhiqing. My research focuses on Tourism Planning and Rural Revitalization in Tieling City, as well as Controlled Detailed Planning in Dalian City.

Zhao Zhiqing, male, professor, doctoral supervisor, currently serves as the assistant dean of the School of Architecture at Harbin Institute of Technology, the dean of the Institute of Urban Planning and Design at Harbin Institute of Technology, and the head of the postdoctoral research workstation. He also serves as the director of the China Russia Chinese Eastern Railway Cultural Heritage Protection Innovation Research Center, with profound academic influence in the fields of urban planning and architectural protection.

Bingrui Yang is a landscape architect with degrees from the University of Melbourne. She has practical experience from interning at Tongji University Architectural Design and Research Institute Co., Ltd. Her design philosophy revolves around innovation and sustainability, aiming to create landscapes that harmonize with the environment.

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Modernization from Road-building and Transport Planning
The Modern Hankow British Concession

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Abstract

The urban spatial structure of the modern Hankow British Concession is vastly different from that of the adjoining Old Town. Its mode of urban planning and construction had a profound impact on the modern transformation and urban development of modern Wuhan. Previous studies have discussed the concepts of Roadism with Guangzhou as an example, but there is insufficient knowledge related to other treaty ports cities in modern China. This study uses the research methodology of urban morphology to analyse historical evidence from primary archives to investigate the "top-down" process of road-building and transport planning in the Hankow British Concession. As also, the paper discusses the evolution of road networks, block plots and architectural spaces in the Concession under the influence of the construction administration system. Road-building and transport planning was the main way in which the British colonial authorities organised the basic framework of the spatial form of the Concession, as well as an important means of governing the social space and improving the lives of the residents. The construction and development process of the road system in the Concession implies the causes, explicit characteristics and hidden order of the modern development of Hankow and Wuhan city in modern times.

INTRODUCTION

The former Hankow British Concession was opened in 1861, and remained under British administration for the next 66 years. It has become a Western-style settlement with colonial self-government along the Yangtze River, which contrasts sharply to the traditional Hankow town along the Han River. The spatial development of the Concession in the early years began with the network of roads, which were used by the first consul in Hankow to frame the boundaries and divide the land into blocks. Unlike the fishbone-like long streets and short alleys of the Old Town, the grid-straight roads of the British Concession reflects the traces of topography and historical events, and suggests the differences between the logic of urban development in different areas of the Wuhan city.

Focusing on key spatial and temporal fragments in the construction of the road system in the Hankow British Concession, this paper analyses the primary archival materials and documents and historical maps from The National Archives, UK. This paper attempts to explore the ways in which the Concession authorities constructed and managed road space, the means of space and social governance, and the commercial logic behind the urban form. In fact, the British colonial authorities used the road-building and transport planning as an important means of rapidly capturing commercial interests in treaty ports, and created Western, modern social and cultural spaces for the concession's occupants.
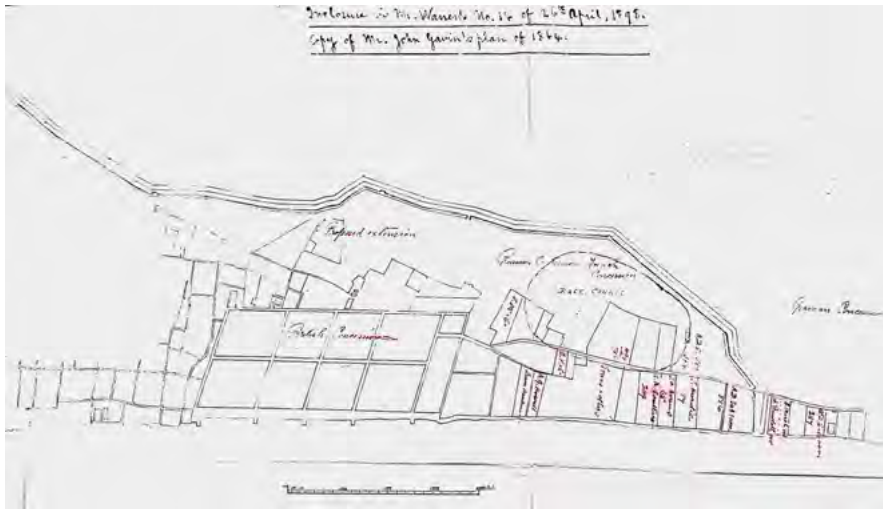
Fig. 1. Historical map of the Hankow British Concession, 1864.[2] A parallelogram of roads divides the 10 blocks of the concession

ROADS AS THE BASIC FRAMEWORK OF THE HANKOW BRITISH CONCESSION

The Hankow British Concession focused on building its road system from the very beginning of its construction. The crisscrossed roads framed the boundaries of the concession, divided the internal blocks, connected the transportation of goods. The building facilities of the Concession were also laid out along the roads. Under the conscious construction administration actions of the authorities, the road system formed the basic spatial pattern of the concession, and became an important administrative tool to demarcate autonomous areas, manage and lease land, and manage colonial trade within the concession.

ROAD-BUILDING DETERMINED THE DIRECTION OF SPATIAL DEVELOPMENT IN THE CONCESSION

When the Hankow British Concession opened in the 1860s, the first important task facing the first British Consul William Gingell, was to dispose the lots to British merchants in the Concession efficiently, reasonably, and relatively equitably. He paid a sum to the local government for a strip of the concession ground running its whole length, and asked each of the British applicants for his share of the sum and at once mark off each lot and give it into possession of the British applicant.[1] This mode of taking possession of lots directly determined the spatial form in the early stage of the development of the Concession. Under the unified arrangement of the consulate, the area of the Concession was redrawn into 18 lots, which were further divided into 72 parallelogram plots of similar scale and area by the intersection of parallel roads and roads intersecting the Yangtze River at an angle of about 72°. It can be surmised that the 18 lots consisted of a consulate lot, a cemetery lot, and 16 street frontage lots laterally divided from the 8 commercial blocks. The diagonal concession roads were relatively consistent with the angle of the road texture in the Old Town of Hankow, reflecting a certain adaptability of the concession land division to the original texture of the area.

The construction at the beginning of the Hankow British Concession was characterised by a typical East Asian colonial planning and management of British concessions and settlements,[3] as well as by early functionalist influences from Europe and the United States. Peripheral roads in four directions framed the autonomy of the concession, separating it from the traditional Hankow town and fields. The grid-straight roads running in both directions facilitated the efficient movement of goods between the river wharves and the plots of land within the boundaries. The 8 commercial blocks were basically of the same scale, and were evenly divided into two groups of upper and lower plots, with at least one side of each individual plot fronting on the street. Equally sized plots and street frontages became the standard unit of land lease, facilitating mapping, subletting and management. A wide bund has been built along the waterfront, leaving plenty of room for wharves and boats.

The disposition of lots and construction of roads in the Concession were dominated by British consular officials and also influenced by the British navy and British merchants, with the main considerations of economy, traffic, efficiency of construction and security of residence.

During this period, the road-building and transport planning of the Hankow British Concession was mainly inherited from the general pattern of Western-style colonial planning. The basic framework and the urban form of the Concession, which was centred on the idea of serving the colonial trade, was constructed under the management of the invaders who did not have any professional knowledge of the background of planning.

THE ROAD-BUILDING AND TRANSPORT PLANNING BECAME THE PRECURSOR TO THE HANKOW BRITISH CONCESSION EXTENSION

At the end of the 19th century, taking advantage of the extension of the Hankow British Concession towards the city's north-west wall, the Municipal Council also systematically expanded its power to encroach on land outside the Concession in the name of road-building. The responsibility for land transactions, management and road- building in the extended area of the Concession was mainly assumed by the Municipal Council. The Municipal Council firstly compulsorily purchased the housing estates already acquired by Chinese and foreign merchants in the extended area. This work was not fully completed until 1902.[4] In the same year, a new revised Land Regulation was promulgated, and the Municipal Council was legally empowered to purchase land leading or being out of the Concession in accordance with the new provision added to the regulation. The Regulation gave the Council the power to acquire land outside the Concession for the purpose of converting the same into roads, public buildings and offices, or public gardens and places of recreation and amusement. The road system of the Concession further became a means of transborder occupation and spatial extension by the British colonial authorities.

Both the old and new boundaries of the Hankow British Concession were defined by roads. The internal roads of the extended area no longer continued the parallelogram grid of the Concession in 19th century, and an irregular urban texture emerged. The land tenure situation and urban form faced by the Council in this period were more complicated than those in the 1860s, as there were already divided plots, built-up roads and properties in the area. Considering that creating the new roads from the original roads of the Concession to the extended area in a straight line was too expensive, the Council decided to build the new area based on the original roads and plot pattern of the site.

Comparison of the 1898 and 1903 historical maps of the Hankow British Concession confirms that the land divisions and road-building of the extension mirrored the original physical texture of Chinese and foreign merchants' properties in the area. As a result, the extended area underwent significant changes. Although the road network basically maintained the shape of the crisscrossed grid, the vertical roads had no longer maintained a uniform angle, and diagonal roads that do not connect to the Bund appeared. The scale and shape of the blocks changed, confined to the shape of the city wall and resulting in pentagonal and triangular shaped blocks. The property plots in the extended area revealed irregular shapes and sizes.
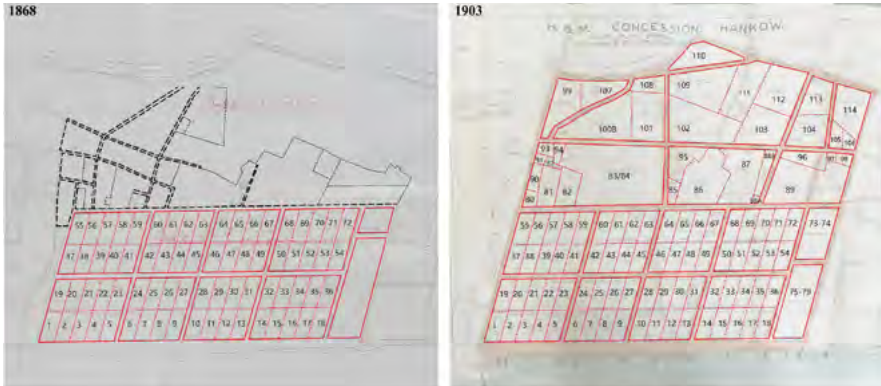
Fig. 2. Comparison of the Urban Form of the Hankow British Concession in 1868 and 1903.[5] Roads and blocks construction in the extended area partly followed the original physical texture

To sum up, the road system of the former Hankow British Concession, as the basic framework of the settlement, was used by the colonial authorities to define and extend the boundaries of self-government, to regulate land transfers, and to organise trade routes from the wharves to the hinterland. In the early period of the opening of the treaty port, the Concession was constructed on the wasteland of the fields. Therefore, the road-building and transport planning followed the colonial square grid planning, ignoring and overriding the original texture in the environment. At the beginning of the 20th century, the Hankow British Concession was entering into the real estate boom gradually. As land rents had risen, the cost of continuing the previous road grid had been prohibitively high, so the construction of the roads and blocks in the Concession Extension reflected a compromise on topography and tenure relationships.

ROAD-BUILDING AND TRANSPORT PLANNING AS THE MEANS OF SPATIAL GOVERNANCE

In the 20th century, public utilities and municipal construction in the Hankow British Concession developed rapidly. Under the goal of municipal improvement, the Land Regulation and Bye-laws of the Hankow British Concession revised and added provisions related to roads and transport year by year. The provisions expanded the authority of the Council on the control of road construction, and regulated that pedestrians on the roads behave in an orderly and modern way. The rules and bye-laws related to roads and transport in the Concession has been modernised. Guided urban planning emerged in the way the Municipal Council constructed and maintained the road system. The Council actively participated in the control of urban affairs and the management of social space in the Concession through the widening of roads, the adjustment of road corners, and the transformation of the shape of the street.

The Version	Relevant Positions: Quantities	Relevant Provisions: Serial Numbers	Relevant Provision: Content Summary
1874[6]	6	6, 7, 9, 10, 13, 16	The management of the roads and the laying out and repairing and closing thereof, shall be vested in the Municipal Council.
			The abatement of nuisance and the penalty of owners shall be vested in the Municipal Council.
			The management of the roads and the laying out and repairing and closing thereof, shall be vested in the Municipal Council.
			The abatement of nuisance and the penalty of owners shall be vested in the Municipal Council.
1902[7]	7	6, 7, 9, 13, 15, 18, 22	The road sanitation shall be vested in the Municipal Council.
			No owner or occupier of land or buildings outside of and abutting on the British Concession shall be allowed to have an entrance or entrances on to the Concession without a license first obtained from the Council and countersigned by H.B.M.'s Consul-General.
			The management of the roads and the laying out and repairing and closing thereof, shall be vested in the Municipal Council.
			The abatement of nuisance and the penalty of owners shall be vested in the Municipal Council.
1916[8]	12	30, 31, 32, 33,	The road sanitation shall be vested in the Municipal Council.
			The construction and renovation of road sewage systems shall be vested in the Municipal Council.
			The rules and regulations for street traffic must be observed.
			No fireworks, the Chinese procession, and the transit of troops are allowed in the street, except when provided with a permit.

Table 1. Collation of road and traffic regulations in Hankow Municipal Regulations and Bye-laws of the British Concession. There are a total of 8 different versions of the Hankow British Concession Land Regulations that can be verified, and only 3 representative versions are summarised here.

ROAD AND TRAFFIC REGULATIONS: A TOOL FOR IMPROVING THE QUALITY OF URBAN SOCIETY AND THE QUALITY OF LIFE OF ITS SETTLERS.

In the 19th and 20th centuries, the number of road and traffic regulations and bye-laws in the Hankow British Concession in continued to increase, and the object of the provisions expanded from non-human road facilities to the settlers themselves. The cultivation of modern civic consciousness in the regulations was a manifestation of the modernisation of municipal administration. The first category of road bye-laws and regulations stipulated the responsibility of the Municipal Council for the management, laying out, and repair of the road system. After many revisions, the scope of its control has gradually expanded from the road proper to include drainage facilities, road sanitation, road occupancy, and many other aspects. The second category of traffic bye-laws and regulations appeared in the 20th century, regulating

the activities and behaviour of passers-by and drivers to ensure road safety and tidiness while maintaining traffic order. In the process of improving the road and traffic regulations in the Concession, the text of the regulations was gradually standardised, the rights and responsibilities of all parties were gradually clarified. More importantly, the development of the social and cultural space in the Concession was guided by the authorities.

MUNICIPAL IMPROVEMENTS: CONSTRUCTION OF ROAD SYSTEMS ADAPTED TO MODERN MEANS OF TRANSPORT

Roads, as 'consumables' in the space of the concession, required constant maintenance, material and construction improvements. In the 19th century, the Hankow British Concession used to lay gravel and bricks on top of compacted dirt roads, which caused a lot of dust and a rapid consumption of pavement materials. At the end of the 19th century, the Council introduced the use of concrete and cement to build sidewalks to separate passers-by from vehicle. In the 20th century, the emergence of motorised vehicles became a direct cause of innovation in road construction. Motorised vehicles had a gravity and speed unmatched by horse-drawn carts and rickshas, causing concession roads to collapse and raise dust. To make matters worse, the parallelogram road grid and the narrow width of the roads led to blind spots and steering difficulties for motorists. At the same time, the irregular driving behaviour of motorists also strongly endangers public safety in the concession.

The popularity of new types of transport placed new demands on the authorities to manage public affairs in the Concession space. In order to cope with the new situation, the Municipal Council of the Hankow British Concession actively improved the roads, and the specific measures included replacing the road surface materials, widening the roads, and rounding off the corners of the roads.[9] On the other hand, the Annual Meeting of Ratepayers and the Municipal Council successively introduced institutional norms for the movement of motor vehicle traffic within the concession, and registered and controlled car drivers. With the active intervention of the authorities, the road traffic facilities in the Concession widely accommodated the construction methods, building materials, and means of transport that circulated with the colonial trade, and were in line with the advanced Western road construction concepts and technologies.

The widening of roads and the adjustment of road corners changed the street pattern of the Concession, which in turn influenced the design of facades, entrances and plans of the new buildings at the intersections of the Concession. The unique non-orthogonal road network of the Hankow British Concession became the background for the spatial strategy and design of the buildings in the early 20th century, and the authorities' control of the road system in plan indirectly influenced the vertical architectural and urban landscape.

The evolution of the road space in the Hankow British Concession was driven by the external force of technological change and the internal force of municipal improvement. In the early 20th century, the authorities strongly promoted the development of the road framework and street style of the Concession towards modernisation. The quality of space and life in the Concession towards modern civilisation.
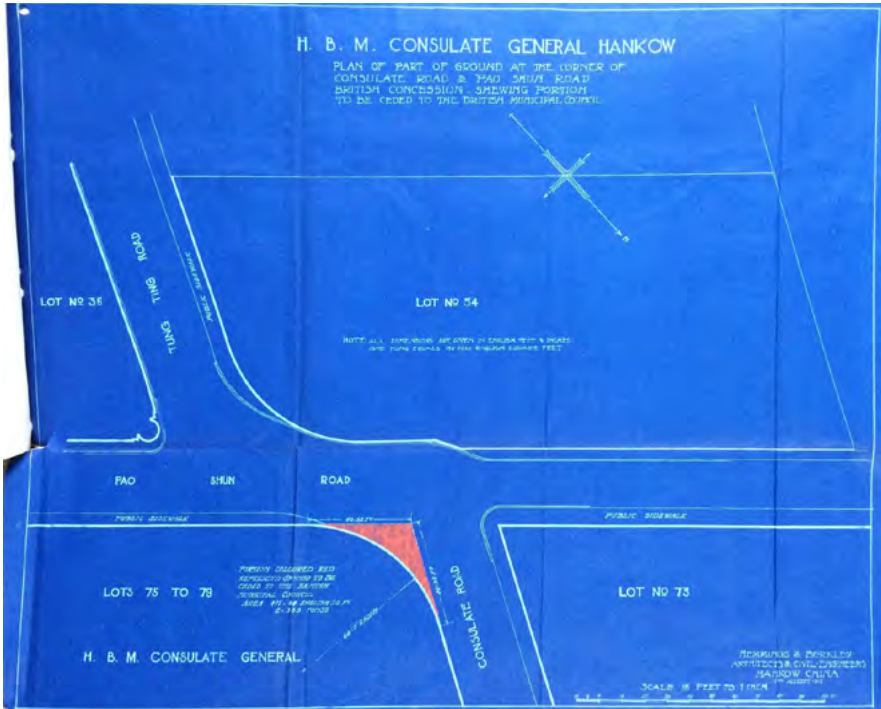
Fig. 3.   The widening of roads and the adjustment of road corners in the Hankow British Concession.[10]
Shewing the portion ceded to the British Municipal Council

SPROUTING OF MODERN URBAN PLANNING IDEAS IN ROAD–BUILDING AND TRANS-PORT PLANNING

In the 1920s, the Council began to apply modern urban planning ideas and methods to the construction of roads and blocks in the Concession. In 1919, the Council acquired the property of Lot 89 in the Concession, and combined it with the Lot 96 which was originally owned by the Council to form a more complete block. In the same year, the Municipal British School was built on Lot 89 by resolution of the Annual Meeting of Ratepayers.[11] Prior to this, the adjoining Lot 96 had already contained a market run by the Council, a Sikh's gurdwara, and the barracks and stables of the Concession Fire Brigade. These municipal facilities were located in the northernmost part of the entire Hankow British Concession, sandwiched between the two main north-south roads, with the Russian Concession across the street to the north. The length of the longitudinal street profile of this block reached 494 feet 3 inches. In the following years, the barracks for the Volunteer Corps, the Union Jack Club and some quarters for inspectors and staff of the Municipal Council were built in the block.[12] There was a further increase in public buildings, with a high volume of daily pedestrian traffic and progressively more serious problems of road congestion.

Fig. 4.   Impact of Public Facility Construction on the Subdivision of Lots 89 and 96.[13] The Municipal
Council built a new east-west road in this large-scale block to smooth the traffic flow
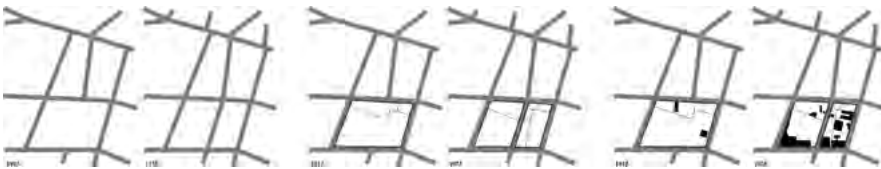
Fig. 5.   The urban morphological transforming in Lots 89 and 96. The new road had an important
impact on urban fabric

In order to plan for new municipal space and to divert public transport, the Council built a new east-west road in this large-scale block to redivide the two blocks. The improvement of the road system in the concession area profoundly affected the development of the urban form at different levels, such as block texture, building facilities, etc. Furthermore, the authorities of the Hankow British Concession drove real estate development and urbanisation through road-building and transport planning, demonstrating a certain amount of modern urban planning ideas and guiding characteristics.

THE ROAD SYSTEM AS A SHOWCASE FOR WESTERN MODERN CIVILISATION

The modern and well-organised streets and urban landscape of the Former Hankow Concession contrasted sharply with the organically grown, narrow and crowded street spaces of the Old Town. In the Hankow British Concession, the Bund along the Yangtze river is undoubtedly

the most visible. This avenue articulated the port terminals, the Hankow Customs House, the British Consulate, and well-capitalised foreign firm buildings, planted with wide riverside green belts, and formed the centre of European life in the treaty port.[14] The road system of the Concession including the Bund also acted as a window of Western modern civilisation, presenting modern urban construction administration to the Chinese public, providing a reference for Wuhan's urban road- building and transport planning from the late Qing to the Republican period.

THE BUND WAS THE CENTRAL SPACE FOR THE POLITICS, ECONOMY AND SOCIETY OF THE HANKOW BRITISH CONCESSION

The idea of the bund is not only the road itself, but included the architecture alongside it, piers and jetties, the pedestrian walkway and the landscape park that travelled parallel to the waterside. The space of the bund was influenced by the Municipal Council, the foreign companies and merchants of the Concession, the Customs and the British Navy, etc. The Customs House and the Consulate, located at the two ends of the bund, dominate the entire avenue of the Hankow British Concession. The Customs House was close to the Old Town and the British Consulate was far away, this spatial distance suggested the relationship between their power and duties and those of the Chinese side. The longitudinal roads leading to the bund corresponds to the wharves, which were conducive to efficient land and waterborne trade and freight transport. The residences and office buildings of the foreign firms along the street showed their wealth and strength as much as they can under the unified architectural control. The green belts along the river formed a landscape axis parallel to the road, which taked care of the settlers' social and civilised life in the Concession.

Generally speaking, the Municipal Council constructed and administrate the space within the waterfront, while the foreign companies and merchants dominated the wharves and the river. According to the Land Regulations and Bye-laws, the responsibility for the construction, repairing and management of the wharves, piers and jetties on the bund belonged to the Municipal Council. However, in practice this function was ceded by the Council to the major foreign firms that leased the bund frontages. The ceding of municipal control over the bund frontages to commercial interests suggests that the nature of municipal construction and administration by the Concession authorities also served the colonial trade. It also reflects the importance of the bund as a stronghold of British colonial commercial settlements in China.
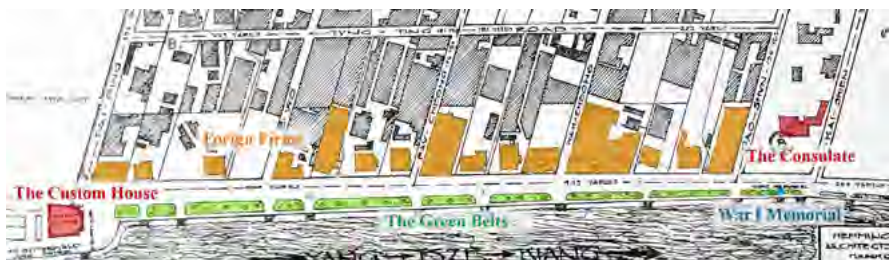
Fig. 6.　　The bund of the Hankow British Concession, 1925.[15] Buildings and municipal facilities on the bund showed a competitive spatial relationship

INFLUENCE OF THE ROAD-BUILDING AND TRANSPORT PLANNING IN THE CONCESSION ON THE URBAN PLANNING OF MODERN WUHAN

Since 1846, when the Committee on Roads and Jetties had been established by the first Land Renters' Meeting of Shanghai British Concession, the municipal construction and administration mode, mainly based on road construction, was introduced into the treaty ports and cities of modern China. In 1905, Zhang Zhidong, the Viceroy of Huguang, set up the Hanzhen Road Engineering Bureau as a specialised agency for municipal construction in Hankow in the late Qing Dynasty. This event marked the beginning of modern urban planning in Hankow. In the 1910s, he also set up the Road Engineering Bureau, constructed the grading system of streets and roads, and built the road network of the Hankow Old Town. The urban planning and construction mode with the modern road transport system as the forerunner subverted the traditional construction method of building houses first and forming streets later. Hankow's new residential areas and markets expanded inland along with the roads.

In the 1920s and 1930s, the government of Hankow Special City led a series of municipal reforms and construction campaigns, and the construction of roads along the Yangtze river and Han river in the Hankow Old Town was listed as the first project. According to Dong Xiujia, the chairman of the Municipal Council of Hankow Special City, roads were the arteries of the city, and all functions and facilities in the city were linked to roads.[16] Roadism greatly influenced the urban planning ideas and construction patterns in Chinese treaty ports during this period. The role of the construction and administration of the road system in the concessions and settlements in guiding this historical process should not be overlooked.

CONCLUSION

The road-building and transport planning in the former Hankow British Concession reflects the urban planning and construction ideas of the Concession authorities, which were mainly based on commercial interests. The road transport system became a tool and means of spatial governance, shaping the port city form of the Concession, improving the behavioural quality of the settlers, and reconstructing the economic and cultural space along the river in Hankow. It is of academic significance to analyse the urban construction administration system of the British Concession in modern China from the perspective of the road transport system, and to clarify the development strategy of modernisation of Chinese cities. This paper also helps to deeply understand the value of the road system in the concessions as an urban heritage, which has certain current practical significance.

NOTES ON CONTRIBUTOR(S)

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IMAGE SOURCES

Figure 1	The National Archives, UK: F.O. 228/1276, 1898.
Figure 2	Redrawn by Jierui Lyu, The National Archives, UK, F.O. 228/1276, F.O. 228/1502.
Figure 3	The National Archives, UK, F.O. 229/1945, 1915.
Figure 4	Redrawn by Jierui Lyu, The National Archives, UK, F.O. 228/2143, F.O. 228/3187.
Figure 5	Redrawn by Jierui Lyu, The National Archives, UK, F.O. 228/2143, F.O. 228/3187.
Figure 6	Redrawn by Jierui Lyu, The National Archives, UK, F.O. 228/3187.

Planning Impacts (1)

Chair: Christopher Silver

Sharing the good life
The contributions to urban studies of Colin Clark (1905-1989)

Robert Freestone
UNSW Sydney

Abstract

Colin Clark was foremost an economist and secondly an urbanist, but in the latter often interconnected role he made a significant contribution to the emergence of urban studies as an interdisciplinary field. Clark's expertise in economic statistics and his appreciation of the role of cities and regions in economic development saw him make contributions from the 1930s to the 1970s, primarily within a scientific paradigm. His interests ranged broadly across transportation, settlement, population, and spatial structure, bringing a data-driven and inductive curiosity to try to unpack patterns and trends in his search for higher-level descriptions and explanations of urban phenomena. Clark was suspicious of theory and pragmatically set all his work in real urban settings. Much of his foundational and most of his original urban analysis was conducted in Australia from the late 1930s to the early 1950s. He maintained a high public profile as a media commentator and enthusiastic conference participant into the 1970s. This paper introduces and seeks to position Clark's writings and, in focusing on their impact, strengths and weaknesses, seeks to position them in an appreciation of his role in the emergence of urban studies as an independent field.

Robert Freestone
Sharing the good life

From a Dying City
Towards the City of Man
The Marcosian State Urbanization
of Pasay in Metropolitan Manila

Marie Christine Marasigan, Reniele Littaua
University of the Philippines Baguio

Abstract

In 1975, Presidential Decree 824 formally established the Metropolitan Manila in the Philippines and integrated Pasay City as part of the new larger urban region. This incorporation served to demonstrate the Marcos Regime's vision of creating a 'City of Man,' a central component of their nativist-nationalist cultural ideology rebranding of 'New Society.' The said initiative was ideally aimed to alleviate the postcolonial urban decay of the capital city of Manila but was also relatively aligned with the global trend of restructuring cities in response to the forces of globalization affecting many countries during the 1970s. In light of this account, this paper presents a historical overview of the Marcosian structuring of Pasay City as a 'City of Man' and its linkages to land usage, social phenomena, and persistent continuities. Mainly, it traces the urban transformation of Pasay City from being a predominantly residential and commercial area to being a national center of cultural and financial activities from the 1970s onwards, within the urban arrangement of the National Capital Region (NCR). To accomplish this, Pasay City was used and analyzed as a historical case study concerning its broader national and international context: the Marcosian urbanism tied with neoliberal development and dictatorial reorganization of the Philippines under the guise of 'New Society,' as well as the political and economic urbanism of authoritarian states in Southeast Asia. With this case analysis of Pasay City in mind, the paper ultimately elucidates the socio-political forces that shaped urban landscapes in the Philippines during the Marcos regime, fostering a deeper understanding of national urbanization processes in neoliberal and authoritarian contexts and their enduring repercussions in contemporary times.

How to cite
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Rescuing the Sinking City
A Strategy to Create Sustainable Megacity Jakarta

Christopher Silver
University of Florida

Abstract

In 2022, I published Urban Flood Risk Management: Looking at Jakarta (Routledge). Although several papers at past IPHS (2016 and 2018) and several book chapters (see below) have examined facets of the flooding and water management history of Jakarta, the book project offers a more comprehensive historical assessment on Jakarta's enduring water management challenges and various interventions to deal with them. The research wrapped up shortly before Indonesia President, Joko Widodo, announced plans to move the capital from Jakarta to a new capital city built in East Kalimantan (Borneo) based on green and sustainable principles and as a counterpoint to the failures of "sinking city" Jakarta. Will the massive investment required to build the new capital city divert attention and resources problems from Jakarta, problems that justified creation of the new capital city in the first place? Despite attention to the new capital project, there is still significant pressure to devise a workable strategy to manage the city's environmental infrastructure to reduce flooding, to clean up surface waters and to address land subsidence that contributes to the scope of flooding. In this paper, drawing upon the historical framework of my 2022 study, coupled with new research on current flood mitigation strategies in Jakarta, it will discuss the implications of various approaches tried but none wholly successful to effectively deal with flooding. Kusno's recent study, Jakarta: City of a Thousand Dimensions, identifies a variety of initiatives proposed or tested to address flooding over the past three decades reflecting the views of experts, politicians, community advocates and development interests. Their conflicting positions have not worked but have engendered a paralysis of action. The position in this paper is that simultaneous application of multiple mitigation and adaptation strategies can create a path forward and this paper attempts to frame that path forward.

How to cite
Christopher Silver, "Rescuing the Sinking City: A Strategy to Create Sustainable Megacity Jakarta." In Ian Morley and Hendrik Tieben (eds.), *International Planning History Society Proceedings*, 20th IPHS Conference, "The (High Density) Metropolis and Region in Planning History," Hong Kong, 2 - 5 July, 2024, TU Delft Open, 2024.

Tracing Jakarta's Flood Disaster Risks from Pre-Colonial Times to the Megacity Age

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Abstract

Jakarta's relationship with water has been a defining feature of its history. This study delves into the evolution of flood risk in Jakarta, tracing its transformation from a manageable natural cycle in the pre-colonial era to the chronic disaster of the modern megacity. Through the lens of urban development since the Dutch colonial period, this paper examine how successive waves of transformation, from land reclamation to rapid population growth, have exacerbated flood vulnerability. This study analyzes the colonial legacy of infrastructure projects, the impact of post-independence development policies, and the rapid urbanization in shaping flood risk patterns. By drawing on historical data from National archives and spatial analysis on population density change, land use change, and flood characteristics change in every 20-years period of time, this paper map the shifting footprints of water, land, and human settlements, revealing how colonial infrastructural interventions, rapid land use change, and environmental degradation have exacerbated urban flooding. Ultimately, this study offers a nuanced understanding of Jakarta's flood crisis, challenging singular narratives of development and vulnerability. It argues that building a flood-resilient Jakarta requires not just technological advances, but a critical analysis of historical legacies.

Planning Practices and Ideas (3)

Chair: John Pendlebury

Khartoum, Jerusalem and Alexandria as seen and planned by W.H. McLean

John Pendlebury, Cristina Pallini
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Abstract

The Scottish engineer W.H. McLean (1877-1967) qualified from Glasgow University in 1899. After first working on several major Glasgow infrastructure and railway projects (1900-1906) he moved to Sudan (1906-1913), gaining the confidence of Lord Kitchener who, following the battle of Omdurman of 1898, entrusted him the planning of Khartoum (1910). In 1913, Kitchener transferred McLean to Egypt with the title of "Engineer-in-Chief, section Municipalities and Commissions". In this capacity, from 1913 to 1926, McLean worked on various plans for some fifty towns, spending much of his time as an Engineer to the Municipality of Alexandria. For Egypt, McLean proposed a '"National and Regional Development Planning Scheme" addressing the needs of the country as a whole and of the regions into which it might be naturally subdivided. Soon after the occupation of Palestine in December 1917, the British military authorities called upon McLean to prepare a town-planning scheme for Jerusalem (1918). At the time, Khartoum, Jerusalem and Alexandria differed greatly. Khartoum was a polycentric form of settlement at the confluence of the White and Blue Nile, including the new European town which served as a bridgehead into the interior of Africa. The ancient city of Jerusalem posed major problems of preservation, particularly of the Holy Sites and surrounding natural environment. Alexandria was a booming cosmopolitan port with a large European population. By using McLean's account in his book "Regional and Town Planning in Principle and Practice" (London: Lockwood, 1930), maps, photos and travel descriptions, our paper will reconstruct the reality of the three cities immediately before the plan, discussing what "past" and "future" means in each different context. Finally, we will identify which elements of these plans left a mark on the related urban structure.

John Pendlebury, Cristina Pallini
Khartoum, Jerusalem and Alexandria as seen and planned by W.H. McLean

The French Historiography of Urbanisme
Analyzing the Complexity of a Fragmented Field

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Abstract

Research about its historiography shows that planning history was born around the 1970s and grew mainly with an epistemological perspective while taking different paths into various cultural areas (Ward, 2017). France is not an exception. This presentation will recount the complex chronology, the different origins and the main actors of the French urbanisme history through research crossing publications and reports with original interviews. A first narrative appeared with the development of the academic field of urbanisme during the interwar period, but it remained limited and not rooted in research. In the late 1960s and the 1970s, new work emerged in several contexts. One of the first developed in architectural criticism to counter the modern architecture narrative. In parallel, a socio-historical tradition emerged. Research programs launched by the French planning administration underpinned the development of a strong French urban sociology tradition working on planning issues; some of these sociologists chose to work on historical objects. Then, research programs in architecture emerged, renovating the field of architectural history, with some scholars working on key architect-planners or urban developments. Therefore, in the 1980s, the history of urbanisme evolved beyond these programs. Growing directly or indirectly from the sociological work done in the 1970s, a socio-history of urbanisme's beginnings focused on the reformist and professional milieus. At the same time, the field of French contemporary history expanded greatly, and a group of scholars began to work on the history of public planning policies after WWI. One main characteristic of French urbanisme history is that, despite an attempt to structure it, it remained disjointed because of this complex origin and despite several strong personal connections. Another characteristic when looking at the global scale is the identification of a French tradition, taking into account the key role of philosophy and, more importantly, sociology at its origins.

Bauhaus Graduates' Urban Planning in the 1950s

Hideo Tomita
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Abstract

Graduates from the Bauhaus implemented urban planning in Europe, the Middle East, and Asia during the 1950s. We clarified their urban planning activities by analysing their designs using published reports and books. Our study reveals the following four points. First, the German Building Academy led urban planning in East Germany, and urban planners, including Edmund Collein (1906–92) and Selman Selmanagic (1905–86), held important positions, and designed new cities in East Germany. Second, in Hungary, Tibor Weiner (1906–65) designed the Sztálinváros. Weiner was involved in constructing the new socialist city of Orsk in the USSR in the 1930s. Third, Arieh Sharon (1900–84) designed 15 new cities in Israel. Fourth, graduate Konrad Püschel (1907–97) was involved in the post-war reconstruction of the North Korean city of Hamhung. All held government or academic positions and led new urban planning in East Germany, Hungary, and Israel. Bauhaus graduates commonly conducted thorough research on the nature, history, culture, and settlement of the area before urban planning using the results of their urban planning. These characteristics were influenced by the general urban planning methods of the 1950s and the analytically oriented education in Bauhaus.

INTRODUCTION

URBAN PLANNING EDUCATION AT THE BAUHAUS AND URBAN PLANNING BY BAUHAUS GRADUATES' IN THE 1950S

Urban planning education at the Bauhaus commenced under the second director, Hannes Meyer (1928–30), and continued under Ludwig Hilberseimer, an urban planning theorist invited to the Bauhaus in 1929[1]. The four main educational outcomes are as follows:

(1) In 1929, under the close guidance of Hannes Meyer, architectural students were responsible for the design of the Dessau-Törten settlement[2]. (2) In 1929-30, the City of Dessau's building department prepared the General Development Plan of the City of Dessau. (3) From 1931, Bauhaus students, under the close guidance of Hilberseimer, conducted an urban analysis of Dessau, the results of which were presented at the 4th CIAM congress (Paris, 1933). (4) The urban analysis of Dessau provided the basis for the 'Junkers Settlement' Project (1932), an industrial city with a socialist character designed by Bauhaus students[3].

Therefore, it can be said that urban planning education at Bauhaus was based on the scientific analysis of the city. The Bauhaus was quick to incorporate the state-of-the-art of the time into its teaching, as can be seen in the 4th CIAM 'The Functional City'[4].

Conversely, during global urban reconstruction after World War II, some Bauhaus graduates led urban planning at the national level (Fig. 1). In East Germany, Bauhaus graduates or people closely associated with the Bauhaus, such as Edmund Collein (1906–92), Richard Paulik, and Selman Selmanagic (1905–86), held key positions in urban planning[5]. In socialist Hungary, Tibor Weiner (1906–65) was responsible for the new urban planning of Sztálinváros (Dunaújváros since 1961) (1950–65). In Israel, Arieh Sharon (1900–84) drew up a national land plan and designed a new town immediately after the founding of the state (1948–53). Konrad Püschel (1907–97) designed the North Korean city of Hamhung as a socialist city at the request of the East German government[6].

PREVIOUS RESEARCH AND AIM OF THIS STUDY

Although the urban planning of the 1950s by these Bauhaus graduates has been studied individually, no studies have taken urban planning education at the Bauhaus as a starting point and look at it cross-sectionally in the context of the Bauhaus graduates. The aim of this study is therefore to provide a cross-sectional overview of urban planning by Bauhaus graduates in the 1950s and to identify commonalities. As research material, the study uses the designers' own published reports and books. The paper is structured as follows: Section 2 describes the German Building Academy that advanced urban planning in East Germany and the Bauhaus staff involved in new urban planning. This is followed by examples of urban planning by Bauhaus graduates in Hungary in Section 3, Israel in Section 4 and North Korea in Section 5. Finally, Section 6 discusses the above in a cross-cutting way.
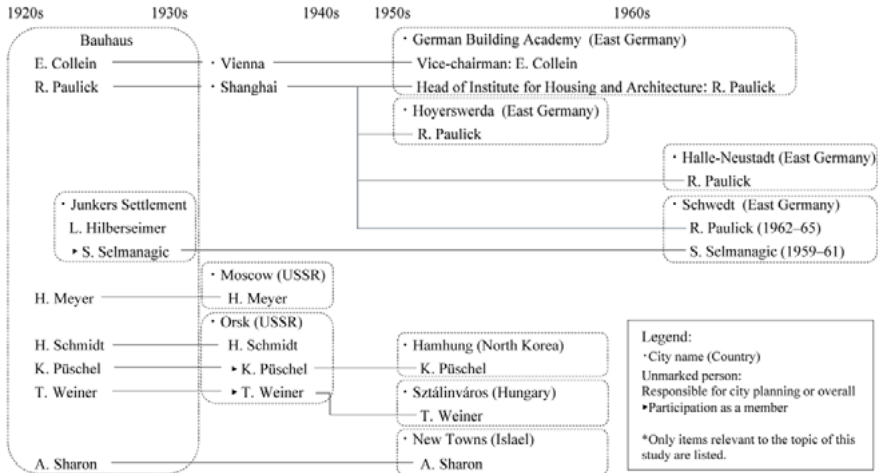
Fig. 1.   Diagram showing the relationship between the Bauhaus people and the urban planning in which they participated.

BAUHAUS GRADUATES ACTIVE IN EAST GERMAN URBAN PLANNING

In East Germany in the 1950s, there was an urgent need to repair the damage caused by the Second World War and to socialise urban space. The German Building Academy (Deutsche Bauakademie), founded in 1951, was at the forefront of these efforts. Its first chairman was Kurt Liebknecht, who had experience of building new cities in Magnitogorsk in the Soviet Union in the 1930s; the vice-chairman was Bauhaus graduate Edmund Collein (1906– 92); and the head of the Institute for Housing and Architecture was Richard Paulick (1903–79), who was not a Bauhaus graduate but was closely associated with Gropius and the Bauhaus. In general, the main features of the inner city space in socialist states can be described as marching streets, centrally located urban squares with adjacent monumental architecture, and housing estates. These elements that characterise socialist cities appeared in the urban planning of the 1930s in the first socialist state, the USSR. The influence of German-speaking architects such as Ernst May, Hans Schmidt and Hannes Meyer, who planned cities as foreign architects, can also be seen[7]. The aforementioned Liebknecht was part of May's team in the design of the New City in Magnitogorsk, while Bauhaus graduates Konrad Püschel and Tibor Weiner, described later, were part of Schmidt's team in the design of the new city in Orsk. Thus, socialist urbanism in East Germany in the 1950s was based on the experience of the former Soviet Union. It was in this context that the aforementioned Bauhaus graduate Collein, as vice- president of the German Building Academy, set the standards for socialist urbanism in East Germany.

Socialist cities in East Germany in the 1950s and 1960s were divided into (1) new socialist cities (e.g. Stalinstadt, Hoyerswerda, Schwedt, Halle Neustadt) and (2) the simultaneous reconstruc-

tion of existing cities from war damage and socialist urbanisation (Berlin, Dresden, Leipzig, etc.), which can be broadly divided into two categories[8]. The aforementioned Paulik was involved not only in the planning of the new cities of Hoyerswerda, Schwedt and Halle-Neustadt, but also in the socialist urbanisation of the existing city of Berlin. The urban planning of the new socialist city of Schwedt was carried out by Bauhaus graduate Selman Selmanagic from 1959–61, while Paulik was in charge from 1962–65. The above confirms the involvement of Bauhaus Graduates in the design of socialist cities.

URBAN PLANNING OF THE HUNGARIAN SOCIALIST CITY OF SZTÁLINVÁROS BY BAUHAUS GRADUATE TIBOR WEINER.

The Hungarian socialist city of Sztálinváros, the focus of Section 3, was designed by Bauhaus graduate Tibor Weinar (1906–65), who was responsible for the area including the village of Dunapentele. Situated about 67 km south of the capital Budapest on the right bank of the Danube, the city was called Sztálinváros in 1951-61 and then Dunaúýváros. Born in Budapest, Hungary, Weiner studied architecture at the Bauhaus from 1929 and went to the USSR in 1930 with Hannes Meyer, the second director of the Bauhaus, and others[9]. He returned to Hungary in 1948 to work at the Academic Centre for Architecture, and from 1950 he was responsible for the design and construction of the city. The history of Sztálinváros began in 1949, when the Central Committee of the Hungarian People's Labour Party decided to build housing for workers in the steel complex. As is well known, Stalin means 'steel (man)' and towns were named after Stalin when they were built in the socialist states of Eastern Europe in

areas where the steel industry flourished. The content of the urban planning of Sztálinváros is described by the designer Weiner himself in 'Sztálinváros, Miskolc and Tatabánya' (1959)[10]. On the basis of this work, the content of the analysis of nature and urban planning is clarified.

The first half of the relevant part of Weiner's book contains a description of the content of the natural environment analysis of the proposed site. The sections are entitled 'New tasks: building a socialist city', 'Hungary's new heavy industry centre', 'Site selection', 'Natural features of the Dunapentele plateau', 'History of the site' and 'Urban development programme'. In this section, the contents of 'Site selection' and 'Natural features of the Dunapentele plateau' are explained. The 'Choice of location' section can be summarised as follows. In Sztálinváros, the rivers are mainly used as routes for transporting supplies to the ironworks. The main business of Sztálinváros - the water needs of the ironworks and the water transport of raw materials - was planned along the Danube. Thus, the Danube was not only useful for the town of Sztálinváros, but also as a transport route for the raw materials of the ironworks. The choice of location for the town of Sztálinváros can thus be understood in relation to the ironworks. As a result, the Dunapentele plateau to the north of the ironworks was chosen as the site for the city of Sztálinváros. This is followed by a description of the 'natural features of the Dunapentele plateau'. The main points are as follows. The topography of the Dunapentele lateau extends north of the ironworks. Villages exist on the Dunapentele Plateau and near the Danube, an agricultural area producing grapes and corn for wine. There were no forests on

the Dunapentele Plateau, and the wind carried smoke and soot from the factories; therefore, wooded areas and parks were created between the new city and the ironworks. Weiner's book indicates that parks are intended to provide recreation, create a good urban landscape, and improve the urban environment.

The latter part of Weiner's book describes urban planning in three phases. The first phase of urban planning, which happened in the first half of 1950, consisted of the preparation of an urban master plan and a building plan for the first housing units. This phase involved in-depth research, analysis of needs, and comparison with the results of urban planning worldwide. The second phase lasted from mid-1950 to mid-1952. It begins by reviewing the planning methods for Phase 1. New types of socialist urban public buildings were built to meet new social needs, such as shopping centres, central squares, hotels, office buildings, cinema complexes, and housing. The third phase occurred between 1952 and 1954. Weiner notes that this third phase was 'problematic for the city, as urban planning degenerated into formalisation'. Weiner notes that this formalisation occurred throughout Hungary because of a misunderstanding of the methods of socialist realism. In Sztálinváros, these misunderstandings led to the construction of two types of buildings: ornate buildings with an eclectic mix of styles, and uneconomic buildings.

ISRAEL'S NATIONAL LAND PLAN AND NEW TOWN PLANNING BY BAUHAUS GRADUATE ARIEH SHARON

Section 4 focuses on the land planning and new town planning for the whole of Israel by Bauhaus graduate Arieh Sharon (1900–84). Sharon was born in 1900 in Jaroslaw, Poland, the son of Jews, and graduated in architecture from the University of Brune in 1920. He graduated from the Bauhaus in November 1929. He moved to Palestine in 1931, worked on the construction of Tel Aviv in the 1930s, opened his own architectural practice and began designing kibbutzim (collective agricultural communities) in 1938. From 1948–53 he worked on national land planning and urban planning as head of the Planning Department, which reported directly to the Prime Minister[11]. One of his achievements was 'Physical Planning in Israel' (1951)[12]. This was Israel's first national land-wide plan, often referred to in Israel as the 'Sharon Plan', and became the basis for the Israeli National Land Plan. When Israel was established in 1948, there was an urgent need for a national land plan to accommodate the settlers coming to Israel from different parts of the country. In 1948, David Ben-Gurion, Israel's first Prime Minister, set up a planning department directly under the Prime Minister, consisting of some 150 architects, town planners and other experts, and entrusted its leadership to Aryeh Sharon (1948–53).

As mentioned above, Sharon's findings were summarised in 'Physical Planning in Israel' (1951). The structure of this report is as follows. 1.Outline of the National Plan, 2. National Planning, 3.Village Planning, 4.Land and Landscape, 5.The New Towns, 6.Hafia Regional Plan, and 7.Jerusalem Outline Scheme, 8.Tel.: Aviv District Regional Plan, 9.Layout and Architecture. Of the 15 new towns, nine are planned for populations between 10,000 and 60,000. This is because the only towns and settlements in Israel are villages of 500 and towns of over 100,000,

and the new towns were positioned to fill the gap between the two. Therefore, the new town was also required to act as a rural-urban centre to unite the existing villages. In fact, four years later, in 1955, Sharon published a paper entitled 'Collective Settlements in Israel', in which he outlined the characteristics of Israeli settlements and stated that these characteristics had been inherited by Sharon's own settlement plan[13]. If the role of the new town plan is to merge existing settlements, it is assumed that the new town will also inherit some kind of settlement spatial structure. In the Sharon settlement plan, the characteristics of the kibbutz plan are observed: buildings are located along contour lines and public facilities are located at the highest elevation in the settlement[14]. Therefore, 15 new town plans were analysed for the presence or absence of the kibbutz planning feature of contour lines, buildings located along contour lines and public facilities located at the highest elevation in the town.

Analysis of 15 new town plans showed that 10 cities had buildings located along contour lines. In addition, nine cities were found to have public facilities located at the highest elevation in the city. Conversely, in plans where contour lines could not be identified or where public facilities were not located at high elevations, the contour intervals were found to be relatively large. This suggests that contour lines and height are not important on flat land, whereas on land with narrow contour line intervals, buildings are placed along contour lines and public facilities are built at higher elevations. In particular, the plan of the new town 'MIGDAL GAD' is a plan whose characteristics can be clearly read both in the drawings and in the commentary: houses for 30,000 inhabitants are arranged along the contour lines, public facilities are located on the central hill and agricultural land is located in the lower areas. The perspective map also shows how the houses are built along the contour lines and the public facilities are planned at higher elevations. The plan description here clearly uses terms such as lowlands and hills to explain the design intent of the new town.

POST-WAR RECONSTRUCTION AND SOCIALIST URBANISATION OF HAMHUNG BY BAUHAUS GRADUATE KONRAD PÜSCHEL

Hamhung, located in the northern coastal area of the Korean peninsula. During the Korean War, which lasted for about three years from June 1950, Hamhung was completely destroyed due to its rapid industrial development sin the late 1920s during the Japanese colonial period. Hundreds of engineers and their families moved to the city from East Germany, which was responsible for rebuilding the city after the war. The head of the urban planning department of the 'German Work Team Hamhung' (Deutsche Arbeitsgruppe Hamhung), who supported the reconstruction, was Konrad Püschel (1907–97), a Bauhaus graduate. Püschel studied at the Bauhaus from 1926 to 1930, and in 1931, he travelled to the USSR with Hannes Meyer (1889–1954) and others as members of the Bauhaus Brigade, working first in architectural design in Moscow and, from 1934, in the construction of new towns in Orsk. From 1948, he worked as the chair of urban architecture at the Weimar School of Architecture and Urban Planning in East Germany. In 1954, he was involved in the wartime reconstruction program in Hamhung, where he headed the town planning department[15].

A review of Püschel's papers and reports indicates that, after conducting research in the Hamhung and Heungnam regions of the planned areas, Püschel tried to understand the structural nature of the planned areas by placing them in the context of the Korean peninsula as a whole. With this in mind, Püschel and his team analysed the internal space of the houses and their layout, which varied from region to region, and produced drawings classifying them as typical housing types in each province of the Korean peninsula. In their article 'An Overview of the Development and Formation of Settlement Planning in Korea' (1959), they summarised the settlements in Korea formed by a cluster of houses as follows: Korean settlements were classified into four types (settlements around valleys, river settlements, seaside settlements and mountain settlements) according to topographical features, and pointing out that topographical features and the water system determine the spatial arrangement of settlements, he concludes that Korean settlements are rooted not only in the shape and composition of the Korean landscape, but also in the interrelationship between landscape, society and economy[16]. He concludes that they are also rooted in interrelationships.

Adding the traffic survey results to those mentioned in the previous section, Püschel's plan divides Hamhung into five regions based on natural conditions and traffic technology. Each of these regions has a number of districts below it. It can be seen that neighbourhoods, which are units of administrative districts, include a cluster of residential complexes with primary schools, kindergartens, nurseries, clubhouses, department stores and shops. According to the records of the 1958 'Hamhung and Hungnam' exhibition, two of these neighbourhoods were completed by 1958[17].

CONCLUSION

The above has provided an overview of the urban planning of Bauhaus graduates in the 1950s. Finally, we would like to discuss the figures we have focused on in this study from two cross-sectional perspectives.

First, we would like to review the pre-1950s urban planning backgrounds of the architects featured in this study. Collein, who formulated the standards for socialist cities in East Germany, had worked on housing for a workers' housing association in Vienna. Paulik, who was involved in the design of several new cities in East Germany, had designed cities in Shanghai in the 1940s. Selmanagic, who designed Schwedt, was one of the designers of the socialist 'Junkers Settlement' project (1932) at the Bauhaus. Weiner, who designed Sztálinváros, and Püschel, who designed Hamhung, both had experience of designing new towns in Orsk, USSR, in the 1930s. Sharon, who designed new towns in Israel, was involved in the design of a settlement in a collective agricultural kibbutz in the 1940s. Thus, the individuals discussed in this study had some form of urban planning experience in the 1930s and 1940s, prior to their involvement in national urban planning in the 1950s. The presence or absence of such experience may have influenced their involvement in urban planning in the 1950s.

Next, we want to find commonalities in the urban planning process. The three graduates who designed cities in East Asia, the Middle East and Eastern Europe all carried out a thorough analysis prior to their designs and based their designs on this analysis. Such a design process

could be described as a common design process at the time, but from the perspective of Bauhaus urban planning education, it can also be seen as an extension of the analysis-oriented architectural design methods taught at the Bauhaus into the field of urban planning. In particular, both Shalon and Püschel paid attention to the settlement structure of the target area in their urban planning and applied the structures extracted there to urban planning, a point of strong similarity that can also be attributed to their education at the Bauhaus[18].

The study was not able to analyse the specific design methods of socialist cities in East Germany. This is a subject for future work.

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DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author.

NOTES ON CONTRIBUTOR

Dr. Hideo Tomita (b. 1974) has been working as a Professor at the Faculty of Architecture and Civil Engineering, Kyushu Sangyo University in Japan. He graduated from the doctoral course of the Graduate School of Engineering at Hiroshima University, receiving his Doctor of Engineering degree in March 2002. From 2005 to 2006, he was a guest researcher at the Bauhaus University Weimar. In 2015, he was granted the Journal of Asian Architecture and Building Engineering Best Paper Award 2014 from AIJ, AIK, and ASC. From 2016 to 2017, he was a guest researcher at the Technical Institute of Berlin.

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Between military, commercial, and cultural use
The transformations of planning in the Kamppi field in Helsinki 1830–2020

Laura Kolbe
University of Helsink

Abstract

Historically, the Kamppi area, today in the absolute city center of Helsinki, was located outside the zoned urban area. Already in the 1700s, the was a campground for the military. During the 1800s, it became a training field for the bourgeois guard, and Jewish and Russian merchants sold clothes and textiles there. One of the large garrison areas, Turku Barracks, stood in Kamppi since 1833 (until 1918). In the spring of 1918 and later in 1943, the Kamppi fields were used by German soldiers. The Kamppi was transferred from the state to the city in 1934. First, the area was the site of a local and long-distance bus station. Mannerheimintie is Kamppi's main street, with traffic from the countryside and suburbs deeper towards the city center. In the early 1930s, street lines were widened and modernized, and the route was nicknamed "Helsinki Broadway". The first modernist commercial building, Lasipalatsi (Glass Palace) soon became one of Helsinki's landmarks. As Helsinki, the capital of independent Finland in 1917, continued to grow, public and private interest and planning began to focus on Kamppi. The area was considered suitable as a new business center, which should reflect the needs of modern commercialism, as well as the rising standard of urban living. The goal was to emphasize the modern, European character of the capital of the young republic. Some new buildings, like Shell's service station and the Tennis Palace (1937) were meant to deliver this spirit. Kamppi's rise to become the became most important business center has been slow but consistent. First, the area was included in Eliel Saarinen's Greater Helsinki 1918 -plan. During 1930s, 1940s and 1950s, several planning competitions were held, and many plans made, without any concrete results. Academician Alvar Aalto's monumental Kamppi-Töölönlahti -plan (1964) finally integrated Kamppi's future business concentration. In Aalto's plan, the bus station, Glass and Tennis Palaces were replaced by a concentration of offices, commercial and retail buildings. However, construction was slow, and it took decades to realize the new monumental and commercial Kamppi. The latest detailed plan for Kamppi was approved in 1999, with aim to strengthen the competitiveness of the city core. Modern dense urbanity was emphasized in planning new squares and event spaces. In the 2020s at the latest, Kamppi has developed into an urban, cultural living room open to all, and the revival of the old bus station as a cultural cluster has been part of this development. My paper frames the dreams and realities in Kamppi planning, initiated by the state, the city of Helsinki, and private entrepreneurs, in hope of creating a true dense international, modernist, and commercial city center.

Australian Planning

Chair: Robert Freestone

Shifting agendas
in Australian planning 1970-2000
A transformation in theory and practice

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Abstract

During the second half of the 20th century, the Australian chapter of a global story saw urban planning transformed, from a largely paternalistic technocratic model focused on land use and dominated by the built environment professions, to a more inclusive mission of managing urban change drawing more deeply on cognate academic disciplines such as sociology, geography, political economy, and environmental studies. This shift reflected broader societal and economic upheavals. The outcome was a planning model reworked through radical critiques of planning practice, revolutions in methodology, popular demand for more effective community involvement, and greater acknowledgement of the needs of women and children, indigenous culture, heritage and environmental concerns, and social inequality. These momentous and challenging shifts set in place a new foundation for planning thought in the 21st century. In this paper we draw on archival and published sources to describe, contextualise and reflect on these changes and identify the events, issues, and contributions which set planning on new pathways. This was both a scientific and professional revolution in Kuhnian terms and, while the legacy planning philosophy and techniques were still evident, a more dynamic model emerged as planning was reinvented. Attempting to interpret and convey what happened, we focus on selected drivers, including the emergence of urban studies in reframing concerns, new critical voices, the rise of community planning, tertiary training, equity, awakening to the global environment, and the dawning of Indigenous issues. Along the way, we identify and discuss some of the key individuals across Australia whose ideas, experiences and legacies initiated and contributed to this paradigm shift. These influential voices came from widely varied backgrounds yet all actively sought to better understand and provide for the social and physical needs of an increasingly diverse urban population by applying and disseminating their ideas, research outcomes and experience through direct action, planning documents, publications, and revised teaching curricula. The paper attempts to locate this shift within a sequential change process, from earliest theorists to accelerated spread and general application as a multi-targeted planning model crystallised around goals of productivity, liveability, sustainability, and better governance by the approach of the new millennium.

'Everyone knows what a first-class town should comprise'
Grahame Shaw's ideal new town, new community milieux

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Abstract

Australian architect-planner Grahame Shaw (1928-1985) is perhaps best remembered in Melbourne as an author of the notorious 'Shaw-Davey' report (1960), which consigned 410 hectares (1000 acres) of inner-city housing for demolition purely on the basis of an apparently slapdash 'windscreen survey'. This paper examines Shaw's involvement in two important early 1960s projects for the HCV: the rollout of the new industrial town of Churchill, 160km east of Melbourne, and the creation of the new high-rise Hotham Estate, 3km from Melbourne's centre. In both projects Shaw was interested in creating social spaces for new communities and eager to synthesise a global best-practice environment for community building. He brought a strong interest in high-rise housing (using London models such as Radiation House in Neasden and the proposals for a new town at Hook) to his HCV work. This paper is therefore an examination of international influence on Australian urban design in the early 1960s; it is also a study of Shaw's particular approach. Additionally, it looks at the 2020s legacy of the Churchill and North Melbourne examples in their seventh decade.

INTRODUCTION

This paper is a snapshot of the activities and observations undertaken by Grahame Shaw during his tenure at the Housing Commission of Victoria (hereafter referred to as HCV), Australia between 1960-66. It is not intended as biographical, though it acknowledges that Shaw is an underresearched figure within his historical period of activity, probably largely by dint of his early death (at the age of 57) and his lack of high-profile publications.

Instead, it aims to explore the role and values of this educated, experienced, young architect-planner in a responsible position in a well-resourced if controversial institution, and the tension between the politicised nature of his work and the stake he appeared to place in both received knowledge and modernist best-practice principles. It would be false to say that Shaw could have operated anywhere in the world; he is not a cipher.

However, it could be argued that, in the early 60s, he was an example of a type: the youthful and idealistic expert, battling against the inertia of the monolith within which he was only one player, albeit a key player. His perspectives and his approach thus give insight into the era(s) in which he worked.

Grahame Shaw was born in 1928 and registered as an architect in 1951, at the young age of 23. He worked and travelled in Europe in the 1950s, one of a cohort of Melbourne architects employed by the firm Riches and Blythin in London; the well-known Kemp House (1961), an 18-story mixed-use tower block in Westminster,[1] was possibly designed during his time with the firm and can be seen as key to later Melbourne work. By the end of the 1950s Shaw was firmly ensconced in the HCV, a powerful body charged not only with remedying the severe housing shortage engendered by the Great Depression and the Second World War but also with various tasks commensurate with urban renewal and, in the early 1960s, decentralisation.

This paper is an exploration of Shaw's time at the HCV – during which he obtained a Diploma in Town Planning – and the ideas he brought and promoted within the organisation, specifically relating to two sites. These were the 'Hotham Estate' (also known as 'Boundary Street') high-rise development on the north-west edge of the City of Melbourne local government area, and the new town of Hazelwood, projected population 40 000, on a greenfield site in what was known to some as Victoria's (perhaps Australia's) 'Ruhr valley'. In exploring Shaw's attitude to best-practice planning, we also discuss his approaches to one of the most controversial elements of the HCV's operations during his time there, the practice of urban reclamation and slum renewal.

THE SHAW-DAVEY WINDSCREEN SURVEY

For ten years between 2014 and 2024, a bar with an obscure name served as a popular drawcard in Carlton, three blocks from the University of Melbourne in inner Melbourne. The

Shaw-Davey Slum was a rebranded Irish pub on a major street corner, seeking to represent 'all that was good about Australia in the 1960s,' combining 'seashells and Swarovski crystals with a gold leaf floor to create an enviable and unique space. With a 1960s milk bar-inspired cocktail list and a full service dining room focusing on Australian herbs and ingredients,'[2] the venue was popular with students, white collar workers and families.

Its curious name, however, must surely have raised the eyebrows of almost every new visitor – even the rare few who understood the reference. The 'Shaw-Davey Windscreen Survey' has come to be the title given the report derived from forays undertaken by James Henry 'Harry' Davey, a former Chairman of the HCV, and Shaw as its Research (later Chief) Architect to quickly identify irredeemable inner city slums. The report highlighted 975 acres in eight inner suburbs of Melbourne in urgent need of attention to be replaced, with further areas surrounding these eight warranting intervention. The total cost of acquiring and clearing the entire area, estimated at £50,000 per acre, would amount to approximately £50,000,000.[3] These were not just in Carlton but in many quarters of what was then Australia's second-largest city but also its most ostentatiously 'Victorian' and stolidly conservative. This survey was dimly remembered, if at all, by the early 21st century. That the bar remained open under that title for almost a decade indicates that on some level, however, the concept has maintained a resonance in a suburb that formed one of many loci for showdowns between residents and would-be slum clearers. For those in the know, the name was a suitably wry nod to the gentrification Shaw and Davey could not have predicted in the heyday of the HCV 65 years ago.

The two men derived their survey from drives taken on streets of inner city areas they had already decided were of low value and ripe for renewal. They ranked them on the basis of superficial assessments of frontages. Shaw would later argue that these were merely preliminary categorisations for the purpose of more detailed evaluation, but as one critic reported in 1969, 'There is no evidence this was properly done.'[4]

It seems likely that Shaw quickly came to regret his involvement in the Shaw-Davey foray, perhaps feeling that he had been played and his reputation besmirched by what he had been led to believe would be merely the first step in a much longer process. He left the HCV in 1966, entered private practice and was, perhaps, hoping for a renewed relevance as an architect-planner when he participated in a seminar in Canberra. Here, he placed the Shaw-Davey experience in the context of prior attempts to plan or replan Melbourne going back as far as 1913. He described the 'windscreen survey' thus:

> Classification was made from the external appearance of the house and its fences and was assessed by streets or portions of streets rather than by individual houses. The street pattern, lack of open space and general appearance of the area were also taken into account… it was often difficult to decide into which classification a particular street or part of a street should be put… it enabled a quick picture of the standard of housing over a wide area to be obtained.[5]

The Shaw-Davey report was published appended to another, by housing minister Horace Petty, entitled *Report on Slum Reclamation and Urban Redevelopment of Melbourne Inner Suburban Areas*. It marked the beginning of the HCV's most powerful phase, during which time it (and

the conservative state government) justified its existence with reference to the pervasive slum 'menace'. Under the new renewal schemes, small landlords were paid market prices (as adjudged by the HCV) for properties, many of which were then sold on to large-scale development companies. At the same time, the HCV developed much of the land appropriated – as well as some greenfield sites previously in local or state government hands – to develop public housing. The activities of the HCV at this time, as evidenced in its work in the inner Melbourne suburb of North Melbourne, form the next section of this paper.

SHAW, THE HCV AND PUBLIC HOUSING IN NORTH MELBOURNE

Before the launch of the Shaw-Davey report, early endeavours had been progressively made by the HCV to clear and redevelop 'decadent' areas in North Melbourne identified by the Housing Investigation and Slum Abolition Board in 1937. Molesworth Street Reclamation Area was an early postwar project containing twelve three-storey flat blocks with one hundred apartments, completed in 1955; the HCV's patented concrete wall prefabrication processes were put to use here, adapted from detached home construction to apartments for the first time.[6] Another project, known as Hotham Gardens, involved sale of 2.5 acres in O'Shanassy Street for private development, where 108 own-your-own flats were erected by private enterprise in 1958, heralding a milestone of reclamation as it signified the first instance of market involvement in subsidised urban redevelopment in Australia.[7]

The Shaw-Davey report identified 59.3 acres in North Melbourne as suitable for redevelopment. In a research essay for the University of Melbourne, written a decade later Nancye Hawkins noted that blocks had been chosen for redevelopment in North Melbourne 'based on "general obsolescence areas."'[8] Writing in the immediate aftermath of the demolitions taking place in North Melbourne, she implied that the decision to redevelop the area after compulsory purchase was based less on assessment of areas as degraded and more on its commercial value via proximity to the city centre. [9]

In the early 1960s, the HCV emphasised the need for high-density development in inner areas due to the costly acquisition of slum areas near the city centre and the need to address the housing need of an increasing population. There were growing cooperative efforts with private developers, which gave momentum to the progress of slum reclamation. The HCV aimed for balanced redevelopment, with equal parts public and private

housing to avoid overconcentration. The private redevelopment was regarded as an effective measure to tackle the slum reclamation activities. In the planning of public housing, walk-up flats were designated for families with young children, while elevator flats were considered for families with older children.[10] High-rise blocks were elevated with provision of car parks and rooftop laundries (the brainchild of Best Overend,[11] of whom more below) to maximise open space.

The HCV file on 'Multi-Storey Flats' gives extensive insight into the models used by the HCV's leading lights. Shaw, now firmly ensconced as Senior Architect, and his colleagues used reportage of international (primarily, British) projects and their own experience of local examples. Just as they travelled to Elizabeth, South Australia (see below) to comprehend the potential outcomes in Churchill, they examined high-rise housing from Sydney to contemplate their own moves in that direction. A 1962 report by Shaw in the file might well be a long essay produced during his studies for a degree in Town and Regional Planning; though ostensibly reporting on tower blocks in The Gorbals, Glasgow it also discusses work by Le Corbusier, as well as 1950s forays by the LCC such as St. Peters Hill and the Tidey St Estate; it additionally, atypically for such reports, has a list of references at the end. Another document - a four-page treatise on the advisability of high-rise housing in the inner city – is unsigned, but corrected in Shaw's distinctive hand. The author suggests that 'the continued exodus of population from the inner fringe area will only result in the American example of dying hearts to cities.'[12]

Development of high-rise housing thus proceeded apace. The Hotham Estate was not the first, but it was a very important illustration of the HCV's intent. The earliest elevator block was constructed in Boundary Road by the HCV in 1961, featuring a 20-storey tower comprising 160 two-bedroom flats with the provision of basic services, marking the commencement of true high-rise public housing in North Melbourne. The plan also included an additional nine-acre reclamation area adjacent to the building consisting of eight four-storey blocks, two three-storey blocks with a total provision of 214 flats and a shopping centre of eleven shops having six flats above them. With the advent of HCV's high-rise flat development, many residents in these high-density estates experiencing a new way of urban life. The high concentration of population had led the HCV to devote considerable efforts to providing the necessary social and recreational services to its tenants. These included open green space, shops, community rooms, kindergarten and baby health centres. In tandem with construction of multi-storey blocks, the HCV continued land acquisition in nearby Lothian Street.

Fig. 1.   Model of flat blocks located on the Boundary Road, North Melbourne Reclamation Area

In late 1964, in a letter seeking a copy of a recent Transportation Study from a Sydney agency, Shaw opined that whereas once the HCV had concentrated on 'the building of villas in outer suburban fringe areas', its activities were more recently 'indicating our return to the subject for which we are constituted, i.e. slum reclamation.'[13] But in truth the organisation was leaning in a different direction. Given the rapid pace of redevelopment, the HCV advocated for an expansion of its charter and a renaming to the Housing and Urban Development Commission in the mid-1960s, reflecting its actual role in urban renewal over the preceding three decades.[14]

Fig. 2 & 3. Shops at Melrose St, North Melbourne, with one of the HCV's large residential blocks at the rear, in 1959 and 2024

Despite being envisaged by the HCV as an economic solution to regenerate inner suburbs, the public housing high-rise provoked strong opposition from the general public and local pressure groups. High-density living was criticised as un-Australian, in contrast to the traditional suburban lifestyle, and deemed unhealthy for family life and children's growth. Stevenson et al. conducted a survey in 1964 to investigate the housing circumstances of low-income families residing in the Hotham Estate, revealing that the prevailing concern among tenants was regarding flat life as problematic for raising children, as well as discontent with high-density living due to a sense of separation from the community and a desire for a suburban way of life.[15] Described by an activist as 'fucking monster blocks,' the emergence of high-rise housing towers incurred intense public backlash, galvanising local residents into a series resident action movements.[16] For instance, between 1968 and 1971, the North Melbourne Association initiated the 'Happy Valley Campaign,' a prolonged battle concerning HCV's reclaimed Lothian Street slum area – most specifically, its shopping strip. The campaign involved petitions, drafting planning proposals to the authorities, a 'peg-out' demonstration, and collaboration with other local associations.[17] The HCV had already created another shopping area nearby – at the Hotham Estate – in a two- storey building with shops at street level and a row of flats above. Visually, with the high-rise tower behind it, the arrangement was not dissimilar to Kemp House (Figures 2 and 3).

Facing widespread opposition, the state government decided to phase out high-rise public housing as a model in urban redevelopment in Melbourne; the major period of high-rise construction did not last long after the end of the 1960s. Yet that decade also allowed the HCV to extend its operations into entirely different domains which did not involve slum clearance or renewal, but the creation of greenfield towns. In the late 1940s, a plan had briefly been in play to demolish the Latrobe Valley town of Morwell to mine the coal beneath its surface and to create a 'New Morwell' nearby. Local protest stopped this from happening, but the HCV was invited to undertake large-scale development in the area. The town of Moe, close to a major coal mine, was expanded with the addition of the large suburb of Newborough under the HCV's aegis. More importantly, the HCV was invited to apply its expertise to an entirely new town, Hazelwood.

SHAW AND CHURCHILL

Shaw obtained his Bachelor in Town and Regional Planning in 1963 (the first graduate from a new degree)[18] and his position as design and research architect at the HCV no doubt provided solid experience for his studies. This was particularly true of his time working on what was for most of its development stage known as Hazelwood (Figure 4) and later renamed Churchill in honour, of course, of Sir Winston Churchill who died close to the time of its dedication. Though the plan for Hazelwood/Churchill's town centre is typically ascribed to veteran architect Best Overend, plans from 1963 credit 'Chief Architect, Housing Commission and Best Overend' (Figure 4).[19]

Fig. 4. Hazelwood Town Centre, 1963. The plan included elements such as high-density housing and high-rise accommodation for the elderly, as well as an extensive range of facilities designed to cater for all generations.

The need for Churchill was obviated by the construction of the Hazelwood Power Station in the Latrobe Valley, 160 km from Melbourne. The State Electricity Commission teamed with the HCV to establish what was initially conceived to be a town of 40 000 people. Chief Technical Officer for the HCV Ray Burkitt wrote in a May, 1962 memo of the project that:

> The Commission has a unique opportunity to plan and build an ideal town at Hazelwood and, consistent with reasonable economy the motto for all concerned should be "nothing but the best." One thing is certain – Hazelwood will make the Commission's reputation – or break it.[20]

Shaw's response echoed Burkitt's concern: 'The importance of this project to the prestige of the Commission can not be overemphasised.' He was also alive to the 'opportunity to make a worthwhile progressive contribution to Town Building'[21] that was presented.

As an architect and a planner, however, Shaw was also interested in the possibilities Hazelwood offered to subvert tradition. He suggested that two options were available in this new town: that the HCV could continue to build its typical detached suburban forms, at its previous rate or that it could undertake 'A complete re- assessment of previous H.C.V. town building.... Taking greater consideration of such factors as pedestrian and vehicle segregation, restriction of walking distances, variety of density, type of housing and accommodation.' While he may have had Kemp House in mind (and in addition he, or someone, also included a photocopy of

Fig. 5.   Model of Hazelwood as depicted in a pamphlet entitled Preliminary Notes to accompany scale model of Hazelwood: A New Town for the Latrobe Valley.

an article on the new London high-rise building Radiation House in the HCV's Hazelwood files) he wrote that for examples of these he looked to 'the two latest British New Towns – Cumbernauld and Hook – which have been based on the experience gained over the past 15 years…' Hook was, of course, not destined to become a British New Town; its plan, conceived by Shankland and Cox under the aegis of the LCC between 1960-63 with a final population figure of 100 000 was not developed. Shaw had, however, requested a copy of the official publication on the proposal and photocopied an article from the February 1962 issue of the *RIBA Journal*, with an extensive description of the concept and its execution, for distribution. He wrote that 'the care and detail with which the Hook plan has been prepared and the basic survey work necessary to verify intelligent guess work is immediately apparent from these papers.'[22]

While Shaw evinces an equivocal attitude in the extant documentation it seems likely – particularly through his promotion of the Hook example – that he favoured the high-density option for Hazelwood. The town's design, by 1966 when Shaw left the HCV, was a compromise. The 'town centre' owed much to British New Towns; Hazelwood included 'Special Old Age Housing' close to the centre 'within a short stroll of the Town Centre and main shops' alongside 'high density housing'(Figure 5).[23] By the end of the 1960s the development of Churchill had been curtailed, due to modifications in the energy market; one feature introduced in the 1960s as a value- add, a university campus, has become the town's biggest employer.

CONCLUSION

On leaving the HCV Shaw entered into partnership with James Earle as Earle Shaw and Partners. The firm's best-known work, the Cross Street Co-Operative Housing Development in Carlton, reflects in many respects Shaw's interest in 'places' like Hook, and his ambitions for high-rise public housing.[24]

Shaw's subsequent partnership, Grahame Shaw, Denton and Corker can be seen as the forerunner to the internationally known architecture firm of Denton, Corker, Marshall, however Shaw had moved on to Grahame Shaw and Partners.[25] This company produced Shaw's final foray into planning, an idealistic proposal known as 'Island City', a series of artificial islands in Melbourne's Port Philip Bay connected by freeway bridges, which acknowledged a conceptual debt to Craig, Zeidler and Strong's Harbor City proposal for Toronto.[26] This project did not eventuate. Shaw died young, in his early fifties, on 10 September 1985. He was not afforded the time that many of his contemporaries used to assess their own legacies.

