Machiya and Transition
A Study of Developmental Vernacular Architecture

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MACHIYA AND TRANSITION
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ABSTRACT

The historical, vernacular, residential forms and processes of urban Japan are to be explored as a potential source of power with regards to the concept of developmental vernacular architecture. This theory is a relatively new and vaguely defined approach to a combined method of conservation and progressive growth; balanced elements of a “smart growth” strategy. Therefore, a clarification of the term, along with an initial analysis of the definitions and values of vernacular architectures, is needed.

Secondly, The Japanese machiya type will be explored as a unique vernacular form, indicating its diversity over time and similarity over distance. The essential controls and stimulus of its formal evolution and common characteristics will be examined. Machiya, a Japanese term, translates roughly to townhouse, in English. It is typically a city dwelling which also includes a small shop or meeting space that fronts the street. This is the typical dwelling of the urban merchant class. The long of history of its development and its many transformations will be discussed.

These analyses ultimately lead to the design exercise which investigates the machiya type as an intelligent base for a developmental vernacular process within the context of the Japanese urban environment. Therefore, the conclusion is to present, or to infer, the merits of incorporating such a program into a wider extent of the current built environment; poor and affluent, urban and rural.
ACKNOWLEDGEMENTS

Thank you, Yoko.
Acknowledgments
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Section One:

ABSTRACT

VERNACULAR DEFINITION

DEVELOPMENTAL VERNACULAR DEFINITION
VERNACULAR ARCHITECTURE

Derived from the Latin root *vernaculus*, the term vernacular was first used in England in 1839, and later gained wider use in the 1950’s. Therefore, it is a rather new term. It is a phrase that has been used in a linguistic study to describe an indigenous idiom- a common speech. Paul Oliver explains, based on the linguistic use of the term, that vernacular architecture may be understood as “the common speech of building.”

The term vernacular architecture could almost be considered an oxymoron. Certainly is not an easy word to define, as it is even more difficult to properly consider what works should be placed under such a heading. The distinction is not necessarily economic, nor is the difference between vernacular architecture and Architecture of so called “high design” based on the distinction between monumental and residential structures. Studies, such as Bernard Rudofsky’s “Architecture without Architects”, have shown that even the monumental and religious structures of many cultures may be exactly the work that serves to define a particular vernacular. Alternative phrases have often been employed in attempts to define the term- ‘indigenous’ architecture, ‘anonymous’ architecture, ‘spontaneous’ architecture, ‘folk’ architecture and, possibly the most widely used, ‘traditional’ architecture. These all encompass a large segment of the whole of vernacular forms, but all fall short of a true total description. The term ‘indigenous’ architecture does not include the vernacular of a colonial or immigrant community, and ‘anonymous’ architecture reflects an harmful attitude that prefers architecture by “named” (famous) architects. Each has its particular shortcoming.

Therefore, what must be kept in mind is that vernacular architecture is a subject which eludes a concise definition for good reason. The body of works is far too rich and diverse, permeated with various levels of technique and cultural meanings, for a single definition. Vernacular architecture is dynamic. The permanence of change must be recognized. Seeking a sole interpretation may thus be detrimental to the overall study by excluding one or another potentially valuable aspects. It is possible, however, to use some general descriptions which take into account the most common features of vernacular architecture. These conditions include:

- **Owner-built/ community-built**
- **Utilization of traditional technologies**
- **Strong relation to local environmental context**
- **Materials from local resources**

These objective and physical properties are only part of the overall description. Another critical characteristic of vernacular architecture is the embodiment of community values- traditions and myths. A penetrating feature of vernacular forms is the reflection of belief systems and
conceptions of the cosmos within a common group. Furthermore, vernacular architecture may be significant and unique in terms of the concept of balance within everyday life - the balance of ecology and consumption, myth and technology, inside and outside, public and private, light and dark. The direct relation to human need and accommodation of economy, beliefs, and cultural values yields a phenomenological sense of place that is therefore of important value to the study of architectural design and the future of the built environment.

The approaches to vernacular architecture studies are as diverse as the definitions. Possibly the earliest type of study which included an investigation of vernacular structures is in the field of archeology. Architectural artifacts are often used to assist in the dating of sites, and are increasingly seen in the field of cognitive anthropology as a way to understand the spatial theories of early human behavior. Historical studies, geographic studies, and “diffusionist” studies - the patterns of human settlement and mobility - may also use information gathered from a kind of analysis of vernacular buildings. Today, the conservation, preservation, and museological methods may be the most common frames through which the vernacular is viewed. There is much benefit from any one of these fields, as well as some criticism attributed to any one method as opposed to another. A strictly museological approach - preservation of vernacular forms in a museum-like setting - is often seen as lacking a feel for the true setting and character of the community from which a building has been taken. On the other hand the conservationist approach may keep a structure in its “native” environment, but may have to sacrifice some material or structural “integrity” to do so. In both cases, authenticity is the crucial argument. Kevin Lynch argues:

“One may... criticize the historic preservation movement on three related counts: first, that it too often displaces the people who live in the areas about to be restored; second, that it conveys a false, purified, and static view of history (vividly sensible, one might say, but falsely so); and lastly, that the values on which the criteria of preservation are based are narrow and specialists. Large-scale preservation, moreover, will impair the fit to new functions and inhibit future adaptation.”

An understanding of vernacular processes enhances the understanding our own built environment and the architectural and cultural patterns of those outside our own. It is necessary to take into account “the perceptions and motivations to which research in vernacular architecture is both subjected and indebted.” Vernacular forms and the aesthetic values adhered to are parts of our language of symbols of social consequence. These symbols become critical instruments of personal and community identity, and in fact serve as justification for, or factors of, social orders. The difficulty lies in the observer’s ability, or lack of ability, to overcome the
restraints of the orders and preconceived notions from his or her own culture. Exploration and analysis of these symbols also relate to people’s methods of architectural communication, and the aesthetic values that may be perceived. Ethnographic studies, giving equal weight to intention and response and their interaction, provide a description, if only a narrative, of how the architectural language of a group employs both utilitarian and aesthetic values, and attempts to understand what meaning these values produce. This brings out the very important distinction of the non-functional significance of vernacular architectures; it is not simply a utilitarian process. “The aesthetic abides in forms that may be considered only part of a useful function.”

The meanings, the social values, that are explored in vernacular studies penetrate through the concepts of aesthetics and into core human belief structures and the ways that such beliefs become manifest, are abstracted into, built form. The basic needs of societies (along with the definitions of comfort) are also represented, as are the conceptions of social hierarchies and the roles of the sexes. “The house forms a cosmos in miniature, a microcosmos.”

As explained further in the case study of the Japanese vernacular, the “life expectancy” of buildings varies between cultures. This may be seen as a reflection of various life attitudes or decisions which must be made on simple needs or recognition of external forces. In relation to this, it is interesting to note that the external forces can be results of a social hierarchy. As indicated by David Stea “…the myth of the ‘unselfconscious builder’… sees vernacular communities as pristine, primitive, cognitively egalitarian and non-specialized settings in which each person is a dweller-user-architect-builder-decision maker, determining the design, use and construction of buildings in terms of shared, unchanging traditions… [however] most cultures have their ‘cognitive caretakers’ of what is architecturally appropriate, specialists who do not carry the label ‘architect.’” This helps to reemphasize the need to see vernacular architecture as a well controlled and even constricted pattern of change and progress- yet not a static aesthetic. Again, the Japanese example will show particular consequence of this.

Still even deeper analysis of the vernacular process reveals a distinctive view of the concepts of phenomenology; particularly hermeneutic phenomenology. This type of study attempts to interpret the phenomena of places which are not easily apparent to the eye. Vernacular architecture is a major part of our daily experience, and thus it reflects a quality or “sense of place” that comes about through the interaction of our physical environments and cultural myths. The proportions, the forms, the patterns of material, light, dark, circulation of air, the roof, and the garden shape this sense. “Sense” of place may often be equated to comfort, or to a sense of belonging in a particular space- “dwelling in a coherent cosmos.”
“Phenomenology is a methodology which attempts to see, analyze, describe, and interpret phenomena that are elementary and intrinsically meaningful within the organized realms of everyday life and that are at the same time open, indeterminate and ambiguous at the margins.”

Vernacular architecture is not the only type of built structure which posses this power, but it is, nonetheless, one of its dominant strengths.
DEVELOPMENTAL VERNACULAR ARCHITECTURE

In addition to all of these various viewpoints and studies, there is the concept of developmental vernacular architecture. If we consider this as a new classification in the approach to vernacular studies, it may therefore be considered a relatively new approach. If, however, one carefully considers the term “development,” it is arguable that this is simply a basic characteristic of vernacular buildings, and therefore it seems peculiar to describe developmental vernacular as if it is separate from vernacular architecture as a whole. Rather, the term development, in this context, is meant to describe the human act of improving, or attempting to improve, well-being.

“It is both the process of achieving this well-being and the products that manifest its achievement. It views vernacular architecture (and architecture in general) as part of one aspect of development (better shelter, settlement, built environment), among several (better food through agriculture, better goods through industry).”

Unfortunately, this concept- this approach- does not have a highly articulated set of principles, theories, or even dialogue, as is the case with regards to the conservation or preservation approach. There are, however, some studies, and even some built works which may help to illustrate. Certainly the most obvious example may be the work of Hasan Fathy in the New Gourna village of Egypt. Seeking a self-reliant system of building which would be based on local material, process, and community participation (including local architects), Fathy attempted to produce not only a pleasing architecture but also a valuable process based on local patterns. His work has been criticized for being too focused on the aesthetic product and losing site of the community participation, yet it is still a valuable step towards the awakening of this new concept.

The Architectural Association of London initiated a Tropical Studies Unit, under the leadership of Dr. Otto Koenigsberger, in the 1960s as a way to explore the bioclimatic benefits and the developmental potentials of vernacular architectures. The Indian architect, Charles Correa deals with a form of developmental vernacular in his search for the “elegant symmetry” of past and present concepts of the cosmos through manipulations of symbol manifestations of Hindu beliefs. Correa’s work begins to indicate the possibilities of such methods beyond projects for the poor. Other work has also been done by various charity and social assistance organizations that often goes unnoticed. Unfortunately, when such groups offer complete imported solutions to some cultures, the affects may be disastrous; but if work is done by sharing new technology and incorporating community patterns, the work can be quite rich and rewarding.

“It (developmental vernacular architecture) expresses the values and the needs of the local, especially poorer, communities and, not least, to survive, it demonstrates
continuity with change: remaining rooted in the past and the local, while incorporating the new and the external to meet contemporary needs. Its simplicity encourages community participation and its affirmation of local values and approaches encourages self-esteem. 

