Interpreting Territorial Structure:

the machiya of Kyoto and the rowhouses of Boston's South End

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Abstract

This thesis focuses on the structure of territory, and how a sense of physical and psychological retreat can be achieved by manipulating territorial principles as one moves through layers of space in an urban context. The machiya or rowhouses of Kyoto are a sophisticated example of a building type which successfully creates a sense of privacy and contemplative retreat within a dense urban context. Through a study of the principles of spatial manipulation and architectural design of the machiya in Japan, some generic techniques are identified which can be applied to other types of rowhouses to add complexity and depth to the experience of space within a confined area. The principles which are gleaned from the Japanese examples are then applied to a local rowhouse type, in the South End in Boston, to explore the implications of increased spatial complexity and layering in the American urban context.

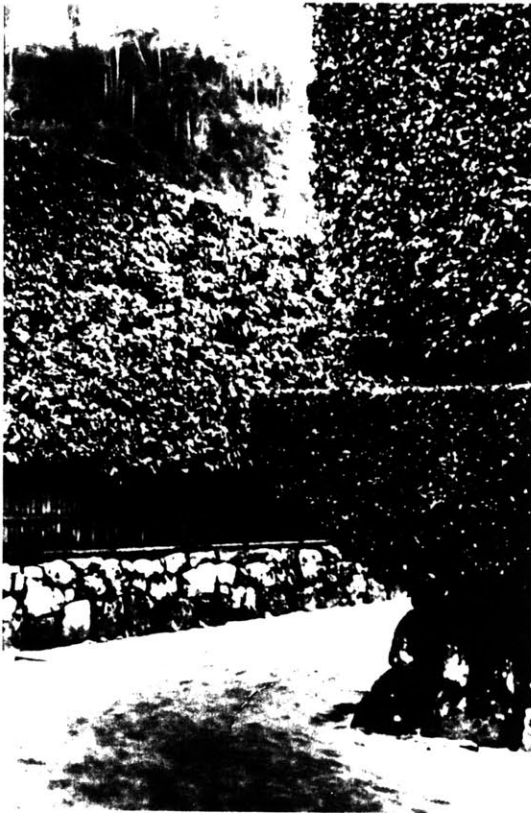The thesis is divided into two parts: first, a discussion of generic issues of territory, and observations of the territorial structure of Kyoto and the South End; then, the development and application of a thematic system for exploring territorial interpretations at the level of the dwelling, cluster of dwellings, and the urban tissue.

Thesis supervisor: N. John Habraken
Title: Professor of Architecture

Acknowledgments

When I began thinking about this project about a year ago, my understanding of Japan and Japanese architecture was very shallow, and my impression of what I wanted to do was still quite vague. There is a lot more to learn, but I feel I have come a long way, and I could not have done so without the help of many generous people:

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Observations

Territory

One might describe one of the roles of architecture as to provide physical and psycholgical security. Both of these suggest a degree of separateness or distance between the subject and its larger context. This notion of physical and psychological distance in the built environment is related to what Heinrich Engel terms "seclusion":

> Seclusion in building was the dominant quality of early architectural space. It was closely associated with the sensation of being protected against the hostility of environment, both weather and animal, and thus was prerequisite for psychological comfort.
> Seclusion in building, both as the withdrawn room and as the hidden house, is not antiocial. Instead, it is the affirmation that man is primarily individual rather than component of family, and, again, that ties within family are stronger than those to society. 1

The traditional, and much contemporary, architecture of Japan provides an interesting model for studying this sense of removal. At many levels, the built environment of Japan can be characterized as maintaining a strong physical continuity with nature while simultaneously achieving a deep psychological removal from the public realm. The distinction is not so much one from exterior to interior as from extroverted to introverted. To Western eyes, the introverted territorial structure of Japan is a distinctive characteristic:

> In the West, seclusion in building had been an inevitable condition dictated by unfavorable weather and limited technical means rather than a condition prompted by an awareness of man's psychological need for solitude. That is to say, seclusion was not an intentional creation, but an accidental circumstance. It is for this reason that

progressive Western architecture has never fully recognized the psychological implications of seclusion in building. 2