As evidenced above, Shaw's ambitions as an architect and as a facilitator of public housing during his time at the HCV were in large part aimed at introducing density without compromising community in the projects he oversaw. While from a 2024 perspective it is hard to imagine his daily work did not require an exceptional amount of politicking both amongst his colleagues and the government they were responsible to, and to the wider community, this does not come out in Shaw's extensive notes, letters and marginalia remaining in the HCV archives. Instead it is his commitment to the application of modern methods to urban problems which emerge most prominently, and the influence he brought to bear on HCV practice in that time.

CODA: INNER CITY PUBLIC HOUSING IN MELBOURNE IN 2024

In its 70th year, the public housing constructed by the HCV has served as the foundation of a public housing system, providing shelters for (primarily) low-income households. Witnessing the ageing state of public housing nearing the end of its operational life, the Victorian government has launched a series of revitalisation initiatives

aimed at redeveloping aging public housing estates. The Public Housing Renewal Programme, initiated in 2018 with nine estates earmarked for renewal, seeks to transform aging public housing estates into vibrant and mixed- tenure neighbourhoods. A site bounded by Molesworth, Abbotsford and Haines Streets, featuring two-to-three storey walk-up housing, is identified as one of the sites for renewal due to rundown conditions and high maintenance costs. However, through a public-private partnership approach, the site is undergoing a transformation into a blend of social and private housing, with social housing accounting for only 43% of the total, signalling a declining role of the state in public housing provision.[27]

The Victorian government's decision to demolish and rebuild all 44 high-rise public housing towers marked another bold move, making it the largest urban renewal project in Australia. Since its announcement in September 2023, the plan has sparked fervent public debate concerning the future of public housing development. Critics of the proposed rebuild have decried its lack of transparency, alleging violations of tenants' human rights through displacement, and prioritisation of private sector involvement over the preservation of public housing. Despite the recent dismissal of tenants' class action, the demolition of Melbourne's public housing towers remains contentious and controversial. It is anticipated that the heated public debate will continue to persist over whether to redevelop or preserve the public housing towers.

NOTES ON CONTRIBUTOR(S)

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Figure 1   Source: Housing Commission of Victoria. The 24h Annual Report of the Housing Commission of Victoria for the period from 1st July 1961 to 30th June 1962, p.18.

Figure 2   The 21st Annual Report of the Housing Commission of Victoria for the period from 1st July 1958 to 30th June 1959.

Figure 3   Photograph D. Nichols.

Figure 4   Hazelwood file, VPRS 1808/P0000, H14 Public Records Office of Victoria.

Figure 5   Hazelwood file, VPRS 1808/P0000, H14 Public Records Office of Victoria.

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Sharing the good life
The contributions to urban studies of Colin Clark (1905-1989)

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Abstract

Colin Clark was foremost an economist and secondly an urbanist, but in the latter often interconnected role he made a significant contribution to the emergence of urban studies as an interdisciplinary field. Clark's expertise in economic statistics and his appreciation of the role of cities and regions in economic development saw him make contributions from the 1930s to the 1970s, primarily within a scientific paradigm. His interests ranged broadly across transportation, settlement, population, and spatial structure, bringing a data-driven and inductive curiosity to try to unpack patterns and trends in his search for higher-level descriptions and explanations of urban phenomena. Clark was suspicious of theory and pragmatically set all his work in real urban settings. Much of his foundational and most of his original urban analysis was conducted in Australia from the late 1930s to the early 1950s. He maintained a high public profile as a media commentator and enthusiastic conference participant into the 1970s. This paper introduces and seeks to position Clark's writings and, in focusing on their impact, strengths and weaknesses, seeks to position them in an appreciation of his role in the emergence of urban studies as an independent field.

Japanese Cities in Transformation (1)

Chair: Fukuo Akimoto

The Influence
of Educational Institutions
on Early Modern Development
in Suburban Tokyo, Japan
For the Jesuit School
Establishment Project

Yuta Genda, Masayoshi Nagano, Naoto Nakajima
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Abstract

The first modern suburban development in Tokyo, Japan, is Shinmachi residential area in Sakura-shinmachi (1913). However, development in the same period was limited and increased in the 1920s. The background of the early development of Shinmachi residential area, etc., is still unclear. Therefore, this study aims to clarify the details and characteristics of this area's modern urban planning history, thereby contributing to the inheritance of a favorable regional environment formed in the modern era. After the Jesuits began selecting lands to establish a school in Japan in 1908, there was a movement to consolidate larger lands in more suburban areas. Specifically, these were Komazawa Village and Kichijoji Village. Finally, Jesuit schools did not come there and were established in Yotsuya, Central Tokyo, as Sophia University. Later, the land in Komazawa Village was developed as the Shinmachi residential area, and the land in Kichijoji Village was developed as a school town by the Seikei Gakuen educational institution, as pioneers in suburban development. Thus, the Jesuit's international educational involvement partially characterized early modern suburban development in the Tokyo area.

INTRODUCTION

BACKGROUND AND PURPOSE OF THE STUDY

One of the characteristics of suburban residential development in modern Japan is the spatial formation influenced by the Garden City Philosophy originating in England. The development areas with a desire for a suburban natural environment were developed with the idea of what kind of environment the area should be (in this paper, it is expressed as "Region Formation Philosophy") and has continued to appeal for a living environment with rich nature and well-organized lands. On the other hand, these characteristic environments have been rapidly disappearing in recent years due to inheritance by aging residents and real estate development. So, we urgently need to take measures to conserve the environment. Various measures have already been taken in each residential area, including establishing a legal system, but the issue is still under discussion. In order to advance the discussion, it is important to share the Region Formation Philosophy among the related groups and persons, including residents. In order to grasp the philosophy, it is essential to understand the unique characteristics of suburban residential areas in modern Japan and their historical context. The first step in the process is to clarify how the pioneering suburban residential areas were developed.

The pioneering early modern suburban residential areas in Japan were Ikeda-Muromachi in Osaka, Kansai region (subdivision started in 1910) and Shinmachi residential area in Sakura-shinmachi, Tokyo (subdivision started in 1913) in the Kanto region. Around 1910, the Ikebukuro area was still a suburb in the Kanto region, and educational institutions started concentrating in Ikebukuro (Figure 1). After that, most of the development occurred from the 1920s to 1930s, especially in Tokyo. The reasons may be that the new middle class, which could separate work and residence, has increased and hoped to live in suburban residential areas, the western suburbs of Tokyo, based on its hard ground, due to the Great Kanto Earthquake (1923). On the other hand, when the Shinmachi residential area was developed in 1913, we could not find other developments, and the number of new developments did not increase until the Great Kanto Earthquake. In other words, it is difficult to assume that the development background of the Shinmachi residential area necessarily involved the same demand by the new middle class from the 1920s to 1930s, and a different process is to be expected. Therefore, it would be meaningful, both academically and practically, to clarify the background of the development.

Based on the above, this study will focus on developing the Shinmachi residential area and other suburban residential areas at that time. It will lead to understanding the Region Formation Philosophy of suburban residential areas in modern Japan and progress in environmental conservation.

RESEARCH SUBJECTS AND METHODS

As mentioned above, the research will focus on Shinmachi residential area, which is said to have been the earliest suburban residential area in the Kanto region. Shinmachi residential

area was developed in about 23.5 ha, carved out of the fields of Komazawa Village and Tamagawa Village, Setagaya Ward, Tokyo[1]. It is south of Sakura- shinmachi Station, about 10 minutes by train from Shibuya Station, one of Tokyo's terminal stations. It is known that Tamagawa Electric Railway established the Shinmachi stop (now Sakura-shinmachi Station) in 1907[2], and in 1911, Tokyo Trust Co., Ltd. purchased the land that would later become Shinmachi residential area[3]; the area was developed in 1912, and sales began in 1913. On the other hand, the area's history before the purchase by the Tokyo Trust and the development of suburban residential areas in the Kanto region during the same period needed to be researched more. This study will use the article "Disturbance of a Large Land" in the Asahi Shimbun on December 9 and 10, 1910, as a starting point. We will attempt to elucidate the situation by surveying newspaper articles and documents from the time. We will also investigate the Kichijoji land in Tokyo mentioned in the article.

EXISTING RESEARCH

Suburban development in the 1910s is discussed in a study by Tamekuni et al. on the transformation of southwestern Tokyo with the Tamagawa Electric Railway[2] and in a book by Yamaguchi et al. on suburban residential areas in Tokyo[4], and so on, which discusses Shinmachi residential area as the first example in the Kanto region with the construction of a railroad. The construction of the railroad is an indispensable element when discussing suburban development in the same period. The history of Shinmachi residential area after the purchase of the Tokyo Trust is clear. Still, it is unclear why Shinmachi residential area was the first suburban residential development in the Kanto region. Therefore, this study is a novelty in the history of modern urban planning.

Fig. 1.   Railroad network and station locations in western Tokyo in the 1920s.

2.1. MOVEMENT TO CONSOLIDATE THE LAND DUE TO THE CONSTRUCTION OF A JESUIT SCHOOL

2.1. ASAHI SHIMBUN NEWSPAPER ARTICLE, "DISTURBANCE OF A LARGE LAND"

We focus on an article in the Asahi Shimbun dated December 9 and 10, 1910, titled "Disturbance at a Large Land[56]." The article states. In September 1910, the Roma headquarters of the Jesuits dispatched an American, Rockliff, to select a land to establish a school in Japan. The school's site was about 110,000 tsubos (about 360,000 m²). It is written that the contract for the sale and purchase of the school site was broken between a prefectural assemblyman, Keiji Tanioka of Fukazawa, Komazawa Village, Ebara County, and more than 50 others, and Mitsuaki Yamazaki who claimed to be Rockliff's agent. The land is described as a total area of 108,639 tsubos, which was spread over six villages: Shinmachi and Fukazawa in Komazawa Village, and Seta, Yoga, Shimonoge and Norada in Tamagawa Village, Ebara County, Tokyo. First, Oshikawa asked Tanioka, whom he had known for many years, if he could find a suitable site in the Komazawa Village area. Tanioka once considered and coordinated with the local community, but could not agree. In response, Oshikawa separately started to select a site near Kichijoji Station in Musashino. Later, a man named Mitsuaki Yamazaki

appeared and made repeated requests to Tanioka. In response, Tanioka immediately started a campaign to consolidate the land, bought other land in exchange, discussed with the owner's relatives to purchase the quasi- prohibitionist's portion, and persuaded more than 50 owners to join him. Tanioka worked hard to put the application together and sent it to Yamazaki on November 27, who presented the signature of Ebrard, a church director like Rockliff. However, on November 28, when Tanioka and more than 50 sellers gathered at the Komazawa Village registration office to prepare for the registration to be made the following day, Yamazaki informed them through his lawyer that he had no objection if even one person did not complete the registration.

He also informed that the foreign buyer was absent today, so they should assemble again on November 29. On November 29, Tanioka and the others waited for Ebrard at the registration office, but he did not show up, and Yamazaki requested a postponement by telegram. When Tanioka and the others questioned Yamazaki about the reason for the delay in the registration, he explained that it would be difficult to register the property due to the discrepancy between the contract price and the purchase price, the ambiguous acceptance letter, and the questionable contract regarding the transfer of the house. In addition, Yamazaki replied that he was unrelated to Ebrard and substituted Ebrard's signature. He also said there was another true client but could not say who the client was. Yamazaki intended to offer Ebrard to deal with him after establishing the land. After that, the reporter interviewed Ebrard. He replied that he had never heard of the Komazawa Village's land, Yamazaki's wife was a church member but had never met him, and Rockliff had left Japan in the spring of 1910. German was succeeding him, Hoffmann. Furthermore, the reporter interviewed Hoffmann. He replied that he was unaware of Komazawa Village or Yamazaki and had not entrusted the land to any Japanese.

From the above, we understand that the Japanese discussed the possibility of putting lands together in Ebara County or Kichijoji, but in the end, these lands were not selected.

2.2 ATTRIBUTES OF THE PEOPLE INVOLVED

We will explain each Japanese person mentioned in the above article. First, Masayoshi Oshikawa was a pioneer of Christian education in the Meiji period and established Tohoku Gakuin educational institute and Miyagi Gakuin educational institute, and was also involved in the acquisition of land in Ikebukuro for Rikkyo University around 1910[7]. Thus, he had a deep knowledge of establishing Christian schools and got involved in this case based on his experience.

Next, Mitsuaki Yamazaki. His wife was a member of the church related to Ebrard. In addition, he was involved in establishing the POW Relief Society, which the members of the Orthodox Church organized[8]. So, it can be said that he was involved with Christianity. In addition, around 1909, Yamazaki referred to Oshikawa as an acquaintance[9]. So Yamazaki and Oshikawa certainly knew each other before the timing of the article's event. As mentioned above, it can be inferred that Yamazaki got the Jesuits' university plan through the relationship.

Keiji Tanioka served as the first mayor of Komazawa Village from 1889 to 1909 and was regarded as a man of great renown. He also served as an elected member of the Tokyo Prefectural Assembly for Ebara County for 20 years from 1894. For the development of Komazawa Village, he worked enthusiastically to build schools in the area, including successfully attracting the Tokyo Prefectural Horticultural School (opened in 1908). From the article, we know that Tanioka and Oshikawa were acquaintances. Oshikawa may have previously consulted with Tanioka about constructing a Christian school.

2.3. REPORTS ON THE CONSTRUCTION
OF A UNIVERSITY IN JAPAN WITHIN THE JESUITS

Here, we examine the authenticity of the Asahi Shimbun articles through the Woodstock Letters, the official journal of the Jesuits. The search for land to build a university in Japan is described in volumes 39 (1910) to 41 (1912) of the Woodstock Letters. The letters reported the following information on university construction in Japan.

> The reason is, because we are adverse to begin in a small way on account of the great expectations that have been raised in the minds of the Japanese, both Christian and heathen, about our undertaking. There are also other reasons that force us to this decision.

> Now it is evident that four or five acres of ground, and we cannot do with less, cannot be bought within a large city of 2,000,000 inhabitants for a small sum.

> The purchase price will surely amount to $300,000 and then the two buildings that will have to be erected, a High School for about 400 to 500 students and a residence for the community with a public chapel will demand about the same sum.

> But in my view the most efficacious means will be for some prominent Fathers of the Maryland-New York or other provinces to approach rich and generous Catholics and ask them to become founder or co-founder of the new Institute, and I often pray that our good Lord will

inspire some generous hearted Father with this idea, and have written to different provinces in that intent.

"Woodstock Letters - Volume 39 (1910) [10]*."*

Negotiations are in progress for the purchase of a suitable plot of land at Tokio, and the Fathers hope that in the near future they will be in possession of a site on which to erect the necessary buildings.

"Woodstock Letters - Volume 40 (1911) [11]*."*

Many sites in different parts of the city had been under consideration, but either they were found unsuitable for the purpose in view, or else they were not for sale. To acquire a sufficient plot of ground near the centre of the city appeared almost hopeless, when quite providentially a site was offered most desirable in every respect, but even then it took more than seven months of negotiations to conclude the bargain with the different proprietors.

"Woodstock Letters - Volume 41 (1912) [12]*."*

They searched for a site to build the university for at least two years. Land in central Tokyo was difficult to purchase due to financial problems. Although they considered many candidate sites and could not find a location that met their desires, they eventually found a desirable site. This point of difficulty in examining candidate sites is also consistent with the article in the newspaper. Therefore, it is highly likely that the movement for land in Ebara County and near Kichijoji Station, as described in the article, is also true.

2.4. THE SEQUEL OF THE JESUIT SCHOOL PROJECT

In 1908, the Jesuits sent three Jesuits, including Rockliff, to Japan to establish a university[13]. They subsequently opened Sophia University in 1913 in Yotsuya, central Tokyo. Thus, the movement to consolidate the land was related to the establishment of Sophia University.

THE SEQUEL OF THE LAND IN EBARA COUNTY

MOVEMENT CONCERNING SAKURA-SHINMACHI BY KEIJI TANIOKA

We explain the sequel of the land in Komazawa Village and Tamagawa Village, Ebara County. Tokyo Trust Co., Ltd. was founded in 1906[2]. In 1907, the Tamagawa Electric Railway, founded by Tanioka and others, opened the Shinmachi stop[2]. Tanioka served as an advisor to both companies[2]. In Komazawa Village, a Tokyo prefectural horticultural school opened in 1908, which Tanioka attracted. According to the Asahi Shimbun newspaper of August 20, 1908, Tanioka was trying to attract the Tokyo Prefectural Second Normal School to Setagaya Ward[14]. Thus, Tanioka was committed to the region's development by attracting railroads and facilities.

In 1911, Tanioka sold the land that would later become Shinmachi residential area to the Tokyo Trust Co., Ltd. after the uproar over attracting the university[3]. In 1912, Tanioka planted

cherry trees on both sides of the road leading south of the Shinmachi stop, planning to make Shinmachi a large amusement park to promote the area's development[15]. The location where this row of cherry trees was planted is Chuo Street (now Sazae-san Street), which connects Shinmachi Station to the Shinmachi residential area. The Tokyo Trust Co., Ltd. created the residential area in 1912 and sold them from 1913. The area consisted of approximately 23.5 hectares of land cleared from Fukazawa, Komazawa Village and Shimonoge, Tamagawa Village[1]. This area is located between Sakura- shinmachi Station and the Horticultural School. Figure 2 shows the Shinmachi residential area overlaid on an area of the land where Tanioka had compiled as the university site. The Shinmachi residential area is located in the center of the Tanioka's area. Therefore, we believe that Tanioka used a portion of the land he had put together for the university to create the Shinmachi residential area.

MINOR CONCLUSION

From the above, we can say that the land in Sakura-shinmachi was put together due to the discussions about the land for the Jesuit school. In other words, suburban development in the Kanto region was influenced by the development of overseas and educational institutions. On the other hand, the Jesuits did not seek a suburban environment. As a result of the demand for a large site of about 110,000 tsubos, land in the suburban area was an easy choice as a candidate.

Fig. 2.   Location of Shinmachi residential area in Setagaya Ward (at the time of implementation of the towns and villages system).
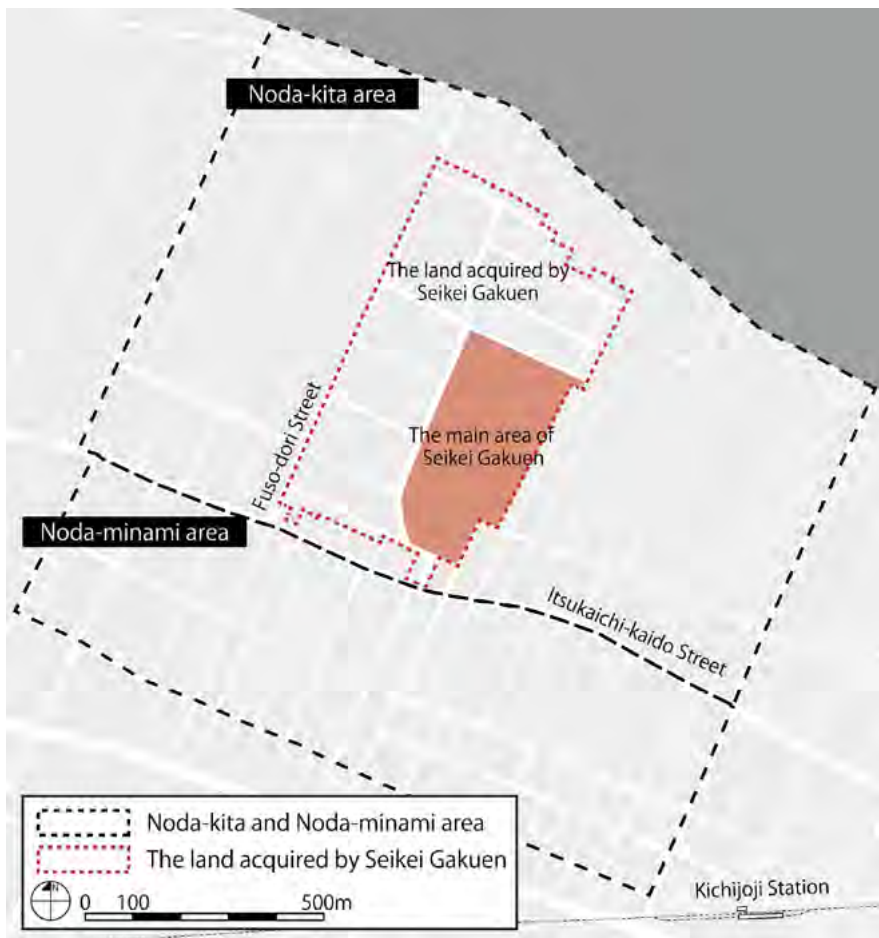
Fig. 3.   Land acquired by Seikei Gakuen around 1931 in Kichijoji.

THE SEQUEL OF THE LAND IN KICHIJOJI

Next, we will discuss the land in Kichijoji (Figure 3) mentioned above. The following is a summary of the Kichijoji land (Figure 3) mentioned in the thesis, based on the author's previously published, unrefereed report[16].

THE HISTORY OF THE LAND SALE AND PURCHASE ANALYZED FROM THE ARCHIVES OF KAMESABURO TAKAHASHI'S BIRTHPLACE

As a result of the research on the land acquisition activities in Kichijoji around 1910, the land acquired by the Seikei Gakuen educational institute in 1919, which is still located in the north-

ern part of Kichijoji Station, was found. The land, including the Seikei Gakuen campus and the residential area, was originally agricultural land with a strip of land allotment, which Shigezo Imamura acquired in 1919 for Seikei Gakuen[17]. Imamura was an official of Seikei Gakuen. The acquisition of this land was only described in "Musashino-shi (last volume)" as follows: "At the end of the Meiji era, Kamesaburo Takahashi put the land together and sold it to Matsunosuke Awa," and "it is said that someone named Awa came and bought the land, saying that he would turn it into a Christian university[18]." On the other hand, we have revealed some details from the survey of contracts and receipts for the land in the archives of Kamesaburo Takahashi's birthplace (the fifth mayor of Musashino Village) in recent years [19].

First, we analyzed one of the documents, a deed of consent dated July 31, 1910, in which all the landowners agreed to sell the land together. The preface with the signatures and seals of 26 landowners reads as follows.

> An area of about 100,000 tsubos from No. 96091 to No. 12880, Noda Kita, Musashino Village, Kitatama County, excluding a distance of 50 ken north of the Itsukaichi-kaido Street
>
> I now agree to sell this land as a site for the construction of a university at a minimum price of three hundred yen and at a maximum price of three hundred yen for residential land, fields, and forests. I do not object on any other day.
>
> July 31, 1910

The purpose of selling the land is described as "a site for the construction of a university," which is consistent with those mentioned above: "a Christian University.

Next, there is a land purchase agreement (draft) and a special agreement (draft) with Matsunosuke Awa, executed in September 1910 by Kamesaburo Takahashi and Tazaemon Kawada (assistant director of Musashino Village), general representatives of 34 landowners in Kichijoji, Musashino Village. Two certificates of receipt for land sales were made on October 4, 1910, by Kamesaburo Takahashi and Tazaemon Kawada, general representatives of 34 landowners of Kichijoji, also in Musashino Village, to " Matsunosuke Awa, unlimited liability partner of Toyosato L.P." The receipt also includes the following information, which reveals the chronological order of the receipts: "the Receipt of Land Purchase Agreement on September 8, 1910," "Deposit on September 8, 1910," and "Deposit on September 29, 1910. The old land ledger in the possession of the Fuchu Branch Office, the Tokyo Legal Affairs Bureau, shows that the ownership of these lands was transferred to the Toyosato L.P. on September 30, 1910. Thus, we know that a deed of consent was concluded between the landowners at the end of September 1910, and that a series of procedures related to the sale of the land to Matsunosuke Awa took place between September and October 1910.

These lands were grouped into three main lot numbers (952, 932, and 933) (Figure 4). The land of Seikei Gakuen was a newly developed area with a hollow in the central ground and a sawtooth oak forest at the end of the Meiji period[20]. In fact, on the old official map, lot 932, which crosses the central ground from east to west, is a mountain forest. It is the reason for dividing the land into three major lot numbers.
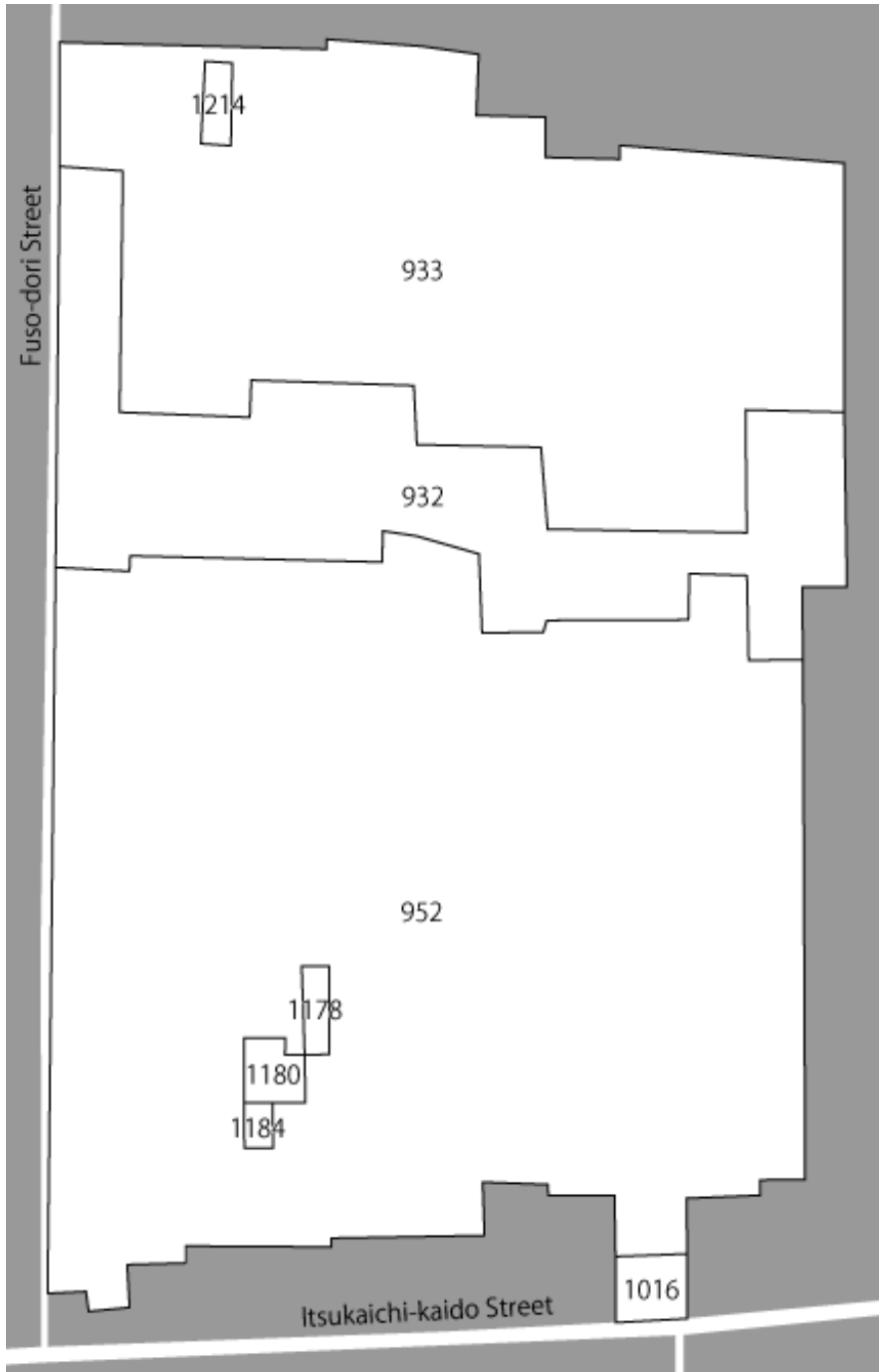
Fig. 4.   Land put together for university use in Kichijoji. The number is a lot number.

Thus, it can be inferred that the land in Kichijoji, one of the candidate sites for the Jesuit above school, was the land purchased by the Toyosato L.P. due to timing, scale, use, Christianity-related factors and so on, and Awa may have put together the land to attract the school.

MATSUNOSUKE AWA AND THE TOYOSATO L.P.

Matsunosuke Awa, the head of the Toyosato L.P. that purchased the land, was an Osaka businessman and a graduate of Gakuno-sha Agricultural School, a Christian agricultural school established by Sen Tsuda. Awa supported the social welfare organization Hakuai-sha from 1892 onward, and on March 12, 1894, he offered his land in Daini Village, Osaka, as a relocation site for Hakuai-sha[21]. He was also the principal of Naniwa Girls' School) [22]. Awa also became a member of Tsuda Juku, which became an incorporated association in 1904, and prepared the articles of incorporation for the association. Article 2 of the articles of incorporation stated that this organization shall provide higher education for girls based on Christian principles[23].

Toyosato L.P. was formerly known as Wakuraya L.P., established on May 13, 1901. 1905, Matsunosuke Awa increased his capital[24], and his family member Kei Awa joined the company[25]. The company also added the real land business to its business activities. On November 1, 1910, the company's purpose was changed to "manage land reclamation, forestation, land, improvement, and purchase of land and related businesses," and it withdrew from the food production and sales business[26]. Thus, Matsunosuke Awa significantly changed the organization of Toyosato L.P. around 1910 when he purchased the land in Kichijoji. It suggests that the business related to buying the land in Kichijoji was also important to them.

MINOR CONCLUSIONS

From the above, the sequel of the land in Kichijoji has become clear. First, the land in Kichijoji was brought together when a purchase agreement was reached between the landowners in July 1910 to establish a Christian university, and contracted and paid to the Toyosato L.P. from September to October 1910. On the other hand, the school's relocation to Kichijoji was not realized. After that, there were several subsequent offers to purchase the land. In 1919, the ownership was finally transferred to Shigezo Imamura, a Seikei Gakuen official, in 1919. We can say that the land in Kichijoji matches the land mentioned in the newspaper article, because of the information on the timing, scale, and so on. The change in the corporate structure of Toyosato L.P. and Matsunosuke Awa's strong involvement in Christian activities is another element that establishes the possibility.

CONCLUSION

After the Jesuits planned to establish a university in Japan and dispatched officials in 1908, Japanese Christians who heard the plan tried to create land for the university in various suburban areas until 1910. However, the Jesuits opened Sophia University in Yotsuya, in central Tokyo,

in 1913. On the other hand, the large-scale land formation in the suburbs developed into the Shinmachi residential area, the first suburban residential area in the Kanto region, and into a school town by Seikei Gakuen in Kichijoji. In other words, it can be said that the Jesuits' movement to establish a university led to the development of suburban residential areas and school towns in the Kanto region. Thus, it is clear that the factors of overseas and educational institutions prompted the suburban development in the

Kanto region. It is important to be aware of these backgrounds when discussing the regional formation philosophy of suburban residential areas in modern Japan.

To further substantiate this case, continually investigating using past land registry surveys, interviews, and so on is necessary.

NOTES ON CONTRIBUTOR(S)

Yuta Genda is a Ph.D. student at the Department of Urban Engineering, the Graduate School of Engineering, the University of Tokyo. He also has been working in the Japan Foundation, an incorporated administrative agency.

Masayoshi NAGANO specializes in urban design and area design. After working as an architect for Nihon Sekkei inc., he became an Assistant Professor at the University of Tokyo (2016-).

Naoto Nakajima is a professor at the University of Tokyo. He specializes in urban design, urban theory and planning history. He chaired the 18th IPHS Yokohama Conference.

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23. Matters discussed, Certificate of Acceptance (dated July 31, 1910), Land Purchase Agreement (draft) (dated September 1910), Special Agreement for Land Purchase (draft) (dated September 1910), Receipt (Land rent including above ground property, dated October 4, 1910), Receipt (Compensation for increase in rich land, buildings, firewood, and farm products, dated October 4, 1910), Compensation for damage to above ground property, Toyosato Goshi Kaisha shoryo shashiketsuke (book of cash receipts and payouts for taxes) (compensation for damage to above ground property, dated October 4, 1910), compensation for damage to above ground property, Toyosato L.P. 's cash receipt and payout book for various taxes, collection book for public dues in effect in 1916, survey map of Noda-kita, Kichijoji, Musashino Village, Kitatama County, Tokyo

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IMAGE SOURCES

Figure 1   Created based on various documents.

Figure 2   Created based on *Shinshuu Setagaya ku shi ge kan (History of Setagaya Ward, last volume)* (Tokyo: Setagaya-ku, Tokyo, 1962).

Figure 3   Created based on Taizo Sasai, *Tokyo fu kitatama gun Musurano chou zenzu banchi kaiiri (Complete map of Musashino Village, Kitatama County, Tokyo)* (Tokyo: Tokyo Illustlation Institute, 1931).

Figure 4   Created based on Minoru Nakata, Musashino mura no zu ooaza kichijoji no bu (Map of Kichijoji, Musashino Village) (Tokyo: Minoru Nakata), Collection of the Tokyo Metropolitan Central Library.

Diversification of the Utilization of Hansen's Disease Sanatoria in Japan

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Abstract

In Japan, Hansen's disease sanatoria first developed as asylums to isolate patients, then served as medical facilities for treatment development, and finally became final abodes for the elderly, who had recovered from Hansen's disease but had no homes to go back to. There still exist 13 national Hansen's disease sanatoria in Japan. Recently, however, these sanatoria have become more involved in developing exhibition facilities and tourist guide maps that are not directly related to medical treatment or their original primary residents. This has resulted from the expectation that sanatoria should play new roles, such as those regarding human rights education and inheritance of historical values. Construction of new facilities and changes in building usage have been observed across the history of Hansen's disease sanatoria, but the big difference is that most of these have been targeted at visitors and local communities, not residents themselves. According to the findings, the diversification approach to be adopted has been left to individual sanatoria such as supporting the learning of Hansen's disease history, preservation of historic buildings, and provision of community healthcare. With declining numbers of residents, the following need to be considered: new roles for the continued utilization of the sanatoria, the experiences visitors could expect from them, and selecting the buildings to be utilized. This study investigates the facilities and functions that are established in sanatoria after the abolition of Leprosy Prevention Act in 1996. Previous studies have revealed the initial development of sanatoria as isolation facilities, their expansion process, and efforts of residents to improve their living environment, therefore, this study focuses on the changes that follow. An investigation of the works and processes being made at each Hansen's disease sanatorium helps elucidate their current situation and future prospects.

The Earliest Residential Area Planning Based on the Neighbourhood Unit Concept in Postwar Japan

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Abstract

The neighbourhood unit concept, proposed in the USA in 1923, was applied in city planning across the world. In Japan, it was introduced in the late 1930s, and current urban planning also uses the neighbourhood unit concept as a basic theory for residential area planning. However, the advanced practice of the neighbourhood unit concept, which was attempted immediately after World War II, has not been clarified. This paper clarifies what experiments were made between standardisation studies from before the end of the war and the large-scale application of neighbourhood units, represented by the Senri New Town development after 1960. three planning proposals were published in journals in the late 1940s and 1950s for actual suburban areas of Japanese metropolises. All were proposed by urban planners and architects, and each had a diverse and highly planned level of spatial design that reflected their own ideas. When collated against the six principles of the neighbourhood unit concept, a certain trend of principles that were faithfully followed and those that were not was apparent. The above has revealed a part of the advanced practice of the neighbourhood unit concept in post-war Japan.

INTRODUCTION

The neighbourhood unit concept is a planning theory for residential areas proposed by C.A. Perry in the USA in 1923 and has had a significant impact on city planning worldwide due to its versatility. It was applied in many countries around the world and incorporated into city planning in their unique ways.[1] In Japan, the garden city concept was introduced in the 1910s by volunteers from the Ministry of Home Affairs' Regional Bureau, and from the 1920s to the 1930s, some private companies were developing residential areas in the suburbs of Tokyo and Osaka on the model of the garden city, but the neighbourhood unit concept was not introduced until the end of the 1930s.[2] The neighbourhood unit concept is also a basic theory in current Japanese city planning.

Today, Japan has entered society with a declining population due to the rapid ageing of the population and falling birthrate, and city planning based on the neighbourhood unit concept is under pressure to change. New towns, which have been developed in the suburbs of cities across Japan since the 1960s, face the problems of an ageing population and infrastructure, which are progressing simultaneously.[3] In Japan, the existing plan of using the primary school district as a unit of residential area is no longer appropriate for sustaining a community. Now that the restructuring of neighbourhood unit planning is inevitable soon, previous residential area planning based on the neighbourhood unit concept should be evaluated in a historical overview.

The process of the introduction of the neighbourhood unit concept in Japan has been outlined in a study by Tadashi Higasa and others.[4] In the late 1930s, Shozo Uchida and other researchers began to study on residential area planning theory based on the neighbourhood unit concept. The Dadong Metropolitan Planning presented in 1938 was a plan led by Shozo Uchida and involving planners such as Eika Takayama, and is widely known as the first plan to use neighbourhood unit as the planning unit.[5] Furthermore, the industrial city plan for Hitachi, Ltd. (1939) by Uchida and Takayama in Katsuta-town, Ibaraki Prefecture, envisaged neighbourhood units with a population of between 8,000 and 10,000 as the planning unit, and is the first example of the current neighbourhood unit's population in Japan.[6] Although both plans were not realised, they are important as pioneering residential area planning. Also, from the end of the 1930s to the early 1940s, during World War II, Architectural Institute of Japan Housing Issues Committee and Japan Life Science Institute Architectural Subcommittee studied residential area planning based on the standardisation of neighbourhood units from the perspective of industrial cities and air defence. This was the first opportunity in Japan to study the systematisation of residential area's planning units based on the neighbourhood unit concept academically.[7]

However, the practice of the neighbourhood unit concept in post-war Japan remains unclear as to its earliest stages. It is generally accepted that neighbourhood unit was first applied fully in Senri New Town, which began to be developed in the 1960s.[8] The purpose of this study is to evaluate, from a planning historical perspective, advanced residential area planning based on the neighbourhood unit concept in response to the new social conditions in early post-war

Japan. In this period, Japan concentrated on the reconstruction of city centres, and the construction of new residential areas was hardly ever realised. However, various experimental planning proposals in the suburbs of cities were published by city planners and architects to address the unprecedented housing shortage. Though these have not yet been fully appreciated in planning history in Japan, we consider them to have been extremely important as advanced attempts that influenced the new town plans that later came to fruition in Japan.

METHOD

This study identifies the early days of the introduction of the neighbourhood unit concept in Japan. Firstly, the study outlines how the neighbourhood unit concept was introduced in Japan until World War II ended. The characteristics of the Furuichiba residential area, which is considered to be the only neighbourhood-unit scale residential area realised before the end of the war,[9] are also presented, including the setting of neighbourhood units and spatial design. Next, the advanced planning proposals in post-war Japan are evaluated. Among the residential area planning proposals published in the three journals *Shinkenchiku, City Planning Review* and *Shintoshi* between 1945 and 1959, those with references to neighbourhood units and concrete planning maps for actual suburban areas in Japanese cities were selected. For these plans, information on the neighbourhood unit concept, such as the number of neighbourhood units, population and area, was sorted out, and their accuracy was verified against the six principles of the neighbourhood unit concept. Finally, each plan was compared with the above-mentioned aspects to identify the progress of neighbourhood unit practice in Japan from the 1940s to the 1950s.

NEIGHBOURHOOD UNIT THEORY
IN JAPAN BEFORE THE END OF WORLD WAR II

Before the end of World War II, there were very few examples of large-scale residential development based on the neighbourhood unit concept in Japan, due to factors such as material shortages caused by wartime social conditions, and one rare example is the Furuichiba residential area in Kawasaki City, Kanagawa Prefecture, developed by the Jutaku Eidan (Housing Corporation), established in 1941. Akira Koshizawa indicates that: 'Kawasaki Furuichiba is a large residential area as Jutaku Eidan and an excellent urban design. It is a very early example in Japan of the application of the concept of neighbourhood units (a community surrounded by main roads and with public facilities such as a primary school).'[10]
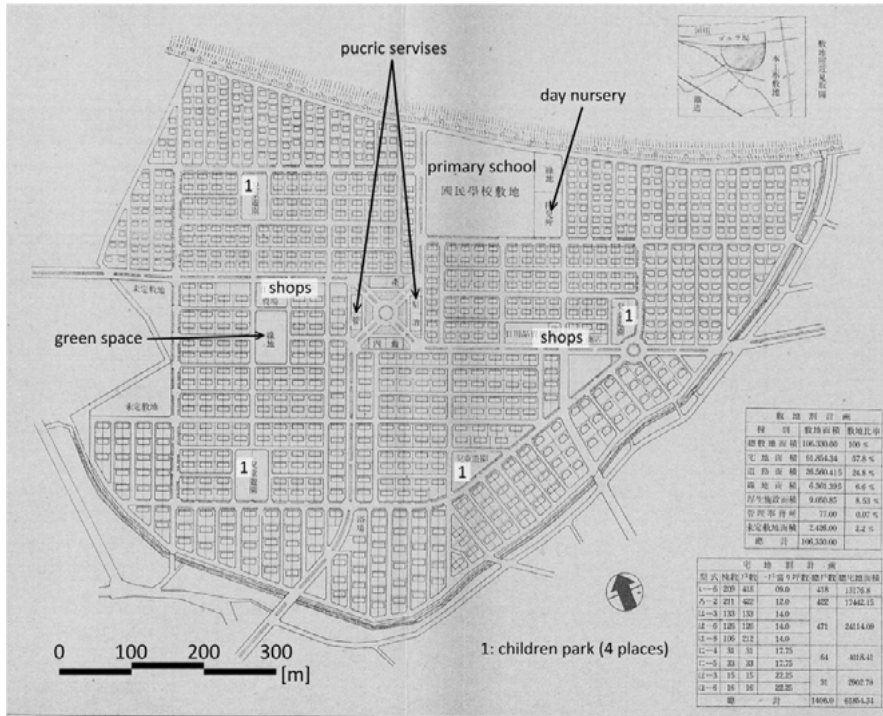
According to the planning map (Figure 1), the area of the district is approximately 347,100 square metres and the number of planned households is 1,406.[11] The total planned population can be calculated to be 7,030, as it is usually assumed that there are five persons per household in this period.[12] There is one primary school with a day nursery. In the centre of the district, an open space is planned with a roundabout surrounded by a police station, fire station, management office and clinics. Wide streets penetrating east-west and north-south from outside the district intersect at the roundabout in this central facility cluster. In addition, markets and shops are grouped in two locations, east and west, and four children's parks are evenly located within the area.

"The Technical Study of Common People's Housing"[13], published by the Architectural Institute of Japan in 1941, states that the neighbourhood unit forming a primary school district can be divided into four purchase units. This corresponds to Furuichiba being divided into four zones by major streets. At the central location of each of these zones, a children's park is constructed, similar to the standard shown in the study. However, there are some differences, as there are only two shopping areas in Furuichiba, which should be located in each of the purchase units. There are also no neighbourhood parks, which should be provided in a neighbourhood unit, and only a small green space in Furuichiba.

Plannning Standard from "The Technical Study of Common People's Housing (1941)			Planning of Furuichiba Residential Ara
Neighbor-hood unit	Scale	1,600-2,000 households	Less than the standard (1,406 households)
		60-120 ha	Smaller than the standard (347,100 m²)
	Facility	Primary school, Management office, Police office, Library, Public hall, Living guidance centre	Primary school, Management office, Police office: Planned
Library, Public hall, Living guidance centre: NOT Planned
Purchase unit	Scale	400-500 households	377 households (average)
		15-25 ha	86,775 m2 (average)
	Facility	Market, Small park, Nursery school, Public bath, Manage-ment office, Police box	Children's park: Planned for ALL 4 zones
			Markets and public bath: Planned ONLY 2

Table 1. Comparison of the neighbourhood unit setting of the 'Technical Study of Common People's Housing' with the planning of Planning of Furuichiba Residential Area.

UNREALISED RESIDENTIAL AREA PLANNING FROM THE END OF THE WORLD WAR II TO THE 1950S.

From the late 1940s to the 1950s, several original residential area planning proposals for the suburbs of cities were published by urban planners and architects. Using the methods described in Chapter 2, three study subjects were selected: the Ookayama Bunkyo District Plan[15], the Pilot Plan for Land Use of Shimonoseki City[16] and the Trial Proposals for planning the Satellite Town, Kashiwa[17].

OOKAYAMA BUNKYO DISTRICT PLANNING PROPOSAL

The Ookayama Bunkyo District Planning Proposal (1947) was one of the earliest plans to put the neighbourhood unit concept into practice in Japan after the end of World War II. The bunkyo (文教) district was a type of specific district established by the Tokyo Metropolitan Government between 1945 and 1946, originating from Tokyo's own zoning system, which was presented as part of the city planning for the reconstruction of Tokyo after the war. Bunkyo means academic, cultural and educational. The system designated areas around universities in Tokyo, such as Hongo, Kanda, Waseda, Mita and Ookayama, and was intended to create areas of architectural and scenic beauty centred on the universities. [18] In the spring of 1946, Eiyo Ishikawa, head of the Tokyo Metropolitan Government's urban planning section, asked universities with architecture departments, such as the University of Tokyo, Waseda University, Tokyo Institute of Technology and Nihon University, to make plans for each district. Each university organised a bunkyo district planning committee, for example, the University of Tokyo was led by Hideto Kishida, with Eika Takayama and Kenzo Tange at the helm. The outcome of these projects was published in *Shinkenchiku*[19] with plans for Hongo (University of Tokyo) and Waseda (Waseda University), among others.
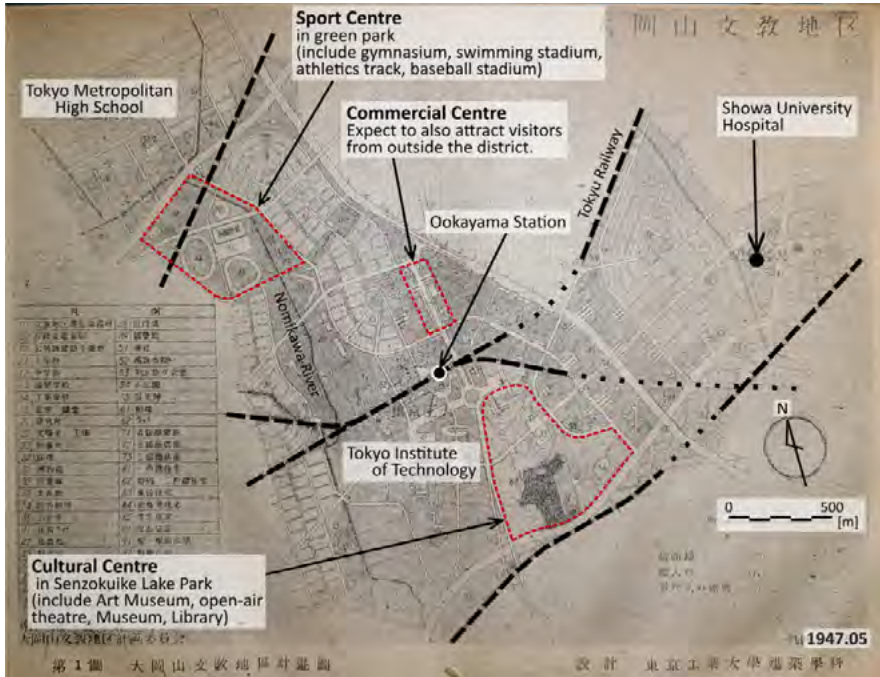
Fig. 2. Planning map of Ookayama Bunkyo District (1947). Road plans and facility layout plans are presented as the main focus. Flats and detached houses are also written separately. There are three existing educational institutions, and three types of centres were planned: sports, commercial and cultural.

One of these, the Ookayama Bunkyo District Planning Proposal, was mainly planned by Kiyoshi Seike and Rokuro Ishikawa under the leadership of Heigaku Tanabe of the Tokyo Institute of Technology. (Figure 2) This planning proposal is unique in that, compared to other bunkyo district plans, it places particular emphasis on the planning of residential areas based on the neighbourhood unit concept. Kiyoshi Seike described the Ookayama area as 'less powerful as a bunkyo district and more like a garden city for housing' and stated that 'we planned it as a garden city as part of Tokyo rather than as a university city.'[20] The Ookayama area was seen as a suburban residential area in the metropolis of Tokyo by planners. He also mentioned that dividing the target area into neighbourhood units would be inconvenient due to the differences in size and uneven shape caused by the current administrative boundaries, indicating that planning by neighbourhood units was strongly considered from the early stages of the planning process. Heigaku Tanabe's laboratory has conducted a precise survey of the current situation in the target district, including the number of houses, lot area, number of rooms per household, family and population composition, etc., and based on this survey the planning proposal has been designed to clearly define four neighbourhood units with a population of 7,000 ~ 8,000 people. (Table 2)

Fig. 3. Division plan map of 4 neighbourhood units in Ookayama Bunkyo District (1947). The extent of the four neighbourhood units is colour-coded on the street network map.

Neighborhood Unit Name	Area (ha)	Population density (person/ha)	Population	Number of households
Koyama	52,1	136	7,087	1,576
Senzoku	53,4	140	7,476	1,790
Ookayama	96,6	80	7,728	1,610
Yakumo	82,1	88	7,214	1,568

Note:
Each neighborhood unit consists of some housing types listed below.
Koyama: small houses, general houses and apartment houses
Senzoku: apartment houses
Yakumo: general houses, apartment houses and vegetable garden houses

Table 2. Scale setting for neighbourhood units in Ookayama Bunkyo District[21]

In the facility layout plan, there are not only primary schools, parks and commercial areas but also well-developed sports facilities such as athletics stadiums and cultural facilities such as museums. As can be read from the planning map, there is a high standard of design in the street network, including the use of many curves and a series of characteristic U-shaped layouts on roads within residential zones to eliminate passing traffic, and the arrangement of greenways connecting the interior of residential zones. This plan has not been realised at all, except for some major roads, which had already been planned as part of the reconstruction

urban plan by the Tokyo Metropolitan Government. However, it is unique from other bunkyo district plans in that it is located in a suburb far from the city centre and plans a very large residential area for the time with multiple neighbourhood units. It was the pioneering residential area planning based on the neighbourhood unit concept in post-war Japan.

PILOT PLAN FOR LAND USE OF SHIMONOSEKI CITY

The Pilot Plan for Land Use of Shimonoseki City was prepared in September 1953 by the Construction Engineering Study Group [22] commissioned by the Shimonoseki City Office. It envisages a master plan for the entire Shimonoseki city area, showing the demographics and industries of the city area and how the future functions and population are to be divided among the various districts of the city within the Kitakyushu metropolitan area. The map entitled 'Zoning Map of Sumiyoshi District' (Figure 4) is positioned as an example of a detailed plan for each district in the city and is the only detailed planning map in this proposal. The proposal states that 'appropriate public facilities, business offices, and commercial facilities should be located in each neighbourhood unit, such as the vicinity of Sumiyoshi Shrine in the Katsuyama area', and fully emphasises the planning of facilities by neighbourhood units. The land covered by the Sumiyoshi district planning map appears to fall within the Katsuyama and Ayaragi districts, two of the 8 districts of Shimonoseki City identified in the Land Use Plan, with the Katsuyama district being positioned as a 'luxury residential area for Kitakyushu' and the Ayaragi district as a 'general residential area'.[23] The plan is to create a residential city for urban commuters, reflecting the housing shortage of the mid-1950s, and the total population of both districts is planned to be 105,600. This is the first example in Japan of a large-scale commuter town plan for more than 50,000 people.

The following are the policies of the Sumiyoshi district plan.[24]

1. The types of roads are divided into three categories: major traffic roads, roads for inner-district traffic and roads for housing areas, and attention is paid to the shape of these roads to avoid disrupting each other's use. The shape makes use of the natural terrain and avoids angular curves for automobile traffic. Within the housing areas, pedestrian paths have been created using green areas and back-break lines. These policies increase safety and quietness within the residential areas and reduce the road area.

2. To consider road layouts so that communities can be established by school districts.

3. There are three types of housing: flat type (about four floors), row house type (two floors) and detached house, and they are arranged in consideration of the density and the character of each residential area according to the population distribution plan. In particular, as the residential area constitutes the centre of the new city under this plan and has a large area, a flat zone that also serves as a fire protection zone was planned in the central area, and the urban centre facilities were arranged within this zone.

4. The commercial areas should be laid out as intensively as possible in a small area, avoiding a linear pattern, and extended in a multi-level direction when the commercial scale expands in the future. Shops in the community should be arranged according to the same concept.
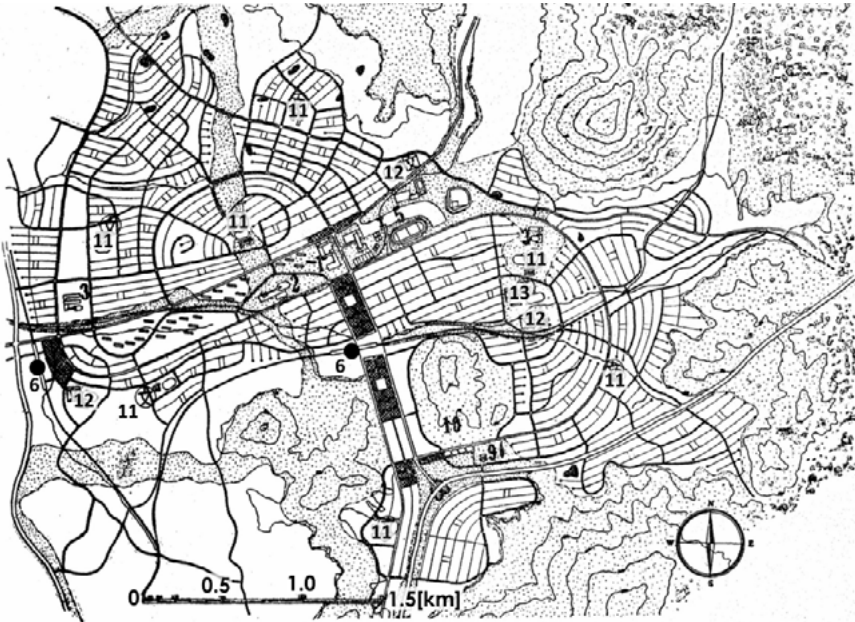
1: City office (Including police and fire stations.) , 2: Public halls and libraries , 3: Medical centre
5: Sports complex , 6: Railway stations , 9: Sumiyoshi Shrine (important cultural property) , 10: Zoo
11: Primary schools , 12: Secondary schools , 13: High school

Fig. 5.   Planning map of Sumiyoshi district (1956). This is shown as an example of a residential area plan to be built in Shimonoseki City. A strip of commercial areas and a block of flats in a green area are planned around the railway station. This is a large-scale plan consisting of seven neighbourhood units with various public facilities.

Three types of roads are depicted in the map according to the road types mentioned above, and the roads are often curved or cul-de-sac in shape. They planned 7 primary schools, 3 secondary schools and one high school in Sumiyoshi district. The central block of flats and public facilities runs east-west through the centre of the district and is connected to a long green belt extending in a north-south direction and to the commercial zone in front of the station. This is similar to the one-centre system adopted in Kozoji New Town, which was developed later, starting in 1964. In addition, the detailed depiction of the peculiarities of the street network layout and even the parallel arrangement of apartments shows a high and advanced level of planning that goes beyond the simple application of neighbourhood units to residential area planning.

'Zoning Map of Sumiyoshi District' was never realised. The only few subsequent moves can be found in the 1957 edition of the City Summary published by Shimonoseki City[25], where this district is described as the 'planned Katsuyama Garden Residential Area'. Although an illustration of blocks of flats is depicted here, no concrete plans exist at all. There is no evidence of any residential development having been carried out to the present day, and it is assumed that plans in Sumiyoshi districts have been abandoned.
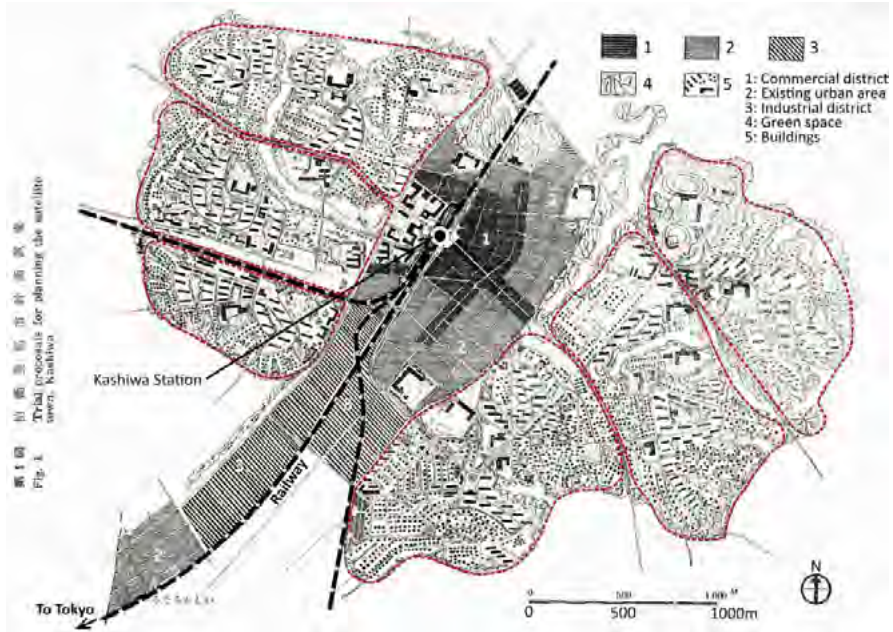
Fig. 6. Planning map of the Trial Proposals for Planning the Satellite Town, Kashiwa (1956). A new residential area, divided into six neighbourhood units, is planned to surround the existing urban area around the station. All of them make use of the railway, major roads and topography as the boundaries of the units.

TRIAL PROPOSALS FOR PLANNING THE SATELLITE TOWN, KASHIWA

Trial proposals for Planning the Satellite Town, Kashiwa, was a plan of a satellite city in Kashiwa, Chiba Prefecture, with Tokyo as its mother city and a mainly residential area for commuters. It was produced by urban planner Kan Hidejima and published in 1956. In addition to Kashiwa, Hidejima also produced satellite city plans for the Tokyo suburbs of Tachikawa and Abiko in the 1950s,[26] but this is the only plan for which a detailed plan has been presented. (Figure.5) The plan is said to be based on the studies and policies on satellite cities in Capital Construction Committee Report No. 3 as part of the Tokyo city planning.[27] On the other hand, the draft plan is strongly influenced by the garden city concept, as he stated that the location of Kashiwa 'could hold an ideal garden city form because it is blessed with a perfect agricultural and natural environment'.[28]

The fact that a large industrial district is planned shows the garden city's character, but the plan is based solely on the relocation and attraction of factories to satellite cities as proposed by the Capital Construction Committee. Although the plan is for a satellite city, most of the content of the proposal relates to residential areas, as the existing town centre and industrial

districts are not envisaged in any detail except in terms of their functions. A new residential area with a planned population of 50,000-70,000 is to be built within a walking distance of approximately 2 km from Kashiwa Station and will comprise 6 neighbourhood units. The boundaries of these units are clearly defined as existing railways and major roads, or newly built connecting roads between the city centre and the suburbs, and all the neighbourhood units are centred around primary schools. In other words, it clearly introduces the neighbourhood unit concept while aiming for the garden city. This proposal contains characteristic expressions on land use planning, which show both the garden city concept and the neighbourhood unit concept. For example, 'cultural neighbourhood units', 'a free-flowing arrangement of residential area landscapes', 'Various facilities for convenient living for housewives and children in one neighbourhood unit', 'Council flats and owner- occupied small houses will be arranged in harmony with each other, and be designed in 'park-flat style' and a 'villa-like garden house style', depending on the location and topography of each neighbourhood unit.' 'The slopes around the urban area are used as a forest belt, which also serves as an urban windbreak and fosters the landscape of a forested garden city.'[29]

The plan shows a characteristic road layout with a lot of curves and cul-de-sacs, including a tree-like arrangement of streets for detached house blocks along the topography. It can also be read that rice fields located in lowlands in the original terrain have been preserved even within the target area. Other features include a configuration in which blocks of flats are grouped in the centre of each neighbourhood unit and surrounded by detached house blocks. This configuration has similarities with the residential area planning developed in the late 1950s by the Japan Housing Corporation, which was established in 1955. It should be noted that Hidejima was commissioned by the Japan Housing Corporation to prepare master plans for Tokiwadaira in Matsudo and Tamadaira in Hino, both of which are located in the suburbs of Tokyo.[30] Although the Trial proposals for planning the satellite town, Kashiwa, have not been realised, these two residential areas, though on a smaller scale than Kashiwa, have been realised based on the master plan by Hidejima. His planning approach has had a definite influence on spatial planning in the later development of new towns in Japan.

ANALYSIS OF EACH PLANNING
ACCORDING TO THE PRINCIPLES OF NEIGHBOURHOOD
UNIT CONCEPT AND POST- WAR PLANNING STANDARDS

This chapter provides a comparative analysis of the Furuichiba and the three post-war planning proposals, comparing each of the plans against the principles of the neighbourhood unit concept. First, basic information on each planning is summarised in Table 3. In the post-war period, an unprecedentedly large residential area planning consisting of multiple units was produced one after the other. The population per unit and the population density of residential areas increased as time went on.

Plan	Furuichiba (realised	Ookayama	Shimonoseki	Kashiwa
Year of publication	1942	1947	1956	1956
Planner	Jutaku Eidan (Housing Corporation)	Kiyoshi Seike, Rokuro Ishikawa, Heigaku Tanabe, and others	Kiyoshi Ikebe, Kiyoshi Ichikawa, Yoshikatsu Tsuboi, and others	Kan Hidejima
Area (ha)	35.15	477 (the whole area) 284 (Only residential areas)	Unidentified	420 (Only residential areas)
Unit number	1	4	7	6
Population per unit	7,030	7376,25	Approx. 8,000	Approx. 10,000

Table 3. Table of comparison with the six principles of the neighbourhood unit concept.

Next, Table 4 compares each planning proposal against the six principles of the neighbourhood unit concept. The criteria for each principle are listed in the table.

	Furuichiba (realised)	Ookayama	Shimonoseki	Kashiwa
Size	Yes	No	Yes	Yes
Boundary	No Consideration	No Consideration	No Consideration	Yes
Open Space	Not Enough	Enough (34%)	Enough	Enough
Institution	Not in the centre	Not in the centre	Probably Yes**	Yes
Shopping district	Planned for two locations in the unit	Planned in the centre of each unit	No detail	Planned in the centre of each unit
Internal streets	No Consideration	Yes	Yes	Yes

Size: Is the neighbourhood unit a single primary school district?
Boundary: Are all units surrounded by major roads?
Open space: Are small parks and recreational spaces provided in each unit, with an area of at least 10% of the unit?
Institution: Are primary schools and public facilities grouped in the centre of the unit?
Shopping district: Are they collectively located near the boundaries of adjacent units?
Internal streets: Is passing traffic eliminated and consideration given to circulation within the unit?

Note:
* The district is almost surrounded by river embankments and narrow waterways.
** Because the setting of neighbourhood unit boundaries is unclear.

Table 4. Table of comparison with the six principles of the neighbourhood unit concept.

As a result, in most cases, one neighbourhood unit is planned as a primary school district. Open space and Internal streets are well considered in the three post-war plans, except for Furuichiba, which was developed during the war years. On the other hand, Boundaries, even in the three post-war plans, which show ideal characteristics, are scarce when surrounded by major roads, and the planning intention is absent concerning the principles. In the Kashiwa plan, the slope of the original terrain is partially preserved, so not all neighbourhood units are completely bounded by major roads. In Institution, Furuichiba plans central public facilities and the primary school far away from each other. In the three postwar plans, concrete plans for public facilities in each neighbourhood unit are not known, but in Shimonoseki and Kashiwa, the location of the primary school is placed in the centre

of each unit. In the shopping district, all three plans, except Shimonoseki where there is no plan description, have commercial areas in the inner part of the units, so the principle is not followed in any of the three plans.

After the end of W.W.II in 1945, in July 1946, the 'Reconstruction Land Readjustment Design Standard'[31] was presented by a government agency as a standard for city planning for reconstruction from war damage. The standard included a section on the design of neighbourhood units, finally introducing the neighbourhood unit concept as an official design standard for land readjustment projects.[32] In 1949, the 'Standard for Ichidanchi Residential Area Planning'[33] was published, with the main purpose of constructing public housing and containing more detailed neighbourhood unit planning provisions than ever before. Concerning the size of neighbourhood units, the 'Reconstruction Standard' sets a population of 10,000 and the 'Ichidanchi Standard' sets a population of 8,000 to 10,000, and the two post-war proposals, excluding Ookayama, follow these principles.[34] Boundary, where deviations from the principle were observed, is poorly mentioned in either standard. However, the 'Reconstruction Standard' defines the boundary as the major roads, rivers and railways as much as possible. The 'Ichidanchi Standard' only states that care should be taken to avoid heavy traffic roads piercing through neighbourhood units. In the case of shopping districts, also a principle, the 'Reconstruction Standard' defined that there should be 2 to 4 shopping districts within one neighbourhood unit, and the same is true in the 'Ichidanchi Standard'.[35] In other words, the planning standards of the time themselves were not faithful to the principles of the neighbourhood unit concept. It can be pointed out that the influence of the Japanese planning standard on the neighbourhood unit concept at the time can be seen in the fact that none of the proposed plans for surrounding a neighbourhood unit with major roads and placing a shopping district near these roads is found in any of the plans.

CONCLUSION

This study extracts planning proposals based on the neighbourhood unit concept in postwar Japan and shows its progressiveness. As a practice of the neighbourhood unit concept that bridges the historical differences between the pre-war standardisation studies and the post-1960 Senri New Town, it has shown some of its value in the planning history. A comparative analysis of the six principles of the neighbourhood unit concept revealed a tendency for some principles to be faithfully applied or ignored throughout each planning, showing the characteristics of neighbourhood unit planning in Japan. The detailed plan maps showed that all of them attempted advanced planning techniques, such as distinctive street and facility arrangement, and housing layouts that combined various forms. There was an aspect that the planners' originality was strongly expressed in each plan, such as the Ookayama Bunkyo District Planning Proposal, which showed the setting of neighbourhood units based on a detailed survey, the Pilot Plan for Land Use of Shimonoseki City with its centralised facility layout and large- scale greenway plan, and the Trial Proposals for Planning the Satellite Town, Kashiwa, which tried to integrate the garden city concept and the neighbourhood unit concept.

This study does not cover all of the earliest residential area planning in post-war Japan. Further rediscovery of contemporaneous planning proposals and historical evaluation from the perspective of the introduction of the neighbourhood unit concept is desirable in the future. In addition, the collection of original documents by the planners themselves on the planning proposals covered by this study will enable the study of the details of the background of the plans. Furthermore, if there is evidence of a direct influence of these pioneering plans on the new town developments that have been realised since the late 1950s, this will complete the history of the early days of the neighbourhood unit concept in Japan.

In recent years, various studies have been conducted on typical Japanese new towns, such as Senri New Town, from the perspective of the social transformation of an ageing population and ageing infrastructure, all of which involve the fundamental theme of questioning the effectiveness of the neighbourhood unit concept in an era of declining population.[36] As they are likely to have been influenced by the pioneering unrealised plans covered by this study, identifying the earliest introduction of the neighbourhood unit concept provides clues to solving the neighbourhood problems that arise in the modern era.

DISCLOSURE STATEMENT

NOTES ON CONTRIBUTORS

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10. Ibid. 270.

11. Koshizawa states that the number of planned households in Furuichiba was 1508. The plan map cited by Koshizawa differs slightly from Figure 1, which is almost equivalent to the plan actually built, indicating that the planned population was larger in the early planning stages in 1941. Ibid. 271.

12. Housing Issues Committee, Architectural Institute of Japan, ed. "The Technical Study of Common People's Housing." *Kenchiku Zasshi [Journal of the Architectural Institute of Japan]* 55, no. 671 (1941): 93.

13. Ibid, 73–101.

14. Although there is no mention of a 'purchasing unit', the four territorial divisions by main roads can be seen on the plan map.

15. Department of Architecture, Tokyo Institute of Technology, ed. "Ookayama Bunkyo District Planning Proposal." *Shinkenchiku* 22, no. 10, 11 (1947): 20–25.

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18. Bunkyo districts are considered a type of special district system for the construction of a cultural city and are defined as areas that are particularly improved in terms of aesthetics, appearance and public morals. According to the draft outline for the approval of special districts, the aim is to 'plan the whole area including the bunkyo district to promote not only the health and tranquillity of the area, but also the beauty of its architecture and atmosphere, and to realise a university town based on a comprehensive plan'. The draft outline includes provisions that appear to have been influenced by the neighbourhood unit concept, such as 'taking into consideration the elimination of through traffic as much as possible'. It should be noted that this planning system is not primarily aimed at residential area developments. Eiyo Ishikawa. "Report and Commentary on the Tokyo Reconstruction City Plan." *Shinkenchiku* 22, no. 1 (1947): 27.

19. "Special Feature on Bunkyo Districts" *Shinkenchiku* 22, no. 10, 11 (1947)

20. Department of Architecture, Tokyo Institute of Technology, ed. "Ookayama Bunkyo District Planning Proposal." *Shinkenchiku* 22, no. 10, 11 (1947): 21.

21. Ibid: 25. Extracts from the table titled 'Neighbourhood Planning' are quoted.

22. The Construction Engineering Study Group was established in 1950 by Kiyoshi Ikebe and Yoshikatsu Tsuboi of the University of Tokyo. Kiyoshi Ikebe and Kiyoshi Ichikawa were mainly responsible for the planning of this project, but Tsuboi took general direction. In addition, it is reported that they were assisted by Hideo Yoshida, Masao Komiyama, Katsu Furuta and Takatoshi Ito.

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33. Public Relations Division, Ministerial Secretariat for Construction, ed. *The Road to Community; Standard for Ichidanchi Residential Area Planning of City Planning*. Japan: Public Relations Division, Ministerial Secretariat for Construction, 1949.

34. The target area of Ookayama is different in character from the war-affected city centres that were the main target of the 'Reconstruction Standard'.

35. The 'Ichidanchi standard' states that each neighbourhood unit is to be divided into four neighbourhood sub-units, with a grocery shop in the centre of each sub-unit, as far as possible; it also allows for one shop in the middle of two or more sub-units. For neighbourhood units, shops for daily necessities are to be located in areas with convenient access, based on an area of 3%. Public Relations Division, Ministerial Secretariat for Construction, ed. *The Road to Community; Standard for Ichidanchi Residential Area Planning of City Planning*. Japan: Public Relations Division, Ministerial Secretariat for Construction, 1949: 64.

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Construction of Civic Center in the Castle Town City of Kofu, Japan

A Study by Shiro Fujimura on the Planning Intentions for the Construction of Civic Center in the Castle Town City of Kofu, Japan

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Abstract

In Japan, as the social system underwent a transformation from the feudalistic period to the Meiji period, government office districts with a concentration of government facilities were formed in castle towns, which had been the main cities during the feudalistic period. In Kofu city, Yamanashi Prefecture, a civic center with quasi-Western-style architecture was formed by Shiro Fujimura, who was appointed as prefectural governor in 1873. The purpose of this study is to clarify the actual situation of the formation of the civic center by focusing on the Kofu civic center, which was planned by Shiro Fujimura in the early Meiji period, as well as how the spatial configuration of the castle town was read to construct public office facilities. Specifically, this study aims to 1) clarify Fujimura's urban planning intentions based on the layout of planned and constructed government facilities, and 2) clarify the uniqueness of the Kofu civic center by comparing it with Yamagata and Utsunomiya, where planned civic centers were established by prefectural governor Michitune Mishima. The findings are as follows: 1) an L-shaped civic center was formed in front of Ote-gomon and along Tokiwa- dori in the former samurai district near the castle, with the prefectural office facing east; 2) the urban space in the civic center showed modern landscaping with street trees, waterways, road maintenance, fire prevention measures, and shared open spaces; and 3) Mishima developed a symmetrical civic center centering on the prefectural government office as a symbol of the authority of the Meiji government, while Fujimura was the first to construct a silk mill, placing importance on the development of industry, and subsequently the civic center, which was centered on the silk mill .

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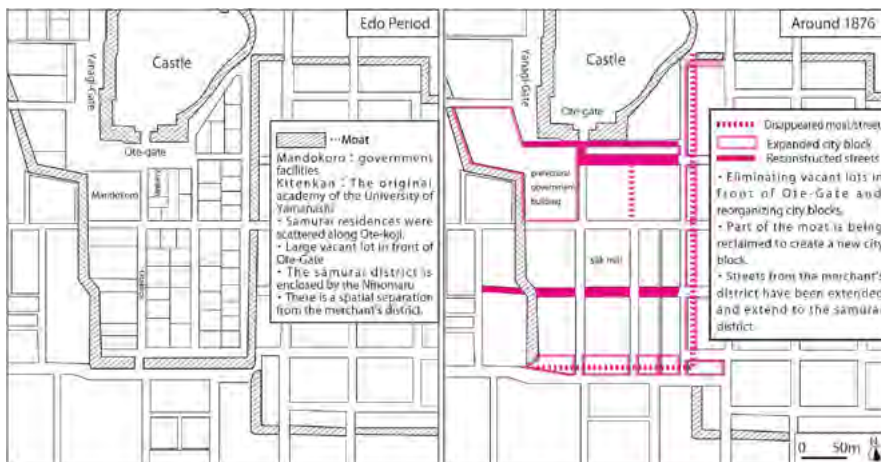
Fig. 1. Changes in the southern part of Ninomaru.

INTRODUCTION

At the time the social system in Japan was undergoing changes during the Meiji era, government offices and facilities were becoming concentrated in the castle towns that had been the main cities during the feudalistic period, leading to the formation of government office districts. In Kofu city, Yamanashi Prefecture, Shiro Fujimura[1], who was appointed as prefectural governor in 1873, created a civic center[3] with so-called quasi-Western-style architecture (commonly known as "Fujimura-style architecture"[2]). As a prefectural governor, Fujimura promoted the modernization of Yamanashi Prefecture by implementing a number of modern policies until he retired in 1887.

Maizuru Street (formerly Nishikicho Street), the location of the current Kofu civic center, was formed during the Fujimura administration, and Kofu was one of the most modern regional cities in Japan in the early Meiji period[4]. However, the buildings from those days were destroyed by rebuilding and air raids, and thus, are not visible today. To clarify the basis of the current Kofu civic center and gain a better understanding of the actual image of the modernization of local cities, it is important to analyze the actual conditions of the Kofu civic center in the early Meiji period, as planned and developed by Shiro Fujimura. Michitsune Mishima[5] is widely known as the person who led the planned formation of civic centers in local cities in the early Meiji period, but studies on Fujimura are scarce. With the aim of clarifying the actual situation of civic center formation, focusing on how the spatial configuration of the castle town was understood to construct government facilities, and how it related to urban development in the central city area of Kofu, this study focuses on the Kofu civic center, a planned civic center developed by Shiro Fujimura in the early Meiji period. Specifically, this study aims to clarify 1) Fujimura's urban planning intentions based on the layout of planned and constructed government facilities, and 2) the uniqueness of Kofu's civic center by comparing it with Yamagata and Utsunomiya[6], where planned civic centers were formed by prefectural governor Mishima.

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This research was conducted through the collection of archival data, such as official documents, a material survey at the Yamanashi Prefectural Museum, a literature survey (the histories of Yamanashi Prefecture and Kofu city, as well as other documents dealing with Kofu in the early Meiji period), and interviews to determine the existence and content of the planning intentions at that time. In addition, I recreated the layout of the buildings of the time based on photographs and drawings.

