SPATIAL CHARACTERISTICS OF MINKA IN CHIBA PREFECTURE :
FROM THE EDO PERIOD TO THE POST-WAR SHŌWA PERIOD

千葉県民家における空間分析研究：江戸時代から戦後の昭和時代まで

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This paper aims to clarify the spatial composition and evolution of traditional Japanese dwellings, or *minka*, in Chiba Prefecture from the early Modern Age to the postwar years. Focusing on the reintegration of horizontal and vertical dimensions, the spatial analysis of *minka* includes both the analysis of functional diagram of five basic activities—living (L), receiving (R), sleeping (S), dining (D), and cooking (K)—and the analysis of sectional development of the *minka*'s lived space. Divided into the “old” tradition, the “transitional” tradition, and the “old and new” tradition, a small set of case studies from Chiba Prefecture offers a profound understanding of the socio-cultural context of the mainstream everyday life Japanese dwellings and the content of the *minka*'s lived space in each evolution process.

Keywords : Traditional Japanese dwelling, Minka, Spatial analysis, Spatial characteristics, Transformation

日本の伝統的な住宅, 民家, 空間分析, 空間的な特徴, 変化過程

Introduction

Despite the fact that architecture is at the “service of totality,”¹⁾ most researches on spatial analysis appear to pay considerable attentions to the arrangement of plan—the organization of horizontal space. Such examination of entire existential space as separate entities is particularly evident in the Japanese architectural literature. As Inoue (1985) noted, “Throughout its history, the Japanese architecture has been rarely developed in a vertical direction.”²⁾ Nonetheless, it is important, as he asserted, that “Architectural spaces could not be recreated from plans alone. In the end, a three-dimensional space must be reconstructed above the plan. Only when these studies have been integrated will a clear and true picture of space in Japanese architecture emerge.”³⁾ Furthermore, as shown in the studies of traditional Japanese dwellings, it is paradoxical that while there are numerous researches concerning domestic architecture of the well-to-do, those relevant to everyday life dwellings of the commoners are relatively few.

Considering these shortcomings, this paper aims to examine the spatial characteristics and transformation processes of the traditional Japanese dwelling, known as *minka*, from the Edo period to the Postwar-Shōwa period. Its central goal is to expound on the interrelationships between the socio-spatial aspects and between the horizontal and vertical dimensions of the *minka*'s existential space. Put in a line of history—the “old,” the “transitional,” and the “old and new” tradition—the comparative case studies will help fill the gap between the polar ends, in other words, between the traditional and contemporary dwellings.

(1) *Minka* – Non *Minka*: Different Lineages

The word *minka* (literally “people's houses”) means everyday life dwellings of the ordinary people or the commoner's houses.

Therefore, *minka* involve not only farmhouses, or *nōka*, in rural areas, but also urban houses, or *machiya*, built during the feudal time. Owing to the fact that, in the Tokugawa period, the ruler often used the term *minka* to refer to the ruled or ordinary people,⁴⁾ the domestic architecture of *minka* is distinguished from and thus humbler than that of the ruling aristocratic class. Hence, it is coherent, as Itoh (1982) argued, that the development of traditional Japanese dwellings could be largely categorized into two distinct lineages—that is, the (true) *minka* of the ruled, e.g. *nōka* and *machiya*, and the non-*minka* of the ruler, e.g. *shinden*-style and *shoin*-style residences.

(2) *Minka* – *Nōka*: A Shared Ground

Owing to its variety, the term *minka* is somewhat difficult to be defined in a comprehensible way. Besides, when examining the term *nōka*—the dwellings that are resided in by the country's majority, or the farmers, who, by their effort, create the houses that reflect a specific setting of local climatic, geographic and agricultural patterns—it is noted that *minka* and *nōka* share several fundamentals in essence. As seen in the Japanese architectural literature, the terminologies of *minka* and *nōka* are used interchangeably as they, to a significant degree, offer an overlapping meaning and shared features.

Overview

(1) Origin and Evolution of *Minka*

A *minka* is a formal articulation of the ingenuity and collective experiences of the local people who live in it. Derived from a profound comprehension of inhabitants' demands—the “content of space”—and the specific condition of inhabited landscape—the “context of life”—it serves not only as a dwelling, but also as a workplace for self-sufficing agriculture. To put it in another way,

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minka integrates the lived space and the production space within the same architectural typology.

