

# Rereading the *moya/hisashi* in Japanese architecture

## Between expression and conception

Mizuki CRUZ SAITO

Ph.D. course, Kyoto Institute of Technology, Dept. of Architecture and Design, NISHIDA Masatsugu Laboratory

We will try to analyse and grasp a Japanese concept of space, from a traditional spatial organisation system used in the Nara period until the arrival of the *shōinzukuri* during the Kamakura period, the *moya/hisashi*, and the expression which allows us to describe it, the *kenmenkihō*. We shall also see how, despite having abandoned the system, the conception is kept throughout subsequent periods, revealing unconscious forms of spatial representation.

**Keywords:** spatial organisation, *moya/hisashi*, Japanese spatiality

---

### Introduction

In Japan, the openness of the house implies the use of a veranda (*engawa*) and of eaves (*hisashi*) in order to protect the interior rooms from sunlight and the elements: “The veranda (*engawa*) is an architectural element that is found in all of the Far East, while at the same time characterising tropical regions, however the eaves (*hisashi*) seem to be purely Japanese. Their function is to protect openings in the walls, that their paper windows render fragile, and other projections”<sup>1</sup>. The veranda is an essential element of the house for constructive reasons, and also shows the Japanese attachment to nature. A prime example of ambivalent space, it symbolises the intimate tie linking interior to exterior and man to his environment. This last point has been widely commented on by westerners, to the point of becoming today one of the emblems of Japanese culture, crystallised around the quasi-unique figure of the “*engawa*.”

When we speak of today’s domestic dwelling, the terms *engawa* and *hisashi* define the veranda

and the eaves which cover it respectively. In religious buildings, however, the *hisashi* alone takes on this double function. It designates the eaves as well as the space in the periphery of the main room, the *moya*. This last acceptance assumes a more technical characteristic and is applied precisely to a construction system used in Buddhist temples as of the Antique period (593-1185). It was then generalised in the residences of nobles in the Heian period (784-1185) and slowly disappeared in the Kamakura period (1185-1333). However this system of spatial representation is still in effect and many affirmed theorists such as Ōta Hirotarō, Inoue Mitsuo, and more recently Nakagawa Takeshi, agree on the fact that we cannot understand traditional Japanese architecture without examining the *moya/hisashi* duo, the central room of the building and its peripheral area. No intelligence, no mental organization of the traditional structure without understanding the interactions between the two “[which] constitute a fundamental departure point of Japanese architecture”<sup>2</sup>.

We shall try, through the study of the traditional *moya/hisashi* system, to untangle and update a conception of Japanese space and identify the parameters which structure it.

### I- TELLING SPACE: a description system, the *kenmenkihō*<sup>3</sup>

Ōta Hirotarō writes: “The *moya* and *hisashi* system is an essential base. If we do not understand it, we can go so far as to say that it is impossible to understand the composition of interior Japanese space”<sup>4</sup>. The *moya/hisashi* is a traditional spatial organisation system that was used in the Nara period until the arrival of the *shōinzukuri*, during the Kamakura period. People used to describe this system with the expression *kenmenkihō*. It is Adachi Kō’s study, dated 1933, on the “Method of representation of architectural plans in the medieval period”<sup>5</sup> which starts his work on the *moya/hisashi* duo. During the period in which the author wrote this article, it was common practice to describe an ancient building using the *kenmenkihō* which meant “so many *ken*, so many *men*.” *Ken* represented the number of inter-columnar spaces, in the sense of “*keta-yuki*” (or beams parallel to the roof beams), while *men* announced the number of inter-columnar measures in the sense “*hari-yuki*” (or beams laid orthogonally to the direction of the roof beams.) For example, the plan of the main pavilion of Hōryūji (Nara period, 607) was described in the following way: “*keta-yuki 5ken, hari-yuki 4men*” which was abbreviated in general speech to “*5ken, 4men*” (fig.1-A). Paradoxically, ancient texts (*Kokin mokurokushō*) used “*3 ken, 4men with mokoshi*” for this same building. The Chūson-ji konjikiidō (1005 approximately) of “*3ken, 3men*” is depicted in ancient texts as an architecture of “*1ken, 4men*”. From the start we note that it is impossible for a building to be *1ken* wide and *4ken* deep. In the nineteen-thirties, these same

expressions *men* and *ken* continued to be used although the numbers did not match.

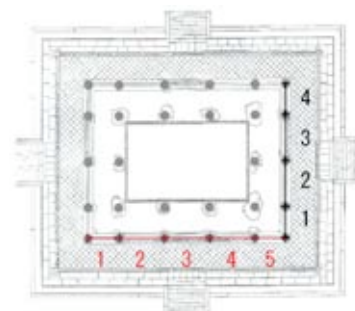


fig.1-A “5ken, 4men”; Plan of the Main Hall of Hōryū-ji.

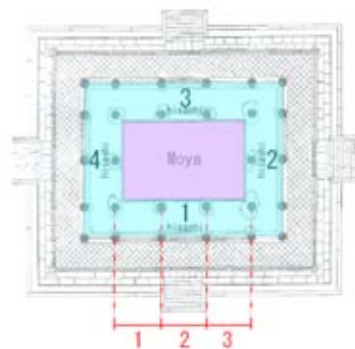


fig.1-B “3ken, 4men”; Plan of the Main Hall of Hōryū-ji.

Nobody had tried, prior to Adachi Kō’s study, to understand the discrepancies between the ancient and actual terms. He demonstrates in an exemplary manner that *ken* actually corresponds to the inter-columnar spaces of the *moya* on the main facade, and *men* defines the number of *hisashi*, the peripheral zones surrounding the core space. Today for example, the Hōryū-ji (fig.1-B) is described in reference books as the *Collection of plans. History of Japanese Architecture*<sup>6</sup>: “*ketayuki 5ken, hariyuki 4ken*”. Contrary to the ancient expression “*3ken, 4men with mokoshi*”<sup>7</sup>, it is difficult to rapidly picture the building. Only the width and depth are represented, but neither the

composition nor the spatial organization. This confusion and this evolution may also come from the fact that the expression, was abbreviated with time: “3ken ari 4men hisashi” or “having 3ken and 4 men or hisashi surfaces”, became “3ken 4men hisashi” and finally “3ken 4men”<sup>4</sup>. Amongst others, the word *hisashi*, which provided a link with the word *men*, was dropped. This is what Adachi Kō discovered.

