A Thesis for the Degree of Ph.D. in Engineering

The Creation and Management of Public-private Interfaces: Wellness and Bottom-up Approach Urban Design Incorporating Micro Public Spaces

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Graduate school of Science and Technology

Keio University

Sano Satoshi

Center for Space and Environment Design Engineering, Graduate school of Science and Technology, Keio University

3-14-1 Hiyoshi, Kohoku-ku, Yokohama, Kanagawa, 223-8522, Japan

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Sano Satoshi | 佐野 哲史

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Abstract

This thesis investigated the links between two notions of fundamental importance for quality urbanism – the Quality of Life and Quality of Space – in Japan. The research, founded upon practical experience, focused at selected, bottom-up created and managed urban spaces and public-private interfaces (PPI). PPI here refers to both spaces and lives defining the domain between public and private realms in the city. Although those issues have attracted significant attention in urban design and research since 1960s, there are neither standard typologies nor agreed methods for their categorizing (Dovey, Wood, 2005). While some PPI places and practices in Japan can rightfully be seen as indigenous, few studies that approach them from a combined spatial and social stand point, with most of them related to either the creation, or to management of PPI. This Thesis provides novel insights into PPI by conducting in-depth, individual and specific studies on the entire process - from the creation to management of PPI. Inspired by the theory of conviviality and the idea of anti-industrial individual freedom (Illich, 1973), this project applies the working definition of PPI as convivial urban space.

By analysing and clarifying the exact social roles, conditions for social effectiveness, and characters involved in concrete cases, the bottom-up urban design and management strategies that incorporate PPI - micro public spaces emerge. The case studies which have enabled that conclusion were conducted at the individual, neighborhood, and community levels, addressing a variety of generic and case-specific forms of PPI activity. The results explain the formation of concrete PPI, their roles as places for social interaction, a critical importance of involvement of multiple and diverse stakeholders, with inclusion of vulnerable community members – their character as places of emerging, autonomous, rather than predefined activities. Of special importance is the finding that successful PPI always involve multiple people, and that the variety of their interactions positively affects their individual and collective behavior and wellness. This was confirmed by the fact that in PPI composed of multiple personal spaces, the changes that occur in one of the spaces have a defining influence on the entire group of PPI, as well as the adjacent spaces.

In the context of contemporary Japan, conviviality expresses itself through individual freedom in mutuality, where (the interaction with) a group becomes more important than an individual. This indicates that in order for PPI to be effective, they should be practiced as collective activities rather than individual activities in urban spaces. The combined results of this thesis show that the bottom-up approach which sensitively combines the space creation and management practices, and which has both an established history and presence in Tokyo of today, has the capacity to play a significant role in locally relevant quality of urban life.

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The Creation and Management of Public-private Interfaces

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Introduction

1.1. Background and Relevance

Using a combination of urban, architectural, and social methods, this thesis explores whether private spaces in Japanese cities have the potential to perform as a place for public interactions, and whether they can advance a bottom-up approach to urban design. The focus is on the public–private interface (PPI) which refers to spaces where the public and private realms meet, merge, and interact.

We address a series of issues related to dialectics between quality of space and quality of life. The significance of the combined investigation of quality of space and quality of life is that this combination underpins the essential nature of human wellness. For various reasons, contemporary society does not pay sufficient attention to quality of life, especially in the case of vulnerable individuals and groups. This increases the already high levels of vulnerability. Every time we encounter a crisis, such as a natural disaster, we become aware of the vulnerability brought about by modern cities and life within them, and of the critical importance of space.

Contemporary cities are losing the quality of space and quality of life that used to be directly associated with urbanity—precisely "the *urban* which survives in the fissures of planned and programmed order" (Lefebvre, 1996. p.129).

The results of this research are, in particular, meant to inform the architects of small residential projects (private houses, small apartments, etc.) who work in 'fissures' of urban spaces. These are small projects not undertaken by the large-scale architectural firms that produce the 'planned and programmed order' of contemporary cities.

By understanding the meaning and role of small interventions, and the significance of activities of concrete people in concrete situations within the often overlooked 'fissures' in urban spaces, small-scale architects' work acquires special meaning and relevance, and

develops the capability to better shape the quality of space and quality of life, as part of collaborative, bottom-up approach design and management practices.

Quality of Life and Crisis Prevention

Times of crisis force architecture and cities to change, whether the specific crisis is economic or caused by natural disasters or infectious diseases like COVID-19. 'Crisis prevention' measures taken in response to a crisis hardly ever explicitly consider the quality of life (QoL) and the quality of space in which everyday life unfolds. The crisis prevention in response to COVID-19 was no exception. The most direct and concrete countermeasures were aimed at preventing infection. In terms of health, only physical health was explicitly addressed. Such a direct response is essential, but while secondary, the problems of mental and social health should not be treated separately. In this case, as in broader established practice, very little discussion has covered a comprehensive perspective, such as QoL. This thesis covers the directly associated set of issues relating to quality of space as part of QoL.

Infectious Diseases and Space

Spatial responses to infectious diseases as crisis prevention have always had a great influence on contemporary urban space, because modern space design has developed in the wake of infectious diseases.

Figure 1 – Illustrative example of a busy street scene of 19th-century London
"Seven Dials" by Gustave Doré (1872). (Source: Wellcome Images via Wikipedia[1])

[1] Available at:
https://en.wikipedia.org/wiki/File:Dudley_St.,_Seven_Dials_Wellcome_L0000881.jpg [Accessed 5 Jul. 2020].

The Latin word *bacterium*, which means bacteria, appeared in 1838, and the pathogen as it is known today was discovered only after the 19th century. There was no fundamental cure for bacterial epidemics until the first antibiotic, penicillin, was discovered by Alexander Fleming in the UK in 1929. The response to virus epidemics still relies on the immunity of individual patients.

Early 20th century spatial design was utilized to control epidemics such as tuberculosis. Tuberculosis was a major epidemic in Britain, known as the 'factory of the world' after the Industrial Revolution. In the most prosperous city of London around 1830, one in five people died of tuberculosis. At that time, workers were paid low wages, usually working as long as 15 hours a day. Overwork and malnutrition coincided and weakened resistance, and tuberculosis bacilli grew. The unhygienic urban environment, such as slums developing due to the rapid concentration of population in cities, spurred it further.

In Japan, tuberculosis increased from the early Meiji era until 1945 and continued to be the leading cause of death among Japanese, killing more than 100,000 every year. In the early 20th century, before antibiotics were developed, modern space design was expected to create spatial conditions that would help prevent epidemics such as tuberculosis. According to Colomina & Wigley (2016), late 19th century medical texts describe the causes of tuberculosis as including lack of exercise, sitting indoors, and insufficient levels of ventilation and lighting.

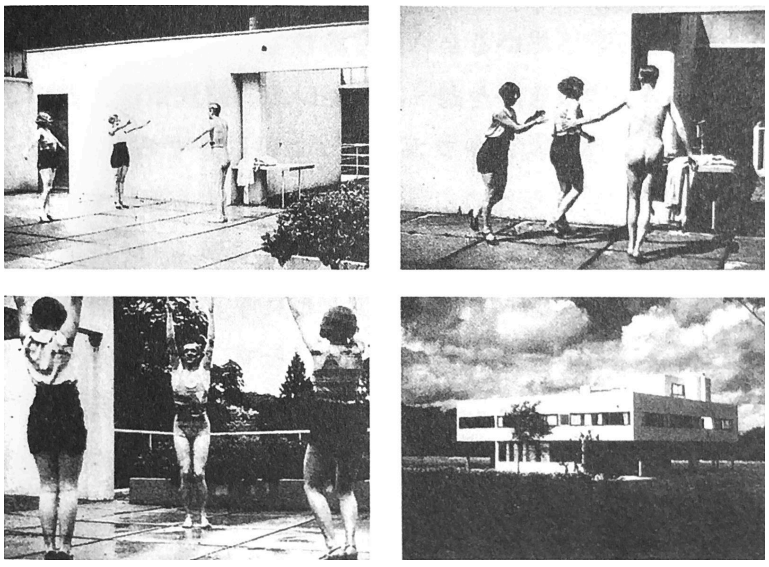


Figure 2 – Illustrative examples of health and modern architecture
"Architecture d'aujourd'hui" - A movie directed by Pierre Chenal, written by Le Corbusier et al. (1929)[2]

[2] Source: Colomina, B. & Wigley, M. (2016) *Are We Human? Notes on an Archaeology of Design.*

At the beginning of the 20th century, novel approaches to space design provided better ventilation and sunshine. In open-air spaces separated from the jumbled land by the Corbusian piloti (Kuma, 2000), continuous horizontal windows[3] instead of vertical ones ensured better daylight and ventilation conditions (Sendai, 2014). Rooftop gardens provided for further daylight and ventilation, even offering sunbathing opportunities. The free plane of the Domino system (Kuma, ibid.) liberated interior spaces from structural walls. It allowed each room access to daylight and ventilation from continuous horizontal windows and the rooftop garden. Spaces for movement, such as stairs and slopes, were seen as the main spatial elements, creating the dynamic feeling of active spaces for 'exercise' (Kuma, ibid.; Colomina & Wigley, 2016), while painting walls produced an image of a "bright, healthy, and hygienic" environment.

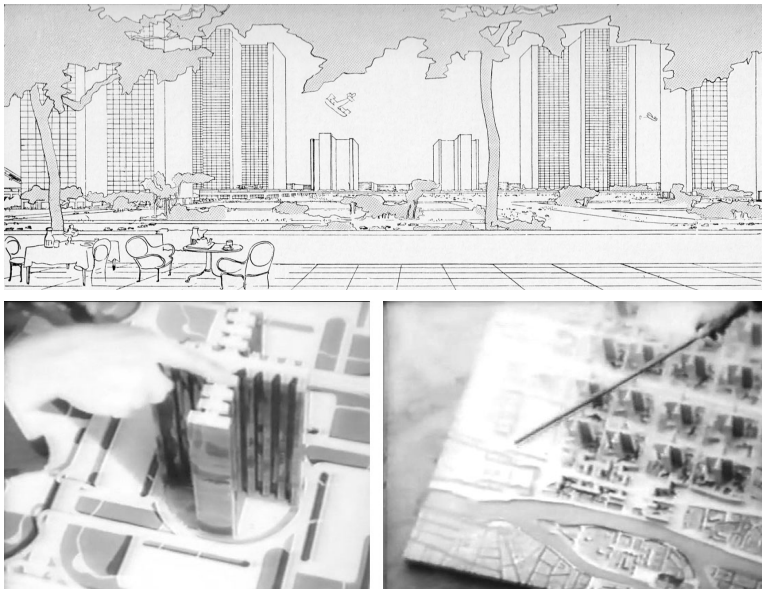


Figure 3 – Illustrative examples of modern city designed by Le Corbusier
(above) "Contemporary City for Three Million Inhabitants" (Source: The Charnel-House[4])
(below) "Architecture d'aujourd'hui" - A movie directed by Pierre Chenal, written by Le Corbusier et al. (1929)[5]

"Contemporary City for Three Million Inhabitants" (Figure 3), proposed by Le Corbusier in 1922, clearly aimed at promoting health and avoiding tuberculosis. Opting for high-rise buildings and securing open spaces reduced overcrowding of the city without reductions in density and with increases in sunshine and ventilation levels.

[3] Sendai points out that Le Corbusier's horizontal windows mainly aimed for better daylight (but also mentions that Le Corbusier cared about ventilation). Horizontal windows here are not limited to Corbusian horizontal windows but refer to horizontal windows in a broad sense.

[4] Available at:
https://thecharnelhouse.org/2014/06/03/le-corbusiers-contemporary-city-1925/ [Accessed 5 Jul. 2020].

[5] Available at:
https://vimeo.com/67793221 [Accessed 5 Jul. 2020].

Although the hygienic space and daylight and ventilation in the space positively affects both physical and mental aspects of health, this design solution still favored the physical and natural environmental aspects of life. While the resulting Modernist projects that were developed all over the world, including in Japan, offered healthier conditions and helped reduce the dangers of epidemics, they have also severely impoverished the social fabric of the city. As a direct consequence, social isolation and loneliness has increased and urban mental health has become endangered.

Disaster and Space

The history of disasters transforming architecture and cities dates back to the origins of cities. For us here, the most interesting are the examples that are directly related to the emergence of the modern era. The 1666 London Fire destroyed 85% of the city, but in response, London, which used to be a city of low-rise wooden buildings, was rendered incombustible by brick-based reconstruction planned by architect Christopher Wren (Kuma, 2013). The wooden city of medieval narrow alleys has been transformed into a new one, made of brick buildings with squares and avenues. With the restored London as the norm, cities all over the world, including Paris, phased out the narrow alleys that retained remnants of the Middle Ages, transforming into cities with boulevards and incombustible buildings.

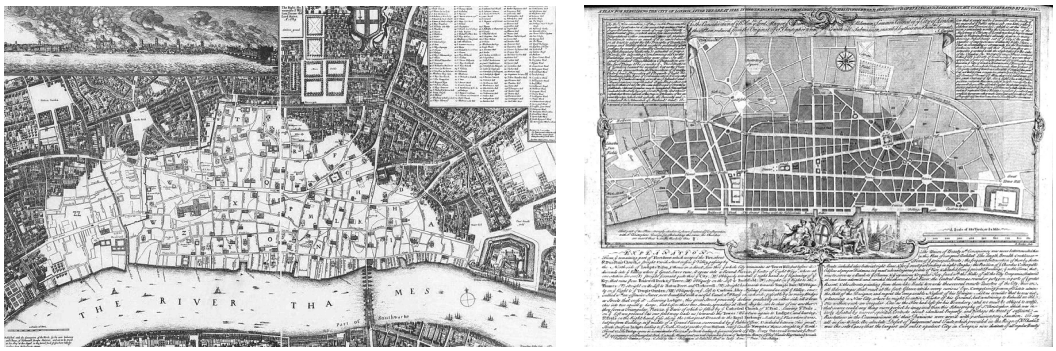


Figure 4 – Before & after of the Great Fire of London in 1666
(left) "An exact survey of the streets lanes and churches contained within the ruins of the city of London" - a map of the area affected by the Great Fire (Source: Reddit Inc[6])
(right) Christopher Wren's plan for rebuilding the city of London after the Great Fire (Source: Royal Academy of Arts[7])

[6] Available at: https://www.reddit.com/r/MapPorn/comments/5b4zqk/map_of_the_destruction_caused_by_the_great_fire/ [Accessed 6 Jul. 2020]

[7] Available at: https://www.royalacademy.org.uk/art-artists/work-of-art/christopher-wrens-plan-for-rebuilding-the-city-of-london-after-the-great [Accessed 6 Jul. 2020]

The 1871 Great Chicago Fire further accelerated that process. The Chicago fire is reported to have burnt 800 hectares of land and destroyed the homes of 100,000 people. The Great Chicago Fire resulted in a new Chicago, composed of high-rise, noncombustible buildings. The world's first building with an elevator, the E.V. Haughwout Building (Kuma, 2013), was completed in New York in 1856, just before the Chicago fire, so buildings became nonflammable and skyscrapers grew.

Some 70 years later, the Great Kanto Earthquake of 1923 promoted combustion awareness in Japan. The following year, the Urban Building Act (building legislation equivalent to the current Building Standards Act) was amended, and it included regulations on earthquake resistance for the first time. The main cause of death in the Great Kanto Earthquake was burns, resulting in approximately 100,000 deaths. After the Earthquake, earthquake resistance and fire protection regulations were revised each time a disaster occurred. As a consequence, low-rise wooden buildings were gradually converted to earthquake-resistant buildings made of noncombustible materials.

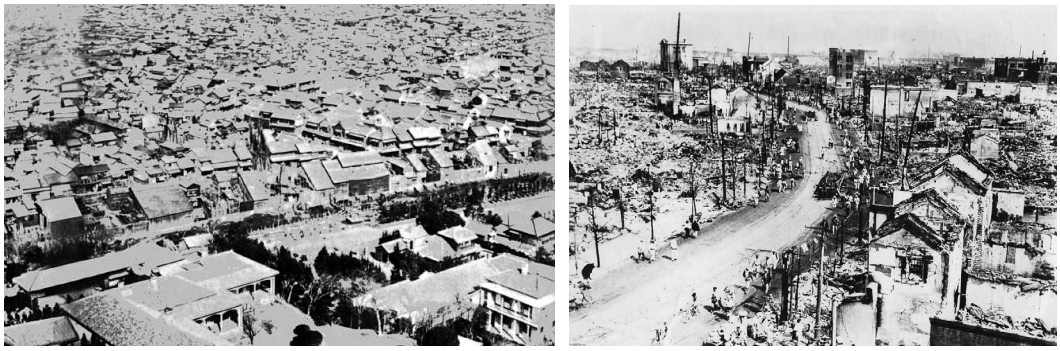


Figure 5 – The Great Kanto Earthquake
(left) Kanda, Tokyo, 1891 (Source: Japan Archives Association[8])
(right) Kanda, Tokyo, 1923 after the Great Kanto Earthquake (Source: Japan Archives Association[9])

Space for Social Interaction: Beyond Globalism, Neoliberalism, and COVID-19

The above brief historic overview illustrates some of the efforts to overcome adverse conditions created by both infectious diseases and disasters. COVID-19 imposes a similar task, as reflected in political slogans referring to a 'war' against viruses. (e.g. French president Emmanuel Macron,[10] Japanese prime minister Abe Shinzo[11]). In Japan, an awareness that

[8] Available at: https://jaa2100.org/entry/detail/052723.html [Accessed 6 Jul. 2020]

[9] Available at: https://jaa2100.org/entry/detail/061093.html [Accessed 6 Jul. 2020]

[10] https://www.politico.eu/interactive/inside-emmanuel-macron-coronavirus-war/ [Accessed 6 Jul. 2020]

[11] https://www.yomiuri.co.jp/politics/20200415-OYT1T50203/ [Accessed 6 Jul. 2020]

something needs to be done preceded the current crisis. Having experienced the 2011 Great East Japan Earthquake, professional and broader communities in Japan started to question the prevalent thinking. Questions that had until recently been unthinkable started to emerge, such as: Can a huge embankment ever completely block a tsunami? Should we continue to rely on nuclear power? These questions, enabled by the Great East Japan Earthquake, ask us to reconsider much of the modern thinking about creating strong defenses and overcoming threats. COVID-19 added to the severity of questions that need to be asked. Highly developed globalization has spread COVID-19 worldwide, in a period of time that was impossibly short until recently. This globalization is directly related to neoliberalism and its demands for continuous economic growth.

Figure 6 – Illustrative images of people and cities affected by COVID-19
(left) Medical personnel inspecting COVID-19 (Source: NNA[12])
(right) Office workers wearing a mask (Source: President Inc.[13])

The focus of this research on private spaces as places for social interaction addresses attempts being made all over Japan in the wake of the Great East Japan Earthquake, which saw these new questions as an opportunity to offer viable local alternatives to questionable local trends.

Figure 7 – Illustrative images of social isolation
(left) Temporary housing in the disaster-stricken area (Source: Sankei Shimbun[14])
(right) Illustrative image of 'stay-home' isolation (Source: sohu.com[15])

[12] Available at: https://www.nna.jp/news/show/2017218 [Accessed 6 Jul. 2020]

[13] Available at: https://president.jp/articles/-/33142 [Accessed 6 Jul. 2020]

[14] Available at: https://www.sankei.com/region/photos/160904/rgn1609040009-p1.html [Accessed 6 Jul. 2020]

In the Tohoku region, houses and towns were washed away by the tsunami, highlighting the complex issue of social isolation and the struggle of communities who have lost the essence of dwelling, their *places* of meaningful life. Although only that part of Japan was directly affected by the tsunami, the Great East Japan Earthquake drew the attention of people all over Japan to notice the problem of isolation in modern society. COVID-19 has shown that isolation is a problem facing humanity at global scale.

The questions we need to ask are not the same questions relating to crisis prevention that we asked before. As the tuberculosis crisis helped create new types for spatial architectural and open spaces, should we aim at comprehensive and rational spatial separation (zoning) that would ensure the COVID-19 mantra of social distancing? Based on an analysis of historic examples that dealt with previous crises, the answer is no. At least, that should not be the entirety or even the focus of our response. The reaction to COVID-19 should aim at both advancing new ideas and creating the qualities that were neglected by crisis prevention and sacrificed by globalism and neoliberalism.

Cases that illustrate what we mean by this seemingly radical proposition already exist in Japan. Immediately after the Great East Japan Earthquake, early attempts at creating a 'private space as a place for public interaction' emerged, named simply 'tea room,' 'community cafe,' or 'town *engawa* (verandah),' for example. According to Konbuyama (2015), these facilities were created in more than 30,000 locations throughout the country.

Figure 8 – Examples of 'private space as a place for public interaction'
(left) Higashimachi Machikado Hiroba in Osaka (Source: Newtown Sketch[16])
(right) Ibasho House in Iwate (Source: Ibasho Japan[17])

[15] Available at: https://www.sohu.com/a/251818241_100157206 [Accessed 6 Jul. 2020]

[16] Available at: https://newtown-sketch.com/blog/20160925-16904 [Accessed 6 Jul. 2020]

[17] Available at: https://ibasho-japan.org/blog/20160627-730 [Accessed 6 Jul. 2020]

These were places where individuals or minority groups could meet and interact with locals. According to the definition by NPO Community Support Center Kobe, these facilities are "a place where various people can gather and feel free to open themselves up, where they can find their own roles."[18] These attempts were intended to, by facilitating interactions between people, improve wellness and QoL not limited to physical health.

Conviviality Towards Wellness and Quality of Life

This thesis aims to find conviviality in these attempts. Conviviality is the concept of "individual freedom realized in personal interdependence" (Illich, 1973, p. 11) Illich mentions, in his book 'Tools for Conviviality', "The year 1913 marks a watershed in the history of modern medicine. (…) Since then medicine has gone on to define what constitutes disease and its treatment." (ibid., p. 1) Illich regards medicine as what creates new kinds of disease, and named these disease "iatrogenic (doctor-induced) diseases". According to Illich, "professional medicine became a major threat to health." (ibid., P. 2) Because "As the value of *services* rose, it became almost impossible to *care*." (ibid., P. 3) even though "People have a native capacity for healing, consoling, moving, learning, building their house, and burying their dead." (ibid., p. 54)

A convivial society is, for instance, "a society in which people can and must take care of their neighbors and do so on their own, (…) in which people can one again be born in their homes and die in their homes," that is where "people would grow up capable of assisting others to heal, to suffer, or to die." (ibid., p. 35) Conviviality is, in a broad sense, the "ability to invest their own time with the power to produce use-value" (ibid., p. 63) and "individual freedom realized in personal interdependence" (ibid., p. 11) as mentioned above. This thesis takes a stand that such conviviality improves wellness and quality of life and the social interactions among autonomous individuals emerge by convivial place making.

Taking the stand as above, this thesis explores the whole process of the creation and management of public-private interface (PPI) in detail, since the most past researches are about one or the other of creation and management and those researches don't explore individual cases concretely. Thus, this thesis offers new knowledge. Also, this thesis addresses Japanese-specific issues referring traditional Japanese architectural and social concepts but also western concepts. The transfer and exchange of knowledge by conceptual-translation of

[18] NPO Community Support Center Kobe ; Ibasho Big Map vol.1 (Oct. 2016) "多様な人々が集い、気兼ねなく自分が開放できる場所、そこでは自分らしい役割も見つけることが出来るそんな地域の居場所"
Available at: http://www.cskobe.com/ibasho/ [Accessed 6 Jul. 2020]

those concepts are also novelty of this thesis.

As emphasized above, contemporary society and cities need to do precisely that—providing spaces which facilitate social interaction, thus consciously contributing to wellness and quality of daily life.

Theoretical Background

This thesis refers the theories highlighted in Table 1. By relating the concept of conviviality, as formulated by Ivan Illich, to the Japanese concepts, such as *hanare* and others, we have established the relationship between the two - in full understanding that they do not and can not fully correspond. Such is the situation with many, if not all of the imported concepts globally (Radović, 2020). It goes without saying that Illich's understanding carries cultural weight of his Croatian, Catholic, European background, as much as Lefebvre's thought is unmistakably communist, French or Sennet's of Anglo-Saxon provenance. Implementation of Illich's concept in this project, to a certain degree, marks the universality of being human, and while its juxtaposition with the established Japanese ways of urban life implicitly charts its limits within the context of this project. His thought, as that of several other theorists, helps create the critical standpoint from which the examples presented in the thesis get critically analyzed.

<table>
<tr><th>Field of Concept</th><th>Public and Private</th><th>Urban Interface</th><th>Criticism of Modern Urbanism</th><th>Human Alienation</th><th>Criticism of Institutionalization</th></tr>
<tr><td rowspan="4">-1960s

1970-90s

2000s</td><td>Hannah Arendt
The Human Condition (1958)</td><td colspan="2">Jane Jacobs
The death and life of great American cities (1961)</td><td>Martin Heidegger
Being and Time (1962)</td><td>Robert Venturi
Complexity and Contradiction in Architecture (1966)</td></tr>
<tr><td>Alberto Melucci
Nomads of the Present (1989)</td><td>Christopher Alexander
A Pattern Language (1977)</td><td colspan="2">Henri Lefebvre
The Right to the City (1968)</td><td>Christopher Alexander
A New Theory of Urban Design (1987)</td></tr>
<tr><td colspan="2">Jan Gehl
Life Between Buildings (1987),</td><td colspan="3">Ivan Illich
Tools for Conviviality (1973)
The Right to Useful Unemployment (1978)
Shadow Work (1981)</td></tr>
<tr><td colspan="3">Richard Sennett
The Craftsman (2008),
Building and Dwelling: Ethics for the City (2018)</td><td>David Harvey
Rebel Cities (2012)</td><td>Bernard Tschumi
Architecture and Disjuctions (1996)</td></tr>
</table>

Table 1 – Relation of the theories

1.2. Definition of Key Terms

This thesis discusses QoL in daily life from a spatial perspective treating the following terms defined as follows.

Public and Private

Realm

An area of activity, interest or knowledge (OALD[19]), especially a specific area perceived as a cohesion of a group of people.

Area

Part of a place, town, etc. (OALD), especially two- or three-dimensional physical distance.

Space

Three-dimensional area, not limited to a physical distance but also mental and social, including people's actions, activities, and behaviors.

Boundary

A real or imagined line that marks the limits or edges of something and separates it from other things or places (OALD), especially a line where two realms meet.

Border

A real or imagined area in between two realms or an area where two realms overlap.

Interface

Where two subjects, systems, etc. meet and affect each other (OALD), especially a real or imagined border where two realms interact (affect each other).

Public (Public Space)

Provided, especially by the government, for the use of people in general (OALD), in a broad sense a realm provided and/or managed not by a particular person or group, relatively defined in comparison to private. For details, see also Subsection 2.2.3. (Public and Private.)

[19] OALD: Oxford Advanced Learner's Dictionary online
Available at: https://www.oxfordlearnersdictionaries.com/ [Accessed 2 Jan. 2021]

Private (Private Space)

Belonging to or for the use of a particular person or group (OALD), in a broad sense a realm provided and/or managed by a particular person or group, relatively defined in comparison to public. For details, see also Subsection 2.2.3. (Public and Private).

Public Nature

Accessible by outsiders, not limited to a particular person or group.

Private Space with Public Nature

A space provided and/or managed by a particular person or group but also accessible by outsiders.

Public-private Interface (PPI)

An interface of public and private in urban spaces. According to Kim Dovey, who has researched public-private interface for years based on his research focused on theories of place, power and urban informality, "the urban interface between public and private space has long been an issue of great concern in urban design, planning and architectural theory" (Dovey and Wood, 2015, p.1), and the public-private interface is defined as "a primary site of transition from private to public selves and vice versa; where friends and customers are greeted and farewelled; where identities are constructed (the entry foyer, front door, front garden); where goods are displayed and exchanged (the shop window); where social activity occurs in interstitial space (the front porch, al fresco dining); where safety is established both with boundaries and with passive surveillance." (ibid., p.1) Based on the definition written above, this thesis defines the public-private interface as a space where public and private interact, in concrete terms, an area in between public and private realm; where people, including outsiders, meet and interact. For details, see also Subsection 2.2.5. (Public-private Interface Towards Conviviality), Subsection 2.2.6. (*Hanare* as Public-private Interface), and Section 7.1. (Creation: Feasibility of Implementing PPI in Urban Space.)

Creation and Management

Conception

To conceive a space, e.g., imagine, envision, and design a space conceptually.

Production

A process of making a space (excluding 'construction'), especially make it with skill, i.e.,

produce architectural drawings of the space, supervise the construction.

Construction

To build a space on site.

Creation

The whole thoughts, activities, and process of conception and production.

Maintenance

Activities (after the creation of the space), in distinction from 'management', to keep the space physically stabile, e.g., repairing, cleaning, etc.

Management

Activities (after the creation of the space), in distinction from 'maintenance', of using or running the space, organizing goods, tools, people, etc.

Architect

A specialist or group of specialists of architecture who is involved in the creation and/or management of the space (i.e., design, engineering, supervision of the construction, and management of the space). See also Subsection 3.3.1. (Practice and Research)

Founder

A person or group who initiated the creation of the space and own the space.

Resident

A person or group who doesn't own the space but lives in the space.

Citizen

A general person or group who is not a founder but is involved in the creation and/or the management of the space.

Top-down

Starting with a general idea to which details are added later (OALD), especially a systematic process of a consensus formation, purposing and execution of a unified purpose.

Bottom-up

Starting with details and then later moving on to more general principles (OALD), especially starting with disunified actions assembled to (co-)pursue multiple individual

desires.

Socio-spatial Terms

Wellness

The state of being healthy, especially when you actively try to achieve this (OALD), that is, the autonomous way of life aiming to achieve not only physical but also mental and social health.

Quality of Life (QoL)

The level of health, comfort and happiness that a particular person or group has (OALD). See also Section 2.1. (Quality of Life – QoL)

Quality of Space (QoS)

The level of health, comfort and happiness that a particular space can afford in association with the culture, the customs, or the way of life that has been fostered indigenously. See also Section 2.2. (Quality of Space – QoS)

Indigenous

Belonging to a particular place rather than coming to it from somewhere else (OALD), especially the way of life and space that have not changed for a long time.

Fissure

A gap of "planned and programmed order" (ibid. p.129)

Vulnerability

In the narrower sense, being weak and easily hurt physically or emotionally (OALD), e.g., disadvantaged groups such as the elderly. In the broader sense, potential harm to people (United Nations Development Programme, 2016), inability of people, organizations, and societies to withstand adverse impacts from multiple stressors to which they are exposed (Wikipedia, 2021). A universal attribute for all humans in the process of life from birth to death (Tanaka, 2010) which has the aspect of being created by society (Furukawa, 2006)

Conviviality

"Individual freedom realized in personal interdependence" "the freedom to make things among which they can live, to give shape to them according to their own tastes, and to put them to use in caring for about others" (Illich, 1973, p.11) See also Subsection 2.2.5.

(Public-private Interface Towards Conviviality) and Section 7.4. (Bottom-up Approach Spatial Practice Towards Conviviality and the Urban)

1.3. Hypothesis and Research Questions

This thesis identifies and verifies the potential of these bottom-up activities as spaces that improve the quality of broader urban spaces. The hypothesis is that well conceived and managed PPI possesses the character which convivial urban spaces need. Consequently, it addresses the following research questions:

(1) Social Roles of PPI

What are the social roles that PPI can play in urban design strategies aimed at quality of space?

(2) Conditions and Actors for Social Effectiveness of PPI

What kind of conditions and actors can make PPI socially effective?

(3) Characters of Convivial Urban Space

What are the characters of well-conceived and managed PPI as convivial urban spaces?

The case studies include architectural and urban spatial analysis, combined with sociological and ethnographic insights, and verify the research questions.

1.4. Structure of the Thesis

This thesis consists of eight chapters.

Chapter 1 gives the background, aim, relevance, key terms of the research, and the hypotheses and research questions.

Chapter 2 provides the theoretical background of this study in three steps, by discussing and defining (a) the quality and ways of life aiming towards wellness in the Japanese context, and (b) the quality of space and social interactions for wellness in the Japanese context, reaching the central issue of (c) interaction between various aspects of public and private lives in space as PPI, in the Japanese context.

Chapter 3 describes the methodology of the research. The approach and focus of this research define three categories (levels) of case studies and introduce the mixed research methods to be applied to analysis and discussion of these cases. This chapter also explains the selection of the case studies.

Chapter 4 offers a case study in the first category: the PPI analysis at individual level.

Chapter 5 offers a case study in the second category: the PPI analysis at neighborhood level.

Chapter 6 offers a case study in the third category: the PPI analysis at community level.

Chapter 7 discusses and combines the findings obtained from the analysis of cases across individual, neighborhood and community levels of PPI, establishing a hierarchy of issues.

Chapter 8 gives a set of conclusions related to particular cases and levels, and possible generalizations.

* * * * *

Chapter

2

2

Conceptual Framework

This chapter shows the theoretical background of this research.

2.1. Quality of Life — QoL

This section describes quality of life (hereinafter, QoL), the way of life toward wellness in Japanese context. Even though public space has been used and/or regarded by people for their wellness, it is not always like that in contemporary urban space and its life. We understand the quality of life from combined multiple points of view.

2.1.1. Quality in Everyday Life

QoL is a comprehensive concept, and the way to understand it depends on the field. Spilker, B. (1996) has developed a comprehensive list of five factors that constitute urban QoL:

1) Physical status and functional abilities
2) Psychological status and wellness
3) Social interactions
4) Economic and/or vocational status
5) Religious and/or spiritual status

Since our research focuses on spatial, social and individual aspects of the urban, from that list we have put an emphasis on factors 1, 2, and 3, and their various combinations.

That combination of physical, psychological and social factors strongly relates to the definition of World Health Organization (Constitution of WHO), according to which

"Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". Wellness and well-being are the word that appear in the definition of QoL and Health. In addition to that, we used the concept of wellness itself as described by Naci and Ioannidis (2015, pp. 121) in their definition in which "Wellness refers to diverse and interconnected dimensions of physical, mental, and social well-being that extend beyond the traditional definition of health. It includes choices and activities aimed at achieving physical vitality, mental alacrity, social satisfaction, a sense of accomplishment, and personal fulfillment". Combining those established definitions, this research sees wellness as the human condition of everyday life that facilitates QoL, within which we focus at non-physical, i.e. Psychological and Social Factors, 'psychological status and wellness' and 'Social interactions' (Ioannidis, ibid.).

Current status and issues of QoL

From around 2000, the number of patients with mental illness[20] is increasing globally. According to the statistics[21] of the Japanese Ministry of Health, Labor and Welfare (hereinafter: Ministry of Health), it has increased from 2.04 million to 3.92 million over the 15 years from 1999 to 2014. In particular, the number of patients with dementia[22] are on the rise, and this is thought to be due to the increase in the number of elderly people. The next most significant increase is related to anxiety disorders, which have increased from 440,000 to 1.11 million in the same period of 15 years. This is not due to an increase in the number of elderly people, but considered to be a problem in society as a whole.

The Ministry of Health (2004) has a basic policy of encouraging the move from hospitalized medical care to community life. The basic direction of measures described in the "Reform vision of mental health medical welfare"[23] follows three points (emphasis by the author):

1: Based on the spread enlightenment study meeting report for the correct understanding of mental health problems, while emphasizing the two aspects of 'correctly understand

[20] Japanese Ministry of Health, Labor and Welfare defines mental illness as dementia, schizophrenia, depression, anxiety disorder, drugs and alcoholism, epilepsy and other mental and behavioral disorders. Retrieved from; https://www.mhlw.go.jp/kokoro/speciality/data.html

[21] Ministry of Health, Labor and Welfare "Patient Survey", Created by the Ministry of Health, Labor and Welfare, Department of Disability Health and Welfare. Retrieved from; https://www.mhlw.go.jp/kokoro/speciality/data.html

[22] Japanese Ministry of Health, Labor and Welfare defines dementia as Alzheimer's disease, vascular dementia and unknown dementia. Retrieved from; https://www.mhlw.go.jp/kokoro/speciality/data.html

[23] Japanese Ministry of Health, Labor and Welfare (2004). Reform vision of mental health medical welfare. https://www.mhlw.go.jp/topics/2004/09/dl/tp0902-1a.pdf

mental illness' and 'change the attitude and act', the opportunity to interact with the parties We will advance according to the target person who should be appealed two activities of activity of regional unit such as having and activity of various media such as mass media.

2: Provide basic information on mental illness to local residents, management supervisors / colleagues in the workplace, etc. in the form of approaching living emotions so that they can have a sympathetic understanding, and promote their independent understanding. In addition, encourage independent understanding so that the parties and their families do not get caught up in 'inner prejudice' due to misunderstandings about mental illness or have excessive anxiety about symptoms, side effects of drugs, etc.

3: Based on a correct understanding of mental illness, we will change our attitudes (or as usual) and encourage them to act appropriately. Confidence that people with mental illness and mental disorder who are misunderstood can increase their basic trust in the person with disabilities by deepening their understanding through communication etc. Promote psychological change, such as increased awareness, leading to behavioral change.

The 'interaction' and 'communication' described above are directly related to the contact with people and the contact with the outside. Also, the national policy explicitly recognizes the relationship between the increase in mental illness and the recent closure of the building space (lack of external contacts).

In addition to that, according to the statistics of the Japanese Ministry of Internal Affairs and Communications (hereinafter: Ministry of Internal Affairs), the number of single member households is increasing year by year, and the ratio of single households is predicted to reach about 40% by 2040.

According to the Ministry of Internal Affairs (2018, pp. 151), "The increase in the number of single households increases the risk of social isolation. (…) Single households have very few people that can be relied upon in one's neighborhood, and the increase in the number of single households is considered to lead to an increase in socially isolated people."[24]

Social isolation and loneliness increase the risk of mental health. Clifford (2018), while saying "It is logical that social isolation may impose stress on our minds and bodies that has a

[24] Ministry of Internal Affairs and Communications (2018). Connection in the age of population decline. Retrieved from; http://www.soumu.go.jp/johotsusintokei/whitepaper/ja/h30/html/nd141110.html

significant impact on health. (…) However, it is surprisingly difficult to study these effects and to distinguish the effects of social isolation and loneliness on health when pre-existing health conditions, such as immobility and depression, can themselves both contribute to ill health as well as increase isolation and loneliness.", concludes that "There is strong evidence that many older adults feel isolated, and that loneliness is associated with poor health and higher rates of mortality. There is also evidence that social isolation even without subjective loneliness increases risk. The effect of social isolation on health appears to be of a similar magnitude to other risks to health, such as high blood pressure, smoking and obesity."[25] Therefore, it can be considered that the increase in single households cause the increase in mental illness. On the same report of the Ministry of Internal Affairs (ibid., pp. 151), "the increase in the rate of unmarried people and the impact of the trend toward the nuclear family" are cited as factors for the increase in single households. This can be considered to be a result of the development of individualism and liberalism. Nango, Y. (2018, pp. 17, 51) pointed out as follows, "While individuals appear to have gained freedom of choice, they have come to face contradictions, such as unemployment, poverty, and divorce. (...) In cities people are anonymous to each other, loneliness and freedom are back-to-back." Social isolation, that causes an increase in mental illness as mentioned, is caused in return for individual freedom within their own areas without interacting with each other.[26]

2.1.2. Human Activities in Contemporary Urban Life

The focus of this subsection is on QoL within low-rise high-density urban fabric of residential Tokyo. For the purposes of this segment of our research, QoL was defined as the potential for unhindered interaction between various actors in the city, as well as the blurred demarcations between public and private spaces. Additionally, in the context of this project, we use the Japan Property Central KK (2011) definitions of low-rise as any building below four floors (on average ground floor plus two stories) and high-density is defined by the floor aspect ratio (FAR) over 200%. To illustrate, the highest ratio in Tokyo is 1300% which applies to commercial land in the Yurakucho/Marunouchi area around Tokyo Station (Japan Property Central KK, 2011).

"Over the last several decades, historically established quality was increasingly sacrificed, in favour of 'universal' typologies, which are, in the name of globalization and single bottom

[25] Clifford, S. (2018). Health Effects of Social Isolation and Loneliness. Retrieved from; https://www.aginglifecarejournal.org/health-effects-of-social-isolation-and-loneliness/

[26] As Nango, Y. (2018) points out, loneliness and freedom are back to back. Also, social isolation and loneliness are different issues but both are associated with mental illness (depression and mortality are specifically mentioned in the quoted paper).

line, destroying cities worldwide" (Radović, 2012. pp.107., further discussion on globalization effects: Exenberger et al. (2013), Khazaee et al. (2015), Kara (2019)). Some areas in Tokyo, such as its central three wards and waterfront areas are gradually losing the low-rise high-density spatial qualities and a particular feel which characterizes this city and its life.