It is fine to consider the good that such an approach may provide to an economically poor or unstable community, but it must not be limited to just such groups. The socioeconomic issues, the material and construction technique advancements, and the merger of tradition and technology, may be crucial to the development of viability of depressed or “underdeveloped” regions. These factors, these questions, and the more illusive phenomenological characteristics of place, however, are not limited to just the “unadvanced” villages of the world. And in fact, in some instances it may be argued that some of the more advanced communities may struggle with viability issues, as well as sense of place, even more than the less advanced.

As noted above, one of the intrinsic values of the vernacular process is the sense of balance—further, the sense of place. The notion of balance is of pivotal importance to this argument for developmental vernacular. Balance describes the state of stability between, among, two or more entities which may or may not be quite the opposite of each other—ecology and technology, black and white, mass and velocity, light and dark, etc. Often, in discussions concerning the future of our cities, our rural landscapes, our built environment as a whole, the various topics for focus involve questions of balance. The measures of density, proportion, and Lynch’s concept of “grain,” as well as the study of demographics and growth patterns all may seek to describe varied states of balance or the lack thereof in the multifarious systems of our very complex world. The architect, planning professional and concerned persons of communities from the large to small all face this challenge and use these figures as a way to measure and control the desired equilibrium of prosperity and well being.

Ironically, some of our modern architectural and planning feats stand to remind us of ways in which certain aspirations or goals caused a loss of balance—take Pruitt Igo or the city of Los Angeles as an example. Pollution, crime, inner city decay, traffic jams, and that infamous catch word—“sprawl”—all serve to indicate some sort of system imbalance in the built environment. The “green” movements and preservation programs serve as reactions, but if taken to an extreme, may run the risk of causing an equally detrimental effect as the problems they claim to combat.

The relatively new phrase, “smart growth,” begins to indicate the thinking that extremes of any type are certainly not a good answer when dealing with the future of our communities.
“Smart growth has the potential to bring together progrowth and antigrowth forces under a common agenda for community preservation, economic success, and environmental protection. It can provide the common ground on which disparate elements of the community can collaborate for the benefit of all.”

Smart growth accepts the notion that development, increasing the level of human comfort and viability through the sustainment of natural as well as man made processes and advances, is not only inevitable, it is in fact necessary. Nonetheless, smart growth, does propose restrictive as well as progressive methods. The restrictions (density limits and wetlands protection) are intended to maintain the balance or the viability of systems (plant and animal) which may not be considered essential in planning or advancing other systems (industry and transportation). Progressive methods may include such policies as the reduction of capital gains tax on the sale of homes in the United States (allowing homeowners to trade down to smaller, less expensive homes without incurring a tax penalty- providing the opportunity to use the proceeds from the sale of their house to buy and renopate an existing home and invest in existing communities). The increase of discussions concerning “smart growth” in the public realm does indicate that the concept of “balance” in the built environment is becoming more clearly identified as a conscious goal.

The advancement of human well-being though progressive practice, although at a slower pace than we may recognize as progressive, along with the understanding of strict limits imposed by climate, environment, and the need to sustain other forms of life, is most certainly a feature of the vernacular built community. Therefore, it would seem logical, if one accepts the values of smart growth principles, that to actively pursue development (not just the preservation) of, or based on, vernacular forms and processes would prove of great benefit to all scales and types of community, not just simply the poorest.

“Stopping sprawl... Development is not the problem; it is really the solution. The real problem is the patterns of development. The key is putting quality development in the right place.”

It would not be fair or wise, however, to promote the notion of developmental vernacular practice as a total solution to the needs of sustainable growth. Sustainable growth is a concept which takes on a much wider range of issues than architectural practices alone may solve, yet it seems that very often the true value of the architectural design process is strangely missing from the debate. Many proponents of “smart growth” are to be found in the fields of ecological, environmental, and economic studies. Proposals given for sustainable growth patterns, guidelines and policies, focus on the issues related particularly to these fields as well. In the United States, the
President’s Council on Sustainable Development identifies the following three main points which relate to sustainable growth:

- **Environmental Health**
- **Economic Prosperity**
- **Social Equity and Well-Being**

We may assume that while architectural practice touches on each one of these issues, none directly give recognition to the idea of “sense of place”- an essential element of architectural struggle in design, and an essential, yet seemingly mysterious element of the city. The general notion of *Social Equity and Well-Being* of the city may infer that the phenomenological properties of places should be considered, yet few texts written on sustainability attempt to tackle what is admittedly a rather elusive, highly subjective, topic. New government policies aimed at the smart growth issues, such as the Tennessee State Growth Policy Mandate (Senate Bill 3278, May 1, 1998) and the Oregon Urban Growth Limit Policies, quite often spell out rather specific requirements-ratios and limits- for sustainable growth patterns. Unfortunately, we have seen too often where simply attempting to meet the minimum requirements of such new codes does not insure a quality design- a quality place.

Therefore, it may prove beneficial to include the developmental vernacular design concept as an opportunity to give weight to a community character, by focusing on the social and cultural patterns and processes that have formed a given community, while serving as a valuable “smart growth” tool.
Section One Endnotes

i Oliver, p.xxi
ii Ibid., p. xxiii
iii Lynch, p. 259
iv Oliver, p. xxi
v Egenter, p.34
vi Glassie, p.5
vii Schefold, p. 7
viii Stea, p.19
ix Mugerauer, p. 55
x Ashfar and Norton, p. 27
xi Ibid., p.28
xii Correa (a+u), p.12-13
xiii Ashfar and Norton, p.25
xiv Pawlukiewic
xv Ibid.
xvi McMahon
xvii President’s Council on Sustainable Development
xviii English
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Section Two:  
THE MACHIYA FORM, CONTENT, AND TRANSFORMATION
At least two important clarifications are needed before offering a description of the machiya type. First of all, it must be understood that the word machiya is not used to define a style, and in fact it is not exactly even a description of form; but rather it is a content and process which is typified. This understanding is necessary in order to avoid the mistake that most foreign studies of Japanese architecture make by attempting to determine styles based on formal elements alone. Yoshinobu Ashihara addresses this point in his book, The Hidden Order.

“The chief focus of attention of such styles of architecture as shinden zukuri (the style of residence of the Heian aristocracy) or buke zukuri (style of residence of the Kamakura warrior class) is not so much form as defined by exterior appearance as content, the lifestyle and functions that took place inside. There are various forms of architecture in Japan corresponding to each historical period, but they do not qualify as architectural style per se. I believe it is more accurate to associate each with a particular lifestyle, that is, a given way – content – of life.”

This is a crucial part of being able to understand that the term machiya describes a rather wide range of forms, and it is therefore rather difficult to offer a concise definition, as is the case with the overall concept of vernacular.

Second, it is important to point out that the machiya type represents a stratum of the Japanese society and architectural history which is very often missed by, or misunderstood by, Western investigations. The residential examples which we are often presented with as being quintessential models of Japanese house architecture, in fact only illustrate samples from the very highest socioeconomic sectors. The importance of this distinction will be elaborated upon later, yet the idea should be kept in mind from the beginning of the narration and that is why it is mentioned here.
**Timeline**

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<tr>
<td><strong>Jomon</strong></td>
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<td><strong>Yayoi</strong></td>
<td>(300 BC – 300 AD)</td>
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<td><strong>Kofun</strong></td>
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<td><strong>Asuka</strong></td>
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<td><strong>Nara</strong></td>
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<td><strong>Heian</strong></td>
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<td><strong>Kamakura</strong></td>
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<td><strong>Muromachi</strong></td>
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<td><strong>Meiji</strong></td>
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Remains from the Jomon Period of prehistoric Japan indicate that the earliest dwellings were generally pit-like shelters (*tateana*), supposedly covered by a simple system of posts and thatch. It is almost impossible to determine with complete accuracy the true nature of the structures which covered the dug out pit, but the existence of hollow pillar holes, suggest that four columns, located in the rounded corners of a rectilinear (or sometimes circular) dug out shape, supported a set of four beams which formed an approximate square. Poles would then be leaned against the beams and this secondary structure might have been covered by thatch, forming a roof-wall protective surrounding.

Archeological findings from the earlier Yayoi period show that structures with elevated, boarded, floors (*takayuka*) began to appear during that time. Images of such buildings have been found on period earthenware objects, but unfortunately it is not made clear if these structures were dwellings or in fact used as storehouses, which is the most common theory. Recent findings suggest that residences with elevated floors may have existed in the northern Kyushu area and Western Japan at about this same time. The fact that the records of these types of structures are found inscribed in pottery and some early bronze artifacts suggest that in either case, dwelling or storehouse, the elevated floor was one of the first distinctions of use and/or class which appeared in Japanese architecture. The raised floor became a sacred space, or a place reserved for special functions (i.e. sleeping, eating, storage of food and valuables). The significance of the raised floor remains a critical aspect of Japanese residences to this day. Tracing the patterns of development with regards to the size, material, and use of the elevated floor will, in a sense, provide a brief summary of the entire history of Japanese residential architecture as well as the evolution of classes.

The term *yuka*, or raised floor covered with wooden board or tatami, is depicted by the Chinese character which originally meant “a platform on which to sleep or sit.” The presence of the elevated floor, however, is only made clear and distinct by the fact that the earthen or sunken portion of the floor also maintains a presence through the development of residential forms. Even today, in the smallest of apartment units found in tall complexes, many floors above the “ground surface,” a small portion of recess, typically found at the entry door remains an essential part of the lifestyle.

All functions of living, sleeping, and eating are enclosed in the singular space of the pit dwelling. The introduction of the elevated floor led to the next major development, the definition of specific and non-specific function space. This of course goes hand in hand with the development of the roof as a singular element, raised off the ground, and distinguished from the wall, or shutter like enclosures between structural columns. At this point, the language of architectural elements
gathered its basic vocabulary—column, beam, floor, wall, and roof—in Japan.

Similar to the history of the pit dwelling, it is still admitted today that very little is known with great certainty concerning the development of the early dwelling forms into the first “style,” shinden, of the Heian period. A relatively simple analysis is that a core space (moya) with an elevated floor, possibly used as the sleeping area, became surrounded or flanked by a space of open bays (hisashi).

“In the Heian period, the bedroom was smaller than the dayroom, but in the Nara period or pre-Nara period buildings, the bedroom was larger. We might say that the pit-dwelling, which consisted entirely of an enclosed sleeping space, developed into the shinden (residential style) as the size of the sleeping area decreased.”

This draws attention to the second critical aspect of Japanese residential forms—the ambiguously defined space. The hisashi portion of such early forms indicates the origin of the verandah (engawa) and the in-between of both interior and exterior character. Such a feature is also found to be as a common thread of the Japanese vernacular, but this aspect has not remained as strong as the distinction of floor levels.