His study does not dwell on the spatial consequences of this composition but indeed reveals an ancient, completely different, manner of telling and representing space. It is, in fact, a fully-fledged measuring system which allows the creation of a mental image of the whole of the building. Less abstractly, 1 *men* means there is a *hisashi* on the main facade, 2 *men* means a *hisashi* in the front and one at the back, 3 *men* a *hisashi* in front and two on the sides, 4 *men* means there are *hisashi* giving on to each facade or surrounding the whole, as an ambulatory (fig.2).



fig.2

## IMPLICIT PRINCIPLES

### Frontality:

However, the *kenmenkihō* does not give any indication on the depth of the building. A tacit law fixed it at 2ken for the *moya* and 1ken for each *hisashi*. Therefore we can deduce that the depth of a building was about 4ken when it had 4 *hisashi*. This description system thus prominently emphasises the width and the general aspect at the expense of the depth, and corresponds to a tendency at the time to privilege the main facade of the building<sup>9</sup>. On this relationship between the depth and the width of the building, Inoue Mitsuo observed a widening of the main facade which he

associated with the development of frontality: “At the end of the Nara period, there were temples that were more than twice as wide as they were deep. This development continued through the Heian period: the main hall of Hosshō-ji [...] was a very wide structure with a frontage of eleven bays”<sup>10</sup>.

At the ancient period, access to the entry of the *kondō* (Lit. golden hall. The name given to the principal hall housing the most sacred images at Buddhist temples in the Ancient period) being forbidden to followers. The only space that was reserved to them was outside, in front of the sacred image. We know that in this period, at the *kondō* or main pavilion of the Hōryū-ji, only the chief priest, had access to the building, and exclusively during very special ceremonies. As long as the temple’s sole function was to shelter a statue of Buddha, a symmetrical structure in plan and section was ideal: “this symmetry gradually disintegrated as design interest became focused instead on structure’s facade; this is the development of frontality”<sup>11</sup>. The development of frontality has roots of a structural, ideological and practical order.

From a structural point of view, the roof, unique in its construction, limited the widening in the front and in the back of the building and allowed the addition of a maximum of three *hisashi* (*hisashi*, *magobisashi*, *mago mago bisashi*). On the contrary, the main facade could be extended indefinitely in its width without encountering any technical problems. Frontality therefore answers first to a constructive logic. Also, as Inoue underlines, the roof’s design reinforces the frontality: “The *jōge hisashi*”<sup>12</sup> was common in the Heian period and can be seen in such structures as the Hōōdō (Phoenix Hall) of Byōdō-in and even in many depictions of houses in picture scrolls [...] The roof edge of these buildings was to begin with considerably taller than any human [...] The reason ultimately was not functional but formal. The *jōge hisashi* was meant to emphasize the front

of a building and to distinguish it from the other elevations. This too, therefore, was an expression of frontality”<sup>13</sup>.

Frontality also answers to an ideology. During the Nara period, a Buddhist ideal newly imported from China (devotion to the Pure Land) spread in the aristocracy of the court, reproducing the aspect of the paradise of Amida nyorai in their residences, transformed into Buddhist homes<sup>14</sup>. The latter were built according to *jōdō henjō-zu* or drawings illustrating this paradise. The use of illustrations for the construction of buildings accentuated the aspect of a “picture” architecture which reached its peak in the Hōōdō of the Byōdoin in the middle of the 11<sup>th</sup> century. Furthermore, a pond was created facing the Hōōdō, opening the portico towards nature, and beyond this pond, a *kogoshō* (Little Palace) was specially designed in order to see the Hōōdō frontally.

## II- ORGANISING SPACE

Hierarchy: centre and peripheral area

The social hierarchy of the building is part of the fundamental principles inherent to architecture: “On religious space, “classic” studies of anthropology, history of religions, of phenomenology or sociology, teach us that for the religious man, space is not homogenous. It is organised around a “centre”, that of the universe [...] the sacred dimension of architecture settles around three elements: the centre, the boundaries and the structure”<sup>15</sup>. As an expression, the *kenmekihō* is the reflection of the constructive and ideological orientations of a time. *Kenmekihō*, in distinguishing the *moya* from the *hisashi*, implies the recognition of differentiated spaces visible not only in the plan but also in the volume.

The posts are the main markers, however Kawakami’s detailed study delves further by

exposing structural differences between the *moya* and the *hisashi*. If the first is structurally independent, the second rests on the *moya*, thus creating primary and secondary spaces. Another example, the *hisashi* has a ceiling called *keshōyane* which leaves the rafters apparent, contrary to the *moya* whose ceiling is flat. In older buildings which have identical ceilings, the *moya* is distinguishable by a clearance that is much greater than that of the *hisashi*<sup>16</sup>. This arrangement answers to the need to house and distinguish the space for the saint of saints. Let us note that during the Ancient period, the *moya* and the *hisashi* were spaces reserved for divinities and not for men<sup>17</sup>. It is the exterior spaces like the garden or the *kairō*<sup>18</sup> which were used by followers during religious ceremonies. The eaves form a prayer space under the roof which we could call the space of man.