As previously noted, spatial density is defined by the Floor Aspect Ratio (FAR) calculated as a building's total floor area (gross floor area) to the size of the parcel of land upon which it was built. Simple numbers illustrate the core problem: the average size of one property in the waterfront area is 7,123 square meters, compared to that of 218 square meters for the rest of Tokyo. The average number of stories there is ground floor plus 6.3 compared to the ground floor plus 1.6 (Tokyo Metropolitan Government, 2016).

Consequently, Tokyo is gradually changing. Dense, low-rise urban fabric is getting replaced by high-rise high-density developments. A 2019 meta-analysis of 180 studies on a vast number of economic outcomes of urban density concluded that urban density had net positive effects but had some regressive distributional effects, which is to say, a negative impact on lower-income residents (Ahlfeldt and Pietrostefani, 2019).

In Japan's capital city and in a dramatically ageing and depopulating country, high-rise apartment buildings have become a dominant trend. According to the Statistics of Tokyo created by Tokyo Metropolitan Government (2019), between 2008 and 2015, the number of buildings in Tokyo increased by 38,218 for residential buildings, but decreased for all other building types. And the number of buildings of more than 30 stories has increased by about 50% in Koto-ward (the ward includes the waterfront area). "Now […] the urban return phenomenon is intensifying, the housing construction promoted by developers creates the situation there are only high-rise apartment buildings with large open spaces." (Maki et al, 2019, pp. 36)

According to the recent report from the Ministry of Health, Labor and Welfare (2008), residents of the high-rise apartment buildings in urban areas, especially elderly people, tend to be drastically confined. This extends to both real and metaphorical terms: an average net size of an apartment in Tokyo is approximately 40-65 square meters, usually housing a family of three or more members. In addition, as the households are predominantly multigenerational, larger occupancy is expected. As an ageing society (Statistics Bureau of Japan, 2019), with the world's longest life expectancy (World Health Organization, 2020), older adults have fewer opportunities for interaction within their immediate communities and the city design practices do not facilitate or take into account such activities. This

urbo-architectural type allows for less contact with the outside world and subsequently social isolation is more likely (Ministry of Health, Labor and Welfare, 2008). Social isolation is one of the factors that can lead to an increase in the risks of mental illness (Clifford, 2018). If a person suffers from said problems, he/she will likely become reclusive and socially isolated, entering a vicious circle of isolation and illness (Ministry of Health, Labor and Welfare, 2008). According to the research conducted by the Building Research Institute of the Japanese Ministry of Construction, high-rise apartment buildings are 'psychologically problematic' (Watanabe, 1989). An analysis of experiences of the homemakers living in various housing typologies provides conclusive evidence of direct relation with mental well-being (Petermans, 2019, Rice, 2019). The reasons are simple: according to Watanabe (1989), the residents of high-rise apartment buildings are not aware of changes in outside brightness, do not hear the sound of rain, miss on outdoor events or the movement of people, cannot see flowers and trees, in stark contrast to the residents of detached houses. For the residents of high-rise apartments, the amount of external stimuli is exceptionally low, because the ground-level is not only physically but also psychologically distant. All that makes the residents of such neighborhoods psychologically distant from each other. That study identifies living in high-rise high-density as psychologically isolating.

Figure 9 – Examples of High-rise High-density Residential Environments of Tokyo
(left) Water front area of Tokyo (Source: yano@mama.akari.ne.japan[27]); (middle) Large open spaces without social interaction (Source: Thirteen-fri[28]); (right) High-rise interior space without external social interaction (Source: edvaldocostacordeiro[29])

Urban precincts with multiple residential towers tend to be designed with large open spaces at the ground level. Planning regulations/policies demand that, when the upper limit of the floor area ratio is reached, the building coverage rate must be lowered. If a developer designates the resulting open spaces as *koukai-kuchi*（公開空地）- literally: open vacant space, it

[27] Available at: https://commons.m.wikimedia.org/wiki/File:Towers_of_Shinonome_-_%E6%9D%B1%E9%9B%B2%E3%82%BF%E3%83%AF%E3%83%BC%E3%83%9E%E3%83%B3%E3%82%B7%E3%83%A7%E3%83%B3%E7%BE%A4_-_panoramio.jpg [Accessed 8 Dec. 2019].

[28] Available at: https://ja.m.wikipedia.org/wiki/%E3%83%95%E3%82%A1%E3%82%A4%E3%83%AB:MM_-_Grand_Central_Tower_P1R.jpg [Accessed 8 Dec. 2019].

[29] Available at: https://pixabay.com/ja/photos/%E3%82%A6%E3%82%A3%E3%83%B3%E3%83%89%E3%82%A6-%E5%AE%B6%E5%85%B7-%E3%83%AB%E3%83%BC%E3%83%A0-3042834/ [Accessed 8 Dec. 2019].

becomes legally possible to raise the total floor area (Building Standards Act (Japanese building regulation) No.59-2). Many developers use this legal loophole and, as a direct consequence, a number of open spaces at the foot of residential towers remain vacant (Figure 9) But, lacking spatial definition and specific use, such spaces are often not used at all, thus failing to perform as places for social interaction.

The motivation of developers to set up 'open vacant spaces' is simple: their goal is to increase the total floor area, not to produce high-quality public spaces for people (Suzuki, 2014). The equation is simple: increased floor area equals increased profit. All efforts go towards reduction of maintenance costs and complaints from future tenants and neighbors, not towards solving the reasons for dissatisfaction. According to Sasao (2019), this problem occurs not in 'open vacant spaces', but likewise in public spaces, such as parks. Various activities which one would expect simply get prohibited (e.g. eating/drinking), on the grounds of avoiding maintenance and management costs.

For instance, a common ban gets placed upon children playing or jogging. In extreme cases, even conversation is not allowed. Public spaces were not conceived for people and social interaction and, subsequently, these are spaces without people through which residents only pass by. Without reasons to stay, they will not linger unless necessary. The low level of social interaction in high-rise residential developments is, thus, not limited to the interior; exterior spaces suffer the same fate.

Figure 10 – Common bans in public spaces of Tokyo
(left) Common ban in Yoyogi park (Source: jbjelloid[30]); (right) Common ban in Shinjuku-chuo park (Source: RC Monkey[31])

This segment presents an alternative to the high-rise high-density trend, reintroducing the low-rise high-density paradigm, which is indigenous to Tokyo and Japanese cities at large.

[30] Available at:
https://www.flickr.com/photos/jbjelloid/16540368217/ [Accessed 21 Sep. 2020].

[31] Available at:
https://www.rcmonkey.jp/2019/06/blog-post_19.html [Accessed 21 Sep. 2020].

Triggered by the above-described social challenges of the new, economy-driven trend, low-rise high-density environments introduce combination of spatial, socio-cultural and climatic characteristics of low-rise high-density Tokyo, and efforts towards sustaining and perpetuating tradition-based qualities.

Wellness, one of the key concepts in this research, will be brought into an active connection with architectural planning and design, linking it holistically to a number of factors. Wellness presents a state of happiness and contentment, with low levels of distress, overall good physical and mental health and outlook, or good quality of life. In simple terms, wellness can be described as judging life positively and feeling good (Diener et al, 1997, Veenhoven, 2008). Employing previously established concepts, the research presented here answers the critical question whether it is possible to design architecture that facilitates wellness utilizing a holistic approach that includes, but is not limited to the users' experience, urban planning and management practices, residential operational practices and bioclimatic architecture. Our case studies illustrate how those facets can converge in an unplanned/spontaneous way, yielding positive effects, but also point out how no joint effort to institutionalize and/or codify such experiences has been made so far.

2.1.3. Social Interaction Towards QoL

This subsection describes the necessity of such social interaction towards QoL. As mentioned above, the need for interaction and communication to improve mental health has been proposed by the Ministry of Internal Affairs and Communications. This proposal is included in the improvement of wellness including not only physical health but also mental health and social health. Our research uses the concept of social interaction as antithetical to social isolation.

As of 2020, due to the COVID-19 we became additionally aware of the widespread deterioration of health and the loss of wellness due to social isolation due to an infectious disease of coronavirus that spreads worldwide. A lot of people around the world have experienced the negative side of social isolation caused by putting the cities in lockdown, on the bases of the fear of infectious diseases. That is another example how social isolation manifests itself in emergency in an easy-to-understand manner, but it is important to remember that that damaging condition is always, latently present in our daily lives.

The next section describes the social interaction for wellness from a spatial point of view.

2.2. Quality of Space — QoS

This section describes the quality of space (QoS) and social interaction for wellness from a spatial point of view, in particular, in regards to the interaction of public and private realms in space, the public-private interface – all in Japanese context.

2.2.1. Japanese Urban Space in Context

The focus of this subsection is on the low-rise and dense urban fabric of Tokyo. That space is an environment composed of a small residential clusters and small houses.

Urban fabric of Tokyo consists of houses. Housing accounts for 56.7% of the total floor space of buildings in Tokyo's 23 wards. Tokyo is a low-rise. Over 70% of the buildings in Tokyo's 23 wards are 3 stories or less high, with average number of stories 2.6. Tokyo is small and dense. The land in 23 wards is divided and owned by 1.8 million land owners - 1.7 million individuals and 100,000 corporations, with an average land area of 218 square meters. (Tokyo Metropolitan Government, 2016)

As one of the largest cities in Asia, Tokyo tends to be seen by Westerners as 'chaotic' and 'lacking public space'. These views are not wrong, but that is also not everything that Tokyo is about. Those views are based on efforts to find the underlying structure of this city. Tokyo is not without 'structure', but that order is harder to find than in Western cities. How to find and define that unique characteristic to Tokyo? Here we will consider Tokyo from a different perspective.

Since the quality which we call Tokyo is huge and not uniform, it is difficult to capture. No individual part can capture that Tokyo but, on the other hand, there are qualities that cannot be seen by macroscopic observation of the whole. The low-rise and high-density urban fabric of Tokyo, as described above, is among those, elusive qualities and here we observe such Tokyo, microscopically. Although it is extremely difficult isolate one area and impossible to say how it represents Tokyo, the following figures visualize several components of Shibuya, as one paradigmatic examples of what people refer to as 'Tokyo'. The map brings together the characteristics of all 34,908 parcels of land in Shibuya Ward (based on the land use survey, Shibuya Ward, 2011). Shibuya Ward is one of the central areas of Tokyo, centered around Shibuya Station where JR and three private railway lines intersect and where is used by as much as 400,000 daily. The Ward includes Minami-Shinjuku across Yoyogi Park and Meiji

Shrine on the north side, and Ebisu and Daikanyama on the south side. The Scramble Crossing in front of the Shibuya Station is one of the famous sights that represent Tokyo as one of its World City faces but, contrary to that image, Shibuya is also a 'small' town. One of the expressions of its 'smallness' is the size of the parcels of land that form Shibuya Ward.

Table 2 shows the site area in Shibuya ward. The average site area there is 295 square meters, but 12,585 sites are under 100 square meters (36.0%), and 20,236 sites under 150 square meters, accounting for 57.9%. 100-150 square meters is a very space, similar to the national average of the total floor area of a detached house (approx. 130 square meters). From these statistical facts it is easy to claim that Shibuya is a small, human-scaled city.

	average site area in Shibuya ward	site area of 100-150 sqm in Shibuya ward		national average of the total floor area of a detached house
Area	295 sqm	under 100sqm	under 150sqm	approx. 130 sqm
Percentage	average	36.0% (12,585 sites)	57.9% (20,236 sites)	average

Table 2 – Site area in Shibuya ward
(Source: Author, based on the statistical data (2018) by the Department of Urban Planning, Shibuya Ward Office)

On the other hand, most of the buildings in Shibuya Ward are built up to the upper legal limit of building coverage ratio. Thus, the density is high. That applies not only to the large commercial sites in front of the Station, but also to the small sites (below 150 square meters). The allowed minimal building coverage ratio is 60%. The areas with 60% coverage constitute just below 80% of the total area in the Ward. Where the road is wide, the density will be lower, but there are 15,843 sites where the frontal road width is less than 4m (i.e. meeting the legal minimum). That accounts for 45.3% of the total. In other words, the buildings are built up the upper limit of the legally allowed building coverage ratio, on the narrow sites that face only narrow road that are less than the legal minimum standards.

However, there are many buildings that do not meet the maximum allowed floor area ratio. Surprisingly, there is a lot of unbuilt floor area in Shibuya, less than the allowable floor area ratio means that the number of floors is unsuitably less than the institutional assumption, that is, the 'low-rise'. (Figure 12)

Figure 11 visualizes this state in a more easy-to-understand way, all the buildings sorted by height in Shibuya Ward. The low-rise building is white, and the gradation is closer to black as the building is higher. Although the area around Shibuya Station is black, the entire Shibuya Ward can be seen in a low-rise and high-density situation, filled with white dots.

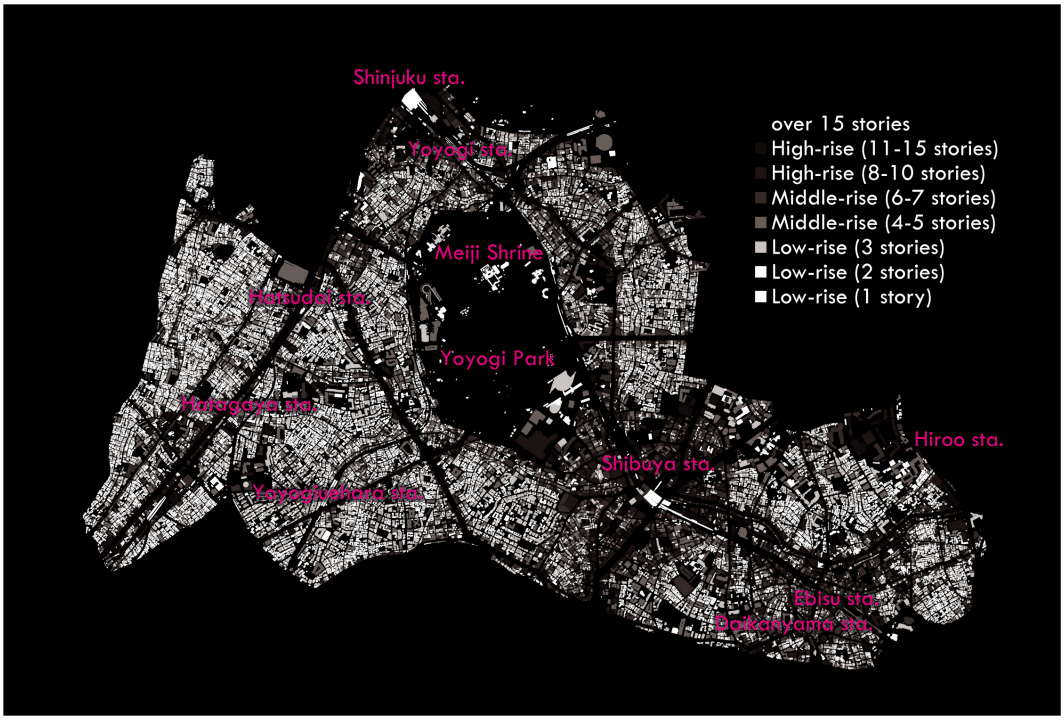


Figure 11 – Shibuya Map of Low-rise: Building heights
(Source: Author, analyzed based on the data of Land and Building of Shibuya Ward[32])

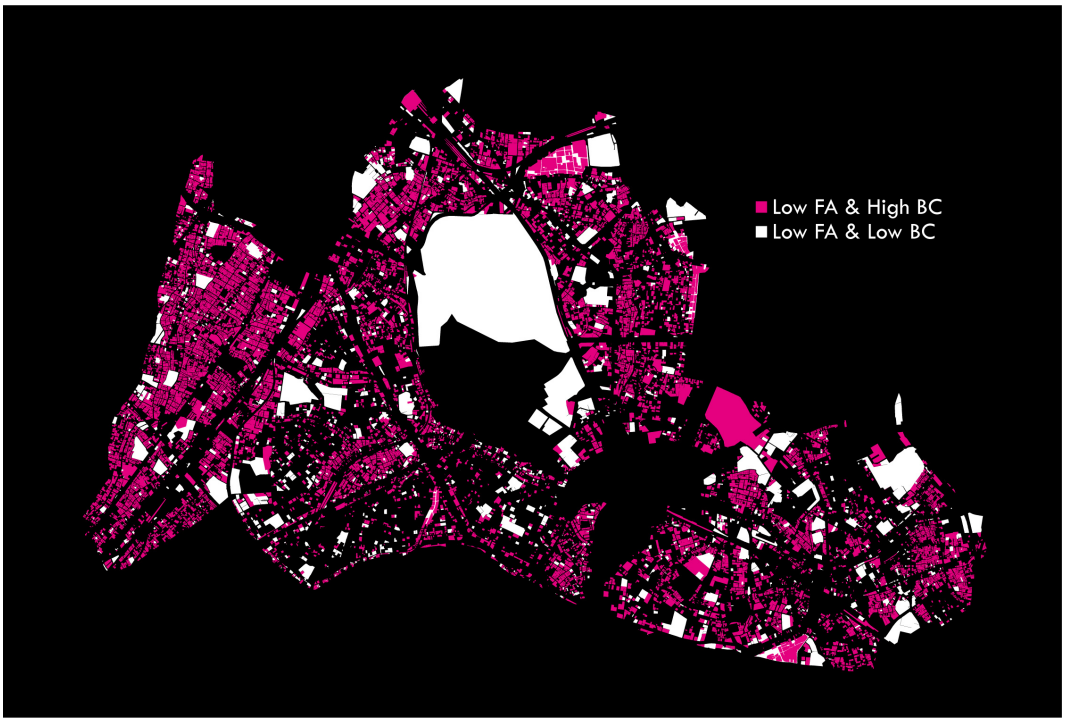


Figure 12 – Shibuya Map of Low-rise High-density: Buildings of Low floor-area ratio & High building-coverage ratio
(Source: Author, analyzed based on the data of Land and Building of Shibuya Ward[32])

* Low FA: Low floor-area ratio (Less than 80%)

* Low BC: Low building-coverage ratio (Less than 80%)

* High BC: High building-coverage ratio (More than 80%)

[32] Department of Urban Planning, Shibuya Ward Office. (2018) Land and Building of Shibuya Ward -the results outline of land use survey in the fiscal year 2011- https://www.city.shibuya.tokyo.jp/kankyo/toshi_keikaku/tochi_tatemono23.html

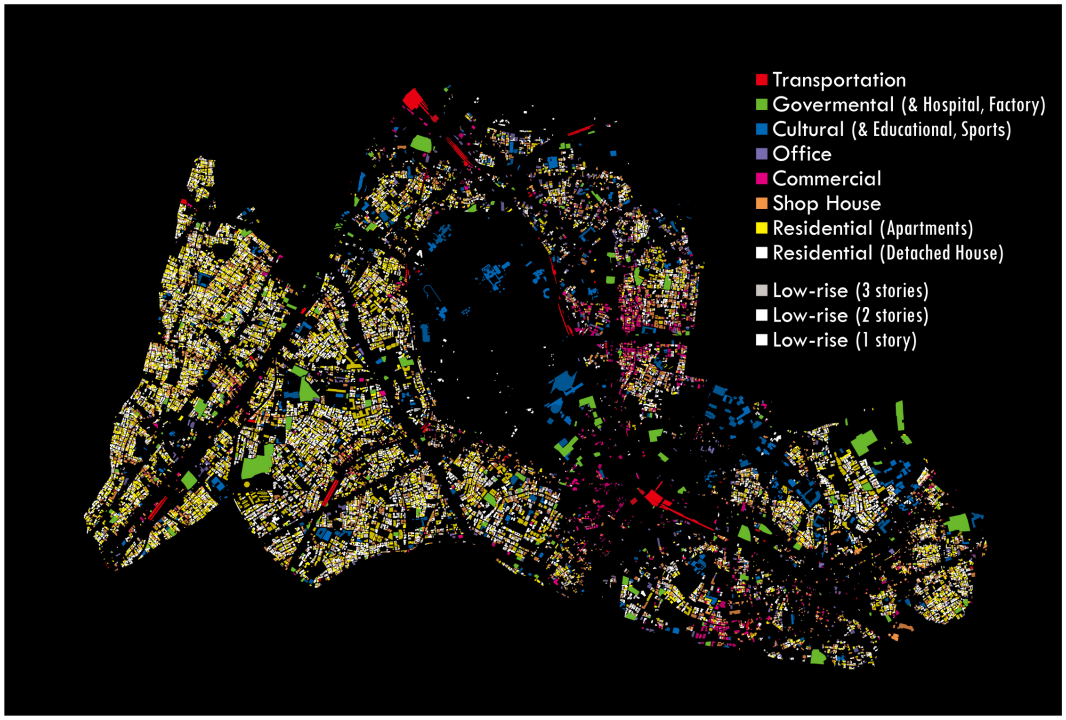


Figure 13 – Shibuya Map of Use: Types of land & building use of the buildings less than 3 stories
(Source: Author, analyzed based on the data of Land and Building of Shibuya Ward[32])

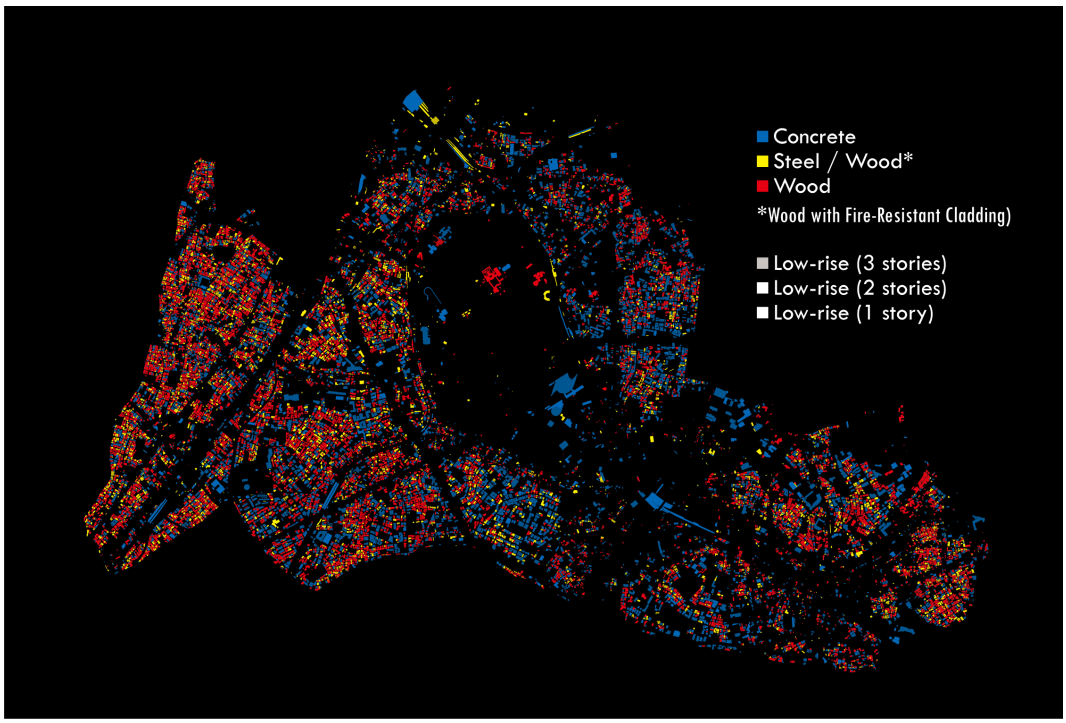


Figure 14 – Shibuya Map of Material: Types of building structure materials of the buildings less than 3 stories
(Source: Author, analyzed based on the data of Land and Building of Shibuya Ward[32])

Based on this, the types of 'building use' and 'structural material' superimposed on the low-rise buildings (3 stories or less) map in Shibuya Ward. The results are Figure 13 and Figure 14, i.e. building use and structural material of "low-rise high-density buildings".

The area of residential use such as house or shop house accounts for 58.6% of the total area of Shibuya Ward (excluding roads and parks, etc.). Although it is numerically clear that residential use is the majority, Figure 13 clearly shows that this is more obvious in low-rise, high-density buildings. On the other hand, the distribution of structural materials shown in Figure 14 might be surprising. Because numerically about half (44.2%) of the buildings in Shibuya Ward are made of fire-resistant material such as concrete (or steel). From the impression of the area around Shibuya station, people may feel that the figure of 44.2% is even less than the actual figure. However, Figure 14 shows that there are many wooden structure buildings even in Shibuya in the low-rise and high-density environment. Red indicates wood, and yellow indicates wood or steel. Red and yellow are encroaching between concrete buildings. In particular, in the southeastern and northwestern areas, countless red and yellow dots gather and give off presence. When you enter one of the narrow streets from the main street, you will meet those wooden (low-rise high-density) buildings in Shibuya.

Material of the City

One could argue Tokyo is still made of wood. That is one of the essential characteristics of Tokyo. In most of its regions Japan has always been a culture of wood, and that has not changed. Wood, earth and paper, are the softest building materials, at architectural and urban scales. The construction methods using a soft, translucent and wooden materials, along with adherence to natural environment, topography and rivers, have shaped the city of Tokyo.

The key characteristics of wooden spatial forms are 'line' and 'dimensional system'. By 'lines' here we mean the pillars and beams that constitute a wooden space. In timber constructions, the interior spaces are divided by partitioning. The key difference to other construction systems here is, as in the metaphor of books vs. magazines like this one - in non-linear reading, the possibility of diverse explorations of space made up of lines. The critical difference is in spatial form, which is in direct contrast with the wall-type spaces, where the openings get cut in the walls, in order to connect inside and outside. With wood, the default state is a space composed of lines only. Even when the partitioning panel gets built it remains movable, uncertain, 'translucent'. The interior spaces get seamlessly connected to the outside, to gardens or streets. This is the softness of space which comes directly from the nature of the main construction material – wood. That is why in Tokyo diverse spaces connect loosely.
The second 'dimensional system' is the size and grid of one or half *ken* (間) which is a unit size of the span of pillars in wooden architecture. By using the grid of *ken*, almost all of Japanese can draw a floor plan by themselves. This is because the floor plan can be drawn simply by

drawing the size of each room on the grid. The position of the column is determined almost automatically according to the grid. Once the position of the pillars is decided, it's possible to build it without any more detailed drawings. *Tatami* (畳) mat makes it easy to imagine the meaning of the grid of *ken*. The long side of *tatami* is one *ken*, and the short side is a half *ken*. Because Japanese people are familiar with the size of *tatami*, anyone can draw a floor plan using the grid. In addition, because of the size of *tatami* based on the human body dimensions and the structural strength of wood as a building material, the wooden space will not deviate from the human body dimensions, it becomes clusters of spaces with a moderate size for humans (at least for the Japanese). Japanese wooden houses are often not designed by carpenters, other construction professions or architects, but by the residents. They envision, design, and create their own living space. This mentality, coupled with the above-mentioned characteristics of the wooden structure as the 'line', leads to the act of the residents themselves creating the external space-the front road space connected to the internal space. In this way, the spaces that would public get 'privatized', as demonstrated all over Tokyo. In addition, in order not to be misunderstood, private territory is not an aggression for public space in the context of Tokyo (especially in the context of this research). This is because in low-rise and high-density urban spaces, private areas and public areas are crowded, folded and merge each other, and then the place become common spaces and worth using. It is very different from the public space in Western Europe, but it is a lively way of life as a 'public' space in Tokyo.

The characteristics of wood as a material are 'softness' and 'weakness'. Those characteristics also promote 'privatization'. 'Softness' is the physical strength of wood. In particular, trees such as Japanese cypress, cedar, and pine used in Japanese architecture are very soft. Anyone can do the processing such as sawing, drill holes and insert other materials or combine them. If one day you think that a pillar is in the way, you can actually cut that pillar and move it to another location. I don't know any other such a free building structure system. It is easy to attach something, remodel it to make it more useful, such as attaching a shelf to a pillar. Therefore, it is easy to renovate. Japanese architecture is said to be short-lived, but even within that short period, it is extremely difficult to find a house that has never been renovated. The city of Japan is a collection of ever-changing spaces made of wood.

On the other hand, the softness of wood is also 'weakness'. Wood breathes, absorbs water, rots, or be eaten by ants. Even if it flexibly survives the earthquake, it will burn if a fire breaks out and will be washed away if there is a flood. In other words, wooden spaces are forced to be renewed because of their weakness. However, there are positive aspects to the "weakness". As already mentioned, wood is easy to modify and replace. In most cases, when replacing a rotten or worn-out tree, they most likely renovate or expand the space to update it to suit

their current life. These wooden characteristics have a great influence on Japanese mentality and the formation of spaces including cities.

In Tokyo, it comes with seriousness. This is because the spaces with small lands are crowded, and those small spaces are always looking for expansion opportunities. If there is a chance, even if it is a minute space, it will be expanded. Residents, in their own way, create, modify and expand their own small spaces. This is the city made of wood – Tokyo. It is a soft and dynamic phenomenon in which autonomous small spaces flow together. The situation where the individual territory is expanded, crowded and dense is all like a private territory, but it is not something that others cannot enter. It is a mixture of public and private. The extensibility of the thin wooden structure is superior in the horizontal direction than in the vertical. The space spreads horizontally, and Tokyo is low-rise and dense.

2.2.2. Japanese Dwelling in Context

Japan's humid subtropical climate, predominant in the majority of the country, strongly influences the broadest cultural fabric of Japanese society (Kusanagi, 2015). The famous saying in Japan - "*Ie no tsukuriyauwa, natsu o mune to subeshi*（家のつくりやうは、夏をむねとすべし）" means that a house should be built with the summer in mind, as originally formulated in the essay "*Tsurezuregusa*（徒然草）" by Yoshida (1330-1331) and through Keene's dissemination (1998) became widely known.

Traditionally, Japanese architecture had an open spatial feature that integrates interior and exterior spaces in response to the humid subtropical climate. Kusanagi (2015 , pp.37) notes the climate of "Japanese Islands, almost the whole area of about 2000km from north to south is humid subtropical climate (Cfa)[33]".

This classification and subsequent architectural practices are in accordance with bioclimatic architecture and concepts of 'passive' design. In the times before 'active', technological climate-control took over, everyday life in semi-exterior space - *noki-shita-kukan*（軒下空間）[34] where direct sunlight is blocked and winds go through created the interaction of public and private. In contemporary Japan, however, 'common areas' (entrance hall, common corridor/steps, elevator hall, an area where different types of functions are mixed), become one of the obstacles.

[33] World maps of Köppen-Geiger classification. Available at: http://koeppen-geiger.vu-wien.ac.at/ [Accessed 8 Mar. 2020]

[34] Noki-Shita-Kukan: Space under eave and space under roof and massing.

Figure 15 – Illustrative examples of Japanese Space
(left) Former Iwasaki House in Taito-ward, Tokyo (Source: mrhayata[35]); (right) Anonymous house in Japan (Source: kontenten[36])

2.2.3. Public and Private

In this subsection, we will describe the concept (antonyms) of public and private. Stating the conclusion first, in Japan, private and public are not mutually exclusive antonyms, and the boundaries in-between those two are ambiguous. Furthermore, if it is assumed that 'Private = Dwelling', which is seemingly plausible, even the paradox of 'Private = Dwelling = Public' occurs. According to Saito, J. (2000), public has three meanings: 1) official, 2) common, and 3) open. In addition, he points out that the three meanings are in conflict with each other. On the other hand, there is little discussion about private. This suggests that private is considered to be indisputable, while public is considered to be relatively ambiguous, as can be seen from Saito's point above. Also, in contrast to public, there are many cases where private is regarded as a negative concept. Hannah Arendt points out at some of such cases. According to her (1958), private acquires the specific meaning of private when related to private property, which is tightly closed and inaccessible to others. Furthermore, she refers to the meaning of deprived, building upon the etymology of private which takes it very negatively. It is necessary to examine whether private is negative thing for urban space. Therefore, we reconsider the above-mentioned seemingly correct assumption, "Dwelling = Private".

For further discussion of that theme, we refer to Japanese intellectual, poet and architect Michizo Tachihara (1914-1939), who was known for his philosophical pursuit of human dwelling in both poems and public discourse. In his dissertation entitled "Dwelling and Essay", and 'Dwelling Architecture' is equivalent to the essay in the literature, and related to

[35] Available at: https://www.flickr.com/photos/mrhayata/3826681124 [Accessed 8 Dec. 2019]

[36] Available at: http://photozou.jp/photo/show/1190304/240798820 [Accessed 8 Dec. 2019]

human origin, he classifies architecture into three simple categories, 'Industrial Architecture', 'Public or Commemorative Architecture' and 'Dwelling Architecture'. For us usefully, he is citing Arendt, who also classifies human basic 'Activities' into three, and these three are *Labor*, *Work,* and *Action*. As Suzuki. (2014) points out, Tachihara's classification encodes Arendt's classification.

Suzuki's arguments are as follows, *Action* (defined by Arendt) is equivalent to 'Dwelling Architecture' (by Tachihara). And, according to the above assumption (*Dwelling* = *Private*), the paradox of *Action* = *Private* occurs. Even though Suzuki himself admits that there is a leap in his point, that does not make his idea irrelevant. That leap is rather inspirational. In other words, his position means that it cannot be simply said *Dwelling* = *Private*. In addition to that, the equation *Action* = *Dwelling (Architecture)* can also not be denied. Therefore, *Dwelling* = *Public* also occurs, considering that Arendt's activities are aimed at the nature of public. Arendt (ibid. , pp. 58) also wrote how "To live an entirely private life means above all to be deprived of things essential to a truly human life (…) The privation of privacy lies in the absence of others" She expresses the state where the nature of public is deprived as private (= deprived), but it is only different in the way of expression, and the public character (existence of others) is necessary for dwelling. In that respect, both Arendt and this research are in the same position.

Following the requirements of the context of our research, we consider the concept of public and private from another perspective. For that, we borrow the concept of appropriation as defined by urban French sociologist Henri Lefebvre. In the Japanese translation of Lefebvre's fundamental concept of the 'right to the city', the appropriation was translated as the combination of the three Kanji characters, *ga-yuu-ka*（我有化）. The meaning of each kanji is *ga*（我）= I, *yuu*（有）= have, *ka*（化）= -ization. In other words, *ga-yuu-ka* means 'Make it mine'. That, 'private', Lefebvre states that cities should have use value, and appropriation brings use value to the space as a product. Therefore, we can derive '*City* = *Use value* = *Make it mine (private)*' from *ga-yuu-ka* - the Japanese (mis)translation of appropriation (Radović 2020).

This points out how, in Japan, public and private are not mutually exclusive antonyms, and their boundaries are ambiguous. This is what is actually happens in Japanese urban space. In Japan, appropriation of space (the private use of roads - public spaces) is not a temporary but a daily and constant occurrence. 'Dwelling - the private action acquires public nature (improvement of public urban space in terms of use value)' is paradoxical, but not disjointed discourse.

公 - the *kanji* (Chinese character) of 'public' can be pronounced in two way - *kou* and *ooyake*. Nishikawa, S. (2004) explains the definition of 'public' as follows.

The *kanji* of 'public' was imported from China to Japan as *kou*. The Japanese reading of *kou* is *ooyake* (importantly - *ooyake* is the word that the Japanese originally had.) *Ooyake* (commonly used to translate term public) is also composed of three words of *oo*（大）, *ya*（屋）, and *ke*（処）, making *oo-ya-ke* (literally) mean "where *oo-ya* is".

Oo（大）: greatness, magnitude, noble (person/family), reverend, foremost (basically it's different from 'big')

Ya（屋）: holy home of the gods (*ya* is different from *ie*（家）- the *kanji* that is also pronounced as *ya* and means 'a house (for people)')

Even though the meaning of *oo-ya* is different from a big building, in the Japanese ancient settlement there was a big building in the center of the settlement. And the big building is where special event was held. The (big) building is the origin of *ya*. In the big building, the head of the community (later on, a king = foremost person) lives, and invites gods, and hold *matsuri*（祭）- festival. *Ooyake* is not the opposing concept to the *kanji* of 'private' - *watakushi*（私）. *Ooyake* means both of 'head of community' and 'collaborative relationship among the members of community' On the other hand, *kou* means equity, impartiality, cutting off selfness, egoism. So, *kou* is the opposing concept to *watakushi*, but *ooyake* is not.

Ooyake means a head of community. *Tennou*（天皇）- Japanese emperor is 100% *ooyake* and 0% *watakushi*, since *tennou* is the existence closest to gods. People who works for *tennou* are given certain percentage of *ooyake* from *tennou*, and the degree of *ooyake* is gradually decreasing by the distance from *tennou* and a person who is far away from *tennou* is *watakushi*.

In other words, the meaning of *ooyake* and *watakushi* is the matter of hierarchical relationship. And it's impossible to separate *ooyake* and *watakushi* in one's behavior. There is a duality in *ooyake* and *watakushi*. For instance, a school is *ooyake* for a young teacher, but the school is *watakushi* for the head of school (since he is the head of the community). And a town is *ooyake* for the head of the school, but the town is *watakushi* for the head of the town. And the country is *ooyake* for the head of the town, but the country is *watakushi* for the head of the country… Any person, excluding *tennnou*（天皇）, is in-between public (*ooyake*) and private (*watakushi*). Any person has to live in the duality of public and private. In Japan, public and private is unified. In Japan, 'private' is always with 'public'. Once the boundary of public and

private was found/determined, realm of private is generated. Thus, people create the realm of private, even within the realm regarded as public. All a matter of a flexible, ambiguous boundary.

2.2.4. Public-private Interaction in the Urban

The Street: Where Public and Private Interact

A number of theorists such as Jinnai, (1995), Sorensen, (2004), Brumann, (2015) tried to explain and define the underlying logic of urban fabric of Tokyo, often in relation to other cities and other cultures. The following references capture some of the dominant discourse. "Unlike the urban structures one finds in Europe that were created with a series of walls, Tokyo consists of an assemblage of independent buildings (grains). […] The majority of the land is filled with narrowly segmented, privately-owned living spaces. In these residential areas, spaces that anyone can pass through blend together with private spaces and many of the most private spaces allow a clear of sight from the outside." (Kitayama et al, 2010. pp. 10 and 131)

That is where, "Ambiguous border between the public and private realms […] spontaneously emerges, from a kind of collaboration between public and private and nature. […] Spaces like this are real ad hoc creations. (…) And that is a very interesting, peculiar, practice in Japanese urban space." (Kuma, 2012, p. 015)

Urban spaces of Tokyo are, thus, recognized as collections of small spaces in a predominantly low-rise, high-density environment, and they have been operated and used privately in response to the natural environment and climate in particular. This is where we encounter the need to introduce the notion of 'bioclimatic architecture'. That term, which points directly at the fundamental relationship between life and climate, summarizes a number of differing terms in a single planning definition of design decisions that offer appropriate living conditions within buildings by the minimal use of technical units 'the group of machinery' that require energy consumption of non-renewable resources (see e.g. Grondin, 1959, Vazquez, 2009, Almusaed, 2014). In bioclimatic terms, for most of Japan the defining extreme is the harsh tropical summer. The vernacular responses in Japan echo those of the cultures South of the archipelago – their light structure, low thermal mass, an emphasis on

natural ventilation, openable wall surfaces, elevated floor, in-between "*engawa*"[37] spaces which accommodate semi-indoor/semi-outdoor living, etc. Tardits (2014, pp.213 and 256) argues, "Like cities in the United States and Africa, Tokyo's public spaces take on different meanings and forms from those in Europe. [...] Agora, forums, plazas, parks, etc. did not appear in Tokyo during the Edo period[38]. Public representation has not developed in Tokyo".

As elaborated above, in Japan the concept of 'public [space]' is a relatively new, imported construct. As Maki et al (2019, p. 145) pointed out, "The reason why today's Japanese people don't utilize open spaces is that outward urban planning (that does not take into account Japanese cultural background) is forced to apply. […] Japan's postwar years are not over yet".

Figure 16 – Illustrative examples of Roji in Tsukishima
(Source: Rubber Soul[39])

Subsequently, we need to ask: what is culture-specific public space for Japan or Tokyo? As discussed by Kitayama et al. (2010), the fabric of Tokyo is finely divided, filled with privately-owned spaces where public and private are mutually interpenetrating. Taking that into account the qualities associated with public nature and human interaction within the small-grained, densely interwoven realms of private and public life can be observed. While plazas and parks were imported to Japan after the Meiji restoration (modernization of Japan after 1868), the streets were always spaces for public expression in Japan. Previous research amply points out at cultural specificity of Japanese *roji*（路地）, narrow alleys, where everyday life unfolds. The role of climate-culture nexus in creation of the, 'seamless transition/integration of private and public spaces' is confirmed, critical in the definition of

[37] Engawa: Traditional spatial element of the Japanese architectural space, which is the intermediate area between the interior and the exterior. Engawa has a use as a space to go in and out, to move between rooms, to see outside, to welcome visitors, and so on.

