

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.

Keywords

Residential Area Planning, New Town, Neighbourhood Unit, Planning Standard

How to cite

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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 *Shintoshu* 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

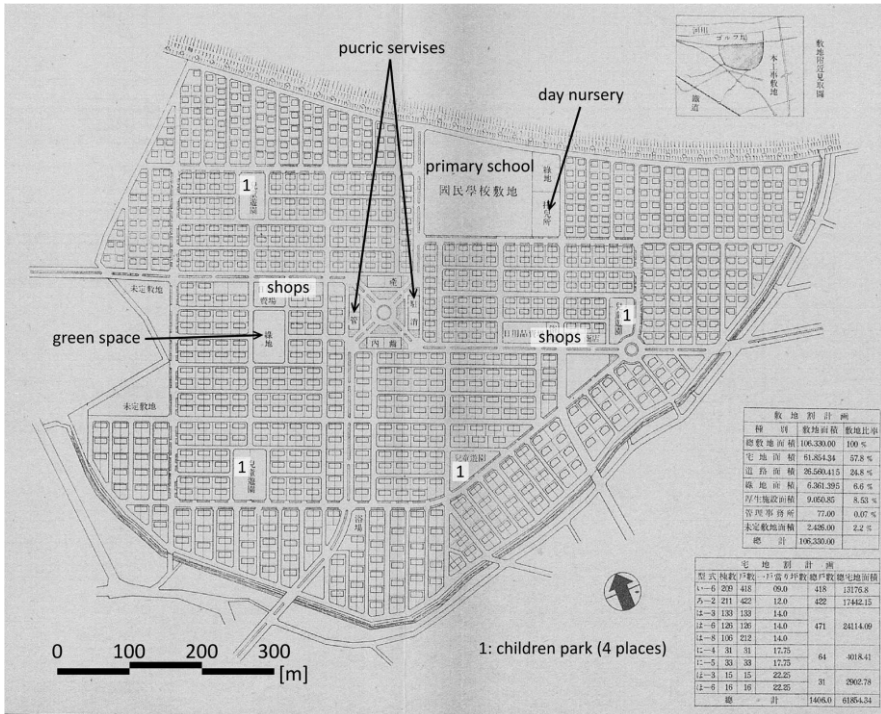


Fig. 1. Planning of Furuichiba in Kawasaki City (1942). This was a residential area for factory workers during the war. The plan was almost realised.

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.

Planning Standard from "The Technical Study of Common People's Housing" (1941)		Planning of Furuichiba Residential Area (1942)	
Neighbourhood Unit	Scale	1,600 ~ 2,000 households	Less than the standard (1,406 households)
		60 ~ 120 ha	Smaller than the standard (347,100 m ²)
		Consists of 4 purchase units	Can be divided into 4 zones. ¹⁴
Facility		Primary school, Management office, Police Office	Primary school, Management office, Police Office: Planned
		Library, Public hall, Living guidance centre	Library, Public hall, Living guidance centre: NOT Planned
Purchase Unit	Scale	400 ~ 500 households	377 households (average)
		15 ~ 25 ha	86,775 m ² (average)
	Facility	Market, Small park, Nursery school, Public bath, Management 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 Plan¹⁵, the Pilot Plan for Land Use of Shimonoseki City¹⁶ and the Trial Proposals for planning the Satellite Town, Kashiwa¹⁷.

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.

