

Interpreting the contemporary Chinese planning from the "new towns" perspective. The case studies of Pujiang and Kilamba

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The new millennium has been a time for a great change in the Chinese planning history. Planning has become a professional practice able to manage the construction of thousands of new urban settlements and urbanization has driven deep transformations in the economic structure of China and in its society. This paper proposes a critical interpretation of the "new towns" by analysing two case studies, Pujiang and Kilamba. Pujiang is a new town near Shanghai designed by the Italian firm Gregotti Associati with the local Highpower-OCT Investment; Kilamba was designed by the Chinese CITIC in the outskirt of Luanda, Angola. From a planning perspective, this paper tries to analyse the phenomenal and formal aspects related to plans of two case studies. Applying a typo-morphological approach, the physical structure of both plans are analysed and compared so to highlight the structural elements of analogy between them. The aim is to reveal the current attempts by planners to transfer cultural issues into the built environment. Thus, this will allow to find out the possible commonalities and define the terms of correspondences of these contemporary layouts with the historical Chinese planning wisdom.

Keywords: Africa, China, Chinese cities, contemporary cities, East-Asia, Kilamba, morphology, New town, Pujiang, planning, planning history, planning legacy, urban history

Introduction

The phenomenon of the new towns presents for China a series of causal and consequential issues intertwined with the economic, socio-demographic, geographic, and political history of the country and its relations with foreign countries. On the wave of urbanization that has involved China since 1978, hundreds of cities have been built *ex novo* to which must be added countless new districts in the suburbs of existing cities. Major metropolises and minor cities have carried out continuous urban additions, so that new neighbourhoods, industrial districts, business centres, residential complexes, and university campuses have grown around the consolidated cities and within. In this panorama, today planning practice is closely related to the oligarchical choices of a few political administrators and entrepreneurs who see the building industry as the main economic engine pulling the country despite the global downturns of finance and foreign interference. Moreover, as long as real estate and town planning have become almost a solely economical affair, most of the planning projects lack a theoretical conception capable to go beyond the pragmatism of technical issues, do better than applying dreary prototypes, and work as a bridge between past and present urban identities.

Acknowledging the phenomenon of the "new towns" as primarily characterizing contemporary Chinese planning, this paper reports the attempt to analyse the morphological characters of the Chinese new towns built in the 2000s. It proposes a critical interpretation of the contemporary Chinese planning history by analysing two apparently antithetical case studies, the new towns of Pujiang and Kilamba from a morphological perspective. Pujiang is a new town of Shanghai municipality, designed in 2001 by the Italian firm Gregotti Associati International and Kilamba is a new town in the outskirt of Luanda, Angola planned by the Chinese company CITIC in 2008.

The two cases represent two ends of the "new town phenomenon"; on the one hand, the importation of foreign planners to design new towns in mainland China and, on the other hand, the exportation of Chinese planners to develop urban plans abroad. By comparing them, this paper suggests similarities and diversities, in terms of general planning conditions, related to their foundation. Besides, the morphological analysis of their plans address the comparison highlighting a series of analogies in terms of structure, physical dimensions and urban facts that could eventually allow to claim the translation of historical planning features into contemporary Chinese planning practice.

Background and methodology

The research underlying this paper was developed in the framework of the author's PhD thesis and is based on two levels of analysis: a phenomenal one, to understand the context in which an urban plan to be drawn and realized; a morphological one to define the structural elements of the planning projects guiding the construction of the new towns under study and identify points of correspondence between them. The analysis required to collect the historical documents about the planning process of each case study (e.g. maps, master plans, descriptions, etc.)



and redraw the data into a series of maps comparable in scale, criteria, contents, and graphics. As a result, the confrontation of the cartographic reconstructions picks out similarities and correspondences under various aspects (e.g. structural, dimensional, formal and visual) that, eventually, do not end in the physical description of urban data but refer to a typological vocabulary that could be identified as symbolic and rooted in the Chinese urban culture.

The historicising interpretation of contemporary town planning is a new perspective for the Chinese case that the literature tends to describe as western-oriented and regardless of its own past. As a matter of fact, the interest of academia was limited and the one of media focused on the socio-economic aspects related to the foundation of these new towns, mostly in critical terms. Indeed, the literature about Pujiang and Kilamba mainly reports the condition of "ghost cities" that both experienced right after the delivery of the urban projects for relatively long periods. Besides, as most of the new towns, their clear urban boundary contrasts with the unbuilt surrounds and increase the sense of "cathedrals in the desert" that the emptiness conveys alone, especially in the time when the towns are waiting to be inhabited.