In the old agrarian context, *minka* had a comparatively long life span when compared to present-day residences. Throughout its history, *minka* experienced evolving roles from the feudal time through the postwar years: the “object of art,” praised by tea masters in the 16th century, the “object of taxation,” under the Tokugawa social stratification, the “model of functional flexibility,” acclaimed by modern architects, and the “remnant of feudalism” after Japan’s defeat in the World War II.⁵⁾

(2) Architectural Manifestation of *Minka*

Minka are exclusively built of readily available materials, such as wood, grass, and earth. The floor could be divided into two parts: the elevated floor and the earthen floor. The elevated floor is approximately 45-100 centimeter raised above the ground level to protect the living quarter against dampness that collects in the earth and to enhance better ventilation. The earthen floor is made of packed clay mixed with charcoal and bitten.⁶⁾ The entire lived space is covered by thatched roof(s), which bear one of the most distinctive features of traditional Japanese dwellings.

The interior of *minka* is comparatively difficult to define for each space has its specific name that varies from region to region. However, the naming system and the identification of the lived space could be regarded in relation to the function(s) in which it furnished—cooking and service space, *doma*, living and dining space, *ima*, guest receiving space, *dei*, sleeping space, *nema*, and transition space, or *engawa*.

Case Studies: *Minka* in Chiba Prefecture

(1) Chiba Prefecture

Chiba Prefecture is located in the east of the Tokyo Metropolitan Area of *Honshū* Island. Most of its areas lie on the hilly *Bōsō* Peninsular, or *Bōsō-hantō*, after which it was named. Surrounded by the sea, crisscrossed by rivers and blessed with abundant nature, Chiba Prefecture boasts Japan’s second-highest agricultural output and constitutes one of the most flourishing fisheries in the country. Although it is recognized as one of Japan’s largest industrial areas, Chiba has been renowned as the agriculture-based prefecture.

(2) Case Studies

With regard to the distribution of location, building scale, and dweller’s socio-economic class and the in-depth content of space, the research selects six case studies comprising one small-scale *minka*, two medium-scale *minka*, and three large-scale *minka*. These *minka* include Ōtsuka house from *Urayasu* City, Mikogami house from *Maruyama* City, Ōsawa house from *Chōsei* Village, Yabu house from *Sanbu* City, Hirano house from *Futtsu* City, and Sakuta house from *Kujukuri*, *Sanbu* District⁷⁾ (Fig. 1-2).

1. Ōtsuka house (85 sq.m/155 years)

Located along the *Sakai* River in a suburban fishing village, the old Ōtsuka house is a small/medium-scale fishing house with the key-shaped service space, the earthen vestibule (*dōma-genkan*), and attics. Among the case studies, it is the smallest, most recently built and least modified house. In spite of its smallness, the house constituted the worthwhile use of space in both the horizontal and vertical dimensions, the multiple and flexible use of the integrated living, dining, and sleeping space and the hidden storage under the roof structure, for instance. The provision of openings on the interior and exterior partitions that corresponded to the inhabitants’ eye level when in the sitting position reflected a dialectical relationship between architecture, the floor-oriented culture, and the manner incorporated in it.

2. Mikogami house (125 sq.m/190 years)

Mikogami house was originally situated in the precinct of *Ishidōji* Temple. It is a medium-scale, (semi) closed-in style, farmhouse with the triangular-shaped platform located between the raised floor served quarter and the earthen floor service zone. Changes in the horizontal expanse involved the subdivision of the everyday life space and the service space, the expansion of a new service unit affixed to the extant one, and the removal of a wooden column located between guests’s receiving rooms together with their integration. In the vertical dimension, the internal development included the provision of finished ceilings that came along with the spread of *tatami* mats, which subsequently helped create a well-defined interior space.

3. Ōsawa house (145 sq.m/309 years)

The old residence of the Ōsawa family was located at the *Chōsei* Village. It is a medium-scale, (semi) closed-in style, farmhouse initially with the simple hall-type plan, the front door (*genkan*), without decorative alcoves and *engawa*. Built in 1664, it is the oldest and humblest house among the case studies. After a series of renovations, the house witnessed various reversed features between the past and the present conditions. Major transformations included the cut-off relationship between the everyday life and the integrated formal space vis-à-vis the separate everyday life space, and the open-style exterior of the dwelling.

4. Yabu house (170 sq.m/300 years)

Located in a vast plain of the *Sanbu* City, Yabu house is a large-scale, open-style, farmhouse originally with the hall-type plan. The house had a partial partition located between the raised floor and the earthen floor areas to provide a sense of privacy for the family while seated. After the transformation process, the interior space became compartmentalized in floor plan and rather compressed in section. It is evident that the house shows a gradual diverging process from the intimate to the half-connected/half-disconnected and, eventually, to the cut-off relationship between the everyday life/served space and the production/service space.