GOVERNMENT OFFICE DISTRICT PLAN BY SHIRO FUJIMURA

First, I analyze land use in the castle district by the Fujimura administration (before 1873). Kofu Castle was one of the most famous castles in the Kanto region during the feudal era, and prospered to the extent that it was called "Little Edo". The samurai district was located in the Ninomaru area and the merchant district in the Sannomaru area, which were separated by moats (Figure 1). The samurai district in the southern part of the Ninomaru area housed a government office called "Mandokoro", as well as central facilities such as the Ometsuke residence and Kitenkan (place of study). The merchant district on the southeast side was particularly prosperous. However, the town was devastated by upheaval in the Edo and Meiji periods. In 1868, Taisuke Itagaki and others entered Kofu Castle without bloodshed, and in February 1872, Kofu Castle was placed under the jurisdiction of the army. In the following year, 1873, the decision was made to abolish the castle; it was decided that only the inner castle would be preserved and that the Ninomaru and Sannomaru areas would be urbanized[7]. Later, as the old guard left the castle, it fell into disrepair and garbage was thrown into the moat, creating a poor environment.

Next, I analyze land use in regard to the castle after the Fujimura administration (after 1873). The castle district underwent major changes from 1873, the year Fujimura became prefectural governor. First, the land ownership of Kofu Castle changed. In the latter half of the domain period, Kofu Castle was under the direct control of the shogunate, but with the restoration of the shogunate's domain in the Meiji period, all the land was returned to the Meiji government and Kofu Castle was placed under the jurisdiction of the army. Later, the Ninomaru area, part of which was owned by the prefecture, where government facilities and other public offices were constructed, was disposed of by the army. It is thought that it was rational to build a government office district on the same site because the Ninomaru area had been home to administrative offices such as the Imperial Administration Office since the feudal era, and because many of the posted duty guards had vacated the castle, which made it easy to develop a coherent development project in the samurai district.

Furthermore, a plan to demolish and reclaim the moat was implemented. In 1875, in a report to the Lord Privy Seal, titled "Request for the Disposal of the Outer Moat of Kofu Castle", Fujimura requested that the moat be reclaimed. The contents of the request included the following: "Dust from the moat will cause health hazards because of the accumulation of bad water", "The residences of nobles and the site of the former imperial residence were disposed of under the castle, and land tickets were issued to build a prefectural government office, hospitals,

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schools, a silk mill, and other residences, which led to an increase in human traffic", "There are bridges and gutters that supply water for regular use, and repairs to them are costly", and "The moat is harmful and useless, so we wish to remove the distinction between the inside and outside by filling in the moat, which would allow us to build a house". The demolition of the moat was subsequently approved, and parts of the Ninomaru and Sannomaru areas were reclaimed to make way for the construction of new streets (Figure 1). The road improvements created continuity from the merchants' quarters to Ninomaru, and the flow of people between the government office and merchant districts became more active. From the content of the report and the actual condition of the road construction, it can be inferred that Fujimura planned the construction of a civic center in Ninomaru before the moat was reclaimed, and that he anticipated the future of the civic center.

Next, I look at the details of the plans for the civic center. The prefectural government was to be located in the original government office (Mandokoro), and a normal school and silk mill were to be established to serve as the mainstay of scholastic education and industrial development that Fujimura had been focusing on (Figure 2[8]). This is considered to be a remarkable example of the policies[9] of the Meiji government at that time. Among these plans, the earliest to be initiated was that for the Kangyo Silk Mill (Table 1). Because Fujimura believed that it was important to strengthen the finances of Yamanashi, an area with few specialty products, through the production of raw silk, the construction of a silk mill was considered a vital step in this direction. The overall appearance of the government office district changed from around 1881, when the silk mill was built, to around 1887, when the police station and city hall were constructed (Table 1). In the early Meiji period, government offices were formed in line with the policies of the Meiji government, such as the establishment of an industrial and educational system; however, in the mid-Meiji period, as the system took off and the privatization of industry progressed, the government began to focus on enhancing administrative functions. In fact, the reason why the Kangyo Silk Mill was not rebuilt after it was destroyed by fire can be attributed to the fact that the privatization of the silk industry had become widespread and thus, there was no need to rebuild.

Regarding the layout plan of the government office district, first, the prefectural government office was built on the site of the original imperial palace, and the silk mill and the prefectural governor's residence were built on Tokiwa Street, forming an overall L-shaped government office district (Figure 2). The silk mill is located at the inner corner of the L-shape and occupies the central position in the civic center, facing Tokiwa Street. In addition, the government facilities on the street in front of Otemon were built facing east. It can be assumed that this shape was largely since the merchant's area was located to the east. Assuming a flow of people from the merchant area, the main line of flow is thought to be through Tokiwa Street to Nishikicho Street. Considering this series of flow lines, it is considered inevitable that an L- shaped civic center would be formed.

Next, I examine the relationship between the streets and the civic center. To facilitate distribution, Fujimura intended to redevelop the roads that had connected Kofu to the outside world (Koshu-Kaido highway, Oume-Kaido highway, and Sunshu-Oukan highway) prior to the feudalistic period. In particular, the Koshu-Kaido highway passed through the town of Kofu
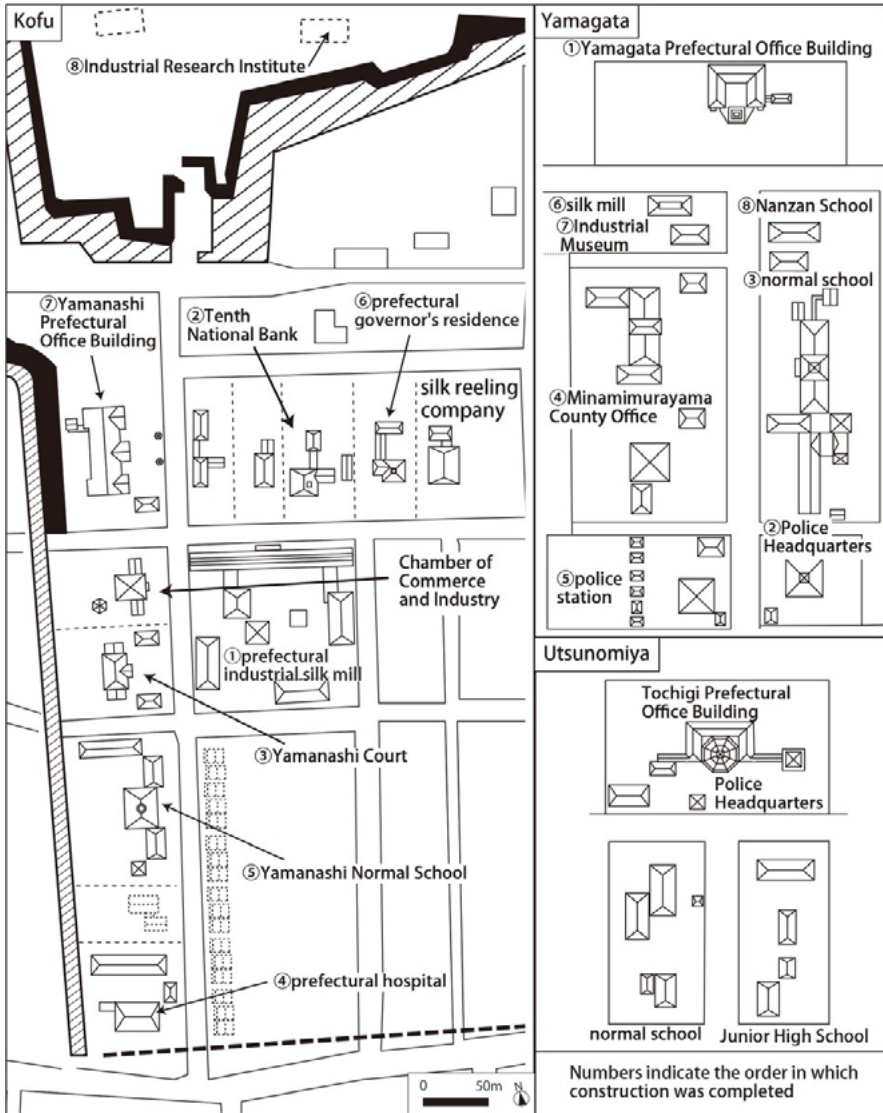
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Fig. 2. Layout of facilities comprising the civic center

along Ninomaru, and the formation of towns along the highway indicates that it was an import-
ant highway in terms of logistics and human flow (Figure 3). Regarding access to the civic center,
Tokiwa Street, an extension of Koshu-Kaido highway that ran through the merchant area, was
probably the best choice as the main street for directing goods and people to the civic center.
This good connection with Koshu-Kaido highway was a factor in the formation of the L-shaped
civic center at the intersection of Nishiki-cho Street on the north–south axis and Tokiwa Street on
the east–west axis. In fact, the silk mill faced Tokiwa Street and was ideally located for logistics.

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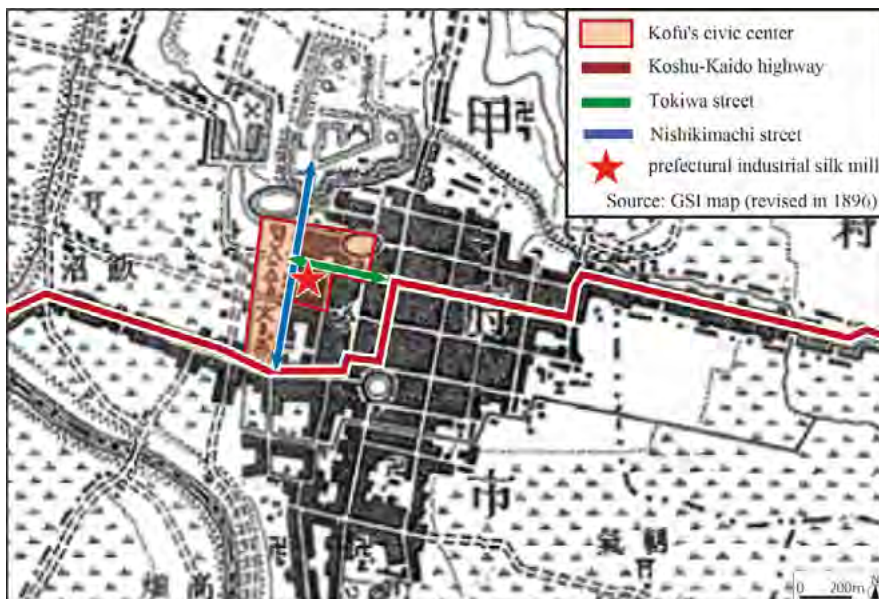
Fig. 3.   Location of Kofu's civic center and the Koshu-Kaido highway

SPATIAL CHARACTERISTICS OF KOFU'S CIVIC CENTER

The width of each street was set at 6 ken (about 11 m), and to facilitate maintenance, additional land rent was to be paid for any portion of the street that extended beyond this width. Fujimura also established modern rules for the construction of houses[10]. He stipulated that there should always be some common open space on the left, right, and front of a house, and that trees should be planted to improve the appearance of urban areas and help prevent fires. Photographs and nishiki-e (woodblock prints) from that period show that the streets were well maintained and wide enough for horse-drawn carriages to pass through (Figure 4). In addition, buildings along the road were moderately set back, and stone walls, fences, and waterways were located at the street boundaries, giving the impression of neatness and cleanliness. Trees were planted along the street, resulting in the entire street being lush with greenery. The gate of Kofu Castle was located in front of Nishikimachi Street, the main street, indicating the proximity of the civic center and castle (Figure 4).

Finally, I compare the civic centers in Yamagata and Utsunomiya planned by Mishima in the early Meiji period with those in Kofu (Figure 2 and 5). First, regarding the location plan, Mishima did not establish government office districts within the castle district[11], but rather, on unused grassland and mountain foothills away from the castle (Figure 5). In doing so, they were conscious of connectivity from the merchant's area, and both Yamagata and Utsunomiya established civic centers adjacent to city streets. Kofu, on the other hand, established a civic center in Ninomaru, which was closely connected to the castle district. By utilizing the

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samurai district and filling in the moat, the connection with the merchant's district was made closer. By following the urban framework of the castle town period, the city was naturally connected to the existing streets and avenues. Next, looking at the layout of the government facilities, Mishima is characterized by a symbolic spatial configuration, with a main street running north–south, government facilities on both sides, and the prefectural office building in front (Figure 2). In the case of Yamagata, the government offices were located on an extension of the highway extending north. In the case of Utsunomiya, the civic center was formed along a street orthogonal to the east–west highway, giving the strong impression that the civic center planned by Mishima was concerned with a symmetric urban landscape along the north–south axis. In the case of Kofu, on the other hand, the prefectural government building was located in a corner of a grid-like city block, giving the impression that it had less presence than Yamagata and Utsunomiya, and that the silk mill was placed in the center of the district. In addition, the shape of the civic center had two axes, east–west and north–south, and was less symbolic than the civic center planned by Mishima. Fujimura may have thought that the silk industry would support Yamanashi, an area with a weak industrial base, and thus planned the layout with greater emphasis on the silk mills than on the prefectural government buildings. Finally, looking at the year each facility was established, Kofu and Yamagata appear to share some common facilities, such as their prefectural office buildings, schools, courthouses, and silk mills (Table 1). These were strongly reflective of the policies of the Meiji government at the time of their establishment, such as the industrial reproduction and development and school system policies. However, looking at the order in which the facilities were built, the prefectural office building was built first in Yamagata, whereas the silk mill was built first in Kofu. While Mishima was concerned with the prestige of the government, Fujimura's intention to prioritize industrial development.
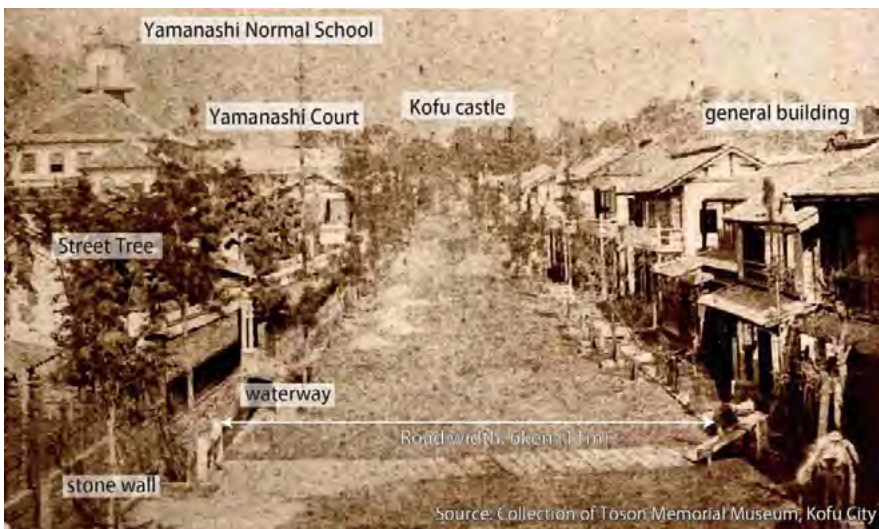
Fig. 4. Nishikimachi Street (estimated to be around 1876)

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Fig. 5.   Location of the civic center

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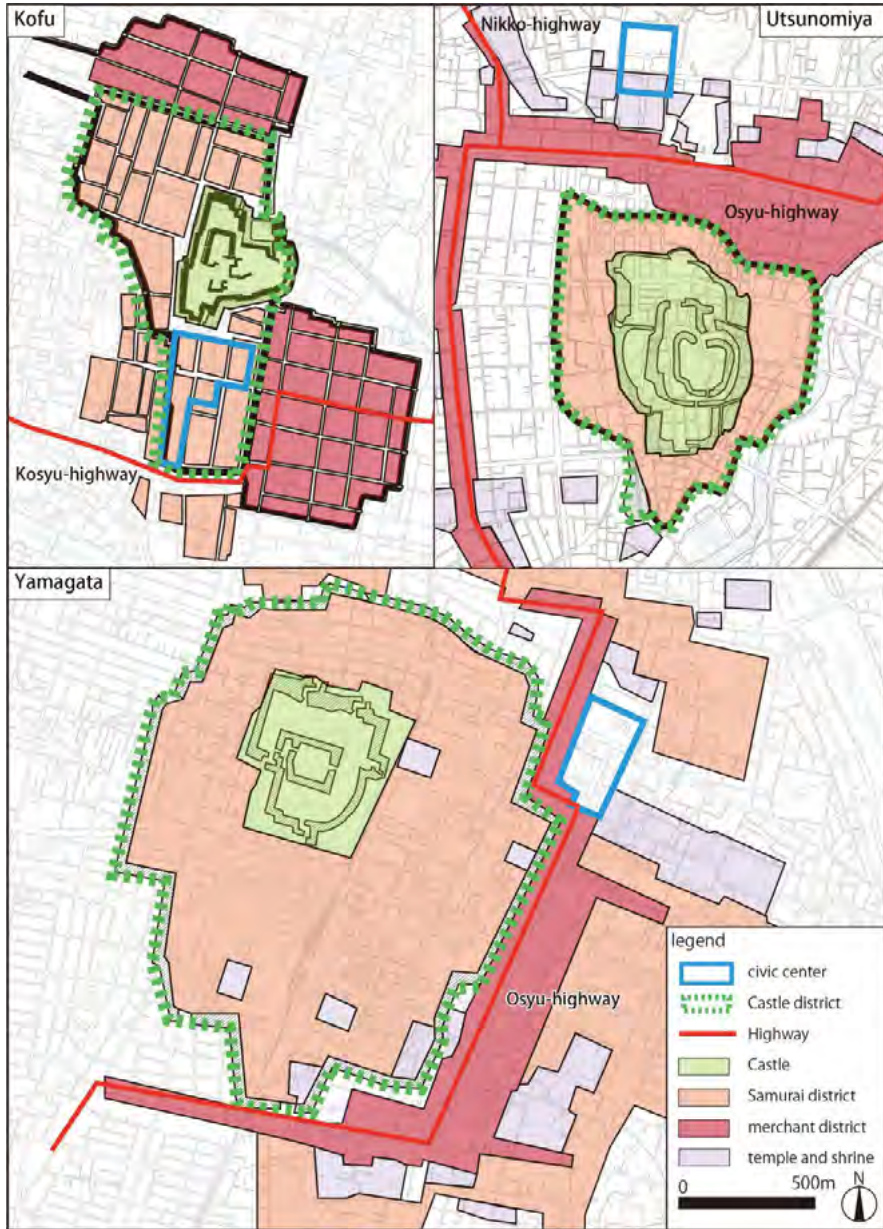
CONCLUSION

The results of the study revealed the following two points.

First, an L-shaped civic center was formed in the samurai district in consideration of its connectivity with the merchant district. The southern part of the samurai district in the Ninomaru area of Kofu Castle had been a political center with administrative functions since the feudal period, and after the restoration of the shogunate, it was easy to develop the area on a large scale because of the withdrawal of the shoguns and land dispossession by the army. The prefectural government buildings were oriented toward the east. This is thought to have been done with an awareness of the connection from the merchant area and the street. The moat between the samurai and merchant areas was filled in and the castle district was modernized.

Second, compared with Yamagata and Utsunomiya by Mishima, Kofu's civic center was characterized by 1) being bordered by samurai districts close to the castle district, and 2) not producing the symbolism of a prefectural office building. Mishima developed a symmetrical government office district centering on the prefectural office building as a key symbol of authority for the Meiji government, while Fujimura was the first to build a silk mill and devote himself to the development of industry. Mishima was concerned with developing unused land and building a government district with a north–south axis from scratch, whereas Fujimura utilized the existing urban framework and transformed a samurai district into a civic center. Therefore, while the castle district, civic center, and merchant district were relatively closely adjacent to each other in Kofu, they are not symbolic of each other.

NOTES ON CONTRIBUTORS

ENDNOTES

1. He was a bureaucrat from Kumamoto, Higo Province. He was appointed as the prefectural governor of Yamanashi Prefecture in 1873. He was described as a "road prefectural governor" and promoted the modernization of Kofu until his retirement in 1887.
2. Government office districts in this study are defined as districts where facilities with public functions were concentrated, such as silk mills, hospitals, schools, and prefectural ordinance residences built by the prefecture, in addition to government facilities.
3. The buildings were planned by Shiro Fujimura and designed and built mainly by local carpenters Yataro Komiyama and Shozo Tsuchiya.
4. Ernest Sato, the British Minister to Japan who visited Kofu in 1877, wrote the following in his diary: "The number of buildings in this town imitating Western architecture is the largest in Japan, as far as I know, considering the size of the town" (http://yshisotricalplace.web.fc2.com/historical_place/mutsuza-wagakko/index.htm (viewed May 11, 2024). This shows that Fujimura was focused on modernizing the city of Kofu.
5. He was a bureaucrat from Kagoshima, Satsuma Province. He served as prefectural governor of Tsuruoka, Yamagata, Fukushima, and Tochigi. He promoted civil engineering projects such as the Kuriko Tunnel and the Aizu-Mikata Road, and worked to foster industry in the Tohoku region, earning him the reputation as a "civil engineering prefectural governor.
6. For the Yamagata and Utsunomiya cases, see references 1) and 2).
7. It was deemed unsuitable as an army garrison.

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8. The government office district around 1876 was reproduced based on the "Map of Kofu under Yamanashi Prefecture" (created in 1876), a drawing in the Kofu Newspaper (issued on September 25, 1876), and photographs of each government office building. Unknown items are marked with dotted lines. For the layout of Yamagata's government facilities, etc., refer to references 1) and

9. 2). Utsunomiya's government office district was reproduced with reference to photographs, maps, and the "History of Utsunomiya Manga".

10. In addition to the academic, military, and taxation systems, the Meiji government focused on promoting industry and prestige.

11. Excerpt from Kofu City History, Historical Documents, Vol. 6, "About the Instructions for Building New Houses in Kofu City" (Kofu Newspaper, 1876) "If houses are built so close together that they are adjacent to each other, they may obstruct air circulation and cause health problems, or they may burn down in similar situations. Please be sure to leave some open space on the left, right, front and rear of the houses, and plant trees, etc., to keep them healthy and prevent fires, and do not build next to them as in the past." May 8, 1918. Shiro Fujimura, Minister of Justice, Yamanashi Prefectural Government.

12. Castles and samurai lands surrounded by outer moats, earthen mounds, castle mountains, rivers, etc. are defined as castle districts.

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IMAGE SOURCES

Open Space
in East-Asian Cities (2)

Chair: Tomoko Mori

The historical transition of Air Defense Green Space
A case study in YOKOHAMA City

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Abstract

Yokohama City, Japan's largest port city, located in the waterfront area in the western part of the Tokyo Metropolitan Area, was most affected by Japan's urban issue of the 20th century: urban expansion and modern warfare. During the 1900s and 1930s, Yokohama City had already developed into one of the largest cities in Japan as an industrial center necessary for modern warfare, and the housing of factory workers created densely built-up area. It was clear that these were air defense risks. In the late 1930s, the central government devised "Air Defense Green Space" to improve densely built-up area. This is a space with three roles: park, military base, and open space. In the early 1940s, when Japan entered WWII, Yokohama City proceeded with land acquisition to be used as Air Defense Green Space with financial support from the central government, but when the war became serious, those spaces were transformed to military bases by Japanese military. After 1945, when WWII ended, Air Defense Green Space were occupied by the U.S. military. During the 1950s and 1990s, Yokohama City continued to urban expansion. During that time, vacant land and recreational facility existed in the open space occupied by the U.S. military have been shared between the U.S military and citizens. When some of post-Air Defense Green Space occupied by the U.S. military, were returned due to the consolidation of U.S. military bases, these were redeveloped sites as parks. The venue for World Horticultural Exhibition YOKOHAMA 2027, is one of the spaces that used to be Air Defense Green Space. This study aims to clarify the historical transition of Air Defense Green Space in Yokohama City in the 20th century.

History of Greenway network planning in China and their megacities

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Abstract

With the spread of the sustainable development concept and the construction of ecological cities, many Chinese megacities have formed their Greenway network system. This study analyses the history of urban Greenways in China through an abundant literature review. It summarizes four aspects of Greenway development: The Greenway concept changing process, Greenway route selection methods, Greenway construction in four megacities, and post-occupancy evaluation research about Greenway. Firstly, we summarize the changing process of the Greenway concept in China in different periods. Analysis shows that the Greenway concept change process is closely related to the implementation policies in China. Research also reveals the relevant leading policies during China's Greenways development history. Secondly, it introduces the changes in Greenway route selection methods from the Olmsted period to recent years in China and other countries with corresponding cases. To view how they influence each other as knowledge spreads. In the third part of this study, we choose four typical megacities as examples, visualize the distribution of greenways, present the construction status of greenway networks now, and summarize the development of their current situation. In addition, the study collected 2098 comments on Ctrip from 2024 to 2017 to analyze visitors' opinions about these greenways. Finally, the study reviews the development process of the POE of Greenway in China, summarizes the popular research methods, and shares the unique perspective researchers are now using. The development of Greenway network is of great significance to improving the quality of human settlements and alleviating megacities common problems. With the application and research of big data, China's Greenway construction is developing toward human-oriented perception while keeping the detailed study of natural factors.

INTRODUCTION

With the rapid development of China's urbanization and the expansion of cities, China has formed 10 megacities with a permanent urban population of more than 10 million.[1] In these high-density megacities, the central urban area is often the most densely populated, with the most severe air pollution and lacking urban public activity space. Urban Greenways, as essential urban functional spaces integrating recreation, ecology, transportation, and culture, are of great significance in alleviating the "big city diseases" such as traffic congestion, living environment problems, and ecological environment deterioration in these megacities[2,3]. A widely recognized concept of the Greenway is that the 'green-' in 'Greenway' came from 'greenbelt' and the '-way' from 'parkway.' This supports the use of 'Greenway' to describe linear public open space in rural or urban areas (Little,1995). Greenways are also recognized as networks of land containing linear elements that are planned, designed, and managed for multiple purposes including ecological, recreational, cultural, aesthetic, or other purposes compatible with the concept of sustainable land use (Ahern, 1995) In the mid-19th century, the famous landscape architect F. Olmsted planned the first Greenway, "Emerald Necklace" in Boston, and the Greenway system planning was loved by the surrounding residents and widely concerned by researchers.

At the beginning of the 21th century, the concept of Greenways was officially introduced in China.[4] Since then, China has conducted planning research and construction practices in Zhejiang, Guangdong, and other regions. With the development of cities, the construction of Greenway systems in China has achieved fruitful results. Many cities and areas have formed their own Greenway network system. However, few studies have sorted out the change and development process of Greenway concepts and route selection methods in China. Therefore, from the development history perspective, this study sorted out the changes in the Greenway construction concept, Greenway routes selection method, typical Greenway construction cas occupancy evaluation （POE）of Greenways. Also, the study selected the central urban areas of four typical Chinese megacities, Beijing, Wuhan, Chongqing, and Shenzhen, as research samples for comparative study. Try to summarize the development process of Greenways in China, the influence of foreign Greenway route selection concepts on China's Greenway construction, and the current situation of Greenway network construction in high- density megacities.

THE CHANGE PROCESS
OF GREENWAY DEVELOPMENT CONCEPT IN CHINA

1949–1998 THE PERIOD OF SHELTER FOREST SYSTEM CONSTRUCTION

During this period, the Shelter Forest System construction project greatly improved the regional ecological environment. Still, the construction purpose was mainly to prevent wind, flood, soil erosion, and other natural disasters, and the Greenway planning was mainly top-down, with less public participation and less attention to recreational functions.[5] In the 1950s, China carried out large-scale Shelter Forest System practice. This practice starts with constructing

green forest belts for farmland protection. In 1978, the construction of the Three-North Shelter Forest Program(三北防护林工程)started. In the early 1990s, the Shelter Forest system around Beijing and Tianjin, the shelterbelt system in the middle and upper reaches of the Yangtze River, and the coastal Shelter Forest System were initially planned. In 1998, the 'National Ecological Environment Construction Plan(全国生态环境建设规划)set off a nationwide greening movement, and so far, ten ecological protection forest systems have been launched.[6]

1998-2015 THE EXPLORATORY PERIOD OF GREENWAY PLANNING PRACTICE

During this period, the specific policy of Greenway construction was not formed nationwide. Still, some areas have begun to actively explore the planning and practice of Greenways and gradually realize the transformation from "conceptual Greenways" to "actual construction Greenways." Scholars gradually spread the ecological and social benefits of Greenway network development in this period.[7] In January 2010, the Guangdong Provincial Department of Housing and Urban-Rural Development issued the master plan for the Pearl River Delta Greenway network.[8] This is the first systematic greenway network system planning in China. From that time, Guangdong took the lead in building a regional greenway totaling about 1690km in the Pearl River Delta region in about three years. In 2012, "Built Beautiful China"(建设美丽中国)was proposed. In the same year, The 18th National Congress of the CPC included ecological civilization in the "Five-in-one overall plan"(五位一体)which refers to the five-sphere integration of economic, political, cultural, social, and ecological progress. In 2013, The State Council proposed"Opinions on Strengthening Urban Infrastructure Construction" to strengthen the planning and construction of Greenways and green corridors in combination with urban and rural environmental improvement, urban village transformation, and ecological restoration of abandoned sites.[9] With the development of times, national policies are paying more and more attention to Greenway planning and ecological development.

2015-2020 THE RISE OF GREENWAY PLANNING GUIDANCE BY POLICY AND STANDARDS

In this period, the status and importance of Greenway construction increased significantly, and the construction concept of ecological priority, systematism, and connectivity was established through policy guidance. In 2016, the Ministry of Housing and Urban-Rural Development issued the "Guidelines for Greenway Planning and Design" to clarify the construction standards of Greenways at the national level and guide the planning and design of Greenways across the country.[10] In 2017, the 19th National Congress of the Communist Party of China (十九大) proposed establishing and practicing that "Lucid waters and lush mountains are invaluable assets." (绿水青山就是金山银山) This concept provides theoretical guidance for the construction of China's ecological civilization. Subsequently, "Urban repair and ecological restoration work"(城市双修) has been carried out in Hainan. In May of the same year, the " 13th Five-Year Plan"(全国城市市政基础设施建设十三五规划)for the construction of National Urban Municipal Infrastructure took the construction of Greenways as a key project. It proposed the goal of adding 20,000 kilometers of Greenways by 2020.[17]

2020-2023 SCIENTIFIC AND SYSTEMATIC GREENWAY PLANNING PERIOD

After nearly 20 years of exploration, China has issued specific Greenway spatial planning and construction standards. Greenway construction has risen from the short-term practice of local governments to extensive practice. It has been formally incorporated into the institutional framework of China's planning system.[11] June 2021 According to the "Community Living Circle Planning Technical Guideline Standard(社区生活圈规划技术指南)" the Greenway will be used as a component of a high-density slow traffic network and green open space network[12]. In June 2021, The State Council proposed in the "Guiding Opinions on Scientific Greening"(关于科学绿化的指导意见) to enhance the systematic and collaborative nature of urban and rural green Spaces, build a Greenway network, and realize the connection of urban and rural green Spaces.[13] In October of the same year, the CPC Central Committee and The State Council pointed out at the regional level that we need to promote Greenway development in urban and rural areas and cooperate to build regional ecological networks. As for Greenway systems in urban areas, we need to scientifically formulate urban slow travel system planning and build bicycle lanes and Greenways[14]. The release of this policy indicates that China's Greenway construction policy is developing toward regional link networking.

HISTORY OF GREENWAY ROUTE SELECTION METHOD

1869-1998 INITIAL DEVELOPMENT PERIOD OF ROUTE SELECTION METHOD

Greenway route selection method analyses are designed to identify and measure the suitability of potential sites for Greenway development. In the early stage of route selection, Landscape architects made choices by overlaying hand-drawn maps with different reference factors. Then, on this basis, Ian Lennox Mc Harg proposed the "layer cake phenomenon," which reveals the interaction pattern of the landscape and develops the process analysis map, ordering the stratified map in chronological order, with the original part containing rocks and then superimposing water, soil, vegetation, etc.[18] The method opened up the classical method of Greenway route selection research. This method later influenced China's Greenway route selection method and was widely cited by relevant scholars. Later on, the advent of GIS technology greatly improved this method.

1998-2012 ROUTE SELECTION METHOD IS GRADUALLY ENRICHED

After 1997, the growth rate of Greenway-related papers increased rapidly. In 2004, Fábos J G summarized the five-step method of Greenway planning, proposed a comprehensive Greenway vision planning method for Greenways with different construction purposes, and proposed linking all types of Greenways at the regional level.[19] This method provides a theoretical basis for the subsequent Greenway network planning. In 2004, Ashley Conine and others expanded the evaluation factors of Greenway route selection, including potential demand range and accessibility of service facilities from the perspective of demand-supply.[20] During this period, foreign route selection methods began to be introduced into China, impacting China's Greenway development theory. The selection method mainly focuses on land suitability assessment. In 2005, Yu Kongjian proposed the concept of landscape Security Pattern (景观安全格局) and analyzed landscape Security Patterns in China on a large scale.

Time	Guiding policies	Construction content	Research and construction focus
1950s	Farmland protection forest	Farmers themselves build protective forest belts around their farmland	
1978	The"Three North" shelter forest[15]	Building protective forests in the northwest, northeast, and north of China	Soil and water conservation, wind and sand prevention, regulation of agricultural climate, etc
After 1990	Protection forest system	Construct 10 major protective forest systems, including the protective forest system around Beijing and Tianjin, the protective forest system in the middle and upper reaches of the Yangtze River, and the coastal protective forest system.	
1998	Notice on Issuing the National Eco-logical Environment Construction Plan	Vigorously carry out tree planting and grass planting	Planting trees and grass on land suitable for greening
2000	Notice on Further Promoting the Con-struction of National Green Channels[16]	Greening and beautification along highways, railways, rivers, and embankments	The main function should be to prevent wind consol-idate soil, and beautify the environment.
2013	Opinions on Strengthening Urban Infrastructure Construction[9]	Intensify planning and construction efforts for Greenways, Greenways, and other green corridors.	Improve the ecological land-scape indicator system and promote the construction of ecological landscape cities.
2016	Several Opinions on Further Strengthening the Management of Urban Planning and Construction[10]	Optimize the layout of urban green spaces, build a Greenway system, connect green spaces inside and outside the city, and introduce ecological elements into the urban area.	Restore the natural ecology of the city.
2016	Greenway Planning and Design Guide-lines	Clarify Greenway construction standards nation-ally and guide Greenway planning and design in various regions.	Leisure and fitness, green travel, ecological protection, society and culture, tourism and economy
2017	The 13th Five-Year Plan for National Urban Municipal Infrastructure Construction[17]	Strengthen greening around cities and urban agglomerations, promote Greenway construction, and build a network system of urban and rural Greenways.	Make Greenway construction a key project and propose the goal of adding 20000 kilome-ters of Greenways by 2020
2020	Guidelines for the Compilation of Ur-ban Land and Space Master Plan	Build a slow traffic system with system security, combined with streets and blue-green networks, to build a Greenway system connecting the city and suburbs	Incorporate urban and rural Greenways into other plan-ning documents.
2021	Guiding Opinions on Scientific Greening	Building a Greenway network to achieve connec-tivity between urban and rural green spaces	Enhance the systematicity and synergy of urban and rural green spaces.
2021	Technical Guidelines for Community Life Circle Planning	Building a high-density slow traffic network consisting of urban roads, Greenways, streets and alleys, public passages, etc., relying on a 15-minute community living circle; Building a green open space network with balanced coverage and a combination of points, lines, and surfaces, relying on various types of park green spaces, affiliated green spaces, Greenways, small and micro public spaces, etc	The chronic system and open space system connectivity network between Greenways and the 15-minute communi-ty living circle
2021	Opinions on Promoting Green Development in Urban and Rural Construction[13]	"Collaborative construction of regional ecological networks and Greenway systems" at the regional level, and "tailored construction of bicycle lanes and Greenways" within urban areas	Improving the regional ecological environment and scientifically formulating urban slow traffic system planning

Table 1. Table of Changes in the Construction Concept of Urban Greenways

In 2011, Zhuang Rong introduced the route selection method of the greenway network based on ecological conservation in the Pearl River Delta region. During this period, Greenway network theories were also being spread across China.[22]

2012-2020 FURTHER EXPANSION
OF INFLUENCING FACTORS OF GREENWAY ROUTE SELECTION

After 2012, the research on route selection related to Greenways began to be gradually enriched. According to the statistics on CNKI from 2012 to 2020, research in this field shows a fluctuating upward trend. The number of articles published in 2020 reached its peak. The factors that researchers consider are also starting to diversify. In 2013, scholars Hu Jianshuang and Dai Fei summarized a set of planning procedures and methods for constructing urban Greenway networks in China, which provided a theoretical basis for planning green island networks in typical cities.[23] 2015, Li Fangzheng et al. studied the travel rules of the urban population based on bus card data. They introduced relevant travel distribution density, travel destination, and other indicators into the analysis and evaluation of Greenway route selection in a pioneering way.[24]

The route selection of greenway construction in central urban areas faces different land use diversity from that in nature. Its planning layout is related to the land use pattern, road network system, population density, and other factors. In 2016, Zhou Conghui evaluated the route selection potential of the central urban area through three indicators: intensity of recreation demand, recreation attraction, and suitability of Greenway construction, and customized the route selection layout plan of the central urban area of Dongying(东营) City with the evaluation results, alternatives are also provided for different aiming.[25] In 2020, Chen Xixi et al. used the use data from shared bicycles and the entropy method to establish an evaluation system for the utilization potential of green space nodes and tried to use this method to search key green space link nodes within the city, obtain the road heat of bicycle use through the track data of shared bicycles, and extract the current linear green space corridor.[26] This method includes data on the shared bicycle business that has arisen in China in recent years, further enriching the route selection ideas of Greenways in central urban areas.

2020-2024 ROUTE SELECTION METHOD COMBINED BIG DATA ANALYSIS

With the development of Internet services and information technology, the application of big data enables researchers to use crowd activity trajectory data such as public bicycle use data and urban public service facility POI. Dai Fei et al. planned and analyzed Greenway route selection in Wuhan based on urban POI point data and the service range of service facilities combined with visual sensitivity analysis.[27] They introduced visual sensitivity and POI interest points into the study of Greenway route selection in a pioneering way.

In general, the route selection methods of Greenways in central urban areas show diversified development, and scholars have begun to study the route selection of Greenways from the aspects of residents' behavior and perception of the city. Instead of only focusing on the interaction of environmental factors in the past, the research object has gradually shifted to human behavior and needs. Big data is widely used for analysis and research to provide data support for route selection.

Year	Author	Route selection method	Important Evaluation Factor	Application case
1869	Frederick Law[28] Olmsted Charles Eliot[29]	Link city parks and coastal views	soil, revetment ecological benefits, urban landscape elements, coastal landscape etc	Boston Park System/ Emerald Necklace
1987	Ian Lennox McHarg[18]	Layer Cake Representation of Phenomena	Natural geographical factors, social value factors, etc	Bronx River Parkway, New York
1998	J.G. Fábos[19]	Five-step route selection method	ecological/nature protection, recreational, and historic/cultural values.	Greenway Plan for New England
1998	William Miller, Michael G. Collins, Frederick R. Steiner, Edward Cook[30]	Expert interviews, public surveys, Suitability analysis	Ecological environment type, slope, water body, distance from humans (wildlife habitat), land use, development pressure, landscape elements, green space coverage, population density, water quality, surface water, erosion control, etc	Prescott Valley, AZ, USA
2001	Yu kongjian Li Dihua Chao Luomeng[31]	Urban ecological infrastructure construction	Native habitat system natural form of the coast combination of shelterbelt forest system and green space system, etc	/
2004	Ashley Conine, Wei-Ning Xiang b, Jeff Y oung c, David Whitley[20]	Seven-step route selection method	Evaluation of potential demand scope, evaluation of potential connection supply, greenway land suitability assessment, accessibility assessment, greenway scope demarcation, and alignment of multiple options, etc	Concord, North Carolina
2006	Alessandro toccolini, Natalia Fumagalli, Giulio Senes[32]	Four-step route selection method	Current landscape resources, existing greenway network, linear historical landscape elements, etc	The Lambro River Valley Greenways System
2013	Hu jianshuang, Dai fei[23]	Greenway planning procedures and methods based on Chinese cities	Natural elements, artificial elements, historical and cultural elements, urban construction materials, etc	/
2015	Li fangzheng, Li wanyi, Lixiong[24]	Bus card route selection method	Bus travel distribution density, travel destination, urban land. etc	Beijing Center District
2015	Wang min, Jia jianling, Zhang junlei[33]	Suitability evaluation method	Ecological location, ecological sensitivity, land use type, landscape resource distribution, boundary characteristics, accessibility, etc	Xiamen City Haicang District Greenway
2016	Zhou conghui[25]	Greenway route selection potential in central city based on quantitative evaluation	Green ecological type, historical and cultural facilities, road section type, road and green belt width, population density	Dongying City Central City Greenway Network Plan
2018	luo kun[34]	Cost Distance Model based on the "Source- Sink" theory	Park green space, river system, historical culture, cultural and sports facilities, commercial facilities, rail transit, etc., landscape style roads, boulevards, etc	Greenway, Xuhui District, Shanghai
2019	Chen xixi, Li Liang[26]	Route Selection Method based on Shared Bicycles	Park green space distribution map, protected green space distribution, etc. shared bike track data, urban shared bike road use, shared bike space heat, etc	Haidian District, Beijing City Cycling Greenway
2020	Dai Fei, Yang Chao, Xu ya, Chen Ming, Pei Ziyi[27]	Route Selection method based on POI data	POI points service range; road network cost weighted distance, visual sensitivity	Wuhan Hanyang District green way

Table 2. Greenway route selection method chronological table

CONSTRUCTION PROCESS OF HIGH-DENSITY URBAN GREENWAY NETWORK IN FOUR MEGACITIES

Megacity greenways are often made up of multiple projects built at different times and by different implementing agencies. However, few studies have yet to sort out the distribution of the overall greenway system in different megacity cities in China, especially in their central-district. According to the existing official data, this study visualized the distribution of greenways in four Chinese megacities to present the construction status of Greenway network now. Data sources include: "Beijing Greenway Construction Overall Plan (2013-2017)"," Wuhan Greenway System Plan2012", "Special Planning Plan for Mountain City Trail in Chongqing's Main Urban Area 2011", "Shenzhen Greenway Network Special Plan (2010-2020)" and another supplementary database.

SHENZHEN

In 2009, the publishing of "General Planning Outline of the Pearl River Delta Greenway Network in Guangdong Province"[35](珠江三角洲绿道网总体规划纲要) opened the prelude to the large-scale, legalized, and normalized planning and construction of Greenways in China. According to "Shenzhen Greenway Network Special Plan 2010-2020" [36] (深圳市绿道网专项规划) in 2011, The urban greenway is divided into three types: coastal style greenway, mountain greenway, and urban vitality greenway, with a total length of about 500km. At present, the total length of greenways has reached 2843 km. Among them, the coastal style greenway takes the 15km coastline of Shenzhen Bay as the line, connecting Sea World, Shekou Area, Shenzhen Bay-Houhai Headquarters Economic Zone, Overseas Chinese Town Inner Lake, Mangrove Park and Futian Mangrove National Nature Reserve, etc., forming a continuous coastal urban living and leisure function place.

From the view of the development process, Shenzhen's Greenway construction has experienced two stages. The first stage (2010-2020) focuses on the construction of The three-scale Greenway network system, which focuses on "quantitative growth"; the second stage (2021-2035) focuses on detailed guidelines for Greenway construction and pays more attention to the "quality improvement" of the Greenway system. Shenzhen's leading role in constructing and managing high-density urban Greenways has become a good practice example for other cities.

As for Greenway management, the Shenzhen Municipal Government issued the "Shenzhen Greenway Management Measures" (深圳市绿道管理办法) in 2012, which clarified the responsibilities of various departments in the process of Greenway planning and construction, management, including maintenance and supervision of Shenzhen Greenway . Shenzhen's green network system has formed continuously improved operation management systems. During the construction period, the construction leading group office takes the lead in the construction process. After the construction is completed, Greenway management combines territorial construction management, park organization management, tourism company management, and real estate developer management in different segments for later management and operation. In 2022, the Shenzhen Municipal Bureau of Urban Management issued the "Shenzhen Greenway Network Special Plan (2021-2035) " [38], which aims to improve the quality of Greenway construction from the perspective of the whole area and all elements

and play.

Since 2011, under the influence of the construction of the Pearl River Delta Greenway network, China's Beijing, Shanghai, Fujian, Zhejiang, Sichuan, Hubei, Hunan, and other provinces have learned from the experience of Guangdong to carry out Greenway construction, and the trend of Greenway construction has begun nationwide.

BEIJING

In 2013, the Beijing Municipal Development and Reform Commission（NDRC）issued the "Overall Plan for the Construction of Beijing Greenway 2013-2017" (北京市级绿道建设总体方案). The overall distribution presents "three rings, three wings, and multiple corridors type"（三环、三翼、多廊）layout. Including 28 major greenway lines with a total length of more than 1,200 km. Among them, the central urban greenway includes the Second Ring Greenway(二环绿道), the Three Mountains and Five Gardens Greenway（三山五园）, and the Yuanbo Greenway（园博绿道）. Greenways are closely distributed along water systems, green spaces, and links to popular Public Spaces inside the city. In the following two years, the Beijing Municipal Department issued the "Measures for the Management of Beijing Greenway 2015 北京市绿道管理办法"and a series of policies also. These policies not only promoted the process of Greenway construction but also provided an institutional guarantee for the management and supervision of Greenways in the later stage.
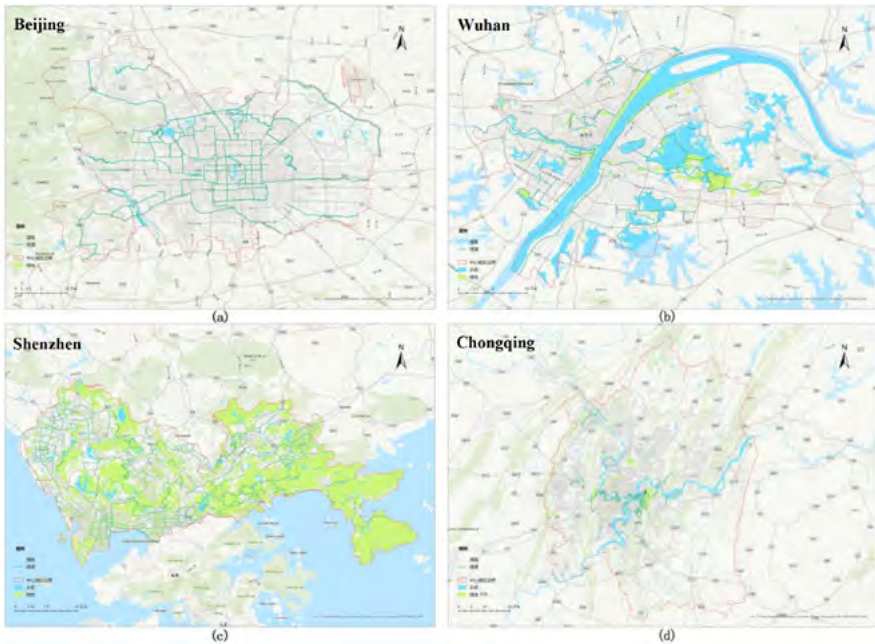
Fig. 1.   Layout of four megacities greenways

Fig. 2.   100 key comments words of four megacities greenways

The period from 2013 to 2015 was the peak of Greenway construction in the central urban area of Beijing. In 2014, a Greenway in the central district of Beijing started to connect many parks and historic sites. By 2017, Beijing had built 710 kilometers of Greenways, of which 500 km are within the scope of the central urban area.[39] One of the most famous is the construction of the "Three Mountains and Five Gardens"（三山五园）greenway, which is located in the west of Beijing and also the first demonstration project of the Beijing Greenway. the "Three Mountains" refer to the Xiangshan Mountain（香山）, the Yuquan Mountain（玉泉山）, and the Longevity Mountain（万寿山）, and the "Five Gardens" refer to the Jingming Garden（静明园）, the Jingyi Garden（静宜园）, the Qingyi Garden（清漪园）(the Summer Palace), and the nearby Changchun Garden（畅春园）and the Old Summer Palace（圆明园）. This greenway's total length is 36.09 km. The line was completed in October 2014, connecting 13 parks and green spaces west of Beijing. In 2023, the Special Plan for Beijing's Greenway System (2023-2035) will further guide Beijing to build a connected, comfortable, modern, and convenient Greenway system.

WUHAN

Wuhan Municipal Commission of Planning and Natural Resources organized the "Wuhan Greenway System Planning in 2012"（武汉市绿道系统规划）. The overall structure of the Greenway network is "one center, six wedges, and ten belts. 一心、六楔、十带" The planned total length of the Greenway is 2200 kilometers, which includes 450 kilometers of urban Greenway located in the center-district of the city [40]. The distribution of Greenways in downtown Wuhan echoes the ecological pattern of "two rivers confluence, lakes and wetlands dense" in Wuhan. A continuous and perfect Greenway distribution pattern forms on the Yangtze and Han rivers. A good connection is formed with the green space on both sides of the river, creating a good walking or cycling environment for the users of the Greenway. In addition, Greenways are built around lakes and parks in the city, and together with the Greenway along the river, they form a relatively Greenway framework.

Under the guidance of this plan, the Lion Mountain Greenway(狮子山绿道) was completed in 2015. the construction of 30km Zhanggongdi Greenway（张公堤绿道）and the first phase of the East Lake Greenway(东湖绿道) was completed in 2016, and the second phase of the East Lake Greenway(东湖绿道) was completed in 2017. The East Lake Greenway is an important part of the Wuhan Greenway system, connecting popular Public Spaces such as universities, cultural centers, lakes, hills, and suburbs. The construction of the third phase will be completed in 2024, and the connection with the first and second phases will be realized.

CHONGQING

The planning and construction of the Chongqing Greenway began in 2018. Greenway's systematic development and construction in Chongqing is challenging because Chongqing is a mountainous city with great terrain changes. The plan divides Greenways into three types: street, riverside, and mountain forest, and it constructs a network of 60 Greenways with a length of about 1207km. Among them, the City Wall Trail (环城墙步道), Shaxi Trail(沙磁步道), Panxi River Trail(盘溪河步道), and Gele Mountain Trail(歌乐山步道) have been completed and put into use now. Gele Mountain hiking trail is mainly distributed in Gele Mountain Forest Park, Shapingba, Chongqing, a hot spot for citizens to relax.

COMPARISON SUMMARY OF TYPICAL CITIES

These megacity Greenways share some commonalities: Firstly, Greenways in central urban areas link various types of open public Spaces. The planning goal is often to integrate overall landscape resources in the region. Secondly, from the perspective of ecosystem protection, Greenways connects the surrounding rivers, animals, plants, and other ecological resources to a certain extent. In addition, the construction of Greenways in central urban areas considers the connectivity of Non-motorized Traffic and, more importantly, the impact on the flow of people and natural organisms. Each city's Greenway construction has its own characteristics.

ONLINE COMMENTS ABOUT GREENWAY NETWORK IN FOUR MEGACITIES

This study collected 2098 comments about greenways and related scenic spots in four megacities on Ctrip (携程旅行网) from 2017 to 2024. The study aimed to analyze the opinions of visitors by using the TF-IDF and lexical network analysis methods. The majority of comments expressed users' love for the greenways, with only a few complaints. Some disgruntled comments mentioned "holidays" and "overcrowding."

SHENZHEN

A total number of 848 comments have been collected, including Shenzhen Bay Park （深圳湾公园） and Shenzhen Mangrove Reserve（深圳红树林保护区）in Shenzhen. In the reviews of Shenzhen Greenway, "pretty good" is the critical comment word, and the relevant evaluation words also include "satisfactory," "great," "superior," and so on, expressing the

user's high recognition of the relevant scenic spots. Time-related words include "autumn," "after dinner," "daily," and "holiday." Indicate that these places are also hot holiday visiting spots. Words related to crowd types, including "children" and "friends and relatives," mean that visitors include children and family groups. From the lexical association network map, there is a strong correlation between "park," "mangrove," "Shenzhen Bay," "walk," "bicycle," and "nature reserve." It could be inferred that the cycling and walking activities of the coastal greenway in Shenzhen are the activities that participants often carry out in this scene.

BEIJING

Comments about Beijing's greenway network including San Shan Wu Yuan (三山五园), Yingcheng Jiandu waterfront Greenway (营城建都滨水绿道), Second Ring Road Greenway (二环城市绿道), Liangshui River Park Greenway (凉水河公园绿道), and Olympic Forest Park greenway (奥林匹克森林公园绿道) were analyzed, totaling 126 reviews. The TF-IDF analysis revealed that "Recreational walking" is an important activity in Beijing's greenways, with related words such as "physical exercise," "walking," and "gathering" also being significant. This suggests that many visitors prefer to walk and exercise in these green spaces. In terms of timing, the analysis showed that "noon," "At nightfall," and "evening" are the peak hours for visitors to the greenways.

WUHAN

Wuhan East Lake Greenway(东湖绿道), Houguanhu Wetland Park（后官湖湿地公园）, Jiangtan Sports Park （江滩体育公园）, a total of 170 comments was collected. In the comments on Wuhan Greenway, "camp" is a crucial word, and its related environmental adjectives also include water-related words such as "mountains and water," "sparkling," and "beautiful," which also reflects the characteristics of the bonding of Wuhan Greenway and water. From the perspective of time-related words, "early morning," "festival period," "sunset," and other words appear more frequently. As for the possible activities, "leisure activities," "swimming," "morning exercise," and "walking" appear more frequent than other words. From the lexical association network map."East Lake "and "greenway" riding "produced a strong correlation. It shows that more users of the greenway in Wuhan use it for cycling, exercise, and leisure walking.

CHONGQING

A total of 954 comments were collected about the Chongqing Greenway network, which includes Chongqing Bijin Park（重庆碧津公园）, Nanshan Scenic Area, and Mountain（南山步道）City Walk（山城步道）. In the comments of Chongqing Greenway, "morning and evening" is a more important word, and its related time words also include "morning," "after dinner," and "often go," indicating that Greenway has become one of the common choices for people to relax and after dinner walk. From the perspective of activity type, words such as "climbing up and down," "walking," and "exercise" appear more frequently. Indicate Chongqing's exceptional topographic condition. As the lexical network analysis result shows, "Nanshan," "walking path," "night view," "boardwalk," "scenic spot," "scenery," and other words are highly correlated, which means that the night scene here has become one of the choices of the city night tour, which many users love.

DEVELOPMENT OF GREENWAY NETWORK POE RESEARCH

2009-2015 SURVEY AS THE MAIN POE RESEARCH METHOD

Under the Guangdong Zhujiang Delta Greenway network construction background, scholars have begun researching the Greenway after its completion. Research and evaluation of the Greenway system started to be carried out during this period. In this stage, the questionnaire investigation was considered an important method in POE research. For example, Wu Junyustudies the users' behavior and usage needs of the Greenway system by questionnaire in Zengcheng(增城)City, Guangzhou, obtains the post-occupancy evaluation(POE) of the Greenway in the research section, research proposes strategies and optimization suggestions based on the evaluation result.[41] Lu Feihong et al. conducted a quantitative analysis of the evaluation of Greenway users' use satisfaction through a questionnaire.[42] Greenway user's experiences and behavior are the focus of researchers in this field.

2015-2020 POE RESEARCH METHODS DIVERSIFIED DURING DEVELOPMENT

In this period, research on Greenway assessment was widely carried out, and there was more diversity in research objects and methods. Research objects are no longer limited to a single city but expanded from a specific area to multiple scales and cities. For example, Zhang Haiye extracted a total of 2,721 effective evaluation records of ten Greenways in Guangdong, Sichuan, Jiangsu, Zhejiang, and other provinces, analyzed the characteristics and demand of Greenway users, and summarized three kinds of user portraits, and put forward targeted suggestions on the quality improvement of Greenways[43] At this stage, researchers began to pay attention to Greenways at various levels. For example, Chi Wenxiu and Lin Guangsi et al. took a representative community Greenway in Guangzhou as an example. They investigated the user's usage patterns and their evaluation of the importance of different built environment elements through questionnaires. The factors of the built environment studied in this period are more comprehensive.[44] As for research methods, some studies began to explore more diversified investigation methods. For example, He Hui et al., based on the SD method, conducted a study on the perception and evaluation of the riding environment on the East Lake Greenway in Wuhan.[45] Instead of using a survey, some studies take the environmental dimension as the entry point to evaluate the impact of environmental factors and their influences on users' feelings and behaviors through direct observation. The aspects of Greenway research are gradually enriched, and the research Angle is more diversified than before.

2020-2023 MULTI-SOURCE DATA
AND INTELLIGENT TECHNIQUES IMPROVE RESEARCH ACCURACY

With the support of new technologies, Greenway evaluation is no longer limited to single questionnaire survey data, multi-source data, and various analysis models for more scientific, accurate evaluation are now available. These studies promote the progress of Greenway evaluation technology and provide a more powerful scientific basis for Greenway

construction and management. Some studies evaluated the Greenway through the impact of built environmental factors and the intensity of Greenway use. Taking the central urban area of Beijing as an example, Qiu Cailin et al. conducted regression analysis using trajectory data to reveal the spatial effects of built environment factors on Greenway use intensity through a spatial metrology model.[46] Other studies start from users' perceptions and evaluate the Greenway environment's effect on users. Xie Bo et al. investigated the residents around the East Lake Greenway in Wuhan to explore the impact of urban Greenway intervention on the mental health of residents in the surrounding communities.[47] More detailed research continues to emerge. Researchers began to analyze and decompose human perception in detail to make more accurate assessments. Greenway research gradually transformed into a comprehensive system involving multi-scale research objects and diversified assessment methods.

6. CONCLUSION

It can be seen that the change process of the Greenway concept is closely related to the implementation policies in China. Early Greenway construction is closely related to natural disasters such as wind, floods, desertification, etc. Greenways are an important way to protect farmland and fields. During this period, fewer factors were considered for recreational activities. With the development of modern landscape ecology and the introduction of foreign Greenway research and route selection methods, scholars began to realize the importance of ecological infrastructure. With the advocacy of ecological development, China began to build the urban Greenway system and carried out pilot construction in the Pearl River Delta region. In recent years, with the continuous improvement of Greenway construction status and the promotion of the degree of construction, national policy has gradually advocated the coordinated development of urban and rural ecological networks and Greenway systems. Promote the improvement of urban and rural ecological environments and plan low-carbon systems in big cities simultaneously.

The Greenway route selection research development process shows that Mc Harg's "layer cake Phenomenon" has played a guiding role in China's Greenway route selection. Chinese scholars have carried out continuous innovation and exploration of this method in combination with the current situation of Chinese cities. In recent years, more and more scholars have begun to pay more attention to human behaviors in megacities. Relevant studies use data on human activity, such as bicycle travel and POI interest point data, to research Greenway route selection. Greenway route selection has gradually developed from focusing on environmental factors and their interaction to integrating human activities and perceptions.

China's Greenway has great potential, and many aspects still need to be improved. Each city has its own development pace. Among them, Shenzhen's Greenway network system has formed a relatively complete three- level Greenway system and a unique management system. Wuhan City Greenway, combined with its own pattern of natural resources, the construction of high-quality urban tourist attractions. Beijing's urban Greenway system has launched 20 characteristic cycling routes, promoting low-carbon travel in the city and easing the problem of regional traffic congestion. Chongqing Urban Greenway provides a digital publicity guide, which offers a good interactive system for urban cultural publicity and citizen leisure.

China's researchers have already carried out different POE research from various perspectives, especially in megacities. As for research methods, the research on the evaluation of Greenways no longer relies only on questionnaires or single survey data. Researchers try to use more scientific and comprehensive evaluation methods through multi-source data and multiple analysis models. As for user activities and perception evaluation, there is also a trend of accurate evaluation in specific aspects. With the application and research of big data, China's Greenway construction is developing toward fine human-oriented perception while retaining a detailed study of natural factors. In general, the construction of Greenway networks in China's megacities has made some achievements. However, green network system research still has a long way to go, and further research and exploration are needed in construction and management.

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IMAGE SOURCES

Table 1: The table is made by the author
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Figure 1: Author drawing According to related statistics
Figure 2: Author drawing According to related statistics

A study on the transition of the public parks Nakajima Park and Maruyama Park - in the city of Sapporo

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Abstract

Sapporo City is the prefectural capital of Hokkaido, which has been developed after the modernization of the government in Japan since then. Michitoshi Iwamura, who was Chief Magistrate of the Hokkaido Development Commission and took charge of promoting the local development of Sapporo City, is believed to have had a design for the urban planning of Sapporo between parks in Kairakuen in the north, Nakajima in the south, Maruyama in the west and Naebo in the east. Although most public parks in mainland Japan are based on traditional recreational areas of scenic beauty and on the grounds of shrines and temples or were converted from castle grounds by administrative order of the Great Council of State, the parks in Sapporo were newly constructed and different from these resource-based parks. Sapporo's urban planning has taken a slightly different direction from Iwamura's design, but the parks of Nakajima and Maruyama exist as a representative public park of the city with a population of 1.97 million (as of Dec. 2023). It is well known that Yasuhei Nagaoka, a professional employee of the Tokyo City Office and considered the first Japanese landscape architect, designed Nakajima and Maruyama Parks in 1907 and 1908 respectively. After his design, the parks were redesigned several times to improve urban amenity by the demand of growing city. For instance, Nakajima Park was used as exhibition sites until the 1950s as well as sites for sports-related facilities, and Sapporo Concert Hall was constructed there in 1997. Maruyama Park became a stadium and playground site from the 1930s, and Sapporo Maruyama Zoo was opened there in 1951. This study examines the role of these two public parks, Nakajima Park and Maruyama Park, in each period up to the present day, focusing on their regeneration as the city expands.

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Tomoko Mori
A study on the transition of the public parks Nakajima Park and Maruyama Park - in the city of Sapporo

Study on the Evolution of Public Space in Historic Cities from the Perspective of Changing Needs of Users
A Case of Harbin City, China

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Abstract

As a witness and carrier of urban history, the evolution of public spaces is of significant importance for the study of urban historical and cultural preservation. Harbin, a representative historical city in Northeast China, emerged gradually in 1898 due to the construction of the Middle East Railway. During this period, Chinese and foreign nationals coexisted and jointly built the city, marking a unique historical period.This paper presents an in-depth study of the evolution of public spaces in Harbin's historical urban areas from 1898 to 1945, with a focus on changes in user needs. The paper analyses the urban construction background of Harbin, explores the changes and characteristics of user needs in public spaces, and details the evolution of Harbin's public spaces from 1898 to 1945. This encompasses the initial foundation period, functional evolution period, and cultural reshaping period. This demonstrates the construction of the public space framework, the diverse development of functions, and the integration of multifunctionality. This study not only reveals the patterns of evolution in Harbin's public spaces, but also provides valuable references for the study of public spaces in other historical cities.

INTRODUCTION

The study period of this paper encompasses the period from 1898 to 1945. It commences with the construction of the Chinese Eastern Railway and concludes with the liberation of Harbin. During this period of significant upheaval and complexity, Harbin underwent a rapid transformation from a relatively isolated riverside fishing village to a prosperous international city. This process established the foundation for Harbin's current urban form and spatial configuration[1], which have shaped its unique urban landscape and exerted a profound influence on Harbin's public spaces.

As Henri Lefebvre posits, space is a social construct, and a comprehensive comprehension of public spaces should not be limited to their physical characteristics. Rather, it should examine the intricate relationship between humans and space. Consequently, this paper initially examines the distinctive characteristics of Harbin's urban development history, before subsequently analysing the types of users and their evolving processes within Harbin's public spaces. The objective of this study is to analyse the evolution of Harbin's public spaces from the perspective of its users.

THE UNIQUE CHARACTERISTICS OF HARBIN'S URBAN DEVELOPMENT PROCESS

HARBIN'S URBAN CONSTRUCTION BACKGROUND

In the late 19th century, more than 50 backward natural villages formed on the south bank of the Songhua River in Harbin, showing the initial trend of urbanization, but there was no sign of modern urban planning[3].In 1898, Russia selected Harbin as the hub of the Chinese Eastern Railway (CER), relocating the General Administration of the CER from Vladivostok to Harbin, and began the construction of the entire CER line.The Chinese Eastern Railway (CER), which extended from Manzhouli in the west to Suifenhe in the east, was a "T"-shaped railway constructed on Chinese territory by the Tsarist-era Russia for the purpose of exploiting resources in Northeast China and controlling the Far East. Harbin served as the point of intersection between the CER trunk line and its branches.

The construction and management of the CER have transformed Harbin into a crucial transportation hub and a logistics center, attracting a significant influx of railway engineering technicians, managers, workers, road maintenance teams of the CER, and their families[4]. These immigrants not only brought advanced railway construction technology and resources, participated in the urban planning and construction, but also played a significant role in the social life of Harbin.Therefore, despite the strong colonial tint of the construction of the CER, objectively speaking, it significantly propelled Harbin's evolution into a modern city, bringing about profound impacts in various aspects such as politics,the economy, and culture. This enabled Harbin to rapidly emerge as an industrial and commercial hub in the Far East.

THE URBAN CONSTRUCTION PROCESS INVOLVING THE JOINT PARTICIPATION OF CHINA AND THE WEST

INTRODUCTION AND APPLICATION OF URBAN PLANNING AND CONSTRUCTION IDEOLOGIES FROM WESTERN COUNTRIES

Between 1898 and 1945, China existed in a particular historical era characterised by semi-colonialism and semi- feudalism, during which the urban planning and development of Harbin gradually emerged[5]. Since 1898, the construction of the CER commenced. Russian urban planners carried out several rounds of urban planning work, introducing advanced Western urban planning concepts and thinking into the planning schemes.The urban planning and design of Harbin's infrastructure, including functional zoning and architectural style.

The planning scheme divided Harbin into four distinct districts, each aligned with the railway network. These were the New City District (now part of Nangang District), Butou District (now part of Daoli District), Old Harbin (now part of Xiangfang District), and Fujiadian (now part of Daowai District)(Figure 1). The New City District and Butou District were designated as railway subsidiary area and were identified as key areas for Russian-led urban planning and construction[6].

The planning of the New City District integrated Classical Planning with European architectural forms, establishing a highly structured urban axis and symbolic landmarks, a radial road network centred on squares(Figure 2), and a political centrality emphasising the New City District and the Russian government's rule over Harbin[6].

In 1902, the administration of the CER initiated preliminary planning for the Butou District. In contrast to the comprehensive planning and long-term layout of the the New City District, the planning for the Butou District prioritised efficient land utilisation and rapid economic returns[6]. To achieve this goal, a grid-shaped road network was adopted in the Butou District, which greatly facilitated the quick division and sale of land.

Following the year 1932, Japan proceeded to expand the urban area, building upon the original planning schemes inherited from Russia. This expansion was accompanied by an optimisation of the zoning and land use layout of the city. These series of initiatives gradually transformed Harbin into an international city, characterised by a fusion of elements from multiple nations and a distinctive urban style.

CHINESE RESIDENTIAL AREAS: A BOTTOM-UP DEVELOPMENT

In numerous urban planning schemes for Harbin, the Middle East Railway Administration proposed the implementation of strategic separation measures to isolate railway subsidiary area from local residential areas in Fujiadian and Old Harbin[3]. This separation strategy served to reinforce Russia's dominant position in Harbin and to highlight the relative 'lag' of the 'modern civilisation' within the colony in comparison to the 'non-colonial areas'[6].

Fig. 1.   The Four Districts in <The master plan of Harbin and suburbs 1906>

Fig. 2.   S.Nicholaevsky Church Circus.Founded in 1900. The surrounding roads radiate from the square as the center.

The Chinese residents in Fujiadian spontaneously promoted the development of the area[3]. The urban layout of this region was not strictly constrained or limited by official planning, resulting in narrow and tortuous roads and a chaotic and disorderly architectural layout[7]. This created a distinctly different urban landscape compared to the railway appendages.

In the context of economic prosperity, Chinese industrialists and merchants in Fujiadian sought to demonstrate cultural integration and identity through architectural means. They emulated Western architectural styles, particularly the decorative elements of Baroque architecture. In terms of spatial layout, these buildings, known as "Chinese Baroque," retained the characteristics of traditional Chinese quadrangle courtyards, exhibiting traditional Chinese residential culture and family values.

Against a specific historical backdrop, the urban development process of Harbin distinctly showcases the characteristics of joint participation by China and the West. This process not only shaped the overall urban landscape but also profoundly influenced the design, layout, and usage of public spaces.

THE EVOLVING NEEDS OF USERS OF PUBLIC SPACES IN HARBIN

Harbin has experienced a succession of periods of governance under various political regimes. The urban zoning under foreign domination was not merely a physical division of urban space; rather, it was a division of social space, power structures, and social strata. Similarly, the development and usage of public spaces were more influenced by the intentions of the constructors and the changing needs of the users.

THE MAIN USERS OF PUBLIC SPACES IN HARBIN

When we compared different urban districts of Harbin horizontally from a certain point in time, it became clear that there were significant differences in the level of urban development and the living conditions of the residents

in these districts. These disparities were not the result of natural processes; they were the deliberate results of urban planning and construction undertaken by the ruling class to achieve specific goals.

The intentional urban development disparity created by the colonisers served as a tool for spatial segregation, with railway subsidiary area clearly distinguished from local residents' settlements. This not only restricted the living space and resource access of local residents, but also further consolidated their social class, resulting in the concentration of quality resources in the hands of the colonisers and their nationals. The development of public spaces in various urban districts was largely synchronised with the urban development, and the types of primary users exhibited significant regional clustering.

From 1909 to 1912, the Russian population in Harbin increased from over 12,000 to 43,091, representing 62.9% of the city's total population at that time[8], thus becoming the main component of the urban population.The proportion of Russians in the railway subsidiary area was even higher, reaching 70.8% in 1913 and continuing to grow year by year[8].

Foreign nationals are the primary users of public spaces, mainly comprising bureaucrats, personnel of the CER, merchants, and other middle to upper-class professions.Primarily residing in the railway subsidiary area, they enjoy superior resources and services, forming a relatively independent and closed social group. They introduced modern public spaces such as plazas, parks, and racecourses, organized a variety of social and cultural activities, cultivating a unique Western cultural atmosphere.

It is, however, important to note that the public spaces constructed by foreign nationals are concentrated within railway subsidiary area, with the primary purpose of meeting their own needs for living, leisure, and entertainment. Chinese residents had limited access to these spaces.

During the early stages of the construction of the CER, due to historical and educational limitations, Chinese residents in Harbin were more engaged in physical labor ,As an illustration, the Harbin General Factory of the CER commenced operations with a workforce of over 1,300, with Chinese workers accounting for approximately 80%-90% (approximately 1,000 individuals)[9].They often occupy a doubly marginal status in terms of social class and physical space, predominantly residing in non-railway subsidiary area such as Fujiadian and Old Harbin, forming unique Chinese communities.

Despite these challenges, Chinese residents in the area still managed to create distinctive public spaces for leisure and entertainment in their daily lives, such as teahouses and snack stalls frequented by laborers. These public spaces served as significant venues for social interaction

and rest, reflecting the living conditions and cultural characteristics of the socially disadvantaged groups of the time. As the Chinese population has grown and living standards have improved, attitudes towards the use of public spaces among Chinese residents have shifted from a passive to an active stance.They have begun to prioritize the utility value and functionality of public spaces, actively participating in the construction and management of public spaces.

EVOLUTION OF NEEDS FOR PUBLIC SPACES

EARLY STAGE (1898-1917): NEEDS UNDER THE GUIDANCE OF WESTERN CULTURE

During this period in Harbin, numerous foreign nationals had recently settled in the city, coinciding with the gradual formation of public spaces. These expatriates were eager to swiftly establish their own communities in Harbin while maintaining their original lifestyles and cultural traditions. Therefore, they preferred to engage in social activities, host cultural events, and conduct business transactions in public spaces. They demanded spaces that could accommodate social and cultural activities, as these spaces also served as carriers for their cultural and identity recognition.

In contrast, for the Chinese residents, due to their relatively low social and economic status, the majority had primary needs for basic living spaces such as housing, workspaces, and trading areas, with minimal demand for public spaces.At this stage, they were less engaged in the social and cultural activities that were largely dominated by foreign nationals. For example, when cinemas first opened in the New City District in 1908, and Russian circuses performed in theatres, due to the high prices, the majority of Chinese people were unable to afford to enter to watch[10]. However, in the Fujiadian area, numerous traditional Chinese entertainment-oriented public spaces were established to cater to the local Chinese population, including teahouses and theatres. These spaces satisfied the social and leisure needs of the Chinese people11.

MID-STAGE (1918-1931): INTEGRATION OF EAST AND WEST AND DIVERSIFICATION OF DEMAND

Following the October Revolution of 1917, a considerable number of Russian Orthodox believers, aristocrats, officials, and other refugees sought refuge in Harbin[12]. The demand for public spaces among foreign nationals gradually evolved from a focus on social and cultural needs to encompass a broader range of demands, including religious, educational, medical, and other public service facilities. They aspired to settle permanently in Harbin

and enjoy a more comfortable life. The influx of a significant number of Russian refugees and expatriates from various countries rendered the existing number of churches in Harbin insufficient to meet the demands of the population, leading to the construction of a large number of new churches and surrounding ceremonial public spaces. Among the aforementioned churches among these, 18 Orthodox churches alone underwent renovation, expansion, or new construction[12].

During this period, the Chinese resident population experienced a notable increase, and the demarcation line between the railway subsidiary area and Fujiadian was abolished. The Chinese residents' demand for public spaces gradually evolved from a focus on basic living needs to encompass cultural, educational, and recreational public services.

Harbin has become a melting pot of Chinese and Western cultures, where the Chinese residents' demands for public space types are no longer confined to traditional Chinese public spaces, but have gradually expanded to include Western cultural and recreational public spaces. This change in demand for public spaces not only reflects the progress of citizens' spiritual world, but also embodies the integration and coexistence of Chinese and Western cultures in public spaces.

LATE STAGE (1932-1945): NEEDS SHIFT UNDER THE INFLUENCE OF WAR

In 1932, Harbin fell under Japanese colonial control, and the colonisers' primary demand was for spaces that catered to the needs of their colonial governance, including administrative, military, and cultural facilities. Additionally, they aimed to conduct commercial activities in Harbin in order to sustain and strengthen their colonial dominance.

During the period of Japanese occupation, the needs of Chinese residents and other foreign nationals were severely constrained. The development of public spaces was primarily dictated by the colonialists' aspirations for the future development of Harbin. Meanwhile, Chinese residents were likely to prioritize their needs for survival and resistance, rather than cultural and social demands for public spaces.

CHARACTERISTICS OF CHANGING NEEDS FOR PUBLIC SPACES

In summary, the demand for public spaces among users underwent significant changes, characterised by a transition from basic to advanced, from material to spiritual, and from singular to diverse. In the early stages, constrained by socio-economic conditions, people's needs for public spaces were primarily focused on basic survival necessities, such as improving living environments and perfecting basic amenities.

However, with the development of the social economy and the enhancement of living standards, people's demands gradually shifted towards higher-level aspirations. These included the desire for comfortable and convenient facilities, picturesque green spaces, and comprehensive transportation systems. Concurrently, the demand for public spaces evolved from a focus on material needs to encompass spiritual aspects, with individuals seeking opportunities for cultural, artistic, and social interactions. These interactions aimed to facilitate the formation of a sense of belonging and cultural identity in public spaces.

Furthermore, as society advanced and living standards rose, the demand for public spaces diversified, expanding from initial basic survival needs to encompass cultural facilities, leisure, entertainment, fitness, transportation, and other multifaceted requirements. This transformation not only reflects the progress of the social economy but also underscores the crucial role of public spaces in promoting social and cultural interactions.

Fig. 3.   China Main Street(Central Main Street)began built in 1899. The left image shows before the laid the square stone payment,The left image shows after 1924.

THE EVOLUTION
OF PUBLIC SPACE DEVELOPMENT IN HARBIN (1898-1945)

1898-1917: INITIAL FOUNDATION
AND ESTABLISHMENT OF THE PUBLIC SPACE FRAMEWORK

Between 1898 and 1917, Harbin's urban public spaces underwent a pivotal stage of initial establishment. As previously stated, the needs of public space users during this period were relatively fundamental, primarily focused on fulfilling basic living requirements, engaging in social activities, and having initial exposure to cultural and entertainment pursuits.