With only this very simple, yet already highly refined, vocabulary of elements and upon the basis of these two ideological principles, along with the origins of Shinto religious values in Japan, the Ise Shrine was built. As has been noted by people including Norman Carver and Kenzo Tange, this structure is at one moment the prototype of past and present Japanese architecture. “Ise perpetuated the elemental purity of ancient building forms and became the eternal model against which all subsequent Japanese architecture was consciously or unconsciously measured,” argues Carver. The shrine was established by the daughter of Emperor Shujin around 680 AD as a dedication to the Shinto goddess Amaterasu, a mythical mother of the Japanese nation, and as a repository for a holy treasure sacred mirror.

The shrine is mentioned here for two significant reasons. First, it represents one of the earliest “caretakers” (as defined earlier) of the Japanese vernacular. The dominance of its sense of place and the influence it has had on nearly all of Japanese architecture reinforces the notion that the vernacular is not a “dumb” architecture, but instead may be the result of a very complex pattern of rules and cultural ideals. Second, it is important to note that even this most sacred of architectural symbols is not a static form. In fact the shrine has not only been ritually deconstructed and built anew many times, it has undergone many subtle transformations of form and construction technique. This emphasizes the idea that Japanese architecture, residential and monumental alike, is thought to be of a temporary nature—a major contrast to the reasoning behind the architectural motivations of the West.
Consider the following passage from the *Hojoki (Tale of the Ten Foot Square Hut)*, written by the hermit Kamo-no-Choumei in the thirteenth century which reflected and reinforced such an attitude.

“Ceaselessly the river flows, and yet the water is never the same, while in the pools the shifting foam gathers and is gone, never staying for a moment. Even so is man and his habitation.”
Origins

One may follow along, as is typically the case in historical analysis of Japanese residential development, to explore the transformation from the pit dwelling to shinden to shuden to shoin to sukiya (life)styles, and so on. Yet, this really only traces one branch, admittedly the most prominent branch, of the Japanese residential architecture tree. The actual range of forms and methods are much larger than most studies infer. It should be noted that even the simple form of the pit dwelling, or a close relative- the ground level structure- continued use and some transformation until even into the Muromachi period in the Tohoku northern region of the main Honshu island. Such dwelling types did not simply disappear just because of the development of a new type.

The rural farmhouse, or minka, is another form which developed parallel to the residences of court aristocracy and warrior classes. The overpowering dominance of the thatch roof and the preservation of a large portion of earthen floor area, often used as a kitchen and/or stable, distinguish this form from the urban relatives. The minka is a unique and rich form that deserves far more analysis than can be allowed here; but it is important to note here that this is a not a dwelling that should be affiliated with poverty, as is often confused, and in fact was a residence of distinction in the rural social landscape. Thus the machiya shares more than just the formal similarities with the minka- both represent a change in social relations and a growing state of control and influence which a middle class gained over their dwellings and the makeup of the village or town.

The city

Three capital cities in Japan preceded the establishment of the Heiankyo (Kyoto) seat of power in 794 by the emperor Kaman. Naniwa (near present-day Osaka), Fujiwara (near present-day Nara), and Heijo (in present-day Nara) all held claim to brief designations as the center of imperial rule; Heijo holding the title the longest period of 74 years. Heian-kyo, in contrast to these early attempts, remained the capital city for over one thousand years until the Emperor Meiji moved his court to Edo (now known as Tokyo) in 1868. Therefore, it is here, in this most important urban political, economic, and cultural center of Japanese history, that the machiya prototype is first realized and refined.

Heiankyo (known today as Kyoto) was established in Japan at a time of strong relations through international trade and communication with the Asian mainland. The earlier Heijo (Nara) capital was based on the Chinese Tang-dynasty city model of Changan, and the Heian plan was in turn based upon this type as well; although with some modifications of measure and proportions. Over time, and through repeated rebuilding due to fire and war, the city grew asymmetrically to the north east; but the formal grided street pattern and regular subdivision of land characterized the early city plan. The
smallest parcels of the divided blocks became the sites of the residences for the urban commoners.

Period documents and measured drawings of the early residential structures of the common folk are practically nonexistent, yet scroll paintings, such as the late 12th century *Nenchu Gyōji Emaki*, provide some glimpse of the early urban residence. This illustration of the Shijo-dori streetscape of early Heiankyo shows small, roughly built wooden structures with orderly lined ridges parallel to the streets. The facades are divided in half with one side serving as the entry and a wall with a small window located on the other side. Earthen floors were typical, although it is believed that sections of raised wooden plank flooring could be found inside some. One author states, "They all follow a basic, existing pattern and it can be assumed that this style of building had been followed for a thousand years."

The villages
Outside the capital city, urban villages began to develop as trade routes improved. Similar structures to those in the Heian districts began to appear, although they tended to be even simpler and cruder constructions. Another picture scroll, the *Ippe n Shonin eden* (1299), illustrating the travels of the monk, Ippen, provides a glimpse of life in early Fukuoka in the mid-13th century. Note that in this scene, the sale of goods from a market stand along the street is permitted. Yamano points out that the early village plans illustrate a critical distinction between Chinese and Japanese city development that is necessary in order to understand one of the important features of the machiya. The Heiankyo capital, and particularly the outer provincial towns like Fukuoka, were not particularly constricted by the massive protective walls typical of the early Chinese cities. The outlying communities and villages in fact spread quite freely along the major transportation routes and, as noted before, Heiankyo easily and rapidly "sprawled"
beyond it’s early formal boundaries. Therefore, the densities of early Japanese towns were typically not as high as those of early China. This, Yamano, explains is the reason that the common urban residence of Japan did not adopt the Chinese courtyard pattern, since there was not as much pressure to preserve a place of quiet and open air in an urban form that was not so severely restricted.

Early scroll painting documents do clearly indicate that within large city centers such as Heiankyo, groups of machiya like houses typically formed a block with a hollow center, serving as a common garden, trash, and lavatory space for the surrounding houses. Such common grounds did not last long unfortunately. These “courts” were filled by the growing sizes of individual houses, increased use of storehouses, and the infill of very small rental units, and tenement housing.
DEVELOPMENTS

The development, the first stage of transformation, from the simple shelter illustrated, in the Nenchu Gyoji Emaki scroll, to the combined shop and residence sort, as noted earlier, is much more a result of political evolution than almost any other aspect. Surely this may be said for many vernacular communities other than those of Japan, but the critical difference is a matter of degree, to such a point that it may be unequaled in all the rest of the world.

“It is usually explained that the Japanese are driven by collective concerns. And indeed, Japan appears to demonstrate the possibility of life organized in a genuinely communitarian manner. As far as outsiders can tell, most Japanese accept with equanimity the daily demands that they subordinate their individual desires and interests to those of the community. This striking communitarianism is, however, the result of political arrangements consciously inserted into society by a ruling elite over three centuries ago, and the Japanese are today given little or no choice in accepting arrangements that are still essentially political. Under these arrangements, a Japanese individual must accept as inevitable that his intellectual and psychological growth is restrained by the will of the collectively.”

This statement by Karl vanWolfren, from his book, The Enigma of Japanese Power, may sound a bit too strong, or over dramatic, in describing the overall living conditions of the Japanese people, but it does help to illustrate the point that political motivations, controls, transformations, propaganda, and struggles are such a pervasive element of all aspects of this culture- including, most especially, the architecture. Again, it is the difference of degree, in comparison to other Asian and Western cultures, which demands that this be considered.

In early Heian period times, the sale of goods in the city limits of Heiankyo was only allowed in specific market areas designated within the central city districts. Note the location of the East and West Markets in the city plan. As is typical of a Feudal system, like that found in Japan and Europe alike, the
rise of a merchant class was strongly discouraged. In the later part of the Heian period, however, restrictions in the capital were eased, the East Market became a place for festivals rather than commerce, and trade spread to other intersections throughout the city. Eventually, certain streets, such as Machi Street (present-day Shinmachi Street of Kyoto), as opposed to bounded market blocks, became known as commercial districts. The *Rakuchu rakugai zu* picture screens (mid 16th century) illustrate scenes from the parade-like Kyoto Gion Festival, which is still observed today. The significance of the images in the scenes are that the elaborate floats and pageantry that are depicted there were financed not by the government but by local neighborhood organizations, indicating the rising power of the merchant class by the late Muromachi period (1333 – 1568).

One assumption concerning the increased relative vigor of the merchant class is to consider that it may be in part a result of the *Onin no Ran* (Civil War) which officially lasted from 1467 to 1477 and the period of general disunity and ambiguity of central authority that would follow it for over one hundred years. Possibly, the fact that power became divided made it easier, and even quite necessary, for merchant groups to band together. During this period, unions of machiya guilds (the *machigumi*) were formed and became a more pronounced sector of society.

**Tokugawa Rule**

This power, however, was not without limit. In the end of the days of the civil struggle for control by many various regimes, there emerged a Shogun warrior leader of Japan that brought the nation together under an unprecedented era of unity, peace, and stability. Tokugawa leyasu (1543-1616), the so called *seii tai shogun*, or “barbarian-subduing generalisimo,” and his immediate successors sought to establish a clear sense of control and social order over the land and the numerous *daimyo*, or domainal lords. Through the conception of laws,
or rather codes of conduct, such as the *Buke Shohatto* (Laws for the Military Houses) and the *Kinchu Narabi ni Kuge Shohatto* (Laws Governing the Imperial Court and Nobility), the Tokugawa leadership believed it was of the utmost importance to define political and particularly social relationships clearly in a rigid hierarchical order. The intent was to assure a distinct “placement” for all peoples and to prevent any disruption to the overall order of the socio-political system. To reemphasize an earlier notion here- this is not to say that such an arrangement or practice was unique to Japan, but rather that it is the degree of complexity and acceptance which is of significance here. Of course, in a time of limited speed of correspondence between distant locales and a country with few guns, relatively speaking, these controls were in reality only as strong as the “length of the general’s sword.” In other words, as noted by Yamano, the outlying prefectures certainly had a little bit of freedom to change, or sometimes even ignore, the regulations handed down by the Shoguns. Nonetheless, the hortatory and prohibitory nature and spirit of the codes had a deep impact on the social fabric of all the land, and even when, in the later part of the Edo period (1600-1868), the specifics of the code might be completely disregarded, the basic essence of the guidelines were internalized into daimyos’ domainal codes, and the “national mentality.”