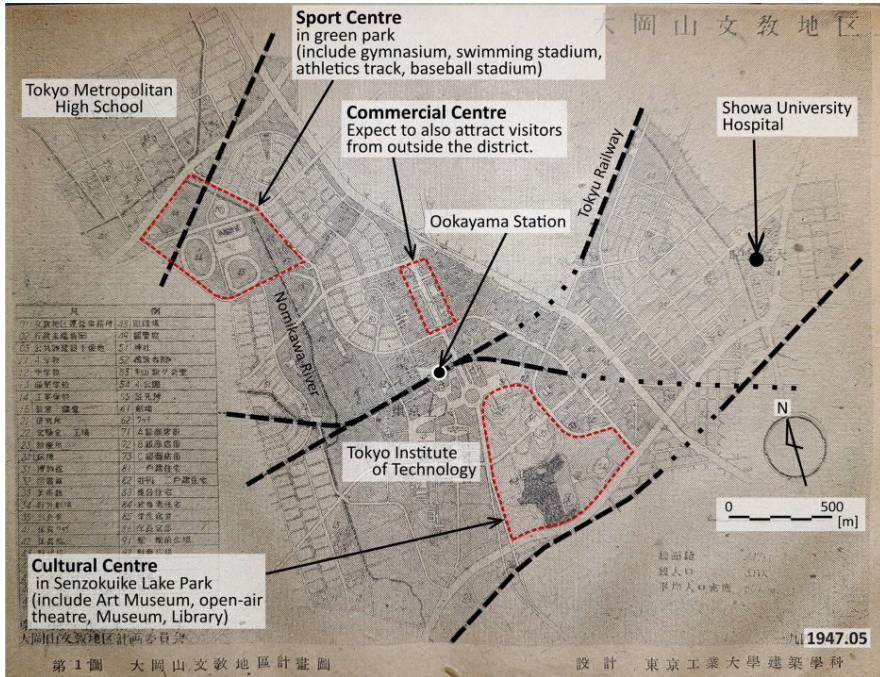


Fig. 2. Planning map of Ookayama Bunkyo District (1947). Road plans and facility layout plans are presented as the main focus. Flats and detached houses are also written separately. There are three existing educational institutions, and three types of centres were planned: sports, commercial and cultural.

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)

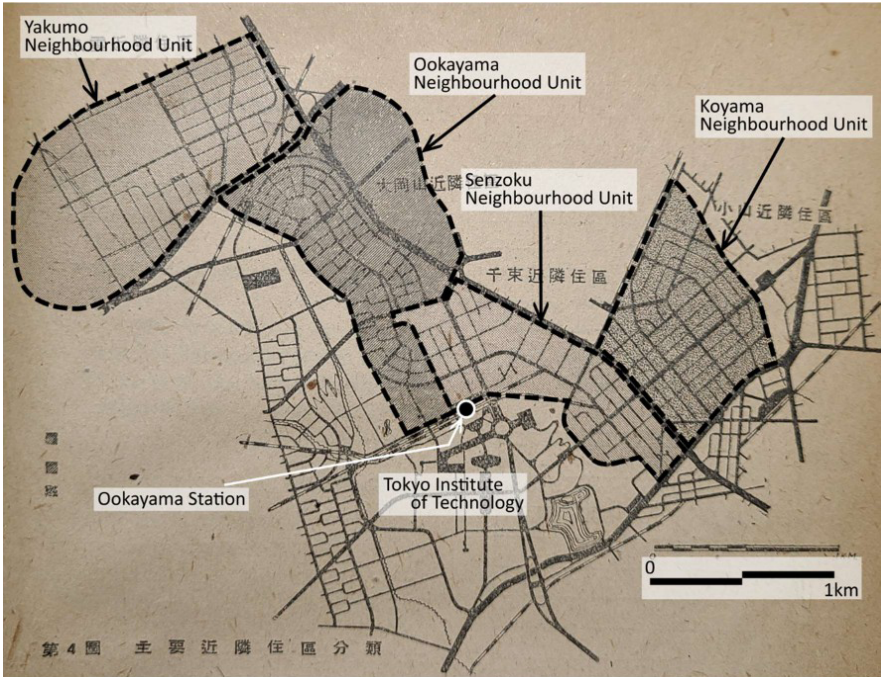


Fig. 3. Division plan map of 4 neighbourhood units in Ookayama Bunkyo District (1947). The extent of the four neighbourhood units is colour-coded on the street network map.