At this stage, the urban road system underwent initial planning, with a grid-like road layout providing a framework for the division and expansion of urban spaces. A series of critical transportation nodes and railway- adjacent areas emerged as significant components of urban spaces, not only serving as transportation hubs but also becoming centres of urban economic and social activities. The New City District and Butou District underwent a rapid process of development, becoming hubs for commercial activities. In particular, China Main Street in the Butou District(Figure 3), due to its distinctive geographical position and architectural style, attracted a multitude of businesses, thereby establishing itself as a renowned commercial district in Harbin.

Urban squares, parks, racecourses, and street center park began to emerge as venues for socialising and leisure[13].Such spaces serve not only as locations for residents to interact, relax, and entertain themselves, but also as catalysts for enhancing the urban environment and improving the city's liveability. These public spaces often hosted a variety of sporting events and entertainment activities such as horse racing, concerts, theatre performances, etc., satisfying the cultural needs of some citizens, especially foreign nationals[14].

The design of public spaces in Harbin was influenced by Howard's theory of the 'rural city', which resulted in the creation of street center park(Figure 4), roadside tree planting, courtyard planting, etc., which better met the daily needs of residents. Relevant laws and regulations, such as the "Rules for Paving Streets and Sidewalks (1908)" and the "Regulations for Managing Pedestrian Roads (1911)", were introduced to ensure that residents had sufficient

development space for their walking and leisure activities[15].The incorporation of green spaces within urban environments, including roads, squares, and other public spaces, has facilitated a more rational and structured urban public space framework, laying a solid foundation for future urban development. However, most of the public spaces mentioned above were built in the New City and Butou District, while it was not until 1917 that Binjiang Park in Fujiadian was completed and became a modern park[16].

During that period, the construction of religious edifices commenced, including the S. Nicholaevsky Grand Church and the S. Sophia Church. These structures not only served as places for citizens to engage in religious rituals, but also constituted integral parts of the city's cultural fabric.

1918-1931: FUNCTIONAL EVOLUTION AND DIVERSIFIED DEVELOPMENT OF PUBLIC SPACES

As Harbin's urban economy developed and its population grew, the user groups of public spaces became more diverse, and the demand for public spaces had accordingly increased. Consequently, the functions of public spaces began to diversify and expand.

The commercial activities in Harbin had been experiencing a period of accelerated growth, which had led to the rapid development of commercial spaces such as shopping streets and markets. These spaces not only met the shopping needs of residents but also became significant venues for socialising and entertainment. The expansion of commercial spaces had also facilitated the growth of surrounding public spaces, including the emergence of leisure venues such as cafés and teahouses.

Fig. 4.   The Street Center Park formed in 1907 in Butou District

As cultural education became increasingly popular and residents' living standards improved, Chinese residents continued to engage in social and cultural activities primarily in traditional Chinese public spaces, such as teahouses and theatres. Concurrently, Western-style concert halls, theatres, and cinemas gradually emerged, providing citizens with a more diverse range of cultural and entertainment options.According to the 1928 edition of the Binjiang Times, a library was built in the New City (which had been renamed Nangang by that time) to satisfy people's need for cultural life[17]. Chinese residents became more active in urban public life, with the construction of a comparable number of recreational or ritualistic public spaces to those established by foreign nationals. Between 1918 and 1923, 25 new cinemas were constructed in Harbin, with 12 of these being built by Chinese entrepreneurs[18] Such spaces not only enriched the spiritual and cultural lives of residents but also contributed to the prosperity of urban culture.

During this period, Harbin's public spaces began to emphasise the enhancement of design sense and artistic quality. Parks, squares, and other public spaces began to incorporate Western landscape design concepts, with a focus on greening and landscape creation(Figure 5). The famous Chinese essayist, poet, and scholar Zhu Ziqing passed through Harbin in 1931 and described his impressions of the city in a letter to his friends. He mentioned the "lively atmosphere" in some public places in Harbin at that time, stating that "there were many benches on both sides of the streets for resting. Many Russians sat there unsupported, some of whom came for leisure. In the midst of the more leisurely streets, there was a small garden surrounded by a short fence, where many people walked back and forth…"[19]. The letter also noted that there was little distinction between the lives of Chinese and foreign nationals in the Butou district (which had been renamed Daoli) during that period. Other literature also records:The Special City Park was "filled with numerous visitors walking on the paths in a continuous stream, almost resembling a bustling market."[20],[15], "there was hardly any room for tourists in the park"[21],[15].Locals often rowed boats and swam in the Songhua River.This letter indirectly reflected the openness and inclusiveness of Harbin's public spaces during that era, greatly satisfying residents' aspirations for a higher quality of life. Through the introduction of Western garden design, the establishment of resting benches and small gardens, and the setup of outdoor sports facilities, it catered to residents' needs for an aesthetic environment, social leisure, and outdoor activities.

Furthermore, the ascension of the Republic of China government and the influx of Russian refugees led to a surge in the construction of religious buildings in Harbin. Foreign nationals constructed churches and other Western religious edifices for the purpose of religious activities such as worship, while the Chinese government erected oriental religious buildings such as the Temple of Ultimate Bliss and the Temple Of Confucius for temple fair and other religious ceremonies[10].

Fig. 5. Partial addition of public spaces from 1989 to 1931

1932-1945: CULTURAL RESTRUCTURING AND MULTI-FUNCTIONAL INTEGRATION OF PUBLIC SPACES

During the Japanese occupation, the functional trends of Harbin's public spaces exhibited both complexity and specialisation. Although Japan's planning and construction of Harbin

undoubtedly exhibited a distinct colonialist tint, such as the construction of numerous Japanese Buddhist temples and Shinto shrines[12], objectively speaking, its planning schemes had significant positive implications for the development of Harbin's urban public spaces.

Most of the Japanese planners' urban planning for Harbin continued the Russian planning programme, drawing on the most advanced design concepts of Western countries, especially in the creation of public space. They planned a large number of green parks and set up squares at important road intersections, further improving the spatial structure of Harbin(-Figure 6). The Japanese attached great importance to the construction of sports and athletic venues, such as the New Racecourse in 1934 and the Eight Stations Sports Park in 1936.

Concurrently, there emerged a trend of functional diversification in public spaces. Parks were no longer solely utilised for leisure and entertainment purposes; they also became venues for cultural and commercial activities. In contrast, squares underwent a transformation, becoming significant stages for political gatherings, commercial promotions, and cultural performances. This diversification of functions enhanced and expanded the scope of public spaces.

DISCUSSION & CONCLUSION

A comprehensive examination of the evolution of public spaces in Harbin's historical urban areas reveals that this evolution not only delineates the developmental trajectory of the city's history but also serves as a vivid manifestation of societal cultural shifts and transformations in people's lifestyles. To gain a more comprehensive understanding of the dynamic process of public space development, it is necessary to examine the social, economic, and cultural factors that underlie it from the perspective of user needs. This will enable us to uncover the intricate interplay between space and humanity.

From a methodological perspective, however, we inevitably face the challenges posed by historical distance and data scarcity. Although we can construct this evolution process through literature reviews, historical records, and

existing data, there are significant difficulties in directly proving whether these public spaces met the needs of residents. Due to the long history and incomplete information, it is difficult for us to verify this through direct research or conclusive material. Therefore, we rely mainly on indirect evidence and logical reasoning to construct this argument, which naturally involves certain limitations, subjectivity, and uncertainty.

We acknowledge that our method may have shortcomings and cannot quantify the needs and satisfaction of residents as accurately as modern surveys. However, we believe that this limitation is not the end point of our research, but rather the starting point for further exploration. It reminds us of the need for a more careful and comprehensive approach to understanding the development of urban public spaces. We need to constantly broaden our research horizons and combine different methods, such as fieldwork, oral history, and social surveys, to obtain more accurate and richer data.

Fig. 6.   Partial addition of public spaces from 1932 to 1945

Harbin, a city of historical interest in Northeast China, offers a valuable case study for the evolution of its public spaces. A comprehensive analysis of this process can provide a more nuanced understanding of the direction and objectives for the preservation of historical and cultural heritage. It is recommended that urban planners give priority to the functionality and usability of public spaces, while respecting historical values, in order to meet the diverse needs of citizens and make these spaces an integral part of their daily lives. This will inject new vitality into the sustainable development of the city.

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DISCLOSURE STATEMENT

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IMAGE SOURCES

Figure 1   Modify according to the literature named 《Impression of Harbin 1》, the ISBN number is 9787112071425.

Figure 2-4   the literature named 《Impression of Harbin 1》, the ISBN number is 9787112071425. The rest of the tables and figures are made by the author.

Planning Impacts (2)

Chair: Ian Morley

Materiality and Metropolis
Shaping of Tondo's Urban Built Fabric during Early American Colonization

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The Chinese University of Hong Kong

Abstract

This study delves into the urban metamorphosis of Tondo, Manila, during the early American colonization of the Philippine Islands. The proposed presentation will focus on the shaping of the district's high-density fabric. Examining primary sources such as newsletters, newspaper articles, urban design proposals, and actual developments from this period, the study explains the impact of the nature of materials and space design utilized during this transformative era. It underscores their significant contribution to the process of shaping Tondo's physical and demographic growth. Intertwining planning and architectural history with insights into local culture, the study unravels the complex relationship between physical form and increasing density in the context of Tondo's growing population by analysing the dynamic interplay between material choices and the evolving urban landscape under American colonial influence. In summary, the study based on ongoing postgraduate research, will shed light on the socio-spatial dynamics that defined Tondo's early American-era urban environment. The paper contributes significantly to the broader discourse on high-density metropolises, offering a nuanced perspective rooted in the unique historical and cultural context of Tondo as part of Manila's evolution as a modern colonial capital city

Histories of citizen-led environmental struggles in Mumbai
Land's End and the Bandra Bandstand Promenade

Tanu Sankalia
Paris Nanterre

Abstract

Since the early 1990s, incessant urbanization stimulated by flows of property capital has pushed government to privilege development over public open space in Mumbai. In this context, citizens' groups have pressured government, and led the charge to conserve and create public spaces in the city. Some planning scholars, however, have criticized the actions of citizens' groups for promoting an exclusive city and shutting out the urban poor. They assert that the actions of citizens' groups align with consumerist and anti-poor attitudes of a "new middle-class" that has emerged in India since the introduction of economic liberalization in 1991. This paper pushes against such a framing of citizen action by examining two case studies—the Land's End struggle and the construction of the Bandra Bandstand promenade—that uncover the historical, political, and social complexities of urban planning in relation to citizen-led urban transformation. Land's End and the Bandra Bandstand promenade are part of Mumbai's coastal, public, open space network. Located in the relatively upscale, western suburb of Bandra, now quite central to Mumbai's expanding urban geography, they are popular destinations for locals and visitors from other parts of the city. In 2000, the Bandra Bandstand Residents' Association (BBRA), a citizens' group, succeeded in transforming the one-and-half kilometer seafront at Bandra Bandstand from a neglected terrain vague into a public promenade, and in reclaiming land for a public garden at Land's End which since the 1970s had been subject to private land grabs and environmental degradation. Through the case studies, and by engaging the vast literature on middle-class citizenship in India, this paper argues that citizens' movements in Mumbai did not emerge with the rise of a new middle-class following economic liberalization in the early 1990s, but that their historical roots go back to the 1970s and beyond. It posits that the political ideology and activism of numerous citizens' groups builds on historical struggles for social and environmental justice. The paper suggests that in the context of a weakened state acting on behalf of property capital, citizen-led movements may present a viable, yet limited, option in creating public spaces and shaping urban transformations..

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Investigating the Impact of Dandaka Planning Technique on Indoor Thermal Comfort
A Multi–Method Approach

Anurag Aman Kaushal, Prashant Anand, Bharath H Aithal
Paris Nanterre

Abstract

Investigating high-density urban housing profoundly shapes living conditions, sustainability, and urban development approaches. Traditional planning and architectural practices hold promise for enhancing comfort while promoting sustainability. This paper presents a comprehensive investigation into the impact of the traditional development technique of Dandaka planning on the indoor thermal comfort of residential buildings. Through a multi-method approach encompassing computational modelling and field measurements, this study aims to evaluate the effectiveness of the Dandaka planning principle on the spatial form of residential dwellings. By conducting comprehensive simulations and field data analyses, the research provides insights into the prudence of past planning approaches and indoor thermal conditions in the present times, contributing to sustainable and comfortable living environments. The computational modelling component involves developing and simulating virtual building models using the software Rhino, Ladybug and Honeybee. This research includes parameters such as building layout and orientation in Dandaka planning to quantify the thermal performance of residential buildings for the warm and humid climatic regions. The quantification of thermal comfort parameters such as Predicted Mean Vote (PMV), Predicted Percentage of Dissatisfied (PPD), and comfort ranges based on international standards further suggests the efficacy of Dandaka planning in creating comfortable and energy-efficient built environments. Through on-site monitoring of indoor thermal conditions and occupant comfort surveys, these measurements show the impact of Dandaka planning on indoor thermal comfort. The outcomes of this research have implications for architectural design practices, urban planning strategies, and sustainability initiatives, offering valuable insights for creating more comfortable and energy-efficient built environments.

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Densities of Urbanization
More-than-City, More-than-Human

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Abstract

The concentration of human populations in dense settlements, from small towns, to cities, to metropolitan and post-metropolitan formations and diffuse agglomeration zones, lies at the core of the urbanization process. But these high concentrations of people, economic activities, capital, structures, and infrastructures that characterize urban life are impossible to be sustained without a much more geographically extensive web of landscapes of primary production, circulation and waste disposal that form the other side of the urbanization process. In fact, cities due to their high densities, cover no more that 3% of the planetary terrain, while these "other" landscapes that support these high densities, activate more than 70% of the earth's land surface. In the context of accelerated environmental crises and transition planning efforts, addressing these indirect consequences of urbanization (e.g. pollution, environmental degradation, or biodiversity loss) on more than city, more-than-human landscapes is conditioning the planning of future urban and infrastructural developments. This contribution aims to interrogate the condition of urban density in this broader perspective, illustrating how the densification of human populations in cities, constructs more-than-human densification patterns across more-than-city environments. Specifically, we situate our investigation in the Dutch context and its more-than-city environments. We explore how, in this respect, densification can be conceived as a broader characteristic of the urbanization process, not just the city. Industrial agricultural systems pack plants together in extreme densities, as do large scale Confined Animal Feeding Operations with livestock. We use this framework to examine the country's long history of agricultural modernization, intensification, and crises, highlighting the convoluted interdependencies between more-than-city landscapes and dense cities. Through historical, conceptual and cartographic exploration, this contribution aims to help reveal the mirror image of urban densities, extending the scope of the conference's theme of the dense city to include the dense more-than city in planning history..

Keywords

How to cite

Ancient Chinese Cities (2)

Chair: Yi Chen

A GIS-based Study on the Distribution of Religious Buildings in Lhasa and its Historical Urban Spatial Pattern

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Abstract

This study examines the pivotal role of religious architecture in shaping Lhasa's urban landscape, emphasizing Buddhism's profound impact on the rise, development, and spatial organization of Tibetan cities. Religious architectures serve as essential nodes for public engagement with Buddhism and are central to the city's socio-cultural fabric. Using Geographic Information Systems (GIS), the research quantitatively and qualitatively analyzes the distribution, density, and architectural characteristics of Lhasa's religious edifices. This approach offers a comprehensive understanding of the spatial interplay between these religious sites and the broader urban matrix. By integrating Lhasa's natural topography and socio-historical context, the study provides insights into how geographical and cultural factors influence urban planning and architecture. The objective is to delineate the spatial symbiosis between religious architecture and Lhasa's urban form, revealing how these structures have shaped the city's physical and cultural landscape. Through this multidisciplinary lens, the paper aims to contribute to the broader discourse on the intersection of religion, architecture, and urban development, particularly in historically and religiously significant cities.

INTRODUCTION

In exploring the formation and development of cities, the influence of religion can be substantial. Urban historian Lewis Mumford profoundly revealed the dual driving forces of social and religious aspects in ancient societies. He believed that it was the synergistic effect of these two forces that ultimately led to the formation of human cities. Mumford further pointed out that the earliest human gathering places, which are the embryonic forms of cities, were often centered around ritualistic sites that attracted pilgrims from various regions. As he noted, 'The earliest ceremonial gathering places of humanity, which became the targets of pilgrimage, were the embryonic forms of cities .'(Mumford,1990)

Tibetan Buddhism has had a profound impact on various aspects of Tibet's politics, economy, culture, and customs. The most tangible manifestations of this influence are religious buildings. Religious sites, represented by these structures, gradually became the carriers of urban public life, significantly influencing the formation and development of cities. The city of Lhasa, in particular, can be described as a city born out of its monasteries. When conducting research on the historical urban layout of Lhasa, it is essential to focus on religious buildings and the temple architectural landscapes they form.

Currently, research on urban religious buildings mainly focuses on building types, layouts, religious art, and the compilation of urban religious history. Although the spatial distribution of religious buildings has received some attention, most studies interpret distribution and evolution primarily from the perspectives of historical literature and the spread of religion. Some studies have used technologies such as GIS for data analysis, but these mainly focus on spatial-temporal distribution characteristics and provide limited explanations for the mechanisms of evolution and influencing factors. Despite some research integrating the relationship between religious buildings and urban layouts, further studies are needed. These should combine macro and micro perspectives, traditional and modern viewpoints, and simultaneously study feature extraction and the exploration of intrinsic factors to more deeply reveal their internal connections and influences.

RESEARCH GEOGRAPHIC SCOPE,
DATA SOURCES, AND METHODS

SCOPE OF THE STUDY

Lhasa City is located in the southwestern region of China and serves as the capital of the Tibet Autonomous Region. It is also the political, economic, cultural center of Tibet, and a sacred site of Tibetan Buddhism. In this paper, the spatial information data of religious buildings is limited to the administrative boundaries of Lhasa City. This scope encompasses the entire urban area and its surrounding regions, including three districts and five counties: Chengguan District, Doilungdêqên District, Dagzê District, Linzhou County, Damxung County, Nyêmo County, Qüxü County, and Maizhokunggar County.

Unlike historical cities in other regions of China, the development of Lhasa City exhibits a distinct uniqueness: it developed around monasteries as its core. Over 1300 years ago, the Jokhang Temple was initially built, serving as the central point from which the ancient city expanded outward in concentric circles, gradually flourishing. This paper focuses on the historical Lhasa City and its surrounding areas.

SOURCES OF DATA

Tibetan Buddhist religious sites can be classified into different levels according to their functions and importance. The data in this paper includes monasteries, branch monasteries, Lakhangs, and retreat centers, all collectively referred to as religious buildings.

The location data was sourced from Google Earth. After determining the spatial locations, the data was stored as KML files and projected in ArcGIS 10.8 to generate geographic coordinates, thereby establishing a geographic information database of Lhasa's religious buildings. Research materials were sourced from various archaeological survey data and local chronicles of Lhasa, including temple gazetteers, travel notes by foreigners, 'Chinese Tibetan Buddhist Monasteries,'(Ran Guangrong, 1994) 'Tibetan Buddhist Monasteries in Lhasa,'(Qunpei, 2010) and contemporary research outcomes, along with various publicly published and internally printed materials.Historical map data primarily came from the 'Lhasa Historical City Map Atlas,'(Larsen, 2005) local chronicles of Lhasa, online historical map libraries, and relevant historical documents. Administrative boundaries and hydrography data were obtained from the National Geographical Information Resource Directory Service System's 1:1,000,000 fundamental geographic information data (2021), using the 2000 National Geodetic Coordinate System, the 1985 National Elevation Datum, and latitude-longitude coordinates. The topographic data were sourced from the 30 m digital elevation data provided by the Geospatial Data Cloud.

RESEARCH METHODS

This study uses GIS as a data processing tool, combining field surveys and literature review. Initially, 234 religious buildings within Lhasa were selected to establish a database for relevant data processing and analysis. By translating historical maps, the historical city limits within the modern city were defined. The spatial distribution characteristics of religious buildings in three layers—Lhasa Old City (original urban form), Lhasa City (historical urban area), and Lhasa Suburbs (evolved city)—were analyzed. Finally, the relationship between the spatial distribution of religious buildings and the urban layout of Lhasa was systematically summarized and analyzed based on the city's geographical features and historical evolution.

GIS Data Collection: Geospatial data for Lhasa was obtained using satellite remote sensing images, aerial photographs, and ground surveys, creating a digital map database.

Data Processing and Analysis: Using GIS software, data processing included data cleaning, geographic coordinate transformation, data overlay, and spatial analysis to reveal the distribution characteristics of religious buildings and historical urban patterns.

Spatial Statistical Analysis: Spatial statistical methods were used to evaluate the clustering and distribution patterns of religious buildings, including:Cluster Analysis, using kernel density estimation to determine the spatial characteristics of temple distribution, such as clustering locations and degrees; Spatial Correlation Analysis, analyzing the impact of roads, water systems, and other spatial factors on the distribution pattern of religious buildings and the mechanisms of spatial interaction.

Historical Map Translation: Since most historical maps have low geographical accuracy due to empirical generalizations of spatial relationships, this study translated historical maps from the perspective of urban mapping. Modern Lhasa's roads and buildings were exported from ArcGIS as CAD drawings with geographic coordinates and imported into Photoshop as base maps. Using important temple buildings as references, historical maps were overlaid, adjusted, and validated to define the boundaries of Lhasa Old City, Lhasa City, and Lhasa Suburbs within the modern city.

Historical Document Research: Historical documents, such as chronicles, local gazetteers, and religious texts, were investigated to obtain historical information and distribution details of religious buildings in Lhasa.

THE SPATIAL CONSTRUCTION OF LHASA: CORRELATION ANALYSIS OF THE EVOLUTION OF URBAN LAYOUT WITH RELIGIOUS BUILDINGS AND ROADS

DISPERSED RELIGIOUS BUILDINGS AND URBAN BOUNDARIES: SPATIAL AUTO-CORRELATION CHARACTERISTICS OF THE DISTRIBUTION OF RELIGIOUS BUILDINGS IN LHASA

According to the selection, within the total area of 29,640 square kilometers in the Lhasa region, there are 236 Tibetan Buddhist religious buildings. These buildings belong to the four main sects—Gelug (Yellow Hat), Kagyu (White Hat), Nyingma (Red Hat), and Sakya (Flower Hat)—as well as numerous sub-sects. Chengguan District has the highest density of religious buildings, with 61 structures concentrated in the smallest administrative area (554 km²), accounting for 25.84% of the total. The remaining buildings are more evenly distributed across the two districts and five counties: Doilungdêqên District with 22 buildings, Dagzê District with 15, Linzhou County with 38, Damxung County with 22, Nyêmo County with 22, Qüxü County with 16, and Maizhokunggar County with 39.

The high-density and low-density areas of religious building distribution are clearly separated. The densely populated areas exhibit the following characteristics:

Firstly, the most evident phenomenon is that religious buildings are primarily concentrated in Lhasa's urban area and nearby counties. These regions have an extremely high density of religious buildings, forming distinct high- density clusters. The core area of Chengguan District is the most densely populated, with a distribution density surpassing the average level. Due to the radiating effect of Chengguan District, surrounding counties also have one or two secondary dense clusters.

Fig. 1.   Kernel Density of Religious Building

Secondly, on the whole, the distribution density of religious buildings in the western part of Lhasa is higher than in the eastern part, and the density is higher in the southern part than in the northern part. This creates a clear religious building belt centered around Chengguan District.

Additionally, considering the geographical environment, religious buildings, whether clustered or dispersed, are distributed along the Lhasa River and its tributaries.

In summary, the distribution characteristics of religious buildings in Lhasa primarily manifest as a clear separation between high-density and low-density areas and a tendency to cluster in specific geographical regions. This distribution reflects the combined influence of Lhasa's religious history, cultural context, and geographical environment.

THE EXTENSION OF RELIGIOUS BUILDINGS AND URBAN SPACE: BIVARIATE ANALYSIS OF RELIGIOUS BUILDINGS AND ROADS

Lhasa is home to three famous circumambulatory paths. The first is the Nangkhor, the square inner path around the main hall of the Jokhang Temple. The second is the Barkhor, the roughly square middle path around the Jokhang Temple. The third is the Lingkhor, the outer path that encircles major religious buildings including the Jokhang Temple, Ramoche Temple, and the Potala Palace. These circumambulatory routes have evolved over history and represent the ancient origins of Lhasa city.
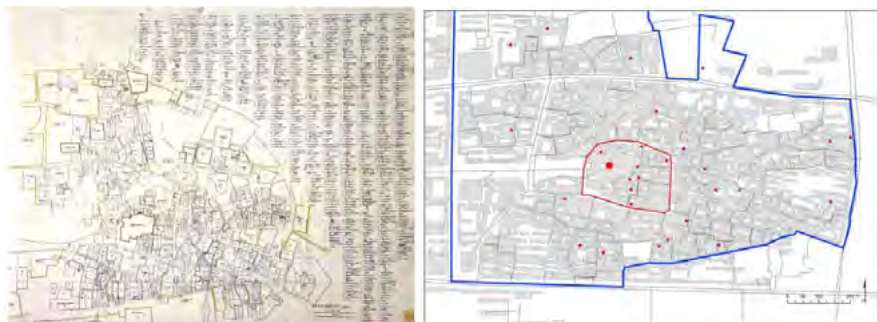
Fig. 2. Historical Map of Lhasa Old City (Central Area of Lhasa, Peter Aufschnaiter, 1946) and Distribution of Religious Buildings

The old city of Lhasa, or the core area, refers to the nearby urban district centered around the middle circumambulation path, Barkhor (Figure 2, The red path in the right image), of the Jokhang Temple (Figure 2, The blue area in the right image). This area is roughly bounded by Beijing Middle Road to the north, Beijing East Road to the east, Jiangsu Road to the south, and Zang Yiyuan Road to the west . This region represents the highest density cluster of religious buildings in Lhasa, with a total of 31 structures, accounting for 50.8% of the religious buildings in Chengguan District. The distribution of these buildings is densest around the Jokhang Temple area, primarily arranged in a circular pattern centered on the Jokhang Temple, with the densest cluster along the Jokhang Temple axis. A secondary dense area is located north of the Jokhang Temple in the Ramoche Temple area. This distribution pattern reflects the central role of religion and faith in the historical development of Lhasa's old city and the continuity of Lhasa's history and culture.

In 633 AD, Songtsen Gampo established the first unified regime and moved the capital to Lhasa, marking the beginning of a series of urban construction projects. The construction activities of this period focused on building palaces, temples, houses, and roads. Around 647 AD, the main hall of Jokhang Temple was established, quickly becoming the center of Tibetan Buddhism and regarded as the 'heart' of Tibet. Simultaneously, the Ramoche Temple was established north of the Jokhang Temple, forming a cluster. Religious buildings became a crucial component of urban space.

The Jokhang Temple, as a religious center, is regarded as the center of the Tibetan Buddhist world, attracting numerous devotees daily for circumambulation, thereby promoting population concentration. To better accommodate the needs of pilgrimage and worship, many other religious buildings and Buddhist facilities were established near the Jokhang Temple. Over time, residential, commercial, and other infrastructure related to the populace extended around these religious buildings, with roads connecting them, gradually forming the Barkhor Street area. This area became a significant urban residential cluster, marking the beginning of Lhasa's urban structure development. People even referred to the entire Lhasa (in a narrow sense) by the Barkhor Street area.

Thus, from the early stages of Lhasa's formation, religious buildings played a crucial role. The construction of the Jokhang Temple and the Ramoche Temple was innovative and pioneering in the architectural history of Tibet's capital. These constructions left a profound impact on the evolution and progress of the capital. The compact settlement form formed by the enclosure reflects the origin and development of Lhasa city and reveals the spiritual core influencing this city (He Yimin, 2013).

The Potala Palace, located on Marpori Hill to the northwest of the Barkhor area, represented the political center of the Tubo Dynasty and became another important element defining Lhasa's urban space. An independent Tsuklakang area was formed around the Potala Palace, Chakpori Hill, Dragon King Pond, Mopan Hill, and the associated Shol Village.The approximately 1 km open area between the Tsuklakang complex and the Barkhor complex gave rise to the main roads and secondary road network connecting the two centers. The Lingkhor outer circumambulatory path, encompassing both the Tsuklakang and Barkhor complexes, defines the space of the old city of Lhasa, functioning primarily as a major urban thoroughfare. The Lingkhor encircles these two core areas and connects them closely, forming a double-core, double-ring structure with an east-west elliptical axis, which provides more construction space in the western part of the city(Figure 3, Left).

This 7.5 km long pilgrimage route roughly follows the western side of Lingkhor East Road, the northern side of Jiangsu Road, the eastern side of Zang Yiyuan Road, and the southern side of Lingkhor North Road, with a circumference of 7.5 km, enclosing an area of approximately 1.33 km², perfectly integrated with the modern road system. The modern Lingkhor closely resembles the ancient one, though with slight route differences (Figure 3, Right).

Within this old city area of Lhasa, there are a total of 37 religious buildings. Beyond the 31 buildings within the dense area of the Barkhor, only 6 more are added, primarily distributed in the Potala Palace area and along the northern and southern lines of Lingkhor. This characteristic can be traced back to multiple historical reasons. With the gravitational pull of the Jokhang Temple area, nobles began to build residences nearby, and many believers and merchants also started to flock in. To meet the residential and living needs of these people, residential areas and other public facilities were built on the vacant land within the Lingkhor

range, limiting the space available for religious buildings. Moreover, religious buildings in this area were not as well protected as those in the Barkhor and Tsuklakang areas. During Lhasa's development and construction, they may have been altered or destroyed due to various reasons such as socio-political factors, urban planning, or traffic layout.

With the continuous expansion of the city and the deepening development of Buddhism, the old city began to show signs of saturation. Additionally, due to differing sectarian ideologies, some large monasteries and their subordinate temples started considering construction in the suburbs and surrounding areas of the city. Lhasa City and its suburbs have a total of 61 religious buildings, with 24 outside the 37 within the old city. Notable large religious buildings, such as Lhasa's three major monasteries—Ganden Monastery, Drepung Monastery, and Sera Monastery—are representative of this expansion. Small towns formed around these significant monasteries. Traditional circumambulation paths underwent a series of evolutions, and the suburban religious buildings promoted the construction of external roads. Besides the original Potalakhor, Doekhor, and Maikhor paths (additional circumambulatory paths, unrelated to the city's structure), new radial roads connecting significant monasteries with the old city emerged. These roads were no longer circular in shape; instead, they connected the inner ring of the city with suburban monasteries located on the northern side of the river and higher elevations in the mountains. Extending westward, northward, and eastward, they formed a radial road network, providing devotees with more pilgrimage route options. The city's boundaries were ultimately constrained by the northern mountains and the southern Lhasa River, preventing further growth. The urban structure shifted from a centripetal circular layout. In L. Austine Waddell's 1905 book 'Lhasa and its Mysteries,' the city formed a triangular pattern enclosed by two mountains and a river (Figure 4, Left).

In summary, religious buildings, roads, and urban layout form a dynamic and interactive system. Religious buildings serve as the cultural and religious centers of the city, roads as the connecting network, and the urban layout reflects the combined effects of history, culture, economy, and social interactions. Together, these elements have shaped the appearance and characteristics of Lhasa, making them essential parts of the city's historical and cultural heritage.

Fig. 4.   Historical Map of Lhasa Suburbs (Lhasa Suburb Map, L. Austine Waddell, 1905) and Distribution of Religious Buildings
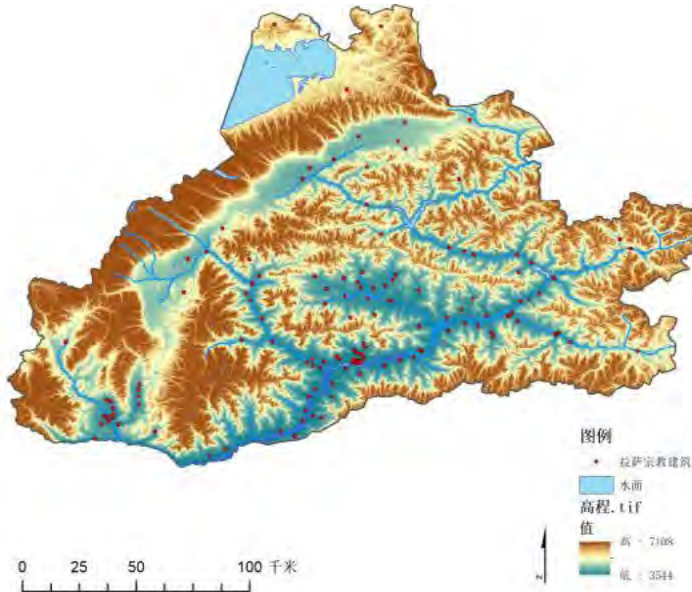
Fig. 5. Topographic Map of Lhasa City

ANALYSIS OF THE RELIGIOUS SPACE AND INFLUENCING FACTORS IN LHASA

Urban development is a self-organizing process based on natural conditions and local political culture, resulting from the interaction of various elements that together shape the city's layout. Natural geographic conditions, historical development, and Buddhist philosophy all play key roles in this process. The natural geographic environment, especially Lhasa's unique mountains and rivers, provides natural spatial coordinates and symbolic meanings for religious buildings. These features ensure that the buildings are not only functional but also convey specific religious significance.

Historical evolution, including political, economic, and cultural changes across different periods, has left unique imprints on the city's physical form, reflecting the dynamic interactions between religion and governance, faith centers, and urban development during particular historical periods. However, the pervasive influence of Buddhist philosophy, particularly the centripetal cosmology of the mandala, has provided a theoretical foundation for Lhasa's urban structure. This philosophy has closely linked the spatial organization of the city with religious principles, achieving a harmonious unity between religion and urbanism.

The interaction among these three factors—natural geography, historical evolution, and Buddhist philosophy— has laid a solid foundation for Lhasa's urban space, constructing a unique and deeply meaningful religious cityscape.

RELIGIOUS SPACE DISTRIBUTION INFLUENCED BY NATURAL GEOGRAPHY

As the political, economic, and cultural center of Tibet, Lhasa's geographic form and historical development are deeply intertwined, reflecting a unique interaction between mountains and rivers. Lhasa's distinctive geographic location on the alluvial plain at the lower reaches of the Yarlung Tsangpo River in the highlands features a mild and humid climate, flat terrain, and fertile soil, providing excellent conditions for human habitation and activities. On a macro scale, the topographical features within Lhasa's three districts and five counties are particularly prominent. The Nyainqentanglha Mountains to the north form a natural defensive barrier, while the Yarlung Valley to the south provides easy transportation access and significant strategic value. This natural geographic setting echoes the historical name of Tibet's first regime, 'Tubo,'meaning 'Valley Plain in the Highlands.' This is not only a straightforward description of Lhasa's environment but also a geographic imprint of Tibet's early civilization .(He Yimin, 2013)In this plain, surrounded by mountains, numerous religious buildings are scattered along the rivers, coexisting harmoniously with the natural landscape and forming a unique religious and cultural landscape in Tibet.

Focusing on Lhasa city and its suburban areas, the phrase' a city flanked by two mountains and traversed by a river' aptly describes Lhasa's geographical structure. The mountains on the north and south sides exceed 5,000 meters in altitude, enhancing its military defensibility and giving Lhasa a unique spatial depth. Before urban development, this area was an open wetland marsh. During the Ganden Phodrang period, Lhasa city and its outskirts still featured numerous wetlands, with several small water systems converging into the Lhasa River in the southern suburbs. These tributaries collectively formed the Lhasa River system. The core building area of Lhasa is located within a circular region formed by these small rivers, whose paths roughly correspond to the circumambulation route of the Lingkhor, delineating the city's main boundaries.

Historical maps from different periods, such as the 1884 Survey of India by Dehradun and the 1828 map by Nikita Yakovlevich Bichurin (Figure 6), show multiple water systems flowing from

the northern mountains. One stream passes through the western suburbs near the Potala Palace and Marpori Hill, circles around Chakpori Hill, and finally flows into the Lhasa River. The eastern part of the city has two streams that converge and flow southwest into the Lhasa River, while another stream flows from south to north and merges with the eastern streams. Notably, a stream from the northeast cuts diagonally through the Lhasa city area, joining the Lhasa River in the southwest, which essentially defines Lhasa's three major religious districts: the Barkhor area, the Ramoche Temple area, and the Potala Palace with Shol area (Ou Lei,2013). L. Austine Waddell's 'Plan of Lhasa'(Figure 3, Left) illustrates that the Lingkhor circumambulation path runs roughly parallel to the river's course. Although the distances between them vary in different sections, they maintain a consistent relationship, marking clear boundaries for the main urban area.

The forms of these rivers suggest that they may not have entirely formed naturally. It remains unclear whether the locations of monasteries were chosen based on the river courses or if the river courses were artificially altered to fit the urban planning and residential needs associated with significant monasteries. Nevertheless, we can observe that this geographic configuration vividly illustrates the influence of mountain and water conditions on the distribution of religious spaces in Lhasa, indicating a profound connection between the mountains, water systems, monasteries, and circumambulation paths. Together, these elements shape the city's unique character and charm. The presence of mountains reinforces Lhasa's geographical features, while the rivers intertwine with the city's religious and historical depth, enriching Lhasa's cultural and developmental narrative.

DEVELOPMENT OF RELIGIOUS SPACE
UNDER POLITICAL AND HISTORICAL INFLUENCE

The pattern of urban development in Tibet has always been closely linked to the construction and presence of religious buildings. Historically, Tibetan cities and towns have often developed around monasteries, stupas, and other religious structures, forming a unique urban structure and spatial pattern. However, the development of religious spaces has not always been smooth and steady, as it has been closely tied to the political landscape. Changes in governance, policy adjustments, or external influences at specific times have often led to the decline or transformation of religious spaces, impacting urban development.

In the early 7th century, with the establishment of the Tubo regime, Tibet entered an important phase of urban development. Lhasa became Tibet's first capital city. The construction of the Potala Palace, Jokhang Temple, and Ramoche Temple laid the foundational structure of the city, and more religious buildings were established around Jokhang Temple, filling much of the urban space with religious sites. In the late 9th century, the decline of the Tubo dynasty, coupled with internal strife, led to significant destruction in Lhasa and its monasteries. Construction on temples initiated during the reign of Trisong Detsen was halted, and the Jokhang and Ramoche temples were closed. The city's growth stagnated and even contracted during this period.

With the establishment of the Yuan dynasty, Tibet was incorporated into a unified adminis-

trative system under the central government, marking a significant turning point in Tibetan history. The Yuan and Ming dynasties' emphasis and support for Tibetan Buddhism led to a resurgence of the religion. Under the Yuan dynasty's central government, the Sakya sect established a theocratic local government, profoundly influencing Tibet's subsequent development and significantly enhancing the role of religion in shaping and developing Tibetan cities (Dai Fawang, 2006). The political power held by the Sakya sect facilitated the rapid spread of its influence, leading to the establishment of monasteries across Tibet, around which towns quickly developed.

In the 14th century, Tsongkhapa founded the Gelug sect in Lhasa. During this period, the three major monasteries of Lhasa—Ganden Monastery, Drepung Monastery, and Sera Monastery—were built. Due to saturation within the city, these monasteries were established outside Lhasa and were vast in scale. The construction of these large monasteries attracted many monks, leading to the formation of monastic towns. The development of Lhasa was guided and constrained by these monastic towns. Despite the rapid development outside the city during this period, construction within the city continued, with the building of the Lower and Upper Tantric Colleges and numerous subsidiary temples. These temples and associated estates formed a network, once again becoming a driving force in Lhasa's development.

As Buddhism gradually revived, its influence on urban development in Tibet became increasingly apparent. The flourishing of Tibetan Buddhism led to the formation of various sects, each constructing religious sites. 'Over approximately two and a half centuries, numerous temples were built in Lhasa, with as many as twelve notable ones. These temples formed different sects, which, despite their differences, were closely linked in religious culture, all centered around Lhasa .' (Fu Chonglan,1994)These temples either became integral parts of the city or led to the development of towns around them.

In 1642, the Ganden Phodrang regime established a unified theocratic system, reaffirming Lhasa's status as the political and religious center of Tibet. Favorable relations with the central government ensured substantial funding for the construction of religious buildings. During this period, Lhasa's historical urban layout matured. Following the peaceful liberation, Lhasa became the capital of the Tibet Autonomous Region, with continuous urban development, forming a comprehensive historical urban layout that seamlessly blends ancient and modern features.

URBAN SPATIAL STRUCTURE UNDER THE INFLUENCE OF BUDDHIST PHILOSOPHY

Buddhist philosophy is characterized by its unique centripetal cosmology, which posits that the universe contains a fundamental force that governs the creation, movement, and transformation of all things. This concept not only highlights the distinctiveness of Buddhist philosophy compared to other schools of thought but also expresses itself spatially through a concentric layout, known as the 'Mandala,' which emphasizes the centrality of a core. The mandala, originating from the cosmological concepts of ancient India's Vedic texts, uses its unique imagery, figures, colors, and layouts to reveal the essence of the universe's 'circular completeness' and 'wholeness.'
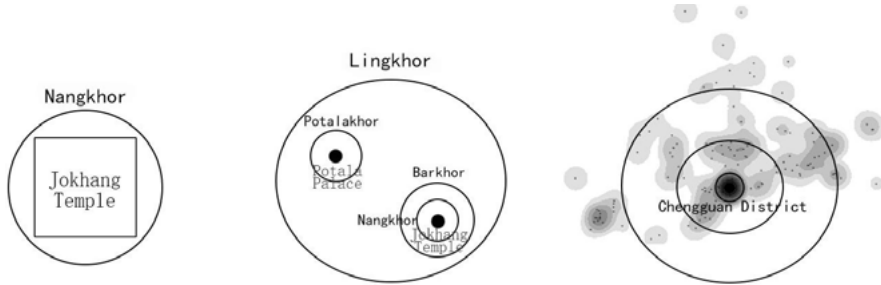
Fig. 7.   Architectural Plan, Spatial Organization, and Urban Layout Under the Influence of Buddhist Philosophy

In Tibetan Buddhism, the practice of circumambulation, known as 'kora,' involves devotees walking clockwise around religious buildings or sacred images. This core religious practice embodies the Buddhist cosmology, consistent with Tibetan Buddhism's philosophical considerations of 'samsara' (the cycle of birth, death, and rebirth) and the 'sacred center.' The clockwise movement symbolizes the harmonious unity of the cosmos and philosophy.

Religious buildings, as places for contemplation and enlightenment, serve as three-dimensional projections of the Buddhist cosmology. Tibetan monasteries' architectural layouts often materialize the mandala's significance and spiritual essence, showcasing its essential elements in their design. Early Tibetan Buddhist architecture incorporated specific proportional shapes, images, colors, and layouts, reflecting the mandala space, typically represented in square or rectangular forms. The main hall of Jokhang Temple, as Lhasa's first Buddhist temple, was established according to this cosmological concept and the esoteric mandala structure. Early traditional Tibetan Buddhist monastery layouts also embodied this cosmic spirit, displaying order through their development and enclosures.

Religious buildings possess an inherent attraction, and the practice of circumambulation integrates daily life and religious activities around these religious centers. The urban layout and road system were significantly influenced by this religious practice. The circumambulation routes not only form the foundational skeleton of Lhasa's urban space but also fulfill the spiritual needs of the devotees, creating a harmonious unity between urban space and spiritual requirements (Deng Chuanli, 2010). In Lhasa, a city built around its monasteries, the urban form not only becomes a religious space in itself but also functions and activities are closely centered around religion, resulting in a naturally compact characteristic.

From a broader perspective, the kernel density map of religious buildings in the entire Lhasa city area seems to exhibit this concentric layout, with a central focus surrounded by auxiliary peripheries. This geographical manifestation not only demonstrates Tibetan Buddhism's profound influence on spatial organization and urban layout but also reflects its role in shaping social and cultural structures. This layout encourages social cohesion and order at a deep level, promoting the exchange and development of religion, culture, art, and economy.

The evolution and development of a city occur on the foundation of its natural environment, driven by local political and cultural factors through a series of self-organizing and adaptive processes. This evolution involves not just the transformation of physical space but also a comprehensive social, cultural, political, and economic metamorphosis. It is shaped by the interaction and mutual influence of various elements, forming the city's shape and layout. This transformation constitutes a complex system network encompassing population migration, resource allocation, regime changes, cultural inheritance, and integration. Each aspect uniquely impacts the city's growth and changes. The influence of religious spaces becomes a primary characteristic of urban spatial formation and a major factor in urban spatial organization. In this context, religious buildings are not merely static spatial structures but active social entities closely connected to their social, political, and cultural environments, creating a dynamic and multifaceted urban development history.

Lhasa, the most representative city in Tibet, holds a central position with a far-reaching influence. Despite its turbulent history, no city has replaced it as the capital until today. Like other religious cities, religious buildings in Lhasa serve as the city's core or initial landmarks. As religious activities and pilgrims increased, the surrounding areas flourished, forming markets, residential areas, and other social facilities. Roads initially developed to connect religious buildings with other parts of the city, providing convenient transportation routes that gradually improved over time. The initial urban layout was significantly influenced by religious buildings, often radiating from these central points. As commercial activities grew, the road system expanded further, driving the evolution of the urban layout to meet increasingly complex transportation needs. As the city grew, new religious buildings might be established on the outskirts or peripheral areas, becoming centers for new communities or districts. The construction of new religious buildings would necessitate new roads, impacting the entire city's transportation network and layout. The introduction of new roads could also alter the original urban core and layout, possibly leading to the emergence of new commercial, residential, or cultural centers. The relationship between religious buildings, roads, and urban layout is complex and tightly interconnected, collectively shaping the city's history, culture, and development trajectory.

Lhasa, as a historic city on the plateau, exhibits distinct religious, regional, and ethnic characteristics in its urban layout. In recent decades, like other cities in China, Lhasa has been undergoing rapid urbanization and the influence of external cultures, which may lead to the gradual disappearance of its original urban form to accommodate urban development. Therefore, studying the historical layout of the city is significant for sustainable urban planning.

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IMAGE SOURCES

Figure 1,5,7 Author's own drawing.

Figure 2,3,4 Left, Larsen, Knud, and Amund Sinding Larsen. The Lhasa Atlas: Traditional Tibetan Architecture and Townscape. Translated by Muya Qujijian Cai and Li Ge. Beijing: China Architecture & Building Press, 2005.[p.29,25,24]. Right, Author's own drawing.

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A GIS-based Study on the Distribution of Religious Buildings in Lhasa and its Historical Urban Spatial Pattern

GIS-based Historical and Cultural Value Sorting and Spatial Construction

Taihu Lake Basin as an Example
Ruin of the Seaport

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Abstract

The Taihu Lake Basin is rich in historical and cultural resources, its water network pattern and settlement texture showing the historical and cultural changes of urban and rural units. This paper takes the Taihu Lake Basin as the research object, excavates historical and cultural resources, and classifies their value elements and carriers. With GIS, we identify the main natural ecological patches, cultural value points and cultural routes to form a historical and cultural spatial system based on nature and humanities, then establish a systematic global historical and cultural spatial database. Firstly, we translate the geographic data of Taihu Lake Basin through ancient texts and ancient maps, locate the elements and carriers of cultural value on the historical and cultural spatial base map, and present the formation mechanism and value connotation in the form of spatial information, so as to facilitate more intuitive knowledge and understanding of the cultural distribution and evolution law in different periods, and provide historical thinking and future development suggestions for the historical and cultural spatial construction of Taihu Lake Basin.

INTRODUCTION

With the co-development of human society and the nature, the contradiction between conservation and development has become more prominent, just as the field of cultural heritage, where conservation and development are relative but seek to be coupled. As a space composed of material and non-material elements, the value elements of cultural heritage can express the cultural identity, social witness and regional spirit, fully reflecting the interactive coupling relationship between human society and the nature.

Since UNESCO implemented Historic Urban Landscape in 2011, the internationally agreed concept of heritage conservation and historical research methodology have been in the same direction as Chinese historic towns conservation practice. In 2021, The General Office of the State Council of China issued the Opinions on Strengthening Historical and Cultural Conservation and Inheritance in Urban and Rural Construction, which requires that put conservation first and being value-driven, build Urban and Rural Historical and Cultural Conservation and Inheritance System, focus on the conservation of various heritage of cultural value from different historical periods and protect regional resources such as historical and cultural routes, corridors and networks[1]. It also expressed that start from the regional level, combine historical continuity, cultural overlay, ecological sustainability and urban synergy, and then sort out historical and cultural resources, link linear spatial elements and construct historical and cultural spaces, which provides ideas for the future region based on the sustainable conservation and development of these resources.

Taihu Lake, anciently known as Zhenze, is a large plains throughput lake. It took shape in the middle of the Holocene, then gradually expanded to its present size in the Song and Yuan Dynasty. Located in the southern Yangtze River Delta, it is connected to the Grand Canal and extends from the Yangtze River in the north to the Qiantang River in the south. The Taihu Lake basin has a long history, the natural substrate of dense water networks facilitated the development of an early settlement and town systems with prosperous economic, advanced society and integrated culture. The Taihu Lake Basin has a traceable history dating back to the 7th century, roughly divided in the Paleolithic and Neolithic. Later in the late Yin and Shang Dynasty, Tai Bo migrated to the southern Yangtze River and excavated Taibe Ditch, and this started the Jiangnan farming civilization. Between the 6th and 4th century, the state of Wu excavated Xuxi, Xupu and Lidu, forming a water transport system of three rivers and five lakes. At the beginning of the Han Dynasty, the shallow marshy depressions of the Taihu Lake Plain began to be diked and surrounded by fields and ponds. During the Sui and Tang Dynasty, the Jiangnan River, which ran from Jingkou (present-day Zhenjiang) to Yuhang (present-day Hangzhou), ran north and south across the Taihu Plain, and it would form a significant section of the Grand Canal. From the Tang Dynasty to the end of the Qing, water conservancy were constructed. The river network organization provides a good basis for regional agricultural development, water system connectivity and economic trade.

THEORETICAL STRUCTURE

NATIONAL HISTORIC CULTURAL SPACE IN THE PERSPECTIVE OF HISTORIC URBAN LANDSCAPE

To respond to heritage conservation issues in different phases, since 1933, Athens Charter for the Restoration of Historic Monuments, the first program document of major international significance, placed historic sites preservation at the core, and thought about the relationship between modern cities and historic monuments. The Venice Charter for the Conservation and Restoration of Monuments and Sites in 1964, which is a comprehensive summary of the basic concepts, theories and methods of heritage in the 20th century, clearly made that the essentials of historic monuments include not only individual buildings, but also urban and rural spaces in which a distinctive civilization, a meaningful development or a historical event can be identified[2]. In the 21st century, there has been an expansion of the objects, methods and scope of heritage conservation in towns and cities, the definition and methodology of Historic Urban Landscape (hereinafter referred as HUL) was clarified in the Vienna Memorandum on Historical Urban Landscapes issued in 2005. It consisted of dynamic evolution, historic layering and a landscape approach to re-conceptualize and re-evaluate urban heritage, and looked at the historic city as a whole, making the landscape approach a new way of thinking about the value of historic cities[3]. In addition, the characteristics of cultural heritage, such as territorial, temporal and holistic, need to be presented in the context of a multi-scale and multi-temporal historical and cultural space. The explicit features of HUL such as cascading, dynamics and relevance make it both a theoretical concept and a research methodology[4]. Based on the in-depth reflection of the HUL, which helps the typological classification and value determination of heritage elements within regional historical and cultural spaces. It can also easily delineate the research scope, control the research objects, and analyse the interaction and the change law between different elements and carriers in concrete practice.

Urbanization in China started late but is progressing rapidly, for a few short decades, urban settlements showed a trend of decreasing natural space, expanding human social space and iterative cascading. In the context of rapid urbanization and the territorial spatial planning system, deconstruction of historic areas, extinction of cultural heritage, fragmentation of historical lineage, disorderliness of heritage elements and other problems all highlight the urgency for historical and cultural conservation and inheritance. Combined with the Chinese context, Dong Wei puts forward a new idea of regional coordination, urban-rural integration and overall protection of nature- culture resources to build a national historic and culture spatial system[5]. Aiming at fragmentation and isolation in heritage conservation, Shao Yong et al. focus on the characteristics of regional wholeness, cultural interaction and elemental correlation to carry out the systematic identification and holistic conservation about regional cultural heritage and historical space to explore the overall value of historical and cultural space[6]. Wang Yan et al. clarified the carriers of historical and cultural value elements, integrating natural-cultural ecological patches, cultural routes, historical and cultural value points, and cultural markers, which together constitute the historical and cultural spatial system of the Taihu Lake Basin[7].

HISTORICAL AND CULTURAL VALUE SYSTEM

Outstanding Universal Value, introduced by UNESCO in 1972 in Convention Concerning the Protection of the World Cultural and Natural Heritage. ICOMOS World Heritage Centre introduced Conservation based on Heritage Values in the annual report in 2008. Value-based heritage conservation is an international concern, and the value- based historical and cultural conservation system in China has been limited to the regulation of historical and cultural cities, towns and villages and material entities for a long time.

Chen Wei et al. suggested that the current reality of historical and cultural heritage conservation in China stems from the confusion of value understanding[8]. Taking Hunan Province as an example, Liu Jia et al. refined the core values of political, economic, social, cultural and geography to construct a pattern of revitalization and utilization of historical and cultural resources by combining resource remains and history and culture[9]. In addition, as described by Chen Shuangchen et al, the present historical and cultural value system needs to focus on different periods and multiple attributes to interpret the systematicity and relevance of history and culture through carrier examples[10].

This paper takes Dong Wei and Wang Yan's research in Jiangsu Province on the value connotation and element carriers of historical and cultural space in the overall pattern of urban and rural historical and cultural resources combination and conservation inheritance as the main reference, completes the classification of the values elements and resource carriers, and makes it a basis for identifying and judging the elements in the historical and cultural spatial database[11]. (Figure 1.)

ELEMENTS COMBABILITY AND SPATIAL CONSTRUCTION
OF HISTORICAL AND CULTURAL VALUE SYSTEM OF TAIHU LAKE BASIN

Historical culture, including language, architecture and institutions, refers to the material heritage, traditional customs and values that have been created and preserved in the long-term development. Historical culture reflects the long-term development of a region or nation, and is an integral part of the process of human civilization. From the perspective of national historical and cultural space, through the integration of cross-regional historical and cultural elements and resource carriers, can better understand the evolution of individual urban elements, then study the changing characteristics and development rules of historical forms, urban patterns and regional structures, and provides reference and lessons for dynamic optimization of the overall urban development methods in the future.

The research scope is based on the announcement by the Taihu Lake Basin Management Bureau of the Ministry of Water Resources. The basin covers 36,895 km², under the jurisdiction of Jiangsu, Zhejiang, Shanghai and Anhui. This paper explores the heritage resources such as historical events, monuments and sites and architectural landscapes in the region and systematically sorts them out. Furthermore, based on GIS, the value elements and carriers of the basin are digitally expressed and form a long-term spatial database. Finally, an integration of the historical and cultural value system of the basin, can not only analyze the layout of natural ecolog-

ical patches, cultural value points and routes at a large scale, but also support the construction of historical and cultural space in the Taihu Lake basin. At the same time, it can also enrich the theoretical basis for the construction of national historical and cultural space and provide supplementary cases for China to build a national historical and cultural space system.

RESEARCH METHODS

DATA ACQUISITION AND PREPROCESSING

The paper focuses on the historical layers and cultural heritage generated by the major natural changes and human activities in the Taihu Lake Basin from B.C. to 2024. Firstly, the geographic basin data was obtained through ancient map translation, and corrected based on ancient books, satellite images and survey results. Then, the research screened cultural heritages of the entire historical period in five dimensions, including politic, economic, society, science and technology cultural, and geography. Finally, the research classified and summarized in detail according to the value theme, and the main types includes state power and institutional civilization, agriculture, commerce and industry, social organizations and settlements, literature and art, science and technology, and geography.

The historical and cultural spatial base map was selected the 2022 aerial image of the sky map and imported into ArcGIS Pro platform, a GIS software. Map preparation was based on the World Geodetic System-1984 Coordinate System, the value data were processed in ArcGIS Pro 3.2 with Toolbox and later organized within Adobe Photoshop CC 2019. After digitizing the historical and cultural value elements and carrier resources, a database about historical and cultural information of the Taihu Lake Basin was constructed to facilitate subsequent analysis of the correlation, interaction and actual connotation of elements and carriers in the region[12].

MAPPING AND MODEL CONSTRUCTION

Based on the comprehensive consideration of historical periods and spatial evolution, the Prehistory Period - Qin and Han Dynasty, Three Kingdoms - Tang Dynasty, Song - Qing Dynasty, Late Qing Dynasty - Republic of China and Modern Period were divided into vertical stages and summarized into a table, (Figure 2.) and formed a distribution map about value elements.

Since the paper aims to form a historical and cultural space system based on nature and humanity, the model scale refers to towns scale in the basin. According to the data in the above five periods, the study used a square with a- 10km-length (This divisional unit can basically cover a medium-sized town) to create a fishing net on the historical urban landscape collection base map, and obtained a sampling module of historical and cultural information from prehistory to modern in the basin[13]. (Figure 3.)

The political, economic, social, technological, cultural and geographical value elements in the module were aggregated and located in the basin, and were visually expressed on the

region, (Figure 4.) which clearly reflects the correlation between elements, elements and environment. Overlaying and comparing according to the theme attributes, the model included two dimensions, five time slices and three layers. In particular, two dimensions are the time and space scale, five slice nodes are 220, 900, 1850 and 1978, and three layers are natural geographical environment layer, urban settlement layer and history and culture layer, where the boundaries of time slices are delineated by synthesizing the dynasties change from the prehistory to modern in China and the urban settlements development in Jiangsu. (Figure 5.) Supplemented by post layer processing, unit analysis and watershed comparison were performed on the model and helped to summarize the structure of HUL in the basin, using spatial information to explore the formation mechanism and value connotation can intuitively recognize and understand the distribution and evolution of culture in different periods.

MAP-OVERLAY ANALYSIS AND HUL

In landscape, the theory of map-overlay method can be interpreted as involving landscape elements layers and drawings superimposition, with the final drawings being a thematic map that reflects environmental influence[14]. The model constructed contained physical geographical environment layers, urban settlement layers and history and culture layers. And, overlay analysis was an important technical process for constructing the historical and cultural space of the Taihu Lake Basin. (Figure 6.) It identified various value elements accumulated over a long- time period in the basin on a vector map in the form of raster data, and the attributes can be edited for detailed classification. GIS-based layer overlay is not a simple addition of points, lines and surfaces, the processing of geospatial and historical information data is a diachronic and synchronic analysis process of spatial element clusters[15]. It helps to discover and summarize the distribution characteristics and change patterns of value elements in the basin, as well as the correlation and coupling of value elements and carriers with the modern urban spatial pattern.

Finally, HUL is introduced, and the results of the horizontal and vertical overlay and comparison of value elements in the basin obtained based on GIS can be used to understand the value attributes and distribution characteristics of heritage from the perspective of spatial diversity, extensive connotation and dynamic development, which guided the establishment of a systematic and overall historical and cultural spatial database and provided historical reflections and future development suggestions on the construction of historical and cultural space in the basin.

RESULTS AND ANALYSIS

MODEL EXPLANATION

The model constructed and map organized of the historical and cultural values elements in the Taihu Lake Basin above were explained by two aspects of processing and parsing results. The paper integrated cultural heritage information with a wide time range, large spatial scale and multiple value dimensions, took vertical historical succession and horizontal spatial change as references for digital processing and supported the national historical and cultural

spatial system as the structural expression propose. A dynamic model can not only conform to the administrative delimitation of territorial spatial planning, but also correspond to cross-regional conservation and inheritance and coordinated development[16].

STUDY AT THE REGIONAL SCALE

The Taihu Lake Basin has a wide scope from prehistoric to modern and changes slightly with the water system and human activities, but the main scope has been generally recognized within Jiangsu Province and there is no dispute. From the fishing net sampling and agglomeration analysis, it can be learned that the historical and cultural value resources in the basin are mainly concentrated in three prefecture-level towns of Wuxi, Changzhou and Suzhou, and the value elements contained therein are rich and varied in three layers of natural geographical environment, urban settlements and history and culture. On the one hand, this is directly related to the fact that three towns are close to and jurisdiction over the lake. In the processing of regional scale accompanied by the dynastic changes, something can be found in the hierarchical mapping: the natural geographical environment mainly reveals the phenomenon of the evolution of natural waterways and artificial canals, and Jiangnan towns have numerous rivers and dense water networks. Especially in the lower reaches of the Yangtze River where Wuxi, Changzhou and Suzhou are located, there are crisscrossed by the Yangtze, Qiantang River and Taihu Lake, with numerous small and medium-sized rivers, creating a historically layered urban landscape. The urban settlement layer reflects that the construction of artificial canals on the basis of the natural water system is more conducive to agricultural irrigation, transportation and economic exchanges, thus laying a good foundation for regional economic development, social harmony, scientific and technological progress, artistic abundance and ecological superiority in the Taihu Lake Basin on a large scale; at the same time, this layer also reflects the spatial distribution characteristics and derivation trends of different types of site remains in each period, such as agricultural heritage, water heritage, and industrial heritage of early settlements and civilizations. Compared with the before two layers, the historical and cultural layer should be a supplement to the historical and cultural space of the Taihu Lake Basin. The characteristics of rich water systems, dense water networks, water urban landscapes and ecological regulation make the Taihu Lake Basin have a differentiated geographic matrix, spatial structure and humanistic pattern in China, which is only one in many civilizations.

Through the connection and comparison of the three layers, the location information, evolution patterns and period characteristics of the historical and cultural value elements from prehistoric period to modern China are more intuitively understood. Taking the urban settlement layer as an example, the value elements of the prehistory period – Qin and Han Dynasty are mainly distributed in Wuxi, Suzhou in Jiangsu and Hangzhou in Zhejiang, with the settlement sites of the Liangzhu Culture in the Paleolithic Age and the Majiabang Culture in the Neolithic Age as the main value elements; During the Three Kingdoms-Tang Dynasty, people in the north moved southward due to the impact of war, and in the Jiangnan and Hudong regions , towns were built, canals for tunnels, navigation and transportation were established. The agricultural economy developed rapidly, and many institutional systems, water conser-

vancy projects, canals and waterways which had historical value were preserved; During the Song - Qing Dynasty, the water conservancy infrastructures of the previous dynasties were consolidated, and the canals were expanded and the hubs were improved. And then from the late Qing Dynasty to Republican of China and modern China, where the development of urbans was focused on the economy, meanwhile the industrial economy and industrialization construction began to be closely related to the international political and social background. Railway construction, the county economy named as "Southern Jiangsu Model" and high-tech industrial parks have gradually reduced their strong dependence on the natural geographical environment. The successive derivation of the historical lineage is no longer characterized by obvious layers, and the urban construction in the Taihu Lake Basin also needs to be studied in the context of the Yangtze River Delta urban agglomeration on a larger scale.

STUDY IN A SMALL SCALE

From the model after fishing net sampling and agglomeration analysis, it can be clearly found the value resources in the basin are mainly concentrated in the three prefecture-level towns of Wuxi, Changzhou and Suzhou, expressed more specifically, it is concentrated in areas where the towns overlap with the Grand Canal and the Yangtze River, and it is particularly concentrated in the main city of Wuxi, and its subordination of Jiangyin and Changzhou. The components of the historical and cultural values of this core area can be refined into three forms: points, lines and surfaces. Point value elements are dominated by ancient settlement sites and gardens. The linear elements are the extensive waterways of the river. The block elements include large-scale industrial construction in modern industrialization times and some urban settlements that are partially coupled with the geographical environment.

The natural base of the Taihu Lake Basin is very similar to urban development, therefore, when the towns in the basin are scaled down to smaller unit scales, there is less differentiation in environment, settlements and culture. This is because the similar geographical location and natural environments provided to form the geographic infrastructure conditions. During the Spring and Autumn Periods, the major towns of the present basin have already

showed signs of human activities and have been important towns since the Qin and Han Dynasty. Towns are built along the water, with crisscrossed rivers, developed agriculture and fisheries. During the Ming and Qing Dynasty, it was an important distribution centre for grain, silk and cotton. In modern times, with the reform and opening up, the focus is on modernization development, and the transform was from traditional industries to modern service industries and high-tech industries, and gradually optimized the regional economic structure. As a result, the value elements in modern China have undergone tremendous changes.

CONCLUSION

In the preliminary stage of sorting out the values elements, heritage elements with clear resource carriers are basically selected but ignored the intangible cultural heritages, which is

the heritage elements and related places and spaces that contain manifestations such as oral arts, handicraft skills and rituals and customs, etc. The Taihu Lake Basin has profound and rich intangible cultural heritage. There are, for example, the Huishan clay figures in Wuxi, Suzhou Pingtan with vast branches, and the Taihu Boat Fist, a folk martial art of the fishermen living with the Lake. Apart from them, as far as the identification of the spatial location of value elements itself is concerned, in addition to the difficulty of not being verifiable, it is also difficult to clearly define the morphological traits and value attributes of some among the value elements and resource carriers, and there are disputes such as overlap and affiliation.

As the large time span and spatial scale make the cultural heritage complex, diverse and fragmented. To a certain extent, it is unable to better reflect the rigor and comprehensiveness of the value themes and detailed subcategories of the historical and cultural system. If we want to reveal the rich relationships and specific connotations between water and layers clearly, we need to create fishing nets in smaller modules, draw a collection of town-scale maps, and study specific urban landscapes, spatial structures and morphological features.

Finally, GIS-based historical and cultural sorting and spatial construction have reference value for the construction of cross-regional national historical and cultural space: 1) Data Integration and Visualization: Through the construction of geographical information databases, multiple types of information are integrated on a standardized platform to form a comprehensive and systematic resource base of historical and cultural values; 2) Spatial Analysis of Urban Landscapes: Using a variety of data processing analyses in geographical information databases to reveal the spatial distribution patterns of historical and cultural value elements and resource carriers. For example, studying the evolution of ancient ruins and architectural heritage is considered to understand the regional characteristics and evolution process of historical culture; 3) Decision-making and Management Support: Digital, visualized and dynamic system can provide decision-making support for the government and relevant departments. It can provide accurate spatial data and analysis results in heritage conservation, urban and rural planning and tourism development, so as to formulate scientific and reasonable planning programs to avoid the destruction of heritages.

ASPECT	THEME	Elements and Carriers of Historical and Cultural Value	Value Description	Location of Value Elements
POLITIC	State Power	Taibo Went to The State of Wu for Shelter	In the West Zhou Dynasty, Tai Bo founded the state of Gou Wu, which symbolized the birth of Wu culture.	Meili, Wuxi, Jiangsu, present-day Meicun
		Qing Runway	The national transportation network built after Qin unified the country, representing the value of the national transportation network for the first time.	Centered in Xianyang, it consists of Oriental Avenue, Northwest Avenue, Qin-Chu Avenue, Chuan-Shaan Avenue, Jiangnan New Avenue, and Northern Avenue, etc. The exact geographic location cannot be verified.
ECONOMIC	Agriculture	Rice field of Majiabang Culture, Caoxiezhan Site	It has the value of symbolizing that the middle and lower reaches of the Yangtze River are the important origin of cultivated rice in China and the world.	South to the north bank of the Qiantang River, northwest to Changzhou City, Jiangsu Province
		Chuodun Ruins	Majiabang period ancient human settlement site contains 24 paddy fields, symbolizing the value of the development of rice agriculture during the Majiabang period.	Beichaodun Village, Zhangpu Town, Kunshan, Suzhou, Jiangsu, a narrow strip of land between Yangcheng Lake and Puppet Lake
		Xiangguoxu	The earliest polders in Jiangnan during the Spring and Autumn and Warring States periods (cannot be verified) symbolize the value of the emergence of polders as a method of cultivation.	Gaochun District, Nanjing, Jiangsu, bordered by Yongfeng Polder in the north, Baosheng Polder in the south, Qindian Polder in the east, Shuiyang River in the west, and Jintao Polder in Xuancheng, Anhui
SOCIETY	Social Organization	Songze Culture Site, Dongshan Village	In the site, there is a distinction between large and small tombs, and it has a large house site, symbolizing the emergence of rich-poor differentiation and social stratification in the Songze culture period.	North of Dongshan Village, Zhangjiagang, Suzhou, Jiangsu
	Cultural Origin	Majiabang Site	A representative of Majiabang culture in the Neolithic Age symbolizes the value of the source of Jiangnan culture.	Tiandaiqiao Village, Nanhu District, Jiaxing, Zhejiang.
		Nanhebang Site	A representative of Songze culture in the Neolithic Age symbolizes the value of the source of Jiangnan culture.	Yunxi Village and Nanzi Village, Daqiao Town, Nanhu District, Jiaxing, Zhejiang
		Shecheng Site	An ancient city in the Xia and Shang Dynasty represents the value of She culture in the Xia and Shang Dynasty.	Gaojiacun, Huashan Village, Yunting Town, Jiangyin, Wuxi, Jiangsu
		Meili Ancient Town	The capital built by Tai Bo symbolizes the first great integration of the Chinese and indigenous cultures.	Southeast of Wuxi, Jiangsu
	Literature and Art	Sanshan Island Paleolithic Site	It is a paleolithic site and has the value of the stone tool processing site of the Paleolithic ancestors.	Southwest of Dongshan Town, Wuzhong District, Suzhou, Jiangsu
		Wudun Majiabang Site	The ruins in the Neolithic Age symbolize the value of the use of wooden tools in the Majiabang period.	South Bank of Qiahuyan Canal, Economic Development Zone, Changzhou, Jiangsu
		Caoxie Hill Site	An Neolithic Age site symbolizes the value of jade products that appeared during the Liangzhu Culture period.	2km northeast of Weiting Town, Wuzhong District, Suzhou, Jiangsu, and 650m away from Yangcheng Lake
SCIENCE AND TECHNOLOGY CULTURE	Town and Settlement	Spring and Autumn Yancheng Site	The most well-preserved and unique Spring and Autumn ground city ruins in China, with the value of representing the urban construction pattern of the Spring and Autumn Period and high archaeological value.	No. 201, Wuyi Middle Road, Wujin District, Changzhou, Jiangsu
		Archaeological Ruins of Liangzhu Town	It was the first Neolithic city site found in the lower reaches of the Yangtze River, known-as the first city in China and the world. It has the value of representing Liangzhu culture and water conservancy projects.	Fengdu Road, Pingyao Town, Yuhang District, Hangzhou, Zhejiang. To the south and north are branches of the Tianmu Mountains. Liangzhu Port flow from the south sides of the city.
		Ruins of Gecheng Town, Danyang	The town site was the political center of the Wu Kingdom during its migration in the Spring and Autumn Period. It has a unique shape of three rivers surrounding three towns, and has the value of reflecting the unique shape of city construction in the Spring and Autumn Period.	Gecheng Village, Danyang, Zhenjiang, Jiangsu
		Mudu Ancient Site	A site with urban character in the late Spring and Autumn Period, which has the historical value of representing the city construction in the Spring and Autumn Period.	Mudu Town and Xukou Town, Suzhou, Jiangsu
		Xu Town	The city site of Wu State in Spring and Autumn Period, built by Wu Zhou to conquer Chu, has the historical value of representing the city construction in the Spring and Autumn Period.	Hutang Town, Wujin District, Changzhou, Jiangsu
		He'lV Town Site	During the Spring and Autumn Period, the city site of Wu State contained relics of archaeological value such as water gates, moats, military training grounds and commanding platforms, etc. It has historical value and extremely high archaeological value representing the city construction in the Spring and Autumn Period.	between Changzheng Village, Xueyan Town, Wujin District, Changzhou and Huishan Village, Hudai Town, Binhu District, Wuxi in Jiangsu
GEOGRAPHY	Natural Geography	Ningzhen Mountains	Mountains have the value of constituting the natural geographical environment of the Taihu Lake Basin and influencing the choice of settlements of ancestors.	the main terrain area in southwestern Jiangsu and the south bank of the Yangtze River, between Nanjing and Zhenjiang
		Maoshan Mountains	Mountains have the value of constituting the natural geographical environment of the Taihu Lake Basin and influencing the choice of settlements of ancestors.	the junction of Jurong District, Nanjing and Jintan District, Changzhou, Jiangsu
		Yili Mountains	Mountains have the value of constituting the natural geographical environment of the Taihu Lake Basin and influencing the choice of settlements of ancestors.	the junction of Jiangsu, Zhejiang and Anhui. the remaining vein of Tianmu Mountains (the highest peak, the Yellow Pagoda) the junction of Yixing, Jiangsu and Changxing County, Huzhou, Zhejiang.
		Tianmu Mountains	Mountains have the value of constituting the natural geographical environment of the Taihu Lake Basin and influencing the choice of settlements of ancestors.	Lin'an District, Hangzhou, Zhejiang, at the junction of Zhejiang and Anhui
		the Yangtze River	It is the third longest river in the world, the mother river of China and the most important water system in the south of the Yangtze River. It provides survival resources and natural conditions for human activities.	Originating from the Tanggula Mountains, the main stream flows through 11 provincial-level administrative regions including Anhui, Jiangsu and Shanghai, and finally merges into the East China Sea.
		Taihu Lake	The core of the Taihu Lake Basin has the value of providing resources and natural conditions for human activities.	southern part of the Yangtze River Delta

Fig. 1. Map of the Location of the Main Ports in the Colombian Caribbean. Self-Developed 2023.