5. Hirano house (190 sq.m/220 years)

Situated amidst vast paddy fields with natural backdrop, Hirano house is a large-scale, open-style, farmhouse fully equipped with *toko*, *tana*, *shoin*, with the front door (*genkan*) and attic. The house is unique in that it consisted of various "double" features, for example, double receiving units and sleeping units, two-story service space, double layers of transitional space, i.e. *engawa* and *nure-en*, and internal circulations, one at the front and the other at back of the house. It is noted that the emergence of the internal circulation created by subtle changes in the floor level and flooring material—the "soft" spatial boundary—reveals a glimpse of the interior corridor of present-day residences.

6. Sakuta house (250 sq.m/300 years)

Situated in a fishing village adjacent to the *Kujūkuri* shoreline, Sakuta house is the largest *minaka* among the case studies. It is an open-style fishing house originally covered by separate roof ridges, or *buntō zukuri*. The integration of separate roof ridges into the single structure affected the house structurally and spatially. Furthermore, changes in the horizontal space included the establishment and expansion of cooking area and the reduction and subdivision of everyday life space. Vertical development involved the installation of suspended ceilings over the raised floor area and the provision of openings, mostly at the inhabitants' eye level when in the floor-based manner.

Fig. 1-2 Location and exterior of the case studies

□ Formal space ▤ Everyday life space ■ Sleeping space

Table 1 Historical development of the case studies

1. Ōtsuka house			
Late Edo	Early Shōwa	Before 1985	
2. Mikogami house			
Mid Edo 1779	Before 1969		
3. Ōsawa house			
Early Edo 1664	1841-75	Before 1969	
4. Yabu house			
Mid Edo	Mid-Late 18 c.	Before 1974	
5. Hirano house			
Mid Edo 1751	Before 1971		
6. Sakuta house			
Latter half of 17-18 c.	Meiji 1878	Before 1967	

■ Production space ▤ Transition space ■ Toilet unit

Table 2 Spatial transformation of the case studies

1. Ōtsuka house

Late Edo	Early Shōwa	Before 1985
2. Mikogami house

Mid Edo 1779	Before 1969	
3. Ōsawa house

Early Edo 1664	1841-75	Before 1969
4. Yabu house

Mid Edo	Mid-Late 18 c.	Before 1974
5. Hirano house

Mid Edo 1751	Before 1971	
6. Sakuta house

Latter half of 17-18 c.	Meiji 1878	Before 1967

Historical Development

Methodologically, integrative approaches, such as review of repair reports,⁸⁾ field observation, and visual comparison, are employed for the analysis of the *minka*'s multidimensional space. The study of transformation process of *minka* consists of two steps: the historical development and the spatial arrangement. Based on physical components, the study examines the historical development of *minka* from the original construction in the Edo period to the transformed condition in the Postwar-Shōwa period. The outlined development of case studies is listed in Table 1.

Spatial Characteristics and Transformations

In order to understand the essential characteristics and the mainstream evolution of *minka*'s existential space in relation to the socio-cultural context, the study categorizes the case studies into three evolution stages—the “old” tradition, the “transitional” tradition, and the “old and new” tradition. This part is primarily based on the analysis of spatial relationships between basic activities—living (L), receiving (R), sleeping (S), dining (D), and cooking (K), and the analysis of sectional diagrams (Table 2).

(1) The Old Tradition

The “old” tradition of traditional Japanese dwellings observed the juxtaposition between structural and spatial aspects. To clarify, while *minka* could structurally be divided into two parts: the raised floor and the earthen floor, the old *minka* was fundamentally composed of three spatial components: the formal space (R), the everyday life space (LDS), and the production space (K). Juxtaposing the functional fixity of the formal space rooted in the feudal Japan with the spatial interconnection and flexibility of the everyday life space and the production space—the manifestation of the traditional agrarian lifestyle, it could be inferred that the lived space of the old *minka* could be recategorized into two different types—that is, the formal space and the informal space. The spatial essences of the old *minka* as shown in Chiba Prefecture consisted of the integrated and intimate LDS space, the interconnected LDK space, and the separate RL space (Fig. 3).