If compared with the literature and research produced around the topic of this paper, the typo-morphological perspective has been applied in a limited number of cases to the Chinese context. On one side, the typological approach, developed in Italy to study the Italian and European historical cities during the second half of the twentieth century, was mostly abandoned because judged ineffective in the analysis of the contemporary cities.¹ On the other side, the morphological approach, developed in the same decades by Anglo-German school of urban morphology, found some application as an analytic tool for urban heritage regeneration.² In recent years, the attempts to define hybrid typo-morphological method found some application in the study of specific urban phenomena characterizing contemporary urban China (e.g. informal urban villages, hyper dense neighbours, etc.); nevertheless, the focus of these application refer to small-scale part of the built environment and lack of interest in understanding city plans at large scale and the structural logic underlying them.³

First case study. Pujiang, one of the Shanghai new towns

In the 1990s, the Shanghai municipality promoted the design of new satellite cities around the metropolitan area. With the slogan "One City Nine Towns" and financed in the five-year plan 2001-2005, nine new cities and few smaller suburbia made up the puzzle of settlements gravitating around Shanghai. This operation would have catalysed urban development away from the centre, along with the road network connecting downtown to the deltaic periphery; in fact, they were meant to absorb part of the new upper-middle-class population, tending to leave the centre to move into modern and less chaotic residential neighbourhoods. A curious new concept characterising the plan was to have given a thematic connotation to the new towns; dedicated each to a foreign nation, they were meant to reproduce its salient features in approximate terms of style and aesthetics.

Most of the master plans were designed by local design institutes and the outcome is mostly of the kind of a "pastiche"; for example, the English-themed Thames Town is a mix of rustic and regency style buildings, back dropping red telephone booths and guardians dressed as royal guards. Few other projects were instead entrusted to foreign well-known designers, who could better prefigure the image of these contemporary cities; Gregotti Associati International designed the Italian-themed town while the German firm GMP designed the German Anting and the Central European New Harbour City.

In 2001, Gregotti Associati won the international competition for the Italian-themed new town Breeza City of Pujiang.⁴ Differently from every other new town around Shanghai, the idea that the promoters, designers, and municipality have tried to convey through the project was the cultural proximity between the two-thousand-year-old cultures of China and Italy. In this framework, Pujiang was to be built on a *tabula rasa* fairly close to the centre of Shanghai, just 16 km southern and well connected by a metro line.

Gregotti project envisaged the construction of a 15 km² neighbourhood surrounded by 60 km² of a protected park (Figure 1). Here the municipality planned to relocate the 50,000 residents of the core area occupied for Expo 2010 and, since relocating the population was a priority fort he municipality, his issue prevented the project to undergo to consistent changes and let the Gregotti plan be realized with few modification, though a reduction of area including the main waterfront public space.

Founded on a rigid orthogonal grid, the city has a longitudinal development organized in two sectors symmetrically divided by a north-south axis (Figure 2). A triple grid supports and differentiates the network system of pedestrian paths, roads, and water channels. The northern part of the town was developed as the "ecological quarter" by the company Highpower-OCT Investment and designed by Gregotti and other Italian architects who developed the single buildings defined by the general masterplan; it presents a slightly dense fabric, a sort of garden city with single and terraced villas, a central core with a square, a vernacular bell tower, and an "Italian style" town-hall *replica*. The central part of the town is the "Top Grade neighbourhood", located around an equipped median axis



on which the main public functions, malls, and public space converge. The southern part reflects more Gregotti architecture and the urban scale of Pujiang; here the fabric is high-dense, the type of buildings recalls the ones he realized in the Bicocca area of Milan, and the public space is designed by sober elements and linear geometries. In the whole Pujiang, the blocks of 300 per 300 meters generate closed units conceived like *xiaoqu* for 1000 people. The buildings do not exceed four floors and maintain a rather low skyline that does not impact the context violently. Blocks are enclosed by straight streets and river channels that cross the city and connect to the rural water network. Well-kept gardens and lush vegetation complete the landscape of the modern and rationalist city that Gregotti has imagined as an emblem of Italian exportable architecture.⁵