[38] Edo period: The period between 1603 and 1868 in the history of Japan. The period came to an end with the Meiji Restoration (modernization in Japan) starting from 1868.

[39] Available at: http://photozou.jp/photo/show/1517641/141889284 [Accessed 8 Dec. 2019].

the overall Japanese urban condition.

Also characteristic to urban spaces of Asia, including Japan, is the presence of *afuredashi*（あふれ出し）, privately-owned items (that would elsewhere be stored inside the private property) within the alley space (Tardits, 2014). Some of *afuredashi* examples are pots and plants, household and garden maintenance items such as brooms, rakes, mops, buckets, gardening tools. These elements increase utilization of alleyways and stimulate social interaction among residents (e.g. interaction between neighbors while pruning the plants and/or greenery within the boundaries of semi-public spaces or cleaning and general upkeep of said spaces.) (Aoki, Yuasa and Osaragi, 1994). While it can be argued that the presence of private items in public space exemplifies the dominance of private over public, such interactions (private and public overlapping) increase the opportunities for socialization, at least among residents of the neighborhood. Aoki & Yuasa (1993, p. 53) pointed out: "In Edo period, the urban blocks of Tokyo were subdivided by roads (alleys) on the premise of private use of public road including even main roads. [...] Operation of road was originally premised on the collaboration of neighbors", while Tardits (2014, pp. 107, 174) stresses how "The Edo government entrusted the citizen with the day-to-day management of the city, left the city overcrowded […] In Tokyo, there is no duality of official 'public' and unofficial 'private' […] Public roads are often violated by private acts and 'tamed'".

2.2.5. Public-private Interface Towards Conviviality

Overview of Public-private Interface

PPI - the public-private interface, ambiguous border between public and private realms, is the indigenous spatial characteristic of Japanese urban space, as previously mentioned. It doesn't mean that the spatial characteristic cannot be found in urban spaces in cities of the world. Dovey & Wood (2005), who have researched public-private interface for years based on their research focused on theories of place, power, and urban informality, mention that public-private interface "has long been recognized as a key issue in urban theory." (ibid., p. 1) and reflected in slogans such as 'eyes on the street' by Jane Jacobs (1961), 'pattern language' by Christopher Alexander et al (1977), whereas "There is no standard typology nor agreed method for categorizing or mapping such interface morphologies, and we found that most category systems we developed tended to become unsettled (…) with all of this attention on the interface over 50 years it is surprising to find only three typologies that form precedents for this study" (ibid., pp. 2-3) and mention the typologies by Jan Gehl (1987),

John Habraken (1998), and Milos Bobic (2004). In fact, PPI has been the issue of concern among a number of urbanists worldwide and been researched for over 50 years but the research is still on the way.

Conviviality as the Essence of Bottom-up Approach

To bring a definitive end to the issues regarding PPI is not what this research aims. The focus of this thesis, as one of the researches of PPI, is on the process of the creation and management of PPI and to discuss it from the view point of the bottom-up approach urban design. Accordingly, the keyword 'bottom-up' is theoretically important.

This thesis refers the theory of "conviviality" by Ivan Illich to address the issues of PPI from the viewpoint of 'bottom-up.' What Illich (1973) means by conviviality is, in short, 'freedom'. "The freedom to make things among which they can live, to give shape to them according to their own tastes, and to put them to use in caring for about others (…) Individual freedom realized in personal interdependence." (Illich, 1973, p. 11) This freedom – conviviality is not what can be passively supplied. Conviviality is, in an active sense, defined as "ability to invest their own time with the power to produce use-value." (ibid., p. 63) Illich mentions his concern about the situation in an industrialized society as, "[We] depend on being supplied with objects and services (…) [We] are degraded to the status of mere consumers." (ibid., p. 11), "People are deprived of their ability to invest their own time with the power to produce use-value, and are compelled to work for wages and to exchange their earnings for industry defined rented space." (ibid., p. 63) This situation hasn't been changed. We depend even further on being supplied with objects and services in the contemporary society. This situation has been generated by the social system consolidated by top-down approach. Although Illich specifically mentions schooling, transportation, and medicalization, it goes beyond that to social/urban systems in general. To give an easy-to-understand example, "'I want to learn' is translated into 'I want to get and education'." (ibid., p. 90) Conviviality is what Illich offers to free oneself from the state that depends on being supplied, and it is the essence of bottom-up in the sense this thesis defines. In order to free ourselves from the state that depends on being supplied, what we need are "to implement [our] aspirations without frustrating equivalent aspirations by others" (ibid., p. 78) and "how well these minorities grasp the profound nature of the crisis, and know how to state it in effective language: to declare what they want, what they can do, and what they do not need." (ibid., p. 105)

The conflict between 'top-down' and 'bottom-up' can be translated as the conflict between

'majority' and 'minority.' The concepts of majority and minority are not defined by quantity. "When we say majority, we are referring not to a greater relative quantity but to the determination of a state or standard in relation to which larger quantities, as well as the smallest, can be said to be minoritarian." (Deleuze & Guattari, 1987, p. 291) Majority is "a state of power and domination" and "insofar as it is analytically included in the abstract standard, is never anybody." (ibid., p. 105) For majority and minority, we must distinguish between "the majoritarian as a constant and homogeneous system; minorities as subsystems; and the minoritarian as a potential, creative and created, becoming." Deleuze & Guattari explains their concept of 'becoming-minoritarian' as 'autonomy.' "All becoming is minoritarian. (…) Becoming-minoritarian as the universal figure of consciousness is called autonomy." (ibid., pp. 105-106) 'Autonomy' is, in Illich's theory, "intolerably reduced by a society that defines the maximum satisfaction of the maximum number as the largest consumption of industrial goods" (Illich, 1973, p. 12), and importantly "A convivial society should be designed to allow all its members the most autonomous action by means of tools least controlled by others." (ibid., p. 20) Minority and autonomy are the important keywords of conviviality as the essence of bottom-up.

Boundaries, Borders, and Edges in the Context of Conviviality

In accord with the marshal of the theories regarding conviviality, we must mention the theory of Richard Sennett, the urban sociologist living in the present age. Because Sennett's theory addresses nearly all the issues and mentions the important spatial concepts of PPI in detail. Firstly, Sennett denies the top-down approach and finds great possibility in bottom-up approach. "It is an error in technical as in artistic work to deal first with big difficulties and then clean up the details; good work often proceeds in just the opposite fashion." (Sennett, 2008, p. 221) Sennett's awareness of the issue comes from the recognition that "Much twentieth-century urban planning proceeded on the principle: demolish all you can, grade it flat, and then build from scratch. The existing environment has been seen as standing in the way of planner's will. This aggressive recipe has frequently proved disastrous, destroying many viable buildings as well as ways of life bedded into urban fabric." (ibid., p. 214) and Sennett advocates productively working with 'resistance' and 'ambiguity.' "The skills of working with resistance are, in sum, those of reconfiguring the problem into other terms, readjusting one's behavior if the problem lasts longer than expected, and identifying with the problem's most forgiving element." (ibid., p. 222) in contrast with "Big projects suffer from overdetermined, fit-for-purpose from; when history moves on, as it always does, tightly defined buildings can soon become obsolete." (ibid., p. 214) Thus, Sennett emphasizes the importance of ambiguity. "The good urban craftsman wants to (…) work less

aggressively, befriending ambiguity." (ibid., p. 215) Befriending ambiguity, the skill of working with ambiguity, is exactly the process of bottom-up approach. It is compatible with improvised behaviors. "The good craftsman understands the importance of the sketch that is not knowing quite what you are about when you begin. (…) The informal sketch is a working procedure for preventing premature closure." (ibid., p. 262)

Working with resistance and ambiguity is, in urban spaces, "converting boundaries into borders." (ibid., p. 229) Both boundaries and borders are what come between two realms but there is a difference. What comes between two realms has two meanings: "it denotes either a boundary, resisting contamination, excluding, deadening, or a border, a site of exchange as well as separation." (ibid., p. 231) The border is 'active edge' made of a porous membrane. Sennett (2019) lists the five keywords for making an active edge – synchronous, punctuated, porous, incomplete, and multiple. In terms of the public-private interface, 'porous' is the most relevant among the five keywords and Sennett defines boundary and border explaining the concept of porous as follows, "Borders are porous edges, boundaries are not. The boundary is an edge where things end, a limit beyond which a particular species must not stray or, conversely, which it guards as do prides of lions or packs of wolves by peeing or pooping to tell others Keep Out! The boundary marks a low-intensity edge. Whereas the border is an edge where different groups interact: for instance, where the shoreline of a lake meets solid land is an active zone of exchange where organisms find and feed off other organisms." (ibid., p. 220) Another keyword 'incomplete' is relevant to bottom-up and conviviality. Making an edge – converting boundaries into borders should be made by a convivial bottom-up action triggered by necessity. One of the ultimate forms of the action is self-built which is ever-lengthening. "Poor people become their own architects. (…) The self-built project is an incomplete form. Urbanism has much to learn from the ways very poor people are obliged to work with incomplete forms. (…) Cities aren't farmed today. Instead they are master-planned. (…) only an initially unrealized, incomplete form – a seed – will have time to grow into surroundings." (ibid., pp. 227-228, 236)

Public-private Interface

On the basis of the theory of conviviality by Ivan Illich and the theory of urban sociology by Richard Sennett, this thesis defines public-private interface – a concept of space and people – as the urban space which is emerged by people's autonomous and improvised actions identifying with resistance and ambiguity, and where people, especially vulnerable minorities, are able to interact having the individual freedom – the ability to invest their own time with the power to produce use-value. In short, the public-private interface is the border, the active

edge, where people interact. The further details are elaborated in Chapter 7, especially in Section 7.1. (Creation: Feasibility of Implementing PPI in Urban Space) and Section 7.4. (Bottom-up Approach Spatial Practice Towards Conviviality and the Urban).

2.2.6. Hanare *as Public-private Interface*

In this section, we discussed how the streets are spaces where public and private interact. *Hanare*（離れ） which is described in this subsection is one of the spaces as where public and private interact described in this section, that is, public-private interface, as a spatial point of view. In other words, *hanare* is one of the spatial measures that is able to generate public-private interface.

Hanare is the Japanese architectural term. *Kenchiku-dai-jiten*[40] defines *hanare* as follows,

1) a building which is related to *omo-ya*（主屋）, but separated from *omo-ya* in terms of distance, and covered with a roof which is different from one of *omo-ya*. Antonymous to *omo-ya*.
2) a building which is connected to *omo-ya*, but separated in terms of structure.
This research does not consider the structural definition (No.2.), since it is not directly relevant for our analysis.

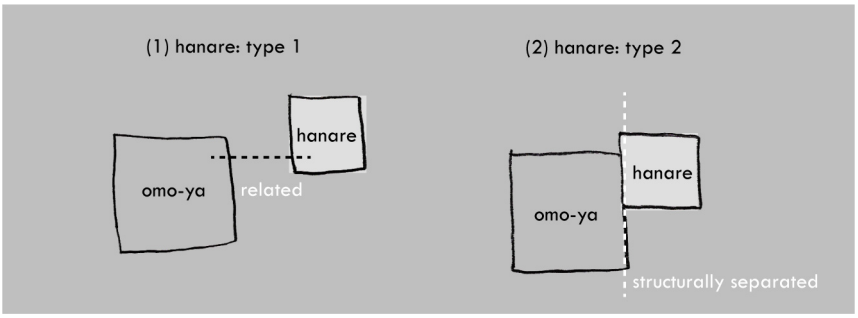


Figure 17 – Definition of hanare
(Source: Author)

Importantly for us, *Kenchiku-dai-jiten* defines *Omo-ya* as:

1) a central building among multiple buildings, such as dwellings, in a property
2) a building which is used for dwelling, distinguished from *na-ya*（納屋）- storage building or *naga-ya-mon*（長屋門）- gate building.

[40] Japanese comprehensive dictionary of architecture. Shokokusha Publishing Co., Ltd. (Eds.) (1993). *Kenchiku-dai-jiten*.

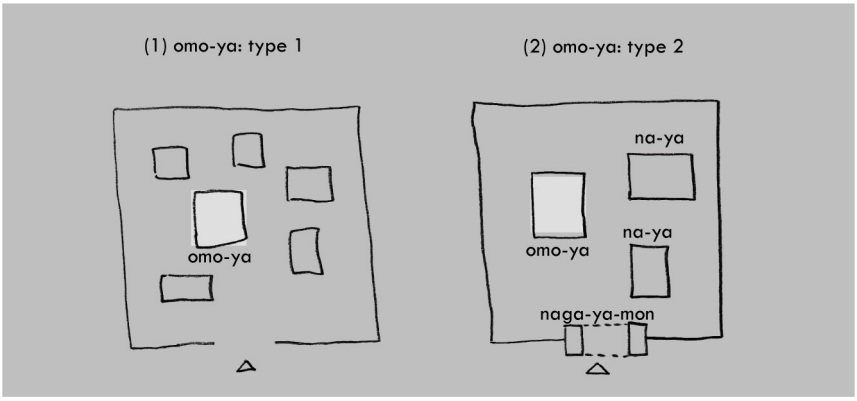


Figure 18 – Definition of omo-ya
(Source: Author)

Based on the definitions of *hanare* and *omo-ya*, in this research, *hanare* is defined as a space which is related to but also separated in terms of physical distance from the central dwelling building.

Originally, from the Heian period to the Middle Ages, Japanese architecture consisted of multiple single-use detached buildings that were connected to each other by a corridor (roof and floor only) - *shinden-zukuri*（寝殿造）. After that (from the Muromachi period to the early modern period), the sliding door was invented, and by dividing the space using partitions, *shinden-zukuri* changed to *shoin-zukuri*（書院造）- multiple divided spaces in one building. *Togu-do* (1486), located in the precincts of *Jisho-ji* (*Ginkaku-ji*), is a typical example of *shoin-zukuri* and is considered to be the prototype of today's Japanese dwelling. In other words, Japanese architecture, until the Middle Ages, had the architectural style of which several buildings were placed apart and people moved between these buildings. However, most modern buildings, including houses, are basically one building. This is not a change that occurred in modern times. It is a spatial style that begins from *shoin-zukuri* in Heian period. On the other hand, even after the Middle Ages, it was common for storage, livestock sheds, and gate house to be built separately from *omo-ya*, and the architectural form in which multiple detached buildings were arranged did not disappear. However, it is not common to be built multiple buildings in modern times. The following reasons can be considered for this.

1) The Building Standards Act (enacted in 1950) stipulates that only one building can be built on one site (excluding buildings that are inseparable for purposes). (Building Standards Act, Enforcement Ordinance Article 1)
2) In modern times, the site area is small and there is no room for building multiple buildings.
3) It is cheaper to construct one building than to build multiple buildings.

Therefore, it is not always common to have a *hanare*. However, on the other hand, the architectural culture to build *hanare* has not disappeared. The *hanare* provided in the house has various uses such as a *cha-shitsu*（茶室）, a study, and a warehouse. As already mentioned, there was a time when the drawing room was built as a *hanare*, but it is not so common now.

In this research, the *hanare* is regarded as a public-private interface, but the *hanare* does not always function as such. Rather, it is often provided as a space with the opposite nature. For instance, a *hanare* as a study or a storage is private, and is not a public-private interface. In the case of *cha-shitsu*（茶室）- tea room, it is ambiguous. In the sense of inviting others into a private space, *cha-shitsu* is a public-private interface (although not everyone can). However, it is basically a very private space because of the closed-door nature of *cha-shitsu*. In other words, historically, a *hanare* is a rather private space. However, a *hanare* as a public-private interface appeared in 2000s, especially in 2010s. This is partly because the importance of establishing connections with people was advocated from the interest in the loss of the existing local communities after the Great East Japan Earthquake (2011). A lot of meeting facilities named *minna-no-ie*（みんなの家） which is literally means a house for everyone, were built after the earthquake.

From the viewpoint of architectural style, since the 2000s, there are many designs in which buildings as one (small) room are dispersed and arranged on the site. Moriyama House designed by SANAA (2005) is one of the representative ones. Architectural historian Fujimori, H. (2006, pp. 189) named the architectural style *bunri-ha*（分離派） - literally: 'secession'[41], and stated as follows, "I think that it is a phenomenon only in Japan, but in the image of some young people, the life of one family under one roof, what the modern nation demanded, the peaceful and democratic society of postwar Japan demanded, was already dismantled."

This kind of intentionality did not begin in the 2000s. According to Watanabe, M. Kinosita, Y. (1998), the number of nuclear family households in Japan peaked in 1975 and has declined. In 1966 there was the architect's suggestion of Individual living units - *koshitsu-gun-jukyo*（個室群住居）by architect Kurosawa Takash. Also, "House in Okayama" (1992) by architect Yamamoto Riken is the typical example of a relatively recent architectural work. However, there is a difference between the series of architectural efforts that have continued since the 1960s and the *bunri-ha* trends of the 2000s. The former was a search for a new form of 'a vessel for a family' or 'a new family image.' On the other hand, the latter no

[41] Terunobu Fujimori's parody of "Secession". It is different from Wiener Secession (1897-1905) nor *bunri-ha-kenchiku-kai*（分離派建築会）- Japanese modernism architecture movement (1920-1928).

longer advocates being a ‘a vessel for a family.’ Citing Fujimori, H. (ibid., pp. 189) once again, the latter is "each room, each function of a house, is dispersed in a single site, and even toward the city". This is the architectural trend of the *hanare* as a public-private interface, where the private space, each room in the house, is detached and opened toward the public space. To avoid misunderstanding, *hanare* in this research is a spatial scheme which is different from the *bunri-ha* trends. The House of the *bunri-ha* trends is a state where the spaces are dispersed non-hierarchically. On the other hand, *hanare* is the space related to *omo-ya*. As already defined, *hanare* is ‘a space which is related to but also detached in terms of physical distance from the central dwelling building.'

* * * * *

Chapter

3

3

Methodology

3.1. Approach and Focus

Two main lines of inquiry and analysis in this research were:

1) an analysis of the contemporary urban fabric of Tokyo (chapter 2);

Within that, through literature review presented in the Conceptual Framework, we have clarified that the space as public-private interface has the potential to generate social interaction. Subsequently, through further literature research based on the analysis of concrete contemporary urban fabric of Tokyo in Shibuya Ward, we have clarified that public-private interface shapes the essential quality of space (QoS) in the city.

2) an analysis of the factors of how the *hanare* works as public-private interface (chapters 4, 5 and 6);

The case studies analyses have clarified how the key concept of *hanare* works as public-private interface. The analysis focused on the processes of creation and management of space. The critical cases were selected from all nine residential buildings that the author has practiced/participated over the last decades (up to 2020), with specific emphasis on the interaction of public and private, and where the concept of *hanare* was detected during the selection process.

Three Levels in the Scale of Human Initiative

We classified the case studies into 3 categories (levels) by the scale of human initiative – the extent of the person(s) who initiates the action to activate and/or manage the space.

a) Individual (owner/resident) Level b) Neighborhood Level c) Community Level

(a) The category a (individual level) is a Public-private Interface (PPI) initiative by an owner (or a couple, a family) of a private house. Those are the projects where a founder (an owner, a couple, a family) has started to conceive the plan and produce the space in consultation with an architect, and where, after the construction, the founder lives and manages the space.

(b) The category b (neighborhood level) is a PPI produced by the initiative of residents (and neighbors) of an apartments house. In those cases, the founder (owner or developer) of an apartments house started to conceive the plan and then asked an architect to produce the space. The residents (and the neighbors) live-in and/or manage the space after the construction.

(c) The category c (community level) are the cases of PPI initiated by local citizens. Here the founder (local citizens) started to conceive the plan and produce the space with an architect and other local citizens, who joined afterwards. The citizens manage the space after the construction.

In conducting the analysis, we divided the process of the creation and the management of space, into following three phases.

1) Conception 2) Production 3) Management

Since each category has its own specific relevance and characteristics, the focuses of the categories vary depends on the relevance and characteristics. The following figures show the process of the creation and the management of space (Figure 19), the critical phase and the stakeholder (Figure 20), and the phase on which the analysis of each category focuses. (Figure 21)

The characteristics of the process of each category a to c (Figure 19) are as follows.

At the Individual level, the founder asks the architect to produce the space. Since the conception at the individual level is often fuzzy, the conception changes depending on the dialogue between the founder and the architect. In other words, the creation process goes back and forth between conception and production many times. Therefore, in the creation phase, founder and architect are one, and conception and production are also one. Management is done by the founder.

At the Neighborhood level, there is a conception developed by the founder as a developer

(whether it is an individual or a corporation), and the architect produces the space based on it. Management is done by residents, neither founders nor architects.

At the Community level, a member of the community (one or multiple persons) conducts a conception. Production is done by the founder, involving architects and citizens. A conception and a production are continuous in the sense that the founder is consistently involved. However, the flow from conception to production is irreversible (which is different from that at the individual level). Since the extend is a community level (not an individual level), management is done by citizens, not by the founder.

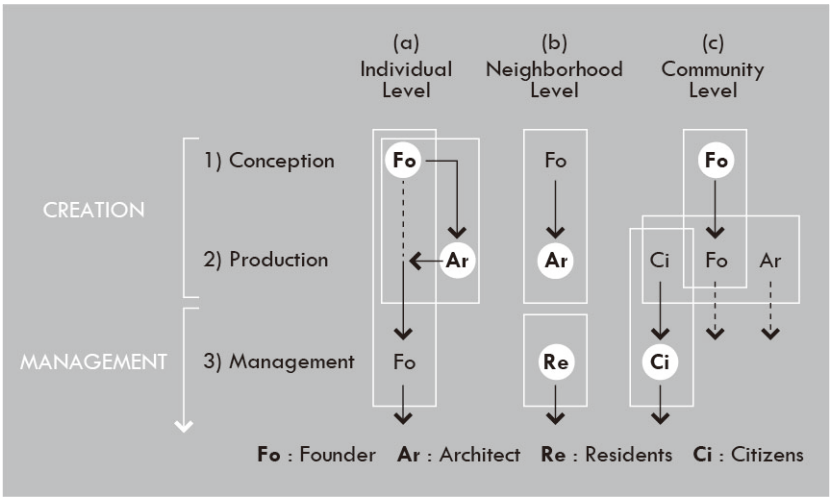


Figure 19 – Characteristics of the process of each category a to c
(Source: author)

The keyword for determining the critical phase is 'transformation'. At each level, there is a timing to 'transform' (change the quality of space), which is the critical phase that determines the quality of space.

At the Individual level, creation and management are continuous because creation is done by the founder (in collaboration with the architect) and management is also done by the founder. In other words, management follows the objective of creation. Therefore, at the Individual level, the critical phases that determine the quality of the space are conception and production, and the dialogue between the founder and the architect (transformation by dialogue).

At the Neighborhood level, production follows conception. The phases of creation are integrated and consistent. However, management is done by residents who are not involved in creation, thus how the residents manage the space (whether it is in line with the founder and architect objectives) transforms the quality. Therefore, the transition from production to

management is the critical phase.

At the community level, conception - the first phase is done by the founder, and management - the last phase is done by the citizens. However, since all the participants are working together in the production – the middle phase, all the processes are continuous and there is no specific phase in which transformation occurs. Therefore, how the transformation has been done from conception (the beginning) to management (the current) is the critical.

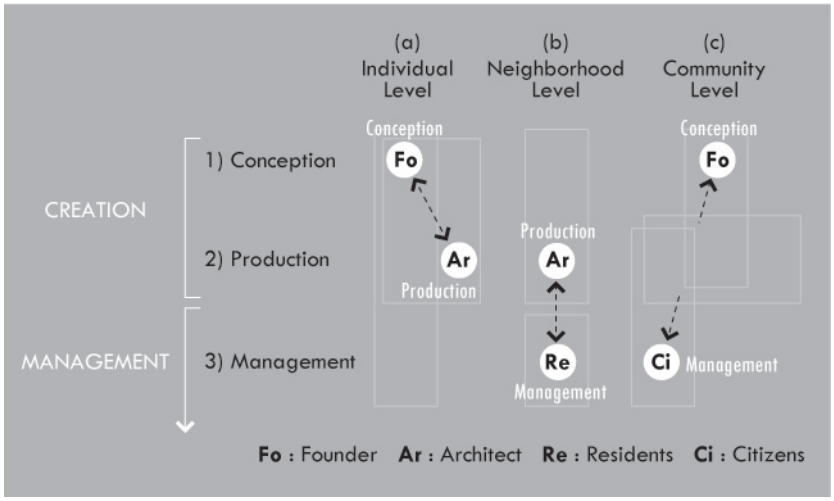


Figure 20 – Critical phase of each category a to c
(Source: author)

As shown in the two figures above (Figure 19, Figure 20), each category (level) has its own focus of analysis (Figure 21).

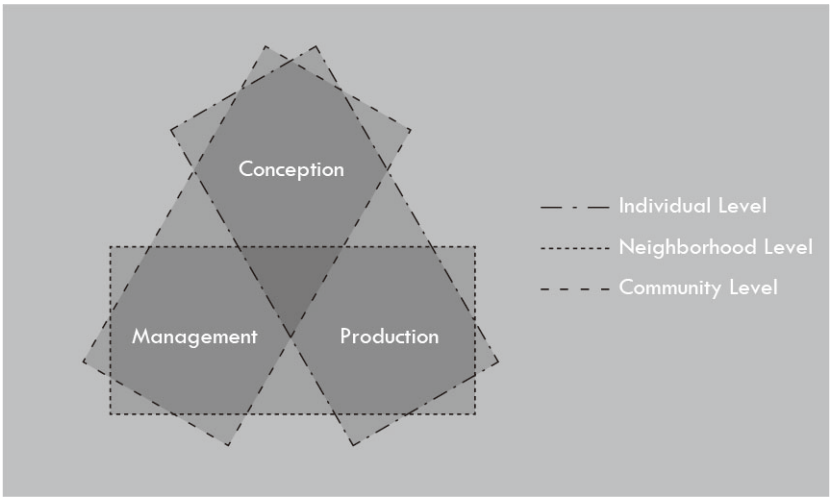


Figure 21 – Research focus of each category a to c
(Source: author)

a) Individual (owner/resident) Level: The focus is on the conception and the production.

Since the management depends on the individual's capability, the conception and the production (in accordance with the architect) is rather relevant to be analyzed.

b) Neighborhood Level: The focus is on the production and the management.
Since the users (residents and neighbors) were not involved in the creation (conception and production), the contradiction/disjuncture can occur between what was produced and how they manage it. The transition from the conception to the production is relatively smooth since the owner doesn't use (live) in the space and the production was done by the conception - the initial requirement by the owner. Therefore, the coherence and/or the incoherence of the production and the management is rather relevant to be analyzed.

c) Community Level: The focus is on the conception and the management.
Since the number of the persons who are involved/participated has increased from the begging (the phase of the conception), the contradiction is able to be occurred in between what was conceived and the way they manage it, even though the founders, who begun the action, stay in the management phase. Therefore, the coherence and/or the incoherence of the conception and the management is rather relevant to be analyzed.

As each category (level) has its own appropriate focus of analysis, the type of the data collected for each analysis is unique and different. The most appropriate analysis was conducted, considering the context and the characteristic of each category.

3.2. Data Collection

The following sets of data were collected and classified for analysis. As explained above, the selection and classification criteria vary according to the context and specific characteristics of the particular level of analysis.

3.2.1. Statistical Data

Statistical data released by relevant ministries and local governments. Specifically, the compiled data included information on land use (published by Tokyo metropolitan government, for details see chapter 2 section 2.2.1.), the statistical data on land use (published by Shibuya Ward; for details see chapter 2 section 2.2.1.), the statistical data on health (published by the Ministry of Health, Labor and Welfare, for details see chapter 2 section 2.1.1.).

3.2.1. Fieldnotes

The recording of relevant phenomena observed and measured within spaces of particular case studies., which include notes recorded on paper, and by photography.
From 2013 to 2019, the field work of Dragon Court Village had been conducted. The specific dates are 11 December 2013, 25 August 2014, 28 May 2017, and 29 April 2019, for details see chapter 5 section 5.5.

3.2.3. Questionnaire

The questionnaire survey of the informants related to the space targeted by the case studies, which include the questionnaire survey (12 days[42] at Haus-Hyazinth open-room[43] during the month of April 2019; The survey was conducted in collaboration with the house guide[44];

[42] 12 is the number of all of the days of open-room in April 2019.

[43] "Open-room" is to make it possible for visitors to stay inside Haus-Hyazinth.

[44] The volunteer staff who operates open-room of Haus-Hyazinth

45/291[45] returned questionnaires were valid for investigation). For details see chapter 6 section 6.5.

3.2.4. Documents

The existing record of the spaces and production processes related to the case studies, which include a variety of meeting minutes regarding the space planning and design, design drawings and construction drawings of the space, event flyers, account book, the member name-lists , diaries of spatial management, administrative documents exchanged with the municipality, interview articles to those involved in the space on magazines and the internet.

3.2.5. Interviews

Interview survey targeted people involved in the case studies. That includes the following interviews.

1) Interview with the mother the owner of Kankyu-tei
   The unstructured interview with Oyama was carried out on the 10th May 2012 at Kankyu-tei. The interviewee was Ms. Tsuneko Oyama (the wife of Masakata Oyama who built Kankyu-tei in 1964, the mother of the current owner of Kankyu-tei); The interviewer was Satoshi Sano (Author). For details see chapter 4 section 4.4.

2) Interview with the owner of Kankyu-tei
   The unstructured interview with Oyama was carried out on the 12th April 2015 at Kankyu-tei. Participants were Mr. Masami Oyama (Owner of Kankyu-tei); Ms. Kuniko Oyama (Owner's wife); Mr. Kiyofumi Miura (Architect*); Mr. Junya Inagaki (Architect*); Mr. Yui Fushimi (Architectural Historian); Mr. Takahiro Ooi (Architectural Historian); Satoshi Sano (Author). For details see chapter 4 section 4.5.
   *Architect who was in charge of the addition and renovation of Kankyu-tei in 2012.

3) Interview with the former resident of Dragon Court Village
   The semi-structured interview with Ms. Sakura Yamakawa was carried out on the 30th April 2020 by phone. The interviewee was Ms. Sakura Yamakawa (the former resident of Dragon Court Village); The interviewer was Satoshi Sano (Author). For details see chapter

[45] 291 is the number of all the visitors in April 2019.

5 section 5.5.

4) Interview with a total of 5 people of specific knowledge related to the Dragon Court Village case study

The semi-structured interview with Kamimoto was carried out on the 8th April 2019 at the Free space in Minagawa Village. Participants were Mr. Toyoaki Kamimoto (Principal architect at Saiseikenchiku Laboratory); Ms. Milica Muminović (Assistant Professor, University of Canberra. Her research extends the professional experience through studies conducted in Japan about identity, places, spaces in between architecture and urban design, public and private, with an emphasis on residential architecture in Tokyo); Ms. Ryoko Iwase (Principal architect / Landscape designer at Ryokoiwase. She works as an architect designing architecture, landscape design with public space in Japan; Satoshi Sano (Author). For details see chapter 5 section 5.5.

5) Interview with a total of 10 members of the founders and steering committee members of Haus-Hyazinth's citizens group

The semi-structured interviews with the founders and steering committee members were carried out on the 27th April 2018, 14th June 2018, 16th June 2018, and 8th January 2019, at Haus-Hyazinth (except the interview to Tomikazu Nagamine and Makoto Nakamura.) The interviewer was Satoshi Sano (Author). For details see chapter 6 section 6.4.

-Interviewees on the 27th April 2018

Mr. Kiyofumi Miura (Architect) - Steering committee member; Mr. Tomikazu Nagamine (Architect) - Founder (interview was carried out at Tomikazu Nagamine's architectural office in Omiya, Saitama)

-Interviewees on the 14th June 2018

Ms. Fumiko Nakajima (Singer) - Steering committee member; Ms. Mutsuko Yoshizato (Writer) - Steering committee member; Tetsuo Sakamoto (Art Critic) - Founder; Yoshihisa Nobori (Writer) - Steering committee member.

-Interviewees on the 16th June 2018

Mr. Makoto Nakamura (Art Curator) - Founder (interview was carried out at Makoto Nakamura's studio in Suginami, Tokyo); Mr. Tomohiko Yamanaka (Architect) - Founder.

-Interviewees on the 8th January 2019

Mr. Tachiki Kitahara (Writer) - Founder; Mr. Yasunori Tsumura (Architect) - Steering committee member.

3.3. Method

This research is a factor analysis through case studies. Stake, R. E. (2005) classified cases into three categories: 1) intrinsic, 2) instrumental, and 3) collective.

1) The intrinsic case study is exploratory, and a researcher is guided by his/her interest to the case itself rather than in extending theory or generalizing across the cases.

2) In the instrumental case study, the case itself is secondary to understanding a particular phenomenon, but to generalize across the cases or to promote the understanding of other cases.

3) The collective case study involves the exploration of multiple instrumental case studies.
Essentially a case study is able to be both intrinsic and instrumental, and it is occasionally difficult to categorize a case as one or the other type.

The case study of this research is instrumental. The aim is to generalize across the cases, and to promote the understanding of other cases by studying an extreme case. The case study is semi-collective. The three cases analyzed in this research have different characteristics. However, by researching the cases of various types this research covers wide range of the theme so that the comprehensive findings can be obtained. It is different from the collective (considerable number of) case studies, but semi-collective in terms of its wide range and comprehensive nature.

3.3.1. Practice and Research

The author has been conducting architectural and urban design and research in parallel – mindful the principles of critical practice and creative architectural research. This Doctoral research aims to generalize across the cases and to, by analyzing particular, strategically selected cases, provide generalizations useful for application and better understanding of other cases in future investigations. It was precisely for that reason that the cases to which the author has a privileged access were chosen as target case studies.

The Position of the Research

According to Richard Sennett who is one of the important theorists featured in this thesis, "Every good craftsman conducts a dialogue between practices and thinking; this dialogue sustaining habits, and these habits establish a rhythm between problem solving and problem finding." (Sennett, 2008, p. 9) The meaning of 'craftsman' here is not limited to a person who make handicrafts, it means a person who make something including cities. A good craftsman can be translated as a good urbanist. "History has drawn fault lines dividing practice and theory, technique and expression, craftsman and artist, maker and user; modern society suffers from this historical inheritance." (ibid., p. 11)

Frayling, C. (1993, p. 5) categorizes the 'research in art and design' into the following three,

A - Research into art and design
- Historical Research
- Aesthetic or Perceptual Research
- Research into a variety of theoretical perspectives on art and design

    Social, economic, political, ethical, cultural, iconographic, technical, material, structural ... whatever.

B - Research through art and design
- Materials Research

    Such as the titanium sputtering or colorization of metals projects successfully completed in the metalwork and jewellery departments at the College
- Development Work

    For example, customising a piece of technology to do something no one had considered before, and communicating the results
- Action Research

    Where a research diary tells, in a step-by-step way, of a practical experiment in the studios, and the resulting report aims to contextualise it.

C - Research for art and design
- What Picasso considered was the gathering of reference materials rather than research proper. Research where the end product is an artefact - where the thinking is, so to speak, embodied in the artefact, where the goal is not primarily communicable knowledge in the sense of verbal communication, but in the sense of visual or iconic or imagistic communication.

The position of this research is in between A (Research into art and design) and B (Research through art and design), specifically, the combination of 'Research into a variety of theoretical perspectives on art and design' and 'Action Research'.

Role of the Architect

The architect is who design the space. Accordingly, the role of the architect is defined by the definition of 'design'. Designing is not limited to making architectural drawings, it includes observation, conversation, taking care of built space, and so on, - every little thing related to space making. This thesis assumes 'involvement' rather than 'design' as the role of an architect, since 'design' can often be (mis)regarded as aesthetic issues only.

The role of an architect can be explained, in an easy-to-understand way, though the discussion of the (dis)contrast of art vs craft. "Art seems to draw attention to work that is unique or at least distinctive, whereas craft names a more anonymous, collective, and continued practice. But we should be suspicious of this contrast." (Sennett, 2008, p. 66) We agree with Sennett's point, and what Sennett mentions can be translated as, the role of an architect is the creation of unique, or at least distinctive, space which draw attention but also the creation is anonymous, collective, and continued practice. Space, architecture, city, or whatever which is built, except pure self-built, is collective creation and management. And an architect is one of the participants of the creation and management.

3.3.2. Mixed Methods Research

The series of analysis, was conducted as mixed methods research. According to Creswell, J. Clark, V. (2010), mixed methods research is a research design with philosophical assumptions and research methods of inquiry. The research methodology is premised on the direction of data collection and analysis, and philosophical assumptions that lead to a mix of qualitative and quantitative approaches in many phases of the research and research process. As research methods, mixed methods research focuses on collecting, analyzing, and mixing quantitative and qualitative data from one research or a series of researches. Furthermore, the central premise is that the use of both quantitative and qualitative approaches yields a better understanding of the research problem than the use of either one alone.

Quantitative Approach

The quantitative approach in this research is visual element analysis using statistical data,

analysis using actual observation / measurement phenomenon data (field notes), and analysis of aggregated questionnaire results.

Qualitative Approach

The qualitative approach in this research is document analysis, analysis of interview data, and derivation of inter-subjective findings by exchanging discourses with the knowledgeable related and/or critical persons in the research topic.

3.3.3. Researcher Reflexivity

Prior to moving on to the analysis of the case studies, this subsection describes the reflexivity of the researcher. As already mentioned, this research was conducted as mixed methods research, quantitative and qualitative. Any researches that contain qualitative aspects is contextual. It occurs at a particular time and place between two or more people. Explaining the contextual intersecting relationships between the participants and the researcher does not only increase the credibility of the research, but also the understanding of the research.

The author is a Japanese architect and a researcher of architectural and urban space. His specialty is architectural design and engineering, and urban design. He studied architectural design at the university and researched the architectural works of Italian architect Carlo Scarpa. After graduating from university, he was a trainee at an architectural design office in France, and was involved in planning a university campus located in New York. After returning to Japan, He studied architecture at the graduate school, and was involved in design proposals for cultural complex facilities, etc., and also conducted research of spatial boundaries and leftovers by analyzing the architectural works of German architect Hans Scharoun. After that, he was involved in the design of buildings at an architectural design office in Japan. He was also involved in some overseas projects, specifically, he was in charge of projects located in the United States, United Kingdom, and China, and was stationed in China for about a year. In 2009, the author co-established an architectural design office in Japan. The co-founders other than the author are a planner and two engineers, and he has worked on architectural design and engineering, mainly on residential buildings made of wooden or steel, but also on other projects, e.g. community facilities and welfare facilities, and planning local cities. And also, he has been involved in local activities for more than 15 years in parallel with the work of architectural design.

Since 2016, he has been researching contemporary Japanese cities and architectural spaces in the doctoral course at the graduate school. This thesis summarizes the research. He is also

involved in university education and travels once or twice a year to the cities in Europe and Asia as part of his education and research activities.

3.4. Selection of Case Studies

We selected the critical cases to be analyzed, from among all the cases of residential buildings that the author has practiced/participated in the decade (2010-2019). The website of author's practice[46] identifies 21 cases as the buildings the author designed as an architect, and 1 where the author has participated on the steering committee. The breakdown of those 22 cases is, 1 regional community center, 1 welfare facility, 1 office, 1 urban furniture, 2 commercial designs, 2 urban designs, 5 exhibition designs, 9 residential buildings.

Table 3 shows the characteristics of those 9 categories of the residential buildings. The critical point of the selection is whether the obvious[47] PPI (public-private interface) has been observed. As a result, the case No.1, 5, and 6 were selected for PPI analysis. The similarities are, type of structure, and presence of *hanare*. Only one case (case No.8) which has a *hanare* was not selected (i.e. PPI was not observed). Therefore, the spatial morphology of *hanare* could be suggested as one of the factors that has correlation with PPI.

[46] http://www.eurk.jp/ (Eureka Architectural Design and Engineering)

[47] Constant and open (public) opportunity of interaction of the resident(s) and other people. This research disregards the occasional and/or temporary PPI.