The architecture of monuments, which had until now been exclusively meant to house divinities, began to concentrate its efforts more and more towards a space for man<sup>19</sup> around the second half of the Antique Period. This evolution was notably due to the influence of the Mikkyō or “esoteric school” at the beginning of the Heian period. By allocating a privileged place to ceremonies and to rituals, it generated the development of a prayer space for adepts, placed before the *kondō*, or building housing the reliquary. This space reserved for man, the *raidō* reproduced the spatial distribution of the *kondō* with a *moya* and surrounding *hisashi*, as we can see as the peak of the accomplishment of this spatial shape, in the plans of the Daizen-ji *hondō*, of the Chōkyū-ji *hondō* or of the Mandaradō of the Taima-ji (**fig.3-C**). We can thus conclude that the *moya/hisashi* duo was a veritable manner of composing space, and was not exclusively reserved to the sacred space, but also applied to the profane space. The value of the central space, assimilated with the *moya*, is different to that of the space

surrounding it, assigning to people of superior rank a place in the centre. Dominique Buisson, specialist of Buddhist architecture, underlines the adoption of this spatial organisation by buildings of all sorts: “We notice that all architecture of this time was concentrated around the object of its conception itself. The image of Buddha is housed in the *kondō* which is placed in the centre of the temple; the emperor sits enthroned in the imperial hall at the heart of the palace; the aristocrat rules in the main building (*shinden*) of his residence; the Gods descends in the saint of saints (*honden*) of the Shinto sanctuary”<sup>20</sup>.

Ōta Hirotarō, in *Specificities of Japanese Architecture*<sup>21</sup>, succinctly exposes how the structure followed the needs of reception of the followers or of a ritual space in front of a saintly image. The sacred space and the profane space became closer in several ways: addition of the *hisashi* or simple extension of its roof, construction of an edifice facing the building containing the Sacred Image, or the fusion of the buildings into a single one. Each of these solutions depends on the pair *moya/hisashi* which constitutes the structural framework from which the great majority of the buildings in the Nara and Heian periods were organised.

#### System of addition of the *hisashi* or extension of the roof

*Moya/hisashi* is first and foremost a simple system of addition: “Addition and division are the two most common ways of generating interior spaces. Addition, needless to say involves the attachment of one or more interior spaces to another interior space [...] These were aisles (*hisashi*) in the case of addition and partitions (*hedate*) in the case of division”<sup>22</sup>. When it was necessary to extend the interior surface, a *hisashi* was added according to a process known as “budding”. If the space thus obtained was still

insufficient, a second *hisashi* named *magobisashi* was added. The plans which retrace the evolution of the Mandaradō of the Taima-ji, (fig.3) are an exemplary presentation of this type of extension by the addition of a *magobisashi*.

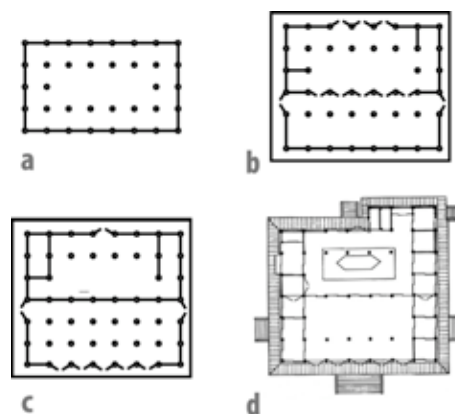


fig.3 Evolution plan of the Mandaradō of the Taima-ji.

Housing followed a same process of addition, as we can see in the description of Fujiwara no Toyonari’s house, built in Shigaraki-kyō around 743, 15<sup>th</sup> year of Tenpyō: “[It] was composed of a central building measuring five spans for its main façade and three for its lateral facade”<sup>23</sup>.

From this primitive shape, Ōta shows an evolutionary process of the *moya/hisashi* which spreads to all housing generally: “With time, the eaves were fitted out over three, then over four sides of the building. Finally the eaves were doubled. Through this development process, the surfaces of the buildings became larger. This development process can be found in literal expressions which describe the houses of this period as follows: the eaves of three spans on one façade, the eaves on three spans on two facades, the eaves on three spans on three facades, the eaves on three spans on four facades”<sup>24</sup>.

However we cannot systematically speak of an added element when we refer to the *hisashi*. Indeed, its construction is articulated around two axes: a

desire to have an extension that is executed in a fluid manner between two spaces and to conserve differentiated spaces. The *hisashi* is never the pure and simple extension of the *moya*, and though it is structurally dependant on the latter, they do not form an indistinguishable whole. Kawakami observed in *Study on Japanese Medieval Residences*<sup>25</sup> that this non-homogeneity could be applied to certain constructive details. When the *moya* and the *hisashi* are linked by a same roof, for example, a slight difference in the slope of the roof allows us to distinguish them<sup>26</sup>. This same idea can be found in the gap between the floor of the *moya*, slightly higher than that of the *hisashi*.

### III- QUALIFYING SPACE

#### *Gejin and naijin*

Until now, we have only considered one shape for the building containing the Sainly Image; a centre and its peripheral area. Inoue perfectly summarises the evolution of the latter, which in the course of time allowed the presence of man in its space: « [During the Nara-period] People worshiped from outside the building, and entry was strictly forbidden. Starting in the Heian period, however, the worship hall, which at last could accommodate worshipers, was created in front of the Buddhist hall, and eventually this became the *gejin*; and only as this became a part of the domain of Buddha. Even then, the *naijin* and *gejin* at first were separated by walls and solid doors. Later, more transparent partitions such as lattice doors and open friezes were used, and thus the two areas gradually merged<sup>27</sup>.

The author gives two distinct definitions of the words *naijin* and *gejin* according to the periods which correspond to two different typologies of buildings. The first, in which we find all of the buildings built before the Heian period, uses the word *naijin* for the *moya* while *gejin* defines the

*hisashi*. In the post-Heian definition, the *naijin* corresponds to the main room and the *gejin* to the prayer room. For Inoue these definitions are different in quality: “the first being a functional definition and the second, a structural one<sup>28</sup>”.

Compared to the *moya hisashi*, *naijin* and *gejin* do not transmit the idea of hierarchy. The other difference is the integration of the *moya hisashi* structure in the *naijin* as well as in the *gejin*. The terms *moya* and *hisashi* reveal a much more complex spatiality; amongst others, a non-homogeneity in the space of the *gejin*, or of man. The people sitting in the centre of the space do not have the same status nor do they have the same functions. However, we notice with time, the progressive disappearance of the *moya/hisashi*, giving way to the terms *gejin* and *naijin*.