Second case study. Kilamba and the Chinese new towns in Africa

A different case is that of "exporting urbanization" out of China. At the beginning of the new century, the Chinese government saw the opportunity to establish relations in Africa. Several North-African and sub-Saharan countries were interested in developing their infrastructural networks, increasing urbanization and life conditions of the population but in need of financial investments. As known, the Chinese interest on Africa is not a new phenomenon and, as early as in the Sixties, already Mao Zedong promoted an anti-colonial solidarity by investing in the construction of important infrastructures like the Tanzam railway. Foreseeing business opportunities in a new capitalistic perspective, since 2005 China has entered into agreements with nations like Kenya, Algeria, and Angola.⁶ The formula was usually based on non-monetary terms; in fact, in exchange for Chinese products, medical assistance, education programs in Chinese universities, know-how useful for the development infrastructures, and building works, China takes oil and raw materials necessary for running domestic industry. Within a few years, those African countries have been launching infrastructural modernization projects that otherwise would not have had the chance to be realized under such favourable conditions, in terms of allocated funds, work management, project quality, and political support. Doing so, in the last decade the most relevant construction sites of Africa have been run or supported by Chinese companies and government, which opened branches there and moved conspicuous groups of designers, engineers and workers on site from China thanks to whom it was inevitable to graft some Chinese urban prototypes in the African constructed landscape.

Among the urban projects of new towns, the Nova Cidade de Kilamba is the most emblematic of the cities built by Chinese companies in Africa. Aimed to give a house to 160,000 people, it stands on an area of 502 km² in the south of Luanda, the capital of Angola (Figure 3). After the end of the civil war in 2002, the Angolan government managed to finance the construction of public housing for low-income population and modern housing for the urban bourgeoisie of Luanda thanks to an agreement signed with the Chinese government. According to this deal, the China International Trust and Investment Corporation (CITIC) would have completed the Kilamba project by offering a USD 3.5 billion credit line to the Angolan government in exchange for supplies of oil and raw materials.

The design was drawn up by CITIC and overseen by Pierson Capital, an international company of engineering and finance. The realization was carried out in all 4 years, using Angolan materials and local and Chinese workers supervised directly by Chinese project managers.⁷ The urban layout based on a *tabula rasa* and framed as a rectangle developed longitudinally in a 1:2 proportion. It is structured on an orthogonal grid of wide roads and divided symmetrically into 4 sectors by a main north-south axis and a secondary east-west one (Figure 4). The main axis works as urban promenade lining up most of the public functions and the larger stripe of public green. In the four sectors, the blocks are occupied by about 750 residential buildings ranging from 5 to 11 storeys for total 20,000 apartments, a hundred commercial businesses, forty schools, and several sports facilities. Different colours make the built fabrics recognizable and mitigate the anonymous landscape of prototyped housing blocks.

Phenomenal level of comparison

The two case studies were designed and developed in different ways and under different conditions. On one side, Pujiang is the outcome an urban plan designed by an Italian firm for a small community of 50,000 people in the outskirt of Shanghai; on the other side, Kilamba is totally a product of the Chinese planning practice intended to create the most modern settlement for 160,000 medium-class citizens of Luanda.

Their functional programs are similar and differ just in terms of quality and quantities. Nevertheless, apart from the geographical contexts, the most evident difference is related to the roles of the actors in charge of the design because, in the case of Pujiang, a foreign designer was asked to imagine a foreign modern city that eventually could adapt to a Chinese program and, in the second case, the Chinese were themselves the foreigners bringing to Angola their own idea for a modern and healthy city. The two conditions of exporting and importing urban plans was translated into the two cases in different ways. On the one hand, Pujiang was the chance for the Italians to experiment the translation of their planning culture into that *tabula rasa* not practicable anymore in Italy because of its dense built environment; Gregotti created the chance to dialogue with the historical identity of the context and tried to intertwine the formal elements of the traditional urban landscape into the high-end project of the new



town. On the other hand, in Kilamba the cultural joint seems to be absent and the town comes to be a true reproduction of the quick and tiresome urbanization occurred in China, with the difference that Kilamba masterplan transfer the symbolism of its power into the structural elements of the built space establishing a sense of order in the physical environment, regardless to the people and the place, and demonstrating sort a post-colonial attitude.

Morphological level of comparison

On the physical level, the analytic study of the two master plans and the comparison of the two with other city plans of modern and ancient times demonstrate that both Pujiang and Kilamba share some planning principles that put potentially them in continuity with the traditional forms of the ancient urban China in terms of design, proportions, dimensional ratio and, with the due differences, of functions (Figure 5, 6). In terms of formal concept, both towns show the presence the dominant elements of the tradition: an orthogonal grid, the main axis of symmetry, and a cellular structure of plots.⁸

In there, the main axis fixes the symmetry of the entire urban organism and it assumes the connotations of the big boulevard characterized by a central linear park around which the primary viability flows and the main public functions are attested (e.g. schools, civic centres, sports facilities, etc.). However, in urban contexts predominantly residential and relatively small like Pujiang and Kilamba, the axis lacks any monumental connotation.