In this thesis I wanted to explore this phenomenon of "seclusion" in architecture. In order to understand the principles and implications of an introverted territorial structure I decided to focus on Japan. Though one can find examples in many areas of Japanese architecture, I settled on the traditional merchants' rowhouses, *machiya*, found in variations throughout the country, and in abundance in Kyoto. Kyoto was the only major Japanese city spared from bombing during World War II because of the richness of its historical and cultural architecture and artifacts. Individual surviving examples of *machiya* are scattered throughout the city, but larger portions of the traditional urban fabric have been preserved in some areas, most notably the Sanneizaka and Gion districts. One reason for my choosing the *machiya* to study was that they represent an identifiable type which is still in active use today. Also, my own interest lies in understanding the potential and implications of territorial distance in an urban context, where great physical distance is not always available. Finally, the rowhouse, as a generic type, is found in many cultures, including the U.S., and especially in Boston.

While it was useful to study a foreign context to begin to understand its territorial structure, it seemed necessary and desireable to test what I had learned in a local context - to consider what could be transfered, and how far it could be taken. With this in mind, I chose the rowhouse fabric of the South End of Boston. The South End has a large stock of sturdy brick rowhouses and, according to Margaret Smith, it is "the largest Victorian urban residential district remaining in America". 3 Also, while it has a long and rich history, and an established urban character, it is a neighborhood in transition, with considerable open space for infill development, and large blighted areas in need of renewal.

The *machiya* of Kyoto and the South End rowhouses are similar in some ways, both being a

rowhouse type, but they represent extremes of territorial intentions. My goal was to explore the possibility of achieving some of the territorial qualities of the machiya in the typological and social context of the South End. To explain why I think that that is a valid endeavor, and to preface the work that follows, a brief discussion of some of the territorial principles which informed it seems appropriate.

Territory is the basic phenomenon by which architecture assists humans in fullfilling their fundamental needs of physical and psychological security. The strength of any territory is determined by the degree to which its occupants maintain control of its borders. When territorial control is clear, actions are generally predictable and unstressful. When it is unclear or challenged, anything from embarrassment or abandonment, at best, to conflict or war, at worst, can be expected.
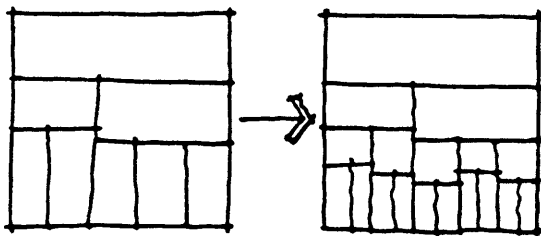
p.1 Increasing territorial depth

Any territory - except perhaps the very smallest - can be said to consist of two kinds of territorial space: public space, and other included territories, or private space. The included territories, being territories themselves, also have public space and more included territories, and so on. Thus there is a hierarchy of territory which begins at nations, probably the highest-level human territory, and extends to one's bed. The term "territorial depth" refers to the number of discernible hierarchical territorial layers in a selected portion of the built environment. The territorial depth of a given area can be increased or decreased by changing the number of territorial layers without necessarily changing its physical dimensions. (fig. p.1)

But a territory is more than just an assemblage of public and private spaces. In addition, since security is maintained through control of the borders of the territory, movement among

territories is very important. In general, access to the private space of a territory must be obtained vertically, through the public space of that territory first. In some cases one may bypass a level of territory and pass directly into the private space. A common example is the back door. One can also find examples of horizontal movement, between territories of equivalent hierarchical level. Examples of this case are borders between nations. (fig. p.2)

Without going to great lengths to prove it, it is assumed here that these principles of the structure of territory are universal throughout the world and necessary to the making of good architecture. They can be represented and explored with the simple "territorial diagrams" shown.