The Tokugawa Shogunate issued *ofuregaki*, “matters to be announced,” or admonitory guidelines to the various sectors of the populace and to the villages within the shogun control throughout their time of rule. These admonitions, prohibitions, and stipulations might include very specific guidelines concerning the construction of a merchant class house and shop. The essential focus of such rules was to ensure that members of a specific class did not do anything to “compete” with a higher class, through the use of certain forms, materials, colors, and construction techniques. Yet, as might be expected with any socio-economic group, such as the owners of the new urban machiya, who were enjoying new found wealth and moderate freedom from direct dependence on the feudal lords, the natural desire to “acquire the finer things” and “keep up with the Tanaka’s (Jones’s)” could not be completely suppressed. As suggested by Engel, “Consequently, the simple and unassuming exterior of gently sloped and tile covered roofs, often hides an exquisitely crafted, impressive set of rooms.”
These codes of conduct and craft had yet another very important effect which must be noted. The Tokugawa administration, rather than disbanding or disallowing the guilds of merchants, the machigumi, saw such organizations as an opportunity. The groups, and their relation to the local daimyo, could in fact be used to strengthen the establishment of social order that was desired by the shogun—provided that they “kept their place.” The use of commerce based relations as a controlling, almost family-like, system in the overall socio-political framework of Japan would become one of the dominant aspects in the production-consumption based environment of the modern nation. Therefore, as we will explore later, this characteristic which may have contributed so soundly to the delightful unity and continuity of the machiya forms, may ironically be a large reason for their current downfall.

“...the Tokugawa Shogunate gave the household... a socio-political function that in some way prefigures that of the corporation. And there was an even more immediate model... the vigorous labor market created by rapidly expanding entrepreneurism in Meiji Japan. This market was originally formed by bands of workers controlled by bosses, who referred to each other as oyakata and kokata (literally: people who fill the role of ‘parent’ and ‘child’ respectively)."

**Unity and diversity**

“Diversity over space and unity over time,” may be a choice description for a large portion of the world’s vernacular architectures and the machiya form is a particularly clear example of this type of order. The fact that the orders given by the Tokugawa Shogunate authority were adhered to with varying degrees of acceptance suggests that local deviations of the general machiya type were many. And yet another possible reason for the diversity of forms is, ironically, the trend toward standardization of construction techniques and the use of component parts.

“My freedom thus consists in my moving about within the narrow frame that I have assigned myself for each one of my undertakings. I shall go even further: my freedom will be so much the greater and more meaningful the more narrowly I limit my field of action and the more I surround myself with obstacles. Whatever diminishes constraint, diminishes strength. The more constraints one imposes, the more one frees one’s self of the chains that shackle the spirit.” - Igor Stravinsky

The words of Igor Stravinsky may not have been meant to describe the state of residential construction and design in 17th century Japan; but he does rather elegantly illustrate a point, an apparent contradiction, which is quite particular to the Japanese vernacular. Engel argues, “The construction of the Japanese house, both the act and the system, albeit refined in detail, has never quite left its original primitive stage.” He may be a bit too narrow and oversimplified with such a view,
but, Engel does further illustrate the point that, “… the immutability of the basic construction system which directed the handicraftsman’s imaginative spirit to detail and provided centuries for gradual empirical improvements. While primitiveness of structural system might at first sight appear contradictory to the refinement of constructional detail, it becomes evident that one was only the logical consequence of the other.”

Over time, from even the age of the earliest takayuka (raised floor) structures, the families of Japanese craftsmen found the practical logic of standardizing the sizing and placement of major wooden structural members based upon modules and multiplication of column sections. The implementation and development of the standards are not as clear cut and purely derived as many foreign interpretations have indicated, but it may be safe to say that Japan did realize and refine a basic order of measure and process very early on, and such a pattern of construction was well established by the time of the 16th and 17th centuries in which the machiya form grew into a unique and significant feature of the built landscape.

Along with the political pressures for standards and prohibitions, the spread of woodblock print and scroll records of contractor’s techniques in the Tokugawa period attributed to both the exchange of new methods over space and unity of dispersion over time. Despite the fact that the simplicity of the structural order could have led to further diversity of form, Japan’s unique history of the development of prefabricated building components acted to place diversity and unity into such a distinctly rich balance and dialogue. Yamano adds that the creation of contractor catalogues in the mid 18th century, which advertised standard building parts, such as door screens and shutters, also added very much to the harmony of the machiya forms.
Like so much of the historical development of residential types in the west, the Japanese vernacular was subject to a complex network of influences based on changes in “taste” and the desire to copy the styling of the very wealthy. The tokonoma, or decorative alcove, the verandah, and the design of the garden are certainly a set of features which, like the overall austerity of scheme, can be attributed to the influences of the “tea culture.” Chanoyu or Way of Tea, is a ceremonial appreciation and custom of Zen Buddhist influence which reached a high level of sophistication among the aristocracy of the early Muromachi period. Guided and refined by “tea masters” such as Takeno Joo (1502 – 1555), and Sen no Rikyu, the philosophical appreciation of this movement developed into an ideal of rustic simplicity known as wabi. Wabi ideals became a manner of design and use of materials not only for the ceremony itself but in the construction of the elegant structures within which the ritual is still practiced. The tea room, or chashitsu, was pivotal in the refinement of features such as the tokonoma and the use of materials that expressed very subtle sophistication with natural materials. The performance of the ceremony may have originally been limited to the wealthy ruling classes, but the influence that it had on the domestic architectures of the common classes can not be over stressed. We may, however, relate this influence in some way to the influence of, for example, Shaker architectural aesthetics in the domestic design of the United States. Even as some might admire and use the “styling” or furnishings of the simple Shaker things, it certainly does not indicate that the user of such things is a faithful follower of Shaker religious practice, nor does it always follow that an entire residential structure will be based upon this influence alone. The same can almost be said for the influence of tea culture on the development of machiya design. We may find examples of adulterations and strange modifications with both. The difference, however, is again the degree to which this influence had a unifying and stabilizing affect on the residential architecture of Japan.
The general construction method followed for the early machiya was that the major columns, hashira, were placed in standard intervals along the groundsill beams, dodai. Then, a system of floor beams, ashigatame, and eave beams, along with some intermediate horizontal tie members, nuki, completed the basic frame box. The roof structure immediately followed - a system of typically heavy and untreated wooden beams topped with a network of secondary posts, purlins, and rafter, plus wooden slats or clay tiles set into a mud-thatch mixture. Within this quickly assembled grid and under a fully protective and massive roof structure, the delicate and highly refined organization and definition of interior spaces and enclosures could proceed with little concern for structural ramifications. The strength of the elegant, yet complex, joinery and the general overcompensation of member sizes in the basic structural assembly allowed not only a certain degree of freedom with regards to overall layouts but especially to the subtle modifications of “infill” materials.

**The core**

It simply can not be emphasized enough that the description of machiya as it is discussed here is meant to indicate a process as much, or more than, an actual form. If, however, one is looking for a prototype plan of the average machiya construction, then the following diagram and description may suffice. The machiya has a close kinship to the rural minka pattern in that it typically includes an earthen floored area which flanks the living spaces. This dry packed ground entry and hall (doma or torinawa) ordinarily runs the length of the house from front (mote- street side) to back (ura- garden side). In the earliest structures, the kitchen facilities (daidokoro) could be found within this hall passageway. From street to rear garden, the hall served not only as circulation space for the inhabitants but also as a duct for natural breezes to pass through the house. Therefore, the divisions of this hallway, if there need be any, was generally accomplished with the use of short hanging curtains (noren) that could be used to visually separate spaces without blocking the passage of sound and cooling winds. The use of noren to provide a “soft” division
or definition of space is still very much in use in many contexts within the Japanese city today.

“Homes should be built for summer. In the winter, one can live anywhere, but dwellings unsuited to the hot months are unbearable.”- Tsurezuregusa (Essays in Idleness) by Yoshida Kenko (1283-1350)

This inclination towards a light and open construction in the ordinarily hot and humid climate of Japan not only explains the need and practicality of such forms as the torinawa and materials such as the noren, but as we will later see, may account for the open grill-like patterns of exterior door and window screens as well.

The front room, as indicated in the prototype diagram, was quite often used as the shop space, the mise-no-ma (mise-shop; ma-room). The shop might be an actual place for labor (such as the maker of tatami mats), sale of goods (such as small ceramic wares or foods), or, quite often, a meeting place for middle-men merchants to receive clients and discuss business and trades over a hot cup of tea. In any case, the mise-no-ma is truly one of the most critical aspects of the machiya type not only because of its function giving credence to the definition of the title, but because of what this space lent to the overall urban pattern. First, of course, the mise-no-ma, a shop under the roof of a residence enhanced what Kevin Lynch might call the “fine grain,” the patterns of mixed use, within the city. Second, the placement of this space at the front of the structure acted as a sort of extension of the house into the street and vice-versa. This led to the feeling of the road as a special “place,” a public room, a place to pause and gather, as opposed to simply a route for circulation. The streets in areas of the early machiya became places for small cookouts and other community gatherings. Such scenes are depicted even in the picture scrolls shown earlier.

The middle room, or naka-no-ma (literally “middle room”), behind the mise-no-ma was generally, as so often the case with ANY room within the common Japanese house, a multi-purpose room for the family. Family dining might often take place here, but the fact that the low and simple furniture of the room could be moved and stored away allowed a great deal of flexibility in how the room might be used- for sleeping, studying, etc.

The rear room, the one farthest from the entry, ironically in many documentations is described as the reception room, or oku-no-ma. It may seem strange that the room for entertaining guests would be placed so far from the entry, but this room was very often located closest to the rear garden (niwa), and therefore afforded the most pleasant, quietest, views.

**Accessory space**
Flanking the sides of the raised floor living spaces, opposite the torinawa, small bays of storage space might be found.
Storage space, however, in the Japanese house is certainly a feature of maximum utility within minimum space. As an example, the space under stairs could be converted into a very elegant set of drawers and cabinets. Additionally tucked into the auxiliary bay of storage spaces, the decorative alcove, or tokonoma, could often be found in the oku-no-ma.

Bathing and toilet facilities were most often found as a semi-detached structure behind the main house. Like the kitchen facilities found in the earthen hallway, however, the improvement of modern supply and waste systems, as well as the changes made in household appliances have allowed increased flexibility in the location of these functions.

Second Floor
The transition from one story (hiraya) to two story machiya structures is yet again a result of changes in political control. As strict controls from the Tokugawa era on the height of roof lines and the uses of second floor spaces changed or became eased, the machiya went from being a one story space, to one and a half, to what is now most commonly a two storey construction. As the space increased and the shop spaces became more common and successful, the second story went from being a place for storage to an extension of family living spaces. This might have been used to allow for increased demand for the lower floor to be maintained as a place of business and reception, or to house a growing, multi-generation family.