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Table 2. Scale setting for neighbourhood units in Ookayama Bunkyo District²¹

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

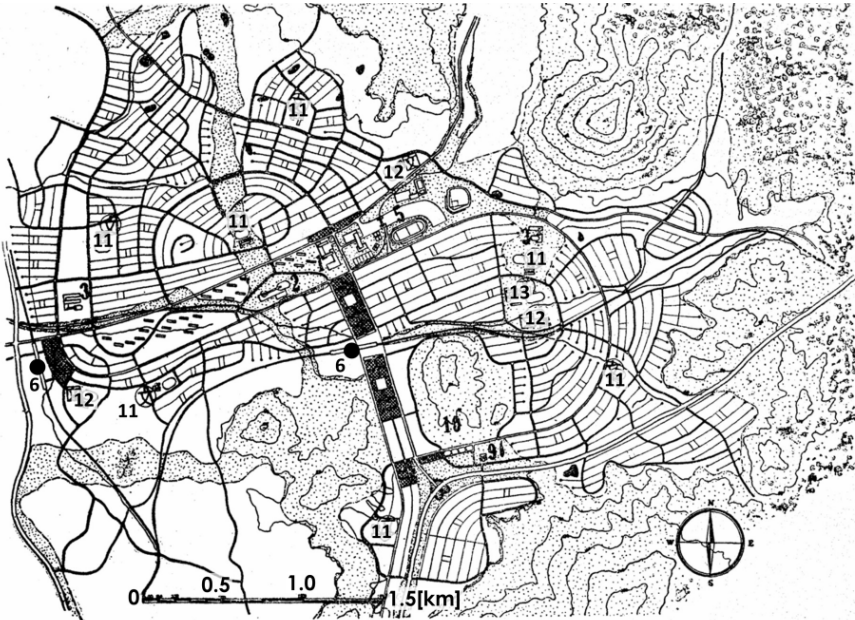
district plans in that it is located in a suburb far from the city centre and plans a very large residential area for the time with multiple neighbourhood units. It was the pioneering residential area planning based on the neighbourhood unit concept in post-war Japan.

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 Group²² 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 Shimonoesei 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 Shimonoesei City²⁵, 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.

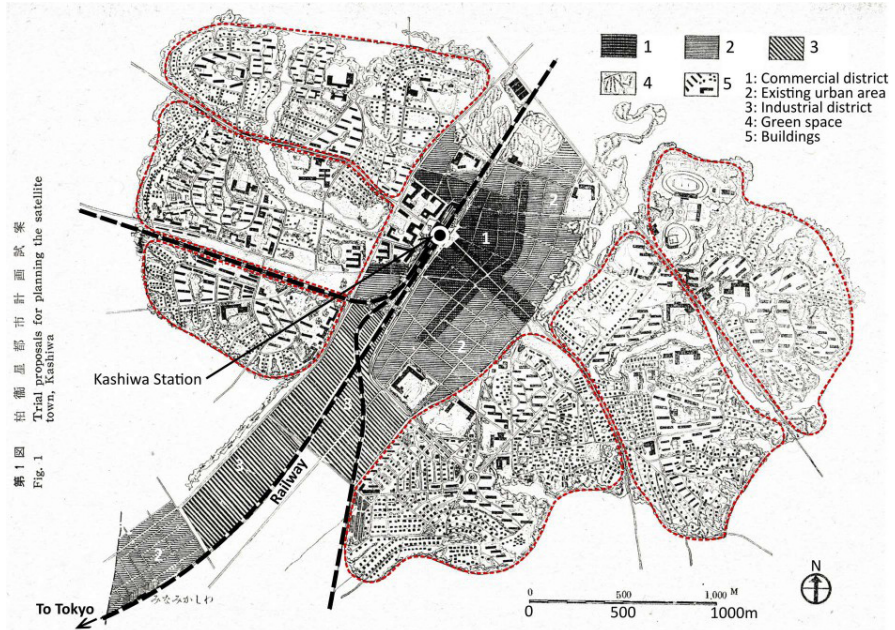


Fig. 6. Planning map of the Trial Proposals for Planning the Satellite Town, Kashiwa (1956). A new residential area, divided into six neighbourhood units, is planned to surround the existing urban area around the station. All of them make use of the railway, major roads and topography as the boundaries 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.

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.

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)
Number of units	1	4	7	6
Population per unit	7,030 (1,406 households)	7376.25	Approx. 8,000	Approx. 10,000
82 persons/ha (Excluding				

Table 3. 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 post-war 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 post-war 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

No potential conflict of interest was reported by the author.