While a territorial diagram is universal,•it is also generic. That is, while the hierarchical relationships and control of access among various territorial elements must be maintained, their physical arrangement and the quality of the paths among them can be interpreted in many different ways. Each such interpretation embodies a different set of territorial intentions and can be represented by a "physical diagram". These range from extroverted arrangements, with short, direct relationships between territorial levels, to highly introverted arrangements, characterized by indirect movement. (fig. p.3) When several territorial levels are operating within an introverted territorial structure, the most private spaces may in fact be physically closest to the most public territories, but they retain a sense of removal because of their position and access relationships to the other levels. (fig. p.4)

Just as the territorial diagram can represent any level of territory, so a physical diagram can be applied to a room, a building, a block, or a city. Also, just as we see the territorial diagram everywhere, we can find instances of the same physical diagrams in disparate parts of the world. Furthermore, within one geographical area, we can find more than one physical diagram
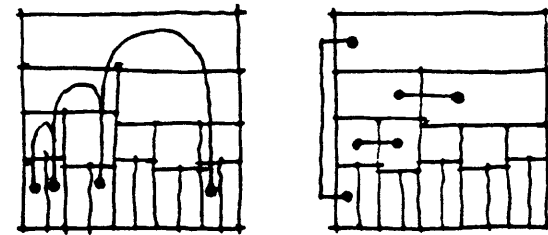
p.2 Vertical movement among territories (left) is most common and comfortable. Horizontal movement, or vertical movement which skips levels, like a back door (right) is also possible, but requires more knowledge among the parties involved.

PUBLIC SPACE

PRIVATE SPACE
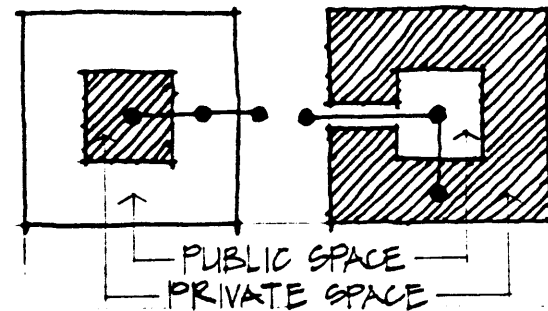
p.3 Extroverted and introverted physical diagrams

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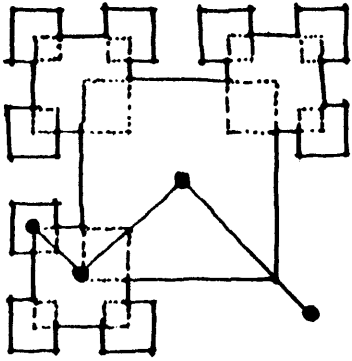
p.4 Same territorial depth, same number of territories, different physical diagrams.

at work. Figure p.5 shows two interpretations of the floor plan of a typical suburban bungalow. The first has an introverted territorial structure with living and dining rooms out front, and bedroom and service in the rear. The second plan makes minor adjustments to the plan and flips the entry to the other side, creating an introverted physical diagram. Though this is a hypothetical interpretation, the resulting dwelling form is actually quite common, especially in more dense urban contexts.

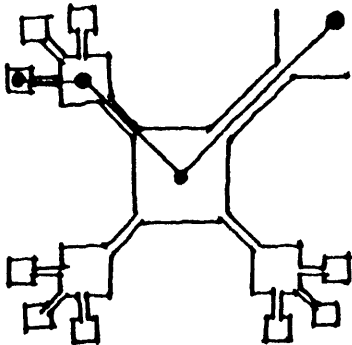In architecture, a physical diagram can be used to organize a single intervention, or may evolve over time as the result of a long-standing tradition of building in a region. A building "type" represents a complex set of agreements about building, developed over decades or centuries. Types encompass the small scale of an individual dwelling, as well as the larger urban scale. While a given type may embody a general world view which informs the territorial structure, one may find physical diagrams at different levels which represent a range of intentions in the introversion-extroversion scale.