ASPECT	POLITIC		ECONOMIC					SOCIETY		SCIENCE AND TECHNOLOGY CULTURE			GEOGRAPHY	
VALUE THEME	State Power	Institutional Civilization	Agriculture	Handicraft	Trade and Commerce	Industry	Industrialized Construction	Social Organization	Cultural Origin	Literature and Art	Science and Technology	Town and Settlement	Natural Geography	Humanistic Geography
Introduction														
EXAMPLE	Taihu Went to The State of Wu for Shelter	Lifting system	Rice field at Majiabang Culture, Caoxieshan Site	Qingpu Field	Liuju Port	Factories construction	Huashi Town	Songze Culture Site, Dongshan Village	Meili Ancient Town	Wuxi Garden	Sanshan Island Paleolithic Site	Archaeological Ruins of Liangzhu Town	the Yangtze River	Jiangnan Ancient Canal
Description														

Fig. 2.   Example of the Taihu Lake Basin Value Elements: the Prehistory Period-Qin and Han Dynasty. The above table takes the prehistoric to Qin-Han period as an example, combing and integrating the historical and cultural value elements and resource carriers of the Taihu Lake Basin in the intervening period
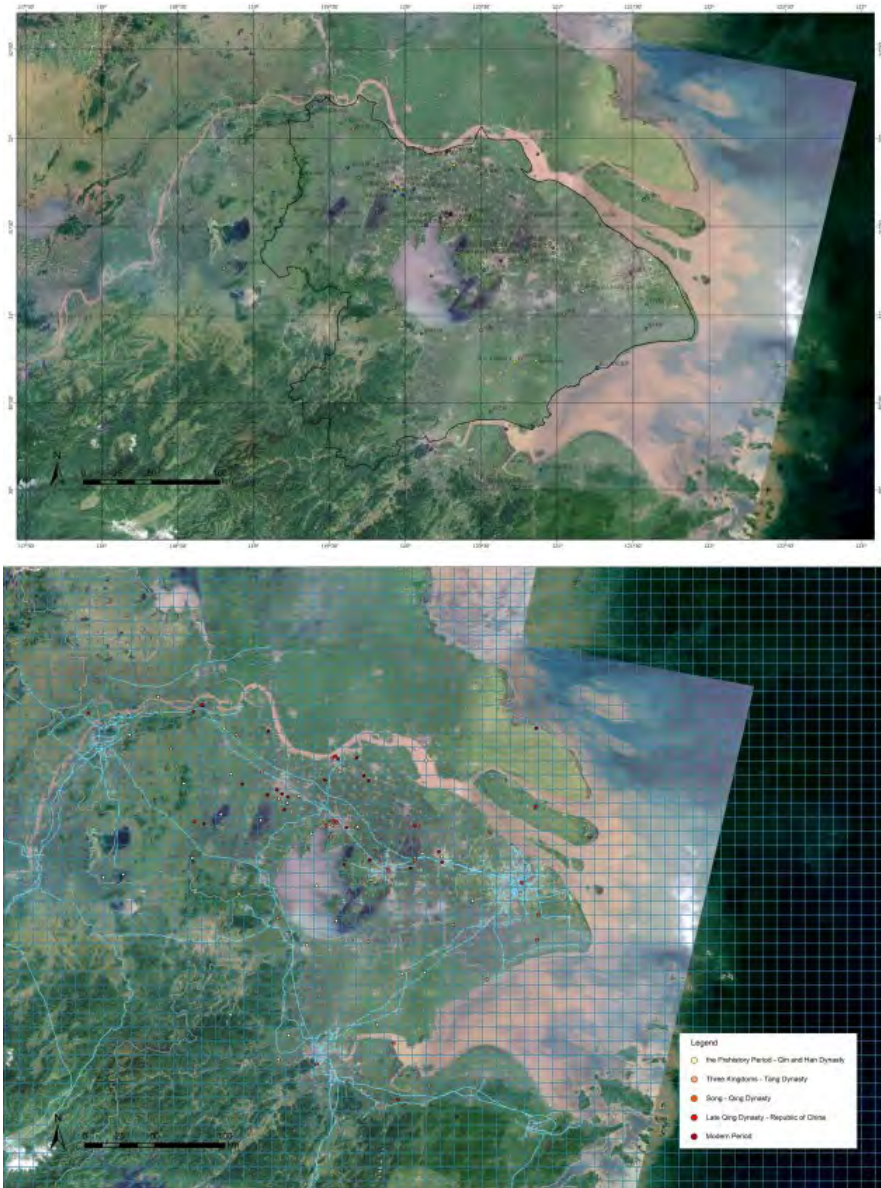
Fig. 3. Sampling Module of the Distribution Map. Distribute the map of the Taihu Lake Basin values elements at first, create a fishing network with 10-kilometre-unit on the map, and obtain the sampling module with historical and cultural information
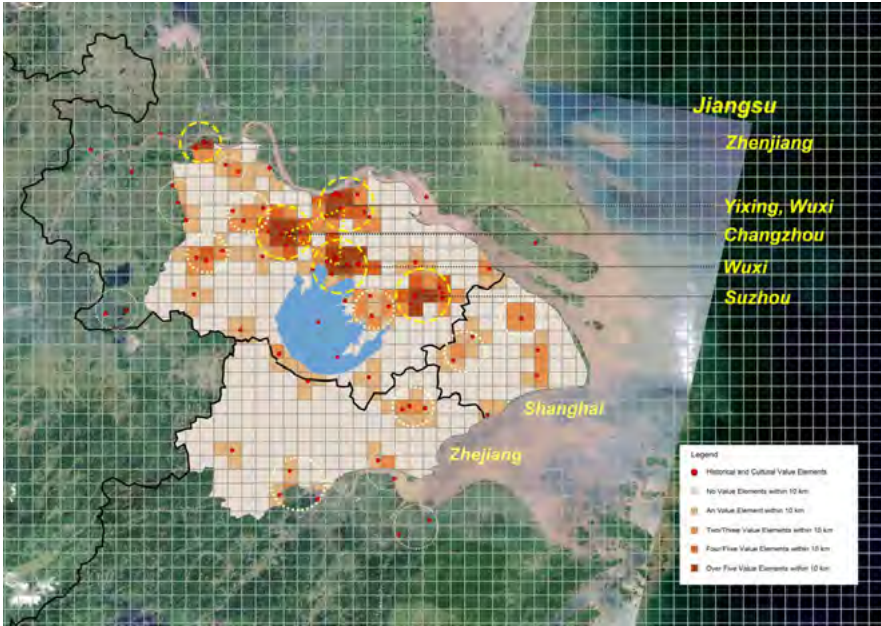
Fig. 4. Historical and Cultural Spatial Value Elements Cluster. Based on GIS, after the creation of fishing nets and unit sampling, network analysis of spatial data is carried out to obtain a visual representation of the agglomeration of value elements and resource carriers

Fig. 5. Basis for Time Slice Delineation: Dynasties Change and Urban Settlement Development in Jiangsu Province. According to the dynasties change from the prehistory to modern time in China and the urban settlements development in Jiangsu Province, the historical and cultural value system identifies five points as time segments for the collation of value elements and resource carries
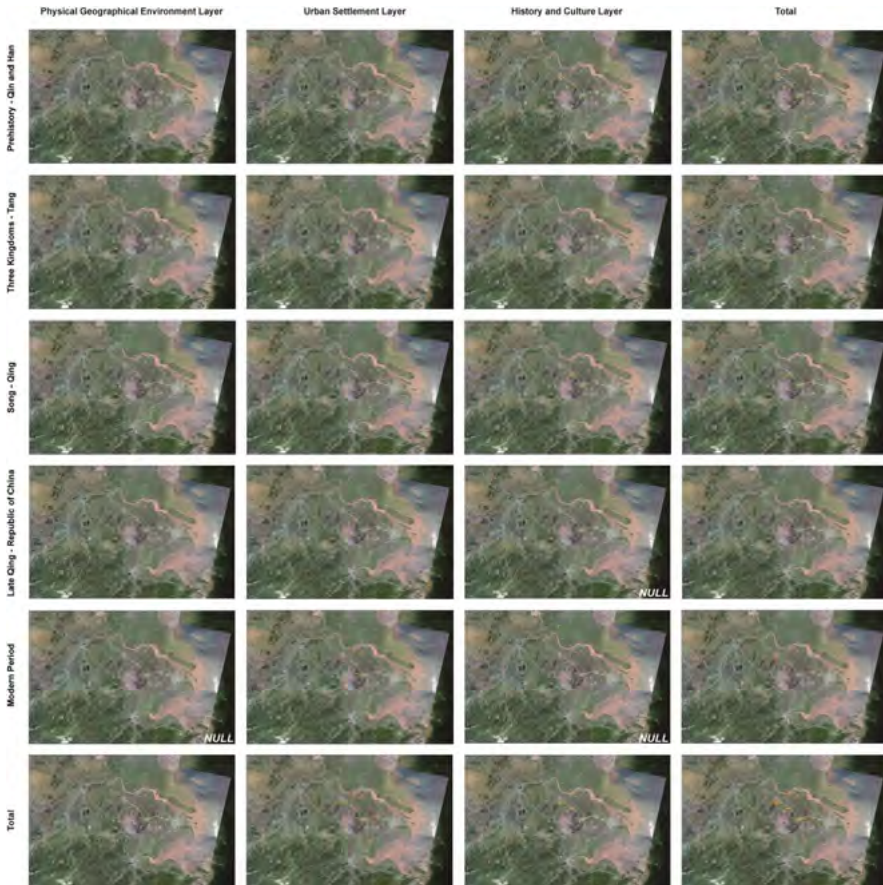
Fig. 6.   Historical and Cultural Value Elements Layer Diagram of the Taihu Lake Basin. These layers display an aspect of GIS-based historical and cultural value sorting and spatial construction in the Taihu Lake Basin

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Research on the Evolution of Historical Scenery Intention of Mount Putuo Based on Text Mining

Xuanzhu Ji, Yinan Sun

Abstract

As one of the four famous Buddhist mountains in China, Mount Putuo possesses both island charm and mountain scenery. Studying the humanistic landscape characteristics of Mount Putuo helps to highlight its characteristics as a representative symbol of China and promote the identification, protection, and interpretation of its iconic cultural resources. The Tang, Song, Yuan, Ming, and Qing dynasties were key periods when the number of poems related to Mount Putuo surged, reaching the highest representativeness and widest influence. This article analyzes the landscape geographic information in 2147 Mount Putuo poems, utilizing text mining technology and ArcGIS spatial analysis method to visualize the spatial distribution of humanistic landscapes and analyze aesthetic cognition in Mount Putuo. The research findings reveal that: 1) the humanistic landscape of Mount Putuo Scenic Area mainly comprises mountain landscapes, island customs, ruins and temples, and ancestral halls; 2) it linearly distributes along the coast in terms of spatial characteristics, forming core landscape clusters around Mount Putuo and the East Sea; 3) it forms six types of landscape themes in terms of semantic network, such as Mount Putuo, Guanyin Temple, island peaks, and marvelous sceneries and stones. The article delves into the aesthetic ideas of each theme and proposes construction suggestions for guiding the spatial layout and poetic scene creation of Mount Putuo Scenic Area through poems.

From the world porcelain capital to a tourist attraction of ecocivilisation
Analysis of Jingdezhen's masterplan and innovative urban planning strategies

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Abstract

Ceramics are extremely important in Chinese culture. This craft has been present throughout Chinese history since the Palaeolithic era and especially during the Ming and Qing dynasties when Chinese porcelain became popular all over the world. Since the 13th century, Jingdezhen, a city in Jiangxi province, has been considered a main porcelain production site and also the porcelain capital of the world. This article aims to analyse the strategies used in the city that revitalised historic areas using the region's cultural heritage and creative potential as a vector for economic and urban development. The paper studies Jingdezhen's current master plan as it demonstrated the factors that enabled the success of this case. The Jingdezhen City Master Plan follows the premises of creating an urban space guided by the ceramics, aviation and tourism industries, supported by manufacturing industries such as automobiles, machinery, home appliances, pharmaceuticals and chemicals, and with modern service industries and modern agriculture as new growth poles. This study aims to analyse the case of Jingdezhen to reveal its practicality to be introduced in other similar cities around the world.

INTRODUCTION: JINGDEZHEN, FROM THE ANCIENT DYNASTIES TO THE CONTEMPORARY INTERVENTIONS

This paper will explore the profound relationship between pottery craftsmanship and the evolution of Chinese civilisation, tracing its development from ancient times to the present era under socialism with Chinese characteristics. It will delve into the history of Jingdezhen ceramics, highlighting key periods of innovation and cultural exchange. The paper will examine contemporary efforts to revitalise the ceramics industry within the context of China's modern development strategies, focusing on urban and regional growth, technological advancements, and the integration of cultural heritage into economic progress. By analysing the Jingdezhen Masterplan, the discussion will provide insights into how urban planning and cultural preservation intersect to foster sustainable development.

The history of porcelain in Chinese civilisation is a testament to refined craftsmanship and technical innovation that has stood the test of time, dating back thousands of years, Chinese ceramics have evolved from simple clay pots to porcelain masterpieces, becoming one of the most precious treasures of Chinese culture and one of the greatest contributions to the history of world art. This art craft in China dates back to the Neolithic period, with evidence of rudimentary pottery dating back to around 20,000 B.C.. Since then, techniques have been refined and perfected, culminating in the creation of porcelain during the Han Dynasty (206 B.C. - 220 A.D.). It was during the Tang (618-907) and Song (960-1279) Dynasties that Chinese porcelain reached its apogee, introducing mass production and export to the world; Chinese porcelain became not only an art form, but also a valuable commodity and a status symbol. During the Ming (1368-1644) and Qing (1644-1912) Dynasties, porcelain production reached new heights of excellence, with the development of coloured glazes, elaborate painting techniques and distinctive shapes, in addition to its aesthetic and commercial importance, porcelain played a crucial role in the transmission of ideas and cultures, via the trade routes of the ancient Silk Road to the seaports of Asia and Europe. Its shapes and patterns influenced ceramic production all around the world, leaving a lasting legacy in the history of global art. Chinese porcelain continues to be valued and appreciated for both its artistic beauty and its historical importance; it is a vivid witness to China's rich cultural heritage.[12]

Over the last ten years, China has witnessed a remarkable evolution in its development project, especially driven by the "New Silk Road" initiative and the rise of its market-oriented economy. From the economic opening and liberalisation reforms initiated by Deng Xiaoping in the 1970s and 1980s to recent efforts to promote innovation and sustainability, China has travelled a path of economic and social transformation. Ceramics has emerged as an important vector in this process. Cities old and new are turning to ceramics as a way of preserving their cultural heritage while boosting economic growth. By investing in research and development, China is modernising its ceramics industry, introducing new techniques and technologies to increase efficiency and product quality which causes the promotion of cultural tourism and an increasing demand for ceramics in urban and rural areas, generating jobs and business opportunities. However, Chinese development also faces significant challenges, such as regional inequality, environmental pollution and social pressures. The Chinese government

aims to achieve a balance between economic growth and sustainability, adopting measures to promote a greener and more inclusive economy.[3]

The integration of culture and innovation reflects the complexity and resilience of China's transformation in recent decades. This can be seen clearly when analysing the Jingdezhen Masterplan, which is a territorial spatial planning focused on the implementation of the new development concept, the implementation of high-efficiency spatial governance, the promotion of well-structured development and the creation of a high quality of life. It is an action program to guide the protection, evolution, utilisation, restoration and guidance of various types of construction of municipal land space; Jingdezhen's Master Plan strictly follows the orientation of socialism with Chinese characteristics adopted in the new era, as established by Xi Jinping's philosophy. Based on this principle, the city is undergoing a significant transformation, aiming to highlight its role as a centre of innovation and heritage of the national ceramic culture. The urban project aims to boost city development while also following the principles of ecocivilisation and establishing Jingdezhen as a key area for the development of national civil-military integration, as to be shown in this article.[4]

Nestled in China's Jiangxi Province, Jingdezhen has a long history of being known as the "Porcelain Capital" of the country and, most of all, of the world. This city has been known for ceramic craftsmanship for over a millennium, garnering praise from all over the world for its exquisite porcelain and ceramics. The history of Jingdezhen's ceramics started in the Han Dynasty (206 B.C. - 220 A.C.), but the region did not become a significant porcelain production hub until the Song Dynasty (960 - 1279 A.C.). Its advantageous location, characterised as being nested among copious clay reserves and encircled by thick forests for kilns, contributed to its development into a centre of pottery production. Under royal sponsorship, Jingdezhen's porcelain industry prospered during the Ming Dynasty (1368 - 1644 A.C.), and, due to the rising demand for imperial ceramics, the Ming emperors ordered official kilns to be built after realising the unique quality of Jingdezhen porcelain; some of the most sought-after ceramics of the time, with their deft craftsmanship, elaborate designs, and vivid glazes, came from these royal kilns. The Qing Dynasty (1644 - 1912 A.C.) saw the height of Jingdezhen's ceramic industry as it emerged as the primary porcelain supplier to the imperial court, the city's kilns produced an astounding variety of porcelain goods for both domestic and foreign markets, ranging from simple tableware to elaborate ornamental pieces.[56]

Even in the face of obstacles like market competition and economic fluctuations, Jingdezhen's ceramic legacy endured until the contemporary period, and the city continues to be a thriving hub for ceramic manufacture today, fusing old methods with new ones. Travellers go to Jingdezhen to see the centuries-old artistry up close, visit its museums and workshops, and maybe even attempt to produce pottery under the guidance of experienced artisans. Jingdezhen's continued celebration as an upholder of ceramic craftsmanship and cultural heritage is evidence of its lasting legacy.

The Masterplan developed for the city of Jingdezhen is a testament to the commitment to strategic urban planning and an understanding of the intrinsic value of its rich cultural and economic heritage: for centuries, pottery and the production/trade of ceramics, including the

famous imperial kilns, have been the main drivers of local development. These activities not only sustained the city's economy but also directly influenced its growth and urban expansion, encouraging the occupation of previously remote areas. The Masterplan is designed to capitalise on this legacy, transforming Jingdezhen into a centre of excellence for the ceramics industry, while promoting sustainable and inclusive urban development by preserving and revitalising the historic ceramic production areas. The plan aims not only to keep the craft tradition alive but also to attract tourists and investors interested in the culture and history of Chinese porcelain. In addition, the Masterplan recognizes the importance of ecocivilisation in promoting sustainable urban development with measures to protect the environment and promote ecological practices. Jingdezhen seeks to balance economic growth with the conservation of natural resources and the quality of life of its inhabitants.

JINGDEZHEN: MASTERPLAN AND RELEVANT NEIGHBOUR-HOODS - TAOXICHUAN AND TAOYANGLI

JINGDEZHEN MASTERPLAN

Jingdezhen's Masterplan is a comprehensive strategic document that outlines the guidelines for the sustainable development of the city, incorporating both industrial growth and the stimulation of tourism in a carefully planned way in line with China's principles of governance. Based on Chinese sources and a more detailed analysis of the plan, we can better understand how it is being implemented and what its main objectives and strategies are. According to the Jingdezhen Civilisation Network, the city's Masterplan aims to modernise and optimise the region's ceramics industry, drawing on its rich tradition and expertise in the sector to boost innovation and global competitiveness; specific strategies include investments in research and development of new ceramic mass production techniques, as well as the development of public-private partnerships to promote the adoption of clean and sustainable technologies. The plan also provides for the diversification of Jingdezhen's industrial base, encouraging the growth of sectors such as the production of aerospace components, taking advantage of the city's strategic location and its already existing and thriving industrial infrastructure. It also recognizes the potential of tourism as an economic and cultural driver, but also emphasises the importance of developing the sector in a sustainable way while preserving the city's historical and cultural heritage. Strategies include developing tourist routes that highlight historic ceramic production sites, as well as promoting authentic experiences that immerse visitors in the art and culture of porcelain. Since tourism activities can be degrading, the plan also addresses common concerns such as proper waste management, protection of natural areas and managing the flow of visitors to avoid negative impacts on residents' quality of life. As explained in that same document, the Jingdezhen Masterplan promotes integration and cooperation between the different sectors of the local economy, as well as between the government, businesses and the community; the creation of collaboration platforms to facilitate the exchange of knowledge and resources between stakeholders can be given as an example, as well as the establishment of governance mecha-

nisms to ensure public participation in the decision-making process. The plan also emphasises the importance of transparency and accountability in the implementation of planned policies and projects, with a view to ensuring that the benefits of development are equitably distributed among all members of the community.[78]

The development is led by the ceramics, aviation and tourism industries, supported by manufacturing industries such as automobiles, machinery, home appliances, pharmaceuticals and chemicals, and with modern service industries and modern agriculture as new growth poles. It is planned to form an industrial spatial pattern of "one core, two belts and two sectors". The first core, with the central urban area of Jingdezhen as the main economic growth core, and the two belts, the 206 National Highway Industrial Development Belt and the Yaoli-Yongshan-Hongyan Industrial Development Belt. There are two sections, the northern ecological economic development section and the southern characteristic economic development section. While in the matter of defining the regions zones, the urban and rural areas will follow the spatial structure of "two centres, three axes, two corridors and three districts". The double centre has Jingdezhen city centre as the main centre and Leping city centre as the sub-center; the three axes are the north-south industrial functional axis relying on the 206 National Highway and the two east-west external connecting functional axes relying on the Hangrui Expressway and Dechang Expressway; as of the second corridor, it is the Jingdezhen-Ehu-Yaoli-Wuyuan tourism development corridor and the Jingdezhen-Yongshan-Hongyan-Dexing urban and rural development corridor. The three zones are the central urban dense area, the southern urban economic development zone and the northern urban economic development zone.[9]
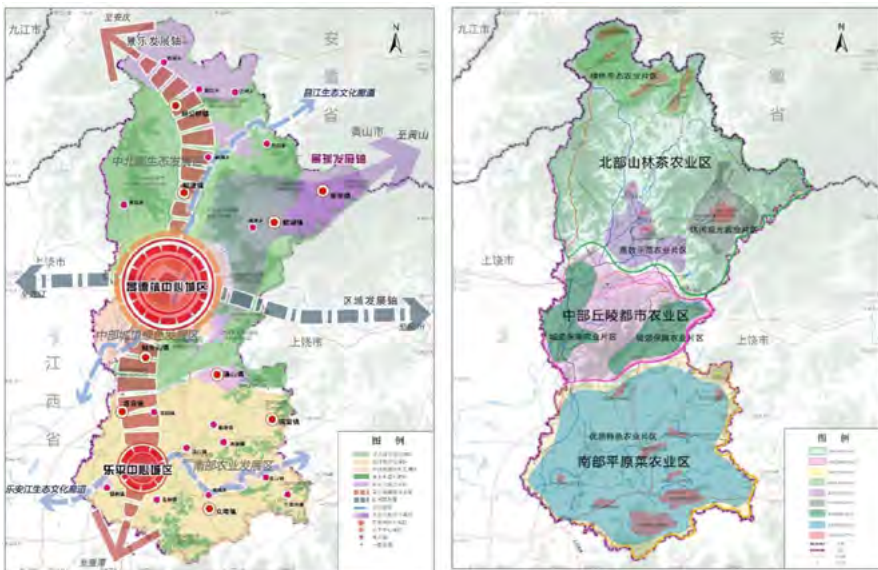

Fig. 1. Jingdezhen's Masterplan. Two centres, three axes, two corridors and three districts. The masterplan focuses on Industrial, Cultural and Ecological Development.

Furthermore, in the near future, Jingdezhen aspires to be recognized as the International Capital of Porcelain, an International Center for Cooperation and Exchange of Ceramic Culture, a Base for Innovation in the Protection of National Ceramic Culture and a World-Famous Cultural Tourism Destination, besides the tourism aspect, it will be a key area for the development of national civil-military integration. The urban planning was set to occur in three phases: short-term (2012-2015), medium-term (2016-2020) and long-term (2021-2030), but, throughout the evolution of the region, this calendar has already adapted itself to the city's reality, being that now it's understood that there was the initial period from 2015 to 2025, which leads to the second phase from 2026 to 2035 and the last one - at least for now - from 2036 to 2050. Therefore, the initial planning wasn't abandoned, only tailored to the speed of Jingdezhen's development as reads below:[10]

- By 2025, Jingdezhen will have set benchmarks with its national pilot zones, moving towards high-quality economic development, enhanced reform and opening-up, leadership in ecological civilisation and progress in social governance. This progress will serve as a replicable model for the development of traditional cultural industries across China.
- Looking ahead to 2035, Jingdezhen aims to build a new humanistic city of national demonstration with global influence as a world centre of ceramic culture. Its economic, social, urban and rural indicators will reach advanced international standards, becoming a model of high-quality development.
- By 2050, Jingdezhen will be a global benchmark for high-quality development, with international cultural exchanges, a robust business environment and enhanced support services. The protection and use of cultural heritage will reach international standards, and the city will stand as a leader in green development and land use efficiency.[11]

Through urban area cultivation, the aim is to fortify and enhance the central region, enhancing its comprehensive functions and industrial competitiveness, this effort aligns with the mandates for constructing the Poyang Lake Ecological Economic Zone, amplifying the central city's leadership within the urban landscape, and accelerating the urbanisation process. By leveraging its capacity for aggregation, influence, and momentum, the plan seeks to optimise the central city's influence. Furthermore, this initiative will facilitate the adjustment and modernization of urban spatial structures, steering clear of inefficient urban sprawl and land overuse. It involves meticulous identification and preservation of strategic ecological, developmental, and industrial spaces within the city boundaries. As for the matter of urban mobility, the masterplan is designed to enhance regional transportation connectivity by improving links between regional transportation facilities and optimising internal city transportation networks, this involves segregating transit, shipments, and urban traffic to enhance operational efficiency; the focus is on promoting eco-friendly transportation methods and constructing key arterial roads to better connect with surrounding areas and, besides that, the urban plan foresees constant investments in research and high education institutions, so that new tailored transportation strategies can be developed to alleviate urban traffic congestion and related issues. In order to accomplish the sustainability aspect of the masterplan, the city is planned to form three major ecological functional zones: the northern mountainous soil and water conservation ecological functional zone, the central ecological urban construction zone, and the southern agricultural ecological zone.

2.2 TAOXICHUAN CERAMIC ART AVENUE

Taoxichuan Ceramic Art Avenue is situated in the central area of Jingdezhen East City, which is a project that integrates tourism, business and culture and aims to protect and utilise the industrial heritage of the porcelain production history of the site[12]. The avenue's masterplan was developed by David Chipperfield Architects in 2018. The main goal of the project was to create a lively and public place within the urban fabric, while managing to preserve the old ceramic factories. The main facilities of Taoxichuan consists of a Grand Theatre, an Academy of Music and a Hotel Complex. All of these buildings reuse structures that are part of the industrial heritage of the area or materials that refer to it. The Grand Theatre is a new construction, but its main material are bricks that refer to the traditional materiality of the historic industrial buildings. The Academy of Music is located in two former ceramic factories that date from the middle of the 20th century. And, at last, the Hotel Complex reused a former dormitory from the 1960's as one of its apartment buildings. Besides the three main structures, new functions were also included in the project, such as porcelain shops, a ceramics market, a museum and a campus for the performing arts with colleges and performance venues[13].
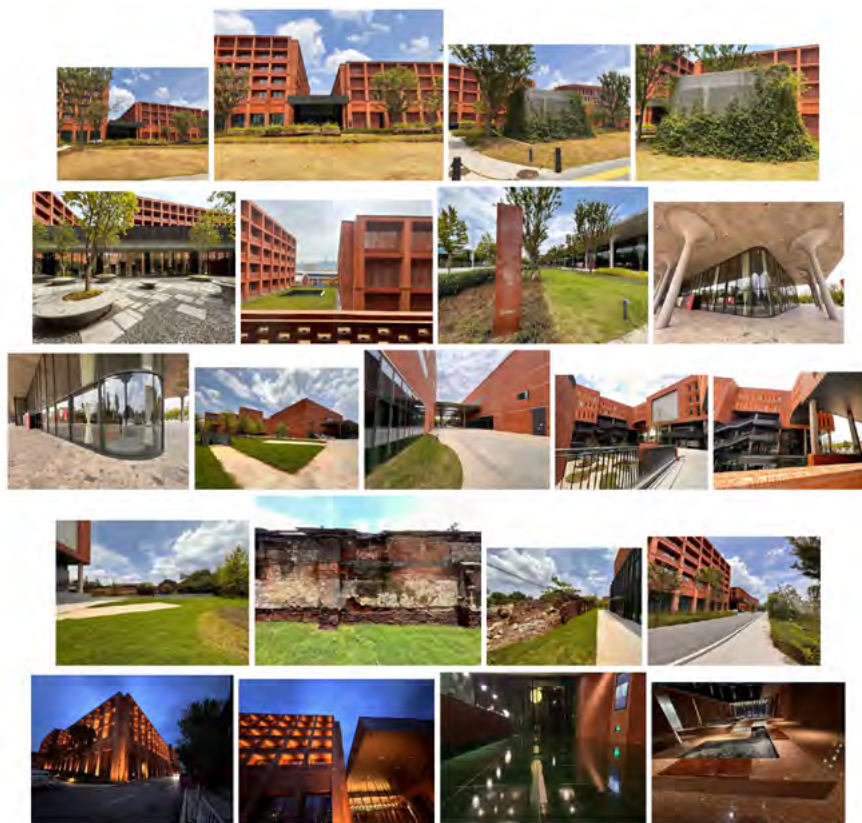
Fig. 3. Photos of *Taoxichuan Area* taken by author Natacha Rena during her research visit to Jingdezhen in June 2023.

During the last years, Taoxichuan became an appealing place for the youth and their business, registering over 18.000 young people, 2.902 new businesses and 1.049 small or micro-sized enterprises. It generates about 10.000 thousand yuan per day through e-commerce and live-streaming and provides employment for over 100.000 people. It also became an attractive spot for craftsman and art design scholars, receiving, since its opening in 2016, approximately 200 artisans and designers from all over the world to hold lectures, academic reports and solo exhibitions. The objective behind the efforts to attract these artists and scholars to Taoxichuan is to promote cultural exchanges, but it also brings a lot of vitality to the place. Besides the buildings quoted earlier, Taoxichuan Ceramic Art Avenue also houses the Ceramic Industry Museum, the Ceramic Art Avenue Art Gallery, the Taoxichuan Ceramic Academy, Yi Creative Space and Taoxichuan Art Center and all of them are located in historical sites and represent the heritage transformation and improvement of the cultural industry that happened in the area[14].

Fig. 4.   Picture of a Regional Map of *Taoyangli Imperial Kiln Scenic Area*, made by the author Natacha Rena, during a research visit to Jingdezhen in June 2023.

The Taoxichuan project has been awarded more than 80 times in global, national and provincial levels including the 2017 UNESCO Asia-Pacific Heritage Protection Innovation Award. It has also been listed as a national cultural industry demonstration park by the Ministry of Culture and Tourism[15]. The recognition that Taoxichuan Ceramic Art Avenue received shows how great of an example the project is, regarding the integration of urban development and preservation of cultural heritage. The site successfully combines traditional craft, cultural industry and technology, renewing the urban space while still maintaining the local heritage and history. And the transformation of the area into an attractive spot for artists, scholars and new business generates millions in revenue, contributing to the economic and industrial development of Jingdezhen.

Fig. 5. Photos of *Taoyangli Imperial Kiln Scenic Area* taken by author Natacha Rena during her research visit to Jingdezhen in June 2023. The Kiln Museum was developed by Studio Zhu Pei.

2.3 TAOYANGLI IMPERIAL KILN SCENIC AREA

Taoyangli Imperial Kiln Scenic Area is located near the Changjiang River, in the core of the old city of Jingdezhen and where the urban heritage of the city is concentrated. Being the home of many relevant attractions, like the Imperial Kiln Factory site, the Imperial Kiln Museum, traditional folk houses, porcelain shops and other relics that are linked to the ceramic industry history, the site is classified as a national 4A-level scenic spot[16]. This classification refers to the Chinese 5A rating system for tourist attractions that evaluate the quality level of them based on criteria like tourism traffic, tourism safety, hygiene, tourism shopping and other. And the grading varies between AAAAA (5A) and A (1A), being the higher the number, the better[17]. Taoyangli is also considered a National Night Cultural Tourism Consumption Agglomeration Zones (NNCTCAZ), which are areas used as models for the development of tourist spots with a high level of quality, integrating strategies to leverage the growth of culture industry while also focusing on the potential for night time consumption and economic development[18] .

Fig. 6. Jingdezhen Imperial Kiln Museum. Developed by Studio Zhu Pei. The project integrates history and innovation with nature.

One of the most significant buildings located in the Taoyangli area is definitely the Jingdezhen Imperial Kiln Museum. The museum focuses on Imperial Kiln artefacts and is adjacent to the Imperial Kiln Ruins of Ming Dynasty. The project, developed by the Chinese based Studio Zhu Pei between 2016 and 2017, aims to bring together the local culture roots, the revolutionary thinking of the porcelain industry and innovative ideas. The most prevalent and visible material in the building is traditional brick, referring to the old brick kilns that are so present in Jingdezhen's memory. Not only the history of the site was taken into consideration, natural conditions of the site were also carefully studied and natural lighting and ventilation were prioritised. The intertwining of the old and the new with nature made the museum a very interesting and unique place to visit, contributing to attracting tourists and bringing vitality to its surroundings. [19]

CONCLUSION

This study demonstrates that it is possible to conciliate ecocivilisation with the economic and industrial development of regions by adopting integrated strategies of cultural preservation and technological innovation. The Jingdezhen Master Plan serves as a practical example, showing how revitalising the ceramics industry can boost urban and regional growth while promoting environmental sustainability. Furthermore, the masterplan which is the object of this study comes to show that it is possible to develop the city's industrial field while also following a sustainability plan in order to create and maintain an ecocivilisation. By investing in clean technologies and promoting cultural and eco tourism, Jingdezhen balances its rich historical legacy with the demands of a modern, sustainable and high-quality economy.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author.

NOTES ON CONTRIBUTOR(S)

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IMAGE SOURCES

Figure 1   Jingdezhen Municipal Natural Resources and Planning Bureau, 2022. **Figure 2:** David Chipperfield Architects, "Ceramic Art Avenue Taoxichuan", 2022.

Figure 3   Natacha Rena, 2023.

Figure 4   Natacha Rena, 2023.

Figure 5   Natacha Rena, 2023.

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Cities and Imprints on the Region

Chair: Clement Orillard

Processes and planning of peri-urban landscapes in Spanish cities
The role of Urban Planning, Environmental Planning and Landscape

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Abstract

The phenomenon of suburbanisation is as old as cities themselves, as urban history shows. However, the ways in which cities have colonised new spaces have changed over the course of time. Contemporary urban landscapes show a widespread decentralisation of tertiary activities, whereas the industrial era witnessed the exponential growth of residential and industrial peripheries. The spread of various infrastructures, particularly roads and rail, has contributed to the formation of what is now commonly called "new peripheries" or "peri- urban zones." Existing in a transitional state between the purely rural and the urban, these areas have a distinct character. The paper seeks to identify and evaluate strategies implemented in six Spanish cities in recent decades, with a view to highlighting their importance in requalifying, preserving, or revitalising heritage and eco-cultural values within twelve case studies. The analysis relies on the identification of risks and opportunities for the12 areas studied, which were derived from a previous study. We have analysed the transformation of these areas over the last 50 years (1970-2020) from different perspectives: land use, urbanisation processes, changes in the road and rail systems, use of buildings, green and blue infrastructures, etc. This is followed by a critical examination of the existing and emerging urban planning and landscape strategies and instruments in the cities under study, particularly concerning the selected areas. The study shows that the proliferation of planning instruments alone does not guarantee the conservation or revitalisation of these peri-urban landscapes. We focus on those strategies that seek to maintain and enhance environmental and landscape quality. Open space management, sectoral policies, comprehensive interventions such as soft infrastructure, river parks or green corridors have also been analysed in landscape plans and projects. The aim is also to identify the most effective ones, which can help guide future interventions.

INTRODUCTION

The phenomenon of suburbanisation, as urban history has shown, is as old as cities themselves. The way in which cities have colonised new spaces, however, has changed over time. While the industrial era saw the exponential growth of residential and industrial peripheries, in today's city the widespread decentralisation of tertiary activities and the proliferation of infrastructures of all kinds, especially roads and railways, have led to the configuration of 'new peripheries' or 'peri-urban areas'. Peri-urban areas have a very different nature, being a kind of transition from the strictly rural to the urban[1]. This concept has been the subject of research in several studies and European projects[2] . Overall, according to various studies, periurban processes should not be identified with 'suburbanization'[3]. These peri-urban landscapes are not simple visual scenarios, but the manifestation of processes that shape the territory and territorial systems, the so-called peri-urban landscapes analysed by some urban geographers[4].

Over the last few decades, there has been a real 'peri-urban explosion', which is part of the more general phenomenon of the emergence of 'urbanised landscapes' [5] . New urban growth processes are reshaping the peripheries, turning the surrounding natural and agricultural spaces into a palimpsest [6] , a collage of often fragmented, dispersed, empty or residual spaces with mixed uses. The damage to the natural environment, the destruction of agricultural land and the increasing trivialisation of the peri-urban landscape are well-known problems. In short, spaces that are no longer fully urban or rural are becoming increasingly degraded. However, the cultural and environmental values of these landscapes, i.e. the eco-cultural values of the new urban and territorial systems, are receiving increasing attention as a response to these dynamics. The European Landscape Convention (ELC) has taken a decisive step when drawing attention "both to landscapes that can be considered exceptional and to ordinary or degraded landscapes". This implies the recognition of the value of "ordinary landscapes" and not only of those with exceptional heritage value. Considering that every territory is a landscape regardless of its quality and the appreciation it deserves is an innovative idea that have led to re-evaluate the importance of peri-urban landscapes and to consider them as an opportunity for the design and implementation of innovative models for the regeneration of cities and landscapes[7].

PERI-URBAN EXPLOSION IN EUROPEAN CITIES: URBAN AND ENVIRONMENTAL STRATEGIES

Several approaches to these issues can be found in the fields of urban geography and planning history. Geographers have studied peri-urbanization, particularly in France, which is a meaningful example of what is happening in continental Europe, where these processes have been accelerating since the 1970s[8]. Planning historians have revisited the visions and experiences of the urban planning tradition with a broad perspective, focusing on the treatment of the relationships between urban processes and the rural environment. Conceptualisations

and experiences that address the implications of planning for the sustainability of productive urban landscapes are often marginalised, despite the wealth of literature on the renewed history of urbanism or planning history. However, there is a wide field of proposals in which it is possible to find elements that are fully valid and that connect with current formulations and strategies, often unconsciously and without considering their precedents. Beside this, other studies focus on specific planning issues, such as the book, edited by Marco Amati, Urban Green Belts in the Twenty-first Century[9]. It addresses this complex issue from different perspectives – landowners, regulation, evolution from Green Belts to Green Networks, Green Wedges, flexible Green Belts – and in different cities, from Viena to Berlin, to Tokio, to Paris, to Seul, to Ottawa… (Figure 1).

The Green Belt is probably one of the most successful concepts in international urban and landscape culture. Its initial objective was to control suburban sprawl by means of strips or belts free of buildings. But they are also understood as a variant of the park systems that are being developed, above all, in North American cities. In addition to the connections with the garden city movement, Green Belts emerged strongly in the middle of the 20th century, at the same time as functionalist urbanism, in correspondence with the idea of strict segregation of uses that forms part of the modern paradigm. The international popularity of Green Belts is largely due to their successful implementation through the London Plan of 1944, which was widely disseminated throughout the world and became a paradigmatic case and an urban planning model. In the urban plans of many cities, Green Belts have been used to preserve open spaces for agriculture, forests, or nature reserves in the immediate vicinity of the city.

Fig. 1. Suburbia and peri-urbanisation. The Green Belt as a strategy for containing suburban sprawl. Some planning history and geographical approaches.

In recent years, the models of Green Belts and conventional park systems have been replaced by other more sophisticated concepts, based on strategies for connecting green corridors and all kinds of elements of natural and landscape value that make it possible to link and integrate rural or forested areas with urban areas. Green Belts have become open space systems within ecological visions that are increasingly important in regional planning, rather than just measures to contain urban growth. Therefore, the new concept of 'Green Infrastructure' is not a new idea at all. While earlier strategies proposed Green Belts as a tool to contain urban growth, recent strategies have become more complex, focusing on green corridors (from open space systems to green infrastructure), regional parks (agricultural parks, forests), watercourse restoration (rivers, irrigation canals), cultural landscapes (protection and restoration of natural, eco-cultural and heritage values) or small-scale interventions in hybrid peri- urban areas (links, routes, edge stitching)[10].

Today's priorities are the management of natural or semi-natural areas with complex functions in the urban ecosystem, including blue spaces, which attach particular importance to the water cycle and therefore include river and coastal systems. The initial defensive strategies, based on restrictive zoning, are being transformed into more inclusive or mixed ones, with the aim of promoting a model change towards a low-carbon and more efficient economy, investing in the natural capital that has been mistreated during decades of relatively planned urban growth[11].

This is in line with what Peter Hall used to say about how in the planning culture there are few ideas that are constantly recycled[12]. There are many diagrams that explain the sought-after relationship between cities and the countryside. From Ebenezer Howard to Patrick Geddes and many others to Cedric Price, there are many graphs that try to express the desire for connection and integration between nature and the city. In contrast, other authors draw attention to the evolution and sophistication of concepts, reflecting on the evolution from Urban Planning Culture to Ecological Landscape Urbanism, from Park Systems and Green Belts to Green Infrastructures, etc[13] (Figure 2).
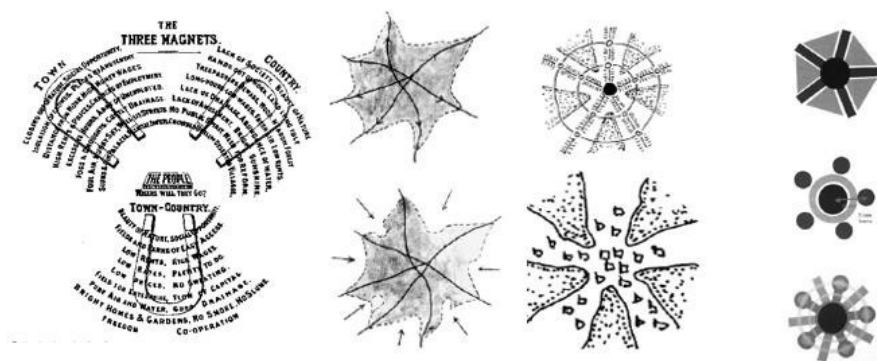

Fig. 2. Nature/urban balance. Left, diagrams by Ebenezer Howard, Patrick Geddes and Kevin Lynch. Right, three models: 'the finger plan', 'the polycentric metropolis', 'the mix'.

When it comes to the main traditions of the Green Belt, the English and German cities are undoubtedly an undeniable reference. In English cities, there is a remarkable continuity in the way urban management tools are conceived and applied in Green Belts[14]. A paradigmatic example is the West Midlands Green Belt (WMGB), one of the 13 existing in England (plus the 10 in Scotland), approved in 1976. Birmingham's Green Belt is part of this much larger belt which surrounds the West Midlands and the Coventry conurbation[15]. It is worth remembering that it is no longer just an empty and protected space, but allows a range of uses under strict control, with a third of the area dedicated to intensive agricultural use. Although it is an urban strip, the boundaries of the Green Belt are recognisable and are formed by road systems and characteristic features such as rivers and watercourses. As with other Green Belts, the objectives are to control urban sprawl, prevent the merging of surrounding settlements, protect rural areas from encroachment by other uses, preserve the character of historic settlements and contribute to urban regeneration, and encourage the recycling of brownfield and other urban land[16]. Even new slogans, such as the so-called 'All London Green Grid', cannot hide the obvious continuity with the Green Belts[17].

The case of Hamburg is probably one of the most significant and exemplary among European cities in terms of the treatment of open spaces, both in the consolidated city and in the peripheries and peri-urban areas[18]. There is a strong continuity with initiatives already developed in the first decades of the 20th century. Thus, in Fritz Schumacher's plans in the inter-war years, an ambitious and coherent system of axes, wedges and green corridors was proposed. The initial scheme focused on the banks of the Elbe and its tributaries, with radial wedges converging on the city centre. This plan has remained in place and has continued to be implemented with few changes for decades. The Hamburg Plan of 1947 and the so-called Reconstruction plans of 1950 and 1960 placed great value on green spaces and their connections by combining radial and circular green corridors, which was taken up in the plans for Hamburg and its surroundings in the early 1970s[19]. In the Grünes Netz Hamburg (Hamburg Green Network) several systems are superimposed: the first Green Belt on the former city walls and the second Green Belt connecting an approximately 8 km long park system, which was to be preserved for agricultural and recreational, now also ecological, uses[20]. Other German cities show similar continuity and innovation in this urban planning and environmental strategies, among them the Natur Netz Munchen or the Stuttgart U Green.

The Green Belt of the Spanish city of Vitoria, an authentic and nationally recognised urban and landscape model, stands out in this European context. In this medium-size city (with about 250,000 inhabitants) the City Council developed at the beginning of the 1990s a series of actions in the peri-urban area to improve the environment of its outskirts. Over the decades, these actions have become a belt that defines and characterises the city of Vitoria itself. The result is a Green Belt made up of several main parks, linked by a series of connecting elements and spaces, ranging from tree-lined hedges to stretches of riverbank. This Green Belt is an example of urban and peri- urban intervention for the conservation and enhancement of biodiversity, eco-efficiency and resource conservation, landscape adaptation or functionality for public use, achieved over 30 years through specific interventions ranging from environmental regeneration to the promotion of rental gardens or the creation of interpretation centres. This municipal project has given the city of Vitoria a social, environmental, and economic boost, becoming Green European Capital in 2012[21] (Figure 3).
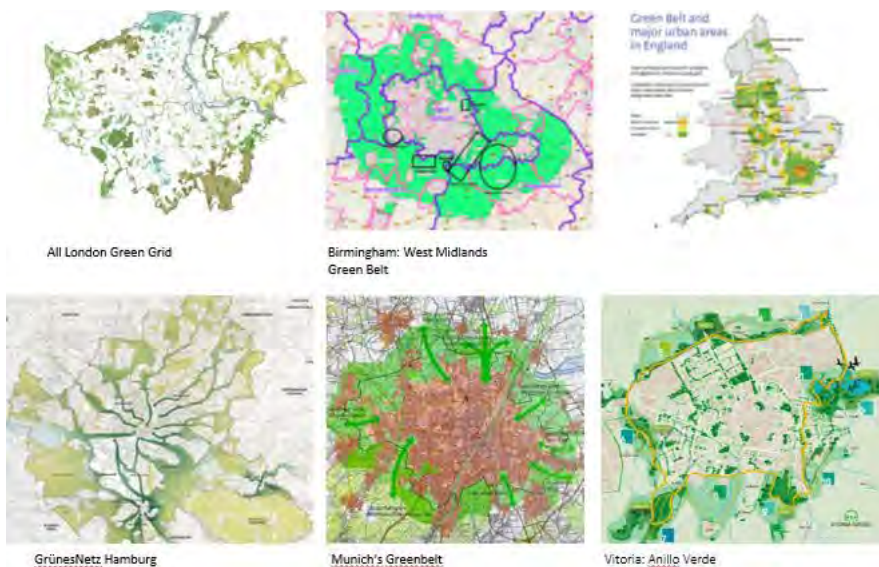
Fig. 3. Green Belts, Green Corridors, Green Networks, Green Infrastructures: London, Birmingham, Hamburg, Munich, Vitoria.

PLANNING AND PERI-URBANIZATION IN SIX SPANISH CITIES

In Spain, over the last few decades, with the expansive urban growth cycles that began in the 1970s and accelerated in the late 1990s until the real estate bubble burst in 2008, peri-urban areas have been heavily occupied. There are several indicators that show this kind of explosion through different tools such as mapping, flights or statistics. One of the most expressive methods to account for the process of land occupation is an analysis of night-time luminosity and its growth over the last decades[22]. The risks of degradation of these spaces are particularly evident in Spanish cities, where urban development policies do not provide an adequate level of protection for that peri-urban areas in which both urban and rural uses coexist.

Our research, developed in the frame of the project PER-START, focuses on the processes of peri-urbanisation that are being experimented in Spanish cities[23]. The aim is to identify and evaluate the strategies that have been implemented over the last few decades in 12 case studies in 6 Spanish cities, with a view to highlighting their importance in the re-qualification, conservation or revitalisation of heritage and eco-cultural values. We have analysed the transformation of these areas over the last 50 years (1970-2020) from different perspectives: land use, urbanisation processes, changes in the road and rail systems, use of buildings, green and blue infrastructures, etc. In this paper we focus specifically on critical examination of the existing and emerging urban planning and landscape strategies and instruments in the cities under study, particularly concerning the 12 selected areas. We deal with those strategies that seek to maintain and enhance environmental and landscape quality. Open space management, sectoral policies, comprehensive interventions such as soft infrastructure, river parks or green corridors have also been analysed in landscape plans and projects (Figure 4).
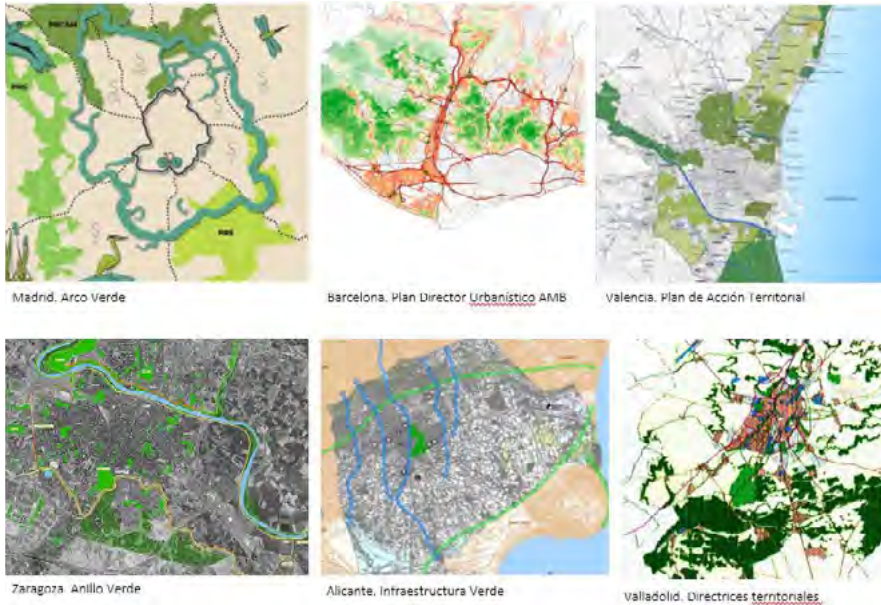
Fig. 4.   Planning and Peri-urbanization in Six Spanish Cities: Madrid, Barcelona, Valencia, Zaragoza, Alicante, Valladolid.

MADRID: AN UPDATED VERSION OF THE GREEN BELT STRATEGY

Madrid is an interesting case in which a certain **continuity** with the idea of the Green Belt can be seen, now recovered in other versions. Thus, both the so-called 'Metropolitan Wood' and the 'Green Bowl', recent projects of the City Council and the Community of Madrid, respectively, can be considered as updated versions of the 1946 Green Belt. These new versions of the Greenbelt, together with the Manzanares River, constitute the main ecological axis of the city[24]. They are therefore updates that are not strictly urbanistic but come from environmental agencies or departments.

BARCELONA: INTEGRATION OF PLANNING AND ENVIRONMENTAL APPROACHES

In Barcelona, the **integration** of different approaches in the renewed urban planning of the metropolitan area is noteworthy. A new Metropolitan Urban Master Plan (PDUM) adopts a more strategic and regenerative vision, with greater attention to the environmental dimension and urban ecosystems. Some instruments, such as the Baix Llobregat Agrarian Park or the Framework Project for the Ecological Recovery of the Llobregat River, are examples of this transformation. Secondly, several landscape and public space projects are being developed, completing the cascade of interventions at all scales in this peri-urban territorial mosaic[25].

VALENCIA: INNOVATIVE PLANS FOR PRESERVING AGRO-URBAN PERIPHERIES

Valencia stands out for the **innovation** of its most recent Territorial Action Plan (PAT). The aim of this 2018 plan is to enhance the value of the landscape of the Huerta (Orchard) as a historical, cultural, natural and agricultural heritage site. One of the specific objectives is to try to reduce urban pressure on the Huerta. Some important landscape projects, such as the Turia Source Park or the Valencia Estuary Park, aim to create a 'green link' between the Turia riverbed and the maritime settlements. All these measures are included in the Valencia Green and Biodiversity Plan[26].

ZARAGOZA: CONNECTING GREEN CORRIDORS THROUGH RIVERFRONTS

Zaragoza's commitment has been the **networking** and strengthening of the open spaces and green corridors system, and the integration of the main rivers into the city. The Ebro Riverside Project (2001), developed with the International Expo 2008, and more recently the new Green Infrastructure Master Plan (2017) include general strategies and sectoral plans affecting peri-urban areas. Some actions to close the Green Belt and restore orchards in the peri-urban area are being developed as a continuation of these strategies[27].

ALICANTE-ELCHE: CULTURAL ASSETS AND WORLD HERITAGE SITES

In the case of the Alicante-Elche metropolitan area, the key concept of the IV is again the starting point. The introduction of landscape programmes in border areas, with appropriate management of green infrastructure, is essential to achieve the desired articulation between the urban and rural environment. The articulation of green infrastructure at different scales is a great opportunity for the Palmeral de Elche (Palm grove), declared World Heritage Site. In this case, it is not clear to what extent the urban planning decisions of the last few years have been effective[28].

VALLADOLID: URBAN PLANNING GUIDELINES FOR THE CITY AND SURROUNDING AREA

Valladolid is trying to leapfrog from urban to metropolitan planning. A system of Green Belts, which interact with a network of soft itineraries, is defined in the Spatial Planning Guidelines for Valladolid and its surroundings (2001-2020). Despite the plans developed and proposed, it is acknowledged the difficulties to guarantee a change of perspective that consolidates the eco-cultural value of these peri-urban spaces only through this type of planning instrument[29].

Figure 5 shows a sample of the research that has been carried out at different scales in the specific case of Zaragoza:

It is clear from this analysis that in almost all Spanish cities there is a degree of continuity with previous approaches, which have only been the subject of reinvention in recent decades.
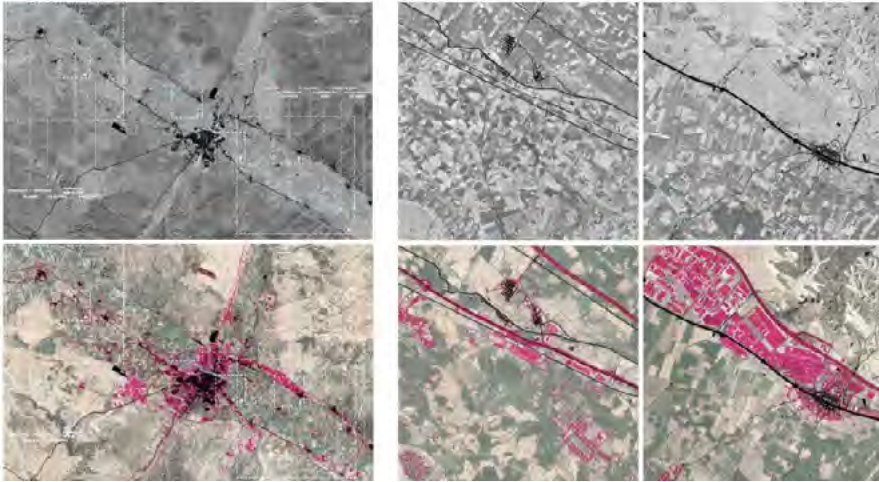
Fig. 5.   Peri-urban explosion n in Zaragoza at two scales. In black, the situation in the 1970s. In fuchsia, the situation in the 2020s.

Another common feature is the generalisation of the new concept of green infrastructure (GI), which has been adopted by almost all the cities. In parallel with urban planning, public space projects of a landscape nature also constitute a fundamental part of the requalification of peri-urban areas, being one of the most visible and effective actions.

It is noteworthy that, in addition to traditional urban planning, a number of instruments, strategies and specific actions have been developed for the management of peri-urban landscapes. On one side, there are urban and territorial guidelines, urban plans, landscape and public space actions and projects. Other instruments belong to the tradition of landscape and environmental planning (give examples): park systems, flood protection, conservation of natural and rural landscapes, forests, etc.

Although the diagnosis is different for each city, they all experience common processes of degradation. Problems caused by incompatible uses of the peri-urban landscape, urban pressure, neglect, infrastructure, pollution, etc. are evident. Deterioration, loss of landscape quality and reduction and fragmentation of agricultural areas are some of the problems that can arise. Lack of use leaves these areas open to illegal exploitation, which increases the degree of damage[30].

CONCLUSIONS

In the strategies applied to deal with the processes of suburbanisation and peri-urbanisation in European and Spanish cities, there is a coexistence of innovation and continuity, albeit at different speeds.

There are new slogans that try to innovate on old concepts and strategies: Green Plans, Green Grids, Green Wedges, Greenways, Green Arch… Green Infrastructure.

Fig. 6.　Peri-urban landscapes upstream and downstream of the Ebro corridor. Situation in 2023

Some cities focus on the Green Belt strategy, not just as a tool to contain urban, suburban and peri-urban growth but rather to connect natural or green areas and in order to power the system of open spaces. A process from containment to connection is taking place.

There is a dichotomy between Urban Planning traditions and Environmental Planning. When implemented, both strategies have been successful in preserving singular landscapes, rural areas and parks. On the contrary, with a few exceptions, poor results have been achieved in dealing with 'ordinary landscapes' and processes of peri- urbanisation.

Almost everywhere, a process of change has been taking place in the Planning culture. From (conventional) planning culture to (ecological) landscape urbanism.

The better integration (different tools working together at different scales), the better control of peri-urban landscapes (preservation, dynamization and revitalization of this peri-urban landscapes with eco-cultural value).

In conclusion: our research shows that the integration of these tools (Urban Planning, Environmental Planning and Landscape Urbanism), working at different scales is essential to manage preservation, upgrading and revitalisation of this peri-urban landscapes with eco-cultural value.

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DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author.

NOTES ON CONTRIBUTORS

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IMAGE SOURCES

Figure 1   Image's collage by authors.

Figure 2   Left: Image's collage by authors. Right: Laurelle and Legenne, in Amati (ed.), 2016.

Figure 3   Image's collage by authors.

Figure 4   Image's collage by authors.

Figure 5   Cecila Sanz and Miguel Ángel Laurenzana, research project PER-START. Images above: Own production based on the orthophoto of 1956 (PNOA). Images below: Own production based on the orthophoto of 2021 (PNOA).

Figure 6   Cecila Sanz and Miguel Ángel Laurenzana, research project PER-START.

ENDNOTES

1. "Peri-urban areas are areas that are in some form of transition from strictly rural to urban. These areas often form the immediate urban-rural interface and may eventually evolve into being fully urban". *Council of Europe, Spatial development glossary* (CEMAT) (Strasburg: Council of Europe Publishing, 2007).

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14. To put this in perspective, over 24,000 homes have been built in the UK's 23 Green Belts in the last nine years. https://urbanistarchitecture.co.uk/how-to-get-planning-permission-for-building-on-greenbelt-land-in-the-uk/

15. The WMGB covers approximately 225,000 ha, forming a continuous ring 8-13 km wide around a conurbation of almost 3 million people The enduring importance of strategic vision in planning: the case of the West Midlands Green Belt", Planning Perspectives, 37 , 6, 2022.

16. Continuing the principles set out in the County of London Plan (1943) and the Council for the Preservation of Rural England (CPRE), founded by R. Unwin in 1926.

17. This is the definition of Green Belt following a recent Glossary: "National policy designation that helps contain development, protect the countryside and promote brownfield development, and assist with urban renaissance. There is a general assumption against inappropriate development in the green belt", The All London Green Grid, Glossary (London: Greater London Authority, 2012).

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The evolution of Green Belt concepts in Hanoi's regional planning, 1960-2023

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Abstract

This article analyses the evolution of Green Belt concepts in Hanoi from a historical perspective to find out what problems the process of introducing international concepts and practicalizing theories locally encountered during 1960-2023. The article uses fieldwork methods and comprehensive analysis to divide the formation of Hanoi's Green Belt into three periods with different scales, characteristics, and functions. The planners have found many ways to enhance Green Belt's role, from changing perception to changing form toward flexibility, but Green Belt theory still can not be put into practical planning. By exploring the Green Belt in the city's Master Planning explains the necessity and perspective for a planning tool that adapts to the practical context across urban development stages. From that development progress, the article outlines challenges in the process of identifying theories and finding suitable solutions to practicalization the Green Belt paradigm.

INTRODUCTION

Green belts have emerged as a prominent planning tool adopted by numerous cities worldwide. The most renowned Green belt theory was proposed in the Garden City movement by Ebenezer Howard (1850-1928). This is an agricultural land area and strategically oriented to preserve the status quo in the face of the exploding needs of urban land expansion in the outer area. Green Belts have been embraced by various cities to address the challenges posed by industrialization and urbanisation. However, the implementation of this theoretical model varies across different contexts. London, a shining example of success with the policy, spread the influence of the Green Belts to many cities of the world; has witnessed numerous transformations in its institutional, form, and functions to adapt to evolving circumstances and development stages. In contrast to London's case, cities like Tokyo, Seoul, and Beijing have encountered significant hurdles in establishing and maintaining Greenbelts. These challenges stem from the conditions and resource constraints of each locality, coupled with the contradictions within the Green belts theory itself – the conflict between short-term needs and long-term development goals[1]. The functions of green belts in urban areas have differed to suit the local development stage. For instance, London's Greenbelt served the purpose of shaping urban form and maintaining ecological balance. In contrast, Tokyo's Greenbelt focused on agricultural land protection, Seoul's aimed to provide recreational spaces for residents, and the first Beijing's Greenbelt preserved the historic inner urban area.

Hanoi's application of the Green Belt theory has undergone significant transformations in perception, evolving from initial food security needs to addressing urban sprawl. At present, the Green Belt has emerged as a crucial planning tool for Hanoi's sustainable development. Hanoi's Green Belt has gone through more than 60 years of development but has still not been able to put this international theory into planning practice. Experts have and continue to conduct research on the Green belt theory from various angles but lack a strategic planning perspective. Studies on Hanoi's Greenbelt primarily focus on the perspectives of outer areas, agriculture outer areas, green infrastructure systems, green spaces or green corridors and articles directly analysing the subjects are mainly conservation and ecological perspectives.

This article adopts a comparative historical planning perspective to examine the Green Belt theory from the introduction of international theory and the practical situation of planning in Hanoi to answer big questions surrounding Green Belt in the Master Planning of Hanoi:

1. When was the Green Belt theory introduced to Vietnam?

2. What mistakes were there in the process of importing into the locality?

3. Why has the Green Belt theory not been successful in practical planning?

From 1960-2023, Hanoi has undergone 7 times of Hanoi Master planning[2] but the Green belt has only undergone 3 changes. Based on fieldwork method research policies, Master planning sessions and changes in planning thought, this article divides the formation and development of Hanoi's Green belt into three periods with clear differences in scale, form and function. The first period(1960-1998) laid the groundwork for Hanoi's green belt when it did not have an international name but was called "City Belt" with the function of ensuring food security during the recovery stage. The next period from 1998-2011 with the ideal of ecological balance

under the impact of globalisation. By the third period (2011-2023) - a period of uncontrolled urbanisation - the green belt was officially considered a planning tool to control urban sprawl. Each period of the Hanoi Green Belt has been influenced by various plans from international experts participating in consulting and supporting planning.

This article examines the formation of Green Belt development perspectives within the unique context of a socialist country. The case of Hanoi is particularly intriguing, as the adoption of planning theories from countries with vastly different political and economic systems has resulted in challenges in establishing appropriate regulatory methods and tools. Hanoi's Green Belt emerged from a subsidised economy and has undergone a struggle for recognition amidst economic recovery and the capital city's special development. Planners face various challenges, including the ambiguity in defining the Green Belt, developing locally-appropriate frameworks for managing the Green Belt as a unified entity, and considering the overall urban development layout with a long-term vision. This article uses a comparative perspective of planning history to explore how planning applications adapt to different contexts, ranging from changes in scale to the flexible integration of structures and functions to balance development needs with long-term vision.

GREEN BELT AS CITY BELT
TO ENSURE SECURITY AND FOOD (1960 –1998)

The green belt emerged during the early stages of modernization following the war (1950-1998)[3]. However, the role of the city belt was not fully emphasised until the 1960s when transportation challenges arose, Vietnamese Communist Party encouraged localities to achieve "a high degree of self-sufficiency in line with current production and combat conditions" and "conduct thorough research to achieve local food self-sufficiency"[4]. During this period, the development of the City belt took place under two stages of Hanoi's history: the centrally planned economy era (1960-1986) and the market economy era (1986-1998). This period did not witness significant changes in the form or function of the City belt, but Hanoi's context has influenced the importance of the Green Belt to the inner city.

THE GREEN BELT PLAYED AN IMPORTANT ROLE
DURING THE CENTRAL PLANNING PERIOD(1960–1986)

During this period, Vietnam's economy, particularly in the capital city of Hanoi, faced the challenge of economic restructuring and development within the framework of the centralised planned mechanism. This context leads the residents of Hanoi, where there is a large concentration of labourers, to face a severe issue of food demand. The urban management system intervened directly to address food and supply issues for the city's residents by expanding the outer areas, establish a Green belt to serve the inner city. Following the 1961 decisions, the Politburo oriented the city's green belt as a vast outer area (approximately 15 times the size of the inner city[5] - Figure 1) encircling the urban centre to enhance defence capabilities and provide food for the populace[6]. This represented a progressive planning concept, a stark departure from the previous era marked by the adoption of international concepts.

Fig. 1.   Hanoi expanded its outer areas in 1961. The area of the city belt after expansion is 15 times larger than the inner city area.

Around this time, Hanoi received help from research groups from the Soviet Union, most notably the "Leningrad Plan" (Figure 2) of the Leningrad Institute of Urban and Planning led by SI Sokolov (1974). This plan brought the image of an autonomous residential area[7] with a system of cities, satellite towns and supporting agricultural belts[8] into Hanoi's planning. This idea is similar to Ebenezer Howard's Garden City theory when the city belt has a large, continuous belt structure, prioritising agricultural development, supporting an urban area of 1 million people. The Green Belt inherently has the function of shaping the urban area, but Hanoi has not yet identified clear development goals, leading to urban boundaries frequently
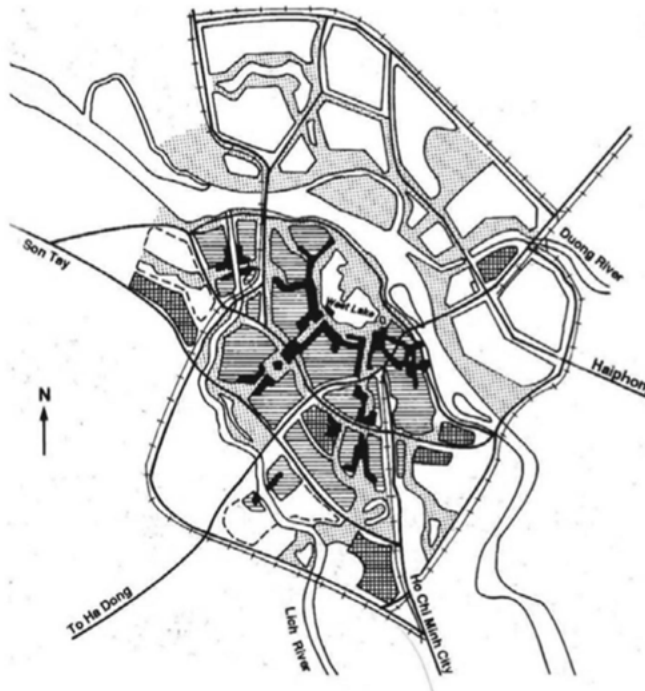
Fig. 2.   The plan of the Leningrad school for Hanoi

changing in the later stages, so when the Agricultural Belt is included in planning, the Managers focus on food support functions for urban residents and military defence capabilities.

Although the city belt was officially included in the national urban design standards in 1987[9], it is the image of the extensive outer area like the previous directives of the Politburo. During the transition period from a subsidised economy to a market economy (in 1986), the nature of the food belt in suburban areas gradually declined[10].

THE DECLINING FUNCTIONS
OF GREEN BELT IN THE MARKET ECONOMY STAGE(1986-1998)

The significance of Hanoi's Green Belt prior to 1986 is undeniable. However, the rebirth of the Market economy under the Party's Renewal Guidelines, as marked by the 4th Congress in December 1986, fundamentally transformed the function and attention of urban planners towards this region. The establishment of a unified national market enabled localities to engage in trade based on their respective strengths, eliminating the previous reliance on central planning. This is necessary to restructure the relationship between the outer areas and the inner city. The "self-sufficient" food supply has declined, leading to a reduction in the outer areas

in 1991. In 1985, Hanoi had 2088km² of Green Belt land in the outer area, far surpassing the 43km² of urban land, then by 2001, many years after the revision of spatial scope, there was a clear change despite agricultural area still accounts for a large part but is only about 160km² compared to urban land of 98km².[11]

The obvious shrinkage of land in rural areas can also be attributed to urbanisation, with numerous industrial and manufacturing projects encroaching upon agricultural land. Immediately after the boundary narrowing in 1991, on April 18, 1992, the Master Planning of Hanoi to 2010 was released through Decision No. 132/CT but without the appearance of the Green Belt. From this stage onward, the Green Belt became indistinct and became a vacuum in both theoretical research and practical application.

GREEN BELT:
GREEN BELT FOR ECOLOGICAL BALANCE (1998 – 2011)

Post-1998 urban planning has been influenced by globalisation, raising concerns about linking urban and surrounding areas, establishing long-term goals, and achieving sustainable development. The process of industrialization and modernization during this period caused many problems that negatively affected the environment[12] and compromised the urban aesthetic due to the placement of industrial development right in the inner city[13].

In 1998, the green belt was mentioned by its correct international name in the Decision no.108 on Approving the reversion of Hanoi's Master Planning to 2020(Figure 3)[14]. This approval document marked a turning point in the development of the Green Belt by identifying subjects and establishing new functional roles. Accordingly, the green belt was established in the area adjacent to planned urban construction land with a width of 1-4 km and plays the role of "forming a framework to protect nature and maintain the city's ecological balance"[15] in the context of the natural environment being ravaged by rapid urban development. Once a vast outer area providing food for the city, the Green Belt has transformed into a specifically defined zone in width with ecological functions.

The 1998 Master Planning project was a collaborative effort between American, Japanese, Dutch, and Vietnamese experts[16]. This collaboration shaped the ecological characteristics of Hanoi's Green Belt. Influenced by the United Nations' "One Earth" program and awareness of environmental protection in the context of globalisation, Hanoi's green belt was envisioned as a buffer zone, protecting the city's green space and separating the capital from neighbouring provinces[17]. The ambitious goals set for the green belt to protect the city's ecosystem with a projected population of 2.5 million. However, the context at that time was not positive, leading to the green belt development plan not being focused. Hanoi was hit by the 1997 Asian economic crisis, and despite attempts to seek support from foreign partners[18], private foreign investment focused on more profitable projects rather than the ecologically balanced Green Belt plan. Although considered the most effectively used Master planning to 2011[19], the Green Belt lacked effective development directions, faced encroachment from urbanisation, and was at risk of being lost.
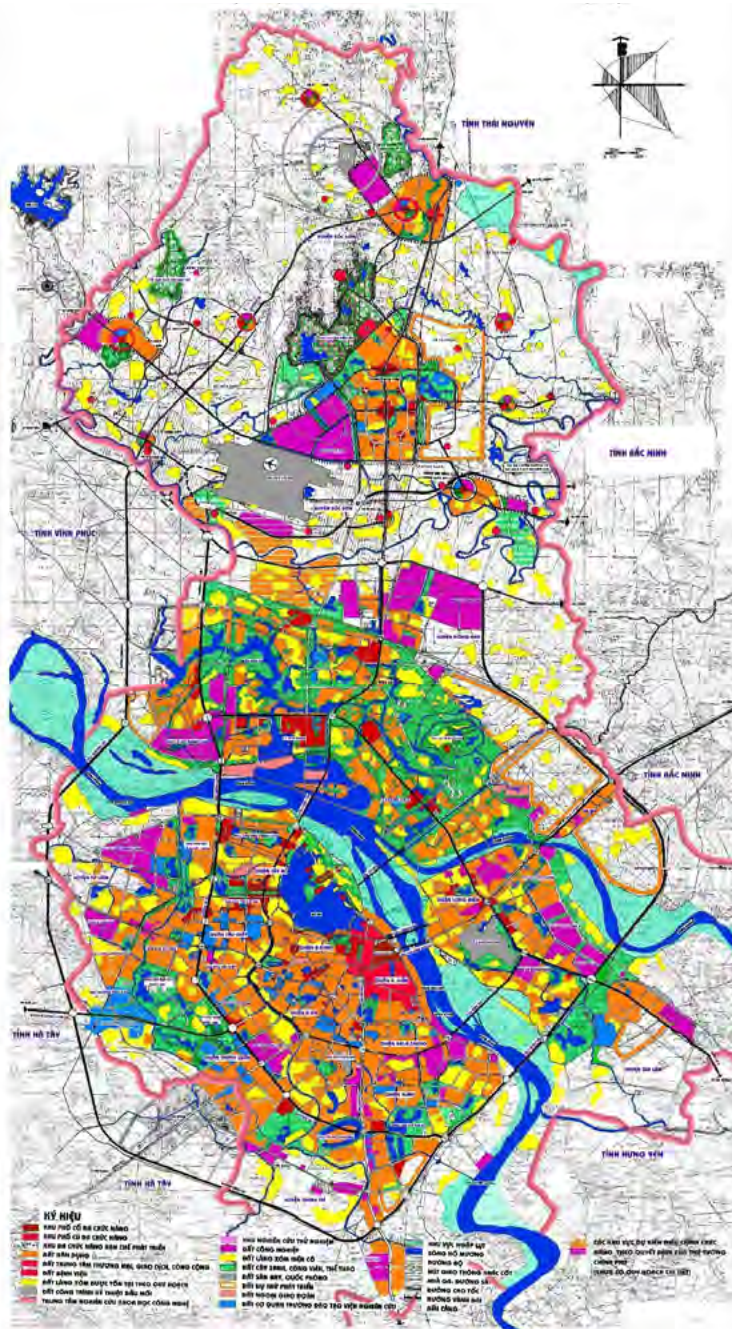
Fig. 3. The revised Master Planning of Hanoi capital to 2020. The Green Belt is located in a system of green lands, parks, and sports.
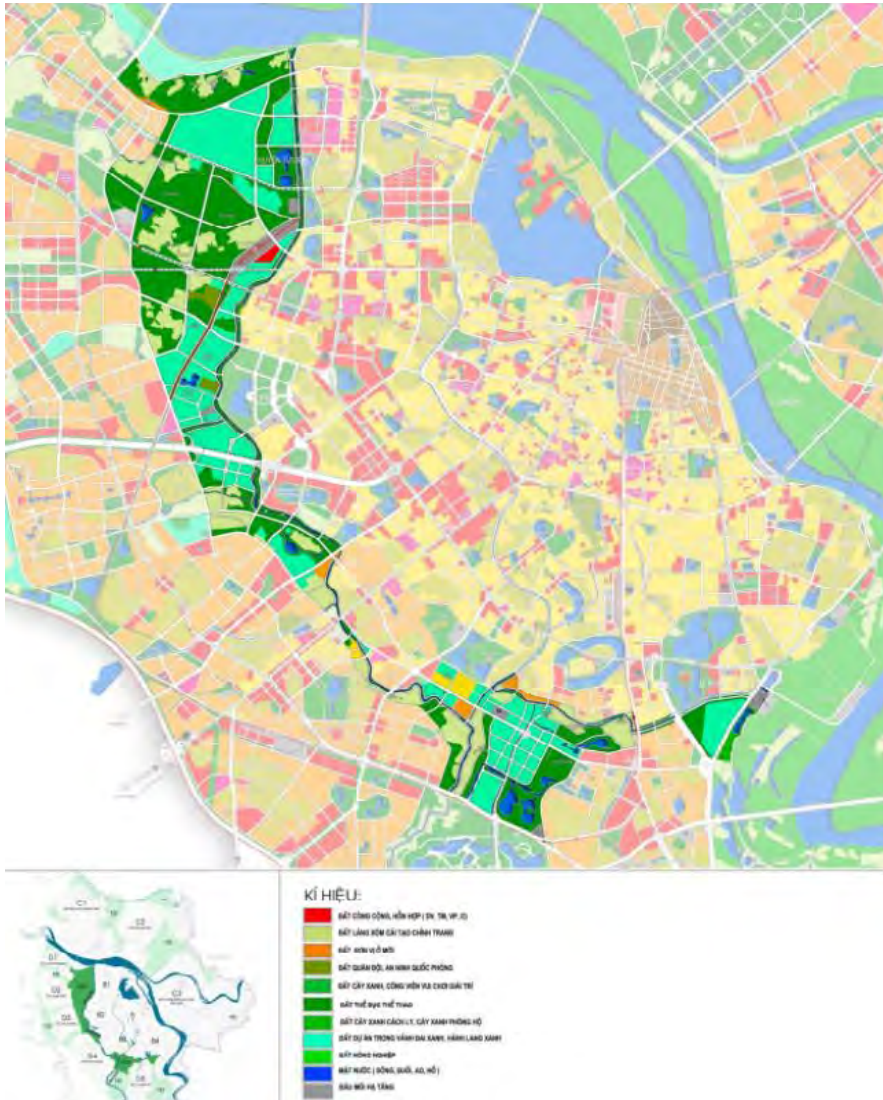
Fig. 4.   The shape of Hanoi's Green Belt has followed the Nhue River since 2011

GREEN BELT SHAPING URBAN AREAS
IN MASTER PLAN (2011 -2023)

In the 2011 Hanoi's Capital Master Planning Project, the Green Belt has become an attention in establishing the general layout in the context of high urbanisation.[20] If the 1998 General

Plan aimed for Hanoi to reach a population of 4.5-5 million by 2020, by 2011, planners had to reassess the city's development direction due to the population exceeding 6 million, beyond planning vision. Although previously, Hanoi's Master Planning had divided lands into development and restricted areas, it was not until 2011 that Hanoi for the first time included tools to control urban expansion into its planning.