	1	2	3	4	5	6	7	8	9
Name	Haus-Hyazinth	Blanks	Cabinets	veterinarian N house	Kankyu-tei	Dragon Court Village	Around the Corner Grain	A house in the house tree	Eagle Woods House
Year	2003-Current	2009-10	2009-11	2010-11	2010-12	2011-13	2012-15	2015-17	2015-17
Photo									
Location [Prefecture]	Saitama	Ibaraki	Saitama	Kanagawa	Kanagawa	Aichi	Saitama	Tokyo	Saitama
Building Use	Pavilion [48]	Private House	Private House	Shop House	Private House	Apartments House	Apartments House	Private House	Private House
Type of Structure	Wood	Steel	Wood	Wood	Wood, Concrete, Steel	Wood, Steel	Steel	Wood	Wood
Type of Construction	New	Interior	Addition	New	Addition	New	New	New	New
No. of Buildings	1	1	1	1	2	2	1	1	1
No. of Stories	1	3	2	2	2	2	3	2	2
Width of Road [m]	n/a	6	6	16	4	6	4	6	n/a [49]
Total Floor Area [sqm]	18.2	190.6	118.6	208.4	116.2	508.0	235.4	140.3	116.5
Type of Residents	n/a [50]	Owner	Owner	Owner	Owner	Tenants	Tenants	Owner	Owner
No. of Families	n/a	1	1	1	1	9	6	1	1
Location of Entrance	GF	GF	GF	GF	GF	GF	GF, 1F, 2F	GF	GF
Wall / Fence	n/a	n/a	Yes	Partial	Partial	n/a	n/a	n/a	n/a
No. of Room for Dwelling	1	7	9	5	5	19	12	8	6
No. of Other Rooms	0	0	0	11	1	7	1	1	0
No. of Hanare	1 [51]	n/a	n/a	n/a	1	5	n/a	1	n/a
PPI	Yes	n/a	n/a	n/a	Yes	Yes	n/a	n/a	n/a

Table 3 – Characteristics of all the cases of residential buildings that the author has practiced/participated in the last decades as of 2020

[48] Originally designed as a private second house. The details to be described in the subsection 3.4.3.

[49] Located in a forest

[50] Located in a public park

[51] The building itself is the *hanare* for the people who manage the space.

Hanare Found in the Selected Cases

Hanare is one of the factors that has correlation with PPI. Below are the morphological explanations of the *hanare*(s) of the selected 3 cases.

1 — Kankyu-tei (Case No.5)

In the case No.5 (Kankyu-tei), the PPI of individual level has been observed. The resident, who is the owner of the house, open the *hanare* twice a month for people who live neighborhood. Figure 22 shows the ground floor plan of the case No.5.

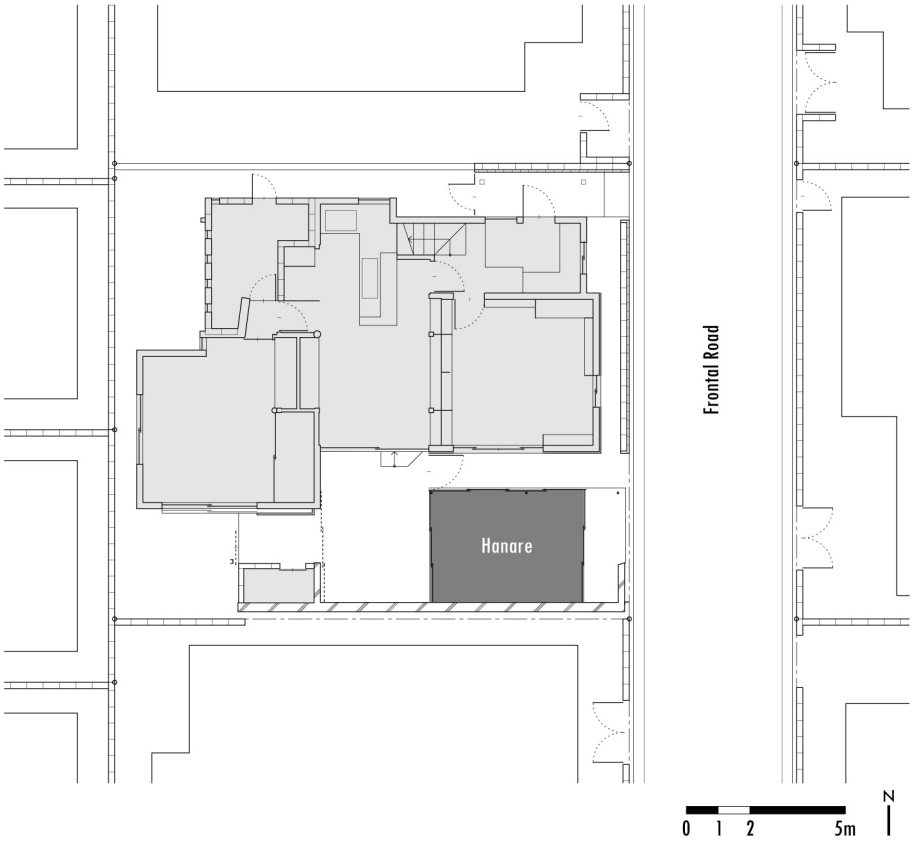


Figure 22 – Ground floor plan of the case No.5
(Source: Author)

The *hanare* was built in the leftover space in the property, in between the main building and the frontal road. The floor area of the *hanare* is 12.4 sqm. The exterior walls of 3 sides are composed of sliding doors so that it can be opened and can be used as semi-exterior space as well. The following figure (Figure 24) shows the *hanare* of the case No.5.

Figure 23 – Aerial photograph, the surrounding area of Kankyu-tei
(Source: Google)

Figure 24 – Hanare of the case No.5
(Source: (left) Yoshihiro Asada, published on TOTO-Tsushin, (right) Ookura Hideki)

2 — Dragon Court Village (Case No.6)

In the case No.6 (Dragon Court Village), the PPI of neighborhood level has been observed. The resident, who has rented an apartment, used the *hanare* on the ground floor as a vegetable shop while living in the 1st floor. And the resident has held a weekend flea market with the neighbors, once a month. Figure 26 shows the ground floor plan of the case No.6.

Figure 25 – Aerial photograph, the surrounding area of Dragon Court Village
(Source: Google)

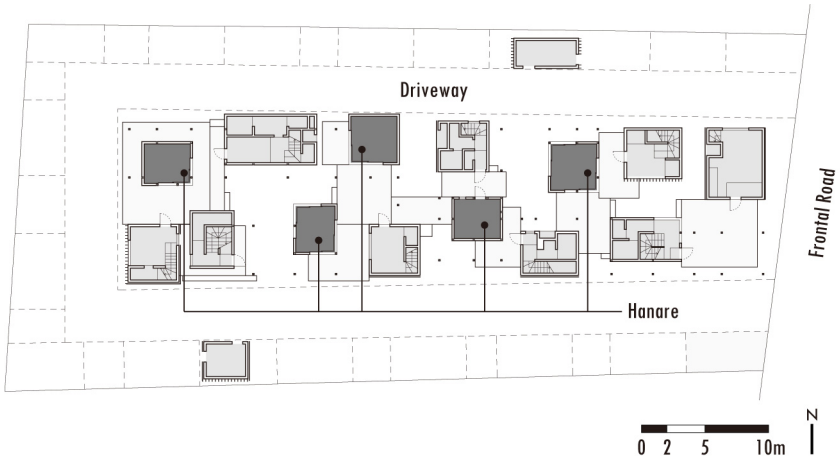


Figure 26 – Ground Floor Plan of the case No.6
(Source: Author)

There are 5 *hanare*(s). The *hanare*(s) don't have direct relationship with the frontal road but face the driveway (private road) connected to the frontal road. Figure 27 shows the *hanare* of the case No.6.

Figure 27 – Hanare(s) of the case No.6
(Source: Ookura Hideki)

3 — Haus-Hyazinth (Case No.1)

In the case No.1 (Haus-Hyazinth), the PPI of community level has been observed. The *hanare* of the case No.1 is different from the other 2 cases in terms of the scale of the distance from the central dwelling building. It is the *hanare* in urban scale.

Figure 28 – The case No.1 as the hanare
(Source: Ookura Hideki)

As defined in the chapter 2, *hanare* is "a space which is related to but also separated in terms of physical distance from the central dwelling building", in that sense, the case No.1 itself is the *hanare* of the dwelling of the one of the owners (founders).

The building of the case No.1 is located in a park (Besshonuma Park). Figure 29 shows the surrounding area of the building.

Figure 29 – Surrounding area of the case No.1
(left) Arial image (Source: Google); (right) Model photo (Source: Ookura Hideki)

Figure 30 is the map of the surrounding area of the case No.1. The residence of the owner is located in the distance of approx. 300 meters from the building. Therefore, the building itself of the case No.1 can be considered as the *hanare* of the owner.

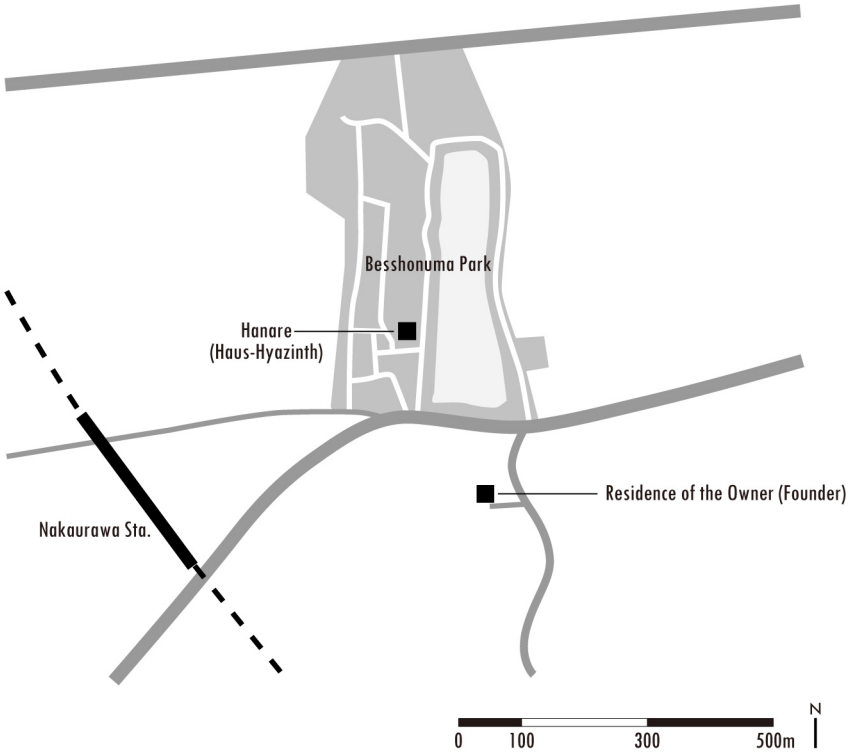


Figure 30 – Map of the case No.1
(Source: Author)

Figure 31 – Aerial photograph map, the surrounding area of Haus-Hyazinth (Source: Google)

* * * * *

Chapter

4

4

PPI — Individual Level

4.1. Project Outline — Kankyu-tei

Kankyu-tei, the house of the poet Oyama Masataka (1916–2002), is a two-story wooden building with a total floor area of 80.4 m². In 1963, Oyama asked the architect Ikuta Tsutomu (1912–1980) to design a house for him and construction was completed the following year. Since then, two extensions have been carried out (total 15.3 m²). The first (1976) extended the Japanese-style *tatami* room on the southwestern side of the ground floor, and the second (1980) extended the study room and the entrance on the northeastern side of the ground floor.

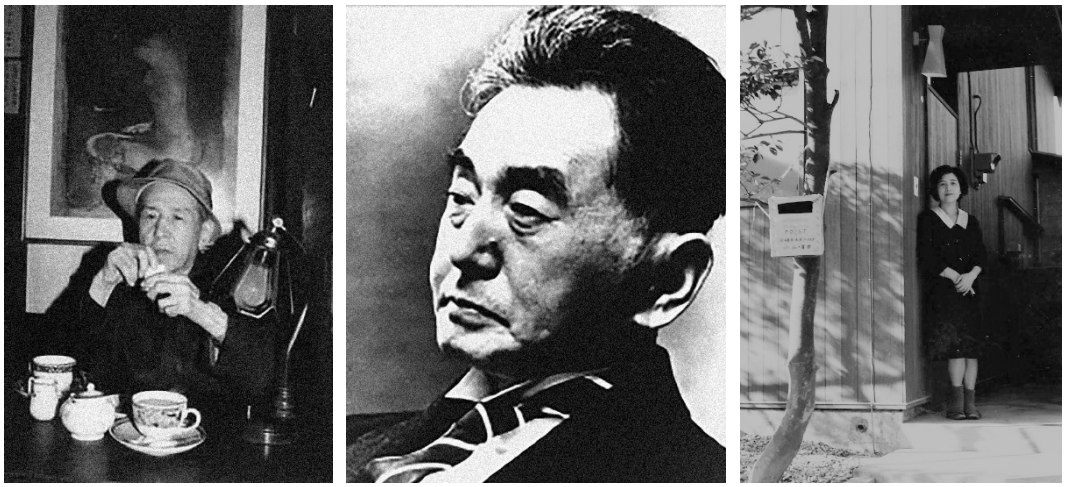


Figure 32 – People related to Kankyu-tei in 1963–1964
(left) Oyama Masataka, poet (Source: kankyutei.la.coocan.jp); (middle) Ikuta Tsutomu, architect (Source: Gendai Kenchikuka Zenshu 13); (right) Oyama Tsuneko at Kankyu-tei in 1964 (Source: Oyama Masami)

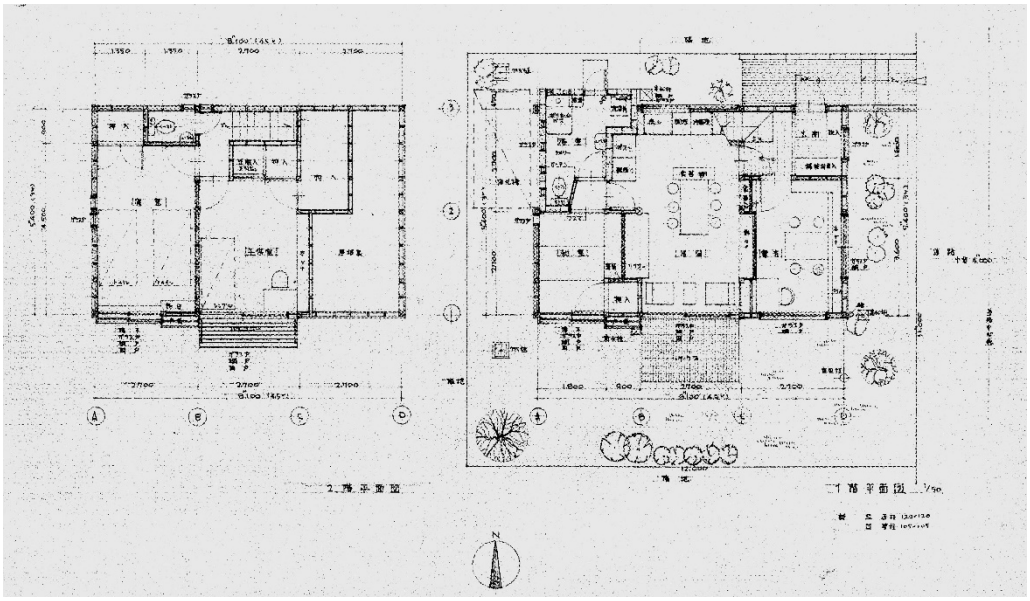


Figure 33 – Floor plans of Kankyu-tei, 1963–1964 (Designed by Ikuta Tsutomu Laboratory, University of Tokyo) (Source: Kanazawa Institute of Technology Research Institute for Architectural Archives. Published in TOTO Tsushin, vol. 59, no. 3)

In 2010, the current owner, the son of the late Oyama Masataka, asked us to design an extension and renovation. We designed the extension as an annex that stands apart from the existing house. In 2011, the seismic retrofitting and renovation of the existing building was completed, and the annex, with a floor area of 14.2 m², was completed in 2012. The annex is used as an extension of the living room on a daily basis, but it is also used for literary salons and community cafes for neighboring residents, organized by the owner and his wife, and external groups also hold meetings there. It is a part of a private house but operates as if it were a public community center.

Figure 34 – Kankyu-tei, before and after the latest addition
Left: Kankyu-tei after its first two extensions (Source: author's photo, 2010)
Right: Kankyu-tei after the 2012 addition (Source: Asada Yoshihiro, published in TOTO Tsushin, vol. 59, no. 3)

4.2. Context and Relevance

Community and QoL in an Aging Society

When the owner retired from the workplace where he had worked for many years, he conceived a plan to renovate and extend Kankyu-tei. He no longer had the social status he had enjoyed in the workplace where he had worked for many years and was looking for an alternative social status or social role. To be exact, he found a new workplace and was working part-time, but the situation was significantly different than his previous full-time work. He cannot continue at his new job for a long time because of his age, so he naturally sought a social role to replace his job.

As the Ministry of Health, Labour and Welfare advocates the theme "100 years of life", how to live after finishing one's working life is an important issue in a society with an aging population. The problem is that when we retire from work and lose that social role, our connection to society and relationship with society is lost or changed. Although there are individual differences, this creates a vulnerable state in which it is "difficult to live" in society. As the end of life approaches, connections with society become weaker, and the degree of vulnerability increases.

When the plan to extend and renovate Kankyu-tei began, the owner's mother, who was nearly 90 years old, had lost her husband and lived alone. She played mahjong at the local mahjong parlor once a week without fail. She was as active as she could imagine from her age and had a connection with society. However, she spent a lot of time alone at her home, Kankyu-tei. Her father had run a clinic in the area where Kankyu-tei is located, and she had run an English classroom in Kankyu-tei for over 30 years. She lives in a neighborhood community that includes not only family relations but also local relations. However, as she approached the age of 90, both family relations and local relations in her neighborhood were growing weaker.

Situations like this one, which is the background of the expansion and renovation of Kankyu-tei, are occurring generally in contemporary Japanese society. How can we create QoL for people in such a vulnerable state? The method the owner took was to seek his and his mother's QoL by regenerating the Kankyu-tei neighborhood community.

From Scrap and Build to Utilization of Housing Stock—The Local Culture

Japanese architecture is said to use scrap-and-build methods, but in the present age with a declining population, there is a transition from flow to stock. In the past, renovation meant repair, but since the 1990s, renovation, including changes in applications, has been increasing. On the other hand, as the number of vacant houses continues to increase, stock utilization is still insufficient. The introduction of diverse and complex perspectives on ways to utilize non-uniform stock is an important issue today.

Another aspect of the problem caused by scrap and build is the inheritance of history and culture. Early modern architecture (up to the 1960s) in Japan is now more than 50 years old, and it stands at the crossroads of whether to preserve, dismantle, or refurbish and continue to use. The issue of how to deal with architectural culture after modern times is also an important issue today. While there are many cases and studies on the preservation of historical buildings, the history of preservation or inheritance of modern architecture is still short. Moreover, attempts to pass on architecture to future generations, including renovation (alteration and extension), not to mention preservation, has not been discussed much in a historical and cultural context. In particular, little research has been done on the inheritance of buildings whose historical value is difficult to evaluate clearly, as in the case researched in this thesis. Considering that most existing buildings have not been evaluated, the question of how to pass them on to future generations is an important issue when considering architectural culture in a broad sense, including folklore implications.

This chapter also focuses on the cultural aspect that should be considered in the social issue of flow to stock, which is an important aspect as diverse and complex perspectives in the stock utilization mentioned above. Therefore, although this is a case study on the expansion and renovation of small-scale buildings that are difficult to evaluate historically, it is a case in viewpoints with few research reports at the present time and offers new knowledge.

We will describe the process and the concrete method by which the policy of inheriting the building was formed under the actual constraints, such as communication between the owner and the architect, and the building regulations. We are involved in the extension and renovation as the architects and we participated in gatherings and events held in the building after the completion of construction, and we perform an analysis based on these experiences and the survey conducted in this research.

Many studies on the renovation of housing stock focusing on the cultural aspect target historic townscapes. However, these past studies are concerned with the whole townscape

from the viewpoint of the streetscape or landscape, and they do not describe in detail how the individual buildings were renovated. Kankyu-tei is a work that has not been published in Ikuta Tsutomu's collection of works, and there is almost no previous research on it, but the authors have collated a description of the process up to the completion of the renovation. This chapter described the extension and renovation of Kankyu-tei based on these past studies and considers the formation of a sustainable living environment by utilizing existing housing stock and the PPI.

Succession of culture and community

Communities and culture are essential to improving QoL and are closely linked. Creating or maintaining a community or a culture is difficult, because they cannot be created or maintained by a standardized approach and they are complex. We need goods and services to live, and we depend on being provided with them in an industrialized society: “[We] are degraded to the status of mere consumers.” (Illich, 1973, p. 11) Creating or maintaining "individuals" without the provision of universal goods and services requires a complex situation where universality does not apply. The same can be said of QoL because it is unique to each person and cannot be obtained by providing universal goods and services. In addition, it can be pointed out that communities and cultures cannot be established by themselves. Communities are created in the context of cultures and vice versa. In other words, community and culture can be considered mutually dependent.

In the extension and renovation of Kankyu-tei, the literary culture of Oyama Masataka, the local culture that his wife had cultivated through English classes, the architectural culture of Ikuta Tsutomu, and the attitude of inheriting those cultures in a composite manner made it impossible to apply a standardized approach. Then, the convivial space spun out under various constraints and difficulties in complex cultural succession, and the spatial practice in it led to the regeneration and succession of neighboring communities. The Kankyu-tei extension shows that the succession of culture and the succession of community do not mean that one is a means and the other is a purpose and that those are “qualities” that can be acquired (only) by combining them.

4.3. Data Collection

During this research, we conducted an interview survey with the building owner and a document or literature survey that examined materials (meeting minutes and drawings).

4.4. Analysis — Creation

Project background and premise of extension and renovation in 2012

This section explains the background of Kankyu-tei, prior to a concrete description of the extension and renovation in 2012. As already mentioned, Kankyu-tei is the house where the poet Oyama Masataka lived until 2002. He asked the architect Ikuta Tsutomu, who had been a close friend for a long time, to design his house and the construction was completed in 1964. Oyama liked the word *kankyu* (*lit.* moved to tears) and named his house Kankyu-tei. Since Oyama's death in 2002, his wife Tsuneko has lived alone in Kankyu-tei.

Figure 35 – Interior of Kankyu-tei
(Source: Author)

Type	Details	Purpose
Construction site	The land was purchased for the construction of Kankyu-tei	Land acquisition
	The neighboring land on the north side belongs to Oyama Tsuneko's sister, and to the west is their father's clinic.	Family relationship Local community
Design conditions	The design requirements were for a living room and kitchen, study, master bedroom, children's room, bathroom/toilet, and Japanese-style room.	Practical daily functions
	Made of wood	Aesthetic taste
Design intention (Overall)	Build a small wooden house with space left on the site to make it easier to extend later.	Future modifications
	Minimize the floor area and take care not to spend too much on construction costs.	Construction costs
	Since there were few tall buildings in the area at the time (1963), keep the building height as low as possible, from the perspective of consideration for neighbors.	Townscape Construction costs
Design intention (Aesthetic)	Wooden construction	Architect's taste Future modifications
	A cypress pillar at the center, and a square pitched roof	Architect's taste
	A bench (small alcove) in the living room	Improvement of domestic work
	The interior is finished with plywood, making it easy to change later.	Future modifications

Table 4 – Design outline of Kankyu-tei (1964)

Oyama's son and his wife lived in a residential tower in the waterfront area, but from around 2007, they started considering moving to Kankyu-tei to live with Oyama Tsuneko. The son, Oyama Masami (Kankyu-tei's owner since 2002), chose renovation rather than demolishing and rebuilding, because "Kankyu-tei is such a good house and [he] wants to leave it together with [his] father's relics," and because he respected the feelings of his mother, Tsuneko. She was attached to the house and remembered in detail the design and construction from 1963 to the following year. Table 4 shows the outline of the design of Kankyu-tei (in 1963–1964), from an interview with Oyama Tsuneko in May 2012.

Figure 36 – Kankyu-tei, after the extensions in 1976 and 1980
(Source: Author)

Ikuta's consideration of leaving a margin on the site was successful. The building was actually extended twice (See Figure 36 and Figure 37), and Kankyu-tei has been in use as a residence for over 50 years since its completion in 1964. As already mentioned in Chapter 2, the ease of extension and renovation is one of the characteristics of wooden buildings, which the extension and renovation in 2012 also benefited from.

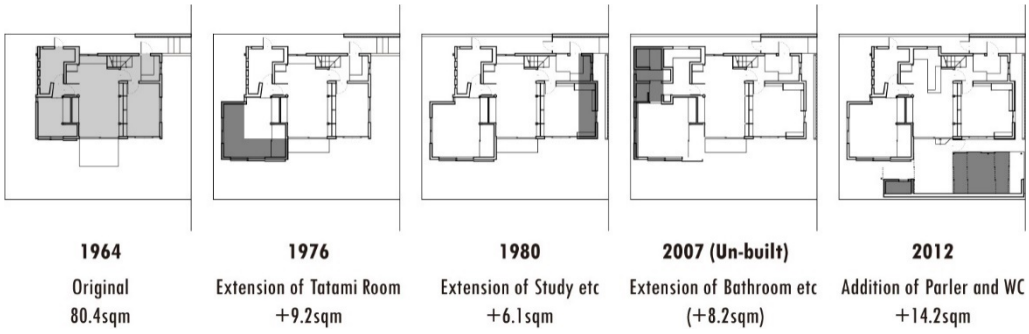


Figure 37 – Extension history of Kankyu-tei from 1964 to 2012
(Source: Author)

Move from Residential High-rise to Kankyu-tei, Inheritance of Mother's Local Network

There was another motivation for the owner's decision to move. As already mentioned, he and his wife lived in a residential high-rise building. His wife, who was born in downtown Tokyo, could not fit in with living on higher floors. He also thought that the management and repair costs of the residential high-rise were high. For those reasons, he had a desire to switch to living in a wooden detached house where repairs can be done within the scope of his own assets, rather than living in a residential high-rise where large repair costs are shared with others.

Figure 38 – Kankyu-tei as an English lesson studio from 1960s to 1990s
(Source: Oyama Masami)

However, the owner had concerns about moving to the town where his parent's house was. Although Kankyu-tei was his parents' house, he lived there for only a few years after it was completed and had almost no local connections there. To overcome that problem, he came up with the idea of joining the local community through Kankyu-tei and Oyama Tsuneko, his mother, who lived there for many years. Oyama Tsuneko had been holding English lessons for a long time at Kankyu-tei, and she was well known in the neighborhood together with Kankyu-tei. This was another reason for choosing to renovate the existing house rather than rebuild.

Vagueness of the Initial Conception

What Oyama Masami specifically envisioned for joining the local community was to run a 'community café,' reflecting his wife's long-held interest in terms of local food and community. In addition, the Oyama family regularly holds poetry gatherings for those who remember the poet Oyama Masataka, and providing a space for poetry at Kankyu-tei is more

rational than arranging a venue for each event. Therefore, Oyama Masami conceived building the extension to Kankyu-tei, not just because he would move there but also for the events and community café.

However, Oyama did not have this idea from the beginning. In 2007, he asked another architect to design an extension and renovation for Kankyu-tei, which was not constructed. The drawings from the time (2007; see
Figure **37**) show improvements of the bathroom, kitchen, storage, and interior finish. There was no intention to invite people to Kankyu-tei, and while this intention was still not clear initially in the design process (2010–), it was becoming more concrete in the design process.

Since Kankyu-tei has no building inspection certificate, it was basically impossible to apply for a building permit for the extension. We told Oyama as such when he asked us to design the extension and renovation, and he replied that he would like to do the extension and renovation however he can, even if the extension is small, such as the storage, so that it is within the range that does not require a building permit. This meant that he would not need to create a parlor to entertain guests. In other words, the only reason for the owner to find motivation for the extension and renovation was the 'need' to do something to the existing house in order to live with his mother.

The Beginning of the Design

Table 3 shows the items that the authors communicated to the owner when starting the design. The owner agreed on these matters, and we started the design of the extension and renovation, on the premise that the extension will be designed as a parlor.

Type	Details	Purpose
Current status and building regulations	Since the site is in a quasi-fire prevention area, it is necessary to apply for a building permit even if the area of the extension is minimal.	Building permit
	A building inspection certificate for the existing building is required to apply for a building permit for the extension/renovation, but there is no building inspection certificate for Kankyu-tei.	Incomplete building inspection certificate
	If there is no building inspection certificate, an architect can create a substitute document and apply for a building permit.	Documents to replace the building inspection certificate
	Doing so requires a detailed investigation of existing buildings (such as dismantling the exterior wall), which takes time and cost.	Investigation of the existing building
Design intention	To continue to live there in the future, seismic retrofitting should be carried out when dismantling the exterior wall for the investigation.	Ensuring durability
	The extension and renovation should be designed respecting that it is Tsutomu Ikuta's architecture.	Cultural background inheritance

Table 5 – Prerequisite conditions to design the extension of Kankyu-tei (2012)
(Source: Author)

Investigation of the Existing Building

This subsection describes the details of the survey of existing buildings. The investigation confirmed that the existing building, Kankyu-tei, is a *kizon-futekikaku* building (a building that met the building regulations in effect when it was built but does not meet current regulations).

1: Confirmation of building regulations at the time of construction

The site of Kankyu-tei was designated as an Article 22 area of the building regulations in 1951, and it was designated as a quasi-fire prevention area in 1987. The building, including the last extension in 1980, predates the designation as a quasi-fire prevention area, and it can be confirmed to be a *kizon-futekikaku* building if it has the fireproof performance required for buildings in an Article 22 area under the building regulations at the time. The fireproof performance that should have applied when the building was extended in 1980 is Article 22 of the Building Standards Act, which was reorganized in February 1979 and provides that wooden buildings must have earth-coated walls in parts that may cause fire to spread, or something equivalent.

2: Survey of existing buildings in the construction process of seismic retrofitting and insulation improvements

We carried out seismic retrofitting and insulation improvements on the existing building, and when the exterior wall was peeled off during the renovation work, it was confirmed that the mortar had been applied and that it had the fireproof performance prescribed by the regulations at the time. The above survey confirmed that the existing building is a *kizon-futekikaku* building, and it became possible to apply for the building permit for the extension and renovation without the building inspection certificate for the existing building.

Design Policies

Figure 40 is the ground floor plan that shows the final design of the 2012 extension (addition) and renovation. The gray area shows the addition.

Figure 39 – Completion photographs of Kankyu-tei (2012)
(Source: Ōkura Hideki)

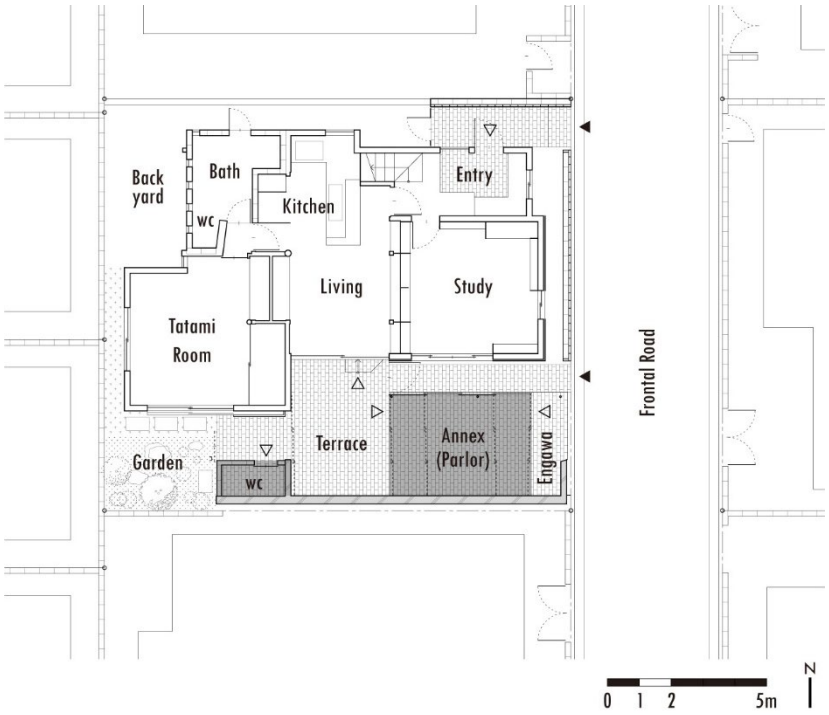


Figure 40 – Ground floor plan of Kankyu-tei (2012)
(Source: Author)

The following three policies (factors) shaped the design of the extension (addition) and renovation of Kankyu-tei

1) Selection of extension type, 2) Settings of spatial units, 3) Openness of the annex.

1) Selection of Extension Type

There are three types of extension:

A) Direct extension: an extension directly onto the existing building

B) Site division: building on another site by dividing the existing site into two

C) Separated addition: building as a new building separate from the existing building

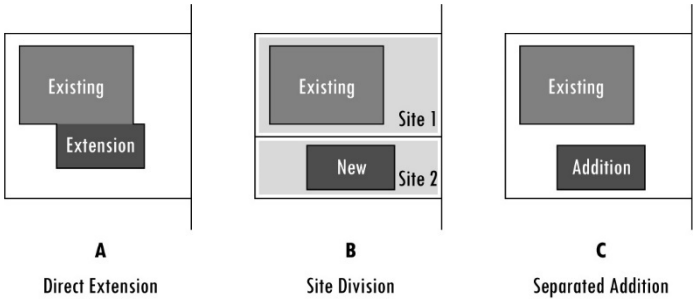


Figure 41 – Three types of extension
(Source: Author)

Table 6 shows the details of the three types of extension in terms of the retroactive application of the current building regulations (from a summary of the building regulations and discussion with the building examination section of the local government).

Extension Type	Impact on the existing building
A Direct extension	The latest building regulations will retroactively apply to the existing building as a whole (including the exterior and interior finishes).
B Site division	Applicable building regulations which newly arise from the changes due to the site division (e.g. change of the distance from the site boundary) will apply to the existing building. Specifically, the newly generated site boundary requires fireproofing of parts of the existing building (windows, wall, soffit etc.) within 3 meters from the site boundary.
C Separated addition	When there are multiple buildings on one site, fireproofing will be required for building parts that face adjacent buildings. However, the regulation does not apply if the total floor area is less than 500 m². Therefore, the latest building regulations do not retroactively apply to the existing building.

Table 6 – Difference in impact on the existing building according to the type of extension
(Source: Author)

The most effective type of extension among those three types was considered, taking into account inheritance of the cultural background, which is the design intent shown in Table 5: to respect the existing building and minimize alterations due to the retroactive application of the current building regulations. We should add that, as a matter of fact, if an existing building is designated as a cultural property by the government, it will not be retroactively subject to the current building regulations regardless of the type of extension (although methods to extend it will be limited). However, because having Kankyu-tei designated as a cultural property was found unrealistic, this was excluded from the options. From the perspective of respecting existing buildings, option C (separated addition) was selected to avoid retroactive application of the current building regulations.

2) Setting of Spatial Units

After we decided to build an annex (a building separate from the existing one), the next consideration was the kind of design to use within the remaining legally available building coverage area, which is only 16.9 m² (approximately 10 *tatami* mats). The functions required for the annex are a sitting room, a toilet and storage, and if 1 *tatami* mat is applied to the toilet, 9 *tatami* mats remain. The space of the main building (existing building) is basically composed of spatial units of 6 *tatami* mats, or combinations of 4½ and 1½ *tatami* mats (6 *tatami* mats in total).

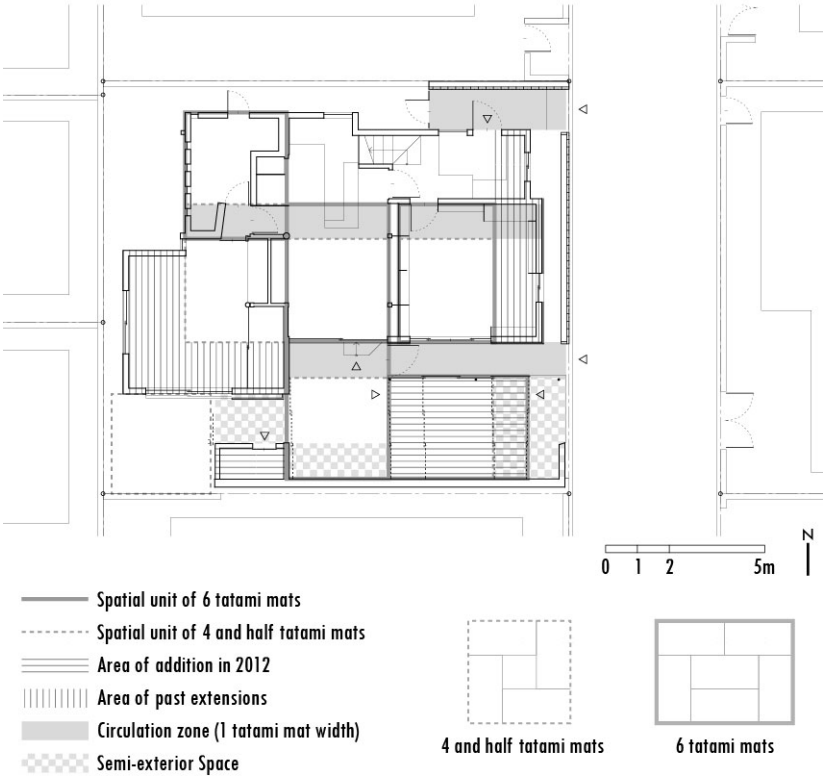


Figure 42 – Space configuration in Kankyu-tei
(Source: Author)

Considering the size of the spatial units in the existing building, we designed the area of the annex as 6 *tatami* mats with the intention of creating spatial continuity with the existing building by repeating the spatial unit used in the main building.

The remaining area of 3 *tatami* mats was designed as a semi-exterior space, or more concretely, two semi-exterior spaces of 1½ *tatami* mats: the space (margin) between the annex and the road frontage, and the courtyard (the margin between the annex and the main house) were designed as covered semi-exterior spaces of 1½ *tatami* mats each.

Figure 43 – Semi-exterior in-between spaces designed based on the existing spatial units and configuration (Source: Author)

The semi-exterior space was intended to create the feeling of spatial expansion in the annex, which is by no means large in area. As a result, the spaces in both the existing and the new were integrated in terms of the size of the spatial units.

The spaces created a complex combination of three sizes of spatial units (6, 4½, and 1½ *tatami* mats), so that the new space (the annex) can be spatially regarded as a part of the existing building. The semi-exterior space is, in practical terms, a space for putting the owner's potted plants in practical use and it is a storage space to be used as appropriate.

In addition, to facilitate the flexibility to extend the exterior space to the interior space and the adaptation of the space when the residents' lifestyle or purpose of use changes in the future, the concept of 'systems building' was introduced to allow the fittings (sliding doors) to be moved in half-*ken* (= 0.91m—the length of the short side of a *tatami* mat) steps so that the annex can be resized in the range of 3 to 6 *tatami* mats. That enables the creation of more semi-exterior spaces, as appropriate.

Figure 44 – Systems building for changeable space to blur the boundary (Source: Author)

In consideration of the small size of the annex, as many of its architectural elements were omitted as possible.

Specifically, the shoe removal area was omitted, and it was decided that the space will basically be used with shoes on. As it will be used with shoes, brick was selected for the floor

finish, following the existing exterior wall, which is finished with bricks. Furthermore, it was decided to use brick flooring for the exterior floor finish as well to create a sense of unity between the inside and outside of the building.

Through these design studies, it became gradually clear that the most important spatial feature that the annex room should have was 'openness'.

3) Openness of the Annex - Hanare

During the exchange between the owners and the architects, the design policy, shown in Table 7, was formed for the annex.

Purpose	Effect	Spatial characteristics
Consideration for visitors	Make it as easy as possible to enter from the outside.	Make the space visible from outside (from the front road).
Consideration for visitors	Visitors can stay without feeling that they are disturbing someone else's private life.	
Sense of openness in small space	Create the feeling of spatial expansion in the annex, which is by no means large in area.	The exterior wall of the main building should appear to be the interior wall of the annex.
Relationship with the main building	The annex should be an open spatial structure that can be used integrally with exterior spaces, such as the courtyard, and also with the space of the main building.	Remove as many obstacles to the integrated use of space as possible.

Table 7 – Spatial characteristics that the annex should have
(Source: Author)

Summarizing the design policies in Table 7, the following two kinds of 'openness' were important as spatial characteristics of the annex:

A) Visual openness (Transparency inside and outside the space)
B) Physical openness (As few physical obstacles as possible at boundaries inside and outside the space)

For visual openness, the design policy was to use glass for all the exterior walls of the annex, except those on the adjacent land side. There were more problems to be solved regarding realization of physical openness. To achieve physical openness, the solution considered ideal was to compose the annex's exterior wall of sliding doors so that it could open fully, which made it possible to remove it as needed and enabled the interior space and the exterior space to be integrated as one. Specifically, a wooden frame sliding door with transparent glass was considered ideal, because it is lightweight and can be fully opened and even removed if needed.