Measure
“The meaning of modern module, however, has an outstanding precedence in Japan, where for the last two or three hundred years the ordinary house of the entire nation have been built on the basis of a modular order which is unique in the history of world architecture. Indeed, the Japanese ken module is an extraordinary phenomenon in architecture without equivalent elsewhere; and, though its complicated past is anything but clear, its uniqueness among all architectural measures, modules, and standards, past and present can not be contested.”

Engel goes on to explain that the order, the modular system of measure and construction, of the Japanese is residential vernacular is unique for five reasons:

- It acknowledges economy and practicality as important factors
- It subjects form to structural and utilitarian requirements
- It functions by means of a constant module that is not relative to the size of the building
- It has evolved as independent module for residential architecture in particular, and
- It is applied universally over and above differences of wealth or social standing.
Engel does present the system of measure in Japanese residential architecture in perhaps too ideal of a portrayal. His points, however, are revealing as to the notion that, like other vernacular systems, a seemingly simple indigenous method may in fact contain a highly refined and advanced system of construction and order.

The module of column spacing, the *ken*, is not simple to provide with clear description of origin. In fact, it is quite obvious that at least two separate measures existed— one of approximately 6.5 feet, the other of 6 feet. The explanations for this split are many, but the most likely is the simple fact that construction outside the city was not as easily controlled by official rules of carpenter guilds, and therefore allowed the use of a more practical (6 foot) measure; where the larger measure tended to be used within the cities.

At least one 17th century construction document, the *Shomei*, indicates that the section size of secondary wooden members varied according to modifications of column spacing. Later records reveal that the standardization of market sizes for lumber led the independence of actual column spacing from the modular order. The column section became standardized, and the multiple spacing of columns (1/2 ken, 1 ken, 1 ½ ken, 2 ken) could be employed with a greater degree of freedom.

**Pieces and Parts**

One popular misconception concerning the measure of Japanese architecture is that the modular flooring material know as tatami mat actually acts as the controlling factor for the building layout. This is not the case. The modular system described above, based on column placement, took precedent in design decisions. The tatami, and its eventual standardization, did however have a strong impact on stabilizing and reinforcing the standards of measure. Regional variations in the sizing of the tatami were quite common before the ruling classes reigned in the variations of column spacing techniques. Obviously, the tatami would be slightly different in buildings where the ken module was measured between column faces and a building where it was measured from the center of one column to the center of the next. The interplay of accommodation between the two components, column and floor, served to bring about a balance of use, each controlling the other, while still allowing each a singular identity. This once again illustrates the refinements and balances of this vernacular method.

Sliding panels of opaque paper covering a thin wooden frame, *fusuma*, are used the primary partition material of interior space. The fusuma support only their own weight, and therefore being rather light, are easily moved in or removed from the wooden tracks in which they lay. The tracks at the floor are generally rather shallow while the top track is deep enough to allow the panel to be lifted up and moved out of the track entirely. The panels almost never extend from floor to ceiling, but are instead only around 6’ in height. Above the
fusuma, the transom section of clay wall serves to support the upper track and act as an additional horizontal brace between columns. It is often found that a grill-like or paper covered opening, or ramma, is inserted into the transom; or it may even serve as the entire transom structure. The wooden grill allows for greater air circulation within the house. The fusuma and ramma are both quite utilitarian in origin and use, but often they are also used as a means of expression of status and taste. The heavy paper used to cover the fusuma screen could be given decorative patterns or used as a canvas for calligraphy or mural paintings. In the homes of the very wealthy and ruling classes, such screen paintings might be of great value, having been executed by highly respected artisans. The wooden grillwork of ramma might also show off the fine taste of the owner by its very delicate and intricate patterning. In some cases, the ramma was filled by an elaborate wood carving of natural scenery.

“In this instance [the decoration of fusuma panels], the Japanese house, which in general lacks any manifestation of wealth distinction other than by the quality of material and the size of building, clearly permits a clue as to the wealth of the owner.”

Where solid, non-moveable, wall partitions are needed, thin, woven bamboo latticework was tied into the horizontal tie members between columns. Over this substructure, mixtures of clay, sand, and/or straw were added in delicate layers to form the wall surface. The mixtures of clay and the colors and textures achieved were highly dependent upon local resources and methods. In the most decorative of settings, such as aside the tokonoma space, formed openings in the clay exposing the lattice below is occasionally found. This shiaji-mado window is rumored to have been developed by the most famous of all tea ceremony masters, Sen-no-Rikyu (1518-1591).

The third type of partition is the shoji, or paper covered screen. Unlike the fusuma, the paper covering on the shoji is found only on one side, leaving the wooden frame exposed. Also, the paper is generally semi-transparent allowing soft light to pass through. For this reason, the shoji panel is most often located at an exterior wall, or opposite the exterior edge of the verandah (engawa). The open shoji panel at the verandah edge quite obviously serves to open the inside of the house out and bring the outdoors in. Even when closed, however, the shoji still serves such a purpose by allowing soft light to pass. During the day, those indoors may view the passing of the light of the day along with a play of shadows while maintaining a closed and private space. In the evening, the flickering lights glowing on the paper panels indoors reveals to the passerby in the street the warmth and life within. Open or closed, private or public- the shoji serves not only to open one to the other, but to blur the distinction between the two.
Closely related to the shoji screen, are the many forms of wooden screens that are used to cover exterior window and door openings. Much like the cloth curtain noren, the wooden screens are primarily a utilitarian product which later carried a more aesthetic meaning. The screen generally serves as a device to either protect from intrusion or simply provide a slight bit of visual privacy while also allowing the cool breezes to enter the house. The screens used on front entryways and extended front windows (*koshi mado*) also served to reinforce the “in-between” of the transition between public and private space, much like the front porch of the Southern American vernacular house. The screen allowed the inhabitants, possibly those working in the mise front room, to have a great deal of control and flexibility with regards to their relations with those people and activities passing by in the street. The delicate and elegant construction of the front window screens became a very important symbol for the “cultivation” and wealth of a household, and the multi-layering of different patterns of screens would indicate great affluence within the community.

**Regional Variations**

The commonalities of proportions of facades and ordered roof construction; dominance of the same materials; the unique harmony of the delicate wooden screens with their subtle distinctions of pattern—all these things led to an urban Japanese streetscape with a rich variance of textural patterns within a frame of common horizontal lines and forms. This is not to say, however, that some major regional differences did not develop. The machiya forms of Kyoto and Fukuoka differ in many small ways, but mainly in the division of the façade and the placement of the entry and hallway. In Kyoto, the torinawa tends to run along the edge of the building (much like a “shotgun” house) while the Fukuoka type splits the house in two with the hall running somewhere down the middle (similar to the “dog-trot”). The variations among communities across Japan are quite endless, yet within these variations across time and place, strong common chords of material, order, and balance remained.
TRANSFORMATIONS

The forces of Japanese political unification and development, along with the close ties of social controls of hierarchy and power produced an atmosphere for not only the cultivation of the machiya type, but also its transformation and, as alluded to earlier, possibly even its downfall.

Once the unification and stratification of power control was achieved by the Tokugawa regime, a period of national seclusion, Sakoku, was established and maintained for over 200 years. Certainly, the geographic location of the small island nation helped to preserve the closed door policies. This term of isolation permitted the interior social orders and manifestations of that order to achieve a very high level of sophistication and refinement; but such was limited by the bounds of the self-referential circle. Politics, technology, the arts and architecture all in some way both benefited and suffered from the separation from outside contacts.

The Sakoku was brought to a rather sudden and dramatic end with the overthrow of the Tokugawa Shogunate and the return of empirical power. The Meiji Restoration along with the arrival of foreign dignitaries demanding the reopening of Japanese markets to the outside world sent the power holders into a scramble, although it was quite superficial, of reordering. Along with political restructuring, the Japanese ruling elite found it very enticing to explore the technological and industrial works of many outside countries. This led to the import of not only new methods and practices, including construction techniques, but also the exploration of new materials. The business of maintaining positions of power in an even cosmetic application of change, left the buercratic systems with little time to worry with prohibitions on residential constructions. These factors led to the beginning of the transformation of the machiya form, not only as a reflection of the changing times, but even as an essential part of the engine of economic change.

The new era of trade and expansion altered the patterns of the labor system and the market. As it slipped into the industrial age and through a temporary struggle with military abuses of power, Japan, and its cities, entered the age of capital production, and consumption, with a seemingly boundless energy. As mentioned earlier, the transformation of focus from nuclear family structures and community associations to a concentrated focus on the company “team” and the group as defined by work and consumption patterns, as argued by John Clammer in his book Contemporary Urban Japan: A Sociology of Consumption, drastically changed the role of the urban residence - the machiya. As these production and consumption cycles, along with increased urban densities needed to support such systems, continue to grow, the machiya forms were often found to be a hindrance to a new socio-economic order - an attitude which continues to pervade the thinking of many local government agencies.
In 1948, the first high-rise reinforced concrete public housing apartments were constructed under the authority of the Tokyo Metropolitan Government and the Ministry of Construction. The extremely rapid development of the “mansion,” or high-rise apartment complex became the new urban definition of residential progress in cities such as Tokyo and other rapidly growing urban centers throughout Japan. This was certainly a phenomenon that the new giant corporations could not have functioned without. The close, often suspiciously close, relation of industry and political leaders further pushed for this reinvented icon of modern urban living.

Machiya forms that did survive periods of major rebuilding due to earthquake, fire, war damages, or just the desire to upgrade to newer constructions during the early to mid part of the 20th century, have become interesting patch work quilts of time that linger in older sections of some towns. It is necessary to note, however, that even the very oldest of these structures are generally no more than 100 years in age simply because of, as indicated before, the commonly accepted attitude of the constructions as temporary in nature. Changes of exterior material application, from sheet metals to synthetic plastic panels along with odd alterations of form, including the conversion of mise spaces into places to park the family car, blur, yet do not completely erase, the homogenous character of the originals.
Section Two Endnotes

i Ashihara, p.12
ii Kiyosi, p.10
iii Ibid, p.23
iv Sadler, p.3
v Bunge
vi Ibid
vii Itoh, p.46
viii Yamano
ix Takahashi, p. 108, 229
x Nishi and Hozumi
xi Engel, p.56
xii van Wolferen, p. 163
xiii Stravinsky, p. 65
xiv Engel, p.107-108
xv Machiya (Nihongo/Japanese), p.21
xvi Ibid., p.24
xvii Engel, p.54
xviii Bid, p.65
xix Bid, p.150
xx Bid, p.155
Machiya and Transition:  
A Study of Developmental Vernacular Architecture

Section Three:  
**The Machiya as Developmental Vernacular**
THE MACHIYA AS DEVELOPMENTAL VERNACULAR

So, the previous section has been a brief attempt to clarify that the machiya type is in fact a distinct vernacular practice of building and living within the urban landscape of Japan. Few would argue against this point. Use of locally available materials; use and development of local technology and construction crafts; response to climate; reflections of belief; ritual; socially accepted controls- all of these factors are found to be embodied in the machiya forms.