According to Decision 1259 of the Prime Minister approving the Master Planning for the construction of Hanoi to 2030 with vision to 2050, Hanoi's Green Belt was established along the Nhue River to prevent encroachment of the rural urbanisation process, as part of the urban-rural system, serving as a buffer zone between the expanded inner-city area and the expanded urban area at the South of the Red River, covering approximately 4,000 hectares (40km2) (Figure 4). Thus, the Nhue River green belt has been reduced in size compared to before, covering half of the central urban area, cut off a former part to become an urban alternating green wedge and a green corridor embracing the remaining central part (Figure 5).

The 2011 Hanoi's Master Planning was a collaborative effort involving experts from international consultancy firms: the Perkins Eastman - Posco E&C - Jina Architects Co.Ltd (the USA and Korea) with the Institute of Architecture, Vietnam Institute for Urban and Rural Planning (VIUP) and the Hanoi Urban Planning Institute (HUPI). The change in the shape of the Green Belt comes from referencing international models and the context of rapid urbanisation. In particular, Hanoi has referred to the Green Belt development model from London - where the Green Belt system is closely combined with newtowns[21].

Overall, Hanoi's Green Belt has a herringbone structure with a combination of Green Corridors along the Red River and Green Wedges. If the London's Green Belt surrounds the city to prevent urban sprawl, the Hanoi's Green Belt following the Nhue River has the function of a Green Wedge in shaping the urban areas by preventing

the connection between component urban areas in the urban system. Meanwhile, Green Corridors are Green Belt according to international theory, aiming to limit the development of urban areas. Hanoi has used many tools but there has been confusion in identifying and applying them to solve problems.

PRELIMINARY ANALYSIS: CONTINUITY AND DISCONTINUITY OF HANOI' S GREEN BELT PLANNING

THE CONTINUATION OF HANOI'S GREEN BELT PLANNING

THE CONTINUATION

Hanoi's green belt has gone through more than 60 years of development but still maintains the original planning concepts in forming the green belt. If in the first two stages, the green belt was used with the most prominent function of ensuring food supply and ecological balance, then after the development process, the previous functions are still retained and developed based on

the practice of urban development. Until now, Hanoi's Green Belt has been built with multi-functions to make the most effective use of resources. From perseverance in aiming at agricultural development, preserving traditional village culture and protecting the environment, planners through the periods have had unity in how to deal with the situation and adapt to the environment conditions and geographical basis. Right from the name "Hanoi", the capital of Vietnam has the advantage of rivers and lakes, developing along the river, taking advantage of geographical advantages to improve agricultural production and create ecological space, improving quality of life for people through the Green Belt. Planners have similar perspectives in shaping green belts with scales and structures that change according to changes in the urban system.

Although the green belt diagram was built based on the views of foreign experts, Hanoi's Green Belt still has its own characteristics based on local development progress and resources.
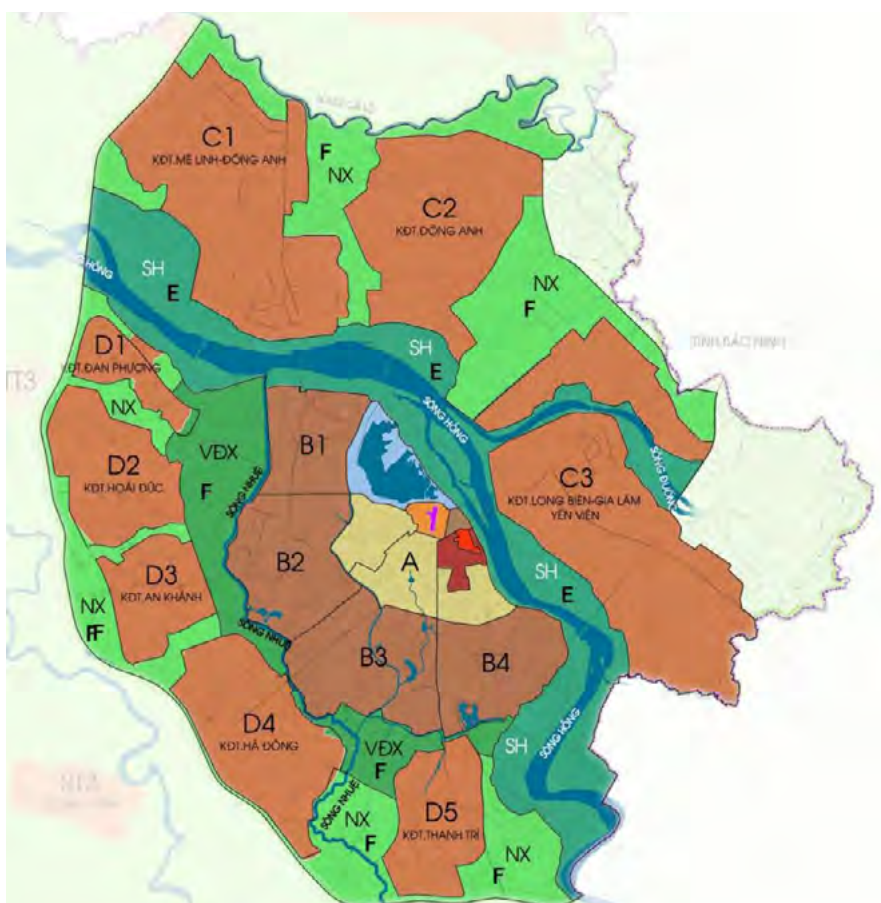

Fig. 5.   Three tools for controlling Urban growth: Green Belt (VĐX), Green Corridors (HLX), and Green Wedges (NX).

THE REASONS

The continuity in Hanoi's Green Belt planning comes from the evolution of general development rules and local characteristics. Hanoi is an urban area that developed from rice cultivation civilizations, with unique geographical features, green spaces are optimally utilised. The development of the Green Belt is associated with a change in Hanoi's urban planning orientation. From the unipolar urban construction orientation to counterbalancing and expanding urban space in the form of a capital city, the green belt over time has been applied to separate and control development according to the general layout vision of Hanoi.

THE DISCONTINUATION OF HANOI'S GREEN BELT PLANNING

THE DISCONTINUATION

Hanoi's planning process has undergone numerous transformations driven by political, economic, and the subjects participating in planning. Despite its over 60 years of development, Hanoi's Green Belt exhibits discontinuity vacuums. Once a hallmark of urban development, the Green Belt was subsequently neglected, lacking a mechanism to safeguard this paradigm, yet it resurfaced as a focal point in the 2011 planning framework. Across different periods, the Green Belt has undergone distinct changes in planning perspectives, structure, functionality, and form, evolving from a perspective of food security, ideal of ecological balance to a planning tool for controlling growth and the role of the green belt in general layout. The Green Belt has transcended its role as a mere supporting tool to become an integral component of Hanoi's comprehensive development.

THE REASONS

The discontinuities in Hanoi's Green Belt planning stem of political factors, economic structures, and the involvement of foreign experts. Shifting political systems and economic structures lead to alterations in resource allocation and a dynamic adaptation of development goals to the evolving context. The structure of the subsidised economy and the market economy, as well as the domestic political system and international relations, have many differences in development directions, resources, conditions, and requirements for planners who must select planning strategies aligned with practical realities. Furthermore, each period of the Green Belt's development has involved diverse planning entities from various countries, each bringing their own distinct and incompatible planning ideals.

Above all, beyond the influence of imported international theories and political-economic shifts, social factors, evolving lifestyles, and strategic urban development goals also significantly impact Green Belt planning perspectives. As society progresses and modernises, individuals gain more choices, and competition intensifies. In the past, residents lived in communal housing and relied on bicycles and walking for daily commutes. Today, a shift towards single-family households and personal vehicles has become prevalent. The urban scale has rapidly expanded from a population of less than one million to accommodating two million

and now exceeding eight million. Hanoi's position has evolved into that of a key urban development hub with multi-functional, acting as the driving engine for regional development. Aligned with its goals of sustainable development and its established prominence, Hanoi's Green Belt planners are constantly refining measures to mitigate the impacts of urbanisation while still optimising effectiveness.

CONCLUSION

The development of Hanoi's Green Belt is a synthesis of learnings from international concepts and adaptation to different development periods, varying visionary goals. However, Hanoi has yet to put Green Belt into practice due to institutional complexities, the region's chaotic nature, and planners' incomplete understanding about Green Belt theory, construction methods, appropriate planning tools, and the identification of key bottlenecks and expansion areas that need to be prevented. Despite these challenges, Hanoi has persevered in preserving green spaces for many years, holding onto the hope of balanced and sustainable development.

Green Belt theory has a long history of development with various forms. While London opted for a wide green belt encircling the city to control the expansion of the core urban area and utilise newtowns system to mitigate the contradictions of the theory, Beijing chose an organic form, separating the historic inner city from the outer expansion area and incorporating green lines to flexibly regulate urban development. The success of Green Belts worldwide lies in the harmonious integration of different development stages, planning methods, management approaches, political and economic systems, and socio-cultural characteristics in each location. Hanoi's Green Belt is currently pursuing a flexible combination of functions and structures to achieve sustainability goals. But the question is how should Hanoi's Green Belt be shaped to control an urban area? Each city, with its unique size and characteristics, has different carrying capacities, infrastructure, and development goals. The choice of stringent or flexible control tools among various urban separation forms hinges on the vision of urban planners and managers, the development strategy outlined for the city's population growth, accurate growth projections, and robust policy implementation. Hanoi can still adopt the London model if it possesses an effective policy enforcement tool to manage its current population of 8 million and integrates it with a well-established newtown system. Alternatively, Hanoi could continue with the Beijing-style fan-shaped Green Belt diagram, aiming for loosen control, prioritising land using for urban development, and optimising the multifunctional Green Belt's effectiveness.

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IMAGE SOURCES

Figure 1 Politburo (January 04, 1960)
Figure 2 Logan (2000)
Figure 3 Prime Minister of the Socialist Republic of Viet Nam (1998)
Figure 4 Urban Development Agency - Ministry of Construction (July 2011)
Figure 5 Urban Development Agency - Ministry of Construction (July 2011)

The Missing Link of Kuala Lumpur and its Region Urban Planning History

Klang Valley Plan (1961) by Vlado Antolic United Nations Urban Planning Expert

Marina Smokvina
Independent researcher

Abstract

At the time of declaring its independence Malaysia had well organized urban planning service but overloaded with the ongoing urban issues and not sufficiently staffed to produce long term plans. According to the request of Malaysian government for the experienced urban planner and the recommendation of Ernest Weismann, Vlado Antolic (1903 – 1981), prominent Croatian urban planner was appointed as a United Nations consultant for urban planning of the Malaysian Federal Department in late 1958. He started to work in the Federal Department of Town and Country Planning in Kuala Lumpur where the urban planning problems of the whole country were being resolved. Antolic was engaged to develop extensive survey and comprehensive spatial analysis of the Klang Valley territory and consequently to prepare a Klang Valley Regional Plan including Klang and Port Swettenham urban plans. In the same time, and as a part of Klang Valley Regional Plan, it was necessary to fully revise the master plan of rapidly growing Kuala Lumpur. In the next two and a half year Antolic finished the Plan addressing the multiple lines of developing region and rapidly growing Kuala Lumpur. He proposed the possible location for the new towns, industrial areas and the possible intensive agriculture zones. Kuala Lumpur master plan was prepared in a way that specific urban guidelines were prepared for each part of the city. The Plan was submitted to the Government but never officially adopted and remained almost unknown. It was one of the first regional plans in South East Asia collided almost with the United Nations Seminar on Regional Planning held in Tokyo in 1958 to address the relevance and need of introducing and incorporating regional planning in the total process of economic and social development in the countries of Asia and the Far East. It was followed by the United Nations Seminar on Metropolitan Planning and Development held in Stockholm three years later. Antolic was familiar with the proceedings of both seminars as they were regularly disseminated among the experts.

Southern Regionalism
Social Planning in the U.S. South

Stephen Ramos
University of Georgia

Abstract

In celebration of the 100th anniversary of the first meeting of the Regional Planning Association of America in New York City, there is also the chance to recognize concurrent interwar regionalisms from other parts of the United States. Howard W. Odum led the Southern regionalism initiative with colleagues from his Institute for Research in Social Science at the University of North Carolina. The South served as their laboratory, where resource development proposals became the model for national regional planning practice and beyond. Southern regionalists understood the regional scale entirely through the cultural lens of the social sciences to abstract, describe, and project it. The South's secessionist past informed their cultural/territorial proposals for folk regional planning, which later functionalist modelling elided. As these histories reach their centenaries, the article considers Southern regionalism more fully in relation to the broader social science and regional planning thought of the interwar period.

"Unplanned Planning": Rethinking Hong Kong Histories Through Infrastructure

Chair: Cecilia L. Chu

The Natural and Unnatural Histories of the Bowrington Canal

Cecilia L. Chu
The Chinese University of Hong Kong

Abstract

This paper traces the histories of the Bowrington Canal, a waterway on Hong Kong Island that once flowed through the Wong Nai Chung Valley and Causeway Bay district before entering Victoria Harbour. Constructed during the 1850s under the governorship of George Bowen, the Canal was conceived as a crucial infrastructure to address flooding and improve drainage for disease prevention. Despite being hailed as a significant engineering achievement, historical records reveal the limited success of the Canal in mitigating the floods and landslides caused by severe typhoons and containing epidemic outbreaks since its inception. Concurrently, these records shed light on the successive attempts by the colonial government to transform the suburban land around the Canal for different purposes. Notable examples include the establishment of a tree plantation in the 1870s for commercial plant experimentation, the development of a public park in the 1880s for use by native Chinese, and an unrealized plan in the 1920s to convert part of the Canal into a reservoir. While all these projects were influenced by emergent ideals of modern planning and resource management that aimed at transforming the 'natural' environment through public works, each scheme was compelled to adapt to the existing physical landscapes that constrained their initial ambitions. This study will be augmented by an examination of popular writings about the Bowrington Canal, which had in time become a cherished scenic spot for 'nature outing' amongst Chinese and European residents. Taken together, these narratives highlight the divergent perspectives of Hong Kong's suburban landscapes and how different constituencies participated in constructing the meanings of 'nature' and Hong Kong's colonial environment.

A Drought, A Storm, and A Riot
The Planning of Plover Cove Reservoir in Hong Kong

Dorothy Tang
National University of Singapore

Abstract

In 1967, a drought, a storm, and a riot upended ten years of planning of Hong Kong's largest freshwater production system—the Plover Cove and Hebe Haven Scheme. The ambitious infrastructure plan was initially conceived of in 1958 and consisted of two networked freshwater reservoirs reclaimed from the sea, a modern water treatment works located in the planned new town of Shatin, a tunnel connecting the New Territories to Kowloon, and an extensive catchwater system that expanded the natural watershed areas of the reservoirs. However, one year before the completion of the Plover Cove Reservoir, weather events, in conjunction with the tricky conversion of a salt-water aquatic ecology to a freshwater system, contributed to political tensions in the aftermath of the 1967 Hong Kong Riots, and re-oriented Hong Kong's water security strategies in subsequent decades. This paper examines the infrastructure plans that parallel Hong Kong's major town planning initiatives in the 1960s-70s to understand how landscape processes such as geology, erosion, weather events, aquatic ecosystems, and afforestation created delays, interruptions, and even cancelations in Hong Kong's post-war planning. By analyzing partially realized plans for Plover Cove and High Island Reservoir, I argue that the engineering rationales of major freshwater infrastructure are disrupted by the landscape, thus producing an account of improvisation and discordance in Hong Kong's urban landscape. This provides insight into the decision-making processes of Hong Kong's colonial government and their relationship to the geopolitics and micropolitics of the city.

Everyday Maintenance the Infrastructure of the Street

Sony Devabhaktuni
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Abstract

The paper turns its attention to one aspect of the processes that planning sets loose in its articulation of material emplacements. While imaginations of infrastructure often turn to the monumental scale and a temporal frame that considers histories of development and construction, this paper looks at the scale and temporality implicated by everyday maintenance. The paper more specifically considers the roads of Hong Kong, beginning with their classification according to parameters that include surroundings and anticipated speeds. These parameters dictate whether roads comprise concrete slabs sitting on layers of sand and stone or are surfaced with asphalt. The government specifies those contractors permitted to work with asphalt's specific material qualities and techniques of construction. That distinction between asphalt and concrete surfacing also has implications for sub-contractors and government work-crews that need to access the networks that run below streets and sidewalks. That work, in turn, is regulated by government agencies charged with setting up protocols for cuts into the surface – cuts that register into the fabric of the city as a history of everyday repair. The daily theater of the road's maintenance implicates work-crews hired under conditions that are themselves sometimes fraught and uncertain. These migrant laborers fill an ever-increasing gap in the populations willing to take on such work. The everyday maintenance of streets brings together material, spatial and human concerns that would seem to be outside the purview of planning's synoptic gaze. The paper proposes that attention to this scale of infrastructure, and the articulation of its day-to-day histories offers an incitation to think in other ways about planning's role in Hong Kong's development.

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Sony Devabhaktuni
Everyday Maintenance the Infrastructure of the Street

Phantom Peninsula
Planning Resonances of Kowloon Upon Hong Kong Island, 1841–1860

Christopher Cowell
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Abstract

At the very start of the colonisation of Hong Kong, landscape played a fundamental role in the planning strategies of the first settlement. This settlement, named Victoria, stretched out some two miles along the northern coastal edge of Hong Kong Island. Recent work, including mine, has paid considerable attention to the policies, ideologies, and economic decisions that affected this rudimentary planning. It is also evident from cartographic analysis and descriptive evidence that the very terrain of the Island— its nullahs, declivities, rocky hindrances, and steep slopes—determined the possible pathways of the settlement's growth and the sequence and pattern to that infrastructure. However, what is less obvious but also influential concerned terrain acting at a near distance—the peninsula of Kowloon—which was, at first, still within Chinese territory and outside British possession. This paper argues that the Kowloon Peninsula played no less a dynamic role in the construction and planning of Hong Kong Island even before the former was colonised. 'At a distance', its presence dictated crucial decisions that affected several stages in the city of Victoria's growth and distribution in the first years of settlement. These effects mutated to match the setters' concerns. First, as a security concern, its Chinese fortifications were dismantled and absorbed into useful spolia for city construction; it acted as a shelter from typhoons for lading ships; it determined the settlement's location opposite as a protector from winterly winds; it formed a marker for debates for the position of Victoria's capital; and it determined Victoria's early gun defence positions affecting the city's extent. All of this was before serious discussions about colonial expansion onto the peninsula began. Claiming the peninsula, as the British started to understand it, would not just legitimate further expansion northwards into mainland China, but more immediately, it would rectify a perceived territorial imbalance. Possessing Kowloon would rebalance and frame Victoria Harbour, properly centring—as the British considered it—their raison d'etre for colonisation upon this prized body of water. Therefore, the paper contemplates how landscape as both a co-temporal and a priori object of proximate influence induced planning actions separate from the peninsula that, in turn, reified and projected subsequent inscriptive desires upon its own surface.

How to cite

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Remaking Nature in Chinese City-Regions: Water, Wind, Oil, and Green Space

Chair: Carola Hein

Taking the Chinese Petroleumscape Seriously
An historical institutionalism approach

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Abstract

To conduct a thorough investigation into the planning and construction history of China's oil industry, it is necessary to redefine the layers within the Global Petroleumscape (TGP) from a historical institutionalism perspective. The TGP framework, as proposed by Hein, differentiates multiple layers generated by the footprint of the oil industry through three dimensions: spatial, represented, and representational. However, when applying these layers to analyse Chinese cases, it becomes apparent that they have difficulties to accurately pinpoint the transformations in China's oil industry planning. This discrepancy stems from the fact that the planning and construction of China's oil industry chain are under the strict control of state power institutions and only allow market transactions within a very limited scope. To address this issue, the paper proposes adopting a historical institutionalism perspective to study and summarize the institutionalized spaces, representations in the development of China's oil industry. By applying these institutions to extend the usage scenarios of TGP, this research develops a framework more suited for examining the Chinese Petroleumscape.

Wind Energy in Planning Visions and Practices in Contemporary China

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Abstract

China is the leading player in the wind energy market, with nearly half of the current global installed wind energy capacity. Literature on wind energy development is dominated by the energy policy and engineering sciences domains and focuses on the economic and decarbonization potential of wind turbines. This paper aims to bring the actual resource (the wind) and the land on which the turbines are placed to the forefront of discussion and explore how these three components relate to each other. While wind as a natural resource is atmospheric and aterritorial, the technology that facilitates conversion into electricity is rooted in the ground. By examining archival texts on climatic resources and analyzing the development of three early wind farms, the paper shows that wind energy in China was able to grow rapidly not only by way of strong state support, but also because regulations on natural reserve preservation were not strictly enforced, and wind farms were aestheticized as fitting into ecological landscapes. The paper concludes by looking forward to shifts in configurations of the resource, land, and technology prompting new path in wind energy development: turbines situated on nature reserves are mandated to be decommissioned under the concept of ecological civilisation, and various cultural meanings of wind continue to be used to rationalize the siting of wind turbines.

INTRODUCTION

China is the global leader in wind energy development, with 366 GW, or 41% of total global installed wind capacity in 2022[1]. Literature exploring the success of the industry tends to focus analysis on strong state support, a vast array of state-owned land, and the industrial opportunities in the manufacturing and engineering design of turbines. This paper hopes to bring forward underdiscussed, especially in the Chinese context, elements in the wind energy development nexus – the resource from which turbines convert into electricity, and the land on which the turbines are sited. The paper provides a historical contextualization of wind energy emerging from existing state attention to climatic resources (*qihou ziyuan*) and shows how normative political views on state-society- environment relations were at one point at the forefront of the discussion, then transitioned into a more scientific and rational understanding of natural resource extraction. While environmental protection measures existed, enforcement of nature reserves was lacking. This ambiguity in how ecological lands were meant to be preserved created an opportunity for a successful branding of turbines as fitting within these ecological lands, with emphasis on the abundance and progressive qualities of wind as energy. The combination of these parameters played a key part in the early successes of the wind energy development. While wind energy development has stalled in other contexts due to private landowner complaints on rights to views, and mature natural parks and preserve regulations, China appears to have bypassed these concerns within a unique property and state-society context.

I first examine two texts on natural resources which include sections on climatic resources, analysing how wind energy development emerged from existing institutions on climatic resources and nascent and disorganized spatial planning systems. I then offer three brief case studies of early wind farms in China, laying out the actors involved in the siting and development of the projects. Finally, as concluding remarks, I look towards the future with some remarks on how these early parameters facilitated the rise of wind energy development in China but are now undergoing changes. The emergence of ecological civilization is clear in its stance that turbines are not permitted on nature reserves, which has resulted in several instances of mandated decommissioning. Further, the meanings laden in and the specific spatial-temporal qualities of wind and climatic resources generally still figure into rationales that support wind energy development, and prior normative questions on attitudes towards attitudes and actions involving the atmosphere are not yet resolved.

EXTANT LITERATURE

The literature on wind energy development in China is mainly published by researchers in the energy policy domain. These scholars offer an overview of the growth of the Chinese wind energy industry by providing timelines of key legal and policy frameworks that laid down a path for the industry to grow and wind farms to be built[2]. The key attributable factors in explaining the rise of the wind power industry are the prioritization of decarbonization as a state goal, formal legal frameworks such as the "Renewable Energy Law" in 2005, subsidies and funding for fixed feed-in tariff wind electricity prices, and enthusiastic, cooperative local governments.

There is an emerging literature that focuses on the manufacturing component of the energy transition. These scholars point towards strong manufacturing coalitions that control the supply chains of the parts necessary for the energy transition – for example, wind nacelles, blades; or panels for solar energy- as the key to creating strong coalitions and a real impact on green growth[3]. Indeed, the trade discussions and malaise on the American and European side of the energy transition rest on China's growing dominance of the manufacturing end of the supply chain of wind turbine parts, which makes up a significant portion of its exports[4]. This group of literature focuses on the economic opportunities around the visible component of wind energy development, the turbines, while this paper aims to shift the attention to the wind, from which the turbines convert into electricity, and the land on which they are sited.

HISTORICAL SKETCH: WIND ENERGY EMERGING FROM CLIMATIC RESOURCES

To contextualize how wind fits into state logics I first examine two texts on natural resources to trace the evolution of discussions revolving around wind as emerging from climatic resources. These two texts are meant to provide a sampling to provide a sketch of how state attitudes toward wind changed. The first text presented is a pamphlet for youth on Chinese geography published in the mid-1970s; the second text is a 1994 national-scale natural resources survey and anthology, with volumes published for each natural resource and province. I then turn my attention to describing the existing institutions pertaining to the land regulation on which these early wind farms were sited.

"Concise Chinese Geography" (*jianming zhongguo dili*) was published by Shanghai Normal University in 1974. The book is part of a series whose audience is mainly urban youth sent down to the countryside to receive re- education from the rural peasantry. Chapter/Section Four details climatic resources (*qihou ziyuan*). The subsection "Climatic resources and agricultural production" describes wind as a carrier of atmospheric things important for agricultural production, which include light, warmth, and water[5]. What is particular about agriculture is its link to time: "…agricultural production does not only need to align with the land but also with time (*yinshi zhiyi*)"[6]. What is needed is to understand the order of the climate and weather, and to scientifically approach agricultural production. What follows is a politicized critique of what the sky represents and what the appropriate actions towards it should be: "But, for the relationship between sky and humans, this is then a question of whether the sky determines everything, or the human can overcome the sky, from ages ago Confucianism and Legalism were completely opposed, the battle between materialism (*weiwu zhuyi*) and idealism (*weixin zhuyi*) was intense." The author then goes on to lay out sayings attributed to Confucious and Mencius on the "Mandate of Heaven" (*tianming lun*), which is criticized as feudal and irrational. The legalists on the other hand see nature and the sky as having an objective order. Instead of following the sky, so to speak, it is encouraged for society to use it and to understand the underlying order and logic of the system[7].

Fig. 1.   A diagram depicting monsoon seasons. The bold lines indicate frontal zones, while the dotted lines show monsoon season boundaries, with text indicating the time.

Wind in this publication is not yet seen as an extractable energy resource. The debates on wind are not so much about how to better extract it; rather they are about how wind more generally is a part of the climatic resource, which is an object to study and control, in the name of increasing agricultural productivity and criticizing feudal and Confucian normative ideals of state-society-environment relations.

Following the reform and opening period post-1978, the discourses and institutions on resources changed, and instead emphasized a rational utilization of resources in the context of growing population and decreasing arable land. Interest in the wind as an additional energy resource that could promote the self-sufficiency of electricity supply grew and was made a separate discussion apart from climatic resources.

The "Natural Resources Series," (*ziran ziyuan congshu*) published in 1994, contains a total of 42 volumes, with dedicated volumes to each type of resource (land, water, minerals, climate, forests, grasslands, fisheries, wildlife, oceans, and tourism) and each province. The first volume is a general volume that has chapters that provide summaries of the findings on the national

scale. The origins of the series are explained in the preface of the first general volume. It was approved and directed by the State Planning Commission (SPC). The resulting work was a collaborative effort on the part of the Land and Regional Department (*guotu diqu si*) subordinate to the SPC, the Chinese Academy of Sciences, and the SPC Natural Resources General Survey Committee[8]. The beginning pages of the first volume are inscriptions of words by lead CCP officials, signalling the level of attention the project was given. For example, the first inscription by Song Ping [9] in January 1993 reads, "Rational development and utilization of land resources for the coordinated development of the economy and the ecological environment."

The first volume, which is a master or summary volume, discusses "Climatic Resources" in Chapter 11. The first paragraph makes distinct climate (*qihou*) and climatic resources (*qihou ziyuan*), noting that there are two types of utilization. The first is direct utilization, under which wind energy falls. The second is intermittent utilization, which are the background conditions helping to facilitate the growth of plants and agriculture. The beginning paragraph makes clear that research and the potential of climatic resources is of the second category and also states that the unique characteristic of climatic resources is their seasonal quality[10]. Emerging metrics on wind energy are separately discussed in Chapter 10 "Energy Resources," which focuses on those resources that may be converted to energy to fuel industrial activities and electricity production. Wind energy is described as having the following characteristics: "high energy potential, but low concentration…easy to utilize, no pollution, renewable; much uncertainty, poor continuity, and stability; uneven across time and space. My country's wind energy is strong in the north but weak in the south, strong on the coast but weak inland, strong on plains but weak on mountains, strong in winter and spring but weak in the summer and fall"[11].

Wind at first was an important component of a scientific understanding of climatic resources, which was important for agricultural productivity. With the reform and opening up, new technologies and economic projects were encouraged across the board. Not only did this encourage the invitation of foreign technologies and expertise in emerging wind turbine technologies. With the increasing demand for energy and electrification, the newly created National Energy Administration (NEA) was on a mission to open up all sources of energy possible. Wind (and solar energy) were considered abundant and easily accessible. Subsidies from the central state poured in to help fund and facilitate the rise of these developments. Local governments participated to gain tax revenues and fulfil state mandates and wore the branding of a progressive, state-aligned province.

Meanwhile, the planning it related to how these aspatial statistics and missions were decentralized, fragmented, and disorganized. Nature reserves (NR) were in existence, but not well enforced. The first law for NRs was enacted in 1994, and there was a surge in the establishment of NRs following several severe natural disasters. But by 2007, NRs began to downsize, which usually would be boundary changes sometimes to extract mining and oil resources, indicating relative ambiguity and flexibility in the extent to which such boundaries were enforced[12]. Maine spatial planning was mainly done within the Marine Functional Zoning (MFZ) framework, which was established in 1989, split into four spatial hierarchical levels in 1998, then more clearly defined in 2012[13]. The MFZ was established in 1989 as a reaction to overlapping and disorganized planning, and the proliferation of many offshore development activities[14].
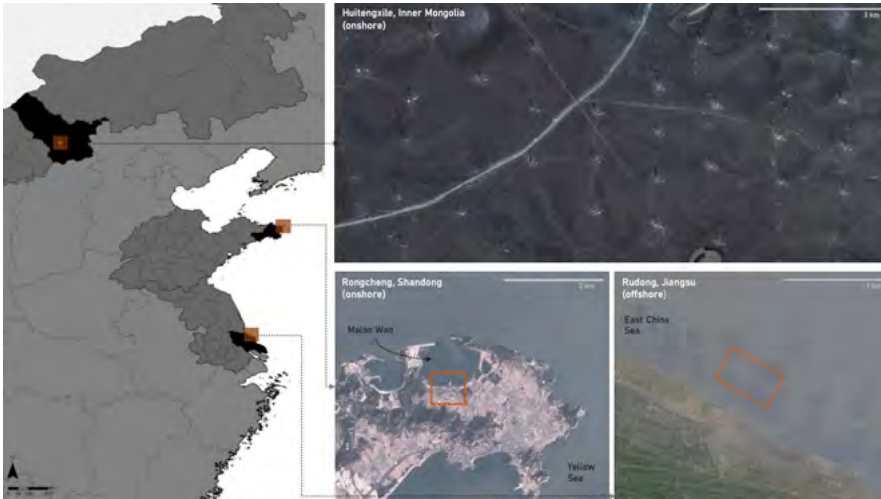
Fig. 2. Case study locations. The map on the left highlights in dark grey the relevant province-level areas; in black the relevant prefecture-level areas. The righthand images are satellite imagery retrieved from Google Earth Pro.

The bureaus that headed all these had conflicting and confusing rules. The regulations on environmental objectives to enforce environmental zones were in place but weakly enforced. At the local level, GDP considerations won out, and the horizontal fragmentation of competing initiatives usually leaned towards economic and development considerations promulgated by the Development and Reform Commission (DRC) aligned groups. Additionally, the cultural meanings laden with wind were used as tools to aestheticize turbines to fit into ecological landscapes. Given these ecological lands were state-owned, with proper state alignment and propaganda the turbines were progressive, green, ecological projects. They projected a sense of harmony with deserts and grasslands and mountains, ecological ideals. Compared to agricultural lands, ecological lands were untouched, had few residents living nearby, and were *de jure* state-owned. Wind turbine installations were thought to generate more productivity from otherwise underutilized territories. Agricultural lands by contrast often were owned by rural collectives and required more involved processes to claim lands.

The abundance of wind energy, and its progressive, ambitious cultural meanings, took advantage of unclear and ambiguous land use functions and rights concerning ecological and nature reserve lands, and projected wind turbines as fitting onto ecological landscapes. This described process, along with strong industrial policy support in terms of state subsidies which make way for profitable business opportunities, green lights from the NDRC, less complaints from civil society on turbines, made way for the staggering and successful rise in Chinese wind turbine installation capacity[15].

Wind turbines in Rongcheng, Shandong.

CASE STUDIES: EARLY WIND FARMS

This paper presents as brief case studies three early wind farm projects that provide granularity in understanding the initial feasibility and site selection processes.

1986 RONGCHENG, SHANDONG: FIRST ONSHORE WIND FARM

These three turbines, totalling 165 kW, in the most eastern part of China reaching into the Yellow Sea, are cited as being the first onshore wind farm in China. It was heralded as the first successful example of "imported technologies, proving commercial feasibility" (*yinjing jizu, shangye shifanxing*), with extensive scientific and construction expertise from Denmark, and technology from Vestas[16].

The initial actors pushing for the development are recorded as being primarily the Shandong Provincial Government and the Ministry of Aviation Industry[17], with discussions beginning as early as 1983. Spearheaded by the Shandong State Planning Commission, the prime aim was to "learn from advanced foreign expertise to fill the gap in the practical production and application of domestic medium-sized wind turbines," and multiple feasibility groups task forces were created by the local bureaus involved in planning, technology, electricity, and energy research. The project welcomed 18 field visit groups, 37 higher education and research institute visits, 30 plus national-level committees, and provincial-level leaders[18]. Aviation industry interest may have been directed towards the turbine technology: The former head of the Rongcheng Electricity Power Bureau recalled thinking if the aviation companies could manufacture aircraft propellers, could they not make wind turbine blades as well[19]?

Fig. 4. Huitengxile wind farm.

Rongcheng, specifically Malan Bay, was selected as a prime location due to it being surrounded on three sides by the sea, with high average wind speeds[20]. Being the most eastern part of China, this tip of Shandong also held propitious fortune historically, known as the "Cape of Good Hope" (*haowang jiao*)[21].

The project received national attention, and land use requirements were minimal. Following the completion of a "Project Suggestion Book", a feasibility study was carried out, the equipment arrived, and by 1986 the turbines were constructed and connected to the grid. In total, the Shandong State Planning Commission and the Ministry of Aviation Industry invested 597,000 RMB. It was decommissioned in 2015 after operating for 29 years[22].

1995 HUITENGXILE, INNER MONGOLIA: UTILITY-SCALE ONSHORE WIND FARM

The Huitengxile wind farm was one of the first utility-scale onshore wind farms in China, received international attention and financing, and is considered a milestone in large-scale wind energy development in China.

As early as 1986, wind energy specialists were conducting feasibility and locating potential sites for wind energy development in Inner Mongolia. In the particular case of the Huitengxile wind farm, a key figure in this development was the engineer Chen Tongmu. At the time, that area was known as Huitengliang (灰腾梁). *Huiteng* was the Han Chinese transliteration of the Mongolian word that meant "cold"; and *liang* was the Han Chinese translation of the Mongolian word "ridge". According to the local people, that was a place where "in the morning a cow might freeze to death, and by noon it will stink," which meant that due to extreme temperature differences between the day and the night the climate was unpredictable and unamenable[23]. After noticing the area on a plane ride, and recalling a previous field visit to the area, Chen brought it up as a potential site for wind energy development at a wind conference

in 1992. By the next day's meeting, one of the conference panel leaders put forth Huitengliang, saying: "Yesterday we went to a new place, the wind is very strong, the terrain is flat, not far from Hohhot… it should be listed as the focus of national development"[24]. Funding for further feasibility and testing was mobilized rapidly soon after. 300,000 RMB was secured from the Inner Mongolia Electricity Administration for a wind measurement device. After one year of data collection, wind speed and wind power density were determined to be viable[25].

Ambitions for the project grew as it received national, and then international attention: a wind energy expert from the China Meteorological Administration shared the plan at a World Meteorological Organization meeting, which included experts from the US, Britain, India, Italy, and Japan, who remarked that "the wind here is even better than the wind in California, US"[26].

As more attention was directed to the area, Chen thought something was not quite matching up – the name of the place. The Han Chinese transliteration of the Mongolian word for "cold" used a character meaning "grey" (灰), which gave a rather desolate impression. Chen decided to replace this was a homophone "brilliance" (辉) which gave a more ambitious feel. He switched back to a Han transliteration of the Mongolia word for "ridge," and the name Huitengxile (辉腾锡勒) was born[27]. In this sense, the potential and the development activities of wind energy fundamentally altered the land and the place on which the turbines were constructed.

By 1994, the financing of the project was finally set, facilitated by the World Bank working with local authorities, including the Inner Mongolia Electricity Company and the China Fulin Wind Energy Company[28]. It included $4 million USD, 40% of which was a grant, and the remaining 60% a commercial loan. The procurement of the nine Danish Micon-600 kW WTGs was installed in 1995, a total of 5.4 MW as a trial operation, and was connected to the grid afterward. These were referred to affectionately as "old 9 units"[29].

The grasslands seemed to be vast landscapes with ambiguous boundaries and overlapping, shared uses. It is difficult to locate maps that indicate where the exact extent of the Huitengxile grasslands. Early developments refer to the grasslands on which the wind farms were constructed as the "Huitengxile stud," a place where horses were bred[30]. The wind farm was to pay a land compensation fee to the stud farm for use of the land; as well as administrative land transfer fees to the Chahar Right Middle Banner[31].

2009 RUDONG, JIANGSU: FIRST OFFSHORE WIND FARM

The Jiangsu intertidal offshore wind farm, along with the Shanghai Donghai offshore wind farm, were considered milestones in grid-connected offshore wind energy in China. The first test offshore wind turbine in China was constructed in the Bohai Sea by the China National Offshore Oil Corporation in 2007[32].

The project development of the Jiangsu intertidal offshore wind farm is described as pushed mainly by an emerging wind energy developer, Longyuan. The account (from the perspec-

tive of Longyuan) describes the neighbouring Donghai offshore wind farm as primarily a branding project by the Shanghai Government to coincide with the World Expo but was not commercially feasible due to high construction costs. Longyuan sought to make more breakthroughs in commercial feasibility, describing the business strategy as being "the first to eat a crab" [33]. As early as 2007, the former CEO of Longyuan was active in meeting with NDRC officials and even took a plane with the former Jiangsu Province Party Secretary to start a discussion on renewable energy. Looking out the plane window, the party secretary is quoted as saying, "Jiangsu should eagerly utilize resources and develop offshore wind energy, offshore wind energy can galvanize also other manufacturing industries."

Fig. 5.   Construction of the Rudong offshore wind farm.

The design, engineering, and construction process was technically intensive and the team experienced many difficulties[34]. In 2009 October, the first 1.5 MW turbines were constructed. In 2010 September, 32 MW was installed[35].

The following table summarizes findings from the three selected wind farms.

	Rongcheng	Huitengxile	Rudong
Type	Onshore	Onshore	Offshore
Location: Province-level; Prefecture-level; County-level	Shandong; Weihai; Rongcheng	Inner Mongolia; Ulanqab; Chahar Right Middle Banner	Jiangsu; Nantong; Rudong
Year; Initial installed capacity	1986; 165 kW	1996; 100 MW	2008; 32 MW
Discovery/Initial mandate (resource)	Shandong Province; Aviation Industry	China Meteorological Administration; Inner Mongolia Electricity Industry	National Development and Reform Commission; Local developers getting involved
Siting consideration (land)	Not discussed, likely unused land; land use was minimal as the project was small	Technically considered a stud farm, state-owned, and followed procedures for land use right transfer	Intertidal region off the coast of Jiangsu shoreline, likely available marine area with no other fishing or oil activities

Table 1.   Initial siting and project development processes of early wind farms.

CONCLUSION

The three case studies of early wind farms indicate that the lands on which turbines were sited were either unclearly defined or simply considered underutilized land that could be put to productive use. The information available appears to indicate that the alignment of national or provincial interests, especially from the DRC, facilitated ease of land use. In the case of Huitengxile, the arrival of wind energy interest even prompted significant reworking of the grasslands. Turbines complemented these changes and were branded as fitting onto these landscapes, as progressive and clean projects that were harmonious with nature and the sky. The case studies also show that meeting a threshold of certainty on wind resources is relatively easily met to facilitate rapid feasibility studies and the start of construction. A curious thread that emerges is how aviation is part of the story: In Shandong, the aviation industry may have promoted the project because there were similarities in engineering technologies with wind turbines to facilitate learning; and in Inner Mongolia and Jiangsu, both sites were "discovered" aboard a plane.

The conclusion looks towards recent shifts that are changing the parameters for wind energy development in China. Most significant is the emergence of ecological civilization, which is clearly prohibiting turbine installations on nature reserves, leading to the formally mandated decommissioning of turbines[36]. Even though the state narrative on ecological civilization is pushing forward a view of wind turbines as no longer fitting in these landscapes, how substan-

tive these results are yet to be determined. All onshore wind turbines in Changdao, Shandong were dismantled rapidly and dramatically through a civil lawsuit in 2017[37]. The wind turbines on the Huitengxile grasslands are mandated to be decommissioned, and while dismantling of a few turbines started in 2020, progress has been slow[38].

Additionally, narratives and meanings associated with wind are continually recycled to promote and fit turbines back into the picture to rationalize wind energy development. For example, the title of the 2019 memoir by the former CEO of the lead wind energy developer Longyuan is "A Strong Wind is Blowing," which invokes directly the first verse of the "Song of the Great Wind" by Liu Bang, the first emperor of the Han Dynasty. The original song was a reflection on war efforts and securing empire borders after defeating a rebellion; this serves to cast an ambitious and grandiose vision of wind energy development. A 2023 promotional overview of wind energy published by the China Energy Engineering Group (CEEC) still sees wind turbines as fitting within ecological landscapes. Starting with lines from a poem by Li Bai on a bird rising with the wind, giving an ambitious tone, the text pushes a positive narrative of the combination of wind, turbines, and ecological lands: "People constantly refresh their imagination of wind on mountain tops, in the clouds, in deserts, and in the sea. Wind power generation is a perfect masterpiece of the combination of man and nature"[39].

The impetus to utilize what is a vast, abundant energy resource is the main rationale for continued wind energy development. The Three Gorges Dam, the largest power station in the world, is continually upheld as a standard for energy developers vying to achieve something on a similar scale. The CEEC promotional material compares total exploitable wind energy in China equivalent to 45 Three Gorges Dams[40]. Inner Mongolia brands itself as the "Wind Power Three Gorges,"[41] and Jiangsu also envisioned a similar vision for its offshore development plans[42]. Wind is atmospheric and aterritorial, but the technology that facilitates conversion into electricity is rooted in the ground, and this is where these complexities and ambiguities play out.

The paper aims to contribute to an understanding of wind energy development as not singularly only about technology, but about the combination of the resource and land as well, and how they are configured. The wind's specific qualities allow for the aestheticization of turbines as fitting into various "ideal landscapes" to change. Wind energy development got off the ground in China not only because of strong state support, but also because ecological preservation rules were not yet strictly enforced, and thus wind turbines became part of ecological landscapes, and the intensive habitat fragmentation effects of the technologies were brushed aside. The extent to which the state is restructuring and more strictly enforcing nature reserves under ecological civilization, and how the cultural meaning of wind and prior questions on rights to climatic resources figure into rationalization of wind energy development in China, present productive pathways to explore and keep abreast of.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author.

NOTES ON CONTRIBUTOR(S)

Yuan (Yvonne) He holds a BA in Economics from Columbia University and a Master in Urban Planning (MUP) degree with a concentration in International and Comparative Planning from the Harvard GSD. She is an incoming Geography PhD student at the National University Singapore.

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8. China Natural Resources Series Compilation Committee, 中国自然资源丛书 [*China Natural Resources Series*], 1:iii.
9. Song Ping was a former member of the Politburo Standing Committee of the CCP and is considered to be part of the "Second Generation" of Chinese leadership.
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11. China Natural Resources Series Compilation Committee, 1:294.
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13. Lu et al., "A Comparison of Marine Spatial Planning Approaches in China," 95.
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29. Xie, 35.
30. While I could not find original documentation supplanting this designation, an article on the *Soviet Changhuan Horse* breed indicated it originated from the Soviet Union and was brought into Heilongjiang in China in 1952. Some of these were then bred in the "Huitengliang stud farm" China Horse Racing Network, "苏维埃重挽马 [Soviet Chonghuan Horse]-大陆赛马网."
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IMAGE SOURCES

Figure 1 Shanghai Normal University. *Concise Geography of China*. 1st ed. People's Publishing House, 1974, 121.

Figure 2 Polygons used in the map are from GADM. The satellite imagery is from Copernicus Landsat retrieved via Google Earth Pro. Further details are presented in brackets: [Windfarm: satellite image date; the source of the geocoordinates] [Huitengxile: 2011 Sep; from a CDM document] "Inner Mongolia North Longyuan Huitengxile Wind Farm Project Design Document Form (Version 11.0) - CDM," 2019. https://cdm.unfccc.int/UserManagement/FileStorage/K3OIR2DGC7VABT8SWUYLE0FH1Z6NMJ. [Rongcheng: 2012 Nov; best guess of location based on satellite imagery in Malan Wan] [Rudong: 2011 Dec; from Global Energy Monitor]

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Figure 4 Yu, Guiyong. "China Wind Energy Landmark: Huitengxile." *Wind Energy* 08 (2010), 32.

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Water as the United Front
Hydrological Power and the Planned Remaking of the Guangdong-Hong Kong-Macau Greater Bay Area

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Abstract

In the Greater Bay Area (GBA), or in another term, the Pearl River Delta region, the territoriality of water is constantly being redefined through the changing economy, politics, engineering technology, and society. The rise of two super megacities, Hong Kong and Shenzhen, on coastal land with wonderful seaport conditions while a limited supply of fresh water is one of the most spectacular cases in the latter half of the twentieth century and the 21st century. The research will examine the relationship between water resources redistribution and urbanization strategies in the GBA over the past six decades, to reveal how different actors from global, national, regional, and local levels changed their visions and dialogues in the process. It will be based on the examination of different versions of regional plans, water engineering schemes, and media reports. Mapping will be applied to depict the changing spatial dynamics based on historical maps, satellite images, and statistical data. Local impacts and responses will be analyzed through interviews and archival research. The inquiry on the regional rescaling started from the state intervention in the 1960s: to unite Hong Kong, a British colony at the time, through fresh water supply from the hinterland, a decision both economic and political. It had served as important state revenues (for selling clean water to HK in foreign currency) and a symbolic gesture to increase a sense of attachment between the "motherland" and a lost territory controlled by a foreign power. The mass construction of reservoirs and canals and the state-controlled redistribution of freshwater resources in the region not only changed its urbanization patterns but also had significant impacts on rescaling the power dynamic. Intense bargaining existed among state, provincial, and local governments and between locals in terms of water re-distribution.

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Oil, Settlements, and Landforms

A Study of Historic Landscape Character in the Gobi Desert and Yellow River Estuary, 1966–2020

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Abstract

Exploiting oil resources has often led to the formation of oil towns and settlements in formerly uninhabited wilderness, such as desert or flood plains. Oil workers gathered and settled down in the oil-rich regions quickly. Their production and livelihoods have distinctively transformed the regional landscape. The characteristics of the industrial landscape are not only reflected in the industrial buildings and structures but also infrastructure or natural elements due to the close relationship between oil reservoirs and landforms. Indeed, under the influence of oil extraction, the most perceivable change is the landform and environment of the region. Applying the method of Historic Landscape Characterisation (HLC), the study maps and analyzes the evolving landscape character types of two oilfields: Yumen( ) at the northern foot of the Qilian Mountain and Shengli( ) at the Yellow River estuary area. This study combines fieldwork, oral history, and GIS historical maps/satellite images to map the historic landscape characters, with five representative historic baselines: 1966, 1972, 1989, 2004, and 2020. The research argues that the landscape characters contain rich historical information. The character type of oil landscape includes not only mining areas where extensive facilities for drilling and extracting oil dominate, but also worker settlements, and infrastructure built to combat natural disasters, such as dykes and irrigation canals. By analyzing the map of the characteristic types of Xianhe Town in the Yellow River Estuary area, it can be found that from the 1960s to the present, the diversion of the Yellow River, oil development, and worker settlement planning are the three main drivers of regional changes.

How to cite

The Water Engineering and the Formation of the Historical Cultural Landscape of Hangzhou City

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Abstract

Hangzhou is a city that embodies ancient Chinese water management wisdom. The seawall was created for flood control; the West Lake (tube well) provided a fresh water supply for the city, and the rivers and canals served as both regional and internal transportation corridors. The natural flow of water systems has been tamed and integrated into urban development through the construction of dams, sluices, and ditches to regulate water levels or organize the flow of water, which have undergone comprehensive changes in modern times. With the replacement of new freshwater sources, the modern municipal water supply system was established. The West Lake gradually became a mere landscape entity. Filling rivers to build roads and constructing underground pipes have changed the original method of relying on open ditches and external channels to solve waterlogging. Electricity-powered pump stations fundamentally changed the way that water needs to flow by natural gravity. These changes brought about by the introduction of modern urban planning and municipal technology have provided more diverse solutions for urban water environment management, but they have also gradually shown the negative side of overreliance on artificial facilities during development. Once the amount of water exceeds the designed facility capacity, the city will be flooded. This article aims to further clarify the main content and methods of the ancient urban water environment management system by sorting out the history of changes in water environment planning and governance in Hangzhou. At the same time, by comparing the contemporary "sponge city" construction orientation that focuses on improving groundwater seepage capacity to improve urban waterlogging prevention, I would further examine the possibility of using traditional water management methods to cope with extreme climate change in contemporary urban construction.

Urban Morphological Studies of East-Asian Cities

Chair: Takaaki Nakagawa

Japanese Architect Yoshikazu Uchida's Planning Techniques for Blocks and Plots
His research on domestic and overseas cases during the pre-World War II period

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Abstract

Japanese architect Yoshikazu Uchida (1885–1972) is known for his creation of large-scale urban plans for suburban residential areas in Japan and overseas colonial settlements. This study aimed to better understand Uchida's planning techniques for blocks and plots, and sought to clarify the formation of these techniques based on domestic and international case studies during the pre-WWII period. Using a literature survey research method, this study analysed "block and plot" materials preserved in Uchida's collections, including a notebook in which he hand-copied from Japanese and foreign literature. Firstly, the author mainly utilized the Garden City plan (1919–1922) and a residential area plan (1933) for agricultural migrants to Manchuria to gain a better understanding of the characteristics of the blocks and plots planned by Uchida. Next, the author identified the original of his handwritten notes to show that Uchida collected examples from Japan and abroad in the pre-WWII period and compared the size and layout of blocks and plots. This study reveals that Uchida was open to overseas influences and that he developed his own planning techniques. The findings hold significance regarding the establishment of the neighbourhood unit and land readjustment in Japan.

INTRODUCTION

In Japan, modern urban planning was established in 1919 by academics and bureaucrats specaializing in civil engineering, architecture, and landscaping. At this time, Yoshikazu Uchida (1885–1972) was involved in drafting the bill as an architect. Yoshikazu Uchida is known for creating large-scale urban planning plans, including domestic suburban residential areas and overseas colonial plans. Representative plans include the Garden City Plan (1919–1922) on the outskirts of Tokyo, the Company Estate Plan (1920–1922) of Osaka Hokko Co. Ltd., the residential area plan (1933) for agricultural immigrants to Manchuria, and the Datong City Plan (1938) in China. How did Yoshikazu Uchida decide on the size and placement of blocks and plots[1] when creating urban planning plans? To answer this question, the purpose of this study was to understand the characteristics of Yoshikazu Uchida's planning techniques related to blocks and plots and to clarify that these techniques were formed based on Yoshikazu Uchida's prewar domestic and international case studies.

Previous research on planning by Yoshikazu Uchida includes a study by Naoto Nakajima[2] of the Datong City Plan (1938) in China, which is famous for its use of neighbourhood units. Naoto Nakajima indicated that, prior to the Datong Plan, Yoshikazu Uchida and co-designer Eika Takayama had collected foreign illustrations regarding neighbourhood units in their Dojun-kai[3] research of the *'Continuing Collection of Housing Site Allocation Cases in Foreign Countries'* (1938)[4]. Shigeo Nakano et al. clarified that Yoshikazu Uchida's Hitachi, Ltd. Company Housing District (1935–1939) also incorporated the neighbourhood unit[5] and that neighbourhood units were considered by the Architectural Institute of Japan Housing Issues Committee and the Japan Life Science Institute Architectural Subcommittee during World War II[6]. In contrast to these examples, the present study is unique in that it elucidates part of the process by which a planning technique was formed through analysing surveys by Yoshikazu Uchida from an earlier era. Regarding the neighbourhood unit, research by Donald Leslie Johnson[7] reveals that it was popularized by William E. Drummond from 1913 to 1922, prior to Clarence A. Perry's proposal in 1929. Mervyn Miller[8], who studies Raymond Unwin, notes that Pixmore (1907–1909) at Letchworth achieved 'the scale of a self-contained neighbourhood'. Carola Hein[9] traces the origins and evolution of *machi*, the Japanese term for both neighbourhood and small town. The present study is significant in that it clarifies the points of contact with overseas countries in the early days when neighbourhood units were established in Japan. Regarding land readjustment, Japan is known to have followed Germany's model[10]. In particular, Tsuruta and Sato[11] clarify in detail the evolution of land readjustment design standards in Japan. The present study also has significance in relation to the establishment of land readjustment in Japan. While researching the Garden City Plan (1919–1922)[12] and the Company Estate Plan (1920–1922)[13] of Osaka Hokko Co. Ltd., the author of the present paper and Junko Sanada revealed that Yoshikazu Uchida used overseas planning techniques such as cul-de-sacs and houses surrounding open spaces throughout. The analysis in the present study also includes the 1910s and 1920s, and the findings indicate that Yoshikazu Uchida played a role in introducing overseas planning techniques in Japan during this early period.

The research method is a literature survey, and the analysis uses the *'Kukaku/Shikichi* [Block/Plot]'[14] materials stored in the Yoshikazu Uchida collections[15] of the Tokyo Metropolitan Ar-

chives. This file was compiled by Yoshikazu Uchida himself and mainly consists of some printed matter, notes handwritten by Yoshikazu Uchida, and numerous domestic and international illustrations. First, by analysing the printed materials on the Garden City Plan (1919–1922) and the rural plan (1933) for Manchuria, the characteristics of the blocks and plots planned by Yoshikazu Uchida are determined. Next, by identifying and tracing the original publications of his handwritten notes, the fact that Yoshikazu Uchida collected domestic and international cases during the pre-war period and compared the size and numerical standards of blocks and plots is clarified. Thus, the aspects of Yoshikazu Uchida's influences from overseas as well as those of his unique planning techniques are elucidated.

CHARACTERISTICS OF BLOCKS AND PLOTS PLANNED BY YOSHIKAZU UCHIDA

Included in the material 'Kukaku/Shikichi [Block/Plot]'[16] are bound copies of articles from *the Journal of Architecture and Building Science* on the Garden City Plan (1919–1922)[17] and the residential area plan (1933)[18] for agricultural immigrants to Manchuria. Below, the author uses these articles by Yoshikazu Uchida to compare and examine block and plot characteristics.

The Garden City Plan is a plan that Toshi Kenkyu-kai[19] commissioned Yoshikazu Uchida to create in September 1919 to consider the Housing Company Bill. After Yoshikazu Uchida presented his drawings to a committee of Toshi Kenkyu-kai in October of the same year, he continued to work on the plan on his own and announced it at a special conference of the Architectural Institute of Japan in April 1922[20]. Although this was a plan that would not, in reality, be constructed, it targeted an actual location in the western suburbs of Tokyo and took into consideration surrounding conditions such as topography and traffic[21]. The residential area plan for agricultural immigrants to Manchuria was a rural plan published as a draft plan in 1933. This is a standard model that is not intended for real locations. Toshiro Kasahara, Tetsuya Kato, Hideto Kishida, and Kosuke Hishida helped Yoshikazu Uchida to create this plan[22]. Because the two plans are both model proposals, it is thought that Yoshikazu Uchida's ideal block/plot can be clearly understood through their analysis.

First, the overall structure of the two plans is determined (Table 1). The Garden City Plan, which aims to alleviate the housing shortage, includes 106.86 ha of residential land and 19.72 ha of agricultural land within the planned area of 176.06 ha. In the rural plan for Manchuria, one village is made up of three regular hexagonal settlements. At the centre of each settlement is a residential superblock, which is surrounded by restricted land, farmland, plantations, and open space (Figure 2). Of the village's 6,750 ha, 84 ha account for residential land, and 4,680 ha constitute agricultural land. As the main objectives of the two plans diverge, the ratio of residential land to agricultural land is completely different. The Garden City Plan includes 110 large houses, 1,933 medium-sized houses, 636 small houses, and 359 shops, for a total of 3,038 houses, and the estimated population is 15,000. In other words, the ratio is approximately five people living in one house. The rural plan for Manchuria calls for 450 houses per village (three settlements), with an average population of 2,250 people, also based on a ratio of five people per housing unit.

Garden City Plan (1919–1922)		Rural plan for Manchuria (1933)		
			One settlement	One village
Residential area	106.86 ha (323,262 *tsubo*)	Residential area	28 ha	84 *ha*
Farmland	19.72 ha (59,664 *tsubo*)	Farmland	1,560 ha	4,680 *ha*
Roads and plazas	30.76 ha (93,043 *tsubo*)	Plantations and open space	580 ha	1,740 *ha*
Parks	9.73 ha (29,424 *tsubo*)	Restricted land	82 ha	246 *ha*
Public facilities	8.99 ha (27,185 *tsubo*)			
Total	**176.06 ha (532,578 tsubo)**	**Total**	**2,250 ha**	**6,750 ha**

Table 1. Overall structure of the two plans

Next, the author clarifies the characteristics of the neighbourhood units in the two plans. In the Garden City Plan (Figure 1), an approximately 5-ha (15,000 *tsubo*) park and an elementary school are observed in two locations, one in the east and one in the west. At the centre of the planned site is a civic centre with public facilities such as a public hall, police station, fire station, and post office surrounding a large plaza. In this way, Yoshikazu Uchida intended to unite the east and west of the planned area respectively, as well as to unite the entire planned area. He also planned shops on both sides of the main road and around the intersecting plaza (Figure 3), a department store in the civic centre, and public markets in three other locations to make everyday shopping more convenient. In the rural plan for Manchuria, a shrine, sports field, airfield, cemetery, and crematorium were planned for the central ward located at the centre of one village (three settlements). Separately, a central plaza and central building[23] were placed in the centre of each settlement's residential area (Figure 2). The central building includes an assembly room, elementary school[24], medical office, public bath, union office, and communal warehouse. The distance to the central building from the farthest point in the residential area is only 400 meters, and it was considered that it could be reached in about 5 minutes on foot. Thus, the rural plan for Manchuria similarly aimed at consolidation on a gradual scale, and compared to the Garden City Plan, the size of the community centred around a single elementary school was smaller.

Analysing the detailed characteristics of blocks and plots, in the Garden City Plan, each plot area is 9.59 a (290 *tsubo*) for large houses, 4.13 a (125 *tsubo*) for medium houses, 1.98 a (60 *tsubo*) for small houses, and 0.99 a (30 *tsubo*) for shops. Looking at the shops lined up on both sides of the main road shows that the plot area of each one is smaller compared to those for the houses (Figure 3). In addition, residential clusters were formed in a scattered manner surrounding a small square (Figure 3), and it was assumed that nearby children would play in this small square. In contrast, in the rural plan for Manchuria, the drawings show that houses are regularly built in straight lines. Although the layout of blocks and plots varies depending on the topography, existing roads, river conditions, etc. The standard for a residential plot is a rectangle with a frontage of 65.62 ft. (20 m) and a depth of 164.04 ft. (50 m), and the area is 10 a (302.5 *tsubo*). Each plot area is larger than in the Garden City Plan because it includes a private fruit and vegetable garden and a front/rear garden for raising livestock (Figure 4).

Fig. 1.　　Garden City Plan (1919–1922)

Fig. 2.　　A settlement (on the left) and a residential area (on the right) of the rural plan (1933) for Manchuria

	Title	Content	Original work	Microfilm frames
1	*Shikichi to kukaku* [Plot and block]	How to think about block size	Unknown	286
2	Block	Examples of block sizes in Japan	Ishihara, Kenji. *Gendai toshi no keikaku* [Modern City Planning] (Tokyo: Koyo-sha, 1924), 189-211. and others.	287
3	*Shikichi no okuyuki* [Depth of plot]	Examples of plot sizes in American cities	Nolen, John. *City Planning: A Series of Papers Presenting the Essential Elements of a City Plan* (New York: D. Appleton and Company, 1922), 19-47	288
4	[Depth of plot (continued)]	Trends in plot depth in America and suggestions for block depth	Folwell, A. Prescott. *Municipal Engineering Practice* (New York: John Wiley & Sons, Inc., 1916), 57-59.	289
5	[Depth of plot (continued)]	Building depth and block depth	Hoepfner, Karl A. *Grundbegriffe des Städtebaues* (Berlin: Julius Springer, 1921), 44-59.	289-290
6	[Depth of plot (continued)]	Table of plot depth by building type	Gürschner, Robert, and Max Benzel. *Der städtische Tiefbau* (Leipzig: B. G. Teubner, 1915), 17.	291
7	Block, Lot	Trends in blocks and plots in America and suggestions for block depth	Folwell, A. Prescott. *Municipal Engineering Practice.* (New York: John Wiley & Sons, Inc., 1916), 57-59.	292
8	The Business and Commercial Zones, Block	Convenient plot size	Holliday, A. C. "Restrictirning city development." *Town Planning Review* 9, no.4 (1922): 217-238.	294
9	*Nihon ni okeru jōtai wa kiwamete fukisoku* [The situation in Japan is extremely irregular]	Example of plot size in each Japanese city	Ishihara, Kenji. *Gendai toshi no keikaku* [Modern City Planning] (Tokyo: Koyo-sha, 1924), 189-211. Ibe, Sadakichi. "Waseda Shinjuku Asakusa Taika-ato tochi kukaku seiri ni tsuite [About Waseda Shinjuku Asakusa Great Fire Site land readjustment]." *Journal of Architecture and Building Science* 35, no.422 (1921): 7-16. and others.	296-298
10	*Tochi kukaku seiri sekkei hōshin* [Land readjustment design policy]	Table of plot depth standard and minimum road width for each use zone	Ota, Enzo. Teito fukkō jigyō ni tsuite [About the Imperial Capital Reconstruction Project] (Tokyo: Reconstruction Bureau Civil Engineering Department, 1924), 178-185.	299
11	*Kaigai jijō* [Over Sea Articles]	Germany's population density	Tokyo Institute for Municipal Research. "Over sea articles." *Municipal Problems* 30, no.3 (1940): 97-103.	300
12	*Kaoku ni kansuru chōsho* [Records related to houses]	Records related to houses facing the main street from Shinbashi to Suda Town	Unknown. There is an entry that says 'March 31, 1922, from Kan Nakamura'.	301
13	*Fuk kō-kyoku kijun* [Reconstruction 13 Bureau Standards]	Land readjustment design policy and block layout in commercial areas	Ota, Enzo. *Teito fukkō jigyō ni tsuite* [About the Imperial Capital Reconstruction Project] (Tokyo: Reconstruction Bureau Civil Engineering Department, 1924), 178-185.	302
14	*Shikichi no wariawase-kata* [How to combine plots]	Examples of how to combine plots	Eicken, Hermann. "Beitrag zum Kleinhausbau." *Der Städtebau* 15, no.11/12 (1918): 115-120. and others.	308

15	Neighbourhood Unit	Estimated population and area	Unknown	330
16	Idea Proposed for Detroit Suburb	Idea Proposed for Detroit Suburb	Augur, Tracy B. "Adaptation of Radburn, N. J., Idea Proposed for Detroit Suburb." *American City* 45, Nov. (1931): 83.	332-333
17	A Substitute for the Gridiron Street System	A Substitute for the Gridiron Street System	Wright, Henry. "Wanted: A Substitute for the Gridiron Street System." *American City* 42, Mar. (1930): 87-89.	337-341
18	The Proposed Model Town Near the Hoover Dam	The Proposed Model Town Near the Hoover Dam	De Boer, Saco Rienk. "Boulder City—the Proposed Model Town Near the Hoover Dam." *American City* 44, Feb. (1931): 146-149.	345-346
19	*Kenchiku shikichi no ōkisa to katachi ni tsuite* [About the size and shape of architectural plots]	Manuscript for the lecture meeting of the Faculty of Engineering at the Tokyo Imperial University	Not applicable	352-355
20	*Kukaku* [Block]	How to think about block size, examples of block sizes in Japan and abroad	Ishihara, Kenji. *Gendai toshi no keikaku* [Modern City Planning] (Tokyo: Koyo-sha, 1924), 189-211.	356-357
21	*Shikichi wari* [Plot distribution]	Examples and concepts of plot sizes in America	Ibid.	358-363
22	*Shōten no okuyuki to maguchi* [Depth and width of a store]	Examples of store plot sizes in Japan	Ibid.	364
23	Pessac housing complex	Description of the Pessac housing complex in Bordeaux by Le Corbusier	Unknown	406-408

Table 2. List of Yoshikazu Uchida's handwritten notes

YOSHIKAZU UCHIDA'S RESEARCH ON DOMESTIC AND OVERSEAS CASES

In this section, the author analyses Yoshikazu Uchida's handwritten notes in *'Kukaku/Shikichi* [Block/Plot]'. The handwritten notes included transcriptions of domestic and foreign documents, and the original publications were identified to the extent possible. Table 2 summarizes the contents and original writings of Yoshikazu Uchida's handwritten notes and shows that he collected domestic and international cases during the prewar period.

First, regarding the sizes of blocks and plots, many American and German documents are referenced. Handwritten note No. 3 (Figure 5) summarizes examples of plot sizes in American cities based on John Nolen's book[25]. The standard dimensions for plot were '100 ft. depth used in ideal rearrangement' in Berkeley, '125 ft. depth except in poorer residential sections' in Chicago, and '100 ft. best for convertibility' in New York. In the same book, Lawrence Veiller argues that the problem of housing arises from deep lots and thus makes them as shallow as possible: 125 ft. for high-class residences, 50 ft. for middle-class residences, and

25 ft. for lower-class residences. Handwritten notes Nos. 4 and 7 (Figure 5) summarize A. Prescott Folwell's books[26]. Based on opinions on plot depth by American city engineers or other officials, Folwell's proposal suggests that the block depth (half of which is the plot depth) should be 250 to 300 ft. for high-class residences, 175 to 250 ft. for labourers' residences and cottages, 150 to 200 ft. for businesses, and 200 to 350 ft. for manufacturing locations. Handwritten note No. 6 is a table of plot depths by building type published in a German book[27] by Robert Gürschner and Max Benzel. Furthermore, Karl A. Hoepfner's book[28], handwritten note No. 5, is unique in that the depth of blocks is considered separately for houses of one to four stories. Moreover, in handwritten note No. 8, based on A. C. Holliday's article[29], a plot of 100 ft. deep and 400 ft. wide is considered useful in business and commercial zones. In handwritten notes Nos. 3–8 above, Yoshikazu Uchida mainly researches examples and numerical standards for block/plot sizes in the United States and Germany, using foreign literature from the 1910s to the early 1920s.

Fig. 3.   Shops along the main road and around the intersecting plaza (on the left), residential clusters surrounding a small plaza (on the right) in the Garden City Plan
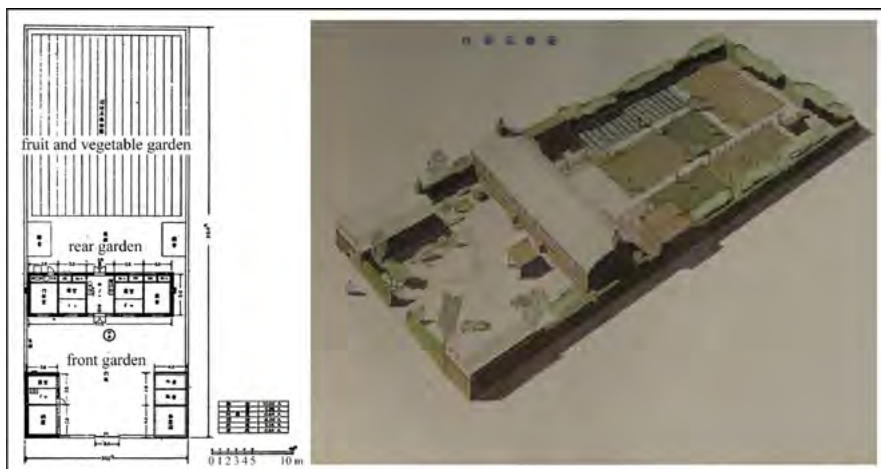

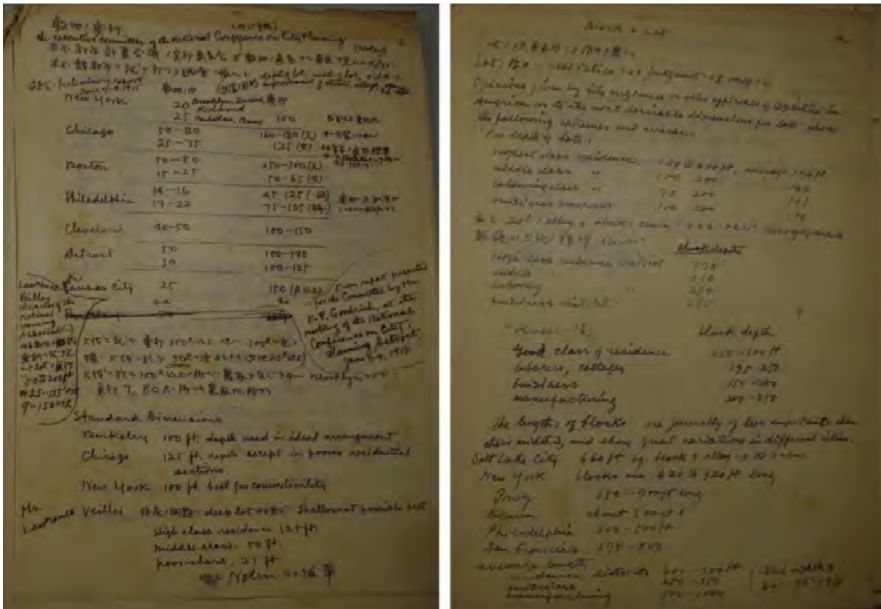Fig. 4.   Housing in the rural plan for Manchuria

Fig. 5.   Yoshikazu Uchida's handwritten notes (No. 3 on the left, No. 7 on the right)

On the other hand, regarding Japan, handwritten note No. 9 summarizes many examples of plot sizes in different cities and is titled '*Nihon ni okeru jōtai wa kiwamete fukisoku* [The situation in Japan is extremely irregular]'. In handwritten notes Nos. 20–22, the third part of Kenji Ishihara's book[30] is transcribed over nine pages. This section lists many examples of block/plot sizes in Japan and overseas and summarizes the following three principles to consider when deciding block width: 1. as the block width increases, unused and low-priced land is created in the centre, resulting in unsanitary and poor housing; 2. as the width of the block becomes narrower, the interior of the block will be used more effectively, and land prices will rise; however, the ratio of street area to block area will increase, resulting in an increase in street construction costs; and 3. sufficient open space is required for hygiene, lighting, and ventilation purposes. The first part of the book is a Japanese translation of Robert Gürschner and Max Benzel's *Der städtische Tiefbau*[31] and is an important document that spread foreign knowledge at the time to Japan. Handwritten notes Nos. 10 and 13 introduce the earthquake disaster reconstruction land readjustment design policy[32] around 1924, showing that the length of the long side of one block should be twice or four times the length of the short side and the standard plot depth for each grade in each area of use. At the Chief Urban Planning Bureau meeting held 15–19 April 1924, the Urban Planning Bureau, Home Ministry of Japan, presented research materials on plot sizes in American cities called '*Rotto no ōkisa ni kansuru shinrai subeki kiso* [A Reliable Basis for Lot Sizes]'[33] and a personal proposal for land readjustment[34]. From this private proposal to the earthquake reconstruction policy, the basic concept of design was carried over, but the numerical standards were slightly smaller[35].

Based on the above research, Yoshikazu Uchida gave a lecture titled *'Kenchiku shikichi no ōkisa to katachi ni tsuite* [About the size and shape of architectural plots]' at the 32nd lecture meeting of the Faculty of Engineering at the Tokyo Imperial University on 17 April 1924[36], the manuscript from which is handwritten notebook No. 19. The manuscript begins by mentioning that land readjustment was actively discussed in the reconstruction plan for the Great Kanto Earthquake of 1923 and that land readjustment methods were also discussed at a meeting of chief city planners in the same month. The problem is that when the distance between roads is wide and the blocks become large, back houses and alleys are developed, which become unsanitary and dangerous and cause land prices not to rise and become uneconomical. Therefore, major streets, which are classified as arterial roads, were determined based on traffic conditions and relationships with distribution centres, while plans for roads of second- class or lower grades were decided based on the appropriate depth of the architectural plot. Thus, Yoshikazu Uchida was able to balance and integrate the planning of arterial roads over a wide area and the planning of general roads based on the size of each architectural plot. Specifically, after summarizing examples of plot sizes in Japan and overseas, he indicated that the appropriate area of one plot in Japan is 4.96 a (150 *tsubo*) as a unit in the case of residential land in the suburbs or in the upper-middle class of the city and 2.48 a (75 *tsubo*) as a unit in the case of lower-middle class in the city. For commercial areas near main streets and middle-class residential buildings, the standard width is 32.81 ft. (10 m), depth is 98.43 ft. (30 m), and area is 3 a (90.75 *tsubo*).

Next, neighbourhood units are summarized in handwritten notes Nos. 15–18. Although the original author of handwritten note No. 15 is unknown, it states that the area is 82.64 ha (250,000 *tsubo*) and has a population of 5,000 people, and approximately 600 people (1/8) among that population are elementary school children in 12 classes. Handwritten note No. 16 is 'Idea Proposed for Detroit Suburb'[37] by Tracy B. Augur, and past research has noted that this was the basis for the neighbourhood unit in the Datong City Plan[38]. Tracy B. Augur planned 1,077 single dwellings, five apartments, two churches, and three neighbourhood shopping centres on an 80.94-ha (200 acre) superblock centred on a school and playground, with 1,000 to 1,200 households expected (Figure 6). In handwritten note No. 17, Henry Wright[39] argues that the gridiron street system is undesirable, presents an alternative plan of combining four 16.19-ha (40 acre) square units, and compares the costs. Handwritten note No. 18 is 'The Proposed Model Town Near the Hoover Dam'[40] by S. R. De Boer. This was a town for workers engaged in dam construction and, later, permanent employees, with the following three categories for the principles of design: A. Street Plan; B. Zoning; and C. Parks, Playgrounds, Schools, and Public Buildings. The above foreign articles related to neighbourhood units are concentrated in the early 1930s and indicate that Yoshikazu Uchida's interest in neighbourhood units was increasing during this period.

CONCLUSIONS AND DISCUSSION

In this study, the author compared and examined the characteristics of blocks and plots in Yoshikazu Uchida's Garden City Plan (1919–1922) and residential area plan (1933) for agricultural immigration to Manchuria. Although it is difficult to make a simple comparison because the former is a domestic suburban residential area and the latter is an overseas colonial project,

compared to a 4.13-a (125 *tsubo*) plot for medium housing, which is the most common in the Garden City Plan, the housing plot in the rural plan for Manchuria has become wider at 10 a (302.5 *tsubo*). This is because, as it was a rural plan, each house had its own fruit and vegetable garden and a front/rear garden for raising livestock. In the rural plan for Manchuria, each housing plot had plenty of open space, so it seems that the houses were arranged in regular straight lines rather than surrounding vacant lots like the Garden City Plan.