Indeed, if we observe the ultimate stage of the Mandaradō of the Taima-ji (after the Kamakura period), reading the *moya/hisashi* is less obvious than on the plan dating back to the beginning of the Kamakura period. The creation of lateral rooms diminishes the *moya/hisashi* pattern, especially in the space of the *gejin*. Furthermore, the *moya* of the sacred space no longer corresponds to the lines suggested by the structure. It becomes more practical to define spaces as *gejin* and *naijin*. Especially if we compare the plans from the beginning of the Heian period with earlier ones, highlighting the limit between the two spaces makes their use obvious. However, the framework of the roof, that is to say two roofs integrated into another that dominates them, show the reminiscence and maybe the will of keeping the *moya/hisashi* structure alive

### IV- MODIFYING SPACE of *gejin* and *naijin*

#### Creation or fusion of the *shōdō*

The necessity of a sheltered ritual space implies the use of *hisashi* or *magobisashi*. This system allowed the building to become larger without modifying its basic design. The roof however was gradually lowered, so much so that there was a limit to the process. One of the other solutions used in the religious enclosure from the Nara period and more particularly Heian, was the creation of a new edifice facing the main building, and eventually their fusion into a single structure: « As long as the *kondō* was but a shelter for the Sacred Image and that we venerated it from the exterior, it was not a problem, but when the monk Ganjin, introducing the Ritsu sect, underlined the importance of the clergy and defined with more precision the ritual roles, the architectural system implanted since the Asuka period proved to be impractical. The great Buddhist image in the north of the sanctuary and facing south, was revered by the priests kneeling before it, but the space was so reduced that the religious congregation had to stay outside during large religious ceremonies [...] The immenseness of the Tōdai-ji would never be reedited, therefore the roof system needed to be modified and extended forwards onto a surface added in front of the *hisashi* (*magobisashi*), or else the construction of a new type of building had to be found, with an independent adoration hall *raidō* in front of the *kondō*»<sup>29</sup>.

#### Example of the Hokkedō in Tōdaiji

The Hokkedō (**fig.4**), or cultic hall (747), of the Tōdaiji in Nara, is a composite construction organised around two buildings which pre-exist it : a lecture hall or *raidō* and a prayer hall, *shodō*. This type of architecture, called *narabidō*<sup>30</sup> is typical of the Heian period. Here, though it is certain that the *shodō* dates from the Nara period, the origin of the *raidō* is not fully determined. Asano Kiyoshi, in *Architectural Researches on Nara Period*<sup>31</sup>, questions whether this *raidō* is a creation of the Kamakura period (1199

approximately) or if it is a building dating from the Nara period and subsequently reconstructed. The available vestiges and archives do not enable us to answer the question with certitude, save for one exception, the *Annals of Todaiji*<sup>32</sup> and which says: “*5ken and 1men for the raidō*”<sup>33</sup>. This source proves that the *raidō* existed since the Nara period and that in fact it is one of the oldest examples of the *Narabidō* type. Thus there were originally two separate building: a *shodō* of *3ken 4men* to which was subsequently added a *magobisashi* and a *raidō* of *5ken 1men*. The *hisashi* of this building was placed on the north side in order for it to be facing the *hondō* or divine Image.

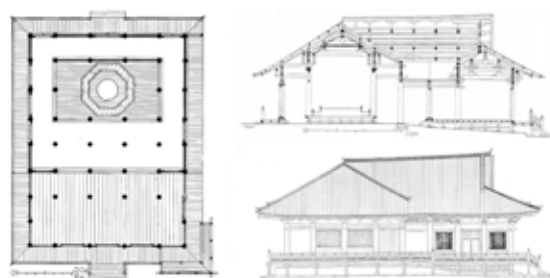


fig.4 Plan, cross section and elevation of Hokkedō in Tōdai-ji.

The cross-section (**fig.4**) of the Hokkedō indicates a desire to merge the *hondō* and the *raidō* while preserving the characteristics of their interior spaces, the second space and man's space respectively. For example, the stairs which originally allowed leaving one building to enter another as well as the differences in height were maintained after the fusion of the two constructions. Initially, the eaves of the *magobisashi* of the *hondō* and those of the *hisashi* of the *shodō* linked these two spaces. Later, around Middle Edge, these two spaces were reunited under one same roof. The building is composite in order to maintain the specificities, while answering to the new demands. Indeed, under the influence of the Esoteric School, the places destined for prayers and rituals were grouped under one same roof

unifying and enlarging the spaces. Paradoxically, it would seem that with the particular roof construction and the relatively steep slope of the eaves, the building could not be fitted with a simple sloped roof<sup>34</sup>. The difficulty consisted in distinguishing the centre from the peripheral areas, while trying to keep one sole roof. From this example we can extricate how the construction methods melt one into the other, making difficult the reading of the spaces and the definition of the origins of its parts.

With the Hokkedō, the difficulty was to integrate a space reserved to man inside of the sacred space. Though the *moya/hisashi* structure is preserved, the description with the *kenmenkihō* is no longer sufficient in order to have a clear representation of the whole building because the limit between the *naijin* and the *gejin* must also be stated. We can notice here the premises of the fall of the *kenmenkihō* because the need of space reserved to men complexified the structure. We can find the same kind of phenomenon in the transition between the *shindenzukuri* (or construction of aristocratic style) towards the *shōinzukuri* (or architecture style of palaces and residences).