However, since the annex (new construction) needed to comply with the current building

regulations, which require fire-preventing windows in areas with a risk of fire spreading within quasi-fire prevention areas, a wooden frame sliding door could not be used. Therefore, by installing a fireproof wall made of concrete on the adjacent land side, the annex openings could be excluded from the area with a risk of fire spreading, allowing the installation of a wooden frame sliding door. However, the vertical fire wall needed to be high enough to prevent the spread of fire from the adjacent land. To solve the problem, a horizontal concrete slab was projected about 1 m from the vertical fire wall so as to cover the upper part of the opening, and a fire prevention wall made of mortar was also installed 1.8 m above the floor level at the perimeter of the annex (Figure 46).

Figure 45 – Construction of the fire wall
(Source: Author)

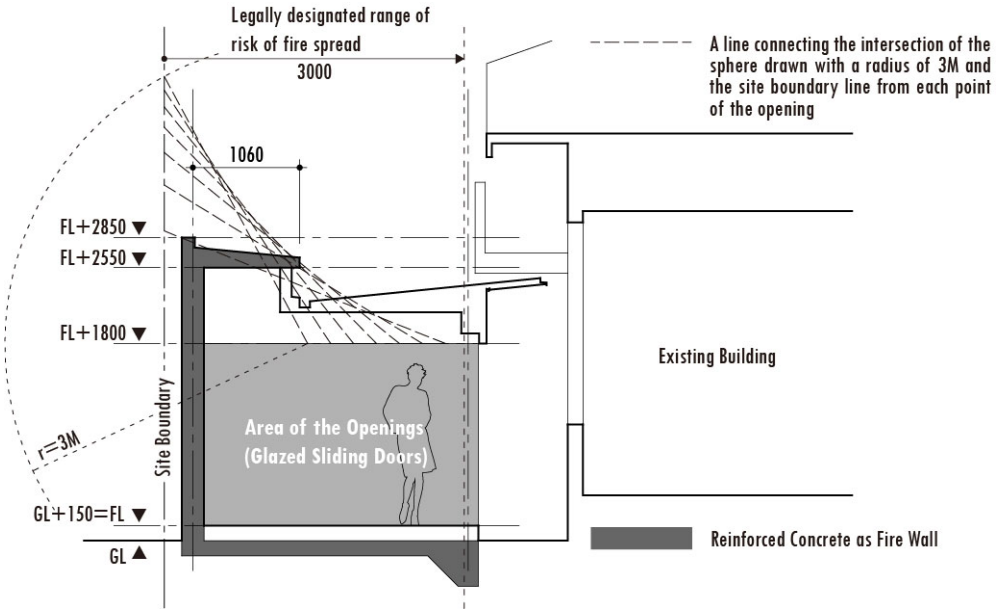


Figure 46 – Sectional diagram of the fire wall
(Source: Author)

We also considered eliminating columns by building a cantilevered roof from the wall of the adjacent land side, from the viewpoint of physical openness. Although a reinforced concrete structure or a steel frame structure was possible, a mainly wooden structure was adopted to

reduce construction costs and to ensure compatibility with the existing building. This renders a cantilevered roof impossible to achieve. However, since a reinforced concrete wall was installed as a fireproof wall on the adjacent ground side anyway, a structure system that projected a wooden beam from the concrete wall had been considered. In this system, a steel bracket was embedded in the concrete wall, a wooden beam was inserted into the bracket, and the steel bracket and the wooden beam were tied using a drift pin. Since there were concerns about deformation due to the creep of wood over time, the cantilever structure was not selected, and three steel pipes with a diameter of 42.7 mm were installed at the perimeter as columns that receive vertical force only.

Figure 47 – Technical details to realize the physical openness
(Source: Author)

4.5. Analysis — Management

When the extension and renovation was completed, the owner and his wife gathered his mother Oyama Tsuneko's friends and held a dinner party in the reception room. After that, several dinner parties have been held each month, and Oyama Tsuneko tends to bow to greet friends walking on the street through the glass doors in the annex more often. Her local community was regenerated, and in the process, the owner—her son—has gradually become familiar with the town and the local community. In the meantime, people have come to say that they want to use Kankyu-tei for gatherings with friends from both near and far. The space, which is neither a meeting place as an urban public facility nor a restaurant, but a residence, has become a semi-public place where people meet and interact, in a small street lined with houses.

Figure 48 – Community café in the annex
(Source: Oyama Masami)

Figure 49 – Annex as the extension of dwelling space on a daily basis
(Source: Asada Yoshihiro, published in TOTO Tsushin, vol. 59, no. 3)

In March 2014, two years after the completion of the extension, Oyama Tsuneko passed away at the age of 93. Nowadays, funerals are often held at funeral halls, but Oyama Tsuneko's family chose the Kankyu-tei annex as the venue of her funeral. On the night in March when it was still cold, we also headed to Kankyu-tei to attend the funeral. Mourners lined the narrow street in front of Kankyu-tei and were illuminated by the light streaming from Kankyu-tei. It was a sight that showed how Kankyu-tei was connected to the town through the annex. We believe that some neighbors rushed to see the scene without knowing of her demise. Encountering an unexpected scene and participating in it is what we do in public spaces of a city.

In addition to ceremonial occasions, urban space and living space are united in daily life as PPI. This is not the story of a distant place. As already mentioned, Tokyo is still made of houses, forming a dense, low-rise environment. The boundary between private space and public space is very vague, and it is neither a road/site boundary nor an interior/exterior boundary. PPI can be found where private and public interact with each other between the living space and the street.

Figure 50 – Annex and courtyard, view from the living room of the main building
(Source: AsadaYoshihiro, published in TOTO Tsushin, vol. 59, no. 3)

Figure 51 – Annex, view towards the frontal road
(Source: Asada Yoshihiro, published in TOTO Tsushin, vol. 59, no. 3)

4.6. Summary

This chapter described the extension and renovation of Kankyu-tei, the late Oyama Masataka's house (original design: Ikuta Tsutomu). It is summarized as follows.

1) Background and premise of extension and renovation (2012): The owner's purpose regarding the extension and renovation was not always clear, and his only requirement was to continue to use Kankyu-tei without dismantling it. When starting the design, three design policies were confirmed between the owner and the architects: the existing building has no building inspection certificate and must be investigated to get the building permit for the extension; durability should be secured (seismic reinforcement); and the cultural background should be inherited (respect for the existing building).

2) Investigation of the existing building: The exterior walls were dismantled not only for the investigation but also for seismic and insulation improvements. The existing building was investigated during the works and confirmed to be a *kizon-futekikaku* building (an unqualified building that nonetheless qualified under the building regulations in effect when it was built).

3) Selection of extension type: From the perspective of respecting existing buildings, ‘separated addition’ was selected to avoid retroactive application of current building regulations.

4) Settings of spatial units: A space of 6 *tatami* mats, which is the main spatial unit of the existing building, was added as an annex, and the remaining allowable building area was applied to the semi-exterior space. The need to use the interior and exterior spaces together was also suggested.

5) Openness of the annex: By building a concrete fireproof wall, the annex’s exterior wall opening was removed from the area where there was a risk of fire spreading, making it possible to install glazed wooden frame sliding doors that are easy to open and close, allowing for integrated use of the interior and exterior.

6) Management of space: The annex of Kankyu-tei became a semi-public space that is used by neighboring people while being part of a private house.

4.7. Overview

The owner, his family, and the people involved in Kankyu-tei after its construction were vulnerable in varying ways and degrees. Each had their own circumstances, such as a reduction in social roles due to aging, limited communities, and disagreement with social systems such as school refusal.

When the owner first conceived of the expansion and renovation of Kankyu-tei, it was simply the idea of ‘returning to the parents' house’ and, therefore, ‘repairing the parents' house.’ It would have been sufficient to obtain a general service, such as engaging a renovation company to carry out the construction. However, the policy of inheriting the existing architectural space was established for the purpose of inheriting the existing environment, including culture and community. As a result, various restrictions such as fitting through building regulation loopholes were cleared one by one, and the extension part became a *hanare*, which is not convenient; in other words, it became a non-universal building form.

The *hanare* became a space that connects the two as an intermediate entity that is neither private nor public (PPI), and enabled spatial practice to work on urban space. The spatial practice leads to the revitalization of latent neighborhood communities and their QoL. Not

only that, it has become a place of spatial practice where vulnerable people are involved autonomously.

The various 'constraints' are not necessarily negative, such as the small size of the space due to area constraints and the design process that must fit through building regulation loopholes. Rather, they are a positive condition that leads to an autonomous, interactive, and creative spatial practice, which does not depend on services being offered as exchange value. In other words, it was confirmed that the creation and management of PPI in Kankyu-tei contributed to the generation of a convivial urban space, its small scale notwithstanding.

Cultural sustainability towards PPI, as post scrap-and-build era

As elaborated in Chapter 2, contemporary Japanese urban space is still densely composed of low-rise, wooden, residential spaces. Japanese conventional wooden construction is a flexible construction system in terms of easy extension and renovation, and it can be continually used without reconstruction, through constant maintenance. Even structural elements such as columns and beams can be easily replaced, and therefore the floor plan can be easily changed. However, wooden houses have a shorter life as an asset value than other structural types, and they are often rebuilt after their useful lives have expired in a short period of time.

Kankyu-tei has been lived in for more than 50 years, with repeated extensions and maintenance. Therefore, although it is a very small building, it can be regarded as one example that embodies the social structural transformation of 'flow to stock' as contrary to scrap and build. It is an example that shows the flexibility and sustainability of Japanese conventional wooden building systems. In extending and renovating Kankyu-tei, the existing building was investigated through the seismic retrofitting and confirmed to be a *kizon-futekikaku* building. Also, by extending it with an annex separate from the existing building, the existing building was passed down to the next generation without major alterations.

However, it cannot be denied that multiple legal systems prevent the use of many conventional wooden structure buildings throughout Japan. One is the above-mentioned low asset value, and the other is the building regulations under the Japanese Building Standards Act. Although the current Building Standards Act has been relaxed compared to 2012 when the addition to Kankyu-tei was constructed, the hurdles to utilization and succession of existing buildings are still high. In other words, the current system requires the creation of such a device. On the other hand, however, seismic retrofitting has increased the durability of

existing buildings, and the addition of the annex also functions as a semi-public place, a public-private interface with the surroundings.

The annex was the option chosen to avoid retroactive application of the current building regulations to the existing building. However, as mentioned in the subsection Setting of spatial units, connecting the space from the interior to the semi-exterior and on to the exterior shows potential as an effective design strategy to create diverse relationships between the main building and the annex, and furthermore between the frontal road and the buildings. The semi-public usage of Kankyu-tei confirmed this.

At the beginning of Chapter 4, we mentioned that there are concerns about rebuilding (scrap and build), because the social utilization of stock is not expanded, and cultural background is not inherited. Kankyu-tei explored as PPI at the individual owner's level is only one small building. It is not a building whose historical value has been evaluated, but rather that is the reason that gives our explorations regarding Kankyu-tei the potential for application to many similar examples nationwide. In other words, it shows possibility as a model for inheriting the cultural background rooted in individuals or neighborhoods at a grassroots level and creating cultural sustainability and PPI from the bottom up.

* * * * *

Chapter

5

5

PPI — Neighborhood Level

This chapter describes the analysis of PPI in neighborhood level. The focus of the analysis in this chapter is on the change in between the production and the management.

5.1. Project Outline — Dragon Court Village

The project is a row-house residential environment designed by the author of this study. In order to respond to the Japanese architectural particularities, definition of public space used in this thesis (see section 2.2.3., chapter 2) is conditional and culture specific. Alternatively, it can be viewed as defined as semi-private space, but this designation lacks the previously mentioned particularities of the Japanese cultural and morphological context. Public space here includes (1) common spaces in residential areas and (2) not only publicly owned spaces (in Japan, only roads or parks) but also to the accessible private land connected to them.

Figure 52 – Dragon Court Village
(Source: Hideki Ookura)

Dragon Court Village is a two-story apartment building (row-house) in residential district of Aichi prefecture, Japan. The total floor area is 508 square meters, with a total of nine units. Its building was completed in 2013. Each dwelling unit can be accessed directly from the street, and there are no designated common areas such as common corridors or common

halls. The main dwelling space is on the upper floor, and on the ground level there are small rooms/entrances and staircases only. Therefore, the ground level is mostly comprised of piloti spaces, open to the surroundings. The characteristic found in this building is the dispersion of small rooms as annexes in the piloti space. In order to go to the annex from main dwelling space, residents go out from the entrance and walk through the piloti. The piloti space is a semi-exterior space where the upper massing casts a shadow and where the breeze flows. The airflow is designed and confirmed by CFD (computational fluid dynamics) analysis, guaranteeing bioclimatic comfort between the annexes.

Figure 53 – South Facade of Dragon Court Village
(Source: Hideki Ookura)

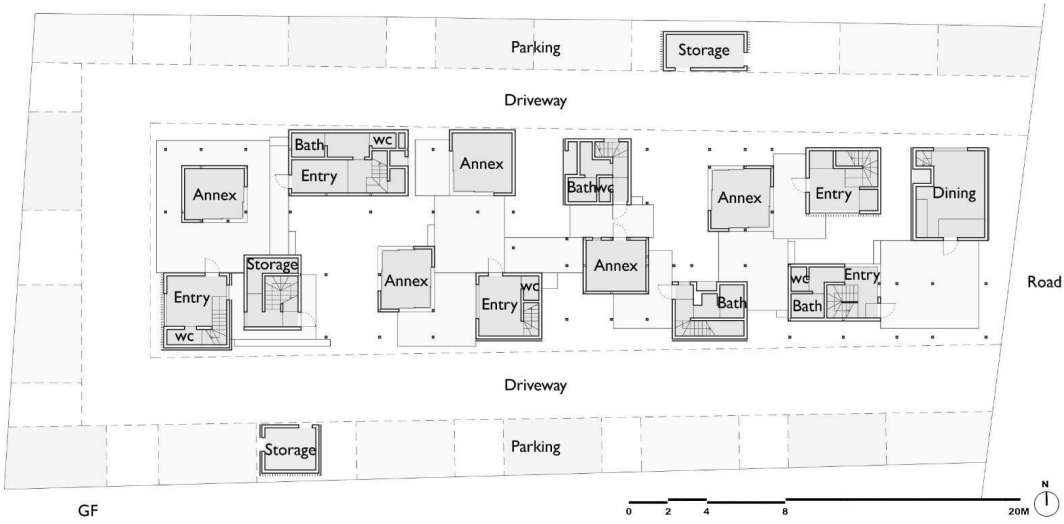


Figure 54 – Ground Floor Plan of Dragon Court Village
(Source: Eureka)

5.2. Context and Relevance

Dragon Court Village is a rebuilding of dilapidated rental houses. Demand for housing is decreasing as the population declines. The vacancy rate of Japanese housing, including rental housing, is increasing year by year. When rebuilding, it is not a universal living space that meets general needs, but a quality of space that can provide a variety of lifestyles and QoL is required from a business perspective. It is a project two years after the Great East Japan Earthquake after the Lehman shock, and the growing social sentiment of QoL also influences the direction of the project.

The aim was to create a social connection by means of a housing structure that would enable work-life integration, such as lessons at home/office or part of the house. This is in common with the possibility of the transformation of the modern 'separate housing' that separates work from home due to the increase in telecommuting caused by COVID-19. Specifically, Dragon Court Village incorporates the spatial form of *hanare* from the case study (Kankyu-tei) from the previous chapter into the spatial characteristics of low-rise and high-density found in Japanese urban fabrics, adapting to the Japanese climate. Private houses are the building type with the least restrictions on building regulations, and the level of restrictions increases for apartment houses. Therefore, in order to realize a spatial form for PPI such as Kankyu-tei, it was necessary to go through the loophole of the law by a method different from Kankyu-tei.

Barrier to the interaction of Public and Private

'Common Areas' can be defined as a space located in-between private spaces, or between private and public spaces. Such spaces have the capacity to enable social interaction, initiated by any party and, thus, acting as a semi-private space. Unfortunately, this is not its frequent condition, as of 2020; instead, the private and public spaces are kept apart. The explanations, as is the case with shortcomings associated with high-rise buildings, are to be found in building regulations. The designated common area is assumed to be used by an unspecified number of people. This increases the risk in the case of fire and introduces a set of risk management measures (e.g. evacuation). As a result, the boundary with the private areas must be divided by a fireproof wall. The consequence being that the common-use areas are divided by the firewall located between the private and public spaces, preventing its seamless transition/integration.

The second obstacle in reaching the potential of this space is again grounded in regulation –

i.e. the question of management: who manages the 'designated common area'? Since this area is not a privately-owned space, the management ought to be handled by a non-tenant. The job of the manager is, again, preventing problems and complaints. Therefore, the number of prohibited actions increases, the same as with open spaces of high-rise developments, making the space difficult for anyone to use. Ironically, the space for everyone becomes the space for no one.

Another issue surrounding the spatial management and residents' interaction can be found in previously noted spatial consequences of imposing the sharing of common areas in a building complex. Spontaneity in common areas is seldom successful and continues to be a challenge for architectural designers and spatial managers alike. The fact that the space is clearly marked as a 'designated common [use] area' is synonymous with 'you must share' and 'you must interact with other people here'. The author's experience as an architect shows that people will refuse to use spaces thusly designated and managed (expanded upon in the later section 5.5.).

Firstly, the users need a space that can be appropriated as their own, to be utilized as they see fit. Then, the desire of expanding one's space may emerge, which leads to another form of space-sharing. In order to share, it is necessary to communicate with other people and any communication is interaction. Socialization then occurs naturally. In this chapter, the focus is on private space/personal space and the possibility to overcome the problems embedded in current 'designated common/public space for nobody' reality. The focus will move to existing apartment buildings, residential environment with private spaces without common areas, and towards the establishment of spatial condition that possibly stimulates the emergence of the interaction of public and private.

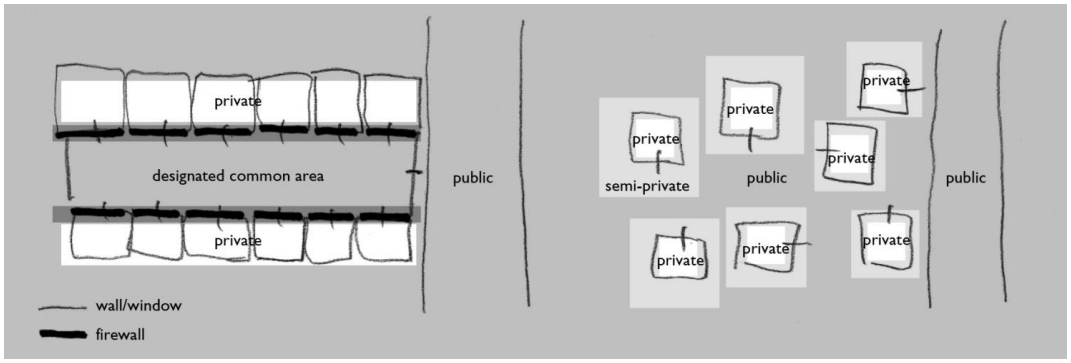


Figure 55 – Diagram of common area vs semi-private
(left) Fireproof Wall in Designated Common Area; (right) Seamless Transition of Private and Public (Source: Author)

Residential Environment of Public-Private interface - Row-House

Japanese building regulation (Ministry of Land, Infrastructure, Transport and Tourism. Enforcement Regulations of Building Standards Act. Major building uses 08020, 08030, 08040.) categorizes apartment buildings into the following three groups:

1) *Kyodo-Jutaku* (communal housing) 2) *Kishuku-Sha* (dormitory) 3) *Nagaya* (row-house)

Communal housing is an apartment building with common use areas, such as corridors, halls and elevators. Dormitory is an apartment building with shared sanitary block (kitchen, bathroom, etc.). Row-house is an apartment building without common areas. It consists only of several private spaces.

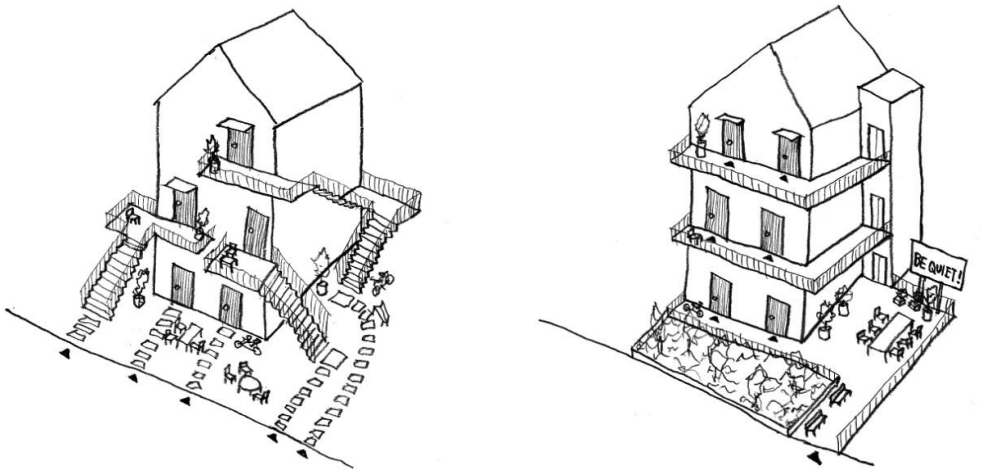


Figure 56 – Diagram of row-house vs communal housing
(left) Row-house/Apartments without common use area; (right) Communal Housing/Dormitory/Apartments with common use area (Source: Author)

In the living environment of the row-house, public space (pathways) is directly connected with private spaces. This is a low-level space without common areas (including elevators), a space where indoors and outdoors private spaces are densely packed. One could argue that this urbo-architectural type has the capacity for formation of living with significant level of public-private, indoor-outdoor interaction.

This potential will be explored using examples from practice, applying the previously elaborated three spatial hypotheses based on the nature of predominant urban character of Tokyo: low-rise high-density (row-house residential environment); climate responsive semi-exterior space; and interaction of public and private (abolishment of designated common area).

Row-house as the bottom-up approach urban development

The purpose of choosing the row-house type is when it is illegal to build a communal housing on an irregular site such as a flagpole or a small site, except for a few households where you can live with your parents. Small developers sometimes do such small developments. It is a method of small-scale development in the 'leftover' of the city, which is left untouched by major developers. And in such cases, the individual architects or small architects office design it, not the big architectural design firm. In such small-scale development, a construction method called 'corporative' is often used. Usually, it recruits residents after the completion of design or construction, such as rental or communal housing. However, 'corporative' recruits residents (owners) prior to the design, and the multiple owners jointly invest in the construction. It is obvious that it is not easy to put together individual requests from multiple owners on an irregular site and design it as a single building. Individual architects and small architectural firms are responsible for such designs. They are one of the bearers of the development method, which is completely different from the universal production of space as exchange value.

It is a (small-scale) development method that multiple residents and individual architects collaborate as autonomous individuals to create individual spaces as utility values. In other words, the building type of row-house is effective for 'urban design with a bottom-up approach' in urban 'leftover' that this thesis deals with. However, such cases are few in the total number of houses (private house, collective housings, etc.) produced in Japan. Therefore, there are few past researches, and almost no studies mention its construction and space management. It's not because the research is worthless. This is a significant research for the residents to create a convivial urban space that autonomously creates the quality of the space as a use value.

The case study in this chapter is for rental housing, and unlike the above co-operative method, the residents are not involved in the design. However, the space has become a place of residents' autonomous spatial practices, creating the quality of a convivial urban space in the corner of a residential area.

5.3. Data Collection

In this research, we conducted a fieldwork survey, an interview survey, and a document survey.

1) Fieldwork survey in Dragon Court Village. Observation of the residents' elements put on the exterior space, and the transition of those elements from 2013 to 2019. (Figure 65, Figure 66)

2) Interview survey with 3 persons - the semi-structured group interview with Kamimoto was carried out on the 8th April 2019 at the Free space in Minagawa Village. Participants were Mr. Toyoaki Kamimoto (Principal architect at Saiseikenchiku Laboratory); Ms. Milica Muminović (Assistant Professor, University of Canberra. Her research extends the professional experience through studies conducted in Japan about identity, places, spaces in between architecture and urban design, public and private, with an emphasis on residential architecture in Tokyo); Ms. Ryoko Iwase (Principal architect / Landscape designer at Ryokoiwase. She works as an architect designing architecture, landscape design with public space in Japan.

3) Interview survey - the semi-structured interview with Ms. Y, the former resident of Dragon Court Village, was carried out on the phone, 30th April 2020.

4) Document survey (literature survey of row-houses based on the Japanese architectural magazine Shinkenchiku for the period of 10 years (2009-2018), meeting minutes, drawings.)

5.4. Analysis — Creation

Conceptual Outline

In East Asian cities and villages, with a viewpoint against a backdrop of increased threats from severe weather and global warming, we sometimes encounter with adaptable housing cultures that border against natural disasters; ecological and customary architectural behaviors that have likened to elements of the natural environment; and methods to help maintain and continue such things. Today, with the rapid urbanization of Southeast Asia, especially from China to the Indochina, the act of observing native and traditional

architectures and villages is synonymous with observing their very own destruction and acceptance. The life of barely scraping by, sometimes becoming subject to unlawfully dense surroundings, is very much reliant on the imperative to tolerate ambiguity, semitransparent and gradational special qualities, and the architecture's redundant and updating nature. In this scheme, such qualities were pulled into a tangible plan.

This project is a rental row house comprised of nine units that is constructed in a residential suburb. The project demanded two parking spaces for each unit, creating a condition in which half of the entire site is covered by parking areas and driveways. We achieved a porous dwelling space composed of small spatial units that opens to the surrounding area and environment by creating shared margins between the neighboring units.

Using the encircling driveways and parking spaces to create margins in the architecture, roofed semi-exterior spaces were inserted into various places, which were then adjusted using wind simulations. It is a porous architecture that allows breeze and produces shades. Life opens up to the outside through the semi-exterior spaces and the annex, and further expands to the street and the surrounding area. A life among the group will become more diversified and public. The wooden frames that expose to the outside are created as clues for controlling and maintaining the semi-exterior spaces.

Trans-Local – the Conceptual Design Theory

The project uses the openness toward tolerance of the ambiguity, and the redundancy and renewal of architecture, found in indigenous and traditional architecture and settlements in the East Asian region. Trans-local is the design theory of applying the local spatial typology to another specific local site, learning the several different local spatial typologies and the way it works. According to Almazan, J. (2019, pp. 04-05), "There is a concept called 'glocal' that tries to realize localness through global means, but I like the word 'translocal' in the sense of learning from many localities. (…) by thinking about things with an attitude of learning from the two locales, you will be able to get 'translocal' inspirations (…) it's okay to open up various possibilities in a space rather than being narrow-minded, saying it must be this way because it's in Japan, or it must be that way because it's in Spain".

The specific references for this project are *seiza* residence, a traditional architecture in Fujian, China, and Stilted residence, a traditional architecture in Lampang province, Thailand. Figure 5.4.1 shows the daily life in a semi-outdoor space (courtyard and roof-covered space) of those two referenced residences. There is a tolerant and redundant life, living in a semi-outdoor space. The daily life is not regulated by the (interior) space of architecture.

Figure 5.4.1. – (left & upper right) Seiza residence in Fujian, China; (lower right) Stilted residence in Lampang province, Thailand (Source: Eureka)

Observing, learning from the indigenous and traditional architecture in east Asian region is worth doing, thinking the sustainable way of living in the era of the climate change. Climate change increases the extremes, and consequently the averages. According to the Japan Meteorological Agency [52], the annual average temperature in Japan has risen while repeating various fluctuations, and has risen at a rate of 1.24 ° C per 100 years in the long run. Especially since the 1990s, there have been many high-temperature years.

Figure 57 – Longitudinal section and perspective of Dragon Court Village
(Source: Eureka)

Context of the Project Area

Figure 58 shows the surrounding area of the project. The site of this project is in a residential area in the suburbs of Okazaki City, Aichi Prefecture. And car (parking) was important

[52] Japan Meteorological Agency (2020). Change in average annual temperature deviation in Japan 1898-2019. https://www.data.jma.go.jp/cpdinfo/temp/an_jpn.html

context of the Project Area. The number of cars owned by one household in Okazaki is 1.809 [53], which is much higher than the national average. This is 1.7 times the national average and 4.18 times that of Tokyo [54]. Okazaki city is where cars are considered important. Due to the large number of cars owned and the parking lots located in between streets and buildings, it's not a rare case that the streetscape in residential areas in Okazaki is mainly composed of the stopped cars.

Figure 59 shows the view of the apartment buildings around the project site. Due to the vast parking lot, the relationship between the building and the front road is broken. In this project as well, it was a design requirement from the developer to provide two parking spaces per household. In light of the local context, however, how critically planning parking spaces was considered.

Figure 58 – Illustrative examples of surrounding area of Dragon Court Village
(left) Arial photo of the project area; (right) Parked cars in front of the houses of the area (Source: Eureka)

Figure 59 – Parking lots of apartments houses in the project area of Dragon Court Village
(Source: Eureka)

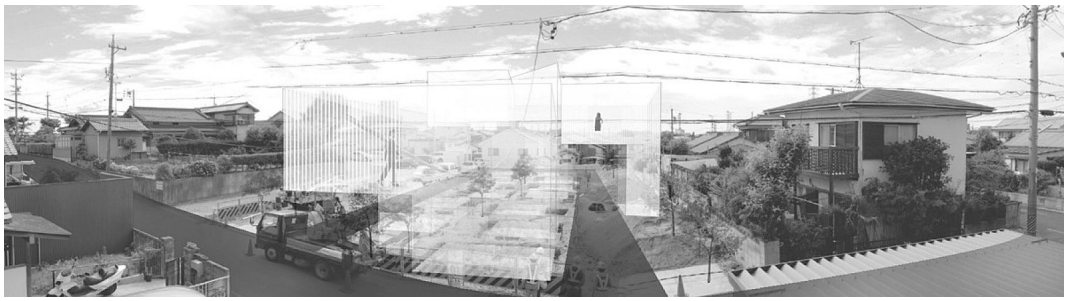


Figure 60 – Photo montage of the driveway and the massing of Dragon Court Village
(Source: Eureka)

[53] City of Okazaki Statistics Portal. Mini Statistics of Okazaki City 2016.
http://webhp.city.okazaki.lg.jp/tokei-portal/minitokei/minitokei2016.pdf

[54] Automobile Inspection & Registration Information Association. Number of privately-owned passenger cars per household (by prefecture) 2019. https://www.airia.or.jp/publish/file/r5c6pv000000mhvq-att/r5c6pv000000mhw5.pdf

Design Process

Table 8 shows the design process. The design process was the repeated study of parking lots location and the natural ventilation in the semi-exterior space underneath the architectural massing.

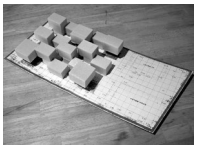
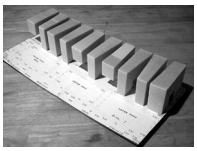
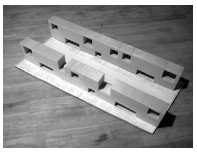
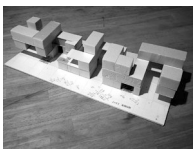
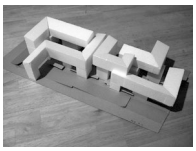
Phase	Model photo	Location of building Location of parking Type of massing	Characteristics and/or Improvements	Problems
1		East side Frontal road side (East side) Stacked small volumes	- Flexibility of building area and the form - Composition of small volumes for sufficient daylight and natural ventilation	- Disconnection to the frontal road - Disconnection of the building and the rest (parking lots)
2		North side South side (Adjacent property side) Gate-like shaped volumes, Lined up with a gap in between each volume	- The building faces the frontal road - Relatively better relationship with the rest of the site (parking lots)	- Clear division (few relation) between the building area and the rest of the site. - The interior space is too deep to have daylight and natural ventilation
3		North & South Center (In between the building) 2 volumes with penetrating voids	- Simple and standard building layout - Better relationship with the rest of the site (parking lots)	- The volume on the north is not good for natural ventilation - The proportion of the center courtyard is not efficient for parking
4		Center Outer periphery (4 sides facing the adjacent property) Snake-shaped continuous volume	-Minimized the negative affect to the environment in the adjunct properties - Sufficient daylight and natural ventilation	- Less semi-exterior open spaces underneath the volumes because of the limited footprint of the building
5		Middle North & South side (2 sides facing the adjacent property) 4 volumes with roof terraces	- More semi-exterior open spaces by extending the area (length) of the building area - Some parts of the building could be lower and roof terraces created	- The proportion of the two linear courtyards (on the north and south) are not efficient for parking - The open semi-exterior spaces are not connected each other
6		Almost Center (Frontal road side) Outer periphery (3 sides facing the adjacent property) 5 volumes of gate-like shape	- Circular driveway is efficient for car parking - All of the volumes have semi-exterior open spaces underneath, and connected each other	- The space composition variety of the previous scheme has lost - 5 buildings cannot be built on one site (Building standard law)
7		Almost Center (Frontal road side) Outer periphery (3 sides facing the adjacent property) 2 volumes of gate-like shape Hanare(s) on the ground are setback from the driveway	- By connecting the volume on the upper level, more semi-exterior spaces were created - The hanare(s) (annexes) on the ground is surrounded by semi-exterior space	- Difficult to build it with timber, from structural point of view, because of the setback of the volumes on the ground

Table 8 – Design process/Transition of the location and form of architectural massing (Source: Eureka)

As mentioned in Table 8, the natural wind circulation was also considered in the design process. Table 9 shows the results of CFD (computational fluid dynamics) analysis corresponding to the design phase no. 1, 2, 4, and 6&7.

Based on the design and engineering described above, we conducted the engineering regarding the position of the *hanare*(s) (annex) on the ground floor, in order to realize the comfortable (semi-)exterior space in terms of natural ventilation for residents' life in the (semi-)exterior. By adjusting the position of those *hanare* volumes, we maximized the natural ventilation in Summer, and minimized the ventilation (reduced the speed of the wind flow). Figure 61 shows the results of CFD analysis of seasonal natural ventilation in the exterior space.

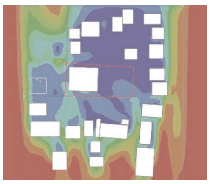
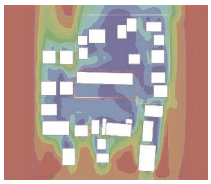
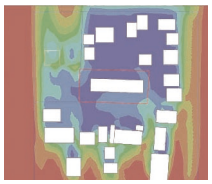
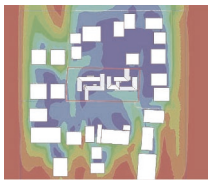
Phase	1	2	4	6, 7
CFD analysis diagram				
Findings	Negative affect on the north adjacent property	Negative affect on the west adjacent property	Better on the west side, but worse on the north side	Balanced layout of wind circulation

Table 9 – Engineering process/Transition of the location and form of architectural massing
(Source: Eureka)

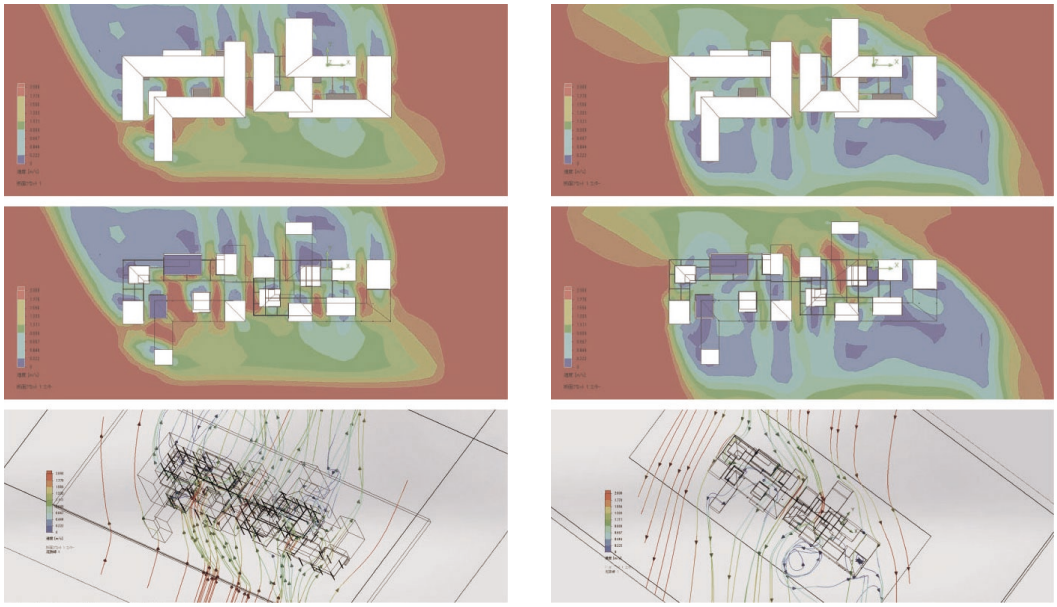


Figure 61– Engineering of seasonal natural ventilation (left) CFD analysis of Summer; (right) CFD analysis on Winter
(Source: Eureka)

The figure on the left shows the final result of the CFD analysis of the natural ventilation by prevailing wind (from South) in summer. The figure on the right shows the one of the wind

(from North) in winter. It was not an easy engineering since it is contradictive to achieve the both of the maximized ventilation in summer and minimized ventilation in winter. The figure on the right shows two hot spots of strong ventilation in winter. Therefore, we decided to install removable partitions to block the ventilation in those two hot spots.

Figure 62 – Piloti space on the ground floor level of Dragon Court Village, Semi-exterior space with natural ventilation in between the hanare(s)
(Source: Hideki Ookura)

5.5. Analysis — Management

Not long after the building completion, residents have started transforming the piloti space into a lively place, in their own way. Each resident placed around their entrance a mailbox, umbrella stand, potted plant, bicycle, and so forth. The life of the residents had overflowed in front of each residential unit (*afuredashi*), as it did in the indigenous residential areas of Japan (as described in the section 2.2.4. Public-private Interaction in the Urban). Some of the residents have set up small flowerbeds.

The residents are mostly families – husband and wife (just one family has a child), a few residents are singles, and approximately half of the units were used as office space combined with dwelling. Most of the occupants were office workers (e.g. designer). Although the types of the residents are diverse, every resident started to enjoy life in their own way through *afuredashi*-making. One of them, Ms. Y, started a small vegetable shop business in the annex on the ground level, while living on the upper floor. Because Ms. Y utilizes her space as a vegetable shop, she is always present as a store manager in the piloti space. That makes space safe and inviting, and the number of outside visitors who come to buy vegetables increased. She gradually expanded her vegetable shop using more of the piloti space. But then, some changes occurred. Other residents also started actively utilizing their annexes and some of them made small interventions (e.g. adding a mezzanine floor for more storage, putting sheetrock on the wall for the display of goods). Such actions (most of those are temporary,

but some are permanent alterations such as the mezzanine floor) made the number of visitors increase further.

A year after the building completion, Ms. Y began to run a weekend flea market. Mainly customers gathered, making friends among other self-employed members of the community. Additionally, coffee shops, snacks, clothes shops, and other shops opened, creating a modest, festival-like atmosphere. In the piloti space, divided by the entrance and the annex, small shops opened. The vacant space became a rest space and a playground for children. As all these activities were temporary in character, there was no conflict to be observed, neither was any reprimand issued by the property manager. Other resident joined in the flea market initiated by Ms. Y and her friends, expanding the visitor number to include acquaintances and friends. The ground level (exterior/semi-exterior space) of the apartment building, gradually began obtaining a public quality, meaning anyone could visit and participate in the events.

Figure 63 – Afredashi in Dragon Court Village, 2014
(Source: Hideki Ookura)

Figure 64 – Weekend Flea Market in Dragon Court Village, 2017
(Source: Hideki Ookura)

Low-rise High-density

As many residents used the annex on the ground floor, connected with the room on the upper floor (office, store, etc.), these spaces understandably developed a strong interdependence. Even though the annex is spatially modest, it is possible to confirm the merit of its smallness, as confirmed by the interview with Ms. Y. As previously noted, during the flea market, each store opens in every individual part of piloti divided by the entrance and the annex, and the vacant space became a rest space and the children's playground. This

produced favourable results due to the high-density space configuration creating numbers of small and convenient and easy-to-use spaces inside and outside, as confirmed by the interview with Ms. Y and the group interview in Minagawa Village.