The focus of the third and final section is to apply, by means of a design exercise, the principles of "Smart Growth" and the notion of a "developmental vernacular" through the machiya type onto a particular part of the future Japanese city- thereby indicating the value of such a design method as well as restating the need for continued study of urban vernacular patterns in our contemporary built landscape.

The common Japanese city of today, and not just Tokyo, reveals the fact that there has been much change from the time in which the machiya order dominated the urban landscape. This is to be expected as time passes and the technologies, economies, and social patterns transform into new rituals and expectations of life. We may recall the quote from Kamo-no-Choumei, "Ceaselessly the river flows, and yet the water is never the same...". Change, he expresses, is as basic a part of our cities and buildings as any other part of the natural world. Therefore, it is very important, to once again make yet another clarification concerning the intentions of this study before continuing with this section. It must be made clear that this is not a call for "no growth" or reversals of growth. Nor is this meant to be simply a demand for preservation. Rather, the principles of both "Smart Growth" and "developmental vernacular" embrace progressive change through thoughtful and well-balanced design. Simply put, this is not an attempt to freeze the machiya type into a museum display, but instead it as an effort to push the machiya type to a new level- making it a reasonable and vital element of the future city, while maintaining the valuable characteristics which it has embodied up till now.

The proponents of "Smart Growth" initiatives have taken the notion of balances as a core criteria in detailing a new agenda for city design. Earlier this century, in the 1960's, Kevin Lynch wrote in one of his many essays:

"Stability is a somewhat contradictory goal; it takes into account the critical social and economic costs of obsolescence, movement of population, and change of function. It is very possible that stability in the modern world will be impossible to maintain, and it runs counter to many of the values cited above [the goals of choice, interaction, cost, comfort, participation, growth, adaptability, continuity, and imageability]. Yet stability may be qualified in this light: if
change is inevitable, then it should be moderated and controlled so as to prevent violent dislocations and preserve a maximum of continuity with the past. This criterion would have important implications as to how the metropolis should grow and change.

Lynch's use of the word 'control' has been tempered by the use of the term 'maintaining balances' in "Smart Growth" policy, yet the focus is very much the same. The stability of the city is based not only upon its economy and infrastructure, but very much on the maintenance of intangible qualities (sense of place, regional identity) as well as tangible patterns of daily life interactions. These qualities and patterns are reflected in the vernacular forms - forms which do in fact serve to "...preserve a maximum of continuity with the past." Again, the focus is on the preservation of continuity and not the preservation of the past.

It is now necessary to clearly spell out just what are these qualities and patterns of good city balance and stability which the machiya vernacular possesses. Much of Lynch's vocabulary of terms regarding city sense will be borrowed here.

Fine grain. One of the most obvious values of the machiya pattern is the inherent pattern of "mixed-use" development. The combination of small shops and merchants with residential functions produces a rich texture neighborhood. In relation to this, the size of historic machiya insured that the fine grain would be kept in respect to a certain maximum density. The modern Japanese city is still noted for maintaining good mixed-use, but the ratio of grain to density has changed drastically in post war years.

Street as public space. The placement of the shop in the front of the house and the treatment of the facade condition causes the street to serve as a room or an extension the interior space. The street is a place for meeting and not solely given to the function of circulation, thereby demanding that the circulation of people and things be conducted at reasonable intervals and speeds.

Personal interaction/ personal privacy. The two factors above, combined with the physical depth of the house and the open corridor produce a balance of social interactions and a transition from public to semi-public to private spaces with a phenomenological character of place that is rather unique to the Japanese town.

Cost of change. The highly refined delicacy of variations within a rigid frame of modular construction has provided a form which is quickly made, repeated, changed, and destroyed. The maintenance costs are minimized, yet fortunately always present - as this kind of work provides opportunity to small scale operations and individual craftsman within the community. The cost of removing the building to reuse the site is not inhibative - as we would be expected to be the case with most vernacular architectures. This is an idea
which Lynch has written a great deal about and is now being
restated by "Smart Growth" proponents who see that the costs
of reversing a building's effects on the landscape should be
considered in the outset of new projects.

*Natural energies.* Again, this is a characteristic shared widely
by vernacular buildings. Nonetheless, the attention to
ventilation patterns and regulation of high humidity are worth
noting. Foreign visitors to Japan have noted that it is not only
the cross and stack ventilation process, but even the light
quality- deep, dark shadows caused by wide eaves and interior
recesses- which add to the "comfort" of the space inside such
wooden structures. It must be admitted, however, that the
compensations for hot and steamy summers leaves the house
ill fitted to deal with the considerable winter chills. The
solution to this dilemma in Japan has been to focus on
warming the individual body through such common rituals as
the warm sake drink, resting in the ofuro, hot bath, and sitting
around the heated kotatsu table, as opposed to being
concerned with the internal air temperature.

Now, does this imply that these features have disappeared
from the Japanese city now that the machiya process has been
on the decline? Not entirely. There are numerous examples
where the most modern of new "high-design" forms have
incorporated one or more of the characteristics listed above.
Note that the city is not devoid of these good qualities. And it
is recognized that the qualities might be found in many
different modern structures. The machiya pattern does not
hold a copyright on these properties. Still, it is the machiya
process which has refined these properties in the context of the
Japanese urban landscape.
The case study

The design exercise, the testing of the hypothesis, must be conducted at a variety of levels, from the scale of the city down to the detail of the window screen. In this instance, however, the greatest weight will be given to a scale somewhere in between these two, which is where I believe the actual success of such a project holds the greatest potential power- the scale of local community; the neighborhood.

The city of Fukuoka, Japan is located on the north-western coast of Kyushu, the southernmost of Japan's four main islands. It has a very long history. In the early 7th century, a nearby outpost, known as Dazaifu, served as the center of power for all of Kyushu and the nearby port at Hakata Bay was the main point of departure to the Asian mainland. The port of Hakata grew under centuries of open trade with China during the 15th and 16th centuries before the time of Japan's closed door policies began in the 17th century. A castle was constructed near Hakata Bay in 1601 and the areas surrounding this outpost became known as Fukuoka. In 1889, the castle and the surrounds became officially recognized as the City of Fukuoka, capital of the Fukuoka Prefecture.

One of the early main trade roads connected this early outpost to the north and to the main Honshu island, where the central powers held the capital seat in Heiankyo. This route tracked closely along the coast. In the early 10th century, a great Shinto shrine, known as Hakozaki Jingu, was established along the road, near the Hakata port. A processional path leading from the inner sanctum of the shrine out to the edge of the Hakata bay still exists to this day. Today, the shrine still stands, although it has been rebuilt due to damage from a fire in the 16th century. It is located within the rapidly expanding city of Fukuoka, in a section of town which borrows the name of the shrine, Hakozaki. Also, the road in front of the shrine, now known as Daigaku Dori, or University Road, still runs along essentially the same path of the historic trade route.

This Daigaku Dori has "disappeared" or been altered drastically as it enters to the Fukuoka city center. Yet still it runs from this new bustling business core out past the shrine, along side of the main campus of the historic Kyushu University (thus the current name of the road) and eventually merges with a modern highway system that continues north along the coast to the industrial city of Kitakyushu. The sector of the road between the shrine and the university campus entrance, a distance of approximately 600 meters, composes the heart of the Hakozaki neighborhood. This neighborhood might be characterized as "elderly" with a high number of aged residents- a fair description for all of . There are still many small shops- butchers, fish shops, vegetable stands, clothing shops, flower shops, and the like- all connected to a residence above or behind each. Small restaurants and neighborhood bars are scattered throughout. There are two branch banks. There are one or two large supermarkets, a few
mid to high rise apartment complexes, and even a "7-11" convenience store or two.

Do any machiya buildings still exist in this neighborhood? This is a very interesting question, and one I posed to fellow students rather often. The first response is generally, "No." Then, after a second thought, the answer becomes more of a, "Well.... sort of." Again, the confusion lies in the distinction between machiya as form and machiya as method, or we might say "character." Exterior treatments have changed—daub and clay walls covered by sheet metal panels, facades bricked over, and front mise spaces turned into mini-garages. Despite the many modifications though, a "sense" or character of the machiya pattern does remain. Some reasons for this are intangible to the eye or to the touch. Some reasons are impossible to record in the construction detail manual or the demographer's data base. Then again, other reasons are very clear. The patterns are the same still as those items listed above, such as the fine grain of uses, the street as an extension of the house or shop, etc. These chords remain, though weathered and faded, just like the wooden screens and clay tile roofs which have survived, often hidden behind a new layer of material. I should add, that in order to give a real concrete description to this phenomenological sense of place, it is necessary to remember the human element. The interaction of people on the street and among the shops—conversing and sharing, informing and helping, laughing and arguing—is a very important piece of this puzzle. Even the smells and the character of the light and breezes are distinct. The community is the flow of people, and the physicality of the place is only the vessel in which this fluid is held. But there is no question that the scale and construction of the place is a very important part of what provides for this particular type of warm interaction among the neighbors.... or could it be just the other way around? or is it both?

I should refrain from becoming all too romantic in this description, yet in some sense the "romance" of it is the absolute core of the "character" which I am trying to describe. Nonetheless, the point is that a certain character that does remain is no doubt attributed to the machiya and the community pattern which formed along with it. Even though the original form has changed and even been torn away in some instances, I contend that the machiya as a character still very much exists in the Hakozaki neighborhood.

The central road is now flanked by a number of alternate transportation lines. A pair of two lane traffic arterial roads, with city bus lines running along each, border the dense blocks of houses and shops along Daigaku Dori. Just to the south side of the University campus, the western road curves and turns perpendicular to the eastern road forming a northern "border" to the community. Parallel to the eastern border road is one of the major train lines, with a station stop directly behind the Hakozaki shrine compound. Along the western route, approximately parallel to its path, runs a branch line of
Nishitetsu Train Line
Hakozaki Station
Hakozakimiyamae Subway Station
to University Campus
to Tenjin (City Center)
city bus - auto
Alternate paths
the city's subway system. Again, a stop is located in line with the shrine processional route. Further to the west along the coastline of the bay run both the city highway and an elevated super expressway.

These alternate lines of transportation, vehicular, bus, subway, and train, are intended to carry workers and shoppers into the city business center. Daigaku Dori, a very narrow route of only about 4-5 meters in width, where the building fronts make no room for sidewalks, and many shops still open directly onto the road, should be a quiet pedestrian path for the neighborhood core. Unfortunately, this is not the case. The way is heavily traveled in BOTH directions by frequent commuters and delivery vehicles. Local citizens have expressed to me their opinion that the reason for this is the lack of traffic signals along Daigaku Dori. The morning and afternoon commuters often want to avoid the stop lights on the main roads, and therefore use, very aggressively, the smaller road as a shortcut. The auto traffic makes the pedestrian use of the road more and more risky. At the very least, it greatly reduces the opportunities for neighbor interaction.