### FROM SHINDENZUKURI TOWARDS SHOINZUKURI and the progressive cessation of the *kenmenkihō*

The *shindenzukuri*, or the architecture of the aristocratic residences of the Ancient period, develops a space with a central area, the *moya*. From this centre eaves open out onto the garden, and *magobisashi* were added in order to increase the floor surface. This *moya/hisashi* structure was used in the Ancient period until the Kamakura period in temples and in noble's dwellings. Ōta Hirotarō, through his work *The Illustrated History of the Japanese House*, tells us that the arrival of Chinese continental architecture in the Nara period

(710) modified the architectural style of temples and palaces. If the architecture of continental style was massively developed in the capital of Heijōkyō, the vestiges of the houses of this period have disappeared. The Dempōdo (fig. 5) or lecture hall located in the East enclosure of the Hōryū-ji temple is the closest example. This building was originally Lady Tachibana's house (constructed in 739, 11<sup>th</sup> year of Tempyo) and was transferred and converted into a Buddhist temple<sup>35</sup>. Kawamoto Shigeo specifies that "between the Nara and Heian periods, the structure of dwellings and of temples being identical, the transfer from one to the other was possible"<sup>36</sup>. Since the beginning of the Heian period, the *kenmenkihō* is used in religious buildings as well as in houses of the *shindenzukuri* style, and this was so until the beginning of the apparition of the *shōinzukuri*. In the Middle Age period there emerged buildings which no longer used the *kenmenkihō*. These changes appeared first in residences of the upper class and then in religious buildings, because the composition of the plan based on the *moya/hisashi* duo no longer met the new requirements of everyday life.

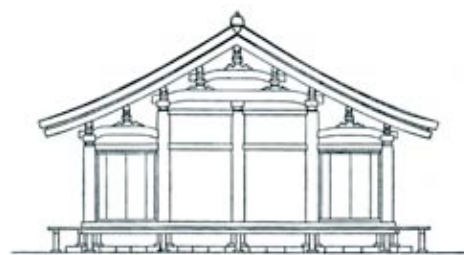


fig.5 Lateral elevation of the Dempōdo, originally the Manor of "Lady Tachibana".

Kawamoto Shigeo emphasises that in the domain addressed, preceding research (he revises previous studies from the Edo period until Ōta Hirotarō) concentrated their efforts on the differences. It is a method which does not highlight the reasons for this change. Following a contrary logic, the author thus attempts to grasp the

resemblances between these two styles and thereby to indicate the progression of one towards the other. In order to do so, he creates three axonometric plans. The first, the Higashi sanjōden shinden (fig.6), is the representative of the *shindenzukuri* and is viewed in comparison to two buildings representative of the *shōinzukuri*, the Nijōjo ni no maru gotten oohiroma (fig.7) and the Nijōjo ni no maru gotten shiroshōin (fig.8) The choice of these three buildings was determined by the considerable amount of written and pictorial sources available for consultation, like the *nenchūgyōji emaki*.

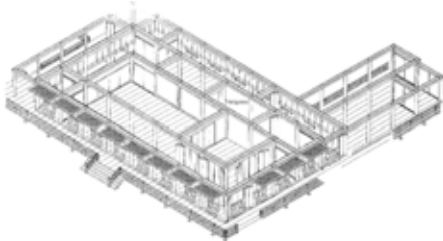


fig.6 Axonometric projection of Higashi Sanjōden Shinden.

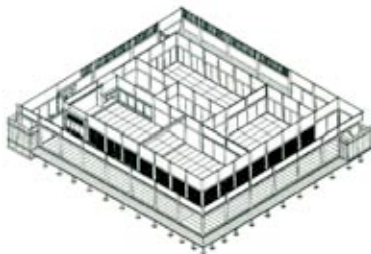


fig.7 Axonometric projection of Nijōjo ni no maru gotten oohiroma.



fig.8 Axonometric projection of Nijōjo ni no maru gotten shiroshōin.

(Fig. 6 to 8 by Kawamoto, Shigeo, *op.cit.*)

Why compare a building to two others? The Higashi sanjōden shinden is a building in the *shindenzukuri* style, which incorporates a private and a public space. It is therefore compared with the Nijōjo ni no maru gotten oohiroma, a building of public nature in combination with the shiroshoin, which is a private building for the shogun. If the type of *tategu* or the separations are different in the *shōinzukuri* and in the *shindenzukuri*, the manner of dividing space is the same. They are all very open spaces facilitating the circulation between rooms and between exterior and interior. For a long time, it has been agreed that hot and humid summers and the necessity of wind circulation are responsible for the construction of the Japanese house. It is for this reason that the houses are open. Let us not forget that the older *minka* have closed spaces surrounded by walls. The dwelling of the Kōfun period (3<sup>rd</sup>, end of the 5<sup>th</sup> century) represented by the *haniwa* (terra cotta figurine placed on the slopes of a tom mound), had doors and windows. With the exception of the Edo period *minka* influenced by the *shindenzukuri* and *shōinzukuri* styles, the most ancient have thick walls. Therefore, if we look at the whole of Japanese architecture, the *shindenzukuri* and the *shōinzukuri* are both particular constructive styles. If the climatic conditions do not explain this opening of the house, why then was such a space necessary? The interior space of the *shindenzukuri* is a space created by posts, closed by temporary elements. The spaces in the north of the *moya*, the *hisashi* and the *magobisashi* are private areas, whereas the south part is destined for public events and rituals. In the *Nenchūgyōji emaki higashi sanjōden* (Lit.The scroll of Annual Events of the Higashi sanjōden) we can see the south part of the building linked to the garden. This type of building presented problems in daily life for it was conceived at first as a space for ceremonies. Another problem linked to the necessity of spaces for everyday life was the scale. Let us note the

progressive decrease of the intercolumnar spaces, from 10 *shaku* to 6,5 *shaku*. Contrary to the *shindenzukuri*, the *shōinzukuri* is first a space for man, thus is based on a scale that allows man to live in it<sup>37</sup>.

During the Muromachi period (1336-1573), the northern part of the room where daily life took place, *tsune no gosho*, was transformed. The round posts were replaced by square-sectioned posts, facilitating the pose of elements of separation and the increase in the number of small rooms in the dwelling. Therefore the structure is more and more complex and no longer allows a simple understanding as with the *moya/hisashi*<sup>38</sup>.