Moreover, the two cases share approximately the same area and a similar rhythm of the grid lines.⁹. This makes, eventually, the geometry of the two settlements almost superimposable; the ideal rectangles defining the urban area have similar proportion and dimension, despite the irregular shape generated by stretching one of them. The orientation of the settlements is the same with the short side aligned in direction north-south and the layout is determined by the orthogonal grid defining the infrastructural layers of the settlements.

The rhythm of the grids shows that modules and dimensions repeat in identical or overturned or reduced sequences, however demonstrating their recursion. The vertical scan tends to differ from the horizontal one, generating a square mesh of rectangular plots of land. Among the modules identified in the comparison, the pair " $A \cdot B$ " and the sequences " $B \cdot A \mid A \cdot B$ " and " $A \cdot B \mid B \cdot A$ " along the axis of longitudinal symmetry configure the principal urban space of the public functions, as like as in the classic city plans (e.g. Chang'an and Beijing). The study reveals also that the grid tends to split between a main grid and a secondary one generated by the submultiples of the basic modules (e.g. B/2 and B/3 instead of B). The first grid defines a higher hierarchical level of infrastructure and a macroscopic partition of neighbourhoods and quarters, which refer to a metropolitan and territorial rather than local scale. The second one marks the networks of roads and channels and the partition of plots. Indeed, the vertical main and secondary grid lines of Pujiang and Kilamba can be composed as:

(P_{nl})	$\mathbf{B} \cdot \mathbf{A} \mid \mathbf{A} \cdot \mathbf{B}$
(1 VI)	

- $(P_{v2}) (B/3 \cdot B/3 \cdot B/3) \cdot (B/2 \cdot E \cdot B/2) | (B/2 \cdot E \cdot B/2) \cdot (B/3 \cdot B/3 \cdot B/3)$
- $(K_{\nu l}) B \cdot A \mid C/2 \mid A \cdot B$
- $(K_{v2}) \qquad \qquad \mathbf{B} \cdot (\mathbf{A}/2 \cdot \mathbf{A}/2) \mid \mathbf{C}/2 \mid (\mathbf{A}/2 \cdot \mathbf{A}/2) \cdot \mathbf{B}$

Eventually, the analysis of grid lines dimension shows a series of constant ratios recurring in the Chinese urban grids with no exception for Pujiang and Kilamba.

Conclusion

In general terms, the Pujiang town recalled the cosmopolitan and hybrid character of Shanghai despite the inversion of roles; in fact, as the past the grafting of Western architecture was a gesture of arrogance towards the local culture, today it was a collaboration that the city promotes with strong commitment. Kilamba shows instead the straightforwardness of Chinese actors in developing its one vision of the urbanization, mostly regardless the cultural implications related to importing urban types and plans, and the consequent living models.

Besides, from the morphological perspective Pujiang and Kilamba demonstrated to be two favourable contemporary testing grounds for applying a method commonly limited to the historical case studies. In fact, the analytical approach demonstrated that the current planning experiences are able to create a trans-geographic continuity between themselves and the past. Eventually, this means that Chinese contemporary planning principles, even when stereotyped, reinterpreted or prototyped, could still be coherent with the urban history and shared in a wider global urban culture.



Tables and Figures



Figure 1: Gregotti Associati International, bird view of Pujiang, 2008.



Figure 2: Gregotti Associati International, Masterplan for Pujiang, 2001.





Figure 3: CITIC, bird view of Kilamba, 2011.



Figure 4: CITIC, Masterplan for Kilamba, 2008.





Figure 5: Analysis of the Pujiang urban structure. Drawing by the author on the masterplan designed by Gregotti Associati International.



Figure 6: Analysis of the Kilamba urban structure. Drawing by the author on the masterplan designed by CITIC.

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Disclosure Statement

No potential conflict of interest was reported by the author.

Notes on contributor

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Image sources

Figure 1: Archello

Figure 2: Gregotti Associati International

Figure 3: CITIC

Figure 4: CITIC

Figure 5: Analysis by the author on the masterplan by Gregotti Associati International

Figure 6: Analysis by the author on the masterplan by CITIC

³ Concerning the typo-morphological approach and its application on the Gu.Chinese context, the contribution by Fei Chen and Kevin Thwaites is the most relevant and exaustive eventhou limited to a small-scale case study in Nanjing. See: Fei Chen and Kevin Thwaites, *Chinese Urban Design: The Typomorphological Approach* (Abingdon-on-Thames: Routledge, 2013).