Fig. 3 The old tradition:
Spatial diagram (left), simplified plan and section (right)

(2) The Transitional Tradition

As a consequence of socio-cultural change, from the fixity of the feudal regime to the mobility of the Modern era, the “transitional” stage of the case studies observed changes that concentrated on the raised floor living quarter. Together with the installation of light-weight and movable partitions and the extension of finished ceilings over the elevated living area, the clear-cut boundary between the formal space (R) and the everyday life space (LDS) began to be merged with each other. Nonetheless, owing to the increasing use of interior partitions and such fixed-feature furniture as built-in cupboard and shelf, the originally open boundary between the everyday life space and the production space became half-open/half-closed. Although the integrated LDS space remained almost unaltered, these changes accounted for the emergences of the (semi) disconnected LK space vis-à-vis the connected DK space in Ōsawa house, Yabu house, and Hirano house (Table 2). Hence, it could be restated that the “transitional” tradition of *minka* unveiled an intermingled composition of the formerly separate functional components—that is, the formal space and the informal everyday life and production space (Fig. 4).

Fig. 4 The transitional tradition:
Spatial diagram (left), simplified plan and section (right)

(3) The Old and New Tradition

This period witnessed the shift in the social value of the Japanese household, from the functional flexibility of the raised floor quarter to the household amenity of the earthen floor quarter and the widespread idea of kitchen reform as a crucial starting point for the reform of the entire dwelling. Gas—the “fuel of civilization”⁹⁾—electric light, and modern utilities were introduced into the *minka*’s service quarter to enhance comfort, convenience, and cleanliness.¹⁰⁾ As a result, the “old and new” stage of the case studies showed a convergence between the structural and the spatial divisions, which thus marked a clear contrast to that of the “old” tradition. During this period, the served activities were accommodated on the raised floor; the service activities were on the earthen floor part. Therefore, the spatial essences of the “old and new” tradition of Chiba *minka* could be characterized as the semi-integrated/ semi-separate LD space, the intimate and integrated DK space, which became popular after the war, and the

integrated and interchangeable RLS space. With the emergence of the “internal circulation,”¹¹⁾ these everyday life space (LDS) could be conveniently linked to one another without mutual interference (Fig. 5).

Fig. 5 The old and new tradition:
Spatial diagram (left), simplified plan and section (right)

In terms of vertical dimension, the case studies revealed a gradual transformation, from the closed-in and almost windowless to the open exterior. As for the interior space, it is quite evident that the Japanese concept of verticality appeared to focus more on the visual, or perceptual, aspect—the aesthetic preference—rather than the functional purpose. As manifested in the middle-scale *minka*, the traditional Japanese dwelling yielded little evidence concerning the use of vertical space. Indeed, the provision of finished ceilings above the formal space, the partial partition between the raised floor and the earthen floor areas, and the latticed framework in front of the everyday life space offered unmistakable support for this argument. The later years of *minka*, nonetheless, showed gradual development of the verticality, both the usable space, e.g. the use of attic above the earthen floor area, and the unusable space, e.g. the extension of finished ceilings over the entire raised floor area.¹²⁾ In addition, it is interesting to note that while the vertical elements of the “old” tradition of *minka* constituted the whole-oriented design approach,¹³⁾ the “old and new” tradition of *minka* became more of the part-oriented, planimetric composition that seems to treat vertical elements quite separately, thus resulting in the discontinuity of the entire spatial enclosures of *minka*.

Conclusions

This paper began with the premise that architecture is at the “service of totality” and is thus an integral part of culture. As manifested in the above analysis, the reexamination of the socio-cultural context and the spatial content and the reintegration of the horizontal and the vertical dimensions of the *minka*’s existential space provide a fuller understanding of the spatial essence and evolution of traditional Japanese dwellings.

In brief, the omnipresence of the “parts-of-the-larger-whole” concept vis-à-vis the notion of formality rooted in the feudal Japan served as a crucial frame of orientation in creating the multifunctional, sharable, and interchangeable everyday life space and production space, and the fixed-feature formal space of the old *minka*, which unveil contrasting qualities to those of modern houses and housing horizontally and vertically. The “transitional” tradition of *minka* witnessed changes focusing on the edges of the dwelling core, thus resulting in the blurred boundary between these three components and thereby the reversed spatial relationship to that of the “old” *minka*.

Although the Japanese concept of verticality seemed to emphasize on the visual, or perceptual, aspect, the later years showed the transformation of the *minka*’s vertical space into both the usable and the unusable spaces. Nonetheless, the “old and new” *minka*, structurally and spatially, consisted of two distinct components: the raised floor served quarter and the earthen floor service quarter. At this point, it is remarkable that while the “transitional” tradition of *minka* focused mainly on the functional flexibility of the raised floor served space, the “old and new” tradition appeared to aim at enhancing the household utility incorporated in the service space. Consequently, it is inevitable that such change, to a great deal, contributed to the juxtaposed modes of dwelling between the traditional floor-based lifestyle in the raised floor area and the chair-based lifestyle in the earthen floor area as widely seen nowadays.