Around the Edo period, there emerges in the *minka* (or country house) *zashiki* or *shōinzukuri*. Distant traces of the *shindenzukuri* style persist in the spatial occupation in two zones in which the domestic space is established: the south face reserved for public activities and a north zone for private life. This style was perfectly suitable in common houses where marriages, funerals, and *hōji* were celebrated. The *moya* and *hisashi* as a system were not used but the outline is fully recognizable. Thus, even if these different architectural forms correspond to a particular lifestyle, we can notice a certain containment during the different periods.

Even if the use of the *kenmenkihō*, representative of the Heian period, is no longer used as of the Kamakura period, we can observe a continuity with this reasoning in the following periods, even the most distant. This continuity is visible if we observe the ceilings such as those of the Kauntei and Yūin built at the end of the 17<sup>th</sup> century and tea rooms at the school of Urasenke. Let us recall that the relationship between the *chashitsu* and the *minka* or rural houses allow us to take the *chashitsu* as examples even though they evoke a world far from ordinary: “The tea room

does not pretend to be anything more than a simple peasant's house”<sup>39</sup>. The ceiling is of a different height in each room. The central space is in *kumiire tenjō* and the surrounding space in *keshōyane ura*. The *chashitsu* (room where the tea ceremony is performed) thus reuses the spatial composition dating from the Ancient period. In front of the *toko*, the most noteworthy place, the ceiling is high; where the *temae datami* is located (position of the person preparing the tea) the ceiling is slightly lower, and in front of the *nijiriguchi* the ceiling is a *kakekomi tenjō*<sup>40</sup>. Incidentally, we can observe in the *Chafu*<sup>41</sup>, a collective guide, the use of the word “hisashi”<sup>42</sup> to evoke places of lesser importance. Another example, this time of a house: though hardly recognizable on the plan, in the cross-section the distinct use of a *moya*, *hisashi*, and *magobisashi* can be observed in the Sawai House (fig.9), a *minka* built in 1740, or also in the Reizei House (fig.10) built in 1790 (It is the last of the old mansions of the nobility in Kyōtō). It is not only a question of technique but of a tradition of spatial composition.

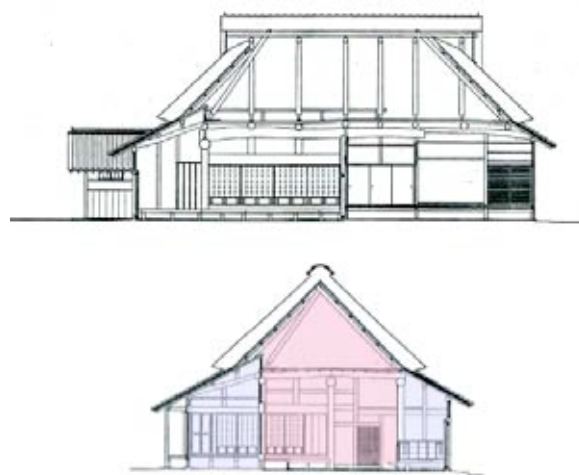


fig.9 Cross section and transversal section of Sawai House.

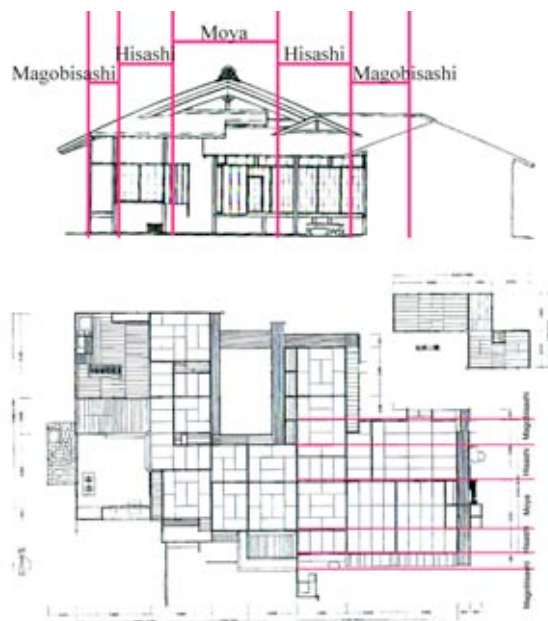


fig.10 Front section and plan of Reizei House.

## CONCLUSION

The *moya/hisashi* duo and the expression which allows its description progressively cease to be used as of the Kamakura period. Be it religious architecture or the domestic habitat, the reasons for their decline are more or less similar. It is mainly a question of the complexification of the structure and the diversification of the building's functions. However, despite this complexity, the building takes on the main idea of the spatial organisation of the *moya/hisashi*: hierarchy of the centre and of its peripheral area, north/south organisation, separation between public and private, keeping a spiritual centre, the domestic altar in the case of the house and the tradition of a ceremonial space which opens onto the south facade. We often forget that these ideas forming the archetype of the Japanese house, still rooted today in Western imagination and which appear so common, are the product of a system. In this sense, the *moya/hisashi* duo could be defined as a "structure of reference", a strong and relatively stable composition, which future operations have come to modify without stopping it from orienting the evolution of a large

part of Japanese housing. The permanence of the *moya/hisashi* also shows an adaptability to different types and periods of time.

More concretely, the elements which before allowed us to differentiate the *moya* from the *hisashi* and the *shodō* from the *raidō*, that is the changes in ceiling heights, the different roof processings, the small changes in floor heights, etc. still exist to distinguish the spaces of today's Japanese house.

Heino Engel observed that in the Japanese house, all of the rooms for daily activity, whatever their dimensions and functions, are made with the same construction materials, the same processing, the same scale. Each room possesses the same spatial gravity which allows it to be made larger or smaller by fusion with its neighbours, without damaging the static quality of its space. The whole house appears to be an addition of equal spaces, without any hierarchy<sup>43</sup>. To understand Japanese spatiality, it is exactly the processing of details, the gaps, suggested elements and the unclear limits that we must look at, as we have seen in this work's numerous examples: the slight difference in the roof, the floor height between *moya* and *hisashi*, the processing of the ceilings, the different ceiling heights etc. All of these elements, because they are suggested, ask that the observer have already acquired certain codes, received an "education in symbols".