Yoshikazu Uchida recognized that the problem was that as blocks became larger, back houses and alleys appeared, which became unsanitary and dangerous and caused land prices not to rise and become uneconomical. In creating the Garden City Plan, he used foreign literature from the 1910s to the early 1920s to research examples and numerical standards for block/plot sizes, mainly in the United States and Germany. Regarding Japan, he referred to Kenji Ishihara's book and the land readjustment proposal by the Urban Planning Bureau, Home Ministry of Japan. Referring to these domestic and international figures, in his lecture 'Kenchiku shiki-chi no ōkisa to katachi ni tsuite [About the size and shape of architectural plots]' on 17 April 1924, Yoshikazu Uchida indicated that one unit of residential land in the suburbs should be 4.96 a (150 *tsubo*) in area. This is close to the plot area of 4.13 a (125 *tsubo*) for a medium-sized house in the Garden City Plan. While middle-class housing and commercial areas near main streets are set to the same standard in this lecture, the shops in the Garden City Plan are unique in that they are small, with an area of 0.99 a (30 *tsubo*). This is thought to be because stores were envisioned as being built in wooden row houses, which were common in Japan, rather than brick, steel frame, or reinforced concrete buildings, which were gradually increasing in number at the time[41]. Furthermore, the size of a block is closely related to road planning. Yoshikazu Uchida determined the size of the block based on the size of each architectural plot, and it was compatible with and integrated not only general road planning but also arterial road planning in a wide area. This technique of planning is unique to Yoshikazu Uchida. In fact, the Garden City Plan intended to connect existing roads and existing railway stations with main roads[42].

Regarding neighbourhood units, the Garden City Plan intended for the unity of the east and west respectively centred on parks and elementary schools and unity in the entire planned area centred on the civic centre. Therefore, elements of a neighbourhood unit were already identified at the time of the Garden City Plan. Later, in the rural plan for Manchuria, a super-block of the residential area centred on a central building containing elementary schools was clearly formed. The scale of the community centred on one elementary school was smaller than in the Garden City Plan, and it was taken into consideration that the central building could be reached in about 5 minutes on foot from the farthest point in the residential area. Thus, the influence of neighbourhood units strengthened from the Garden City Plan to the rural plan for Manchuria. This is thought to be because Yoshikazu Uchida intensively researched overseas articles related to neighbourhood units in the early 1930s, and interest in neighbourhood units increased during this period.
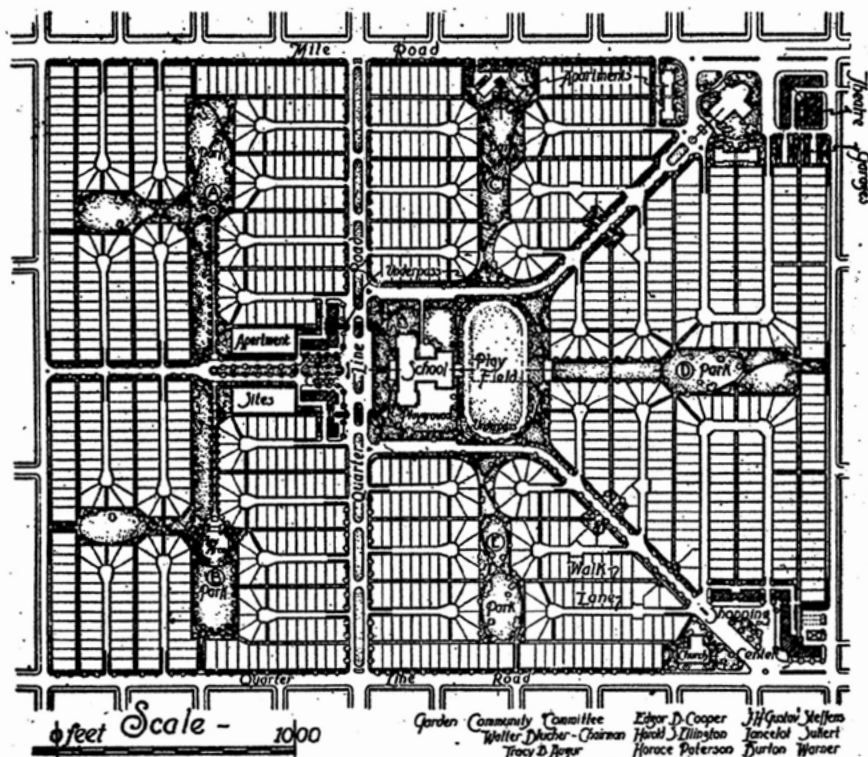
Fig. 6.   Idea Proposed for Detroit Suburb

In summary, it became clear that Yoshikazu Uchida had cultivated his planning skills by personally researching and comparing cases of blocks and plots in Japan and abroad. Moreover, there was a trend at the time of incorporating foreign designs into Japan in terms of land readjustment and neighbourhood units, and Yoshikazu Uchida could be said to be at the forefront of this trend. Furthermore, Yoshikazu Uchida has contributed to the establishment of land readjustment and neighbourhood units in Japan in that he proposed a concrete model plan using planning techniques related to blocks and plots. At this time, Yoshikazu Uchida was developing a unique planning technique that did not simply incorporate researched cases and figures but adapted them to the circumstances of Japan and the surrounding area.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author.

NOTES ON CONTRIBUTOR

Takaaki Nakagawa is an Assistant Professor at the Department of Civil Engineering and Regional Design, the School of Regional Design, Utsunomiya University, Japan. His research interests include the history of urban planning, especially the foreign influences and the unique aspects of Japan. He received a doctoral degree in engineering for his research on Yoshikazu Uchida's urban planning ideology from the Tokyo Institute of Technology in 2023.

ENDNOTES

1.   A block is a collection of plots surrounded by roads, and a plot is a piece of land for each house or store.
2.   Nakajima, Naoto. "The Datong City Plan (1938): the three week-process of organizing planning ideas and techniques towards the construction of a new urban area under Japanese occupation." *Planning Perspectives* 38, no.1 (2023): 99-125.
3.   Dojun-kai is a foundation established for the purpose of providing housing after the Great Kanto Earthquake of 1923, and Yoshikazu Uchida served as a director. Dojun-kai built reinforced concrete apartments and wooden residential areas in Tokyo and Yokohama.
4.   Takayama, Eika, ed. *Gaikoku ni okeru Jūtaku Shikichiwari Ruirei Zokushū* [Continuing Collection of Housing Site Allocation Cases in Foreign Countries]. Tokyo: Dojun-kai, 1938.
5.   Nakano, Shigeo, Yusuke Koyama, Masahito Fuwa, and Shin Nakajima. "The relationship between the company housing of Hitachi, Ltd. and the residential neighborhood plans of Yoshikazu Uchida during WWII: A case study on the Hitachi, Taga and Mito works of Hitachi, Ltd." *Journal of Architecture and Planning (Transactions of AIJ)* 80, no.708 (2015): 441-451.
6.   Nakano, Shigeo, Naoto Nakajima, Shin Nakajima, Yusuke Koyama, and Masahito Fuwa. "Examination on neighborhood unit theory by Architectural Institute of Japan Housing Issues Committee and Japan Life Science Institute Architectural Subcommittee during W. W. II." *AIJ Journal of Technology and Design* 27, no.67 (2021): 1512-1517.
7.   Johnson, Donald Leslie. "Origin of the neighbourhood unit." *Planning Perspectives* 17, no.3 (2002): 227-245.
8.   Miller, Mervyn. *Letchworth: The First Garden City*. Sussex: Phillimore, 1989.
9.   Hein, Carola. "Machi: Neighborhood and small town—The foundation for urban transformation in Japan." *Journal of Urban History* 35, no.1 (2008): 75-107.
10. Home, Robert. "Land readjustment as a method of development land assembly: A comparative overview." *Town Planning Review* 78, no.4 (2007): 459-483.
11. Tsuruta, Yoshiko and Keiji Sato. "A study on the idea for land readjustment design through reviewing the design standards during the early period enforcing land readjustment system." *Journal of Architecture and Planning (Transactions of AIJ)* 65, no.535 (2000): 171-178.
12. Nakagawa, Takaaki, and Junko Sanada. "A study on the design methods of "the garden city" planning by Yoshikazu Uchida: Focusing on the process of making his planning." *Japan Architectural Review* 6, no.1 (2023): e12341.
13. Nakagawa, Takaaki, and Junko Sanada. "A study on Yoshikazu Uchida's plan for outdoor spaces in the estate plan of Osaka Hokko Co. Ltd." *Journal of the Japanese Institute of Landscape Architecture* 85, no.5 (2022): 625-630.
14. Uchida Yoshikazu Collections. *Kukaku/Shikichi* [Block/Plot]. U519.86- -5884, Tokyo Metropolitan Archives.
15. The Yoshikazu Uchida collections are a collection of books and materials stored in his home that his family has deposited in the Tokyo Metropolitan Archives.
16. Other printed materials included in the '*Kukaku/Shikichi* [Block/Plot]', '*Kyoto-shi toshi keikaku shikichi wari hōkoku-sho* [Kyoto City Urban Planning Plot Distribution Report]' (1923), and '*Heiankyō no takuchi wari to machiya* [Heiankyo Residential Land Distribution and Townhouses]' (1940) by Masaru Sekino.
17. Uchida, Yoshikazu. "Daitoshi ni okeru jūtaku no hokyū-saku [Supply measures for housing in large cities]." *Journal of Architecture and Building Science* 36, no.430 (1922): 223-234.
18. Uchida, Yoshikazu, Toshiro Kasahara, Tetsuya Kato, Hideto Kishida, and Kosuke Hishida. "A model plan of "siedlung" for the agricultural immigrant in Manshu-koku." *Journal of Architecture and Building Science* 47, no.569 (1933): 537-564.
19. Toshi Kenkyu-kai was a group established in 1917 by bureaucrats and academics to create urban and housing policy.

20. Nakagawa et al., op. cit., 12

21. Nakagawa, Takaaki, and Junko Sanada. "Revisiting a model for housing and infrastructure supply with private capital: The case of the Japanese architect Y. Uchida." *ARCHTHEO '21 / XV. International Theory and History of Architecture Conference Proceedings*, (2021): 238- 244.

22. Uchida Yoshikazu Sensei Biju Shukugakinen Sakuhinshū Kankō-kai, ed. *Uchida Yoshikazu Sensei Sakuhinshū* [Yoshikazu Uchida's Works] (Tokyo: Kajima Institute Publishing, 1969), 166-167.

23. The central building is designed in a square shape for the purpose of defense against bandits and similar threats.

24. Regarding elementary schools, it would be appropriate to establish one school in each village in its respective central ward. However, due to the difficulty of commuting to school during the rainy and winter seasons and to guard against bandits, Yoshikazu Uchida explains that an elementary school will be located in each settlement, with one school being the main school and the others being branch schools.

25. Nolen, John. *City Planning: A Series of Papers Presenting the Essential Elements of a City Plan* (New York: D. Appleton and Company, 1922), 19-47.

26. Folwell, A. Prescott. *Municipal Engineering Practice* (New York: John Wiley & Sons, Inc., 1916), 57-59.

27. Gürschner, Robert, and Max Benzel. *Der städtische Tiefbau* (Leipzig: B. G. Teubner, 1915), 17.

28. Hoepfner, Karl A. *Grundbegriffe des Städtebaues* (Berlin: Julius Springer, 1921), 44-59.

29. Holliday, A. C. "Restrictions governing city development." *Town Planning Review* 9, no.4 (1922): 217-238.

30. Ishihara, Kenji. *Gendai toshi no keikaku* [Modern City Planning] (Tokyo: Koyo-sha, 1924), 189-211.

31. Gürschner et al., op. cit., 27

32. Ota, Enzo. *Teito fukkō jigyō ni tsuite* [About the Imperial Capital Reconstruction Project] (Tokyo: Reconstruction Bureau Civil Engineering Department, 1924), 178-185.

33. Second Technical Division, Urban Planning Bureau, Home Ministry of Japan. "Rotto no ōkisa ni kansuru shinrai subeki kiso [A Reliable Basis for Lot Sizes]." *Toshi Kōron* 7, No. 7 (1924): 77-82. This research material is a translation of what was presented at the meeting of the National Conference on City Planning, 7-9 June 1915, in Detroit. The original material is published in Nolen, op. cit., 25, and Yoshikazu Uchida transcribed a portion of it in handwritten note No. 3.

34. Second Technical Division, Urban Planning Bureau, Home Ministry of Japan. "Tochi kukaku seiri shian [Land readjustment private proposal]." *Toshi Kōron* 7, No. 7 (1924): 76-77.

35. Tsuruta et al., op. cit., 11

36. Teiyu-kai. "Rinkō-kai endai narabini kōensha [Lecture topics and speakers]." *Teiyu-kai Zasshi*, no.7 (1925): 93-101.

37. Augur, Tracy B. "Adaptation of Radburn, N. J., Idea Proposed for Detroit Suburb." *American City* 45, Nov. (1931): 83.

38. Nakajima, op. cit., 2

39. Wright, Henry. "Wanted: A Substitute for the Gridiron Street System." *American City* 42, Mar. (1930): 87-89.

40. De Boer, Saco Rienk. "Boulder City—the Proposed Model Town Near the Hoover Dam." *American City* 44, Feb. (1931): 146-149.

41. Ishihara, op. cit., 30

42. Nakagawa et al., op. cit., 21

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IMAGE SOURCES

Figure 1   Uchida Yoshikazu Collections. *Daitoshi ni okeru jūtaku hokyū-saku* [Housing Supply Measures in Large Cities]. U520.7- -3297, Tokyo Metropolitan Archives.

Figure 2   Uchida Yoshikazu Collections. *Kukaku/Shikichi* [Block/Plot]. U519.86- -5884, *A model plan of "siedlung" for the agricultural immigrant in Manshu-koku Part 1*. U334.422- -4108, Tokyo Metropolitan Archives.

Figure 3   Uchida Yoshikazu Collections. *Daitoshi ni okeru jūtaku hokyū-saku* [Housing Supply Measures in Large Cities]. U520.7- -3297, Tokyo Metropolitan Archives.

Figure 4   Uchida Yoshikazu Collections. *Kukaku/Shikichi* [Block/Plot]. U519.86- -5884, *A model plan of "siedlung" for the agricultural immigrant in Manshu-koku Part 1*. U334.422- -4108, Tokyo Metropolitan Archives.

Figure 5   Uchida Yoshikazu Collections. *Kukaku/Shikichi* [Block/Plot]. U519.86- -5884, Tokyo Metropolitan Archives.

Figure 6   Ibid.

Remaining patterns of vernacular buildings made of local materials in different development periods
A case study of warehouses made of Oya-stone in Utsunomiya, Japan

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Abstract

Utsunomiya, a Japanese mid-sized city located on approximately 100km north of Tokyo, is famous for warehouses made of Oya-stone. Oya-stone is characterized by its unique texture, and stone with fine texture is regarded as more precious than the rough texture one because of the difficulty in quarrying. Corresponding to the development of the city and the demand for the stone in different periods, the texture of stone used for warehouses has been changed. Utsunomiya city government has been considering the conservation of these warehouses built in different periods, but there is little basic knowledge on how these warehouses have been maintained or abandoned. Thus, this study aims to identify the remaining patterns of vernacular warehouses made of Oya-stone. Firstly, we analyzed relationships between the construction periods of Oya-stone warehouses and their tendency to decrease. Secondly, we examined relationships between the construction periods of warehouses and their texture. The result shows the following two findings. First, warehouses built during the high economic growth period, when the Oya-stone quarrying industry was thriving and supplied the most numerous amounts of Oya-stone, were more likely to decrease than those built during other periods. Second, warehouses built before the Meiji era, when the Oya-stone quarrying industry was still growing, were mainly made of Oya-stone with a fine texture, while warehouses built during the high economic growth period were mainly made of Oya-stone with a rough texture. These findings suggest that the remaining patterns of the Oya-stone warehouses are related to the development periods of the city and the rise and fall of the quarrying industry, Furthermore, the high tendency of decrease in warehouse built during the high economic growth period might be related to the high proportion of Oya-stone with rough texture.

local materials in different development periods: A case study of warehouses made of Oya-stone in Utsu-nomiya, Japan." In Ian Morley and Hendrik Tieben (eds.), *International Planning History Society Proceedings*, 20th IPHS Conference, "The (High Density) Metropolis and Region in Planning History," Hong Kong, 2 - 5 July, 2024, TU Delft Open, 2024.

Landscape Evolution of Historic Campuses from the Perspective of Historic Layering
A Case Study of Three University Campuses in Nanjing, China

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Abstract

As China's social development enters a new stage of connotative progression, campus heritage is attracting attention as an essential part of the cultural landscape in historic cities. Historic campuses are the spatial carriers of campus heritage, a superimposed collage of campus landscapes from multiple historical periods with outstanding value. Campus space presents the development history of campus planning and construction concepts, showing the unique cultural connotation. Related research has expanded from studying "points" of historic buildings to the holistic study of "surfaces" such as spatial patterns and landscape environments.With the support of "Historic Layering" and "Anchoring-Layering" in the theory of historic urban landscape (HUL), this article takes the three cases of Southeast University (Sipailou Campus), Nanjing University (Gulou Campus), and Nanjing Normal University (Suiyuan Campus) to interpret landscape evolution of historic campuses in Nanjing. Combining the technical support of campus planning and construction drawings from different decades with historical photos, documents, and on-site surveys, the dynamic process characteristics and layering rules of campus landscape are investigated under the constant collision and compromise between planning ideals and social reality.The study found that the historic campuses show the evolutionary characteristics of the hybridization and collage of multiple landscapes and the spatial and temporal correlation between architecture and environmental elements in landscape shaping from the early architectural dominance to the late architectural and environmental co-action. Moreover, different campuses have unique landscape characters, especially the pre-1949 campuses dominated by Western classicism or the Chinese-Western fusion, which has become an essential cultural gene of the campus.This can serve as a reference for cultural interpretation of the historic campus landscape's dynamic evolution and characterizing the contemporary campus space.

INTRODUCTION

Historic campus refers to a campus with a long history of school development, preserving rich and intact cultural relics or historical buildings inside the campus, reflecting the traditional pattern and historical landscape style more completely, and built for education and teaching, and still mainly used for higher education teaching, the unique architectural and landscape style of the historic university campuses promote them to become a nurturing place for cultural accumulation[1], showing the development of campus planning and construction concepts in different periods. Historic university campuses' unique architectural and landscape features make them a place of cultural accumulation and education, showing the development of campus planning and construction concepts in different periods and becoming one of the essential spatial carriers of urban history and culture. Currently, several historic campuses have been included in the World Heritage List[2]. In China, more than 50 university buildings or old campus sites have been included in the list of national key cultural relics protection units.

As a dynamic heritage in which cultural heritage qualities are continuously superimposed and precipitated over time within a specific scope[3], the historic campus has transformed university higher education from traditional to modern over the past hundred years. The introduction of the cultural landscape concept expands the historic campus's heritage vision, placing it in the spatial and temporal context of continuous evolution and paying more attention to the cultural landscape qualities in the process of dynamic evolution[4][5]. Historic campuses are the sum of campus landscapes with humanistic and natural factors accumulated over a certain period[6]. The current expansion and extrusion of artificial construction makes the local area of natural and humanistic anchoring imbalance. There is an urgent need to clarify the mechanism of landscape evolution and the generation law, with a view to multi-dimensional recognition and identification of its heritage value. The dynamic spatial and temporal stratification model has become a new trend in landscape evolution[7][8], providing scientific references for characteristic identification and heritage value assessment.

METHODOLOGY

Historic Urban Landscape (HUL) is a landscape approach for cultural landscape heritage conservation. This study adopts the theory of "Historical Layering" in Historic Urban Landscape (HUL) and the theoretical model of "Anchoring-Layering" proposed by Liu Yifei and other scholars to establish the landscape evolution of three historic campuses, namely, Sipailou Campus of Southeast University, Gulou Campus of Nanjing University and Suiyuan Campus of Nanjing Normal University, as research cases. Gulou Campus of Nanjing University, Sipailou Campus of Southeast University, and Suiyuan Campus of Nanjing Normal University are used as research cases to establish a research framework for the evolution of the landscape of historic campuses and to make a scientific and comprehensive value assessment[9].

THEORETICAL BASIS

Historic Urban Landscape (HUL) considers the accumulation of layers of culture and values, traditions and experiences as the diverse characteristics of the dynamic development of cities, leading to a new shift in the concept of heritage conservation in recent years, gradually expanding the focus from the "spatial level" to the "temporal level"[10]. Historic campus landscapes have a layered nature, and their layered value is also an important part of the campus heritage value. In urban renewal and preservation, the multi-perspective interpretation of historical layers has many application scenarios[11][12][13], presenting interdisciplinary and multi-source data synergistic research characteristics.

In 2014, based on the "landmark-substrate" urban research paradigm, Liu Yifei, Tsinghua University, summarized the "anchoring-layering" theory of historic urban landscape by dividing urban historic landscape into "anchoring points" as landmarks and "layering spaces" as substrates[14]. Since then, some scholars have applied this theory to empirical research on different scales of historical areas, such as Guilin[15], Duanzhou Ancient City[16], and Songkou Ancient Town in Meizhou[17]. The theories of "Historical Layering" and "Anchoring-Layering" provide new perspectives for studying heritage conservation, cultural heritage, and the development of historic campuses.

The landscape of the historic campus can be mainly divided into two parts: material elements and immaterial elements, including tangible material forms such as buildings, topography, plants, spatial patterns, etc., and intangible immaterial elements such as campus history, traditions, activities and other intangible humanistic features, and the historical layering of material forms is more significant. By classifying and extracting the historical landscape, an analysis model is constructed with "anchoring points" composed of topography, historical buildings, and plants, and "layering space" composed of spatial pattern, axial space, and public space as the core.

OVERVIEW OF UNIVERSITY CAMPUSES IN NANJING

Nanjing is an important center of science and education and the beginning of modern education in China. Since the preparation of the new-style school (Sanjiang Normal School) in 1902, the establishment of higher education institutions in Nanjing has a history of more than one hundred years of development, and the combination and accumulation of traditional culture and modern education have formed a unique campus culture and a rich campus form.

Located in the old city of Nanjing, Southeast University's Sipailou Campus, Nanjing University's Gulou Campus, and Nanjing Normal University's Suiyuan Campus are the campuses of the modern National Central University, Jinling University, and Jinling Women's University, respectively, and they are the typical representatives of historic university campuses in Nanjing. The three historic campuses are in the same lineage and are outstanding representatives of modern campus planning in China (Figure 1). In 2006, the three campuses were approved by the State Council of the People's Republic of China as the sixth batch of National Key Cultural Relic Protection Units at the same time. In 2016 and 2017, they were selected as "China's 20th Century Architectural Heritage Projects" list.

China—Jiangsu Province   Nanjing City

Nanjing Normal University   Nanjing University   Southeast University

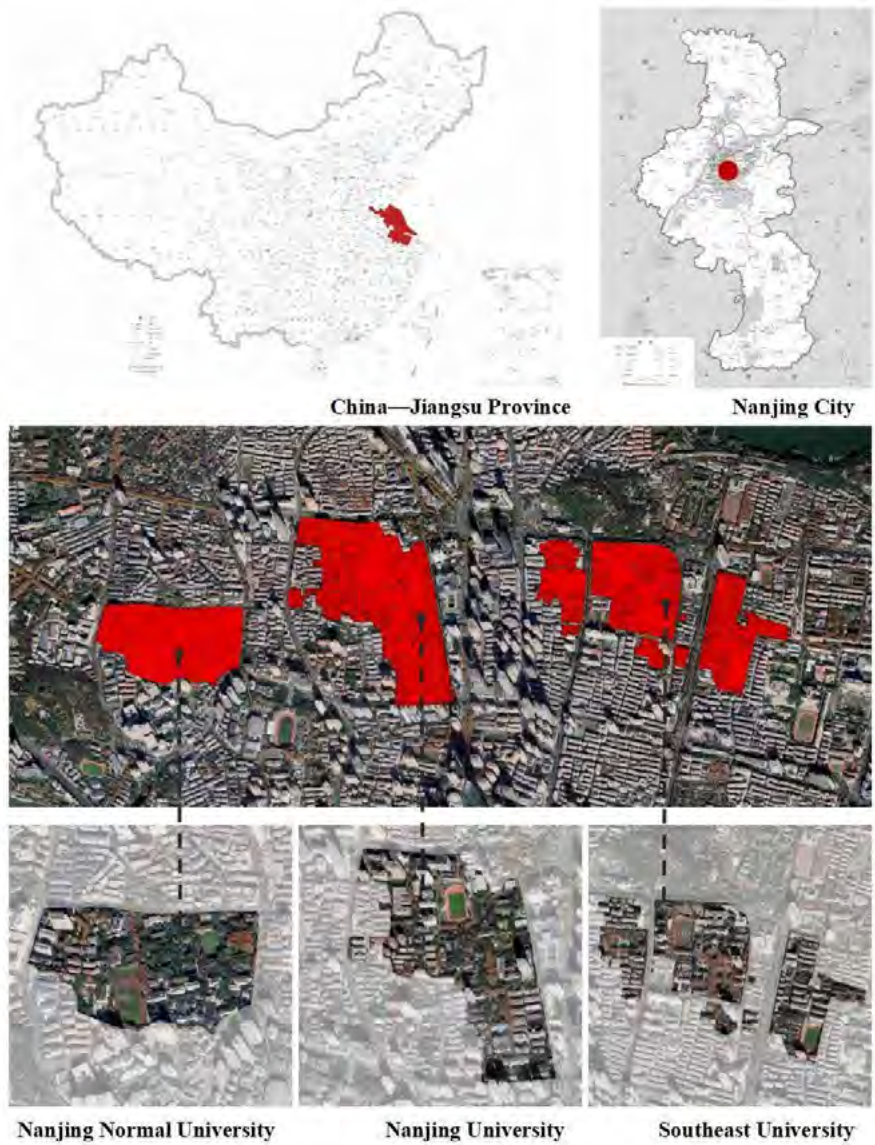Fig. 1.   Location of three historic university campuses in Nanjing.

"ANCHORING—LAYERING" TIME SERIES OF HISTORIC CAMPUSES

Historic campuses generally go through multiple planning and construction periods, thus reaching a state of spatial saturation. The morphological representations and cultural genes of Nanjing's historic university campus landscapes are organically integrated in the process

of spatial and temporal dynamic evolution, which can be roughly divided into five phases: the birth phase in the 1900s and before, the formation stage in the 1910s and 1940s, the development stage in the 1950s and 1970s, the renewal stage in the 1980s and 1990s, and the transformation stage in the 2000s and today.

BIRTH STAGE (1900S): TRANSFORMATION OF THE SHUYUAN AND THE FIRST APPEARANCE OF THE UNIVERSITY

At this stage, Chinese higher education realized the initial transition from traditional academies to new-style academies combining the East and the West. Sanjiang Normal School was the first government-run new-style school in Nanjing and one of the pioneers of higher teacher training schools in China. The campus base is roughly a 480m*280m east-west flat rectangle, covering an area of about 13.3hm². The buildings are independent and self-contained, and the overall shape of the enclosure makes the campus appear closed and inward-looking. Due to the influence of the traditional architectural space layout system, the campus space follows the symmetrical courtyard organization layout of the central axis space as much as possible.

FORMATION STAGE (1910S–1940S): CULTURAL COLLISION AND SPATIAL INTEGRATION

As the modern university model was gradually improved and the campus function changed from simple to complex, the spatial form also showed different characteristics, which was also the initial exploration of the early construction of modern universities in China. The mode of American-style university campus planning is one of the important sources of university campus planning ideas in this period, and the independent and complete community and continuous and open natural landscape are its most significant features and achievements[18]. The National Central University (expansion), Jinling University (new built), and Jinling Women's University (new built), which were planned and designed by Chinese and foreign architects, are typical university campuses with campus spatial patterns of this period (Figure 2). The structure of the three central campus areas at this stage is rigorous, and the pattern has already taken shape. However, the specific spatial organization and architectural design have their characteristics.

National Central University (Sipailou Campus of Southeast University today) is located under the Jilong Mountain (present North Pole Pavilion), near Xuanwu Lake in the north, with a beautiful natural environment. The planning program uses the surrounding scenery as the borrowed scenery of the campus. It incorporates the natural environment into it to achieve the organic integration of the campus and the environment (Figure 2a-1). The campus space adopts the "Rotunda" of the American university as the center of the composition and the geometrically regular road network as the skeleton, constituting the Western classical spatial pattern of "axial openness". In contrast, the new buildings on the campus all adopt Western classical architectural features (Figure 2a-2,3).
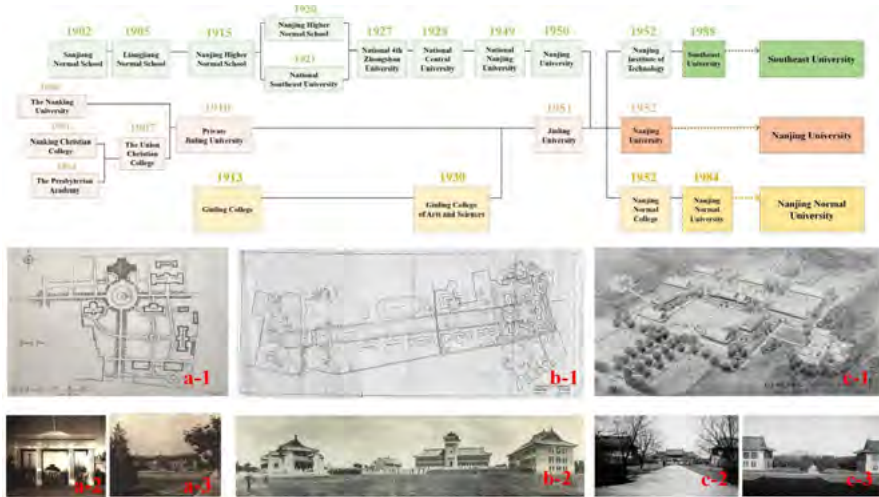
Jinling University (Gulou Campus of Nanjing University today) was one of the early church universities to adopt the architectural form of East-meets-West, setting a precedent for the fusion of Western architecture with the official architecture of northern China. The campus follows the original topography and unfolds the central axis from low to high along the north-south direction, creating a spatial effect of rich hierarchy and shifting scenery (Figure 2b-1). The spatial layout of the axis and the triad is typical of American university campus planning, creating the spatial atmosphere of a "university community" (Figure 2b-2). Also, using the semi- enclosed space to provide an open space for socializing can promote communication among students and between teachers and students.

The campus base of Jinling Women's University (Suiyuan Campus of Nanjing Normal University today) is close to the square. It fully draws on the compositional techniques of the Forbidden City of China, which sequentially adopts the contrast of vertical and horizontal space and the echo of lakes and hills on the axis (Figure 2c-1). The original hillock was fully preserved during the planning and construction. The high point of the western hills is used as the counterpoint of the campus axis, which coincides with the direction of the western ridge. The triple or quadruple courtyards are the basic units that form a building complex with a rich sense of spatial sequences. The outdoor public space not only has the characteristics of the western courtyard space but also contains the flavor of the classical Chinese garden (Figure 2c-2,3). Also, using Chinese garden corridors breaks down the courtyard walls, connects the campus buildings, and constitutes an open and interpenetrating spatial cluster within the campus.

DEVELOPMENTAL STAGE (1950S-1970S):
EMULATING THE SOVIET UNION AND COLLAGE OF CONNOTATIONS

In 1952, under the influence of the idea of a "comprehensive study of the Soviet Union", the three universities were reorganized and carried out the first round of expansion and renewal with distinctive characteristics of the times, and the campus was characterized by its functional zoning.

The new buildings on the campus of Southeast University in this period are more in harmony with the original historical buildings in terms of volume and style, adopting the form of simple modernism with a few national symbols and no excessive decoration, which further improves the layout of the campus center, and sets an example for the new buildings on the campus in the later period.

The Soviet socialist form of the 1950s and 1970s became the cultural characteristic of Nanjing University's campus during this period. Campus buildings were built with a combination of traditional Chinese pitched roofs and Soviet-style roof bodies. The new north-south and east-west axes are re-planned on the west side of the former Jinling University, and the east-west axis between the Southeast Building and the Southwest Building allows for a better integration of the old and new axes, reflecting the spatial continuity and unity.

The new buildings on the campus of Nanjing Normal University have been influenced by the revivalist trend again, with the construction of the new South Building, the North Building, and the Middle Building. The new buildings continue the three-part classical Chinese architectural form with green stone plinths, red pillars and yellow walls, and extensive roofs with hermetic peaks. The scale of the campus gradually expanded and developed around the central axis, further extending the main axis of the campus during the period of Jinling Women's University.

RENEWAL STAGE (1980S-1990S):
STEADILY PROGRESSING AND CULMINATING IN A BURST OF ACTIVITY

The rapid urban expansion brought about by the reform and opening up and the popularization of higher education have pressed the boundaries of the campuses and demanded that the campuses increase their capacity, presenting a blossoming diversity of practices[19]. After this round of expansion, the construction of the three campuses tends to be saturated.

The construction activities of Southeast University's campus during this period were dominated by demolition and reconstruction as well as large-scale new buildings and insertions, which greatly changed the campus's landscape. New campus buildings such as the Center Building and the New Library became the focus and turning point for the continuation and strengthening of the axis of the National Central University period. With the completion of the Center Building and other buildings, the main axis along the "South Campus Gate - the Great Hall" has been further extended in the northern section, running through the entire campus.
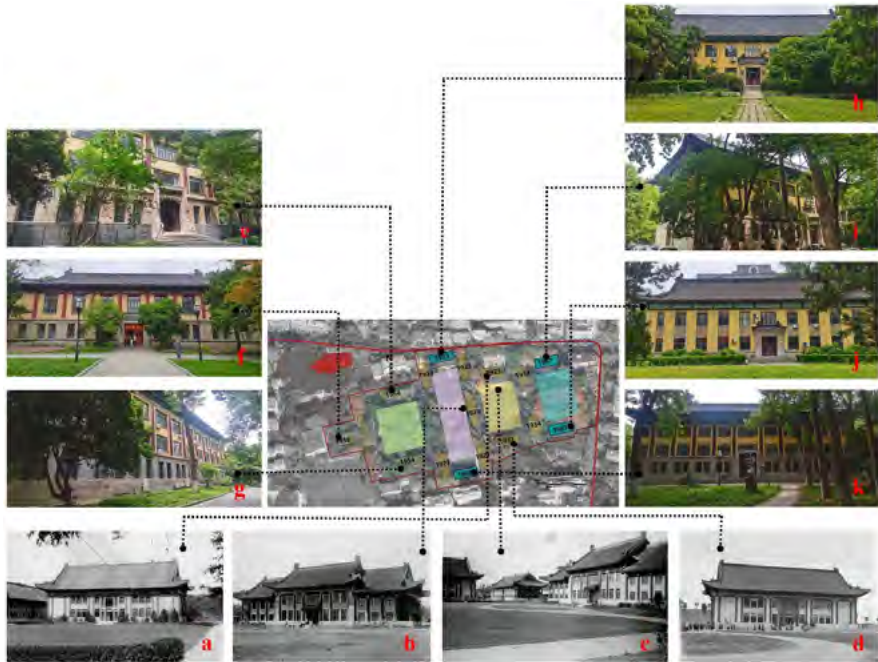
Fig. 3. Architectural landscape of Nanjing Normal University campus in different periods.

The new buildings of Nanjing University all adopted the same style of modern, simple form, no decoration, adapting to the needs of industrialized mass production and the trend of high-rise. Campus in the original building based on further strengthening the original Jinling University campus axis and the "entrance-teaching building" axis, and began to expand to the west side of the stadium, the formation of the chemical building, liberal arts building, and Yifu Hall formed the third campus axis. The three north-south axes gradually transition from east to west, complementing each other, and an east-west axis structures a prosperous and orderly campus space pattern.

In the 1980s and 1990s, the Nanjing Normal University campus had no suitable development sites, except for demolishing some old buildings and constructing a few new ones. New campus buildings continued the three- stage classical Chinese architectural form during this period, although with more simplified decorations. The architectural forms under the influence of the three retro trends coexisted in the same overall spatial pattern, with primary and secondary courtyards and axial symmetry forming a spatially sequential architectural complex (Figure 3).

TRANSFORMATION STAGE (2000 TO PRESENT): FUNCTIONAL TRANSFORMATION AND COLLISION BETWEEN OLD AND NEW

The number, scale, speed, and reform efforts of university campus construction entered a new high gear during this period, with all three campuses being built in an infill high-rise mode, causing varying degrees of damage to the overall pattern of the historic campuses.
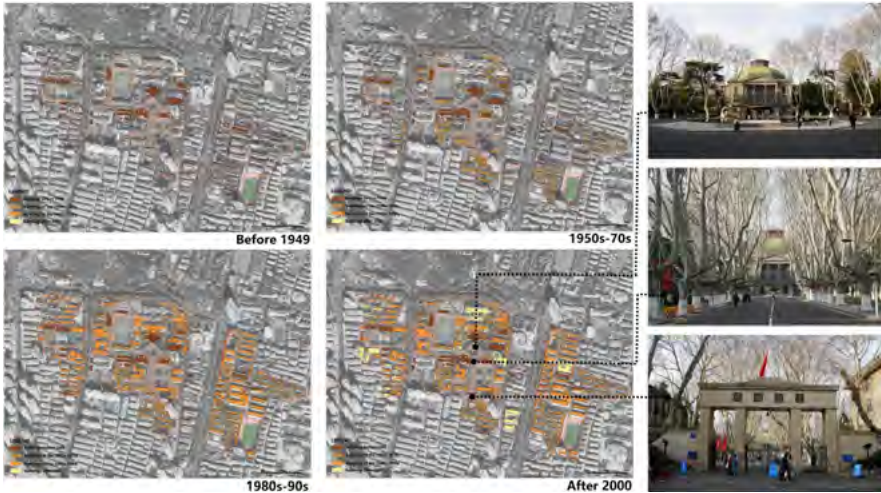
The high-rise and infill construction activities of this period greatly changed the campus landscape of Southeast University, and a haphazard boundary enclosure appeared around the campus (Figure 4). The disorderly expansion of new buildings and the international turn of architectural forms severed the continuity of campus space and gradually weakened the overall spatial pattern of the campus. However, some new buildings are committed to continuing and strengthening the axes of the Central University period, such as the Li Wenzheng Building (2004) in the northern part of the Great Hall, which continues the main north-south axis while enriching the campus skyline through the use of appropriate massing and a small dome that echoes the Great Hall. In addition, the trees and other plant landscapes have grown for nearly 100 years, changing with the seasons, and play an important role in shaping the campus' humanistic environment.

Since 2000, the new buildings on the Nanjing University campus have been more extensive and flexible in space, no longer confined to a symmetrical layout. The modern campus space is more inclined to flow freely around the building clusters, forming an open and free campus space (Figure 5). The dozen or so new high-rise buildings built around the campus around 2000 have seriously affected the skyline of the campus landscape. Inside the campus, the historic campus located in the center of the old city was constrained by the limited land for development. The only way to cope with the development space problem at that time was to use high-rise buildings and increase the buildings' density, which negatively impacted the historic campus's landscape appearance (Figure 5, right).

After Nanjing Normal University constructed a new campus in the 1990s, which played a positive role in easing the conflicts of the old campus, the Suiyuan Campus had little construction activity after 2000 (Figure 6). The number of floors of the campus buildings is mainly two to four, and most are two-story, generally showing a spatial pattern of high in the west and low in the east, high in the south and low in the north. The campus landscape is centered on open green space. It adopts the traditional Chinese courtyard layout, which enhances the integration of the buildings with the landscape environment, thus enjoying the reputation of "the most beautiful campus in the East" (Figure 6, right).
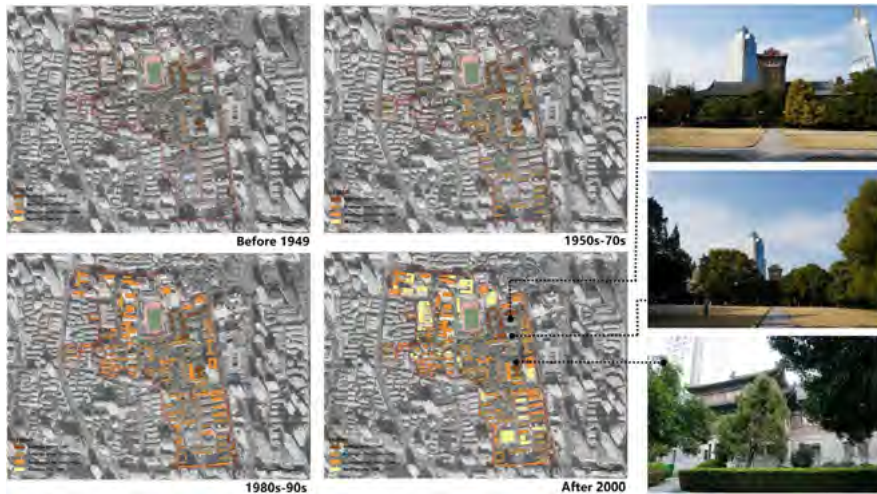
Fig. 5. Historical Evolution of Campus Space Patterns at Southeast University.

"ANCHORING-LAYERING"
FORMATION MECHANISM OF HISTORIC CAMPUSES

DRIVING FORCE OF CULTURAL CONTEXT AND VALUE IDENTITY

The transformation of social and cultural backgrounds and value identities is the inherent driving force behind the anchoring and change of historic university campuses. University campuses have experienced three influxes of foreign architectural and planning trends, and the historic campuses in Nanjing have developed diverse landscape characteristics under different cultures and value identities[20].

Between 1911 and 1949, the first foreign architectural and planning trends flooded into China. Western classicism, or the fusion of East and West, was the mainstay of the campus landscape in this period and an important cultural gene of campus space later. In the 1950s and 1960s, with the large-scale introduction of Soviet architectural and planning trends for the second time, the principle of Soviet classicism was implemented throughout the country. The second was the large-scale introduction of Soviet architectural and planning trends in the 1950s and 1960s when campus renovation practices based on Soviet classicism were implemented nationwide. The third time was after the reform and opening up in 1978, especially after 1992, when modernism, postmodernism, and cultural veins came in, contributing to the heterogeneous and diversified characteristics of the campus landscape in this period.
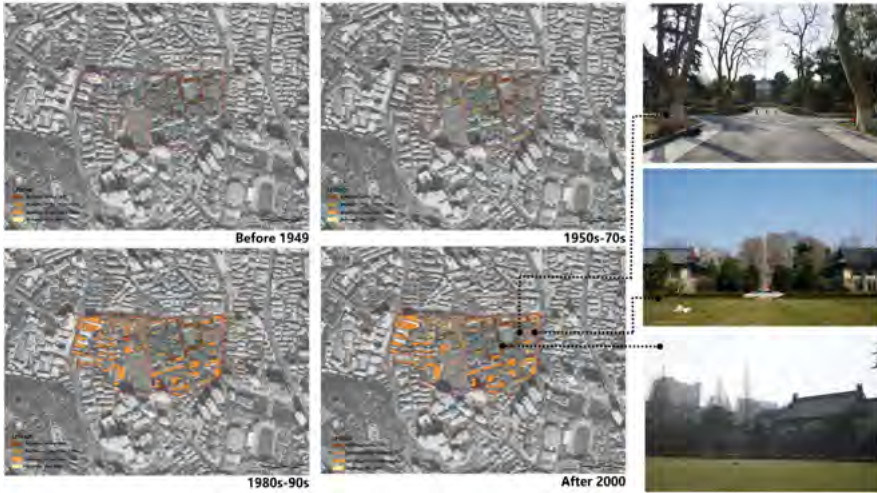
Fig. 6.   Historical Evolution of Campus Space Patterns at Nanjing Normal University.

ANCHORING SYNCHRONIZATION OF NATURAL GEOGRAPHY AND HUMANISTIC CONSTRUCTION

The evolution of the "anchoring-layering" process of Nanjing's historic campus landscape is a synergy of natural geography and humanistic construction, with natural geography anchoring as the basis for the germination of layering and humanistic construction anchoring as the driving force for continuous layering. In planning and constructing the university campus, the surrounding mountain scenery is used as the borrowed scenery of the campus, which realizes the interaction and communication between the campus, the city, and nature. The terrain around and within the campus forms the base for the landscape features of the historical campus, which is the foundation for the heterogeneity and diversity of the campus landscape and then influences the spatial pattern of the campus, the skyline, and so on.

Campus architecture is an essential part of the campus heritage in terms of scale, function, and spatial combination. It is also the focus of campus humanistic construction at all stages, and Chinese and foreign architects play an important role in this. If there are only buildings on the campus, as when it was first built, the campus will lose much of its unique character. At the same time, plants and other landscape elements help to highlight the architectural features of the campus. The buildings on both sides of the central axis of the Sipailou campus of Southeast University and the sycamore trees planted in the 1920s reflect each other, forming a well- organized and unique campus landscape (Figure 4, right). Overall, in the spatial and temporal process of campus landscape shaping, the early and later architectural and landscape environment elements work together to create a natural and peaceful spatial atmosphere of the historic campus (Figure 2,4-6).

LAYERING COMBINATIONS OF ORDERED CONSTRUCTION AND DISORDER EXPANSION

The layering of historic campuses is a dynamic combination of disordered expansion and ordered construction, where unified value orientation and clear anchoring influences lead to the more orderly layering of space. In contrast, value confusion and anchoring collapse lead to spatial shifts toward disordered development. From the 1900s to the 1940s, the construction of campus space was constrained by natural geography, spatial planning, and cultural anchoring, with most buildings being 2-4 floors. The spatial pattern was unified and harmonious, with a pleasant scale. In the 1950s-70s, the unified planning and construction of the accumulation period made it possible to continue the historical characteristics, and the campus space realized the connotative collage renewal. The high-rise buildings constructed in the 1980s and 1990s are squeezing the existing historic buildings. At the same time, the interaction between the university and the city has caused the growth of the campus edges, and the campus shows a disordered and fragmented spatial structure. Under the interweaving of the old and the new, as well as the replacement and renewal of order and disorder, the historic campuses in Nanjing present a layered space with diversified forms and combinations.

CONCLUSION

This paper's historic laying study is carried out on three historic campuses in Nanjing: the Sipailou Campus of Southeast University, the Gulou Campus of Nanjing University, and the Suiyuan Campus of Nanjing Normal University. The research on the campus landscape development pattern was conducted, and the hidden natural, social, cultural, and other factors were further analyzed by the effectiveness of the anchoring points and the layering space in different periods. The historic Nanjing University campus's landscape has undergone five stages: birth, formation, development, renewal, and transformation. Under the synergistic anchoring of nature and humanity, the natural anchoring based on topography and geomorphology lays the foundation for campus spatial planning and development. At the same time, the humanistic construction influenced by Chinese and Western multicultural values is the anchoring power for the campus to continue accumulating. As an internal cultural factor, culture determines the layered elements' external representation. Through the dynamic layering process of order and disorder, it is finally endowed with the heritage value of the campus landscape. The interaction between the anchoring points and the layering space also reflects the wisdom of building the historic campus spatio-temporal construction by integrating the architecture with the landscape environment and shaping the historic campus space's natural and tranquil, stable, and introverted atmosphere.

The campus landscape has also gone from being dominated by buildings in the early years to a shared role of buildings and landscape environment in the later years. Historic campuses have distinctive landscape features, especially the pre-1949 campuses dominated by Western classicism (Sipailou Campus of Southeast University) or the combination of Chinese and Western features (Gulou Campus of Nanjing University and Suiyuan Campus of Nanjing Normal University), which has become an essential cultural gene of the current campus space. Given

the current campus situation of saturated land, complex functions, high-rise buildings, and motorized traffic, the anchoring and spatial changes in the campus landscape are analyzed in order to establish a "spatial and temporal view" for the preservation and development of the historic campus. This study is a preliminary application of the theory of "Historical Layering" and "Anchoring-Layering" in campus heritage. In future research, the anchoring- layering effect can be deepened quantitatively to realize the historic campus landscape's scientific protection and fine management.

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DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author.

NOTES ON CONTRIBUTOR(S)

Tingjin Wu, a Ph.D student in Department of Landscape Architecture, School of Architecture, Southeast University, China. His research interests include evaluation of urban spatial perception and campus landscape.

Jinxiu Wu, professor in School of Architecture of Southeast University, China, mainly engaged in the research of green building design and renovation, as well as integrated design of architecture and landscape.

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IMAGE SOURCES

Figure 1 Created by the author; base map from the China National Standard Map Network, Review No. GS(2023)2767.

Figure 2 a: Southeast University Archives; b: Yale Divinity School Library; c: Yale Divinity School Library.

Figure 3 a-d: Yale Divinity School Library; e-k: photograph by the author.

Figure 4 Created by the author; base map from Google Maps.

Figure 5 Created by the author; base map from Google Maps.

Figure 6 Created by the author; base map from Google Maps.

Conservation of Plot Pattern in Chinese Historic Cities
A Combined Morphological and Institutional Perspective

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Abstract

Plot pattern is an important concept in urban morphology, which refers to the division and arrangement of land lots formed during the development and evolution of cities and towns. It is an essential morphological element implying the structure of land property rights. Interrelated with other morphological elements such as street patterns, building footprints, and land use, it plays a vital role in shaping the built environment. What's more, plot serves as the basic unit for the control of urban planning and implementing the conservation measures of the historic city. Therefore, the plot is regarded as an "intermediary between land property rights, planning control and urban form"; the conservation and control of the plot pattern is of great significance for an organic regeneration of the historic city. Since the 1980s, China has undergone significant institutional changes involving urban heritage conservation system, land development system and urban planning system. Thus three institutional periods is divided, including historic monument-centric period, historic district-centric period, and historic urban area-centric period. In different institutional periods, the plot pattern plays different roles in the protection of historical cities, and its protection objectives and contents also differ, which are reflected in the relationship between the boundaries of plot ownership, the physical boundary and the boundary of planning control. Through a literature review, the key value of the plot pattern for the protection of historic cities is clarified in three aspects: urban form, ownership, and planning control. Based on the theory of historical institutionalism(HI) and Conzenian school of urban morphology, an analytical framework with a combined morphological and institutional perspective is established to explore the connotations,characteristics and path dependence of the plot pattern conservation in terms of land property rights, urban form and planning control in the institutional evolution of China's historical city protection system.

Planning, Greenery, and Public Space

Chair: Javier Monclus and Carmen Diez

The value of trees and ground
Offsetting densification par renaturation in Greater Paris metropolis

Corinne Jaquand
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Abstract

Plot pattern is an important concept in urban morphology, which refers to the division and arrangement of land lots formed during the development and evolution of cities and towns. It is an essential morphological element implying the structure of land property rights. Interrelated with other morphological elements such as street patterns, building footprints, and land use, it plays a vital role in shaping the built environment. What's more, plot serves as the basic unit for the control of urban planning and implementing the conservation measures of the historic city. Therefore, the plot is regarded as an "intermediary between land property rights, planning control and urban form"; the conservation and control of the plot pattern is of great significance for an organic regeneration of the historic city. Since the 1980s, China has undergone significant institutional changes involving urban heritage conservation system, land development system and urban planning system. Thus three institutional periods is divided, including historic monument-centric period, historic district-centric period, and historic urban area-centric period. In different institutional periods, the plot pattern plays different roles in the protection of historical cities, and its protection objectives and contents also differ, which are reflected in the relationship between the boundaries of plot ownership, the physical boundary and the boundary of planning control. Through a literature review, the key value of the plot pattern for the protection of historic cities is clarified in three aspects: urban form, ownership, and planning control. Based on the theory of historical institutionalism(HI) and Conzenian school of urban morphology, an analytical framework with a combined morphological and institutional perspective is established to explore the connotations,characteristics and path dependence of the plot pattern conservation in terms of land property rights, urban form and planning control in the institutional evolution of China's historical city protection system.

Planting Angsana Tree
Cohesion and Resistance
during Singapore's Urbanization

Tiantong Gu
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Abstract

Planting Angsana tree, integral to Singapore's "Garden City" vision in the 1960s, provided immediate lushness, ample roadside shade, and transformed Singapore into a desirable garden city. However, as political and aesthetic visions evolved, the tree's prominence waned due to misalignment with new urban ideals and recurring disease. This paper explores this rise and fall of Angsana tree's history along the urbanization of Singapore, intersecting the domains of nature (with a focus on plants), politics (urban planning), and space (the physical realm), and questioning how urban studies can overlook the intricate relationships between human and more-than-humans, as the formation of the city is not only purely led by human's intentions but also plants' story. This study advocates for a more mobile positioning analytical framework that acknowledges the agency of more-than-human subjects and their contributions to urban transformation. It first argues that planting is a joint practice, process and a close interaction between human and more-than-humans, which helps us to go beyond the universal and simply statement of urban greening. Second, this study embodies the botanical study with historical analysis of planting Angsana, by examining how the Angsana tree's lifecycle—growth, adaptation, and eventual decay aligns with and resists human urbanization goals. This goes further shift from the traditional understanding of nature by either scientific or social constructed to contextualizing more-than-humans within the social and ecological fabric of the city.

INTRODUCTION

An Angsana tree, much taller than the surrounding buildings and other trees, stands along one main road in Singapore (Fig.1). The crown is big but not too well-shaped, the trunk is very thick. Nearby, one can see other carefully pruned shrubs, lining up along the road. A bit far away, there is another line of equal-spaced trees. All those vegetations are situated in between a main road and housing buildings. The Angsana tree shown in the photograph is scientifically called Pterocarpus indicus, and it naturally grows on flat riparian where is shadier, cooler, and moister than the adjacent upland environments, which is very different from the landscape now they are in. Then, the question is, how did this Angsana travel from the riparian area to urban Singapore but standing by itself? Moreover, the size of the tree itself also simply tells its age and the history of it, especially how Angsana tree has been integrated into human's settlement. It is tagged as a 'Heritage tree', which means it is more than 60 years old and is one of the largest roadside trees in Singapore, while the adjacent vegetation and built things seems much younger. It is not hard to notice that Angsana, in this landscape, is very outstanding and holds a history behind the formation of this space. Then the question is how it grows and adapts the process of urbanization of the area, further forming and re-shaping the space around it?

The curiosity first triggers a historical research of Singapore's urban greening trajectory. In 1963, Prime Minister Lee Kuan Yew planted a mempat (cratoxylum formosum) tree at Holland Circus marking a historical moment, leading into a 6-decades-long non-stopping planting, at national scale, socially and geographically. From then, 'Garden City' to 'City in Nature', Singapore's urbanization, urbanism, spatial reconfigurations, social changes, and politics are all closely tied to nature. Most critically, all these things are all connected through the various planting process, from what and how we plant to where we plant. Therefore, in this study, I argue that, planting is a joint practice, process and a close interaction between human and more-than-humans, which go beyond the universal and simply statement of urban greening. Further, this also marks this research intersects the domains of nature (with a focus on plants), politics (urban planning), and space (the physical realm), questioning how urban studies can overlook the intricate relationships between human and more-than-humans as the formation of the city is not only purely led by human's intentions but also plants' story.

During this research inquiry, Angsana trees quickly emerged from the urban greening history of Singapore, as over 20,000 trees were planted between 1969 and 1982, rapidly making Singapore 'green'[1]and being recognized as a Garden City. However, the role of Angsana has much been neglected in the urban studies. Built on that, it is my objective to see and understand how Angsana trees depend on both their individual character traits and the spatial effects created by the process of planting (pre-planting, transplanting and post-planting) as row or in groups and where, specifically situated in Singapore, Southeast Asia. And how Angsana's own process align with entangled with different political visions of how much a city should be shaped and managed and rationalized through urban planning. This requires this project to pivot from traditional ecological or social-centric analyses of nature towards a mobile-positioning framework that fosters dialogue between these realms, illuminating the evolving

human- nature relationship in Singapore. Its changing place is elaborated from how nature embodies themselves in urban and human society and how humans embody the message from plants. Angsana, here, is studies as an example through the way of planting in the history of Singapore to fulfill the following two critical questions:

1. How to form a nuanced analytical way to read urbanization through the process of planting - to closely examine our interactions with plants, recognizing their unique entities, agencies, and dynamics? This helps to shift common-sense perception when we contextualize plants within their specific natural and social ecosystems.

2. How do more-than-human subjects play an active role in the urban space and culture transformation as they grow, adapt and decay, and how it is entangled with different political visions of how much a city should be shaped, managed and rationalized? This helps to understand the implications for our broader understanding of life in our shared space.

In addition, this study also tends to shed lights on post humanist study by re-evaluating Singapore's urban greening from specific tree story. This attempt shifts from a devoid of human interaction but as a tale of embodiment of both human and more-than-humans. The journey of the Angsana tree exemplifies this narrative. Throughout its lifecycle—growth, adaptation, and eventual decay— whether the Angsana aligns with or diverges from the evolving goals of urbanization, systematically been planted and then been replaced to meet the human's intension and shape the city's space. Most interestingly, this process involves both cohesion and resistance.

Before Angsana's story, let us take a quick overview of conventional discussion around nature, what Latour[2] called two houses: one rooted in natural science and the other in social science. However, I contend that both approaches are inherently human- centric, in both overt and subtle ways. First, nature is analyzed through the so-called scientific lenses of botany and ecology, focusing on the biological traits of species in a manner that seems to remove humanity from the equation. Furthermore, ecological strategies employed in urban areas often lack consideration of the sociopolitical contexts in which they operate, reducing them to mere ecological initiatives[3]. I argue that this perspective inadvertently promotes a human-centric narrative by fakely attempting to disassociate ourselves from nature. Paradoxically, ecological understanding largely stems from scientists' direct embodied engagement in situ with natural environments, emphasizing the interconnectedness of all entities[4]. Echoing Castree and Braun[5], everything, including humans, is defined through its relationships with other entities.

Moreover, I argue, since interdependence, Singapore's urbanization has been represented by nature, critically leading by the massive planting activities. Thus, this research further critiques the tendency to categorize nature purely based on socially constructed notions and spatial representations, which often overlooks the actual agents of nature—the more-than-humans through the planting process. Although Singapore's natural landscapes are de facto deliberately repurposed for urban development, such approaches tend to emphasize societal power dynamics, neglecting the active role of nature[6] in politics and space, what agency they represent. This study posits that both the overt and covert anthropocentric perspectives limit our understanding of nature and imagination of how future urbanism, most importantly what kinds of human-nature relation could be.

METHODOLOGY

To answer those questions, this study is rooted in methodological localism, drawing inspiration from Donna Haraway's concept[7] of situated knowledge, involving forming 'mobile positioning' to be able to see and read both humans and more-than-humans. However, the question is how? I begin with embodying the purely botanical analysis with the historical analysis and to see how the tree intersects with political vision, spatial changes through the way of planting. It means first situated the Angsana tree into Singapore to see how the tree itself embodies the political intentions and materialized urban changes, also embodying myself as an observer and writer into Singapore.

This requires tracing its trajectory in the history of Singapore's landscape. I understand this tracing as multilayer, meaning that it is attuned to how Angsana as a body interacts with human and their intentions in Singapore, and to the intertwining of biological, political, and spatial matters in the making of Singapore's contemporary urban and its landscape. My approach connects the work of urban history, politics, and so-called science (botany/ ecology) with insights from bontanical studies to explain the performativity of Angsana in Singapore urban history and landscape that I encountered during fieldwork. I am also concerned with how Angsana is both an object and subject during the Singapore's urbanization process. While Angsana was introduced to Singapore as a major component to green the roadway, as the major part of fulfilling the image of garden city, its history also illustrates the role that non-human subjects can plant in the transformation of both urban space and culture as their bodies grow, adapt, host, reproduce and decay. I am building on Haraway's argument to looking for the view from a more-than-human, from a situated location, from a complex but connected web, neither the view from a dominated human, from simplifications, nor the view from so-called natural science that fakely excludes humans.

SITUATE ANGSANA, SITUATE OURSELVES

The narrative of the Angsana tree is captivating not only for its cyclical presence in Singapore's urban landscape but also for the layers of meaning it accumulates through these cycles of disappearance and resurgence. Traditional studies often quantify the changes in Singapore's greenery. However, as Danneels [2] (2023) astutely observes, such approaches frequently overlook the agency and political significance imbued in these living entities. By initiating the inquiry with straightforward questions—What distinguishes the Angsana? How does its physical form resonate with political ambitions and urban planning? What has facilitated its growth, particularly within the urban confines of Singapore? Why was this species chosen for significant planting initiatives during different periods in Singapore's history? —we begin to peel back the layers of its story.

I begin with the 'common sense' way of discussing trees - botanical books, and I notice that there is a consistent emphasis on characteristics such as size, shape, trunk, leaves, fruits, flowers, and scent. Let's look at a typical writing introducing Angsana, from Rao and Wee's book Singapore trees [8]. This is also typical when we talk about trees. Another reason I picked on this book is, in the introduction part, "This book is addressed to everyone who is keen to recognise and learn more about our local trees. For this reason it is purposely written in simple language." But the actual botanical details in their descriptions of each species, it doesn't feel like it's meant to be understood outside of botany:

A large tree of up to 40 metres, it has a dense, drooping crown (size and shape). The trunk is buttressed and the bark greyish-brown, becoming scaly and slightly fissured with age. If a slash is made on the trunk, a dark latex slowly oozes out (trunk). The leaves are simple pinnate compound and the flowers are small, yellow, faintly fragrant and in bunches (leaves). The fruits are flattened pods, disc-like, with one or more seeds and they do not split open. They turn brownish, pulpy and very few of them germinate (fruits). Trees that are ready to flower

may burst into bloom one day and shed the petals the next, giving rise to the familiar carpet of yellow petals on the ground below. A closer observation of the individual tree would also reveal that only that part of the tree exposed to direct sunlight will flower more profusely than the shaded part (flower). The Angsana is a majestic seaside tree native to this region (origins).

In popular botany or horticulture books, this type of text often leaves me puzzled. While there is a certain sense of familiarity in reading such descriptions, it simultaneously feels as though I know nothing about the plants. This stems from the inherent dullness and distance embedded in the writing style, which aims to establish a sense of natural science. This style of writing has two main characteristics:

1. Plants are explained individually, also in its fragmented elements. The "body of nature" is considered in isolation from wider determinants of nature. This is neither the case of how they grow in their natural habitat, nor where the urban condition they currently exist. Trees always grow in association with other trees and plants under natural conditions to get protected from its neighbours[9]. Then, where is their society (linked to other plants, and to human)? Also, what's Angsana's relation to Singapore, to Singaporeans, where this book is written? This is calling for shifting from a purely botanical analysis to an inquiry of how those plants in association with human settlements and intentions. How are these ecological characteristics connected with socio ecological groups of inhabitants?

2. Nature is intentionally explained as a nature with humans removed. However, again, this is also a human- centeric way of trying to exclude ourselves from nature by explaining nature without us. Deliberate dehumanization is itself a form of human-centricity, a de-humanzalized lens is still under impact of the human- centric lens. Thus, human-centric views are pervasive, both visible and invisible.

Interestingly enough, although Angsana has been present in Singapore for a long time, it was a cultivated species and introduced to the region by English people. The history of Angsana in Singapore started with the intervene of how humans urbanized. The process of how Angsana being naturalized in urban and at the same time being urbanized are intervented through the process of planting, so why should we separate when we study and interpret them? How does this purely botanical analysis linked to how that is linked to people and the urban changes? We criticize human-centric views, but avoiding talking about the role of humans doesn't mean jumping out of existing frameworks. So I am asking, fundamentally, how plants society establishes themselves and represents urban through the process of planting, and how humans react to this nature force? How do plants' own process entangled with different political visions of how much a city should be shaped and managed and rationalized through urban planning?

The brief history of the Angsana tree in Singapore unfolds in two distinct chapters, each marked by a cycle of planting, disease, and eventual falling out of favor. Initially introduced by the British in 1802. However, by the 1910s, a devastating fungal disease had decimated the majority of the Angsana population[10]. With the ambition of transforming Singapore into a "Garden City," a resurgence in the planting of Angsana occurred in the 1960s. Despite this effort, the fungal disease made a comeback, leading to the gradual replacement of these trees with alternative species[11]. The Angsana's story shows there are always certain natural forces that exceed human intention and planning, but we have fundamentally ignored and misinterpreted them. By 80s, Angsana had been actively supported and built up Singapore as the

'Garden City', but its role and natural processes have been ignored and uncovered.

Let us take Angsana's roots and routes as a guide of overlaying historical and policy analysis to botanical investigation, for a situated study of nature, towards a more mobile-positioning analytic. I would like to once again reinforce some things to keep in mind when studying Angsana (and for future other plants):

1. Shift from a purely botanical analysis/study to linking that to how that linked to different political visions and the urban spatial changes.

2. To understand how the process of planting affects or aligns with plants' own natural process.

I start with adding historical process into the scientific description of Angsana, to situate the tree into a more specific context:

– *"The Angsana is a majestic seaside tree native to this region."* The Angsana tree, known by its Malay name, is native to the southern part of the east coast of Peninsular Malaysia. The genus name Pterocarpus derives from the Greek words "pteron" (wing) and "karpos" (fruit), referring to the flat, winged pods characteristic of the genus[12]. The species name "indicus" suggests a connection to India, though the tree is not native to that region[13]. Angsana is widely distributed throughout Southeast Asia and the Pacific, including Sumatra, West Java, Borneo, the Philippines, Sunda Islands, the Moluccas, New Guinea, and the Carolines[1]. However, Angsana did not naturally appear in Singapore; its history there began with human cultivation.

– *"A large tree of up to 40 metres, it has a dense, drooping crown."* Humans translated this chartater as providing excellent shade and lush green, and it became a popular choice for roadside trees. This species was widely cultivated along Singapore's roadsides beginning in the 1880s. But this also means it requires a lot space, and does not explain if its natural growing habits can adapt to urban conditions, for example, next to concrete.

– *"Leaves are simple pinnate compound and the flowers are small, yellow, faintly fragrant and in bunches."* Human translated this as it can provide lush green and 'colors' in green, which fit into the garden city idea.

– *"The fruits are flattened pods, disc-like, with one or more seeds and they do not split open. They turn brownish, pulpy and very few of them germinate."* Fruits means nothing to human, but how about other species? Here are no mentions.

Here, we began to see the connection between how Angsana naturalized and urbanized at the same time. However, this is still a fragmented study if we only focus on biophysical functions of the tree, without answering the questions like how do they sustain their own growth and adapt to urban conditions. And how those contribute to their embodiments of the local and historical conditions of its production. Yet, if we look into that, the primary reasons Angsana trees have been extensively planted in Singapore during two distinct historical periods extend beyond their aesthetic appeal. The decision to plant Angsana trees was primarily informed by how their innate growing habits align with the socio-political vision of urban. Here, plants, like trees, are agencies, having the capacity to act in a given context - urban. These provides new insights to looking into a deeper histography of Angsana: What are some differences of planting Angsana in two time periods, interns of the way of planting, the alignment of the policy, and the space created. What are trees planted to replace Angsana and how does it change the image of Garden City? In what ways, this help to produce different knowledge or lenses of seeing things?

FIRST ROUND OF PLANTING

ROADSIDE TREE BUT DISEASED   REMOVING

Angsana trees first extensively planted in 1802 in strategic colonial ports—starting from Malacca, extending to Penang, and ultimately gracing Singapore [14]. When it began to be planted in Singapore, it was incorporated as a wayside tree, especially the important streets. British adorned key promenades such as St Andrew's Road and Connaught Drive (where the national gallery is now), embodying the colonial aesthetic of orderly green spaces[15]. Therefore, Angsana appeared in Singapore from a cultivated species, meaning the evolutionary process has been influenced by humans to meet their needs. However, a pattern of disease mirrored the route of their planting, devastating these arboreal giants in succession from Malacca in 1885, to Penang by 1908, and reaching Singapore by 1914[16]. To control the disease, rows of the trees were cut down, but in vain. By the 1980s, the first generation had vanished[17].

SECOND ROUND OF PLANTING

'INSTANT' TO 'WEAK AND BORING' TREE   REPLACING

May 1967, *The Straits Times* anchored an ambitious objective for Singapore: to transform into a beautiful city within three years (Fig. 2), which derived from the Garden City campaign in the same year to make cityscapes with lush plantings. However, how is it possible, in three years? This urgent demand for quickly effecting a visible change in the urban images requires: first, rapid planting materials - not only immediate greenery but also the introduction of trees with tall structures and expansive crowns to build up the visible green space; second, easy planting trees with less care. The Angsana became a perfect choice, due to its ability to form the structure in one year and starting to provide shade and restructure the space in four years. Its mature size can reach heights of 30 to 40 meters with wide and dense canopy with gracefully drooping branches [18] offering the desired instant transformation of urban image (Fig. 3 and 4).

Beyond its aesthetic qualities, the Angsana trees' natural growth habit has aligned with remarkably well with Singapore's rapid urbanization requirement, thanks to its robust growth capabilities: propagation techniques, a resilient root system, and the presence of nitrogen-fixing bacteria. Angsana trees can be efficiently propagated from cuttings, facilitating successful transplantation[19] . Their strong and fibrous root system allows them to thrive under roads and adapt to diverse soil conditions [20]—including moist sandy loam, clay loam, and even the compacted clayey soils prevalent in urban settings. Those critical traits help Angsana to tolerate a more rough handling [21] when transplanting, less care in terms of laboring. Moreover, Angsana trees are capable of growing in reclaimed lands with compact soil conditions, as evidenced by their prevalence along the east coast parks developed in the 1970s, where they quickly began providing essential shade.

Fig. 2.   The Straits Times, 12 May 1967, Page 4   Fig. 3. Angsana, after one year of transplanting.

A crucial aspect of the "Garden City" initiative involved the regular clearing of fallen leaves to maintain urban cleanliness. This practice, while keeping the streets neat, reduced the nutrient recycling naturally provided by decomposing leaves. Fortunately, the presence of nitrogen-fixing bacteria in Angsana trees enables them to self- sustain by fixing atmospheric nitrogen, compensating for the nutrient-poor urban soil.[22]. Not surprisingly, between 1969 and 1982, over 20,000 'instant' Angsana trees were strategically planted island-wide, especially along important roadsides (orchard road) and important developments to provide immediate greenery (fig.3).

In addition, many developments were embedded behind the garden city movement - new town plans - to relocate residents to outskirts in high-density housings. Angsana also served as markers of burgeoning development areas, highlighting the expansion of housing and new town initiatives. The example is Ang Mo Kio, a new town completed in the late 1970s, was one of the largest town centers in Singapore, where previously it was an industrial area. 1973 Straits Times report: "Ang Mo Kio new town will have the best designed HDB flats in Singapore, the Housing Board said yesterday. The town will have 45,000 flats on a 1,500-acre site, with plenty of open space and greenery, social, recreational, sporting, educational, shopping and transport amenities. The HDB calls it a "new generation" town designed for gracious living." Angsana, in this case, because of its instant green effects, were largely planted around the new town zone to quickly transform the industrial area into a green residential zone. Here, Angsana also signified where urbanization happened.

This stage, is a cohesion period - the planting of Angsana is an alignment between the tree's own growth pattern, characters and human's political visions - successfully reshaped the urban space with green canopies, and further built the image of Singapore as a garden city by the 1980s.

However, the popularity of the Angsana in the 1960s did not last long until the fungal disease attacked again in 80s and Angsana began to be gradually phased out[23]. Notably, disease was the main reason to remove Angsana in the 19th century, but in the 80s became a more complicated story - a multi-layered interplay between how the plant's behavior started to resist to the political vision of how urban space should look like.

Fig. 4.   Angsana forms structure after four years of transplanting.

What further led to the large replacement of Angsana? Clues can be found through the stories of why Angsana was named to be a "weak" tree. Despite the initial appeal of Angsana trees, which included their ability for rapid root development from cut stems facilitating quick canopy growth post-transplantation, Angsana quickly showed some resistance to urban development and human intentions. Firstly, Angsana trees exhibited an extensive growth pattern that conflicted with the need for road expansion. Their rapid growth required frequent pruning, which was labor-intensive and contrary to the maintenance expectations for a garden city. Additionally, as a deciduous species, their frequent leaf shedding did not align with the vision of a perpetually lush, green urban landscape. The tree's propensity to develop roots from the upper portions of its cut stems—while beneficial for quick growth—proved to be a double-edged sword. As the trees matured and more branches developed, the upper sections of the stems were often unable to support the additional weight, leading to branch failure[24]. Moreover, the ideal spacing required for the trees to thrive is about 25 meters apart to ensure proper growth and canopy spread. However, to maintain an appearance of dense greenery, they were often planted only 12 meters apart. This closer spacing led to overcrowded conditions, further stressing the trees and causing them to thin out prematurely[25]. These factors combined—the tree's natural growth habits impacted by humans and the evolving demands of urban planning— contributed to their classification as "weak" in the context of urban forestry and ultimately led to their large-scale replacement.

By the 1980s, Singapore was internationally celebrated as a "Garden City," largely due to the widespread planting of Angsana trees. However, the government soon sought to diversify the urban greens, advocating for a greater variety of trees that could bring more color to the cityscape. As a result, the Angsana began to be viewed as a boring tree. Despite its natural beauty, the Angsana is a deciduous tree that blooms spectacularly with yellow blossoms twice a year—potentially adding the desired 'colors' to the green landscape. Yet, these flowering phases depend on experiencing a dry season, a rare occurrence in Singapore's typically humid climate[26]. During the same period, Angsana trees began suffering from a mysterious and rapid-spreading disease, likely fungal, that caused them to wither and die within a month. Public and governmental dissatisfaction with the Angsana was increasingly voiced in platforms like The Straits Times[27] published a news in 1981- "Angsana trees here there and everywhere", which criticized the tree's boringness for the evolving urban environment. This marked a period of tension where the natural characteristics of the Angsana clashed with human aspirations for a more vibrant and diverse urban greenery. By the late 1980s, this discord led to the gradual removal or replacement of Angsana trees in what was framed as an "upgrade" to the city's greenscape. This phase highlighted the inherent resistance between the natural tendencies of the more-than-human world and human intentions.

THE EMERGENCE OF FAMILY OF FABACEAE

Does the death, removal, and replacement of Angsana trees truly alter the landscape of Singapore's "Garden City" or how? Interestingly, historical documents ignore this Angsana's story but tend to quantify the success of this initiative by the sheer number of trees planted, currently simplified to the 'One Million Trees' campaign. Yet, what deeper significance does this figure hold? What are those trees? What can the selection of tree species and their numbers tell us about the spatial impacts and the human-nature interactions within the urban environment? As we replacing Angsana, it's crucial to consider not just the quantity but how does these changes materalized. How do the chosen species influence urban space and interact with human?

The late 1970s marked the completion of the first phase of Singapore's ambitious island-wide planting campaign. This initial phase transitioned into a second, characterized by a shift towards planting a more diverse array of species, notably those with large and visually striking blossoms. During this period, the greening initiative introduced several notable species: the Yellow Flame, recognized for its vivid yellow blossoms; the Flame of the Forest (Delonix regia), renowned for its bright red flowers; and the Rose of India (Lagerstroemia speciosa), admired for its graceful purple blooms. The Golden Shower (Cassia fistula) also gained prominence, decorating roadsides with its appealing clusters of yellow flowers hanging from the branches, according to Wee and Coelett[28]. By 1988, the top fifteen trees are: Acacia auriculiformis (30 meters tall), Samanea saman (Fabaceae, hardy, widely- spreading crown which can reach 20 to 30m), Cinnamomum iners (10-15m tall, wide crown), Peltophorum pterocarpum (Fabaceae, 35 meters tall, wide crown) Eugenia grandis (25-45 meters tall), Swletenla macrophylla (30-40 meters tall), Pterocarpus indicus (Fabaceae, Angsana), Khaya senegalensis (30 meters tall, wide crown), Andira inermis (Fabaceae, 35 meters tall, wide crown), Casuaria

equlsetlfolla (hardy, 30-40 meters tall, wide crown) Cerbera odollam (flower, a medium-sized tree, up to 12m tall), Khaya grandiflora (30-35 meters tall), Tabebula rosea (flower, a medium to big sized tree, can grow 30m tall), Terminalla catappa (a big tree, up to 35m tall), Eugenia polyantha (up to 30m tall).