Glossary

<i>Amado</i>	Wooden shutters (literally, “rain door”)
<i>Engawa</i>	Verandah
<i>Fusuma</i>	Opaque paper panel (literally, “bed quilt”)
<i>Genkan</i>	Front door or vestibule
<i>Irori</i>	Sunken hearth
<i>Kamado</i>	Clay-plastered cooking stove
<i>Minka</i>	Traditional Japanese dwelling
<i>Oshiire</i>	Closet
<i>Shoin</i>	Study-place window
<i>Shōji</i>	Translucent paper panel (literally, “interceptor”)
<i>Tatami</i>	Floor mat (literally, “to fold”)
<i>Toko</i>	Picture recess
<i>Tana</i>	Shelving recess

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- 10) According to the survey of the 1960’s–1980’s *minka*, it is quite apparent that the *minka*’s earthen floor area underwent further modifications including the subdivision of the large service space into several functional units, e.g. bathroom, bedroom, storage, and changes in the floor level and flooring material of the earthen space.
- 11) Special to the “old and new” tradition of *minka* was the emergence of “internal circulation.” During this period, several forms of circulation space arose ranging from the indeterminate space that became a passage linking the living and dining areas as in Ōsawa house and Sakuta house, the inchoate form of interior corridor due to slight changes in the floor level and flooring material as in Hirano house, to the back corridor linking the sleeping space and toilet as in Ōsawa house, Hirano house, and Sakuta house.
- 12) In this context, the usable space is an extensional functional area—the hidden vertical space. The unusable space is a manifestation of the Japanese concept focusing on visual and perceptual experiences.
- 13) The discontinuity in composition of openings and type of spatial enclosures—the absence of the “interconnected whole”—in particular where two different planes meet, affords an important evidence of the changing design approach of the “old and new” tradition of *minka*. See, Waricha Wongphyat: *Culture of Small Space: A Comparative Study between Traditional Thai and Japanese Dwellings*, Ph.D Dissertation, Department of Architecture, The University of Tokyo, 2008.

和文要約

本研究は、伝統的な日本の住居「民家」の生活空間を論じる。千葉県を選択し、事例研究で取り上げるのは、高度に都市化が進んでいる西地域から大塚家、御子神家、平野家の3軒、農業中心の東地域から大沢家、藪家、作田家の3軒、計6軒である。研究対象は、「旧」型、「過渡期」型、「新旧併存」型の伝統住居で、時代的には、近世から現在までを俯瞰する。そして、5つの基本行動：団欒(L)、接客(R)、就寝(S)、食事(D)、調理(K)にもとづく平面および断面ダイアグラムの分析から、民家の空間的な本質は次のような性質を持っていることが分かった。

「旧」型の伝統的な民家を構造的に見ると、床上部分と土間部分から成っていた。しかし、空間的側面から見ると、旧来の民家は日常生活のための空間、生産のための空間、そして接客などの公的空間とに分かれていたと言える。日常生活のための空間と生産のための空間はともに融通可能な空間であり、それが機能的に固定化された公的空間と併存していたのである。この状況は言い換えれば、「旧」型の伝統的民家は、二つの異なる領域に分けられていたということである。一つは、平面的にも垂直的にも、公的で固定化された空間、もう一つは平

面的にも垂直的にも、私的で流動的な空間である。

「過渡期」型の伝統的な民家では、住空間の中心から離れた周縁部で変化が見られる。つまり、3つの空間の境界があいまいになり、「旧」型の民家で見られた関係性が反転するのである。民家は徐々に垂直方向への発達が促され、使用可能な空間、あるいは屋根裏空間のようなものが垂直方向につくり出された。

一方、「新旧併存」型民家は、構造的にも空間的にも大きく2つの主要部分から構成された。即ち、床上の奉仕される領域と土間の奉仕する領域である。この二つの領域を比較的に分析してみると、「過渡期」型の伝統的民家では、床上の奉仕される空間の機能的融通性を高めることに焦点を置いていたのに対し、「新旧併存」型の伝統的民家では土間の奉仕する空間において家事効率の向上や技術的改良をすることに力点が置かれているようである。結果として、これらの変化により、床上部分における伝統的な床座の生活様式と、土間部分における近代的な椅子座の生活様式が併存することになった。

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