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17. 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.
18. 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.
19. *Ibid.*, 73-101.
20. Although there is no mention of a 'purchasing unit', the four territorial divisions by main roads can be seen on the plan map.
21. Department of Architecture, Tokyo Institute of Technology, ed. "Ookayama Bunkyo District Planning Proposal." *Shinkenchiku* 22, no. 10, 11 (1947): 20-25.
22. Kiyoshi Ichikawa, and Kiyoshi Ikebe. "Pilot Plan for Land Use of Shimonoseki City." *City Planning Review* 5, no. 1 (1956): 21-30.
23. Kan Hidejima. "Trial Proposals for Planning the Satellite Town, Kashiwa." *City Planning Review* 5, no. 4 (1956): 29-32.
24. 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 mor-

- als. 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. Eiyō Ishikawa. "Report and Commentary on the Tokyo Reconstruction City Plan." *Shinkenchiku* 22, no. 1 (1947): 27.
25. "Special Feature on Bunkyo Districts" *Shinkenchiku* 22, no. 10, 11 (1947)
26. Department of Architecture, Tokyo Institute of Technology, ed. "Ookayama Bunkyo District Planning Proposal." *Shinkenchiku* 22, no. 10, 11 (1947): 21.
27. Ibid: 25. Extracts from the table titled 'Neighbourhood Planning' are quoted.
28. 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.
29. Kiyoshi Ichikawa, and Kiyoshi Ikebe. "Pilot Plan for Land Use of Shimonoseki City." *City Planning Review* 5, no. 1 (1956): 23.
30. Ibid: 24, 26.
31. Shimonoseki City Office, ed. *City Summary*. 1957 edition. Japan: Shimonoseki City Office, 1957: 34-35.
32. Kan Hidejima. "Trial Proposals for Planning the Residential City, Abiko", "Trial Proposals for Planning the Satellite Town, Tachikawa." *Collection of Research Reports of the Kanto Branch of the Architectural Institute of Japan* 34 (1955): 21-28.
33. Kan Hidejima. "Trial Proposals for Planning the Satellite Town, Kashiwa." *City Planning Review* 5, no. 4 (1956): 29.
34. Ibid: 29.
35. Ibid: 30.
36. Tsukei Ito. "Land Readjustment by Japan Housing Corporation." *Shintoshu* 10, no. 8 (1956): 15.
37. "Reconstruction Land Readjustment Design Standard", Planning Division, War Reconstruction Authority of Japan, ed. *Collection of Special City Planning Laws and Regulations*. Japan: City Planning Association of Japan, 1947: 181-186.
38. Higasa Laboratory, Department of Urban Engineering, Faculty of Engineering, The University of Tokyo, ed. *The Theory of Spatial Planning of Community*. Japan: Daiichi Jutaku Kensetsu Association, 1977: 66.
39. 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.
40. The target area of Ookayama is different in character from the war-affected city centres that were the main target of the 'Reconstruction Standard'.
41. 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.
42. Takuya Ono, Koji Itami. "An Improvement Scheme of Community Facilities Based on Use Condition and Evaluation of Community Facilities in Senri New Town" *Journal of Architecture and Planning (Transaction of AIJ)* 70, no. 592 (2005): 57-64.

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IMAGE SOURCES

Figure 1 'Planning of the residential area for workers by Jutaku Eidan', *Shinkenchiu* 18, no.10 (1942): 77-78.

Figure 2 Department of Architecture, Tokyo Institute of Technology, ed. "Ookayama Bunkyo District Planning Proposal." *Shinkenchiu* 22, no. 10, 11 (1947): 20.

Figure 3 Department of Architecture, Tokyo Institute of Technology, ed. "Ookayama Bunkyo District Planning Proposal." *Shinkenchiu* 22, no. 10, 11 (1947): 23.

Figure 4 'Zoning map of Sumiyoshi district', Kiyoshi Ichikawa, and Kiyoshi Ikebe. "Pilot Plan for Land Use of Shimonoseki City." *City Planning Review* 5, no. 1 (1956): 26.

Figure 5 Kan Hidejima. "Trial Proposals for Planning the Satellite Town, Kashiwa." *City Planning Review* 5, no. 4 (1956): 31