By 1988, the fifteen most prominent trees included: Acacia auriculiformis (30 meters), Samanea saman (30 meters, with a hardy, widely-spreading crown), Cinnamomum iners (10-15m, with a wide crown), Peltophorum pterocarpum (35 meters, with a wide crown), Eugenia grandis (25-45 meters), Swietenia macrophylla (30-40 meters), Pterocarpus indicus (Angsana), Khaya senegalensis (30 meters), Andira inermis (35 meters), Casuarina equisetifolia (30-40 meters), Cerbera odollam (flower, a medium-sized tree, up to 12m), Khaya grandiflora (30- 35 meters), Tabebuia rosea (up to 30m), Terminalia catappa (flower, up to 35m), and Eugenia polyantha (up to 30m).

The replacement of the Angsana tree involved over a hundred different species, with the Fabaceae family being particularly prominent, comprising 37 species including the Yellow Flame and Flame of the Forest, and various others. The success of these species is largely due to their symbiotic relationship with nitrogen-fixing bacteria within their root nodules[29]. This biological feature allows them to assimilate nitrogen directly from the atmosphere, providing a significant growth advantage in nutrient-poor soils. Moreover, the flowering traits of these trees contribute vibrant colors to the urban landscape, aligning with human aspirations for a more colorful green environment at that time.

THE INTERACTION BETWEEN GOVERNMENT AUTHORITY, THE PUBLICS, AND BOTANISTS

By the end of the 90s, Angsana on the island had decreased a lot. The rest of the surviving trees have grown into huge trees and stand individually along the road, like the figure 1. The story of Angsana resumed in 2010 when the School of the Arts (SOTA) began to be constructed at Orchard road area, where there is a large Angsana tree standing. The botanists and design consultants worked together to include the tree into the overall design of the school – integrating the Angsana tree into a large step – later became Sota's grand steps. Unfortunately, due to decay and cavity at its base, the tree was removed on 21 January 2018 [30]. More than 200 students stood at the top of Sota's grand steps to farewell this giant tree. At the ceremony, Sota principal Lim Geok Cheng called the tree an important landmark for Sota that this Angsana tree has become more than an urban space structure, but a sign of culture, known as the "Tree of Knowledge" or the "SOTA Tree"[31]. In addition, in 2015, we saw a successful transplanting of the mature Angsana trees to Esplanade Park to provide shade for the public. Different from planting for shade in the 60s, this time, Angsana is tied with culture sense, as NParks Director (Streetscape) Oh Cheow Sheng said this would "help to bring back a sense of nostalgia"[32]. NParks scientists managed to breed disease-resistant Angsana trees[33] and started to plant Angsana once again. Here we not only see the role of Angsana shift, but also the interaction between government authority, social groups, and botanists.
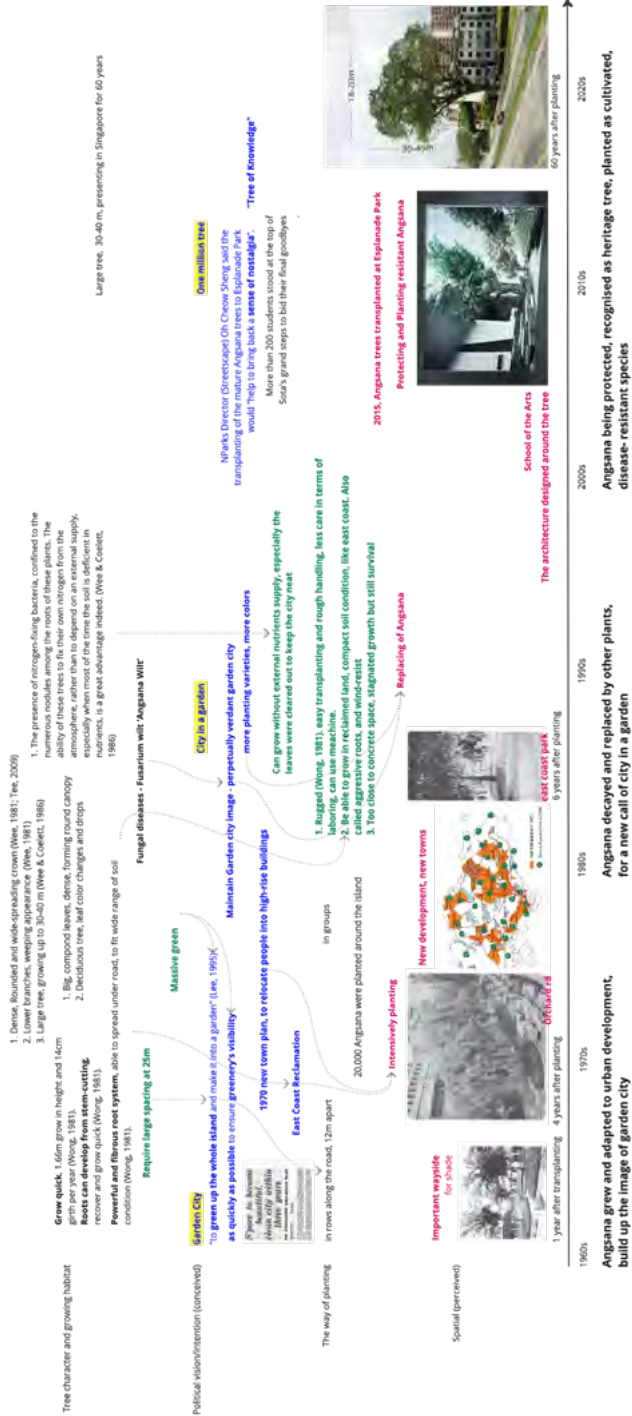
Fig. 5.   Periodization diagram – showing Angsana's growth overlays with urbanization. Created by author.

CONCLUSION

The long history of Angsana in Singapore is materialized in the wide landscape on the island, which is an accumulation and intersection of its natural force with humans' political subjectivities, and spatial impacts. In the 1960s, the Singaporean government aimed to enhance urban greenery to support rapid urbanization. Angsana trees were pivotal in this initiative, providing immediate lushness across the island, offering ample shade along roadsides, and transforming industrial zones into desirable residential areas. Over two decades, extensive planting of Angsana in rows and clusters helped forge Singapore's identity as a "Garden City," both physically and discursively. Yet, human intentions are relentless and evolving. As Singapore's political and aesthetic visions for the future shifted, the way Angsana trees grew and their physical appearance began to misalign with these new urban ideals. Consequently, they gradually receded from the forefront of the urban landscape. However, the remaining mature Angsana trees, now significantly larger and more imposing than many other urban plantings, have transcended their original utilitarian role. These giants have become symbols of heritage, culture, and knowledge—entities that are preserved, protected, and even transplanted (Fig.5).

Plants make silent yet profound statements simply by existing, transforming modest spaces into narratives of greater depth. The journey of the Angsana tree exemplifies this narrative, going beyond understanding urban greening as one devoid of human interaction but through a tale of embodiment. Throughout its lifecycle—growth, adaptation, and eventual decay—the Angsana aligns with or diverges from the evolving goals of urbanization, systematically planted and then replaced to shape the city's space.

This research underscores a critical need to re-evaluate our engagement with urban nature, especially more-than- humans. The story of Angsana is a start for looking at Angsana trees not through the established methodology system but positioning it into a specific social and ecological context. Such a perspective recognizes trees as active participants in urban planning and space-making, shifting from objects placed by human design to subjects with their own agency and influence on the urban landscape. Their position is changing from passively selected by humans to locate at a certain place, to more actively present themselves in the urban planning process and construction of urban space.

From 'garden city' to 'city in nature', they are big political visions, as well as simply situated plants' stories.

NOTES ON CONTRIBUTOR(S)
Tiantong is currently a PhD student in Architecture at NUS. Her research interests focus on seeing urbanization from the process of planting in Singapore, to recognize more-than-humans' agency to futher understand how human-nature interactions shape urban systems, and what novelty would emerge.

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Figure 5   Created by author

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The Resignification of the Garden Suburb as International Heritage

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Abstract

Urban green spaces have gained increasing recognition due to industrialization, moderniza-tion, and the negative impacts of climate change. This article examines the history of urban green space system planning in Vietnam's capital city, Hanoi, focusing on its theoretical pro-totype and practical planning situations from an international perspective. Aiming to alle-viate the crowded and residential conditions caused by the high construction density of the central urban area in Hanoi, the Vietnamese policymakers, planners and investors proposed and formulated planning versions of urban green space to improve its urban congestion and environmental issues. Using the case of urban green space system planning of Hanoi during the French modern planning influence period (1886 - 1954), the Soviet Union planning in-fluence period (1954 - 1991), and the globalization period (1991 - 2011), this article examines urban green space system planning which authorities developed for the capital city of Hanoi in three different periods. By analyzing planning concepts, planning policy, and implementa-tion situations of planning, this article argues that urban green space system planning aims to improve the urban environment quality and create green and leisure spaces for residents. Throughout this trajectory, urban green space planning in Vietnam has undergone continu-ous transformations. However, in terms of the actual construction and implementation, green space projects in Hanoi city are difficult to succeed due to the issues of urban land using pol-icies, misconceptions arising from diverse perceptions, and the absence of long-term vision.

INTRODUCTION

Hanoi, the capital city of Vietnam, has a rich and fascinating history that spans over a thousand years. During its long history, Hanoi's urban green space system has been shaped by a variety of influences. This article analyzes the theoretical concept of the urban green space system from the perspective of international ideas and the practical planning situation in the capital city of Hanoi, with a focus on the historical planning aspect.

In different planning systems, there are various names and different professional approaches. In socialist countries and territories, similar areas/spaces are referred to as "urban green space system" in land use planning and "urban green space" in general construction planning. In the following section of this article, these related contents are collectively referred to as the urban green space system. According to the international definition, urban green spaces are spaces within urban and peri-urban areas, in the form of patches, corridors, or clusters of geographical areas, where the land use is primarily dedicated to the development of artificial or natural greenery, as well as other wetland ecosystems and natural water bodies[1]. Urban green spaces include not only existing spaces with greenery, but also areas that will be developed with greenery in the future based on established urban spatial planning.

In general, domestic research in Vietnam has not yet approached the core scientific issues of the urban green space system. From the perspective of landscape architecture. Tran Van Chu and Dang Van Ha stated that green spaces and water bodies are one of the important factors in urban landscape architecture.[2] However, most of the research contents have not yet been synthesized into a theoretical foundation and have not yet yielded effective results in practice. From the perspective of urban development management, has given opinions on the existing problems in calculating the norms for parks, greenery, and flower gardens in the urban green space system, as well as the existing issues for the development of the urban park and greenery system in Vietnam to ensure standards for the development of sustainable cities. Regarding the urban green space system in Hanoi, the scientific foundations for research have not been fully surveyed and consolidated. The theories and international experiences seem to be limited to strategic proposals without finding an effective pathway to practical implementation and addressing the issues specific to the circumstances and realities in Hanoi.

Through an analysis of planning concepts, planning policies, and planning implementation scenarios, this article explores the urban green space system planning undertaken by authorities for the capital city of Hanoi across three distinct periods. The first stage began in 1886 with the concept of "public parks". However, the urban green space system planning only remained at the conceptual level during this period due to strong French influence. The next stage from 1955 to 1986 focused on overall land use, space, and physical objects, following planning techniques from the Soviet Union. In the globalization period between 1990 and 2011, a focus was placed on increasing the amount of green public spaces available for the local people.

The urban green space system is a topic directly related to the trend of sustainable development, making an important contribution to the cause of building and developing cities in the new era. This paper will provide theoretical foundations for the planning of the capital region,

urban management oriented towards smart and sustainable development. At the same time, it will help raise awareness and open up international ideas for the green space system of the capital city of Hanoi in the future.

ORIGINS OF URBAN GREEN SPACE SYSTEM IDEA DURING THE FRENCH MODERN PLANNING INFLUENCE PERIOD (1890-1954)

Before becoming a French colony, Hanoi was the capital of Vietnam during the Nguyen dynasty, built in accordance with traditional East Asian architecture, reflecting the cultural identity of Vietnam. The city was planned as a closed system, with a developed network of streets and canals, divided into various areas based on profession and population. In 1883, the Patenotre Treaty officially placed Vietnam under French protectorate. Afterwards, France intensified the construction and development of Hanoi as the capital of French Indochina. The French arrival in Hanoi and their establishment of influence in Vietnam led to significant changes in the political, economic, and cultural spheres of Vietnam throughout the colonial period until Vietnam gained independence.

THE PAUL BERT PARK AXIS – THE FIRST PUBLIC PARK OF HANOI (1886)

For Vietnam, the concept of "public parks" truly began to emerge during the French colonial period. In 1886, Auguste Henri Vildieu, a French engineer, was tasked by the French colonial administration to plan and design this park axis, followed the prevailing urban planning principles of the time in France[3]. This was the principle of symmetry in planning. Architects such as Ernest Hébrard and Henri de Montalembert were brought in to design and oversee the construction[4]. When opening new roads, they built wide sidewalks and planted shade trees along both sides. This new French style with rows of trees and planned parks created a major change in the appearance of the city.[5]

The initial area of the Paul Bert Garden was approximately 12,153.5m². The main axis of Paul Bert Park is perpendicular to Hoan Kiem Lake. This arrangement facilitated ventilation through the green system and also connected the center with the open space system including vegetation and walkways in the Hoan Kiem Lake area. This park was connected to the surrounding buildings such as the City Hall, the Residence of the Governor- General, the Treasury Building, the Post Office, and the Bank of Indochina, forming an overall structure for the central area. This area was designed and built entirely in the architectural and planning style of the French. The Paul Bert Axis was completed in 1888[6].

The introduction of the concept of "public parks" by the French into Vietnam during the colonial period was a significant contribution. The urban green space planning was an important component in the overall plan to transform Hanoi into a modern colonial city modeled after European cities. This plan laid the foundation for the transformation of Hanoi into a modern colonial city under French rule. It would have a significant impact on the urban development of Hanoi in the decades that followed.

ERNEST HESBRARD'S PLAN (1924)

In 1923, architect Ernest Hébrard was appointed Director of the Indochina Architectural Planning Department. In 1924, Hébrard's plan was published. Hanoi was divided into two distinct areas: the old quarter was maintained to serve the native population, while the new quarter was the residential area for officials and the French. In the plan, Hébrard allocated a significant amount of land for important structures such as the mansions of colonial officials and military headquarters, surrounding them with green areas. This reflected the prioritization of serving the French and the colonial elite. While the planning focused on parks and street trees, the areas designated for the native population, such as the Old Quarter, lacked adequate green space.

Rejecting the simplicity of the chessboard layout, the Master Plan was filled with pedestrian spaces, greenery, and spacious squares. Applying the Beaux-Arts school of thought prevalent in France, Ernest Hébrard planned the road system based on a geometric network, harmoniously combining it with public spaces where symbolic buildings could be located.

Hébrard's plan included several major ideas, such as building a green park and recreation area around West Lake, transforming West Lake into two interconnected lakes with a system of roads and green spaces surrounding them, creating an ecological infrastructure with a range of recreational activities. He also envisioned a refined Hanoi with wide central avenues planted with trees on both sides, combined with green spaces and historic buildings related to the French colonial period.

However, the 1929 economic crisis slowed down the budget for public works and caused Hébrard to definitively abandon Hanoi, leaving many of his projects and the public space program in their infancy. Overall, Hébrard's plan set forth an ambitious vision to develop Hanoi into a capital city worthy of the French Indochina Federation, harmoniously blending French architecture and tropical landscapes.

LOUIS-GEORGES PINEAU'S PLAN (1943)

In this project, in addition to combining the ideas of Hébrard, the star-shaped squares (square configurations that lead to characteristic areas) along the French style that have been added will contribute to the development of Hanoi's urban architectural foundation. In the 1943 Master Plan, Hanoi had many such star-shaped squares. The diagram was made by architect Luis Pineau - Deputy Director of the Indochina Planning Department (Figure 1). The Master Plan emphasized the idea and architectural style in harmony with the surrounding environment. In L.G. Pineau's planning scheme, the city boundary was limited from the west bank of West Lake, running along the To Lich River (Lang Belt Road), expanding to the Southwest and South to Khuong Trung village. The land area was thoroughly exploited within the city boundary, interspersed with green trees and housing: green trees in low-lying areas, housing utilizing the higher land areas. Villas and apartment-style housing with the characteristics of the Vietnamese capital developed in the expanded areas to the Southwest, Southeast, and interspersed with urban green areas.

XIII. Hà Nội, Sơ đồ quy hoạch lập tháng 1/1943 dưới sự chỉ đạo của Louis-Georges Pineau (phó giám đốc Sở kiến trúc và đô thị). Bản gốc có tỉ lệ 1/10.00...
(có thước đo tỉ lệ), bằng giấy, in màu, không có hướng [bắc], có đề: "Hà nội, giới hạn ở phía trong đường vành đai, tháng 1/1943. Sơ đồ quy hoạch". Phần chủ gi...
chia thành bảy khu quy hoạch khác biệt nhau: hai khu đầu là biệt thự dành cho một gia đình và cửa hàng, xây kiểu Pháp; bốn khu sau là biệt thự kiểu Việt Na...
ở thành phố, nhà ống ở thành phố, cửa hàng, nhà nông thôn truyền thống; phần sau cùng là đất dành cho công trình công cộng và cơ quan hành chính. Sơ đ...
cũng nêu rõ các dịch vụ, đường cần mở hoặc mở rộng, khu vực công cộng, ao hồ hiện hữu, kích thước 90 x 59 cm. Phòng Louis-Georges Pineau, Trung tâm lư...
trữ, Viện kiến trúc Pháp, Paris (pinge 33/02).

Fig. 1.   Hanoi Master Plan Map (1943) Under the direction of Louis-Georges Pineau

Unfortunately, those projects were not implemented due to financial reasons and the war. However, the buildings constructed by the French in the late 19th and early 20th centuries had a strong influence on the planning and urban architecture of Hanoi. Through these planning and construction activities, an open space system was designed based on modern Western planning principles. Lakes remain a special open space element, and furthermore, formal parks and Western-style squares have been introduced as new types of open spaces[7]. Overall, this master plan is highly regarded for prioritizing green spaces and public spaces. The distribution of green areas interspersed with residential and public buildings is a very positive aspect, as it creates living spaces in harmony with nature.

During the French colonial period, the planning and development of public green spaces in Hanoi gradually received more attention and improvement. From the late 19th century to 1954, Hanoi had 1 park and 16 gardens. However, in general, the plans and policies on public green space planning during the French colonial period, and the implementation and deployment of these plans, still faced many difficulties and did not achieve the set goals. Although the master plans prioritized the integration of green elements and nature, they did not specify any concrete standards (m²/person). At that time, the concept of green space standards per capita was not yet standardized and widely popularized in urban planning as it is today. The focus was on the overall spatial vision and the integration of green infrastructure, creating a harmony between French architecture and the tropical landscape, rather than rigidly defining green space ratios.

APPEARANCE AND DEVELOPMENT OF URBAN GREEN SPACE SYSTEM PLANNING UNDER THE INFLUENCE OF SOVIET PLANNING MODEL (1954-1984)

Ten years after the end of the resistance war against the French in 1954 marked a period of recovery, recovery and gradual economic development. Hanoi was heavily devastated by the war and faced many severe difficulties due to the damage of the war as well as the "Cold War" political situation. At that time, Vietnam had close relations and received significant help from the former Soviet Union and countries in the Soviet bloc. Due to the prolonged war, many parks and gardens in the city were damaged and destroyed.

THE EARLY STEPS OF THE GREEN SPACE SYSTEM PLANNING (1955)

This period saw a significant increase in the area of green spaces and parks in Hanoi, from 38 ha during the French period to 130 ha[8]. The parks were still relatively simple, with their main purpose being to provide resting, playing, and entertainment spaces for residents.

In the years 1955, when Hanoi established its urban planning map, the term "Green space system" first appeared (Figure 2). The term includes planting trees along streets and developing parks. This was a very important step, showing that Hanoi paid attention to allocating land for

green spaces and parks in the process of developing the city. It demonstrated the vision and concern for the environment, landscape and quality of life of residents from the early stages of urban planning work in Vietnam. The planning map showed a large green space surrounding West Lake, as well as another sizable green space in the southwest, connected by a long road, ensuring greenery coverage for all residents.

In 1960, a more detailed master plan for developing the capital city was drawn up with the assistance of Soviet experts to determine the development direction for this important urban area. It marked the launch of long-term plans for Hanoi (Figure 2). Here, the Soviet approach in Hanoi partly inherited and further strengthened the colonial urban planning experiences of the French in the past. The map clearly demonstrated functional zoning, with green spaces and parks being better defined and linked together. Parks and public buildings had all been determined based on this plan.

The two representative projects of this period were Youth Park and Thong Nhat Park. The Thanh Nien Parkway (formerly Co Ngu Road) was the first parkway in Hanoi. Prior to this, it was just a small dirt road crossing West Lake and Truc Bach Lake, built by local fishermen for trade and transportation[9]. After 1957, it became a place for recreation, exchange, and enjoying the beauty of West Lake. During this time, parkway were understood as green- lined roads that improved the quality of life for the people and represented the cultural and historical symbols of the city.

Meanwhile, Thong Nhat Park covering 50 hectares was considered the first park in Vietnam, modeled after the "cultural, recreational" parks of the Soviet Union. From a vast garbage dump and swampy lakes where water would accumulate, the area has become a wonderful space for the capital's residents to relax and recreate. The shift from providing "resting, playing, and entertainment spaces for residents" to more ambitious goals like improving quality of life and cultural/recreational functions. The motivations and user needs driving the creation of green spaces likely evolved over time, reflecting changes in Hanoi's socioeconomic conditions and demographics.

Specifically, Youth Park played an important role in developing Hanoi's first linear park concept by transforming a small dirt road. Meanwhile, Thong Nhat Park demonstrated how large degraded areas could be repurposed into major green spaces mimicking models from the Soviet Union, providing venues for culture, recreation and improvement of living standards. These projects reflected an evolving vision of urban green space planning and management in Hanoi during this period.

LENINGRAD PLAN (1974)

After national reunification, the development of Hanoi capital city was implemented at a faster pace. In the period of 1966-1984, urban planning and construction of Hanoi's green space system made significant progress. The land area for greenery reached 140 hectares, an increase of 20 hectares compared to the previous period.
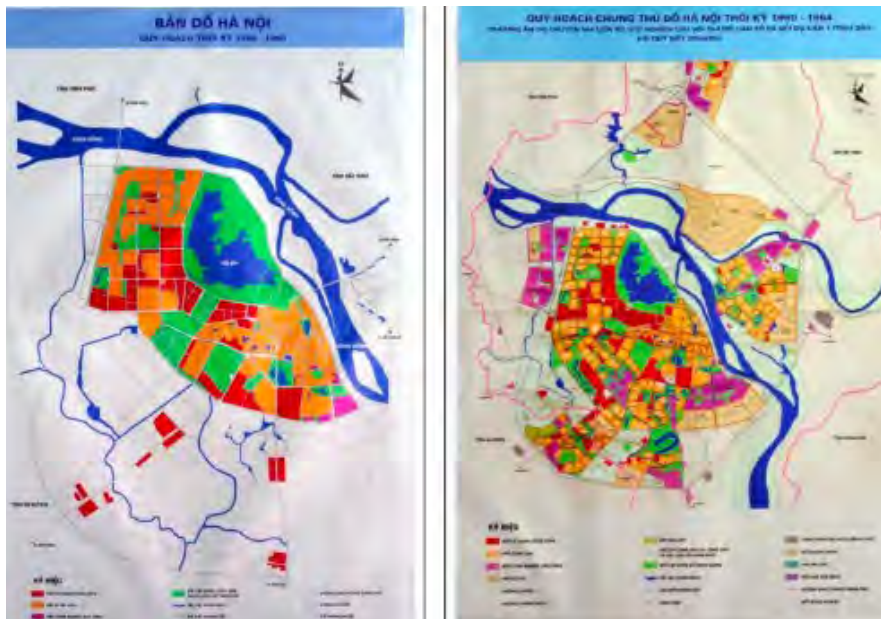
Fig. 2.   Master plan of Hanoi in 1955 (right) and Master plan of Hanoi in 1960 (left)

Parks were also expanded and upgraded during this period, notably Thu Le Park (1976) constructed with an area of 29 hectares. This park took advantage of diverse terrain, with a harmonious combination of greenery and water to create a beautiful landscape. However, the architectural and landscape designs of parks were still relatively simple and unable to demonstrate artistic diversity.

During this time, the development of large-scale housing projects in Hanoi in the "microrayon" model, taking inspiration from the Soviet principles of urban planning . These apartment blocks completely replaced traditional residential areas and natural open green spaces. In 1974, a research group from the Leningrad Institute for Urban Planning and Research, led by SI Sokolov, proposed a new plan called the "Leningrad Plan". The Soviet planners took inspiration from the 19th century approach of Haussmann to redevelop and expand cities, delineating avenues and streets to create parks and squares, and establishing urban focal points and perspectives.[10] The new urban center would be built on the south and southwest shores of West Lake, with avenues radiating out from that center, public spaces, high-rise public buildings and pedestrian crossroads. In addition, in the "Leningrad Plan", planners emphasized allocating land for greenery, including green belts organized to surround new construction areas and nature reserves across the Red River (Figure 4). This reflected the idea of a "socialist city" with a balance between urban development and natural spaces.
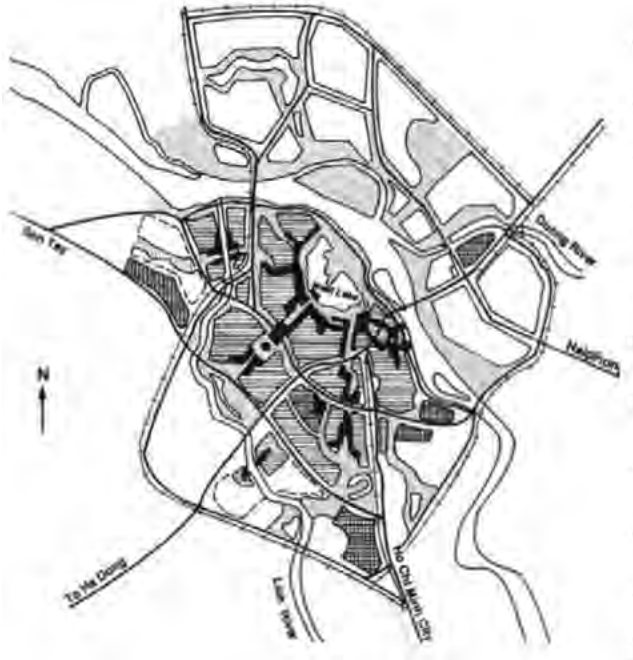
Fig. 3.   The plan of the Leningrad

Socialist ideology and French colonial influence shaped the design and layout of green spaces, with a focus on large public areas. Limitations in resources also affected the development of smaller, neighborhood-level green spaces. However, the government prioritized infrastructure development and public institutions before green spaces.[11] Overall, the historical and ideological context influenced the design and focus of green spaces in Vietnam during this period.

Today, in hindsight, it is clear the optimism placed in the plan was not realized: Hanoi did not become the bustling metropolis predicted by planners, at least not within that timeframe.

CREATING MORE GREEN OPEN SPACE FOR THE LOCAL PEOPLE DURING THE GLOBALIZATION PERIOD (1990- 2011)

Vietnam's transition to a market-oriented economy, driving rapid urbanization in Hanoi. This brought socioeconomic benefits but also exacerbated environmental pressures. As the population grew, demand rose for urban green spaces. Several new parks were developed to serve recreation needs. However, the pace of urban development concurrently reduced forests and natural areas around the city. The period marked both socioeconomic progress and environmental challenges that demonstrated the importance of planning cautiously to properly address development pressures on Hanoi's natural resources and liveability.
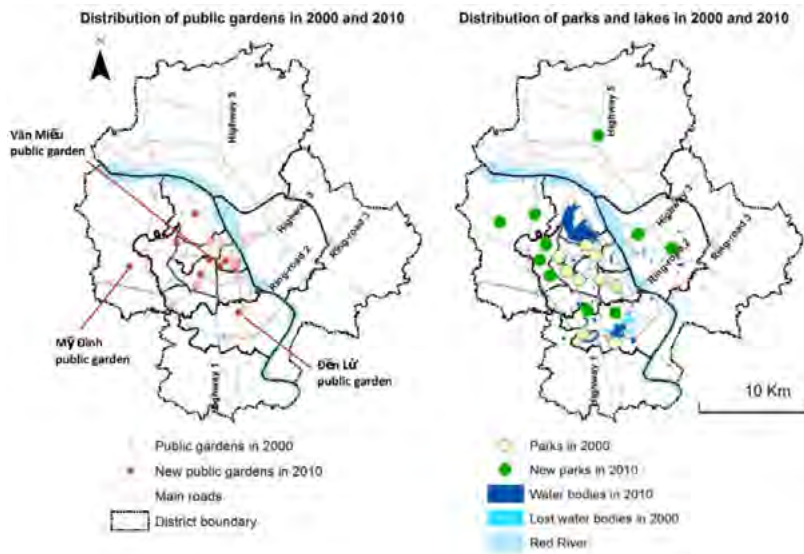
Fig. 4.   Evolution of public spaces between 2000 and 2010.

MASTER PLAN FOR THE CAPITAL CITY OF HANOI UNTIL 2010 (1992)

In the overall planning for the development of the capital city of Hanoi until 2010, the development of the green tree system and open spaces was identified as one of the important objectives. The planning set a target of increasing the public green space area to 6-8m² per capita, including various types of spaces such as parks, gardens, playgrounds, and sports fields. In terms of the ratio, the planning envisaged allocating around 15-20% of the total urban area for public green spaces. For the first time since the Soviet teams, several large international architecture and engineering firms have been invited to participate. Bechtel, a major American engineering company, is preparing a feasibility study for this area and the Vietnamese government has invited three renowned international research companies to develop this area. OMA will be responsible for designing the Dong Anh district, SOM the Van Tri lake area, and Nikken Sekkei the Tu Liem area on the left side of West Lake. OMA and SOM are competing in the same area. The two projects have clear similarities due to the mandatory program, but the design approach and functional allocation are very different. SOM, following a logic of steel zoning, divides and reorganizes the landscape according to a clear and well-defined scheme, using water as the urban anesthetic for a new miniature Chicago. While OMA shapes the territory according to the scenarios they propose, balancing the inevitable artificiality and creating favorable conditions for new ecological possibilities. The landscape becomes an integral and inseparable part of the design. The economic crisis that hit the South Asian countries in 1997 dealt a heavy blow to the experimental/glorious revival approach. The American engineering company Bechtel and Daewoo International have implemented a different plan, which turns out to be the merger of the two previous projects, OMA and SOM. The whole thing

looks like a 1930s garden city, with a miniature Chicago surrounded by a wedge-shaped, drop-shaped island. Despite everything, the plan was approved and incorporated into the future urban development of the city. [12]

MASTER PLAN FOR THE CAPITAL CITY OF HANOI UNTIL 2010 (1998)

The plan sets out the goal of increasing the area and quality of urban green spaces, while building an interconnected green network from the city center to the peripheral areas. In terms of planning standards and targets, the master plan sets a target of achieving a standard of 10m² of urban green space per resident, along with a green canopy coverage target of up to 30% of the urban area. The plan also outlines the distribution and structure of greenery across the city. Specifically, the urban green space system will be evenly distributed, with a greater concentration in the city center and residential areas. In terms of structure, there will be a combination of broadleaf trees, shrubs, flowering plants, and climbing plants, in order to create a diverse and harmonious landscape. In the Hanoi Master Plan 1998, the task of increasing the area of parks, green spaces, and improving the water quality of rivers and lakes was set out. The Red River is considered an important feature of the city's landscape, and the lakes and rivers are preserved to become recreational and leisure areas. Importantly, the West Lake area, first mentioned in the Hébrard Plan in 1926, has once again been identified as a tourism and leisure center. West Lake is an open space of great value in Hanoi with an area of 500 hectares and a perimeter of 16 km. The green space system will be improved by including existing parks, flower gardens, green areas connected to parks in new urban areas, and green lines along the city's rivers. However, this Plan has addressed the uneven distribution of vegetation and open spaces in different parts of the city, particularly the lack of green areas in the inner city districts.

MASTER PLAN FOR THE CAPITAL CITY
OF HANOI UNTIL 2030, WITH A VISION TO 2050 (2011)

Although the 1998 master plan was issued by the government, but during the 2000-2010 period, the number and area of parks and public gardens increased significantly, but mostly in the suburbs, not meeting the needs of the Hanoi inner city. This indicates a significant gap between the provision of public spaces in the suburbs and the inner city, requiring comprehensive solutions to improve the situation (Fig 14). The area of green space system in Hanoi at this time was 320 ha[13]. The green space per person ratio within Hanoi's inner urban districts remains below the benchmark of 2 square meters.

Given the current insufficient green coverage, action is needed. This plan outlines the clearest objectives and implementation strategies for developing the green space system compared to any plans since the 1955s. That is plan in 2011 Prime Minister approving the Master Plan for the Construction of the Capital Hanoi until 2030 and a Vision to 2050 is an important legal document related to the master planning of Hanoi was approved (Fig 15) . This is a major effort to address the shortage of green spaces in the inner city, meeting the needs of the people. Hanoi

has set a target of 11-13 square meters of urban public green space per person. The city's green space system is envisioned to include green corridors, green belts along the Nhue River, green wedges, and urban parks, as well as rural areas, river and lake systems, mountains, natural forests, and agricultural lands. The master planning covers the public green space network, comprising parks, flower gardens, and streetside trees, as well as the broader system of parks, gardens, and water bodies like rivers and lakes.
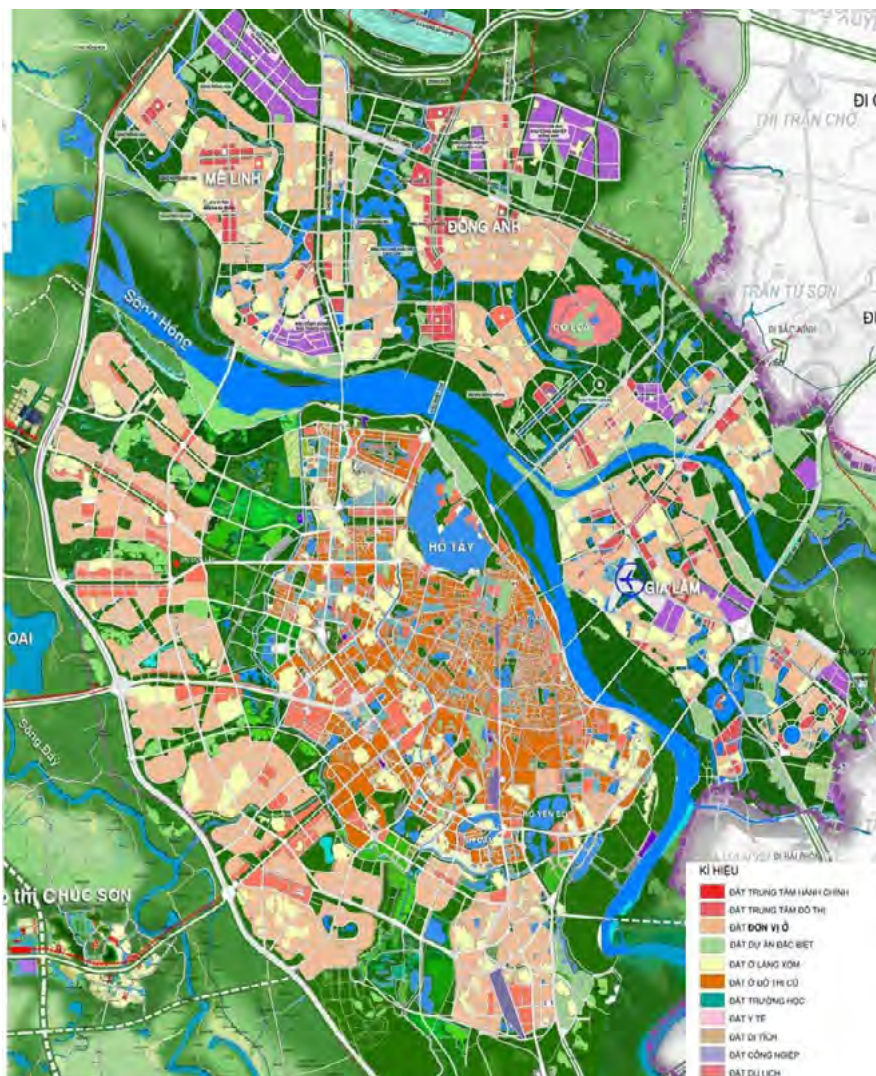

Fig. 5.   The Master Plan for the Construction of the Capital Hanoi was approved in 2011.

The key objectives are to develop Hanoi into a green, clean city that addresses pollution in the inner urban areas by 2030, maintain and expand the existing green infrastructure by leveraging its advantages and potential, meet government requirements for the construction, management, and utilization of green and water systems, and provide a foundation for new green investment projects as well as the upgrading and preservation of the current green and aquatic resources. This comprehensive plan aims to concretely implement the green space planning vision outlined in Hanoi's overall 2030 Master Plan, with the goal of enhancing the living environment and quality of life for the city's residents.

CONCLUSIONS

During the past 70 years, Hanoi has been subject to a series of innovative urban green space plans. Some of their key features have been carried forward to the present day in modified form. Others have been abandoned. Taken as a group, the plans lack intellectual rigour.

The history of urban green space system planning in Hanoi reveals a complex trajectory that has been shaped by various influences over time. During the French colonial period (1886-1954), the concept of "public parks" and symmetrical planning principles were introduced, leading to the development of iconic spaces like the Paul Bert Park and the Botanical Garden. This laid the foundation for a greener urban landscape in Hanoi.

The Soviet-influenced planning period (1954-1991) focused on overall land use, space, and physical objects, with a greater emphasis on the functional organization of green spaces. However, the actual implementation of these plans faced challenges due to the realities of population growth and land use conflicts.

The globalization period (1991-2011) saw a renewed emphasis on increasing the quantity and accessibility of public green spaces for the local population. However, challenges persisted regarding land use policies, diverse stakeholder perceptions, and the lack of a long-term strategic vision.

Throughout this trajectory, the key aims of urban green space system planning in Hanoi have been to improve the urban environment quality and create green and leisure spaces for residents. However, the realization of these goals has been hindered by issues such as urban land use policies, diverse perceptions, and the absence of a long- term vision.

The case of Hanoi highlights the importance of integrating international models and experiences with local realities and challenges. Effective urban green space planning requires a holistic approach that addresses land use regulations, public engagement, and the development of a shared vision for a sustainable and livable city. As Hanoi continues to evolve, the lessons from its planning history can inform future strategies to create a balanced and resilient urban green space system that meets the needs of its growing population.

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IMAGE SOURCES

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Figure 2 Vietnam Institute for Urban and Rural Planning
Figure 3 Vietnam Institute for Urban and Rural Planning
Figure 4 Aimini, M., Giang, N.D., Minh, D.B. (2021). The Last 150 Years of Urban Mutations in Hanoi: An Investigation About Form and Morphology of the Vietnam's Capital City. 185
Figure 5 Pham, T. T. H., & Labbé, D. (2018). Spatial Logic and the Distribution of Open and Green Public Spaces in Hanoi: Planning in a Dense and Rapidly Changing City. Urban Policy and Research, 36(2), 168–185.
Figure 6 Hanoi Institute of Urban Planning and Construction

Five parks, five ideas of a city
The landscapes of urban development in Lisbon, Portugal

João Rafael Santos
Paris Nanterre

Abstract

The article proposes a critical exploration of the contribution of five parks to the spatial shaping of Lisbon, Portugal, but particularly as expressions of the broader urban planning ideas that informed the Portuguese capital's development from the late 19th century to the current days. The five examples offer a fertile framework for analyzing the relationships between political choices, technical-disciplinary influences and the ways in which major urban and territorial projects were implemented. Parque Eduardo VII and its multiple projects (1877, 1899, 1940) represents a compositional continuity with the formal axes of Parisian influence that structured the bourgeois city of the 19th century; Monsanto is the first green area with a metropolitan scale, initially conceived as a forest park (1868, 1927, 1938) and progressively integrating a diverse range of urban facilities, articulating the city of Lisbon with its planned expansion to the west; more than a park, the Olivais neighborhood (1955-1960) is one of the most clear examples of the nuanced and critical application of modernist urban principles in Portugal, with a strong presence of green spaces and a fluid layout of buildings; the Tejo and Trancão park (1998) takes its name from the two rivers that meet at its borders, introducing the presence of water and the ecological processes as key themes for a renewed urban relationship with the metropolitan landscape; finally, Praça de Espanha park (2021) turns a heavy traffic intersection into a green area linking different parts of the city's ecological and public space network. Drafting a broad perspective on their urban relationships, symbolic dimensions, time frame and design principles, the article aims at highlight not only the conceptual convergences and alignments, but also the tensions and contradictions of the disparate and fundamentally unequal process of the metropolitan and socio-political framework in which these laboratory projects are located.

João Rafael Santos
Five parks, five ideas of a city

Planning Practices and Ideas (4)

Chair: Christopher Silver

Building Anew

A Satellite City, Infrastructure, and Land Consumption in Jakarta Post-Independence Urbanism, 1948–1955

Putrikinasih R. Santoso
The University of Hong Kong

Abstract

This paper examines Kebayoran Satellite City (1948-1955) to study the spatial expansion, infrastructure, and land consumption in post-independence urbanism in Jakarta as a continuation of the colonial practice. The satellite city was built at the cusp of the power transfer between the Netherlands Indies Civil Administration (NICA) and the newly independent Republic of Indonesia, and it has been mainly discussed as Indonesia's last Dutch garden city legacy. However, a closer look at the Kebayoran Satellite City project might also uncover a tendency in planning attitudes in Jakarta that seems to favour a tabula rasa development over resolving problematic existing areas. This attitude in spatial planning is akin to Tim Cooper's "throwaway society" (2010), which revolves around consumerism and disposableness of products. Under this framework, land is assumed to be a consumable product which can be disposed of upon obsolescence. Such behaviour invites further interrogation of the Dutch colonial planning practice in Indonesia, particularly of the roles of infrastructure and land consumption in the practice. How have land and infrastructure become an instrument and agent in the colonial planning practice? How has the sovereignty transfer partaken in breaking or resuming those planning outlooks and approaches? How has Kebayoran Satellite City embodied such a practice? The analysis for this paper delves into several archival materials, including official correspondence, project reports, maps, drawings, and autobiographies. While these materials are presumed to shed light on the planning practices behind Kebayoran Satellite City, they are also expected to contribute to a discourse on land consumption in contemporary urbanism, when spatial expansion has been economically, socially, and environmentally challenging.

Location, Function, Boundaries
Tracking the History of Urban Expansion in Hanoi, 1960–2020

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Abstract

Urban expansion planning plays a pivotal role in orchestrating the potential development of urban spaces while accommodating the increasing population demands and fostering sustainable urban development. This paper focuses on Hanoi's urban expansion planning practice from 1960-2020, dividing into three different stages with seven proposals: 1) the first stage(1960-1975), the planner uses a monocentric urban model in the Finger Plan; 2) the second stage(1975-1986) reflects two different planning approaches, one was inspired by planning techniques employed in the Soviet Union to develop a new center which located 30-50 km away from the existing city, the other was inherited proposals from the 1960s; 3) the third stage (1986-2020) evolves a comprehensive model which combined polycentric urban model with green belts and satellite towns. The paper particularly analyzes the location, function, and boundaries of urban expansion areas of Hanoi by using primary and secondary materials from the Vietnam Institute for Urban and Rural Planning, the Ministry of Construction, etc. It reveals that urban expansion proposals in Hanoi are politically driven, and lack science due to relying on inaccurate population and economic forecasts.

INTRODUCTION

Throughout history, urban areas have played a pivotal role in human development, leaving a clear imprint on the planet's landscape. In the context of globalization and strong socio-economic development in recent centuries, urbanization has been on the rise, manifested through the continuous expansion of urban construction areas. Studying the history of urban expansion planning helps to understand past decisions, preserve cultural values, and guide sustainable development and effective resource management. It also provides a scientific basis for addressing current and future issues, promotes creativity, ensures harmonious urban development, and supports sound decision-making processes. Urban expansion planning determines the location, scope, and scale of new urban areas or the expansion of existing ones within a region. It aims to develop different types of urban areas with various characteristics and functions.

In Vietnam, the concept of "urban expansion planning" was first introduced by Hebrard in his plans for Indochina, particularly in the *Urban Expansion and Renovation Plan of Dalat* in 1921 [1]. To date, domestic studies have approached the field of urban expansion planning; however, there are no specialized monographs on the methods of identification and principles of planning and the history of planning. Foreign studies, facing challenges in accessing local data and conducting surveys, have largely been limited to methodological research and exploratory studies.

This article focuses on the practicalities of urban expansion planning in Hanoi from 1960 to 2020 by analyzing the location, function, and boundaries of urban areas in Hanoi over three periods with seven proposed planning suggestions to clarify the models of urban expansion planning in Hanoi and the spatial structure components of this city.

THE FORMATION OF THE URBAN AREA SYSTEM
IN THE FINGER PLAN 1960-1975)

On July 20, 1954, the Geneva Accords were signed, bringing peace to Indochina. On October 10, 1954, the Government of Vietnam took control of Hanoi. From 1955 to 1957, the city focused on rebuilding its economy under the guidance of the Hanoi Party Committee of the Labor Party of Vietnam. The goal was to change Hanoi

from "a colonial trading city" into "a production city." Later, Hanoi implemented a plan for economic recovery and development from 1958 to 1960, focusing on transitioning from capitalist commerce and industry to socialism. This included developing and strengthening state-owned enterprises to establish a socialist system. However, due to the many difficulties left by the pandemic and the limited financial capacity of the state, along with the absence of a comprehensive plan, city development in recent years has been piecemeal and not aligned with the demands of production or the improvement of the material and cultural lives of the people [2]. In 1958, given this situation and based on the Resolution of the 14th Central Conference

on the three-year plan for economic recovery and development, and cultural development, "*it is clearly stated that "there is a need to study the planning of economic regions and the construction planning of cities*" [3] . This is to serve the mission of being "the political and cultural center of the country, supporting industry, production, and the lives of the working people.

THE FINGER PLAN CONCEPT IN HANOI

Given this context, the government proposed a guiding principle for the renovation and expansion of Hanoi: "*to serve as the political and cultural center of the country, to support industry, production, and the lives of the working people.*" In 1960, during a visit to Vietnam, Polish professor P. Zarema contributed a planning proposal for Hanoi, which served as a suggestion at that time (Figure 1). Additionally, with the assistance of Soviet experts, Vietnam's architects proposed a study for the urban planning of Hanoi, envisioning a population scale of 700,000 to 1,000,000 residents. The city was to be entirely located on the right bank of the Red River, with urban land expanding from the old city to the west (not reaching the Nhuệ River). For the first time, West Lake was designated as the central element in the urban layout. The urban functions were shaped by a structure of four new urban areas surrounding West Lake, alongside historic quarters with central areas at the core, conveniently connected by city roads. Industrial zones were to be established in the southeast and northwest areas (between the Nhuệ River and the Red River). Green spaces were designated as a system to shape and separate these areas. The western belt railway of the city was identified as the boundary to limit urban sprawl into rural areas [4] .

Although it was only a preliminary sketch, this plan marked a new approach to functional zoning, aiming to meet the industrialization needs promoted by the local government, moving away from the commercial urban planning model of the colonial period in Hanoi. However, the plan had a significant limitation: it did not provide space for future development. The entire capital was confined to its current land area, bounded by West Lake and the Nhuệ River. Additionally, the construction area was narrow, not suitable for the long-term scale of a capital city. Furthermore, the planning structure was theoretical rather than practical.

To build the capital in a civilized, modern manner suitable for the social context of the time, the first comprehensive master plan for Hanoi was completed in 1962. This plan was developed with the assistance of a team of experts from socialist countries, led by architect I. A. Anfyozob, in collaboration with Vietnamese experts. During this period, Hanoi was designated to develop according to a "splayed hand" model, with a population scale of 1 million residents and approximately 20,000 hectares of construction land. The Finger Plan, inspired by Copenhagen's urban planning strategy, emphasizes controlled development along radial axes. It envisions a city structure extending from the outward along urban rail lines, creating distinct urban zones with essential services and amenities within a 15-minute walking radius of rail stations. This model, akin to Transit-Oriented Development (TOD), prioritizes convenient transportation links to the inner urban and foresees highway development to bolster public transit and improve commuting convenience.
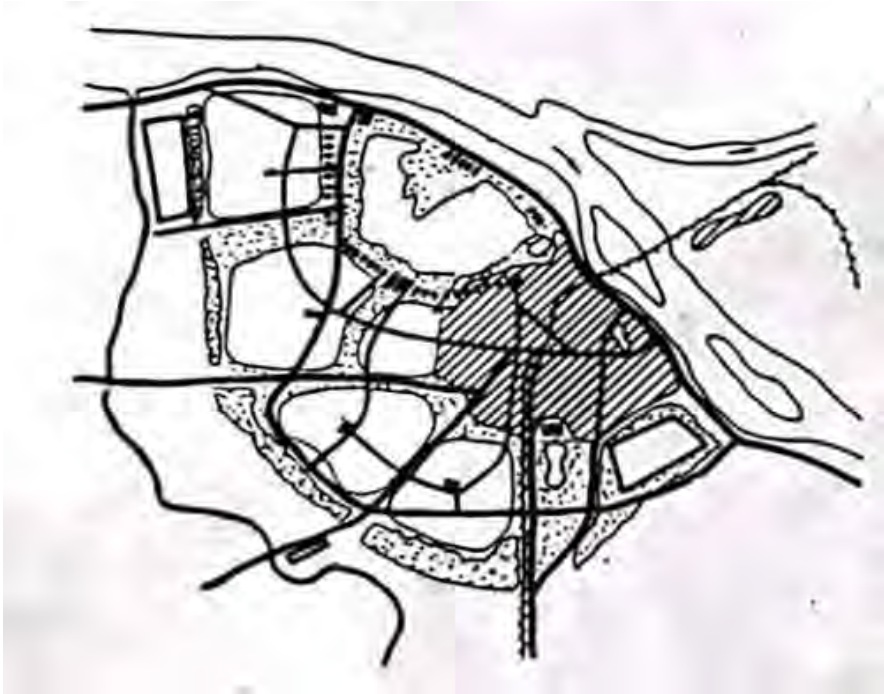
Fig. 1.   Suggested planning proposal by Professor P. Zarema

The Finger Plan structure in Hanoi's urban planning model is a combination of an urban lay-out along five radial axes (the five fingers), while also incorporating the concept of three main rings from the 1960 plan. The city was projected to be divided into the following areas: the inner urban, the extended inner urban, and a new satellite town.

The inner urban included the old quarters (Ba Đình, Hoàn Kiếm) and the area south of West Lake as it exists today. The extended inner urban was planned to develop primarily towards the northwest and southwest along five radial transportation axes. Future development was projected for the Gia Lâm area, with Đông Anh town serving as a satellite (Figure 2).

The ring roads were planned to run parallel to the old Đại La dyke, extend to the banks of the Red River, cross the Red River, and enclose Long Biên and Gia Lâm districts into the inner urban via two bridges: Thăng Long and Thanh Trì. The central areas of the capital would in-clude plazas and boulevards stretching from the Red River bank to Hoàn Kiếm, through the old 36-street quarter, and up to West Lake. The old railway line would be preserved only from the southern section to Hanoi station, with the section crossing Long Biên Bridge to Gia Lâm station being removed, leaving Gia Lâm as a terminus. The new railway system was designed in a ring shape, encircling the city from the northwest, down to the southwest, and then to the northeast.

The advantage of this Finger Plan model is that it provides a clear direction for the future development of the capital. It allows for the expansion of Hanoi's urban space into the surrounding areas, reserving land for a larger capital in the future. Additionally, this planning model is well-organized and coherent, skillfully and harmoniously integrating the ring roads and radial axes. The idea of relocating the railway outside the urban area facilitates the connection between functional zones, ensuring improved environmental hygiene. The plan also established a strong link between the old quarter and West Lake, incorporating the capital's unique landscape and environmental features into the city's central planning.

The Finger Plan model applied to Hanoi marked a change from the original theory by integrating a new town form with the ring road system and establishing a new central structure for the city. However, the most crucial aspect of the original Finger Plan - the development of a railway system along all radial axes - was entirely absent in Hanoi's application during this period.

Nevertheless, during this time, Vietnam faced economic difficulties, with infrastructure damaged by American bombings and limited budget resources focused mainly on reconstruction. Therefore, using the standard of 100 square meters per person, the projected urban area of approximately 20,000 hectares was relatively large and challenging to align with the current pace of economic development. The project focused solely on long-term planning without phased implementation, leading to the dispersed, uncoordinated, and incomplete arrangement of urban infrastructure projects according to the long-term plan. Howerver, in general, the planning proposal from this period was highly regarded for its many innovative design ideas and served as a foundation for subsequent plans

TWO PROMINENT PLANNING MODELS IN URBAN EXPANSION PLANNING(1975-1986)

During this time, Hanoi faced the challenge of rebuilding its economy after the end of American bombing, addressing the impact of the war, and preparing for the reunification of the country in 1975. Additionally, Hanoi had to deal with localized conflicts on its borders that lasted into the late 1980s.

In the early 1970s, people's lives and economic activities were unstable, exacerbated by severe flooding in August 1971, which significantly impacted the economy. Furthermore, the second wave of American bombing in Northern Vietnam in 1972 caused severe damage to economic infrastructure, schools, and hospitals in Hanoi.

Given these circumstances, there were significant changes in the city's development planning. The focus was on reevaluating the development direction for Hanoi to address issues related to flooding and minimize encroachment on agricultural land. The planning approach emphasized renovation and the selection of new construction sites to address Hanoi's deficiencies at that time while meeting the needs of economic and cultural development needs and ensuring national defense and security.

COUNTERPOISE MODEL – ESTABLISHING TWO INNER URBANS

In 1969, Hanoi considered an urban planning model to improve the city, as outlined in Resolution No. 191-NQTW of the Politburo on May 24, 1969. After years of renovating and constructing the capital, the limitations of the old urban area's natural conditions were identified, such as low terrain, high groundwater levels, weak soil compression capacity, and the threat of flooding from the Red River. The resolution also addressed complex issues related to the city's expansion, including the use of agricultural land. A new planning concept was presented, which included dividing Hanoi into two urban areas: the old city, focusing on renovation and upgrading, and the establishment of a new city at a different location to overcome the current shortcomings of Hanoi while meeting the requirements for economic, cultural, and wartime defense.

As a result, a directive to study the construction of a new Hanoi was implemented, with the location being 50-60 kilometers from old Hanoi. The selected area encompassed the hilly regions of the Tam Duong and Binh Xuyen districts and the town of Vinh Yen in Vinh Phu province. This area is connected to the old city of Hanoi, and an integrated planning solution was created to address the city's current limitations and meet long-term development needs.

To concretize this policy, on November 9, 1974, the Party Central Committee's Secretariat issued Notice No. 20TB/TW, allowing Hanoi to control the inner-urban population at 600,000-700,000 people and to plan for the construction of a new city in Vĩnh Yên. The economic and technical rationale for the planning, renovation, and construction of the capital, developed by a team of Soviet experts led by architect Boocdanob, proposed two options for population distribution: Option A: Hanoi: 700,000 people, Vĩnh Yên: 600,000 people; Option B: Hanoi: 1,000,000 people, Vĩnh Yên: 300,000 people[6].

After extensive studies, the final chosen option was to limit the population of old Hanoi to 400,000 people and to develop Vĩnh Yên to accommodate 600,000 people. This effectively created a parallel city (counterpoise) model in Vietnamese terminology. The new city of Vĩnh Yên, located approximately 40 km northwest of the old inner urban, was to be connected via a highway through the Thăng Long Bridge over the Red River (Figure 3). This model bears similarities to the concept of developing a new city parallel to the old historical city, an idea explored by French and Russian planners since the 1930s. This approach also reflected the practical wartime context in Northern Vietnam, where significant urban infrastructure had been developed in Vĩnh Yên to support the evacuation of residents from American airstrikes on Hanoi, including universities and industrial facilities located in the midlands and mountainous regions.

The proposed plan essentially merged the comprehensive "Counterpoise city" model with the "Finger Plan" for the old city. While the new city in Vĩnh Yên would have a closed, hill-based structure with functional zones for education, industry, and recreation, the old city's development was confined within the boundaries of the second ring road, limiting it to the area envisioned in the French 1943 plan for Hanoi. The new development space was concentrated along three main radial routes (the three fingers of the Finger Plan) entirely south of the Red River. Notably, this plan introduced a new airport— the precursor to today's Noi Bai Interna-

tional Airport in Hanoi— located north of the old city and equidistant from both parallel cities. Additionally, scattered urban points and small towns were proposed north of the Red River, between the new city of Vĩnh Yên and Nội Bài Airport. These elements were entirely new propositions from Vietnamese planners.

However, this planning concept was not implemented due to obstacles in maintaining a consistent planning ideology and the challenges of translating theory into practice. The instability in planning ideology and strategy was partly due to political instability and the need to respond to wartime conditions. This represented a variant in a highly turbulent period.

INHERITANCE OF THE FINGER PLAN FROM 1960

From 1976 to 1986, Hanoi's Master Plan continued to build upon the planning concepts from the 1960s. The complete victory in the war against the United States ushered in a new development phase for the capital. The new requirements necessitated a revision of the existing plans. Soviet experts, along with other international specialists, collaborated on the revised general plan. The Council of Ministers approved this revised plan through Decision No. 163/ CP on July 17, 1976. The General Plan for Hanoi up to the year 2000 projected a population of 1.5 million and integrated several models: 1)The "Finger Model" for the old Hanoi urban area;2)A green belt to provide food, cultural and recreational activities, key transportation hubs, and environmental protection zones.;3)New towns surrounding the main city, serving industrial, agricultural, tourism, and recreational functions, located 30-50 km from Hanoi's inner urban. The western direction included: (1) Xuân Mai, (2) Sơn Tây, and (3) Ba Vì; the Northern direction included (4) Vĩnh Yên, (5) Tam Đảo, and (6) Bắc Ninh.

With this direction, in December 1978, the government decided to expand the administrative boundaries of Hanoi, encompassing a natural land area of 2,136 km² and a population of 3.5 million people.

In 1979, the outbreak of the border war in the North had a significant impact on Hanoi's urban planning direction from 1976, particularly concerning urban development to the north near the conflict zone. The main development direction for Hanoi was thus reoriented primarily to the south of the Red River. On April 24, 1981, the government approved an adjustment to the General Plan for Hanoi up to the year 2000, with an average land area of 9m² per person and a construction area of 13,500 hectares. Experts from the Leningrad Urban Construction Institute (formerly of the USSR) and Vietnam collaborated to adjust the overall layout of this plan, targeting an inner-urban population of 1.5 million within a land area of 100 km², and expanding the suburban area to include 11 districts.

The 1981 planning model developed from the 1976 plan incorporated a Finger Plan combined with a green belt (Figure 4): 1) The Finger model extended urban development along three radial highways to the south, west, and southwest of the Red River. "The palm of the hand featured three ring roads inherited from previous plans to facilitate the expansion of the inner urban; 2) The green belt surrounded and interspersed between the "fingers" of development in suburban Hanoi.
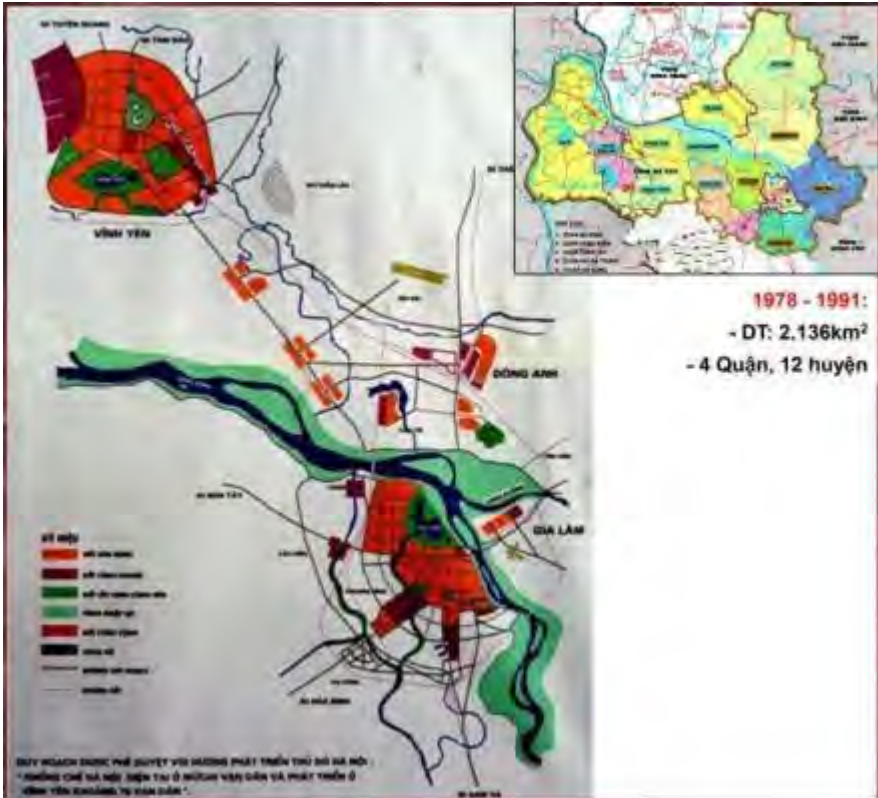
Fig. 3.   The Master Plan of Hanoi in 1976

However, the spatial organization of the city had to be adjusted and could not be continued. As in the previous phase, this planning approach faced obstacles in practical implementation. Part of the reason was the socioeconomic crisis, instability in planning policies, and restrictive policies that did not emphasize urban development within the planned economy. Particularly significant were the impacts of the collapse of the Socialist states in Eastern Europe and the prolonged U.S. embargo on Vietnam, which lasted until the mid-1990s.

COMBINING A MULTI-CENTER URBAN MODEL WITH GREEN BELTS AND NEW TOWNS (1986–2020)

During 1986 to 2020, Hanoi in particular and Vietnam in general entered a new phase characterized by economic reforms, transitioning from a subsidized economy to a multi-sector economy and ultimately to a market economy. Globally, this was the time when the Socialist group in Eastern Europe was gradually collapsing. Consequently, Vietnam could no longer

rely on support from the Socialist group. The planning for Hanoi was scaled back compared to the 1981 plan, recognizing the limited resources available. However, the "Finger Plan" model south of the Red River was maintained.

Following the decision to open up, at the 6th National Congress of the Communist Party in 1986, Vietnam entered an entirely new era. This period marked the transition from initial global interactions to progressive and deep integration, culminating in Vietnam's accession to the World Trade Organization (WTO) in 2007 and increasingly close connections with international institutions. Foreign Direct Investment (FDI) had a significant impact on Vietnam, particularly in economic planning, accompanied by the explosive development of industrial parks and export processing zones. Development orientations following the "garden city – new town" model were revived with a new role within the regional-territorial planning system.

The most notable feature of 1992 was political stability, production development linked to reduced inflation rates; prices remained stable without major fluctuations; national reserves were replenished; foreign economic activities, from exports and imports to economic cooperation and foreign investment attraction, were expanded and initially achieved substantial results.

Fig. 4.   The Master Plan of Hanoi in 1981

Fig. 5. Adjusting Hanoi's Master Plan in 1992

RETURNING TO THE "FINGER PLAN" MODEL
AND INTERGRATING ADDITIONAL EXPANSION

From 1986 to the present, Vietnam has actively learned from international urban planning models. The comprehensive master plan adjustment approved in 1992 helped Hanoi establish a well-defined urban system (Figure 5). This development phase achieved significant results but also highlighted new challenges, including the need for regional infrastructure connec-

tivity, conservation, and population management. In 1998, the Prime Minister approved the adjustment of Hanoi's master plan until 2020 [7] (Figure 6). The spatial planning structure included: 1) A central urban area with restricted development in the inner urban and two expansion areas in the suburbs, one following the "finger plan" model of 1960-1970 and another expanding across the Red River to the north and east; 2) Formation of five new town areas; 3) An agricultural green belt combined with large sports areas in the suburbs, creating a continuous green space system that limits the central urban area's expansion.

Fig. 6.   The comprehensive Plan in 1998

After more than ten years of implementation, the inner urban and expanded inner urban areas have been filled with urban construction and infrastructure. However, the development of these new town areas has been slow, and they have not yet been fully established.

After Vietnam joined the WTO in 2007, the government decided to expand the administrative boundaries of Hanoi in 2008. This paved the way for the establishment of the General Planning of Hanoi Capital until 2030 and vision towards 2050. This plan was approved by Decision No. 1259/QĐ-TTg on July 26, 2011, aiming to develop Hanoi into one of the economic, tourism, commercial, and service centers of the Asia-Pacific region[8].

The essence of the 2011 planning model is a synthesis of several models previously considered in the Hanoi context. These include three classical models that have been implemented in various countries worldwide: 1) The Finger Plan model, 2) The Transit-Oriented Development (TOD) model, 3) The Garden City – New town, and Green Belt model.

In integrating these models, the Hanoi urban area system can be divided into 31 urban areas and classified into six structural components as follows: 01 historic inner-urban area, 04 suburban areas, 08 new urban areas within the two urban chain along Ring Road 4 and the Northern chain across the Red River, 05 new towns, 3 eco-towns and 10 historic towns and townships. These urban areas are delineated by green corridors, interconnected by ring road transportation systems, and radial traffic systems.
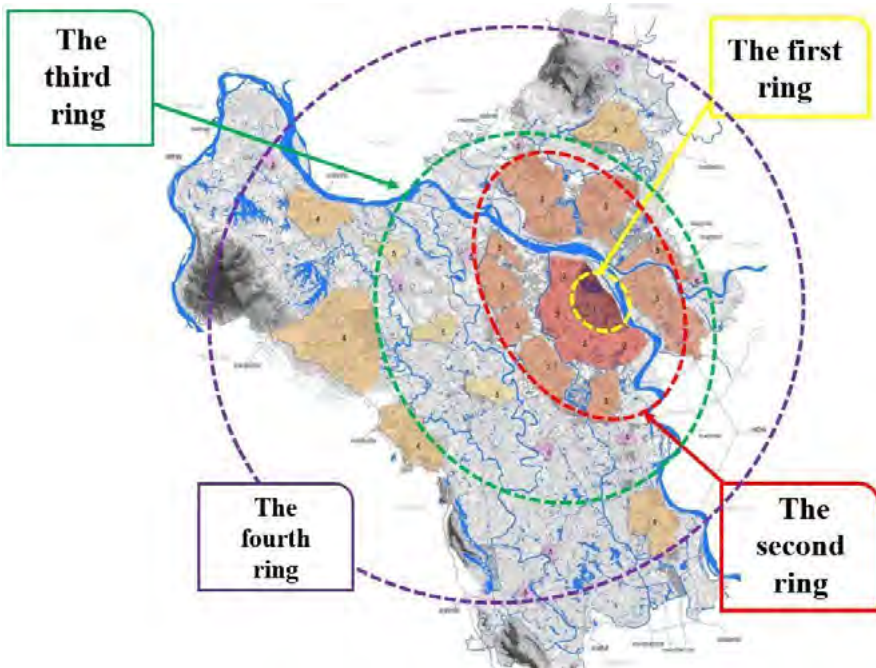

Fig. 7.   The model of 4 concentric center rings

The systematic nature of Hanoi's urban system, like that of famous cities in the world, is mainly formed from four structural components and controlled by four concentric control rings: inner urban, suburbs, ecological urban areas within the controlled development of the Green Belt, and new urban areas scattered in rural suburbs 30-80 km from the city center (Figure 7): 1) The first ring: Maintaining the continuity of history; 2) the second ring: Regulating the quality of urban density development; 3) The third ring: Monitoring the adverse effects of urbanization on the natural environment; 4) The fourth ring: Managing future development resources. This area is designated for socio-economic and regional planning, assigning tasks to Hanoi within the socio-economic planning of the Red River Delta region.

THE CHARACTERISTICS OF FUNCTIONS, AND BOUNDARIES ON THE SPATIAL COMPONENTS OF THE URBAN AREA OF HANOI

The historic inner urban area of Hanoi serves as the political, economic, and cultural center of the city. The location of a historical inner urban area is determined not only by its historical significance but also by its advantageous connectivity and transportation infrastructure. Hanoi is developing while preserving this area, which serves not only as a political hub but also as a spiritual and cultural center. Planning for this location aims to ensure the continuity of its historical and traditional values, optimizing accessibility and connections with other areas, also known as transportation hubs, within the city and surrounding regions. The suburban area surrounds the historical inner urban area, acting as a buffer between it and more distant areas. The location of the suburban area is chosen based on criteria such as transportation access, infrastructure connectivity, and urban development potential. In the case of Hanoi, based on mutually supportive relationships, the inner urban serves as a center, with its population, infrastructure, services, and employment opportunities radiating outward, beyond the inner urban. New towns are planned beyond the green belt area. The location of these new towns in the planning process is based on their ability to self-provide services, to connect with the inner urban and other regions, and their potential for independent development.

The historic inner urban area plays a primary role in perpetuating and promoting the quintessential values of tradition, culture, and society. It is where government administrative offices, historical ruins, and major cultural centers converge. The primary function of the historic inner urban is to preserve and promote these values while maintaining its role as the administrative, economic, and cultural hub of the city, connecting economic gateways. The suburban area supports and shares the functions of the historic inner urban. New residential areas, commercial districts, services, and critical infrastructure such as hospitals, schools, and light industrial zones are developed. Its function is to alleviate the population pressure and infrastructure burden from the historic inner urban, while providing modern services and amenities for urban residents. New towns function independently and provide residents with services. Large industrial zones, new urban areas, and independent service and commercial districts are developed. The function of new towns is to decentralize population and economic activities away from the center, reducing pressure on the historical inner urban area and its suburban area, while creating new economic development opportunities and enhancing the

city's competitiveness. Depending on the development stage, satellite towns may serve as bedroom communities, semi-independent urban areas, or even independent cities.

The boundary of an area is not merely a line on a map but a concept reflecting the development and transformation of a city. The boundary in this inner urban area is often determined by historical, economic, cultural, and existing technical infrastructure factors. Determining the boundaries of historic inner urban aims to preserve and promote its historical and cultural values, while ensuring that urban development does not diminish these values. The boundaries of the suburban area is more flexible, often adjusted based on the development and urbanization process. The boundary is typically determined by transportation connectivity, infrastructure provision capability, and urban development potential. Determining and adjusting the boundaries of the suburban area aims to ensure that this area can relieve pressure from the historic inner urban area, while providing space for new economic and service activities. The boundary of new towns is usually more clearly defined based on long-term development plans and criteria for self-provision of services and connectivity with other areas. Determining the boundaries between new towns aims to ensure that these areas can develop independently and provide services for residents, while reducing pressure on central areas.

Understanding the three propositions of location, function, and boundary allows us to identify the laws of urban development. These propositions help us recognize the laws of population growth and urbanization, spatial distribution and function, laws of mutual connection and support, laws of continuous development and transformation, as well as laws of balance and sustainability in urban planning.

CONCLUSION

The functions of urban areas are not merely for residence, work, or recreation; they also play a pivotal role in shaping the economic and social structure of the entire region. Location is not just a fixed point on a map but a dynamic factor continually changing and influenced by economic, social, and environmental forces. Boundaries are not merely rigid lines drawn and institutionalized but are constantly formed, contested, and altered. Throughout over 70 years of development planning history, Hanoi has adopted nearly some popular ideal planning models above, while also innovating based on local context and experience. However, this continuous adoption and alteration of planning models is a clear indication of the lack of consistency in long-term vision when addressing short-term issues. This represents a significant limitation. The theoretical models applied have never been developed into comprehensive and synchronized implementation plans.

By analyzing the three main components of "location," "function," and "boundary" through tracking Hanoi's planning history across three phases, each element of the urban spatial structure has been elucidated. Despite undergoing three phases and various planning revisions as previously analyzed, the primary spatial structure elements of Hanoi's urban system have generally retained their characteristics. First, the primary task of the inner urban area

is to continue its historical legacy. This area is a geographically contiguous region, typically the largest in the system, centrally located, originating from historical cities, with high population density and vibrant economic activities. Surrounding the historical inner urban area is the suburban area, planned for the renovation, upgrading of existing conditions, and new development, aiming to "reduce pressure" on population density and infrastructure for the inner urban area.

Additionally, eco-towns are urbanization points that are strictly limited and controlled in development. These ecotowns manage the negative impacts of urbanization on the natural environment. These areas are often historical villages or areas designated for eco-tourism and recreational activities. The final component of Hanoi's urban system is the new towns. New towns are development models of small to medium-sized cities geographically separate from the inner urban and expanded inner urban areas, located 30-80 km from the center. New towns aim to distribute population and productivity evenly across the extensive surrounding geographical areas, bringing benefits such as promoting economic and social development in peripheral areas, improving the environment, and enhancing the quality of life for residents. Between the new towns and the inner urban and suburban are typically green wedges and green belts.

Lastly, this article clarifies the role of the expansion plan. It aims to rationally distribute urban settlement points based on the varying conditions of each urban land area within the region, to preliminarily determine the characteristics, scale, development orientation, and labor distribution among the spatial development components. In other words, by establishing the shape and systematics of the urban area system, this plan coordinates the development potential for urbanization, meets the needs of the growing population, and promotes sustainable development. The roles of the three components—'location,' 'function,' and 'boundary'—will be further elucidated in each spatial structure component in subsequent studies.

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IMAGE SOURCES

Figure 1   Cuong Lam Quang. *40 years of Hanoi Capital Planning*. Journal of Architecture and Society, 1994, pp.16-17.

Figure 2   From Architect Huỳnh Tấn Phát's family archives

Figure 3   From "Adjustment of the Master Plan for the Construction of the Capital until 2030 with a Vision to 2050" – Article 13: A 100-Year History of Hanoi's Planning through Maps", 2024. https://kientrucvietnam.org. vn/gop-y-dieu-chinh-quy-hoach-chung-xay-dung-thu-do-den-nam-2030-va-tam-   nhin-den-nam-2050-bai-13-luoc-su-100-nam-quy-hoach-ha-noi-qua-cac-tam-ban-do/

Figure 4   From Document Repository of Vietnam Institute of Urban and Rural Planning.

Figure 5   From Document Repository of Vietnam Institute of Urban and Rural Planning.

Figure 6   From Document Repository of Vietnam Institute of Urban and Rural Planning.

Figure 7   From Master Plan for the Construction of Hanoi Capital until 2030 with a Vision to 2050, Hanoi: Ministry of Construction, 2011, p.15

Urban Planning in Independent Burma

Greater Rangoon Plan (1958) by Vlado Antolic United Nations Urban Planning Expert

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Abstract

From 1953 to 1958, Vlado Antolic (1903 – 1981), a prominent Croatian architect and a prewar member of CIAM, joined Government's National Housing and Town and Country Planning Development Board in Rangoon, Burma as an urban planning expert appointed by the United Nations to undertake the wide range of urban planning assignments to address the context of serious war devastation followed by migration and inflow of refugees into the towns, but also the accelerated social, economic and technical development and reconstruction of the country. Alongside with the studies, regulations and plans for numerous Burmese towns Antolic prepared Greater Rangoon Plan. That was the first Rangoon urban plan related to the wider city area. Based on the principles of modern functionalistic planning it proposed the concept of the lineal ring growth interweaved with the abundance of green spaces. The lineal and radial extension with the special concern about decentralization and functional units placed along the main circular route aimed to encourage city's organic growth in the appropriate relation between the places of dwelling, working, green areas and recreation and the central facilities. Within the Greater Rangoon Plan, Antolic developed separate, detailed Redevelopment Plan for Central Rangoon resolving the colonial city area strongly damaged during the World War II bombing also suffering from severe overcrowding, insanitation, traffic congestion and the lack of facilities and green spaces. The new layer of planning proposed gradual superposition of the open space layout over the existing historical morphology. Based on the Athens Charter principles and determined to create a quality living space, the extension and the reconstruction plan are the examples either of the sensitive response and a radical dialog with the carefully surveyed and understood Rangoon space and context. The Plans are still almost unknown.