⁴ About Shanghai New Towns and Pujiang, see: Bettina Bauerfiend and Josefine Fokdal, *Bridging Urbanities: Reflections on Urban Design in Shanghai and Berlin* (Münster: LIT Verlag, 2011); Charlie Q. L. Xue and Minghao Zhou, "Importation and Adaptation: Building 'One City and Ninetowns' in Shanghai: A Case Study of Vittorio Gregotti's Plan of Pujiang Town," *Urban Design International* 12 (2007); Peter G. Rowe and Har Ye Kan, *Urban Intensities: Contemporary Housing Types and Territories* (Berlin: Birkhäuser, 2014); Guido Morpurgo, *Gregotti & Associates. The Architecture of Urban Landscape* (New York: Rizzoli, 2014); Ioanni Delsante, "Shanghainese Sub-Urbanism. Features, Rise and Trends Towards Unified Urban and Rural Development," in *Study on Architecture and Urban Spatial Structure in China's Mega-Cities Suburbs*, ed. Tiziano Cattaneo (Bologna: Universitas Studiorum, 2016); Harry den Hartog, *Shanghai New Towns* [上海 新城: 追寻蔓延都市里的社区和身份] (Rotterdam: 010 Publishers, 2010).

⁵ Right after, the firm won two other competitions, the one for the regeneration of the area of Wai Tan Tuan, a former British concession along the Shanghai Bund (2002) and the one for the residential district Pujiang Village, south of Pujiang.

⁶ In 2006 the Africa-China partnership was ufficialised at the Beijing Summit of the Forum on China–Africa Cooperation (FOCAC) attended by 48 African countries. About the Chinese foreign policies and affairs, see: Thomas W. Robinson and David L. Shambaugh, *Chinese Foreign Policy: Theory and Practice* (Wotton-under-Edge: Clarendon Press, 1994).

⁷ See the official website promoting the new town: CITIC, "Kilamba," http://kilamba-info.com/.

⁸ These "urban figures" are extlensively described and analyzed by the litterature and they are part of the work developed in the author's PhD thesis. Among the main studies, see: Xiaodong Li and Yeo Kang Shua, *Chinese Conception of Space* (Beijing: China Architecture & Building Press, 1991); Alfred Schinz, *The Magic Square: Cities in Ancient China* (Fellbach: Edition Axel Menges, 1996).

⁹ As shown in the PhD thesis by the author, at the same scale the modules composing the urban grids were identified in linear measurements, which make up the sequences of the vertical and horizontal grid lines. The recognized modules are mainly six, indexed with the letters A-F.

First to develop the typological method, Gianfranco Caniggia applied it to several cases, by comparison, demonstrating the general rules behind the evolution of urban fabrics in the medieval time and determining the evolution process of historical architectural types. Focusing on the case Como, he could determine the historical evolution of the city from the Roman time and date the current urban fabrics. The same work was conducted by Saverio Muratori to study the evolution of Venice and Rome, discovering the logic behind the urban development and the typological evolution of their architecture. Later, Aldo Rossi's work of the "analogous city" was an attempt to move the typological research to the urban scale, considering some urban elements as typological in force of their form, function, and symbolism. See: Gianfranco Caniggia, *Lettura Dell'edilizia Di Base* (Venezia: Marsilio, 1981); Saverio Muratori, *Studi Per Una Operante Storia Urbana Di Venezia* (Roma: Istituto Poligrafico dello Stato, 1960); Aldo Rossi, *L'architettura Della Città* (Padova: Marsilio, 1966).

² The geographer Michael Robert Günter Conzen was main scholar who foresaw the possibility to research the geography of settlements by focusing on the ground plan of a town or a part of it and determining a scalar logic underlying the hierarchical structure of the built environment. See: Michael R.G. Conzen, *Alnwick, Northumberland: A Study in Town-Plan Analysis* (London: Institute of British Geographers, 1969). In relation to the specific Chinese context, see: Kai Gu and J.W.R. Whitehand, "Research on Chinese Urban Form: Retrospect and Prospect," *Progress in Human Geography* 30, no. 3 (2006); Kai Gu, "Urban Morphology of China in Post-Socialist Age: Towards a Framework of Analysis," *Urban Design International* 6, no. 3 (2010); J.W.R. Whitehand et al., "Urban Morphology and Conservation in China," 28, no. 2 (2011).