"We have a habit of speaking of a Japanese architectural "style", by analogy with European styles. Such a term cannot, in any way, be applied with the same understanding to Japanese edifices, the architecture of these depending not of fashions or of proportions but of construction types, especially roof framework assembly techniques... The only differences between the "styles" allowing them to be distinguished are the details in construction and roofs, ornamentation, beam ends,

gables, diverse decorative motifs, doors, windows, etc. Even these differences are sometimes minimal and only reveal themselves after meticulous examination”<sup>44</sup>.

However, this short study is abundant in examples which, though they show the durability of the abstract shape, make it difficult to interpret Japanese architecture history by referring to a western linear progression in which each new style supplants the former: “No execution is a system, it is only the answer to a question renewed each time”<sup>45</sup>. The duality and the ambivalence of traditional Japanese architectonic can be explained by the overlapping of different construction elements, of materials, belonging to different periods in a same building.

Finally, the elements which structure *moya/hisashi* have given us certain keys to understanding a thinking and a way of apprehending space which are specifically Japanese, distant from abstract and speculative reflections. The manifestations, conscious or not, of these elements find multiple extensions in our contemporary architecture. The use of the *kenmenkihō* thus permits the immediate mental representation of the composition of the building which is not without recalling the use of the tatami and of the different contemporary modular elements for the evaluation of the dimensions of the rooms and their conception. In this sense, it is possible to presume that this traditional technique results from an ancestral practise of modularity specific to Japan where the construction elements benefit from explicit, even tacit, rules, which facilitate the description and the composition of buildings.

---

#### Endnotes

The author would like to express his gratitude to her profesor Nishida Masatsugu and Miss Sophie Coulier for the English translation.

- [1] PEZEU-MASSABUAU, Jacques, 1981, p.42.
- [2] NAKAGAWA, Takeshi, 2005, p. 42.
- [3] *Kenmenkihō* 間面記法
- [4] ŌTA, Hirotarō, 1982, p.27.
- [5] ADACHI, Kō, 5 august 1933, pp.495-518.
- [6] Nihon kenchiku gakkai hen, 2005, p.111.
- [7] *mokoshi* : “The difference between *hisashi* and *mokoshi* is that the tie beams, *nuki* , of the *mokoshi* are directly inserted into the shafts of the pillars.” (JAANUS Japanese Architecture and Art Net Users System.)
- [8] “*3ken ari 4men hisashi*” 三間在四面庇; “*3ken 4men hisashi*” 三間四面庇; “*3ken 4men*” 三間四面
- [9] ŌTA Hirotarō, 1978, p.30.
- [10] INOUE, Mitsuo, 1985, p.60.
- [11] *Idem.*, p.60.
- [12] *Jōge hisashi*: “a decorative treatment of the façade of a main structure in which a gap is left in the lower roof edge and covered by a slightly higher roof segment; older examples generally take up a larger proportion of the building width” INOUE, Mitsuo, op. cit., p.177.
- [13] INOUE, Mitsuo, 1985, p.66.
- [14] Dictionnaire historique du Japon, Vol.1, p.214.
- [15] NISHIDA, Masatsugu, mars 2007, p.140.
- [16] ŌTA, Hirotarō, 1977, pp.151-159.
- [17] ŌTA, Hirotarō, 1983, p.215. He specifies that during the Heian period, at the *kondō* or main pavilion of the Hōryūji, only the monk superior, or *jushoku*, had acces to the building, and exclusively during very special ceremonies such as that of the changing of the monks.
- [18] Bay wide, originally constructed to surround the most sacred precinct containing the main hall, *kondō* and pagoda in 7c-12c Buddhist temples.
- [19] Between the Buddhist temple and the Shinto sanctuary, the big difference resides in the fact that the architecture of the latter still does not have a space for man. It is a shelter-architecture for sacred objects.
- [20] BUISSON, Dominique, 1989, p.42.

- [21] ŌTA, Hirotarō, 1983, p.217-218.
- [22] INOUE, Mitsuo, 1985, p. 85.
- [23] ŌTA, Hirotarō, 1962, p.96.
- [24] *Idem.*
- [25] KAWAKAMI, Mitsugu, 1967, p.96.
- [26] From a historiographic point of view, this desire to discern spaces does not allow us to determine, with evidence, if the *hisashi* were added after construction or if they were thought out from the beginning in the design of the building.
- [27] INOUE, Mitsuo, 1985, p. 106.
- [28] *Idem.*, p.105.
- [29] BUISSON, Dominique, 1989, p.127.
- [30] Narabidō: Twin buildings in the grounds of a Japanese temple that are of equal length, but not necessarily of equal depth, arranged one in front of the other. (JAANUS).
- [31] ASANO, Kiyoshi, 1969, p. 94.
- [32] *Tōdaiji Yōroku Eikan Bunpuchō* 東大寺要録 永観分布帳
- [33] “堂一宇五間一面在礼堂”
- [34] BUISSON, Dominique, 1989, p.134
- [35] ŌTA, Hirotarō, 1999, p.12.
- [36] KAWAMOTO, Shigo, 2005. p.216 (Translation by the author).
- [37] KAWAMOTO, Shigeo, p.220.
- [38] ŌTA, Hirotarō, 1978, pp. 142-145.
- [39] OKAKURA, Kakuzo, 1992, p.66
- [40] A sloping ceiling formed by the underside of a roof of a tea ceremony house.
- [41] *Chafu* 茶譜 is a manual gathering informations about the art of tea and also about the construction of *chashitsu* or house of tea; probably written by the middle of 17<sup>th</sup> century. Like the “Shōmei” or literally “Clarification for the artisan-builder”, the *Chafu* was rewritten many times and undergoing various modifications so that its original date remains approximate and that it is difficult to establish clearly its history.
- [42] NAKAMURA, Masao, 1988, p.77.
- [43] ENGEL, Heinrich, 1964, p. 249.
- [44] FRÉDÉRIC, Louis, 1985, p.197.