It certainly is no surprise that the automobile could be a factor in the decline of a community character, but there are other factors to consider. One very complex problem is the matter of land prices and the taxes levied on inherited properties-known in Japan as the "Death Tax." The increased speculation and over inflation of land values is particularly acute in the Tokyo Metropolitan area, but Fukuoka, a city of over one million inhabitants, has also shared in the trouble. A simple narrative may be the best way to explain the situation. Let's say that Mr. Tanaka has owned a small combined house and shop within the city of Fukuoka since the early part of this, the 20th century. Due to the increased density of the city over time, and particularly due to wild speculation on land prices during the 1980's, Mr. Tanaka's property is now worth much more than the sales of his small ceramic wares shop could afford. Fortunately, he owns the property. In the event of Mr. Tanaka's death, the ownership of this land may be passed down to an oldest child now living in another part of the city. At this point, the government policy is to charge a hefty tax on the value of the land inherited by the child. As the land is now worth a great deal, although it may be an over inflated value, the tax can easily be overwhelming. The result is that the land must be sold, typically to a developer, or it must be converted to a new use which is much more profitable- in order to pay off the tax. Often, the older existing house is demolished, and a mid to high rise apartment tower is constructed. Obviously, the rents earned from the apartments can be substantially more lucrative than the sales of the small shop. The demand for rental housing is always on the increase, as companies expand and young folks, who are no longer interested in a rural, agricultural lifestyle, seek employment in the city. The cycle seems never ending. Many of such apartment complexes have been built in Hakozaki.
(Recent reports that land prices have dropped for the 8th straight year in 1999 may seem contradictory to the above information. It must be noted, however, as stated by Professor Tokunosuke Hasegawa of Meikai University, that despite the decrease, residential property in Japan is still highly over valued as compared to international standards.)

Also, it has been expressed by Prof. Yamano that the leaders of the city are quite actively pursuing a modernization of the city and see older, smaller, wooden shops and houses as the "wrong image" for the new Fukuoka. One of the central themes of the current administration is the "internationalization" of the city of Fukuoka. The city has rebuilt strong ties with Korea, China, and other south east Asian countries. The hope is that while Tokyo serves as Japan's center of trade and relations to the "west", Fukuoka may become the focal city for the "east". Many "pressures" are made to bear on the citizens to demolish older structures and build newer, more "international" styled, buildings. "Pressures" in the Japanese sense may be slightly different from what we would consider in the United States or Europe. If one follows along with van Wolfren and numerous others' arguments that Japan is rather unique in the degree of conformity within society and relation to the political system, then simply "encouraging" change through talk and swaying local emotion can be an unusually strong pressure indeed.

These are not the only factors which have led to a decline in the community quality and machiya character of the Hakozaki neighborhood, but they may be the most clearly identifiable ones. Therefore, it is possible to address these issues.

First of all, the street must be "regained." I propose that the first step is to stop the free traffic flow along Daigaku Dori from the shrine to the main crossing of the border road just to the south of the University campus. Commuter traffic must be moved back to the wider roads to either side. (This may have the side effect of increasing the use of the mass transit lines- bus, subway, and train- so as to avoid the slow traffic of the streets.) Cross traffic would still be allowed at the first cross street running along side the shrine and at controlled intervals at a interior cross street. The barriers to traffic flow would, of course, be moveable. This allows emergency vehicles to access the street when necessary. The use of the road may also be granted to special purposes or for special events.

This would form an L-shaped pedestrian corridor. The intersection of the paths would be the Hakozaki shrine, reemphasizing its central position in the community. One extension of the 'L' is the historic processional path leading from the inner grounds of the shrine out to the sea. This would remain the sacred path- a path used in festivals, celebrations, and for the religious pilgrim. The new path, the secular path, would be composed of small shops, restaurants and residences. The street is again defined as an outdoor
Hakozaki Station

Sacred path to shrine
Secular path through neighborhood
room. Other examples in Japan show that such a street closing can be very successful. On Sundays in the city of Tokyo, main streets in the Shinjuku and Harajuku districts are closed to automobile traffic. The streets become filled with people, shopping, strolling, entertaining, and eating. Also, recent reports were made on Japan’s first “pedestrian only” roadway in the Tokyo district of Ginza. The road has been introduced in response to the increase in the number of deaths of pedestrians and bicyclist related to traffic accidents in Japanese cities.

Simply closing the street to traffic alone, however, does not insure success. Maintaining and restoring the character of buildings which will enliven the new outdoor room is the next critical step. It seems almost daily that a demolition crew moves into a new site along the street, or some place nearby, to take down one of the old wooden houses or shops. The truth of the matter is that many times, these structures have become in danger of collapse or they may simply be quite susceptible to fire or unsanitary conditions. Again, that is simply the nature of the urban residence- to be built, torn down and rebuilt. It is to be expected. The structures which have followed the demolition, however, have often been rather disappointing. Apartment towers, some over 10 stories high, have been erected. Often, these structures are set back from the street and the space in-between is given wholly to parking. In some fortunate cases, the new structures are quite small and shops or restaurants are placed on the bottom floor. Maybe the most fortunate are the sites that remain empty and unused for one reason or another.

The vacant site used in this exercise is a deep and narrow plot of land, sandwiched between a small restaurant and a dentistry hospital. Behind the restaurant is a low rise, three story, apartment complex. Along the rear edge of the site sits a small detached single family residence. The site front measures 7.5 meters and the total depth is 24 meters; approximately 190 sq. meters total, including the bootleg portion at the rear. Across the street sits a number of truly "machiya-like" structures, one with a vegetable shop that opens directly into the street in front of the site.

The initial act, now that the site is clear, is to provide a series of concrete frames. This is a simple set of walls that serves as a firm foundation. There are three frames with a corridor space left between each and one corridor space defined along the right edge from front to back. The roof structure is a system of prefabricated trusses topped with the standard tile assembly. This is the shell.

The resulting plan is quite similar to the machiya prototype plan discussed in section two. The plan and section are then divided into zones. The street front frame comprises the retail zone. The frames behind the first, on the ground level, are to be used as one residential unit for the building owner. Concerns for an elderly or handicapped person are considered.
in the layout of the main residence. The upper level will serve as a rental unit. The corridors between the frames serve as entries from the main corridor which connects the street to the garden. The upper level of the retail frame serves as an office/studio space that is used by the shop below or by the tenant of the rental apartment (in keeping with the notion that more and more company employees may be working from home via computer network systems).

This is one prototype which may serve a residential function. The form of machiya plan, in which the corridor splits the building in two, may be better utilized for public or semi-public functions. While the front frame will always serve as retail space, in the second type the remaining space might be used as a community center or meeting place.

While the concrete frame is meant to increase the stability and longevity of the project, the materials and methods used to enclose and partition the individual spaces may be less permanent. It is in this area that opportunities may be made for the reuse and recycling of materials from older wooden structures which are torn down. Certainly, a great portion of the material left over after the demolition of many machiya structures is unusable. Some structural members and well cared for components could be reused. Informal surveys made at some local demolition sites in Fukuoka revealed that none of the material was to be reused in construction. Almost all of the remaining wood is to be processed in making paper; the rest simply discarded or burned. There have been successful movements in Japan to encourage the recycling of building materials. One organization is working to preserve materials from demolished farm houses, minka, and link contractors with the recycled supplies. The organization recognizes that the success of such a recycling program depends not so much on the careful stockpiling of material, but on finding and creating opportunities for the material to be reused.

A project such as the one proposed here may serve as such an opportunity.

Another effect that such a construction process may have is to provide an area for the preservation of certain small scale craft techniques. While the small scale retail spaces are meant to provide opportunity to local family merchants and start up shops, the making of the building itself might provide opportunity to smaller contractors and local craftsmen.
This architectural act, I would hope, might serve as a simple example for a pattern that might be developed along the entire street. As older homes are demolished as necessary, a new machiya standard might be developed. Certainly though, there are other factors outside the realm of architectural design alone which would strengthen such an attempt. Essentially, guidelines, new "caretakers," must be generated by local citizens and the local government administration. Within the project there is opportunity for experimentation.
Nishitetsu Train Line
Hakozaki Station
Hakozakimiyamae Subway Station
to Tenjin (City Center)
to University Campus
city bus - auto
Developmental zone
• The frame zones might be used as ways to test new forms of shared or transferred land ownership between the individual and the city, or from owner to tenant. This might in turn provide and incentive for the easing of the restrictive tax code.

• Requirements for future construction must not permit the apartment tower along the main street.

• New construction should be kept close to the edge of the street, to maintain the “room.” Setbacks must be kept within a certain maximum, not a minimum, distance. The current trend for new construction along this corridor is to pull the building back away from the street, theoretically providing more space for pedestrians. Unfortunately, the theory proves ineffective as most of the reclaimed space is turned into clumsy and unwelcoming parking lots—degrading the quality of the streetscape, the pedestrian path, and the transition of public to private realms.

• Interior community parking facilities must be maintained. Projects such as this often receive criticism concerning the restriction of individual automobiles. It is considered unfair and inhibiting to expect people to "walk" any distance, especially in the rain, to accomplish daily tasks. To this type of argument, I might only suggest that this seems a very "American" assumption. The state of the American city and suburb demands that an individual car be ready and available at all times. The city of Japan is much different. Japanese cities, even in the extreme densities of Tokyo, do maintain a fine grain. The good mixture is at least true of residential and shop facilities. Unfortunately, connections to green space do not fare so well. Still, walking is generally not seen as an unfair "expectation." In fact, the use of the car is often more trouble than it is worth—rain or no rain. As long as a good fine grain is maintained— which is basically what this project attempts to do—then the American surbanite's argument is rather lacking. The Hakozaki community already has in place a number of central parking lots which are protected from the rain and shared by local residents. This practice must be maintained and enhanced.