Climate Responsive Semi-exterior Space

The piloti area is designed as a semi-outdoor space where strong sunlight is blocked, and the wind passes through. Climate-responsively designed spaces in warm and humid climate encourage people to stay outside and to interact, after half a year at the latest (Figure 66). The tendency of people staying in the semi-outdoor space was particularly remarkable at the time of the flea market, but people also stayed during times when there were no special events. Since almost all the *afuredashi*, except signboards, were installed in the semi-outdoor space, this space was also effective in making the external space rather private-like.

Public-Private interface

Because the piloti spaces were not originally designed for a specific purpose, the residents needed to consider its utilization purposes. According to the research on the alleys of Tokyo (Tsukishima, Chuo-ku, Tokyo) by Aoki & Yuasa (1993, pp. 53.) “Spaces that are open to the exterior are more likely to be used privately, by putting *afuredashi*, rather than spaces that are closed”. Aoki & Yuasa (ibid.) state this tendency occurs not because "an area for private use is generated because there is an enclosed area (there is an area that is easy to personalize)", but because "Since there is no area in the open space in advance, using it for private use will result in private domination, and as a result, private domination will be strengthened", Aoki & Yuasa (ibid., pp. 52). In other words, “the residents are not passively receiving the given space environment, but are actively working against the environment”, Aoki & Yuasa (ibid., pp. 53). This statement has been interpreted as positive, because the residents proactively define their own living surrounding, a practice not common in Japan. The user actively discovers the possibilities of the space without defined functions, so utilization of the space becomes more active, as the usage is discovered (by the user) thereafter. In this sense, ‘polyfunctional’ space is easier to use, due to their lack of a designated function. In this way, each resident felt entitled to apply their own setup to their spaces, influencing the neighbours’ mental wellness through increased social interaction. As a result, shared spaces were created, or the entire area became a common space over certain intervals of time. From this observation, it can be said that the private space and the common space are not divided, but their functionality is continuous or mixed, and the rules and manners of the space were

decided and utilized by the residents themselves. This is completely different from the 'designated common area' described above. Normally, the unwritten rule of this designation, in architectural and planning practices, for the given architectural typology is an area that is mainly utilized as a buffer or a transitional zone. Active usage and continued evolving of activities are uncommon, but it was not considered disruptive by the residence manager – the owner of the building. Therefore, its usage was activated without perception of activities being in opposition to the guidelines and being prohibited.

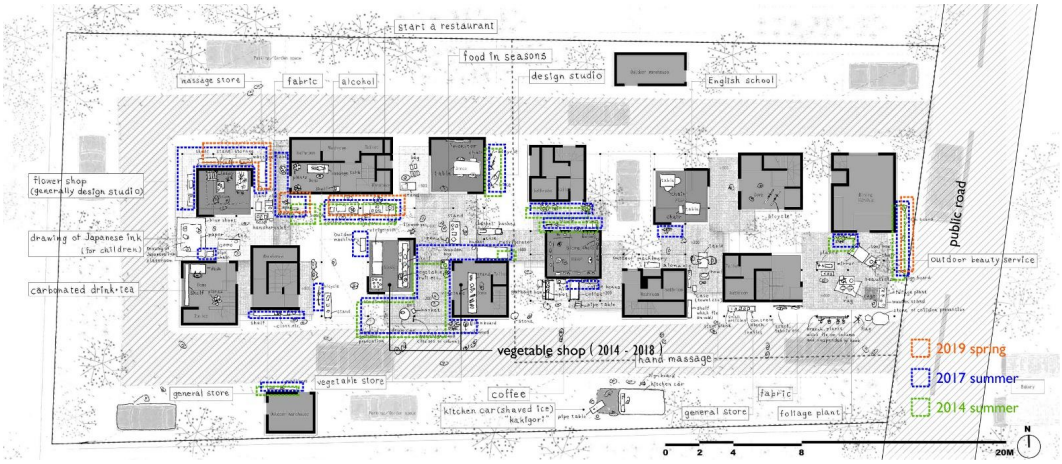


Figure 65 – Transition of the Privately Used Area Afuredashi (2014, 2017, 2019) floor plan (Source: Author)

Challenges to Spontaneous Usage of Semi-Outdoor Spaces

Figure 65 and Figure 66 show the transition of private areas (2013) to 2019 that has been formed in outdoor or semi-outdoor spaces by comparing the range in which *afuredashi* appeared. All semi-outdoor spaces were the location where the *afuredashi* elements appeared. This is consistent with Aoki's (1993) *afuredashi* observations. Many of the *afuredashi* are on the west side of the site (opposite from the main road). It is also observed that more private areas were formed as far as possible from the main road. The same tendency is noted in Aoki's study (1993), there are more *afuredashi* near the centre of the alley (location farthest from the entrance) rather than the space near the entrance. However, the fact that several *afuredashi* elements are located on the sites' west side has a lot to do with the location of the vegetable shop likewise located on the west side. Because the private territory had been increasing until 2017, as of 2019 the existence of *afuredashi* elements could only be partially confirmed. This is believed to have been caused by the relocation of Ms. Y and the magnitude of her influence. Ms. Y relocated in 2018, and it is thought that this event is the major factor for the *afuredashi* decrease in the 2019 spring. It is interesting that, although it was expected that the *afuredashi* around her residence are removed, the amount of *afuredashi*

of the entire site have reduced too. So, a correlation between the residents' influence has been noted. The disappearance of the *afuredashi* that used to exist signifies that the expansion of private usage onto the external space has not been established. It is ideal for private elements (e.g. *afuredashi*) to spontaneously appear and eventually turn the (previously underused) space into a place fostering human interaction, but this did not happen.

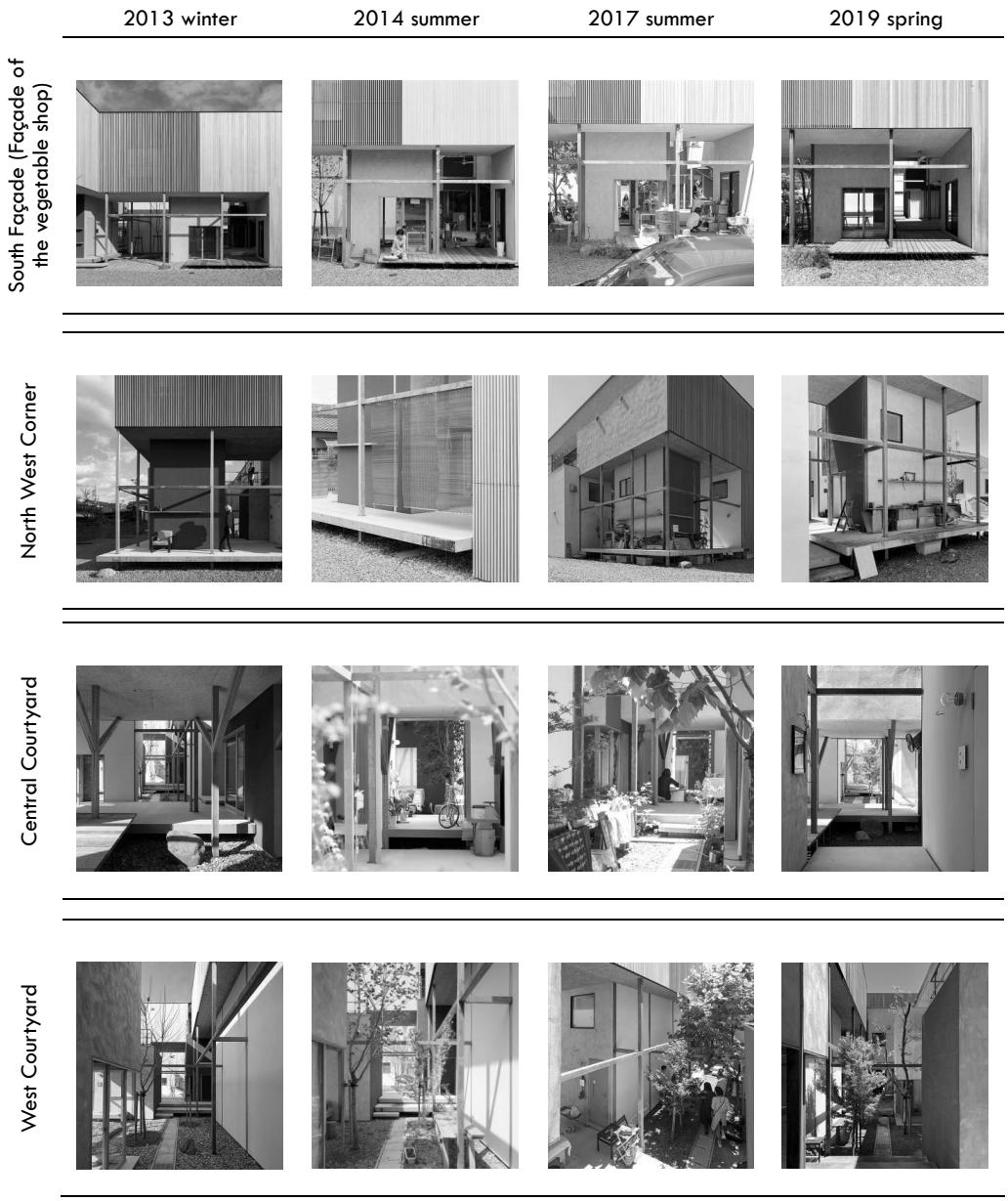


Figure 66 – Changes in Spatial Operation of Private-Use Designated Areas (note the Afuredashi elements) (Source: Author (2019) and Hideki Ookura (2013-2017))

The hypothesis of this research, an opposite to the high-rise high-density paradigm, theorized that the low-rise high-density spatial and morphological dispositions can generate public-private interface and can also foster human interaction, so it was partially confirmed. But the question that remains is 'how to verify this claim?'

Comparative Analysis

Based on the examination above, a Tokyo case study which has a similarity to Dragon Court Village in terms of the architectural type, is selected to test the feasibility and effectiveness in contemporary urban spaces. Literature review of all the row-houses was carried out based on the authoritative database established within Japanese architectural magazine Shinkenchiku[55] for the period of 10 years (2009-2018). There were 69 cases in Tokyo Metropolitan Area (Tokyo, Kanagawa, Saitama, and Chiba). Among those cases, 56 cases (81%) were in Tokyo's 23 wards, and 13 (19%) were elsewhere. In more detail: 8 cases in Tokyo's 5 central wards, 48 cases in other Tokyo 18 wards, 5 cases in Tokyo (outside 23 wards), 8 cases in other Tokyo Metropolitan Area (Kanagawa, Saitama, and Chiba).

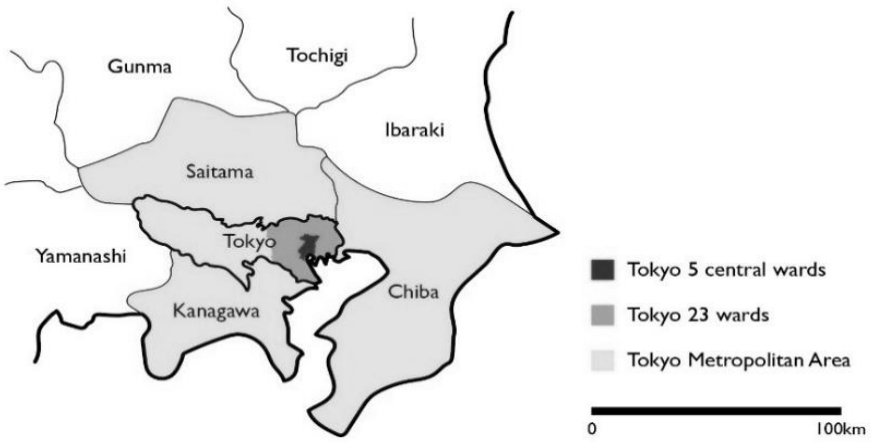


Figure 67 – Tokyo Metropolitan Map
(Source: Author)

Since there are no elevators in row-houses and all are low-rise (less than or equal to ground floor plus two stories), the number of floors is not the subject of discussion. The focus is on 'semi-exterior' spaces. As previously mentioned, semi-exterior is the space adapting to the humid subtropical climate, blocking sunlight and allowing airflow. It is recognized as an important parameter which ensures the outdoor quality for staying, connecting private with public space. There were five cases with semi-exterior space with more than 20% of the total floor area. Most of the surveyed cases (81%) were in the 23 wards of Tokyo. But the site areas in central Tokyo were comparatively smaller and in order to efficiently secure the maximum total floor area, they are box-shaped, with no room for semi-exterior spaces. Even if there is a semi-outdoor space, it is not a space under the eaves, it is a space open to the elements. There were many cases with a courtyard, but there were few 'semi-exterior spaces' with a roof or overhead mass. This indicates that in urban areas priority is given to minimizing the construction costs (rising due to the reconstruction after the 2011 Great East

[55] Shinkenchiku: Japanese architectural magazine that has the longest history in Japan, first published in 1925.

Japan Earthquake and construction demand for the 2020 Tokyo Olympics[56]). Thus, a simple box-shape is applied as a design strategy. The tendency to go against climate responsive spaces in low-rise and high-density is observed as well as the trend of high-rise, high-density development. 'Boxing-up' is one of them. Of the five cases with semi-exterior space of 20% or more of the total floor area, there were two cases in the five central wards of central Tokyo. Two cases are Minagawa Village in Shibuya, Tokyo and Yoyogi Terrace in Shibuya. Minagawa Village applies rental row-house system. On the other hand, Yoyogi terrace is also row-house managed by division of ownership. Regarding the ownership pattern, like Dragon Court Village, Minagawa Village is chosen as a case study.

Primarily, the background on the design process and the architectural brief of Minagawa Village will be presented. Minagawa Village is located in Omotesando (Jingumae, Shibuya-ku, Tokyo). The wooden house built in 1957 was repurposed as an apartment building, completed in 2018 and designed by Toyoaki Kamimoto, a founder of Saiseikenchiku Laboratory. The site area is 454 square meters, the building area is 238 square meters, and the total floor area is 421 square meters. It is a six-unit building complex, consisting of a four-unit row-house (residence combined with office), a café, and a retail shop. Four residential units and a café are connected via 'Free Space' facing the garden. Since Minagawa Village is row-house, this type of free space is not the common entrance/designated common area. The four residential units and the café have independent entrances. (Figure 69)

Figure 68 – Minagawa Village 1
(left) Free Space (on the left) and garden (center); (right) Roof Covered Semi-Exterior Space (Source: Author)

According to Kamimoto interview notes, 08 April, 2019, the architect himself[57] was

[56] Construction Material Price Index. A vailable at: https://www.zai-keicho.or.jp/price_relative/ [Accessed 08 Mar. 2020]

[57] The semi-structured interview with Kamimoto was carried out on the 8th April 2019 at the Free space in Minagawa Village. Participants were Mr. Toyoaki Kamimoto (Principal architect at Saiseikenchiku Laboratory); Ms. Milica Muminović (Assistant Professor, University of Canberra. Her research extends the professional experience through studies conducted in Japan about identity, places, spaces in between architecture and urban design, public and private, with an emphasis on residential architecture in Tokyo); Ms. Ryoko Iwase (Principal architect / Landscape designer at Ryokoiwase. She works as an architect designing architecture, landscape design with public space in Japan; Satoshi Sano (Author and Principal architect at Eureka)

involved in the renovation works. The owner held a competition in which proposals were sought from multiple professionals in order to decide on the consulting company for this property. While the others proposed rebuilding, only the Kamimoto team proposed renovating and won the competition. The wooden house built in 1957 had been used as an apartment complex with repeated extension and reconstruction works. Some of the works were illegal because of the lack of building permission and completion inspection; it was understandable that other teams suggested the existing building be demolished and rebuilt. The existing building was not only illegal, but also did not satisfy the building regulations for this site and was not economically feasible. However, by legalizing the existing building, Kamimoto, as explained in the interview, proposed an "architecture and its mechanism to create a new community that cannot be achieved by a new building", and the proposal was accepted by the owner. Kamimoto' offices relocated to Minagawa Village for ten years after completion, and he recruited the tenants and managed the shared spaces. Kamimoto is also currently (as of 2019) involved in managing the entirety of Minagawa Village.

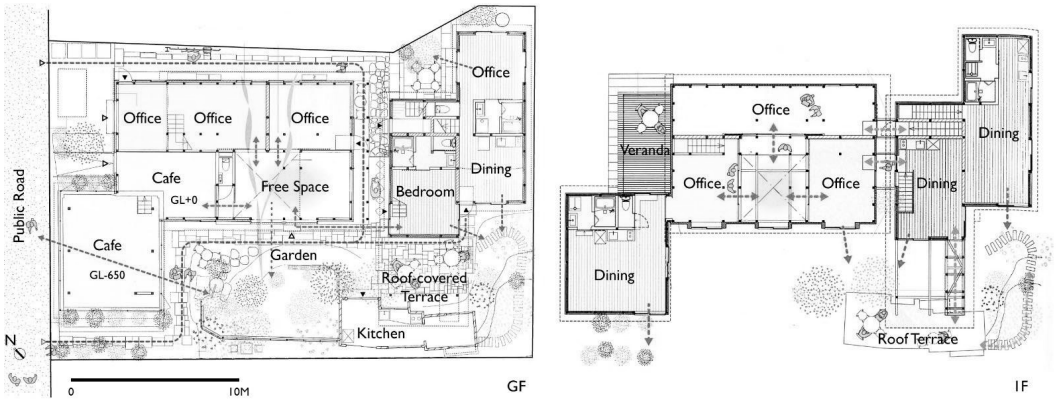


Figure 69 – Minagawa Village Floor Plans
(Source: Saiseikenchiku Laboratory)

The interview to Kamimoto was carried out in Free Space café, Minagawa Village. The interview highlights some points of further discussion.

Kamimoto :There is a clear reason for making Minagawa Village a row-house. A row-house has the advantage of fewer legal requirements (e.g. fire protection) compared to communal housing. Row-house is comprised of independent units, and all of which must have direct access to the road, because row-houses cannot have any common-use areas. These requirements present a design challenge (in the orthodox way of thinking/designing). By solving the intricate puzzle of row-house requirements, the space composition of row-house becomes (almost inevitably) elaborate and complex, but I found the spatial extensibility and redundancy that are generated by the complexity in space composition of row-house. In order to create a space where four residential units

and the café are continuously connected, the fire protection zone (fire walls) could be eliminated, by not providing a designated common-use area. You may perceive the 'free space' as common areas, but it's legally a retail shop (non-common-use area) and therefore avoids communal housing classification by the law.

Author: How did you foster people's interaction without having any common-use areas?

Kamimoto: If we made designated common areas, as legally defined, 'loose connections' and 'ambiguous spaces' are hard to produce. That is because, when it becomes legally designated common areas, fire protection requirements arise, In Minagawa Village I created the free space where people could not clearly perceive the inside/outside boundary, whether it was a part of the house or another dwelling. It could be called the 'otherness' or 'multi-personality' of the space. By doing so, it becomes a 'common space' in its core, rather than the 'designated common-use area' as legally defined. It has the potential to create a community. The handling of the 'common area' under the current building regulation is wrong. Architects should not only talk about the attractiveness of space, but also the legal frameworks.

Author: (Free space changes as indoor-outdoor space) What were your external space of row-house considerations?

Kamimoto: I also look at the spaces (e.g. Dragon Court Village) designed by Eureka, and I also think about the share of outdoor space. While solving the space puzzle of a row house (secure outdoor passage to each dwelling unit), the outdoor 'margin' is naturally created. There is a sense that an outdoor share space will be created by, let's say, expanding the 'margin' a little more than necessary. And there is free space (as an internal space near the exterior) as a thing to activate it further.

Figure 70 – Minagawa Village 2
(left) Frontal Street of Minagawa Village; (right) View from the Street, Minagawa Village (Source: Author)

Muminović: Minagawa Village is composed of residential units combined with offices, but there are no people who actually live there, as each unit is being used as an office. If the category of occupants changes in the future, how will the use of free space be altered? (If

the number of people who actually live in the units increases, free space will not be as public as it is now, will it become more private?)

Kamimoto: Even in that case scenario, basically the same. Even now, luncheons are held in free space, and they are used as if they were living. There were many people who buy and eat lunch at a convenience store, so Kanayama-san thought it pity and she started cooking in the garden to hold lunch parties. If there were people living there, the kitchen in the garden will be used even more than now and be more active. One of the main concepts of Minagawa Village is: "Let's get the commonplace/natural communications back to the place of everyday life". In today's apartment buildings, they often never see the owner until they leave the house to rent and start living. In Minagawa Village, the owner meets all residents and then, after being approved, they move in. The recruitment of tenants is done by word of mouth, not by real estate broker.

Author: All recruitment of tenants of Minagawa Village is done by recommendations, without real estate broker, but will that policy change in the future?

Kamimoto: Although it is sometimes difficult to look for recommended tenants if you do not operate in this way, the space will be 'unused'. Network of personal contacts and face-to-face communication are crucial in spatial usage. In terms of space composition, external spaces in row-house are inevitably shared among residents. In order to set up entrances for each unit at row-houses is not efficient (in the sense of land utilization), an external space is generated. Designing row-houses is addressing the issue of conceptualizing the external space. Designing external spaces of a row-house is to also design the community to be created.

Muminović: Who manages the tasks such as cleaning of exterior shared space? In the West, it's the most difficult for the user to recognize the place as 'their place'. They do not think so unless they pay money or help manage them.

Kamimoto: It's managed by my office. But the tenants consider it as their own place. Because they also eat or drink in the garden.

Iwase: I think that the external space of Minagawa village is modest in volume and because of its smallness it is recognized by the users as shared space. How people conceive a space would be different, be it an open space in the residential tower or an external space of a commercial facility. Conclusions cannot be made only by the type of management; it depends on the spatial typology.

Figure 71 – Minagawa Village 3
(left) Free Space, Minagawa Village (Source: Author); (right) Rice-cake Making Event in Minagawa Village (Source: Saiseikenchiku Laboratory [58])

Similarly to the Dragon Court Village, Minagawa village has human-scaled, small and dense spaces assembling semi-exterior space and exterior space in a low-rise architecture with ground floor plus one or two stories. The feature that the exterior space is divided to have spatial continuity is also similar in character. As Kamimoto noted in the interview "[…] space composition of row-house becomes (almost inevitably) elaborate and complex, but the spatial extensibility and redundancy that are generated by the complexity in space composition". Minagawa Village is equally complex and highly dense. Since people have lunch in exterior/semi-exterior spaces, 'low-rise high-density space' particularities help to attract people to exterior/semi-exterior spaces.

Minagawa Village's 'Free Space' is a large *engawa*-like space which can also be used as a semi-exterior space integrated with the garden. *engawa* is the traditional spatial element of the Japanese architecture, which is the intermediate area between the interior and the exterior. *engawa* is utilized as a space to go in and out, move between rooms, observe the exterior, to welcome visitors, etc. In other words, it is a 'no fixed function but versatile' space, which is also observed in the free space of Minagawa Village. When all the sliding doors are open, the space becomes a climate-responsive semi-exterior space, allowing airflow. Tables and sofas are placed under the roof, forming a comfortable space in another semi-exterior space of Minagawa Village. The presence of these two semi-exterior spaces makes it easy to utilize the central garden (an exterior space without a roof or similar elements). In addition, the temperature is lowered by the trees in the central garden and the airflow in the semi-exterior space makes it more comfortable, regarding temperature. The exterior and the semi-exterior spaces synergistically form a climate-responsive environment, providing people with opportunities for outdoor habitation and interaction.

[58] Available at: http://minagawa-v.com/wp-content/uploads/2018/12/IMG_3548@2x.jpg [Accessed 5 May. 2019].

5.6. Summary

This chapter described the residents and the neighbors' initiatives related to the creation and the management of Dragon Court Village located at the residential area in Aichi prefecture, focusing on the production and the management of Space of PPI. The summarized overview is as follows.

1) The *hanare* and the surrounding semi-exterior space were produced by using the conceptual design theory of trans local.

2) The design development had been done by reflecting the local context of the project area. The design process was the repeated study of parking lots location and the natural ventilation in the semi-exterior space underneath the architectural massing.

3) After the building completion, residents have started transforming the piloti space into a lively place, in their own way. The life of the residents had overflowed in front of each residential unit (*afuredashi*), as it did in the old residential areas of Japan. A year after the building completion, one of the residents begun to run a weekend flea market. The ground level of the building, gradually began obtaining a public quality, meaning anyone could visit and participate in the events.

4) The transition of private areas has been formed in outdoor or semi-outdoor spaces has been analyzed by comparing the range in which *afuredashi* appeared, and all semi-outdoor spaces were the location where the *afuredashi* elements appeared.

5) Several *afuredashi* elements are located on the sites' west side has a lot to do with the location of the vegetable shop likewise located on the west side. Because the private territory had been increasing until 2017, as of 2019 the existence of *afuredashi* elements could only be partially confirmed. This is believed to have been caused by the relocation of the vegetable shop and the magnitude of its influence.

6) The comparative study of Dragon Court Village and Minagawa Village, which was chosen among 69 row-houses, verified that low-rise high-density spatial particularities help to attract people to exterior/semi-exterior spaces.

5.7. Overview

Dragon Court Village has become a place for spatial practice to create QoL, especially in the *hanare* area and its surroundings. The practice was performed by people who were unable to meet their QoL in their past living spaces. We are not sure if they should call them vulnerable, but at least they couldn't find a 'my place' that fits them comfortably in society. They felt the possibility of discovering 'my place' in the space where *hanare* was arranged in the low-rise and dense spatial characteristics, and they lived there, worked, and developed spatial practice. *Afredasi* (spatial appropriation), which they develop by installing items for daily life around their own dwelling units, spreads further from the area around their dwelling units to the outside, and the spatial practice influenced in the vicinity. The ground level PPI of Dragon Court Village has become a place of social interaction involving the neighborhood. After Ms. Yamakawa moved, the significant reduction in spatial appropriation not only around her dwelling units but throughout the site was indicative of human interaction. In other words, it shows that multiple humans are involved in PPI, and that their interaction and diversity have a positive impact on the behavior of individuals and groups. PPI functions as a place for social interaction only when spaces are occupied by meaningful human activity.

Spatial Morphology and the Creation of PPI

There is a lot in common between Dragon Court Village and Minagawa Village, there is a big difference regarding the interaction of public and private Specifically, the presence of *afuredashi* elements is the point of interest: such elements were observed in the Dragon Court Village, but not in Minagawa Village. As it is the case with Dragon Court Village, it takes a certain amount of time after its construction before the *afuredashi* elements appear, so even in Minagawa Village, *afuredashi* emergence will occur over time, and the private area might be formed spontaneously. However, the two cases show a significant difference in spatiality, demonstrating that the difference greatly influences the formation of the private areas in the semi-exterior and outdoor space.

Figure 72 is the field note quoted from the research of narrow alley in Tsukishima, Tokyo, by Aoki and Yuasa (1993). It concludes that from the comparison of the number of *afuredashi*, the open exterior space 'Semi-Open type' that allows passing through (rather than the dead space with high closedness of 'Semi-Closed type') has a tendency to be more likely to be used privately such as spill overs elements of *afuredashi*.

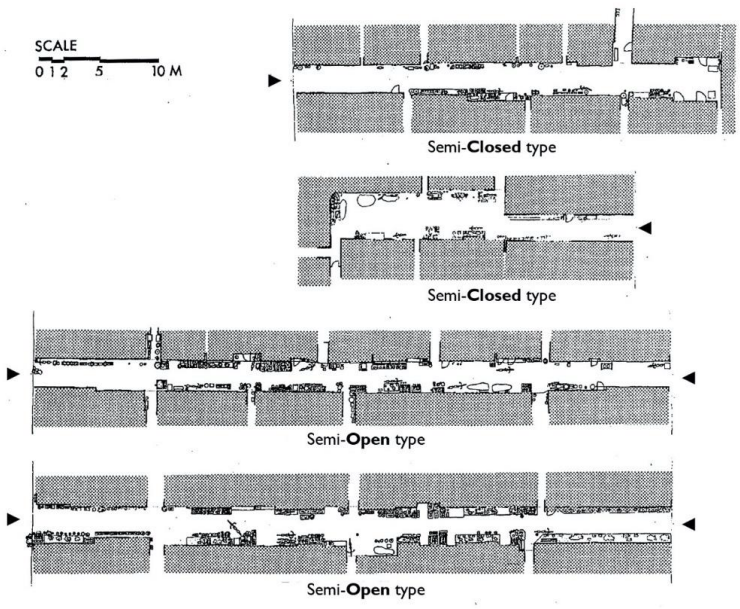


Figure 72 – Field note of Afuredashi in Roji
(Source: Aoki, Y. & Yuasa, Y., 1993)

The two results represent the major difference between Dragon Court Village and Minagawa Village. Dragon Court Village allows people to pass through the massing or the exterior perimeter, categorized as Semi-Open type. Alternatively, Minagawa Village is conceptualized as a Semi-Closed type. The tendency noted by Aoki and Yuasa (1993) was also applied to Dragon Court Village and Minagawa Village, and *afuredashi* were observed at Dragon Court Village, but hardly observed at Minagawa Village. That is, in the Semi-Open type, a private area is likely to be formed spontaneously in the exterior space, whereas in the Semi-Closed type, its formation is relatively difficult.

Therefore, if human interaction is to be created through the formation of a private area opening to the exterior and utilized as public space, Semi-Open type space is better than other types, as pointed out by Aoki and Yuasa (1993). Yet, the construction of low-rise, high-density redevelopment in modern Tokyo is carried out only on small or irregular sites with a small distance between evelopments. In such cases, the space configuration of the Semi-Open type is difficult to achieve, and then Semi-Closed type is adopted in the current situation, in Tokyo.

Nevertheless, according to the interview with Kamimoto, although Minagawa Village, possessing Semi-Closed typology, does not have *afuredashi* elements, so the public-private and human interaction are produced in this low-rise, high-dense environment with semi-exterior space thanks to his active management. It demonstrates that though the formation of a private area in exterior and public space is unlikely to occur spontaneously in Semi-Closed types, active operation makes it possible to facilitate public-private and human

interaction.

However, even in the Semi-Open type Dragon Court Village, *afuredashi* (the formation of a private area outside) does not always exist, and the occurrence was triggered by a key user. Even in the Semi-Open type, the operation of space is desirable to induce collaboration.

In conclusion, low-rise, high-density, semi-exterior space has the potential to create public-private and human interaction, if certain conditions are met (e.g. designing semi-private spaces that will facilitate interaction between residents and neighbors, innovative spatial management strategies, etc.). However, when dealing with small-scale, low-rise, high-density redevelopments in contemporary Tokyo, the space configuration tends to be a Semi-Closed type due to site constraints. Thus, not only the morphological conditions of low-rise, high-density and semi-exterior, but also the active management is required to produce public-private, human interaction.

Management of PPI

Regarding the particularities of spatial operation, the relationship between the type of management and the ease of spatial sharing, discussed with Mr. Kamimoto (architect and manager of the property), is a very important argument. Certainly, there is relevance in discussing the spatial management, but on the other hand, the size, shape, and nature of the space are considered to have a great influence on fostering interaction, both spatial and social. It is the effect brought about by the spatial characteristics of low-rise and high-density, and public-private interface that is achieved by the exclusion of designated common area.

"People cannot use the space unless they are actively involved" (Kamimoto interview notes), is an understandable statement, but another person manages it, for both Minagawa Village and Dragon Court Village, even though the space is shared and used by residents. In Dragon Court Village, day-to-day managers and operators are the residents, including Ms. Y. However, to be precise, there is a manager who is the owner/landlord of the building and the property. The owner/landlord lives in the adjacent property. In Minagawa Village, Kamimoto clearly declares that he oversees the management because he is the assigned manager. (Kamimoto interview notes, 08 April, 2019) Other tenants might also have the habit of cleaning the area around the entrance. However, even if there is no 'self-management' and fully managed/operated by Kamimoto's office, tenants are familiar with Kamimoto and his employees and are familiar with spatial management. Thus, it would be possible for other residents to use the space, while communicating with the manager.

* * * * *

Chapter

6

6

PPI — Community Level

This chapter describes the analysis of PPI in a community level. The focus of the analysis in this chapter is on the change between conception and management.

6.1. Project Outline — Haus-Hyazinth

Haus-Hyazinth is a weekend house that poet and architect Tachihara Michizō (1914–1939) envisioned building for himself on the shore of the pond Besshonuma[59] in the former Urawa City (now Saitama City).

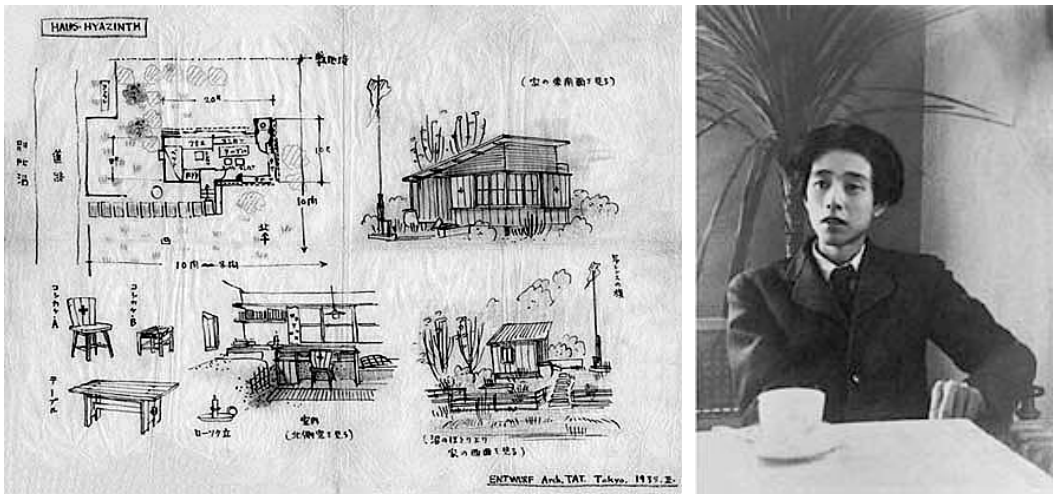


Figure 73 – Haus-Hyazinth, designed by Tachihara Michizo
(left) Sketch by Tachihara Michizo; (right) Tachihara Michizo (Source: The Society of Michizo Tachihara)

It is a small wooden house with a total floor area of approximately 18 m², with a large corner window and a table and bench in the southeast corner, a small window and bed on the opposite (west) side, and a horizontal window in between (north side) as a study desk. There

[59] In Tachihara's original design, the construction site was on the east side of the pond, but as a result of administrative consultation, it was built on the west side of the pond in 2004.

are no wet areas except a small toilet.[60] Tachihara is said to have made about 50 trial plans from 1937 to the spring of the following year, but he passed away without his plans being realized.

In 2001, more than 60 years after Tachihara's conception, a citizen's initiative to build the Haus-Hyazinth began, and donations for the construction were received from all over Japan. The construction drawings were drawn based on sketches left by Tachihara (Figure 73 left, which seems to be the final draft), and Haus-Hyazinth was built in Besshonuma Park in 2004 after consultation with the local government (Figure 75). Since then, it has been managed and maintained by the citizens, and 2020 marks the 16th year since its completion.

Figure 74 – Model of Haus-Hyazinth
(Source: Ookura Hideki)

Figure 75 –Haus-Hyazinth upon completion
(Source: Ookura Hideki)

[60] When it was built in 2004, the toilet was changed to a sink for convenience.

6.2. Context and Relevance

Haus-Hyazinth in this chapter is somewhat different in nature from the case studies in Chapters 4 and 5, in that its spatial form is different from the previous two cases. However, conceptually, it can be considered a *hanare*, and from the context of an 'own place,' it is highly relevant to the case studies in Chapters 4 and 5.

Even more important in the context of this thesis is that the space management of Haus-Hyazinth extends to the level of the community and has been operating for over 15 years. This is about twice as long as the previous two cases (7–8 years from completion). It is a meaningful example of how PPI can be managed and maintained over time. Therefore, while the previous two cases focused on the relationship between 'space and humans,' the examples in this chapter focus on 'humans' and analyzed the management of PPIs in detail.

Also different from the previous two cases is that the meaning of 'public' involves not only spatial character, but also official administration (local government), which means ownership of the space (building). 'Public and private' basically refers to 'cities and individuals (or groups)', but the verification in this section further adds the perspective of 'official and private.'

Public–Private Partnership

Attempts to manage and maintain public spaces through citizens' activities and privatization have been made since the 1990s. In the 2010s, public-private partnerships became active with the deregulation of private businesses in public spaces. They are becoming more diverse, and new ways of managing public spaces are being sought.

If the activities of citizens and the participation of private businesses are comprehensively called 'private' vis-à-vis the public, private management of public spaces is increasing. Although private management may be able to avoid the uniformity that public administration-led public management tends to fall into due to various restrictions and may achieve excellent design and management, it should be kept in mind that the space is public. However, given that it is inferior to public management in terms of inclusiveness, positioning and utilizing private activities and management in public spaces is an important issue today.

There are many cases of private management in public spaces, including private businesses building private facilities in parks, such as Inshotei in Ueno Park (founded in 1875), and

Starbucks Coffee in Ueno Park and Racines Farm to Park in Minami Ikebukuro Park in the 2010s. However, the case reported in this research is rare, in that a voluntary citizens group which does not aim for profitability carries out the conception, construction, management, and maintenance of the park facility, as civil activities.

Therefore, this case study will give new knowledge about ways to manage public space that include private management. The author has been involved in the researched case, Haus-Hyazinth, since before its construction, and the research was based on that experience.

6.3. Data Collection

In this research, we conducted interview surveys, questionnaire surveys, and a document survey.

1) Interview surveys of a total of 10 people: the founders and steering committee members of Haus-Hyazinth's citizens group (Haus-Hyazinth Making Society, renamed Haus-Hyazinth Society[61] in 2004 upon the completion of the Haus-Hyazinth construction;[62] hereinafter, the related persons interview.)

2) Questionnaire surveys of a total of 45 visitors to Haus-Hyazinth[63]

3) Document survey (meeting minutes, event flyers, account book, name list of the members, Haus-Hyazinth management diary, and administrative documents exchanged with the local government)

[61] The Haus-Hyazinth Society is an organization with approximately 100 members, including the 16 members of the steering committee and 18 volunteer staff members.

[62] From April 2018 to January 2019, we interviewed the five founders and the five members of the Haus-Hyazinth Society's steering committee, and used the transcript of the recorded data as the data for the research.

[63] The questionnaire surveys were conducted over 12 days during April 2019. The house-guide (volunteer staff from the Haus-Hyazinth Society) distributed questionnaires to visitors, and 45 of the 291 visitors answered.

6.4. Analysis — Creation

The Beginning of Citizens' Initiatives—Individual Actions

The citizens' initiatives were started by the five citizens shown in Table 10 (hereinafter, the founders) in 2002 as the Haus-Hyazinth Making Society. The founders all had different motivations, except that Mr. N and Mr. Y had points in common. Although their goal was to construct Haus-Hyazinth, their purpose was not unified. Next, we describe the process by which the five citizens' private actions led to the construction of Haus-Hyazinth in a public park.

Name	Title (at the time) Address	Initial motivation	Type of motivation
Mr. N	Architect Omiya-ku, Saitama-shi	Besshonuma is a place I used to go to play since I was in elementary school. Since I knew that there was such an episode there, I wanted to build it.	Interest of local place identity
Mr. Y	Architect Urawa-ku, Saitama-shi	I was very interested in having this architectural episode in a place I was familiar with when I was in junior high school.	Interest of local place identity
Mr. M	Art curator Suginami-ku, Tokyo	I am engaged in activities that connect art and society. I dreamed that this project would go in that direction—place where artists of various genres gather.	Artists' network vision
Mr. S	Former art curator Sakura-ku, Saitama-shi	I was interested in literature and also deeply involved in art. It started as a cultural program.	Vision of cultural programs
Mr. K	Novelist Minami-ku, Saitama-shi	I wanted to build a good museum of literature, because Saitama City has no literature museums.	Vision of literature museum construction

Table 10 – Founders' initial motivations[64]
(Source: Author)

Process from Conception to Construction

Table 11 outlines the process leading to construction. In order to realize the construction of Haus-Hyazinth, the main issues were the acquisition of a construction site in public property and the acquisition of construction funds. Both the main issues required that many citizens have interest in and agree with the construction significance.

[64] From data obtained from the related persons interviews (author's English translation of the Japanese raw data).