The physical diagram is also "generic" in that it says nothing about the specific local traditions of culture, climate, materials and building practices, etc. These contextual issues add physical reality and richness of meaning for the users, and can reinforce their territorial intentions. Indeed, these local factors are as important to the making of good architecture as the territorial principles discussed above. While diagrams can be instructive, the issue of territory cannot be separated from people, for territory is an intentional phenomenon and only exists if people acknowledge and take control of space. Any place can have many territorial interpretations, regardless of the designer's intentions. Thus, while accomodating the basic territorial principles is necessary, it is not sufficient. The physical diagram which is employed must be familiar and meaningful to the social and physical context, and the additional local traditions must be accomodated.

These three areas of concern must be addressed in order to make successful architectural interventions. However, we have further seen that each of them offers potential to increase what one might call the "territorial distance", the degree of physical and psychological removal experienced as one moves from public to private territory. First, manipulating the territorial diagram allows us to increase territorial depth. Within the same physical distance one can increase the number of territorial layers one passes through by aggregating previously individual territories and identifying a public space through which they pass. A caveat with regard to this approach is that creating new shared spaces for people who don't necessarily feel any social bonds may result in well-designed, but unused public space. Beyond a certain point, one must rely on other methods. The second way of increasing territorial distance is through manipulation of the physical diagram: the dimensions, direction, and character of the access, and the orientation of the territorial elements can heighten the sense of removal. Finally, local traditions of use, materials, and building methods can affect the perception of the territorial structure of a place.

In working with the territorial structures of Kyoto and the South End, I have tried to utilize these three methods of increasing territorial distance. Since, when stripped of their local cultural baggage, all types are manipulations of the same territorial diagram, and variations on the same manipulations are found all over the world, it seemed reasonable to attempt to implement qualities of the territorial structure of one context into the territorial structure of another, as long as local issues of use, materials, climate, etc., are accomodated.
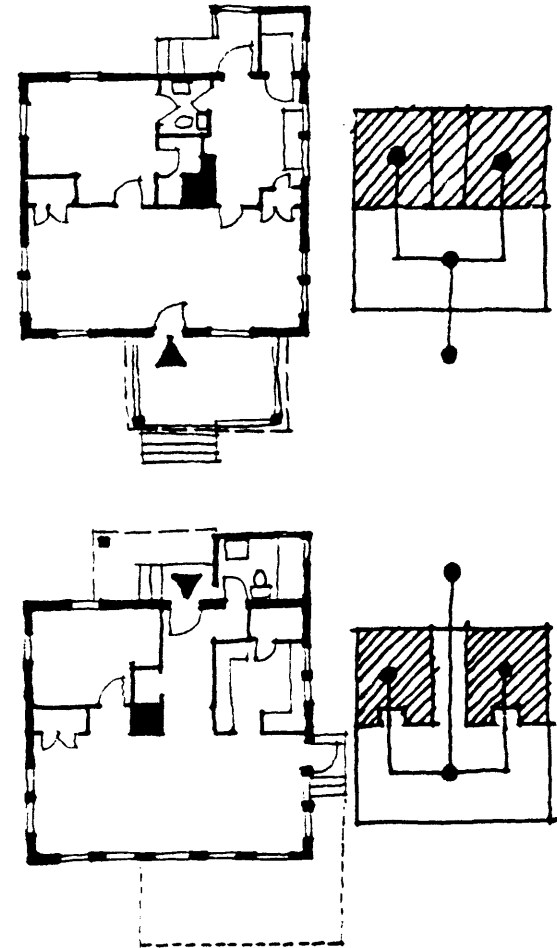
p.5 Source: Walker, p. 186

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Chapter 1:

Kyoto

My initial fascination with Japanese architecture was with its form, but my thesis has focused on territory. My original interest was in continuity in an urban context, but has ended up centering on discontinuity. The tone of my work began as objective analysis, but soon became subjective discovery and interpretation. Once there, I realized that the "spatial layering" I had read and written about was everywhere in daily life, not just in the rowhouses and temples. I soon put away the analytical methodological tools and took out my notebook. In it I tried to explain to myself what was going on around me. Eventually I began to distill two qualities which seemed to be present and fundamental to many of the architectural and social contexts I found myself exposed to, both of which seem to be related to the Japanese spatial phenomenon, "oku." One I termed "inner focus;" the other is the quality of fragmentation, or mystery. These qualities both relate to the issue of territorial distance in all three of the ways discussed above: territorial depth, physical diagram, and traditions of use and construction. I will briefly discuss their meaning in general, and then their relationship to the *machiya* and the urban fabric built around the *machiya*, the *machinami*.