• Access to green space must be addressed. While the street character is intended to be a room defined by building facades and the street floor, some of the corridor paths must allow access to public green spaces. In the case of this project, the side corridor leads to an open garden. The corridor becomes an in-between—from public to private. Such alleyways are found in the narrow corridor streets of the Pontocho quarter of Kyoto. Small signs above the alley entry indicate if this is a public or private path. The close proximity to private property serves to reinforce the status of the alleyway and to keep a close check on "undesired activity." The garden space may serve, much like the parking facilities, as a shared common space for a neighborhood block.
i Banerjee (Lynch), p. 186
ii The Daily Yomiuri Newspaper article, “Land Prices Tumble…” 21 Sept 99, p.1
iii The Daily Yomiuri Newspaper article, “Pedestrian, Bicycle…” 22 Sep 99
iv Japanese Newspaper article
Lynch stated that there are three basic types of theories concerning the making of a city. First, the "decision" theories are concerned with the complex planning decisions and how they directly affect the city. Second, "functional" theories are about the actual spatial structures and dynamics of the city. And third, is the "normative" theories, which seek to explain relationships between human value systems and city form. This third type of theory is the type which Lynch very often focused upon and tried to refine. One of his primary concerns was in the study of goal-form relationships.

"This approach is concerned with how physical arrangements facilitate or inhibit various individual and social objectives."

I would argue that although he might not have intended to address the neighborhood scale, this notion is valuable on many levels—urban and rural. Therefore, I shall attempt to use this type of analysis in the example of the Hakozaki neighborhood.
Consider, as I have already stated, that the physical arrangements plus the individual form of the machiya type, did facilitate the rich social sense that still lingers in the community. The "social objectives," whether they were consciously perceived goals or not, such as interpersonal communication, flexibility, and community involvement, were well sustained. As the physical character of the neighborhood changes, it is a fair and necessary question to ask—do the social objectives thrive or suffer? Now, that is of course assuming that the objectives themselves have not changed. True, I think it is, that certain values will shift and be altered by each generation. But, I also think it may be safe to assume that the goals of "good living" in a good community may essentially remain stable. As proof of this, consider the following findings. Surveys conducted by Hirai Kiyosi indicate that of persons living in multi-story apartment towers, only 10% of those surveyed wish to reside in such a structure permanently. Between 50% and 70%, depending on which type of apartment tower, low or high rise, indicate that the situation is only temporary and there is still a strong desire to move to a single detached house. The strongest reason given for the move to apartment towers is in order to avoid long commutes to inner city jobs.

Data taken from the Economic Planning Agency of Japan (Kokumin seikatsu hakusho) in 1990 back the survey results. From 1968 to 1988, despite incredible growth of city densities, the percentage of detached houses remained nearly constant at an average of 64%, dropping only four percentage points during that time. Far greater declines were found in the townhouse type (from 14.7% to 6.7%) and apartments of less than three stories (13.7% to 11.6%). The multi-story tower of greater than three stories made a dramatic increase from just 4.7% in 1968 to 18.9% in 1988. Be assured that continues to increase at a sensational pace today.

This analytical data reveals something about the Japanese sensibility for housing. If the percentage of single detached houses has remained nearly constant, even as multi-story towers have greatly increased, then it would seem that there still exists a strong devotion to that type. Following this line of thought, it could be assumed that the desire remains for not only the image of the detached house but for what it represents. Following Turner's argument in Housing by People, the importance of the house is what it does and not simply what it is. The single house retains a fundamental relation to the garden, the street, the community, the city, that the multi-story tower has been unable to maintain or improve upon. While the multi-story tower may be better suited for certain economic concerns, still a balance of scale is present in the townhouse and shared shop composition that strikes a chord in the consciousness of the Japanese.
Conclusion

In a matter of convenient timing, the Nihon Keizai Shinbun (Japan Economic Newspaper) recently carried an editorial titled “Urban revitalization.” The focus of the article was on the need for Japanese cities to “make good use of declining land prices by revitalizing” urban neighborhoods. The atmosphere of declining land prices, as mentioned above, have been assisted by new central government tax incentives for housing loans. The article acknowledges that the surging land prices in the time of the bubble economy forced most city residents to flee to the suburbs in order to find affordable housing.

“When the myth that land prices would never decline was still alive, land developers focused solely on making money. They did not give much consideration to developing cities that would be fit to live in 100 years later. However, the death of the ‘land myth’ is making it possible to develop well-planned, comfortable cities. The shortening of distances between office areas and residential areas is the best example of new city planning. The government should continue to promote housing construction in city centers. The development of infrastructure, such as parks and streets in metropolitan areas, is also being facilitated by falling land prices. The government should engage in dialogues with residents and continue to develop spacious housing environments through the effective use of idle land.”

Indeed public awareness is rising. A city plan, a housing scheme, based only on corporate strategies, maximizing consumption, and streamlining infrastructure led to a bubble city feeding the bubble economy. The bubble has burst and it is time to readjust the focus.

Ceaselessly, the river of city life will continue to flow. Therefore, a progressive redevelopment of an urban neighborhood in Japan, using design principles of developmental vernacular and ‘smart growth’ is in keeping with both the need for balanced urban renewal and maintaining chords of continuity with historic community patterns and rituals. Admittedly it is far from being a total solution to all of the problems associated with a city, or rural community, in rapid transition. This method, though, aims at least to provide a rich and rewarding contribution to the texture which makes up the remarkable urban fabric. This is one of the tools to be used in readjusting the focus from city, housing, and citizens as economic fuel, to the dynamic community as an engine that drives economic, cultural, intellectual, and personal growth and connectivity on a wide range of scales. The machiya order must be reborn, rediscovered, and renewed.
Section Three Endnotes

i Banerjee (Lynch), p.279
ii Trends in Japanese Housing, Economic Planning Agency of Japan (Kokumin seikatsu hakusho), 1990
iii Nihon Keizai Shinbum Newspaper article, “Urban revitalization” 23 Sep 99
Glossary of Terms

- **Ashigatame**- main floor beam
- **Bugyo Mado**- rectangular opening with thick plastered mullions (over wood or iron bar with wire netting) with interior sliding shutter
- **Daidoko**- central family room
- **Daishigeta-zukri**- upper wall of house cantillevers beyond the lower wall (segai-zukuri)
- **Dashigeta-Zukuri**- construction to produce deep eaves, rafters rest on beam supported by brackets projected from wall surface, sometimes plastered over entirely
- **Degoshi**- lattice work screen which projects out from between columns by 1 to 1.5 shaku
- **Dodai**- the groundsill beam
- **Dozo-zukuri**- main storehouse construction with thick daub and plaster finish over all the supporting timbers, a highly fire resistant construction type
- **En-geta**- veranda beam
- **Hachimaki**- part under eaves or at gables which is plastered and daubed, on all four sides of dozo-zukuri, on gable ends only of nuriya-zukuri
- **Haramaki**- band of tiles about halfway up the walls of a building, on all four sides of dozo-zukuri, on gable ends only of nuriya-zukuri
- **Hashira**- wooden structural column
- **Hijiri Mado**- small projecting window with lattice set in fence or perimeter wall, with two sliding shutters set inside the lattice
- **Hiragawara**- flat tiles used occasionally for capping walls
- **Hiragoshi**- lattice of various slat intervals fixed between columns
- **Hirameji Kawabari**- exterior wall finish with square tiles and plaster grouting which does not protrude above top surface of tile (simpler than namako kabe to construct)
- **Hisashitsu Kirizuma Yane**- gabled roof with canopy added at gable end to give appearance of a hipped and gabled roof, the upper and lower end walls are in the same plain
- **Hongawara**- tiling composed of both half round and slightly curved tiles in alternating sequenced
- **Honshiki Irimoya Yane**- roof with sloping faces on all four side with triangular sections of wall (tsuma) at two upper ends which are set back from the first floor end walls
- **Kabuki**- lintel type entrance, two columns joined by a wall plate
- **Keta**- interior beam
- **Kiji-no-Takuri**- exposed rafters on front elevation at first floor level
- **Kirizuma Yane**- simple gabled roof
- **Kojiki Mado**- small peep hole with wooden slats in wall beside main entry
• **Komatsunagi**- metal fitting of ring and backing plate fixed to board at base of lattice screens
• **Koshi**- lattice mainly found on first floor front elevation fixed between columns and sills, two or three short and narrow slats placed between full length main vertical slats
• **Koshido**- main entry sliding door with vertical lattice usually with a spacing of two to three times the width of the slats, three to five horizontal slats hold vertical lattice in place
• **Koshimaki**- skirt of tiles at base of building
• **Kurashiki Mado**- second floor, front elevation windows with three or five vertical timber mullions in *tsunogara* frame
• **Machiya**- buildings with both dwelling and places of work or trade (“machi”- town block; “ya”- house)
• **Mairado**- panelled door let into fence or perimeter wall with horizontal battens of wood fixed at regular intervals on its surface
• **Maku-kake**- long, chamfered beam under canopy bay or lean-to roof
• **Mizukiri Gawara**- layer(s) of tile set in walls to provide short canopy
• **Mizukiri Hisashi**- shallow stepped canopy with supporting brackets
• **Mura**- rural Japanese village
• **Mushiko Mado**- second floor, front elevation windows with thick vertical mullion
• **Mushiko-mado**- heavily mullioned windows
• **NamakoKabe**- exterior wall finish with square tiles and semi-circular plaster grouting
• **Noki-geta**- eave beams
• **Noren**- dyed curtains hanging at the entrance of buildings
• **Nuki**- horizontal wall tie
• **Nurigome-no-Taruki**- covering of rafters at eaves with plaster and daub for fireproofing
• **Nuriya-zukuri**- side walls and second floor wall of front elevation made with thin daub and plaster finish, covering the entire timber structure
• **Ohoto**- sliding entry door to a main building, 1 to 1.5 ken wide
• **Renjigoshi (or Shimotayagoshi)**- style of lattice screen with slats spaced apart one to three times the width of the slats, from Meiji period, later style than koshi style
• **Sage Odare**- panneling up to 1 shaku deep fixed at the edge of front elevation roofs for protection from sun and rain, similar to throating plate
• **Sangawara**- pantiles, wave shaped in section, use beginning ni Meiji period
• **Shinkabe**- half-timber style
• **Shinkabe-Zukuri**- all timber members exposed, daub or plaster walls thinner than structure, now banned in urban areas
• **Shitomido**- hinged shutters, propped open with a stick
- **Taka-yuka** - earliest structures with raised floor construction
- **Tate-ana** - the “pit house,” earliest house form
- **Torinawa** - earthen floor passage from the front entry to the back garden
- **Tsubo-niwa** - interior courtyard garden
- **Tsuke-shoin** - freely composed shapes of alcove windows
- **Udatsu** - raised fire break on roof
- **Zashiki** - entry parlour
- **Zushi Nikai** - attic like space with low ceiling on second floor of Edo period *machiya*
Image Credits

Section One

Image 01 from Architecture without Architects by Bernard Rudophsky

Image 02 from Architecture without Architects by Bernard Rudophsky

Image 03 from Architecture without Architects by Bernard Rudophsky

Section Two

Image 01
Image 02

Section Three

Image 01
Image 02

All other tables, sketches, and diagrams prepared by author
# Reading List

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