Year	Month	Description
1995		Mr. N (architect) proposed unsuccessfully to the mayor of Urawa City to build Haus-Hyazinth in a public park (Besshonuma Park).
1998		Mr. K (novelist) conceived of the construction of Haus-Hyazinth as a literature museum.
2001	Autumn	Mr. N consulted Mr. Y (architect) and they (re)started the movement to build Haus-Hyazinth together. Mt. Y consulted Mr. M (art curator).
2002	Spring	Mr. M consulted Mr. S (former museum curator), who consulted Mr. K (novelist). The five people founded started full-scale activities as the Haus-Hyazinth Making Society.
	Jul. (to Mar. 2003)	Meetings of the five founders (7 times in total)
	Nov.	The founders had a discussion with the Saitama Prefecture Park Division but could not get its acceptance.
2003	Jan.	Mr. N and Mr. Y visited the Tachihara Michizo Memorial Museum (at the time). The museum decided to support the movement to build Haus-Hyazinth.
	Jun. (to Mar. 2004)	Meetings regarding the construction drawing, based on Tachihara's schematic drawings (sketches).
	Mar.	The proposal was submitted to the secretary of the mayor of Saitama City, in the presence of the Saitama City Planning Department Manager and Cultural Promotion Division members.
	Apr.	The event "Gathering for Making Haus-Hyazinth" was held. Approx. 150 people participated.
	Sep.	Calls for donations of construction funds started.
	Nov.	An application for a park facility construction permit was submitted to Saitama City.
2004	Feb.	The donation amount reached 4 million yen.
	Feb.	An Agreement Regarding Haus-Hyazinth was concluded with Saitama City.
	Mar.	A certificate of building confirmation application was issued.
	Mar.	Groundbreaking ceremony (start of the construction of Haus-Hyazinth)
	May	Topping out ceremony
	Sep.	Donations reached approx. 7 million yen from approx. 900 people.
	Nov.	Construction of Haus-Hyazinth completed.

Table 11– History of citizens' initiatives regarding Haus-Hyazinth, from conception to construction
(Source: Author)

Acquisition of Construction Site

The background to the construction of the Haus-Hyazinth is described below, centered on the process of consultation with the local government regarding acquiring land for construction. Table 12 shows the factors that led to acquisition of the construction site, as told in the related persons interviews.

Interviewee	Reasons given by the interviewee	Factor
Mr. Y	The people from the local government (Park Division) saw that many citizens gathered for the event "Gathering for Making Haus-Hyazinth", and that made them take this seriously.	Citizen's interest
Mr. Y	The director of the Park Division happened to like Tachihara Michizo.	Coincidence
Mr. M	Despite the cities of Urawa and Omiya merging to become Saitama City (an ordinance-designated city), people in the areas of the two former cities are opposed to each other, so the government hoped that this construction project would become a symbol of harmony. (Mr. N is from the Omiya area, and Mr. Y is from the Urawa area.)	Political timing and intentions
Mr. M	Since the late 1990s, outsourcing of directly managed facilities and privatization have been progressing, including designated management, and this project was just in time for these.	Social situation
Mr. K	The city officials saw how the donations were gathering, and if the plans were actually advanced, the city officials started to think letting them do it.	Financial planning feasibility
Mr. K	The mayor and his secretary did really well.	Local government's kind understanding

Table 12 – Factors for the acquisition of the construction site[65]
(Source: Author)

According to the related persons interviews, the factors that led the local government to make

[65] From data obtained from related persons interviews (author's English translation of the Japanese raw data).

the rare decision to allow a private organization (neither controlled nor protected by law) to lease public land[66] free of charge for a building were realized by multiple overlapping factors and background elements shown in Table 12.

The concrete background of the acquisition of the construction site is as follows. As shown in Table 11, in 2002, the founders approached Saitama Prefecture Urban Development Park Division with a proposal in order to acquire a construction site in Besshonuma Park, which was a prefectural park at the time). The proposal document gave "Introducing and exhibiting Tachihara Michizo's work" as a building use, and a poem by Tachihara was attached.

The prefecture officials replied that they could not say anything, because the cities of Urawa, Yono, and Omiya were to merge and become the ordinance-designated city of Saitama in 2003, and the management of Besshonuma Park would transfer from the prefecture to Saitama City. Subsequently, the founders approached Saitama City, but received the reply that the city could not permit it. Even though neither the prefecture nor the city could permit the construction, they gave the comments shown in Table 13.

Factor	Reasons given by administrations	By
Relevance of the project	It is quite difficult to allow recognition of a project for a person who has no direct link to the prefecture or city (who was not even born there	Prefecture
Relationship with citizens	The administration cannot allow it without a strong presentation of the relationship between the building and citizens and the participation and utilization by citizens.	Prefecture
Feasibility of financial planning	Is there a prospect for funding?	Prefecture
Citizen's interest	If citizens aspire for it, it could be reconsidered.	City

Table 13 – Comments from the administrations[67]
(Source: Author)

Table 14 shows the actions taken by the founders in light of the comments from the administrations.

Factor	Countermeasures	Details
Relevance of the project	Change the use of the building	The use of the building was changed from "Introducing and exhibiting Tachihara Michizo's work " to "Park facility, citizens' cultural activity facility".
Relationship with citizens	Change the plan to enable citizen gatherings	Change of the construction site. Initially, there was no space around the building, so they proposed another location in the park for the construction site so that the area around the building was big enough for citizens to gather.
Feasibility of financial planning	Make it feasible	Began a fundraising campaign and received donations of about 4 million yen (a little less than 70% of the target amount) in 6 months. Submitted the financial plan for management after construction to the city.
Citizen's interest	Acquire supporters and disseminate information	The event "Gathering for Making Haus-Hyazinth" was held. Approx. 150 people participated.

Table 14 – Countermeasures taken by the founders[68]
(Source: Author)

[66] To be precise, the construction site is rented not to the Haus-Hyazinth Society but to the Saitama Writers' Association, whose board member is the chair of the Haus-Hyazinth Society.

[67] From meeting minutes kept by the Haus-Hyazinth Society (author's English translation of the Japanese raw data).
[68] From meeting minutes kept by the Haus-Hyazinth Society (author's English translation of the Japanese raw data).

The details of the countermeasures taken by the founders (Table 14) are as follows. Firstly, the relevance of construction (building use) was changed from "Introducing and exhibiting Tachihara Michizo's work" to "Park facilities, citizens' cultural activity facilities", and the management policy stated, "Citizens are the main actors, and the facility is managed based on their independence of mind. The managing activities are based on literature and art." The revised proposal, not as a building that honors Tachihara Michizo but as a complex, multipurpose cultural activity facility, was submitted to Saitama City in March 2003.

Secondly, there were discussions with city officials about the location of the building in the park, from the perspective of involvement with citizens. The initial proposal had no space around the building, but the founders changed their plan and proposed another location in the park, corresponding the city officials' suggestion that it is better to have a sufficient area around the building so that citizens can gather and that it not be far from the park management office. They ultimately proposed to the city a larger section (about 300 m^2) near the park management office.

To acquire supporters, the founders held events, disseminated information on construction plans by publishing in newspapers and so on, requested cooperation from the then-Tatehara Michizo Memorial Museum and local organizations. Among these, one of the factors contributing directly to the land acquisition for construction was the event "Gathering for Making Haus-Hyazinth" (hereinafter, the Gathering) held at Besshonuma-Kaikan (a facility in Besshonuma Park) in April 2003. Approximately 150 people attended the Gathering, demonstrating citizens' interest, and Saitama City began to consider the site provision and construction permit.

On the feasibility of the financial plan, they began a fundraising campaign in September 2003, and thanks to measures to acquire supporters, they reached donations of approximately 4 million yen from a target of 6 million yen in February 2004. They also submitted a financial plan to cover the management and maintenance costs after construction, with income from annual membership fees from an expected 200 members.

In this way, the founders continued their activities while changing the concept, and gained supporters and construction funds. As a result, the Haus-Hyazinth construction project was designated a "Saitama City ordinance-designated city commemorative citizens' project" (a project commemorating the city's transition to ordinance-designated city status in April 2003), and a construction site (about 300 m^2) was acquired in the park. In February 2004, the Agreement Regarding Haus-Hyazinth was concluded with the city, then construction started in March and was completed in November.

Measures for Obtaining Supporters and Construction Funds

The founders took the following measures to obtain supporters and called for donations of construction funds.

1) Disseminating information about the construction concept by holding events and publishing in newspapers, etc.: In addition to the Gathering, an event titled "Besshonuma Literature Forum: Toward the Construction of Haus-Hyazinth" was held in November 2003, and lectures on Haus-Hyazinth were given at related organizations. Information was disseminated in newspapers and magazines, such as the *Yomiuri Shimbun*, *Mainichi Shimbun*, *Saitama Shimbun*, and *TV Saitama*.

2) Request for cooperation from the then-Tachihara Michizo Memorial Museum: In order to approach related people and fans of Tachihara Michizo on a nationwide scale, they requested cooperation though the then-Tachihara Michizo Memorial Museum and called for donations from the members.

3) Request for cooperation from local organizations: They submitted sponsorship request forms to the Rotary Club, Chamber of Commerce, and other bodies to collect donations. When taking these measures, the founders collected unit donations of 3,000 yen from September 2003, targeting a construction fund of 6 million yen, and at the end of construction, about 7 million yen had been donated from all over the country. The construction fund was covered entirely by donations, and no subsidies or other money was obtained.

Characteristics of Supporters (Donors)

Figure 76 shows the donation amounts (total number of donators: approx. 850), classified by donator address.

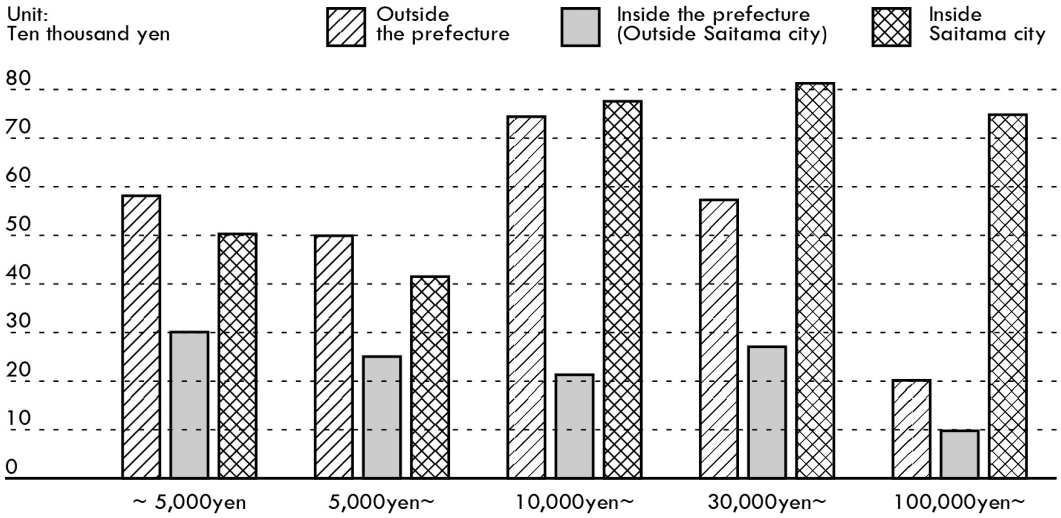


Figure 76 – Amount categorized by donor address for each amount of donation
(Source: Author)

6.5. Analysis — Management

Characteristics of the Management and Maintenance of Haus-Hyazinth

Regarding the characteristics in terms of management and maintenance, the prerequisite is "Haus-Hyazinth (the site and the building) is private real estate that is outside the control of the local government, but is also surrounded by a public space (a city park of approximately 8 ha) managed and controlled by the local government". Table 15 shows the characteristics of management and maintenance according to the specific conditions (A to D) of the prerequisites, and Table 16 shows a classification of these characteristics.

As advantages of 'public-ness,' volunteer staff (hereinafter, house guides) who can handle visitors in Haus-Hyazinth can interact with the general public, and people who were originally uninterested may become interested, due to characteristic C-1. It is explained later that the management of Haus-Hyazinth gradually shifted to the general public due to this characteristic.

Specific conditions		1 Advantageous characteristics	2 Limiting/problematic characteristics
A	It is surrounded by a park managed by the local government.	It benefits from "minimum protection and management by the local government" (e.g. security guard patrols in the park).	The minimum rules in the park must be followed.
B	Parks are not private land as a revenue business.	There are no instructions on management contents. (It is not required to contribute to profitability.)	Unable to run a profitable business
C	It is in a park where many citizens come and go	Various citizens can visit.	Since visitors cannot be selected, there are problems such as nuisance.
D	Private real estate outside the local government's control	There is no control or restriction by the city on the premises.	The local government does not perform maintenance.

Table 15 - Characteristics of management and maintenance
(Source: Author)

Classification keyword	Characteristics	Specific characteristics
Public-ness	Open to the public in terms of visits and management	B-1 (Autonomous management) C-1 (Anyone can visit)
Safety	Minimal protection secured, even though impossible to select visitors	A-1 (Patrolling of security guards, etc.) C-1 (Nuisance, etc.)
Extraterritoriality	Various actions can be done freely	A-1 (Comply with minimum rules) D-1 (Free from the control by the city)
Self-management	Although it is a non-profitable activity, it must be maintained properly	B-2 (Profit business not possible) D-2 (City does not maintain)

Table 16 – Classification of characteristics of management and maintenance
(Source: Author)

The advantages of 'extraterritoriality' are several. The Haus-Hyazinth Society is free to perform various activities within the site (building modification, exterior modification, holding events, etc.), but on the other hand, the Haus-Hyazinth Society must carry out all maintenance on the site including the building. Maintenance includes the cleaning of buildings, repairs for aging parts, cleaning of premises, regular mowing, and maintenance of outdoor signs and outdoor furniture. Since Haus-Hyazinth Society is a not-for-profit voluntary organization, it is a challenge to generate funds for repair work costs and to perform maintenance operations that are difficult for laypeople to perform. However, extraterritoriality keeps the cost of repair work to a minimum. In addition, part of the maintenance is gradually changing to be performed by the administrative side. These will be described later.

Characteristics of the Visitors

This subsection considers the characteristics of visitors to Haus-Hyazinth. Table 18 summarizes the characteristics of all respondents (45 people) to the visitor questionnaire (a questionnaire administered to Haus-Hyazinth visitors over a month)[69] classified by type.

[69] The questionnaire survey was conducted for a total of 12 Haus-Hyazinth open room* days during April 2019. The house guide distributed questionnaires to the visitors, and 45 of the 291 visitors answered.

1	Respondent's place of residence	6	Did you know about Haus-Hyazinth on your first visit?
2	How many people are you visiting today?	7	Motivation for the first visit
3	Number of visits so far	8	What do you do when you visit?
4	Frequency of visits to Haus-Hyazinth	9	Do you think it was good to have Haus-Hyazinth?
5	Frequency of visits to Besshonuma Park	10	Who do you think constructed Haus-Hyazinth?

Table 17 – Question items for visitors
(Source: Author) * Multiple answers are allowed for Questions 7 and 8.

Type of respondent	Type ratio	Respondent's place of residence			Visiting alone	Talking	Interest in Tachihara	Built by the local gov't
		Local	Medium distance	Long distance				
All respondents	100%	45%	32%	23%	43%	59%	39%	23%
First visitor	75%	35%	41%	24%	38%	70%	46%	26%
Repeat visitor	25%	82%	0%	18%	55%	30%	9%	10%
Park users	27%	75%	8%	17%	58%	55%	8%	0%
Non-park users	73%	36%	39%	24%	36%	58%	48%	29%

Notes: Definition of terms. The same applies in the text.
- [Park users]: Respondents who come to the park regularly (Non-park users: Irregular park users)
- [Type ratio]: Percentage of that type among all respondents
- [Local]: Saitama City; Medium distance: Saitama Prefecture (outside Saitama City) or Tokyo; Long distance: Others
- [Talking]: Respondents who answered "*Talk to a house guide or a friend they came with*" to Question 8. The other answer item is "*Stay without doing anything*".
- [Interest in Tachihara]: Respondents who answered "*Because of their interest in Tachihara Michizo*" to Question 6. The other answers are "*Somehow I was interested, walking in the park*" (Interest in locality) and "*I was interested in Haus-Hyazinth*" (Interest in architecture).
- [Built by the local government]: Respondents who answered "*Saitama Prefecture*" or "*Saitama City*" to Question 10. Other answer items are "*Citizens group*", "*Company*" and "*Individual*".

Table 18 – Results of the visitor questionnaire survey (Characteristics by visitor type)
(Source: Author)

Most visitors are first-time visitors, and one in four people has visited multiple times. Most repeat visitors are from Saitama City. Many people come because of their interest in Tachihara, but they tend not to become repeat visitors. Repeat visitors tend to be motivated by their first visit to Haus-Hyazinth with interests in locality and architecture.

Management

This subsection describes the operation of Haus-Hyazinth. There are two main management activities: 1) open room sessions at Haus-Hyazinth, and 2) utilizing Haus-Hyazinth in cultural activities.

1) Open room sessions at Haus-Hyazinth:

Open room sessions allow visitors to enter Haus-Hyazinth. Open room days are every Wednesday, Saturday, Sunday, and national holiday, and Haus-Hyazinth is open from 10:00 am to 3:00 pm. During open room sessions, the house guide handles visitors. Open room sessions have been held since 2004 as the main management activity of Haus-Hyazinth. In

* On open room days, visitors can enter Haus-Hyazinth.

the 15 years since its completion, Haus-Hyazinth has changed from being operated by the steering committee to being operated by the general citizens of Saitama City. In relation to changes in management (changes in the members of the house guides), Figure 77 to Figure 79 show the aggregated data of the Haus-Hyazinth Management Diary owned by Haus-Hyazinth Society.

The number of house guides is stable at 15 to 20 people. There are 2 or 3 new guides every year, with the members swapping regularly (Figure 77).

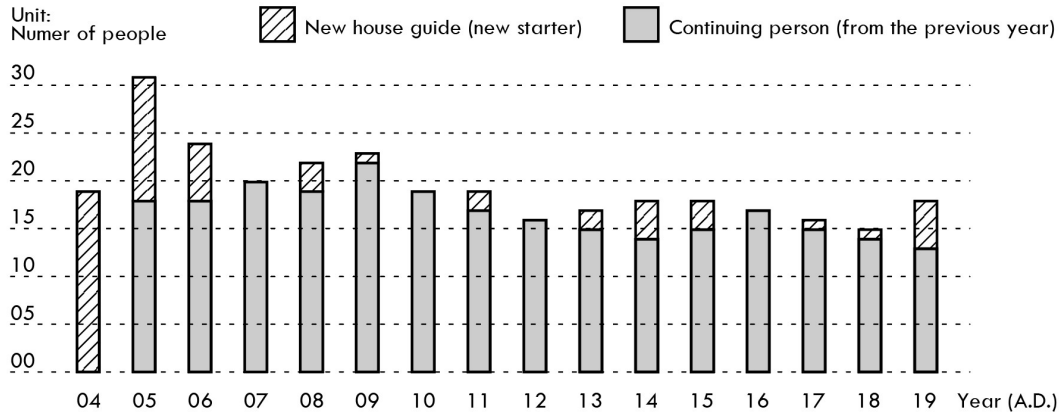


Figure 77 – Transition: Number of house guides
(Source: Author)

Except around 2004 and 2012, most (80% or more) of the house guides are Saitama citizens (Figure 78).

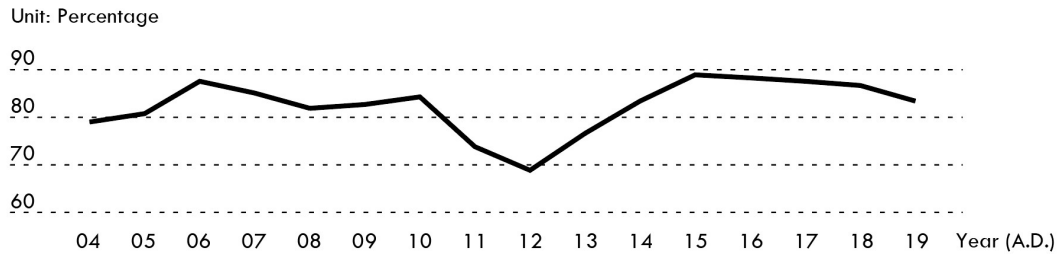


Figure 78 – Transition: Percentage of residents in Saitama city among all the house guides
(Source: Author)

For the first few years, the steering committee served as house guides as a provisional measure until the number of house guides increased, and as of 2004, they accounted for 89% of the total, including those from related organizations. However, after 3 years, the percentage of voluntary participants rose to 45%, the percentage of acquaintances of existing house guides reached 30%, and the number of house guides from the steering committee was reduced to 10%. The percentage of voluntary participants has continued to increase since then and has remained around 60% since the fifth year (Figure 79).

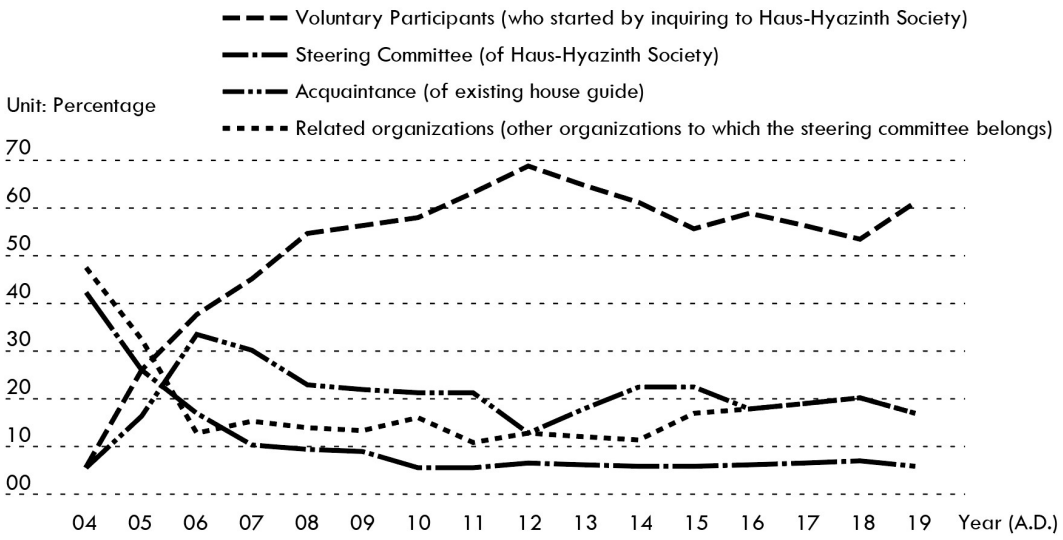


Figure 79 – Transition: House guide characteristics (Motivation to start working as a house guide)
(Source: Author)

2) Utilization of Haus-Hyazinth in cultural activities:

Table 19 shows the history of the utilization of Haus-Hyazinth in cultural activities. Initially (2004–2009), it was only used by the Haus-Hyazinth Society, but since the sixth year, it has also been used by other organizations. Specifically, it has been used by related organizations since 2010, and by external organizations since 2016. All these groups are based in Saitama City.

The two external organizations are both related to Saitama City, the local government. External organization 1 is chaired by the Mayor of Saitama, and external organization 2 is an organization that the PPP coordinator of Saitama City (Strategy Headquarters Administrative and Financial Reform Promotion Department) cooperates with. Haus-Hyazinth has been managed in a form that is not specifically related to the local government even though it is located in the public park, but a change in the utilization terms has meant that local government-related organizations have begun to use Haus-Hyazinth.

In March 2019, a request was made to the Haus-Hyazinth Society by the Meeting for the Establishment of the Besshonuma Park Liaison and Coordination Meeting, in which the City Park Division of Saitama City serves as the secretariat. Discussions concerned the future utilization of the entire park and utilization and management of Haus-Hyazinth. After more than 10 years, the possibility that local administration or related organizations may be involved in the operation of Haus-Hyazinth is emerging.

Period	Type of organization	Name of organization	Place	Contents
2004–present (every November)	Haus-Hyazinth Society "Haus-Hyazinth Dream Festival"		Front courtyard	Art exhibition, music, dance, art installation
2005, 2006 (every November)	Haus-Hyazinth Society		Front courtyard	Participated in Saitama Children's Festival as a cooperative organization
Spring 2010	Related organization 1	CAF.N	Inside the building	Exhibition, art installation
November 2014	Related organization 2	SMF	Front courtyard	Installation of temporary pavilion
2016–present (every October)	Related organization 3	JIA Saitama	Front courtyard	Workshop (architectural/art installation)
September (–December) 2016	External organization 1	Saitama Triennale	Inside the building	Screening of video and exhibition of paintings
October 2018	External organization 2	Urawa Clip	Front courtyard, Inside the building	Symposium, café and bar business
Notes: Definition of terms. The same applies in the text. - [Related organization]: Other organization to which the steering committee belongs - [External organization]: Organization other than related organization				

Table 19 – History of Haus-Hyazinth utilization in cultural activities
(Source: Author)

Figure 80 – Utilization of Haus-Hyazinth in cultural activities
(top & left) Utilization by Haus-Hyazinth Society; (right) Utilization by external organization 2 - Urawa Clip
(Source: Author)

Maintenance

This subsection describes the maintenance of Haus-Hyazinth, the building and the site. There are two types of maintenance: 1) regular maintenance, 2) repair and modification due to deterioration.

1) Regular maintenance: Regular maintenance is mainly mowing the site and cleaning the inside and outside of the building. The site is mown once a year; this was done by the steering committee for the first 5 years, but since 2009 it has been done by the park management office. Cleaning is done by the house guides. Cleaning of the roof and eaves (which is difficult for a layperson to do) was rarely done by the house guides, and since 2017 the park management office has been doing it. The fact that the park management office has begun to carry out part of the maintenance work does not mean that a new agreement has been signed with the city—the park management office is doing it voluntarily.

2) Repair and modification due to deterioration: Table 20 shows the history of repairs and modifications due to deterioration. While all repairs and modifications are at the expense of the Haus-Hyazinth Society, there is no need to place an order for public works due to extraterritoriality. This allows maintenance and management to be done at minimum cost through individual carpenters, DIY work by members, etc.

Year	Factor	Details of the repairs and modifications	Done by
2006	Improvement	Installed a gravel drain around the building to reduce rain splashing.	Citizens
2009	Deterioration	Replaced a rope for outdoor flag stands.	Builder
2011	Deterioration	Replaced the rotten wooden fence on the outside.	Builder
2011	Typhoon damage	Restored fallen trees inside the site.	Landscape builder
2013	Nuisance	Repainted over graffiti on the outer wall panel and outer wall in general.	Members
2014	Deterioration	Replaced deteriorating metal guide plate in the front courtyard with a new wooden guide plate.	Individual carpenter
2015	Deterioration	Remade the flag.	Members
2017	Deterioration	Replaced some of the outdoor wooden stairs due to rot.	Individual carpenter

Table 20 – History of repairs and modifications due to deterioration
(Source: Author)

Financial status

This subsection describes the financial status of the Haus-Hyazinth Society. Figure 81 shows a breakdown of its annual income and expenditure (excluding income carried forward from the previous term). The Haus-Hyazinth Society receives no subsidies from the city, and the main source of its income is annual membership fees paid by members.

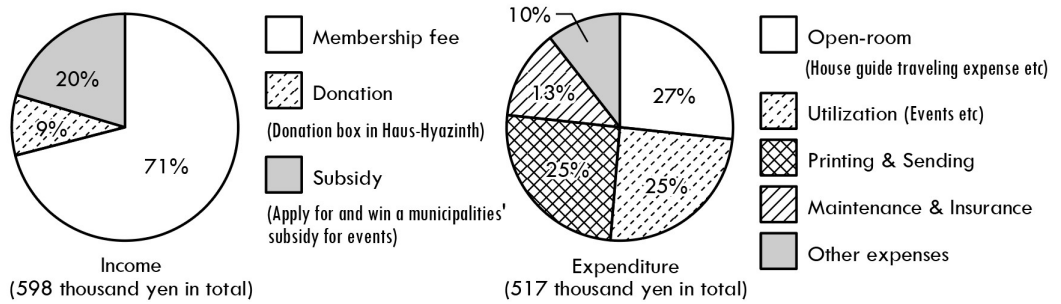


Figure 81 – Breakdown of average annual income and expenditure over 5 years (2013–2017)
(Source: Author)

Figure 82 shows changes in annual membership income and the number of members. The trends in annual membership fee income and the number of members are almost the same. Therefore, changes in annual membership fee income and changes in the number of members are almost identical.

The number of members was 279 in 2005, the year after construction was completed, and it fell to approximately one-third (96 members) in 2017. Even though the decrease was rapid in the first three years (until 2008), it slowed from 2009, and the number of members has decreased by approximately 35% in the eight years until 2017 (averaging 4–5% per year).

Figure 82 – Transition: Annual income from membership fees and number of members
(Source: Author)

Figure 83 shows the change in the number of members by place of residence. Specifically, it shows the change in the ratio of the number of members in 3 residence classes: Saitama City, Saitama prefecture (outside Saitama city), and outside Saitama Prefecture. The proportion of

residents in Saitama City is increasing year by year, and its weight is increasing. The ratio has been particularly high since around 2009, when the decline in membership numbers slowed, which correlates with the slow decline in the number of members.

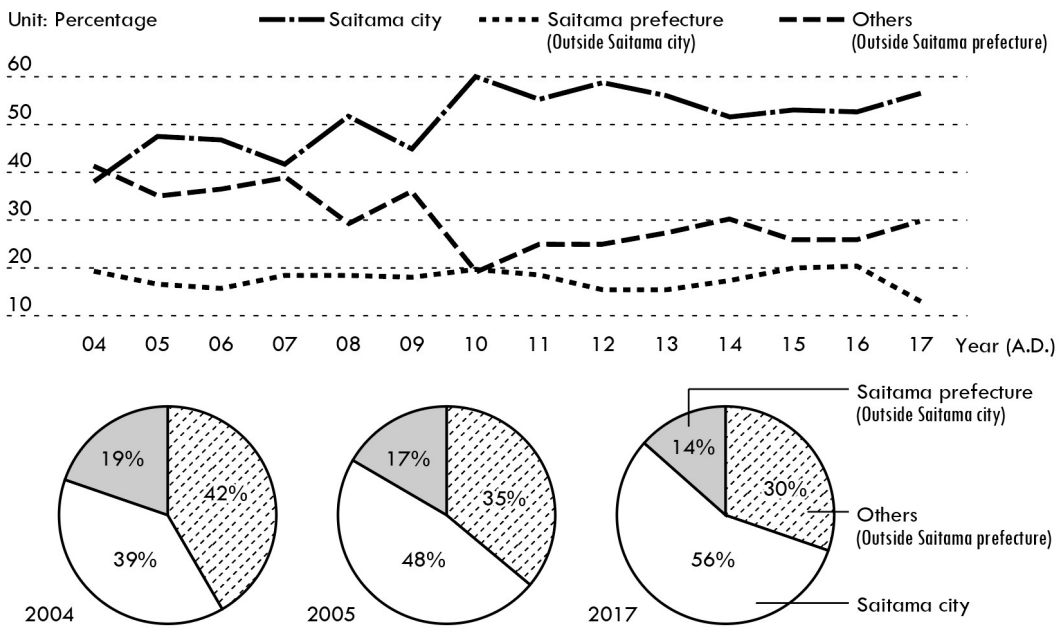


Figure 83 – Transition: Percentage of members who live in Saitama City, Saitama Prefecture
(Source: Author)

6.6. Summary

This chapter described the citizen initiatives related to the creation and management of Haus-Hyazinth located in Besshonuma Park in Saitama City, focusing on the conception and management of the PPI space. It can be summarized as follows.

1) Beginning of the citizen initiatives: The founders had different motivations for starting activities and did not have a unified purpose.

2) Acquisition of construction site: The local government leased the site in the park to the Haus-Hyazinth Society free of charge, as a Saitama City ordinance-designated city commemorative citizen's project. It was the result of obtaining construction funds from supporters while modifying the concept in response to the administration's opinion.

3) Acquisition of construction funds: Construction funds were secured by taking measures to acquire supporters and combining donations from local citizens and nationwide citizens.

4) Visitors: A visitor breakdown shows that more than 70% are first-time visitors and less than 30% are repeat visitors. Most repeat visitors are local city residents.

5) Management (open room): Management centered on the steering committee has shifted to management by local individuals who joined voluntarily.

6) Management (utilization): Initially, Haus-Hyanzinth was only utilized by the Haus-Hyazinth Society, but from the sixth year onward, it has also been utilized by other local organizations

7) Maintenance: Basically, the house guides do maintenance, but the park management office has started to do some maintenance.

8) Funding: The annual membership fees from members are the main income, and the ratio of Saitama City members is increasing.

6.7. Overview

PPI—Possible Future Urban Design Strategies

This is a bottom-up approach to urban design, contrasting the top-down approach urban developments that involve clearing land and extensive redevelopment, destroying cultural sustainability and human interaction.

In Chapter 6, private conceptions initiated by five citizens were transformed into conceptions aiming at fostering civil and cultural activities in a complex manner, and sharing the awareness of many people resulted in obtaining many supporters, and with the cooperation of local government, Haus-Hyazinth was successfully constructed.

After the construction, management centered on the founders changed to management by general citizens from the area, and Haus-Hyazinth gradually came to be utilized by local groups. The activity funds have been raised with support from local people, instead of relying on donations from all over the country. In addition, the local government, which was not involved initially after the construction, gradually took over part of the maintenance of the building. Due to this transition, PPI continues at present.

In other words, the transition can be considered as a process by which a system of space management has formed within a local community. This means that a space conceived by small number of people can be realized by being shared by multiple individual consciousnesses, and gradually shared by the local community. It denotes a possibility of 'process design' (= designing the process of developing and sustaining PPI activities which gradually change while sharing different consciousnesses) as a new inclusive urban design strategy in which private activities and space can include diverse citizens from the local region.

* * * * *

Chapter

7

7

Discussion

7.1. Creation: Feasibility of Implementing PPI in Urban Space

'Middle space' neither private nor public

As mentioned in Chapter 2 (2.2.3.), the public (*ōyake*) is not an absolute property in Japan. Since public (*ōyake*) and private (*watakushi*) are defined through a complex, multi-layered relationship, the premise 'urban space = public' does not hold absolutely. The continuity of the public and private realms means that the spatial boundary between the two does not separate them but rather serves as an interface that mediates them. That translates the question 'How can PPI be implemented in urban space?' into 'How can PPI be created?'

This research selected three cases of confirmed functioning PPI for analysis on the basis of precisely defined selection criteria. In some cases, the existence of PPI was not confirmed. The public and private spaces were in direct contact, with no intermediate area (Type–a: Figure 87.) To be absolutely precise, an in-between space did exist in physical terms, but it was dimensionally and spatially insufficient for the creation of PPI (e.g., the space under the eaves). As mentioned in Chapter 2, looking historically, such miniscule in-between spaces have, in combination with Japanese bioclimatic quality, created indigenous PPI. Our research verifies only that the in-between space (Type–b: Figure 87), such as the spaces under the eaves, are insufficient for the formation of PPI in the present day, or in a short period of 2 to less than 10 years after the completion, which was the timeframe of our research. One could argue that PPI could perhaps be created gradually over a longer period of time. That does not deny our findings, but opens space for continuing research and innovation.

To create a functioning PPI without these uncertainties and without requiring a long period for possible emergence, the results of this research reveal that '*middle* space' needs to be physically established as an intermediate area between the public and private areas. The

hanare, as described in Chapter 2, works as '*middle* space' (Figure 84.) In Kankyu-tei, this kind of '*middle* space' was created as an intermediate area positioned away from the main residential building and in direct contact with the street (Figure 85 (1).) This is the center for spatial practice of PPI. The same applies to Dragon Court Village. Unlike Kankyu-tei, the *hanare* here is not located close to the street as a horizontal composition. However, in terms of cross section, the upper floor is the main living space while the ground level has a public character similar to other streets within the site (Figure 85 (2).) Therefore, the *hanare* located on the ground level functions as '*middle* space' between public and private, despite being horizontally away from the street. Although not in a planar relationship like in Kankyu-tei, this *hanare* has a similar cross-sectional relationship.

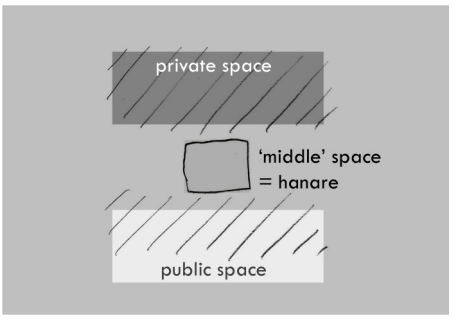


Figure 84 – Spatial diagram of '*middle* space' (*hanare*)
(Source: Author)

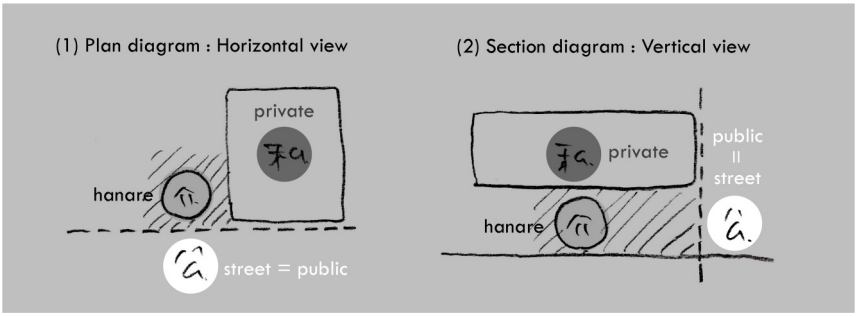


Figure 85 – two types of the location of *hanare*
(Source: Author)

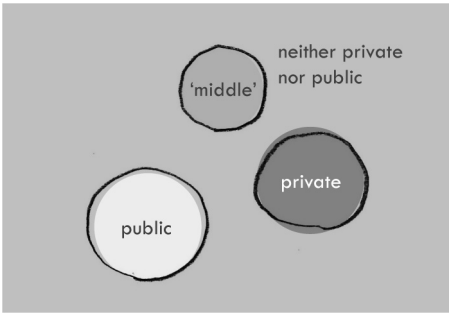


Figure 86 – Conceptual diagram of 'the *middle*' which is neither private nor public
(Source: Author)

A spatial diagram that defines this relationship is also its true conceptual diagram (Figure 86.) It is possible to have a relationship between the private and the public by interposing the *middle*, which is neither private nor public, between the private and the public.

Moreover, in the spaces (in-between spaces) between private and the *middle*, and between the *middle* and public lies a medium that acts as an intermediate area. That makes the private-the *middle* -public transition seamless through the existence of the *middle* (Type–c: Figure 87.)

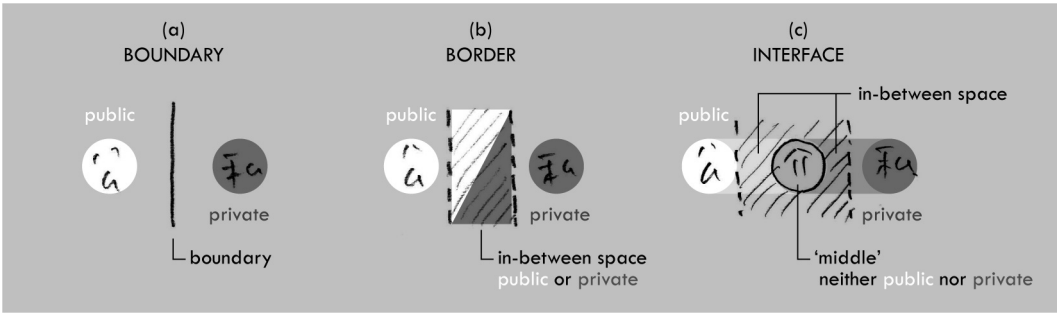


Figure 87 – Three types of the public-private spatial relationship
(Source: Author)

This means that PPI has two different spatial properties (in terms of horizontal plane): boundary as 'line' and border as 'area' (Type–c; Figure 88.) In other words, the *middle* has an area surrounded by line boundaries, and the area between them is an area-like border, which is a medium.