[45] PIVIN, Jean-Loup, 1987, p.27

### Bibliography

- ASANO, Kiyoshi, *Nara jidai kenchiku no kenkyū* (Researches on the architecture of the Nara period), Chūōkouron bijutsu shuppan, Tōkyō, 1969.
- ASHIHARA, Yoshinobu, *L'ordre caché. Tōkyō, la ville du XX<sup>e</sup> siècle ?*-Translated from Japanese by Masako Shimizu, Première édition, Kodansha International Ltd, 1989, Ed. Hazan, Paris, 1994.
- BERQUE, Augustin, *Le sens de l'espace au Japon. Vivre, penser, bâtir*, Ed. Arguments, Paris, 2004.
- BUISSON, Dominique, *L'architecture sacrée au Japon*, ACR Editions, 1989, p. 121.
- CRUZ SAITO Mizuki, MASATSUGU Nishida, BONNIN Philippe, “Un des aspects de la spatialité japonaise vue à travers un cas concret : le tatami module-mesure”, in: Ebisu, Maison Franco-japonaise, n°38, automne-hivers, 2007 (in process).
- ENGEL, Heinrich, *The Japanese House*, Charles E. Tuttle, 1964.
- FIÉVÉ, Nicolas, “Espace architectural dans le Japon des époques classiques et médiévale : l'exemple des résidences de l'aristocratie et de la caste militaire”, *Architecture&Comportements/Architecture and Behavior*, vol. 7, n° 3, Lausanne, 1991.
- FRÉDÉRIC, Louis, *Japon. L'Empire Eternel*, Ed. Du Félin, Coll. Racines de la Connaissance, Paris, 1985, p.197.
- INOUE, Mitsuo, translated by Hiroshi Watanabe, *Space in Japanese architecture Nihon kenchiku no kūkan*, Weatherhill|New-York ; Tōkyō, 1985, p.60.
- KAWAKAMI, Mitsugu, *Nihon Chūsei jūtaku no kenkyū* (Study on Japanese Medieval Residences), Kokusui shobo, Tōkyō, 1967.
- KAWAMOTO, Shigeo, “Shindenzukuri to shoinzukuri sono kenkyūshi to aratana tenkai wo mezashite” (Shindenzukuri and shōinzukuri. Study considering new developments for researches), in: SUZUKI, Hiroyuki, ISHIYAMA Osamu, ITŌ Takeshi, Yamgishi Tsuneto (under the supervision of), *Shirizu toshi kenchiku rekishi*

- II. Kōdai shakai no houkai, Tōkyō daigaku shuppankai, Tōkyō; 2005, pp. 179-235.
- NAKAGAWA, Takeshi, *THE JAPANESE HOUSE. In Space, Memory and Language*, LTCB International Library Selection No. 17, Tōkyō, 2005
  - NAKAMURA, Masao, *Sukiya koten shūsei 3, wabi cha no sakufū*, Shogakukan Inc., Tōkyō, 1988.
  - NISHIDA, Masatsugu, « Time in Japanese Architecture. A reflection through the practice of reconstruction », in : *Design Discourse Japan*, Vol. 1, Design History Forum, Ōsaka, 2006.
  - NISHIDA, Masatsugu, “S comme Sacrée”, *Les Cahiers de la recherche architecturale et urbaine*, n°20/21, Editions du Patrimoine Centre des monuments nationaux, Paris, mars 2007, pp. 140-143.
  - PEZEU-MASSABUAU, Jacques, *La maison japonaise*, Paris, POF, 1981.
  - ŌTA, Hirotarō, *Nihon kenchiku shi josetsu* (Introduction to the History of Japanese Architecture), Shōkokusha, Tōkyō, First Edition 1946, Last Edition 1989, 1962.
  - OKAKURA, Kakuzo, *The book of Tea*, first edition in English 1905, Editions Dervy, Paris, 1992.
  - ŌTA, Hirotarō, *Nihon kenchiku-shi josetsu*, (Introduction to Japanese History of Architecture), Shōkakusha, Tōkyō, first edition 1946, utilised edition 1978.
  - ŌTA, Hirotarō, *Zusetsu Nihon Jyūtakushi* (Illustrated History of the House), Shōkokusha, Tōkyō, first edition 1948, utilised edition 1999.
  - ŌTA, Hirotarō, *Nara no teradera. Kokenchiku no mikata* (The temples of Nara. Ways to see ancient architecture), Tōkyō, Ed. Iwanamishoten, 1982.
  - ŌTA, Hirotarō, *Nihon kenchiku no tokushitsu* (Specificities of Japanese Architecture), in : coll. *Nihon kenchiku ronshū I*, Iwanami shoten, Tōkyō, 1983.
  - ŌTA, Hirotarō, *Nihon jyūtakushi no kenkyū* (Studies on the History of Japanese Houses) *Nihon kenchiku shi ronshū II*, Bunkazai Kōza, Daiichi hōki shuppan, Tōkyō, Daiichi hōki shuppan, 1977.
  - PIVIN, Jean-Loup, *Espace des autres, Lectures anthropologiques d’architectures. Penser l’espace, (Space of the Others, Anthropological Readings of Architectures. Thinking Space.)*, Les éditions de la Villette, 1987.
  - IWAO Seiichi, IYANAGA Teizō, ISHII Susumu, *Dictionnaire historique du Japon*, Vol.1, Maison Franco-japonaise de Tōkyō, Maisonneuve & Larose, p.214.
  - Nihon kenchiku gakkai hen, *Nihon kenchiku shi zushū shinteiban* (Collection of plans. History of Japanese Architecture, new edition), Shōkokusha kan, Tōkyō, first edition 1980, 2005.