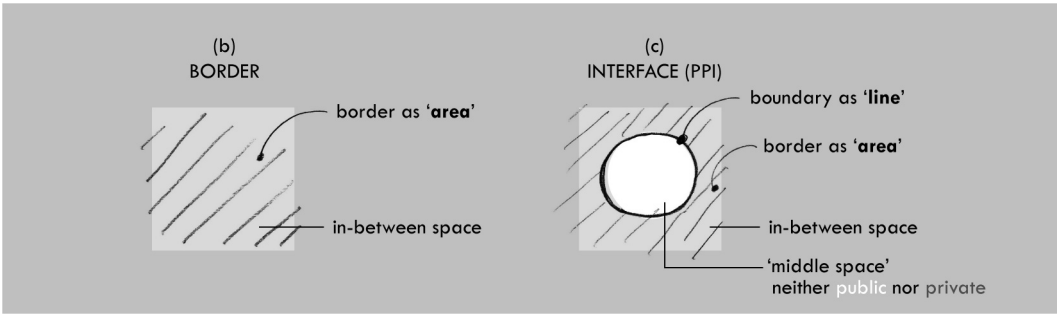


Figure 88 – Spatial diagram of boundary as 'line' and border as 'area'
(Source: Author)

A state in which an in-between space exists between private and public, or is only a border as an area (Type–b: Figure 87, Type–b: Figure 88,) does not function as a PPI. An interface has two spatial properties of 'line' and 'area' through 'the *middle*' which is neither private nor public, and private and public can transition seamlessly and have a relationship only when they have the spatial interface as mixture of 'the *middle*', the space surrounded by line boundaries, and the in-between space as an area-like border (Type–c: Figure 87, Type–c:

Figure 88.) This thesis concludes that a PPI can feasibly be generated by creating a space of *hanare* -the '*middle* space', as diagrammatically described above.

Complexity where universality cannot be applied

It should be added, though, that building a *hanare* is generally rare. Building a *hanare* is not necessary because a space that cannot be reached once outside the main space is not convenient. Since the 2000s, and especially in the 2010s, Japanese architectural magazines featured many houses incorporating non-residential spaces, such as stores and shared spaces, but few of the non-residential spaces in these buildings were built as *hanare*.

Figure 89 – Examples of the houses incorporating non-residential spaces
(left) Apartments with a small restaurant[70]; (middle) YY house office kitchen[71]; (right) House/Café in Kyodo[72]
(Source: Shinkenchiku-Sha Co., Ltd.)

Even in Kankyu-tei, the spatial *hanare* diagram was not adopted without the purpose of avoiding the retroactive application of existing laws and regulations to existing buildings. If the design requirement for Kankyu-tei had been to demolish an existing building and build a new house on a vacant lot, no *hanare* would have been established. However, the restrictions created by the policy of preserving the local culture represented by Kankyu-tei created the spatial form of *hanare*. The Dragon Court Village also had a policy that enables diverse lifestyles, such as combining work and housing, as a critical business strategy for universal living space as an exchange considering the increase in vacant houses due to population decline, and without this, *hanare* would not have been implemented.

In view of these, one might conclude that the spatial form of PPI as a *hanare* is theoretically feasible, but its feasibility is doubtful from a practical point of view in the real world. However, as already mentioned, this thesis takes the position that the idea underlying such indications is questionable. The many 'crises' we have experienced in the last decade have

[70] Available at: https://shinkenchiku.online/shop/shinkenchiku/sk-201408/ [Accessed 28 Oct. 2020]

[71] Available at: https://shinkenchiku.online/shop/jutakutokushu/jt-201609/ [Accessed 28 Oct. 2020]

[72] Available at: https://shinkenchiku.online/shop/jutakutokushu/jt-201609/ [Accessed 28 Oct. 2020]

called into question the premise of these indications. We must consider what quality of life we need and how it can be created, with essential and critical ideas, by removing existing values and implementing them.

Both Kankyu-tei and Dragon Court Village, although they may be extreme cases now, were merely the result of the step-by-step process to achieve the quality of life they need or the quality of life people may need. In that sense, neither Kankyu-tei nor Dragon Court Village is extreme. The backgrounds of the two cases are not special, and they even include general problems in contemporary society. Nevertheless, every desire for space and QoL is individual and valuable, and even if the background and problem awareness are general, the exchange value does not satisfy the desire.

As already mentioned, we need goods and services to live, and in an industrialized society we rely on them to be provided (as exchange value). Creating 'individual values', such as *hanare*, requires a complex situation where universality cannot be applied. In other words, using the complexity against itself is necessary for implementing the PPI in urban spaces. The complex situation is inherently latent. What is necessary to satisfy the conditions that make implementation feasible is to take each one on without cutting away the various contexts.

Feasibility of PPI implementation on both of private and public (official) land

It was already mentioned that Haus-Hyazinth is different in character from Kankyu-tei and Dragon Court Village. From the perspective of implementing PPI, both Kankyu-tei and Dragon Court Village are examples of PPI on private land, while Haus-Hyazinth is an example of PPI on public land. Therefore, the Haus-Hyazinth case study demonstrates the feasibility of PPI in consultation with the public (local government) with 'official' meanings. (For the details of the meaning of public, see 2.2.3.) This thesis does not assume a priori that PPI is implemented on private land. It is important to orient PPI in the direction from private to public as a bottom-up approach to urban design strategy, in which private space on private land becomes PPI and functions as a part of urban space. Even so, considering the greater possibilities and development potential as an urban design strategy, the land on which PPI is installed need not be limited to private land. The feasibility of PPI on public land will enhance the viability—the importance—of the urban design strategy.

The direct factor that allowed the space (building) of the private property named Haus-Hyazinth to be placed on public land, as shown in Chapter 6, is the recognition of the 'significance of construction, approval of citizens, financial plan' to the local government.

However, the essential factor there was that the five founding individuals persistently held consultations with administration. There they found people who agreed with them and cooperated with a view toward realization of their idea, far exceeding the level of common 'agreement between citizens'. The individual motivations for these tenacious activities were different and autonomous. The autonomy of the motivations influenced the members of the group and helped the activities develop to involve people other than the founders themselves.

Our three case studies show that the key to the realization of PPI, whether on private land or public land, is having the PPI initiated by autonomous individuals keen on creating quality for the common good.

7.2. Redefining 'private' in PPI

Privatization (commercialization) of public spaces

It should be noted that the framework of 'private' is sometimes replaced by 'commercial.' In Japan, 'public and private' often means 'official (public authority) and commercial.' For example, a public service and public space management method called public–private partnership (PPP) has already been established as a collaboration between public (official) and private (commercial), but PPP falls within neo-liberalism because it entrusts, wholly or partly, the utilization or development of public property to a 'private' business operator. Ooyama (2011, pp. 09-10) said, "In today's highly developed economy and society, we need to envision a mechanism for PPP that demands the role of a non-profit organization in addition to the market and government. We should go beyond the principle that all will be well if we leave PPP to the market, and the mixed-economy principle that governments can eliminate deficiencies by supplementing the market." PFI (private finance initiative), which is a typical method of PPP, was introduced in the UK in 1992 through efforts for 'small government' after the Thatcher administration. It should be noted that PPP, including PFI, originally falls within 'liberalization, privatization, deregulation' as a policy based on neo-liberalism. 'Private' has the potential to replace 'commercial.'

Figure 90 – Example of privatized public space: Minami Ikebukuro Park in Tokyo
(left) Arial photo (Source: Landscape Plus ltd.[73]); (right) Scene at the time of the event (Source: Renovaring Inc.[74])

The management of the Saitama Municipal Bessho Numa Park, where Haus-Hyazinth is built, is already outsourced to the private sector. There are also moves towards further privatization with a view to redeveloping the park with PPP. Specifically, they would like to

[73] Available at: https://www.landscape-plus.co.jp/minamiikebukuro [Accessed 28 Oct. 2020]

[74] Available at: https://re-re-re-renovation.jp/projects/2280 [Accessed 28 Oct. 2020]

change the usage of Haus-Hyazinth to a commercial cafe, and then the facilities in the park will be replaced with 'private' commercial facilities. The economic activities of a private company, including park management, suggests a future vision in which public spaces are managed by the private sector and government withdraws from the management of the park substantially and economically. Naturally, the commercialization of public spaces must be avoided. Hirayama (2019, p. 114) said, "The neo-liberal logic has influenced urban renewal policy. ... In a privatized park, it has been replaced by the relationship between a private company that seeks profits and consumers and tourists."

The same applies to PPI. Even if the 'private' of PPI is allowed to be 'commercial,' there is a possibility that the PPI is no longer public & private, but simply 'P'—private. The three case studies discussed in this thesis are no exception. A community *cafe* has opened in Kankyu-tei, and a small fee is charged when an external organization uses Kankyu-tei. A flea *market* is also held in Dragon Court Village, and at its center are the residents who run the vegetable *shop*.

Figure 91 – Commerciality of Dragon Court Village
(left) Vegetable shop; (right) Flea market (Source: Ookura Hideki)

The exception is Haus-Hyazinth. Haus-Hyazinth accepts no money, except that it has a donation box for operating funds. (It is designed to give a small souvenir when you donate money.) As detailed in Chapter 6, the operation of Haus-Hyazinth is mainly covered by the annual membership fee, and the actual space has no commercial character, because Haus-Hyazinth is operated by volunteers. The average age of the volunteers stationed in Haus-Hyazinth is 72.8 years, and none of them work, except for one person who is self-employed. Elderly people who do not need income to support their families are involved in the operation of Haus-Hyazinth as volunteers for the purpose of fulfilling QoL, such as social roles and social connections.

This is in contrast to the PPI at Dragon Court Village. In Dragon Court Village, most of the people who ran the PPI and the people who visited were in their thirties or forties. Practically, it is difficult for people in their thirties or forties to perform PPI as an activity that has nothing to do with income. It would be different if the PPI was limited to the elderly, but

then it would eliminate the young and middle-aged vulnerable individuals and the public nature of including diverse people. Attempting to exclude commerciality from PPI is unrealistic.

Criteria of the needful and acceptable commerciality in PPI

Tanaka (2019, p.145) points out the positive side of financial exchange, saying, "Ordering a drink, ordering a meal, and paying for it. These interactions are good reasons for people to visit and interact with others, even without a program." The point is that people can visit without a program. Once you start programming, those who are good at it or interested in it gradually form the majority, and the program becomes a circle activity with a closed community. In other words, it becomes a space that excludes people outside of a certain group. This is negative from a public character perspective. Therefore, completely eliminating commerciality in PPIs is not always ideal. On the other hand, PPIs must avoid falling into commercialism. Where are the well-balanced commercial borderlines in PPI?

Figure 92 – Illustrative images of financial exchange activities in PPI
(left) Akkeshi town community cafe (Source: Akkeshikouhouhan[75]); (middle) Cafe Shionomichi (Source: secondleague[76]); (right) Kyoden Community Cafe Shiokaze (Source: The Kitanippon Shinbun[77]),

One of the answers to this question is, 'As long as the activity in PPI produces use value rather than exchange value, commerciality is acceptable.' As mentioned above, commerciality also has an aspect that contributes to the creation of social interaction for diverse people. In other words, it is important for the PPI to be the autonomous, individual, and non-exchangeable creation of people, and to have the quality of a convivial urban space thanks to their interaction. Then, such an autonomous and individual subject of spatial practice can be redefined as 'private' in the PPI.

[75] Available at: https://profile.ameba.jp/ameba/akkeshi-town/ [Accessed 28 Oct. 2020]

[76] Available at: https://www.secondleague.net/?p=9317 [Accessed 28 Oct. 2020]

[77] Available at: https://webun.jp/item/7697852 [Accessed 28 Oct. 2020]

7.3. Management: Feasibility of sustaining PPI

Financial status of PPI management

According to a survey conducted by the Oita University Research Center for Welfare Science at 166 community cafes all over Japan (2011), 44% of organizations operate at a loss even if subsidy income is included, and about 70% operate at a loss if subsidy income is not accounted for. Tanaka, Y. (2019) cites 'people,' 'things' and 'money' as factors necessary for managing spaces such as community cafes. This kind of space does not operate by exchange value, so 'people' and 'things' cannot be obtained by paying money. That said, 'money' is an important and practical factor, and it can be one of the objective indicators for understanding the operational status. This is an issue related to the previously described benefits and detriments of commercialization, but after all, it is generally considered that manage a space such as PPI is not easy, especially in terms of continuity.

Quantitative surveys on a large number of survey targets, such as the survey by the Research Center for Welfare Sciences at Oita University above, show the actual situation in an easy-to-understand manner. On the other hand, they do not consider the individuality of activities by a small number of individuals, such as PPI.

Mutual-influence by 'sharing' - the key to sustain PPI

This thesis considers the individuality of each case and, in particular, verifies the actual condition of the operation in consideration of the difference in level (scale).

The conclusion found that 'sharing' sustains people's activities and interactions at the PPI; it is the key to management. What is important for sharing is that activities should not be fixed or closed, and must keep changing. Specifically, the people involved change. Once a shared state is fixed, it loses persistence, and it is effective to continue to share while changing. Kankyu-tei is a PPI at the individual level, and management depends mostly on the individual. However, even with such PPIs at the individual level, neighboring residents are involved in its management. Nowadays, community cafes are open even when the owner is absent. In Dragon Court Village, Ms. Yamakawa played a central role in implementing PPI involving local residents such as the flea market, but initially, she decided to take part in the flea market after being invited by another resident of Dragon Court Village. The resident who invited Ms. Yamakawa moved away from Dragon Court Village shortly afterward, so

Ms. Yamakawa became the central person in the management of the flea market.

Involving other human beings in the activity, that is, 'sharing' the activity, is essential for management. This is most noticeable in Haus-Hyazinth, where activities extend to the level of civic communities. The activities spread to the level of the civic community by 'sharing.' However, more important is the changing nature of the activity and its flexibility. This will involve new people in management and make it sustainable.

Figure 93 – Disappearance of spatial appropriation (*afuredashi*) at Dragon Court Village
(left) While Ms. Yamakawa had lived; (right) After Ms. Yamakawa moved (Source: Author)

It is also crucial for the people to be involved in the management as their own autonomous practice. The mutual-influence and interdependence of each individual's different, autonomous thoughts and attitudes will lead to continuous sharing and change. This mutual-influence and interdependence were confirmed differently in the Dragon Court Village PPI. The disappearance of the flea market indicates interdependence. As soon as Ms. Yamakawa moved, the flea market stopped, and moreover the spatial appropriation (*afuredashi*) around each dwelling unit drastically decreased. The sharp decrease in the spatial appropriation indicates the mutual-influence. Of special importance is the finding that successful PPI always involve multiple people, and that the variety of their interactions positively affects their individual and collective behavior and wellness. Providing space alone does not create social interaction. PPI functions as a place for social interaction only when spaces are occupied by meaningful human activity.

Danger in the 'institutionalization' of PPI

What these findings show is the danger in the institutionalization of PPI. Since the generation of social interaction by this kind of PPI is considered useful as a welfare service, the Ministry of Health, Labor and Welfare has institutionalized it as a "nursing care/daily life support comprehensive project." The danger of institutionalization is that it becomes a welfare 'service' and generality may be emphasized rather than individuality. Even more critically, it creates a division between the person who provides and the person who is

provided to: there is no mutual-influence. The management of PPI must be the autonomous and mutual-influential practice of the residents. (To be elaborated in the following section 7.4., as discussions regarding conviviality.)

Figure 94 – Example of the institutionalization of PPI: Nursing care/daily life support comprehensive project by the Ministry of Health, Labor and Welfare
(Source: Ministry of Health, Labor and Welfare[78])

[78] Available at: https://www.mhlw.go.jp/stf/seisakunitsuite/bunya/0000192992.html [Accessed 28 Oct. 2020]

7.4. Bottom-up Approach Spatial Practice Towards Conviviality and the Urban

Personal desire, purpose, and practice - the essence of bottom-up approach

All three of our case study cases were initiated by a small number of individuals and were unique. None of them were intended for social interaction, at least not in the beginning, when they were first imagined. Personal desires are not verbalized prior to practice and states. Architect Jun Aoki explains that using an example of a client's request for his/her house when receiving a design request. "Most of the client's request such as 'I want to do this' is, in fact, a manifestation of the already structured form, not as a personal desire." (Aoki, 2004, p.179)

In the design process of Kankyu-tei, the client's 'I want to do this', the purpose at the beginning, was to renovate his parents' house to live with his mother. Neither the spatial form called *hanare* nor the space with a public character like urban space was intended. In Dragon Court Village, even though PPI can be considered to have been intended in the sense that the spatial form of Kankyu-tei was applied in its creation, the primary purpose was to 'expand life outside' and it was not a creation (spatial design) for social interaction that involves neighborhoods. Spatial practice as a PPI by residents occurred spontaneously or as a result of their perception of the potential of PPI in the spatial characteristics. For Haus-Hyazinth, 'building Haus-Hyazinth' itself was the original purpose, and the motives for that purpose were different among the five founders. In these three cases, it is not clear even now whether the purpose is to create social interaction, 7 to 15 years after the spatial practice as a PPI started.

Figure 95 – People who have been involved in Haus-Hyazinth (Interviewees of the research, chapter 6) (Source: Author)

To be more precise, the PPIs in the three cases are practices by multiple persons. It is not possible to reveal a unified view of their purpose, nor is there any point in doing so. Because the interviews with Haus-Hyazinth officials and volunteers have revealed that each person is involved in the management with different motives and ideas, and the practice of each individual and autonomous person is generated with mutual-influence and interdependence.

There is no unified purpose there. This is a clear difference from a space institutionalized to generate social interaction, and that is why it is a bottom-up approach, and why it is a convivial urban space.

Institutionalization is, in other words, purposing. We can define the top-down approach to be a means to achieve a unified purpose and the bottom-up approach to be the opposite. Because the smallest unit in a bottom-up approach is an individual, which cannot have a 'unified' purpose. An individual may have a definite purpose, but it is the particular one of an individual, not a 'unified' purpose. Furthermore, 'the particular purpose of an individual' has not even been confirmed in the three case studies. In fact, the actions of all people involved in PPI were initiated without a definite purpose. If institutionalization is paraphrased as ideology, the following point from Henri Lefebvre applies to the above. "To know that they make a whole but that the elements of this whole have a certain independence and relative autonomy. To not privilege one over the other, otherwise this gives an ideology, that is, a closed and dogmatic system of significations." (Lefebvre, 1996, p.152)

The case study in this thesis shows that 'lack of unified purpose' is the essence of bottom-up. The three PPIs of the case studies were not produced by one individual, even in Kankyu-tei, which is at the individual level and was produced with at least his mother and wife, and the other two cases were also produced by multiple persons. The logic that 'the minimum unit of bottom-up is one individual, and there is no unified purpose there' does not lead to the conclusion that the lack of unified purpose is the essence of the bottom-up approach. The assertion that the minimum unit for the bottom-up approach is one individual is strictly theoretical and may not be the case in practice, because the three case studies suggest that the minimum substantive unit is a small number of individuals (and, in fact, PPI is the result of the interactions of a small number of individuals).

However, as already mentioned, the case studies show that even when multiple people are involved, their purpose is individual and there is no unified purpose. Although the individual purposes and motives of individual people are not unified, they are coherent as a spatial practice in one space (PPI) while interacting and interdepending.

This can be paraphrased into Ivan Illich's definition of conviviality: "individual freedom realized in personal interdependence" (Illich, 1973, p.11). That leads to "the freedom to make things among which they can live, to give shape to them according to their own tastes, and to put them to use in caring for about others" (Illich, ibid., p.11). In other words, the bottom-up approach and conviviality have common essential parts. Therefore, it can be said

that an urban space designed or created by a bottom-up approach is a convivial urban space, and the PPI is a convivial urban space created by such a bottom-up approach.

Loopholes in law – the key to individuality and complexity

The realization of 'individual freedom' through the bottom-up approach is significantly affected by laws and regulations related to architecture and cities. In general, the architectural/urban space is shaped by building regulations in some aspects, especially in urban areas, which have strict building regulations particularly stipulated by each municipality, and in small sites, almost all the spatial forms are automatically determined by building regulations. The case studies of this thesis showed that the building regulations had a significant influence on the spatial forms of Kankyu-tei and Dragon Court Village.

This influence is not observed in the usual sense, for example, in the sense that the spatial form is determined by form restrictions such as height restrictions. It was an effect in the sense that the spatial form was selected to fit through loopholes, which are the 'fissures' of building regulations. In general, there are varying views on taking advantage of loopholes in building regulations, and it may be easier to say that there are negative views of it.

However, why is there a loophole in the law? On this question, Mizuno Tasuku, a jurist, said: "There are almost no exceptions to the laws and regulations, and there are 'margins' in the regulations themselves. … Unless a law is a special law that limits the period, area, and target, it generally applies to all citizens. Therefore, it is necessary to secure an ad hoc mechanism within the law so that it can apply flexibly in individual-specific cases. Besides, since it takes time to revise laws, they must have some flexibility to adapt to changes of the times. … Due to this nature of laws, laws are intentionally written in ambiguous language, and how the users of laws discover the 'margins' hidden there, creatively interpret them, and make full use of them is vital." (Mizuno, 2019, pp. 119-120, 122, 125)

Kankyu-tei and Dragon Court Village can be considered creations that arose through such a process. In order to take advantage of a loophole in the law, it is not enough to discover the loophole; the creation must take a spatial 'shape' that fits through it. In Kankyu-tei, the shape is a spatial form called *hanare* and a fire wall on the adjacent landside. In Dragon Court Village, it was a direct access route to each dwelling unit that was necessary to create a building type called a row-house. By taking such a shape, the creation of Kankyu-tei and Dragon Court Village could maximize 'individual freedom' while fitting through the legal loophole.

Furthermore, this is not only a realization of 'individual freedom', but also a confrontation with the challenges facing contemporary society: "The issues facing modern society are manifested in the 'gray zone,' which is the margin at the boundary between reality and law. In Japan, gray zones tend to be negatively regarded as evading the law. However, to confront that challenge is to directly tackle the social issues facing contemporary society." (Mizuno, ibid., p.130)

Even so, one may wonder: the need to have a 'shape' that allows it to fit through a loophole imposes another limitation, in return for fitting through the loophole, so in the end, would it not be putting the cart before the horse if the building is subject to constraints that it would not have been subject to in the first place?

The answer to this question has already been mentioned in Chapter 4. As Illich (1973, p.11) points out by saying "They are degraded to the status of mere consumers," we need goods and services to live, and in an industrialized society, we depend on being provided with them. Therefore, in order to escape from the addiction to receiving universal goods and services (exchange value) and to create 'something individual' (use value), we need a complicated situation where universality cannot apply. In other words, the 'unnecessary constraint' for fitting through the loophole can be a positive factor for establishing a 'complex situation' and it is certainly not a negative factor.

Autonomous, spatial, and social practice of individuals

This 'unnecessary constraint' is equivalent to what Aoki (2004) calls the 'overdriving[79] decision rules'. Aoki presents it as a design methodology for eliminating/overriding intentions and purposes from the factors that determine the design, and it sets rules that have nothing to do with the context of the project or human activities and overdrives them. The idea underlying the 'unnecessary constraint' and 'overdriving decision rules' is that "the architect's view of the user's need determines every architectural decision (which may, in turn, determine the user's attitude)." (Tschumi, 1996, p.128)

[79] Aoki's 'overdriving' is almost equivalent to Alexander et al (1987)'s 'overriding.' "Let us ask, then, what kind of process might actually be capable of giving wholeness, true wholeness, to a town. According to the summary of wholeness we have given, it is clear that the wholeness will have to come from the process. And, concretely, the process will have to guarantee that each new act of construction becomes related in a deep way, to what has gone before. This can only be accomplished by a process which has the creation of wholeness as its overriding purpose, and in which every increment of construction, no matter how small, is devoted to this purpose. Such a process can exist." (Alexander et al, ibid., pp. 015-016.) Knowing the difficulty of overriding design intentions and purpose, Aoki suggests 'overdriving' as a design process to overdrive the intensions and purposes.

This brings the discussion back to the issue of 'institutionalization.' The institutionalization of space is 'violence' as "a metaphor for the intensity of a relationship between individuals and their surrounding spaces." (Tschumi, ibid., 122) To relieve architecture from 'violence,' Tschumi offers the following methods: "Architecture seems to survive only when it saves its nature by negating the form that society expects of it. … It is useless, but radically so. … Architecture is not unlike fireworks, for these empirical apparitions, produce a delight that cannot be sold or brought, that has no exchange value and cannot be integrated in the production cycle." (Tschumi, ibid., p.47)

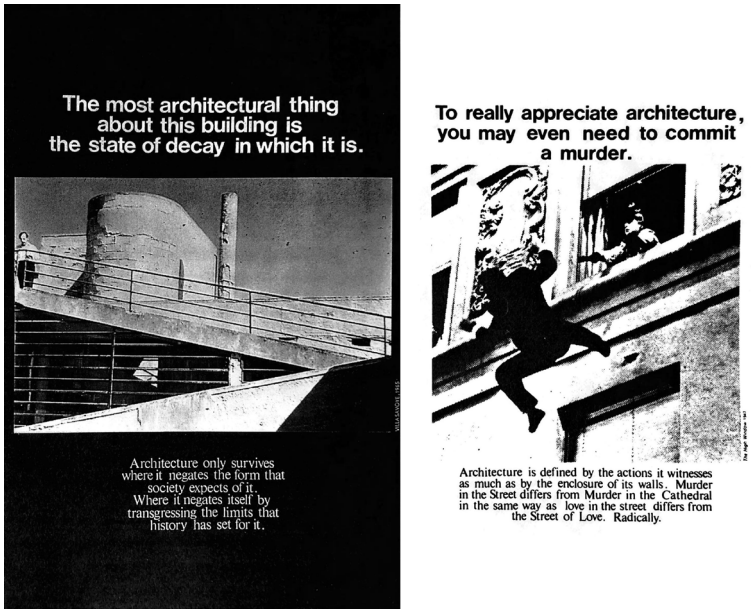


Figure 96 – Advertisement for Architecture
(left) Advertisement for Architecture 1975; (right) Advertisement for Architecture 1978 (Source: Tschumi, ibid.)

The same applies to cities. Zoned modern cities are in danger of being institutionalized: "the notables isolate a function, detach it from a very complex whole which was and remains the city, to project it over the ground" (Lefebvre, 1996, p.77). Architecture as a facility is located in a city zoned by functions. The way to relieve this city is the autonomous spatial and social practice of individuals, including PPI. A bottom-up approach to cities by unpurposed individual practice is suggested as a way to bring conviviality to institutionalized cities, which is to say, "to propose the form of a new urban society by strengthening this kernel, the *urban*, which survives in the fissures of planned and programmed order" (Lefebvre, ibid., p.129).

The 'fissures' are the building regulation loopholes mentioned above, the spaces where it is not possible to develop a universal space as an exchange value, such as an irregular shaped site, the spaces between buildings in the urban fabric represented by a group of low-rise dense wooden buildings, and the boundaries between the public and private buildings and the road. 'The *urban*' can be found as an interplay of unpurposed individual autonomous practices in

the fissures of the city. This bottom-up approach is our 'right to the city,' and brings us 'the *urban*,' simultaneity and encounter in the city. "[T]he *urban* becomes what it always was: place of desire, permanent disequilibrium, seat of the dissolution of normalities and constraints, the moment of play and of the unpredictable." (Lefebvre, ibid., p.129)

7.5. Social Interaction Towards QoL of Vulnerable Individuals and Groups

'Fissures' of the city

Can such spatial practice contribute to the generation of QoL? In particular, does that lead to QoL for vulnerable individuals and groups? As already mentioned, contemporary Japanese society does not give sufficient attention to QoL, especially in the case of vulnerable individuals and groups. This problem has the same cause as the crisis in contemporary cities. Vulnerability is "a universal attribute for all humans in the process of life from birth to death" (Tanaka, 2010, p.39), but it has the aspect of being created by society (Furukawa, 2006). Assuming that the various institutions of society were initially created to support people's lives, a vulnerable state can be said to be a state of falling through the cracks.

As mentioned in the previous section 7.4., zoned modern cities are in danger of being institutionalized: the problem is in the city. Modern cities were degraded into a mere collection of institutions, losing 'a very complex whole' (Lefebvre, ibid.) and causing people to fall between the institutions of society. They are in the 'fissures' of modern cities. In other words, the state of modern cities created vulnerable individuals and groups. On the other hand, as mentioned already, 'the *urban*,' meaning the complexity of the urban space, is found only in the 'fissures' of the city—the 'fissures' of planned and programmed order. 'Fissures' in cities are both a cause of and a hope for problems in contemporary society. The spatial practice in urban fissures is the generation of QoL for vulnerable individuals and groups, as well as the relief of endangered cities, that is, the regeneration of complexity.

PPI as 'my place' managed by vulnerable individuals and groups

Based on the above, the premise to describe the contemporary social problem of social isolation that this thesis focuses on and the effectiveness of social interaction in PPI as an improvement measure is that vulnerable individuals and groups are more or less socially isolated (or have the potential to be social isolated). This is derived from the definition of vulnerability that 'the vulnerable state is the state of falling through the cracks (between the various institutions of society.)' 'The state of falling through the cracks' is isolation, which is the state where the connection with society has been lost. Therefore, verifying the effectiveness against vulnerable individuals and groups is equivalent to asking, 'How can we

help them think that they can be there? How can we help them think of it as their place?' In other words, it is a question of how to make one's place in the city.

As mentioned in the chapters on the case studies, in Kankyu-tei, the owner who had retired and lost his social status involved his wife and elderly mother who lived alone with sparse family and local relationships. The PPI at Dragon Court Village was a spatial practice by the residents who had not found their 'own place' where they could fit comfortably in society. In interviews with the people who manage Haus-Hyazinth, we often heard words like 'I like it when it's empty' and 'a place to be alone'.

Figure 97 – Comments from the interview conducted in Haus-Hyazinth 'a place to be alone',
(Source: Author)

Figure 98 – Seemingly contradictory comments - 'a place to be alone' & 'a place for human interaction' from the interview conducted in Haus-Hyazinth
(Source: Author)

That does not mean that they want to disconnect from people. 'Alone' means 'self' and that they are looking for their 'own place'. To put it the other way around, they do not have their 'own place' at home, at the workplace, or in urban space. Fujitake (2000), a sociologist, divides 'own places' into two categories: 'social' and 'humanly.' A typical example of a social own place is at work, and of a humanly own place is at home, but they can be considered to lack one or both of them. They may not be lonely, but they are socially isolated.

The three case studies show that PPIs are managed by vulnerable individuals and groups like this who want their 'own place.' As mentioned above, 'Can PPI be a place for social interaction for vulnerable individuals and groups?' is synonymous with 'How can we help them think that they can be there? How can we help them think of it as their place?' and the

case studies show that the answer is, 'It depends on whether they have any involvement in the space.' In short, what matters is that they are involved in the PPI not because they 'provide something to people,' but because 'they want to be.' PPI is not a place to provide something, but a place to create and manage something together. In the first place, 'providing social interaction' is impossible in principle, because 'receiving something offered' is a one-way, passive act, not an interaction. Ikai Shuhei, a sociologist, points out the nature and limitations of social systems, in that they are provided as a service, saying that "it cannot be solved by a support system directed to the general public" (Ikai, 2016, p.40).

Interrelating keywords as a complex whole of PPI

The above discussions, including the ones in 7.1., 7.2., 7.3., and 7.4., make clear that the keywords dealt with in this thesis are interrelated and form a whole. QoL, QoS for vulnerable actors, social interaction, bottom-up, the urban, and PPI are latently hidden in the 'fissures' of contemporary cities and society, where we can find not only the lack of those qualities, but also hope for convivial urban spaces. As famously summarized by Jane Jacobs, "cities have capability of providing something for everybody, only because, and only when, they are created by everybody" (Jacobs, 1961, p.238).

7.6. Micro Public Spaces in the Indigenous Japanese Urban Fabric: Beyond Crisis Prevention and Globalism

Potential of collective micro public spaces

All the case studies are at spatial and social scales that can be managed by individuals and at an urban scale, they are naturally microscopic. The social effects of these micro public spaces were confirmed by the PPIs in all case studies having relationships or links with other local activities. In other words, the micro public space is a 'point' on an urban scale, but by connecting with different 'points' in the area, it spreads out over an 'area' as a network, that is, it acquires a social spread and has a positive social impact. Thus, it has social effectiveness.

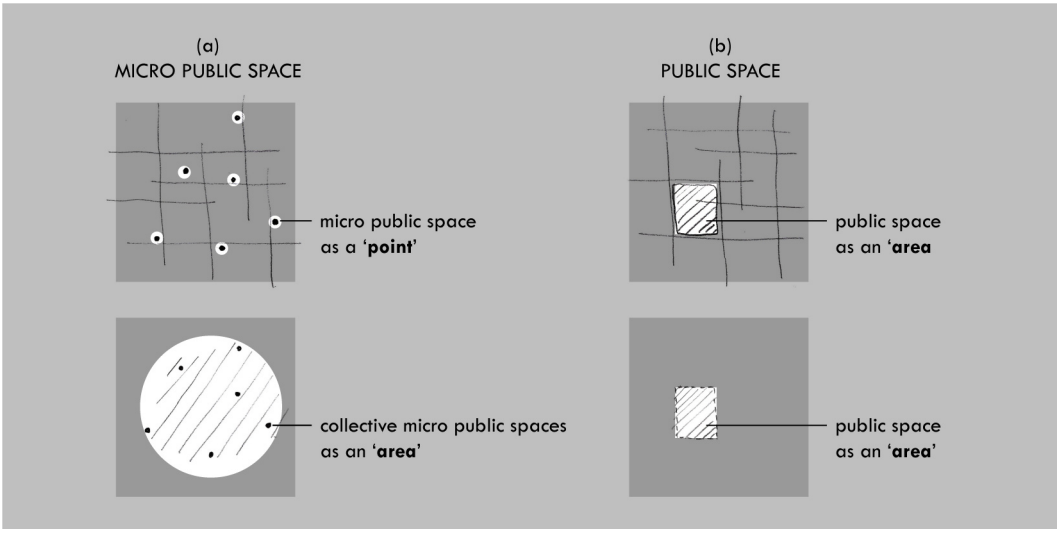


Figure 99 – Urban scale spatial diagram of micro public space
(Source: Author)

The role of the urban space model as a collection of individual 'points' is to provide an agile response or adaptation to individual and uneven vulnerability. The creation of agile socio-urban characters that rapidly change and adapt to individual and unforeseen problems is a character that cannot be implemented by a top-down approach to urban space models. That is the role that should be played by the urban space model as a collection of individual 'points' by bottom-up approach urban design incorporating micro public spaces. Social isolation as a contemporary social problem, which is the focus of this thesis, is the end of individual and uneven vulnerability, and PPI is effective as a micro public space that produces daily social interaction.

Urban design strategy as crisis prevention aimed at improving QoL

The urban design presented in this thesis is also a new strategy for 'crisis prevention.' Conventional crisis prevention has dealt only with the 'physical' aspects such as fire and earthquake resistance in disaster prevention, and public health in prevention against infectious diseases. In other words, QoL, including mental and social health, has been neglected. This thesis considers the COVID-19 crisis to be an opportunity to reconsider the lack of QoL in modern society, based on the fact that the problem of isolation in modern society has become even more pronounced with COVID-19. It presents urban design strategies that improve QoL beyond physical crisis prevention.

The bottom-up approach urban design incorporating micro public spaces has the physical effect of reducing urban overcrowding. As a measure of physical and direct prevention against COVID-19, national policy mandates avoiding situations where people are closely gathered. However, this measure, which can be said to be like doctrine, hardly considers the scale. It is necessary to reconsider the problem of the monopolization of cities on the macro scale rather than questioning the fact that people meet and gather. In this respect, the distributed network-like bottom-up approach spatial model is superior to the concentrated top-down approach spatial model. There are close interactions of people at the micro scale, but they are dispersive 'points' at the macro-city scale, and the density is low, and they can be considered effective as prevention from a physical perspective. Moreover, the main focus of this urban design strategy is to improve QoL, which has been neglected in past 'crisis prevention.' It is effective as a new 'crisis prevention' strategy to improve not only physical aspects but also QoL.

Crisis prevention, globalism, and neo-liberalism have sacrificed the indigenous urban qualities that Japanese cities have historically established, but COVID-19 requires us to rethink those ideas. "The peculiar, the Japanese ability to live small, can prove to be an invaluable internalised knowledge, a unique cultural asset and the key survival skill in the times of crisis and scarcity which environmental crisis might be bringing about." (Radović, 2008, p.38)

Towards soft, flexible, and convivial urban fabrics

This thesis showed that Tokyo still has a small, low-rise, dense urban fabric composed of a group of wooden houses. The indigenous urban fabric possesses micro public spaces of PPI, and the case studies have confirmed that it is still feasible to implement those spaces in

contemporary Japanese cities, and effective as urban design strategy towards convivial urban character and QoL. This thesis does not propose a 'new' urban space. The new findings presented in this thesis are that micro public spaces of PPI are feasible and effective even in the present day, and are rather what we need today. On the other hand, this thesis emphasizes that urban space should be updated. The update should be by intervening in the 'fissures' of the urban space, and altering or adding to the spaces facing the 'fissures', rather than cleaning up and renewing the existing urban space. The cluster of wooden architecture and the spaces in between are soft, flexible, and convivial urban fabrics that enable those interventions, and places where public and private interact.

* * * * *

Chapter

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Conclusions

This thesis investigated the links between two notions of fundamental importance for quality urbanism – the Quality of Life and Quality of Space – in Japan. The research, founded upon practical experience, focused at selected, bottom-up created and managed urban spaces and public-private interfaces (PPI). While some PPI places and practices in Japan can rightfully be seen as indigenous, few studies that approach them from a combined spatial and social stand point, with most of them related to either the creation, or to management of PPI. This Thesis provides novel insights into PPI by conducting in-depth, individual and specific studies on the entire process - from the creation to management of PPI.

Also, this thesis addresses Japanese-specific issues referring traditional Japanese architectural and social concepts but also western concepts. The transfer and exchange of knowledge by conceptual-translation of those concepts is another novel insight of this thesis.

We examined the quality of the space that contributes to QoL, against the background of the problem described by a number of crises such as disasters that we have experienced in the past ten years and the vulnerability of contemporary urban space due to global and universal urban development. It also pointed out that QoL was particularly insufficient from the viewpoint of people's vulnerability and explored the quality of urban space that encompasses vulnerability. Specifically, the quality of the convivial urban space that produces social interaction was considered, focusing on the problem in contemporary society that is the social isolation that impairs the mental and social health that underpins QoL. Taking PPI as a spatial practice that leads to this quality of space, we conducted a case study on the formation and operation of PPI at three levels: individual, neighborhood, and community. The combined results of the case studies show the following answers to the research questions.

(1) Social Roles of PPI

What are the social roles that PPI can play in urban design strategies aimed at quality of space?

PPI can play the role as a place for social interaction, the role as an effective urban spatial

component, i.e., the role of feasible means of bottom-up approach urban design. None of the case studies were top-down, but instead were independent or spontaneous PPIs initiated by a small number of individuals, or in other words, bottom-up spatial practices in cities.

The results of the case study confirmed that PPI is effective as a bottom-up approach urban design strategy for creating the quality of space – convivial everyday life of vulnerable individuals and groups.

(2) Conditions and Actors for Social Effectiveness of PPI

What kind of conditions and actors can make PPI socially effective?

The results explain a critical importance of involvement of multiple and diverse stakeholders, with inclusion of vulnerable community members – their character as places of emerging, autonomous, rather than predefined activities. The social effectiveness increased with conscious inclusion of vulnerable community members, both in the processes of creation and management of PPI.

Of special importance is the finding that successful PPI always involve multiple people, and that the variety of their interactions positively affects their individual and collective behavior and wellness. This was confirmed by the fact that in PPI composed of multiple personal spaces, the changes that occur in one of the spaces have a defining influence on the entire group of PPI, as well as the adjacent spaces.

(3) Characters of Convivial Urban Space

What are the characters of well-conceived and managed PPI as convivial urban spaces?

PPIs as convivial urban spaces were not for vulnerable actors, but by vulnerable actors. It means that the space has the quality that it is not provided as a service but allows autonomous engagement. As famously summarized by Jane Jacobs (1961), "cities have capability of providing something for everybody, only because, and only when, they are created by everybody."

That character could be paraphrased as to create individual values, which requires a complex situation where universality cannot be applied. In other words, using the complexity against itself is necessary for implementing conviviality in urban spaces. The complex situation is inherently latent. What is necessary to satisfy the conditions that make implementation

feasible is to take each one on without cutting away the various contexts.

The answers to the research questions, i.e., the social roles, the conditions and actors, and the characters to be attained can be translated to the working definition of PPI as convivial urban space. In the context of contemporary Japan, conviviality expresses itself through individual freedom in mutuality, where (the interaction with) a group becomes more important than an individual. This indicates that in order for PPI to be effective, they should be practiced as collective activities rather than individual activities in urban spaces.

This thesis shows that the bottom-up approach which sensitively combines the space creation and management practices, and which has both an established history and presence in Tokyo of today, has the capacity to play a significant role in locally relevant quality of urban life.

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著者：佐野 哲史