Description

Inner Focus

The elusive concept of *oku* seems to be the operative phenomenon behind my sensing of an inner focus to many aspects of the Japanese cultural and built environment. I give it the more generic name because of the complexity of the term in its deepest and richest meanings. The term *oku* literally means depth or interior, but to express the word's full implications in Japanese culture, it takes many tries to define *oku* in the English language. Maki uses the terms "invisible center", "innermost space", "convergence to zero", and "relative distance" to try and convey its architectural or spatial significance. Every Japanese house has a hierarchical organization of more public and more private, or interior, spaces in its depth. Moving progressively inward is moving towards the inner focus of the house, its most private and distant realm, its *oku*. Maki reminds us that the term is used not only for describing spatial configurations, but also for expressing psychological depth; a kind of "spiritual *oku*." 4

This latter point is reinforced by a conversation I had in Nara. An aquaintance explained that *oku* has to do with something which is not immediately clear or simple. An adjective which is used to describe this is *oku-bukai*. (strangely redundant expression which might translate literally as "deep with depth") An *oku-bukai hito* (person) or *tatemono* (building) is one whose true self is not right up front, but obscured by layers, which are relaxed and revealed depending on the situation. The quality of *oku-bukai* was once considered a thing of virtue or beauty, but this traditional value is being slowly forgotten.

Insofar as *oku*, or "inner focus" relates to territorial structure, it has to do with the gradual moving away from the public realm through layers of more and private space, toward a perhaps

partially obscurred heart or goal. Buildings organized and perceived with a sense of *oku* have an intense sense of inner focus, yet the notion of *oku* itself seems separate from absolute notions of public and private space. *Oku* is as much a state of mind as it is a kind of space or form, and therefore is very much tied to traditional Japanese culture. *Oku* must be perceived to be appreciated, but not necessarily reached. Those who have not learned to appreciate a Buddhist emptiness (*mu*) or void, and must inspect out the contents of a murky temple altar, or open the very smallest of a series of little boxes, are often disappointed. Maki notes that the closest Western equivalent to *oku* is the concept of center, but that "the center unlike the *oku* must be open and visible.... The *oku* is the original point (mental touchstone) in the minds of the people who observe or create it, and hence becomes the invisible center." 5

The depth of meaning of *oku* may not be relevant in the South End of Boston; nevertheless, it is an important phenomenon, a key to an understanding of the spatial structure of Japan. It is the heart of an introspective territorial structure, which removes one from the outer world and allows one to nurture one's inner self.
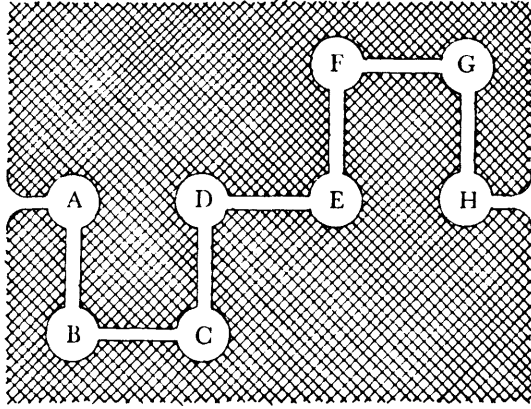
1.1 Diagram of movement-oriented space. Each spatial unit is isolated from the others and from the outside world. Source: Inoue, p.144

見えがくれ　*Seen and Hidden*

凹　み　*Recessed Space*

Fragmentation

Whereas inner focus deals primarily with the relative positions of the territorial elements of public and private space, fragmentation is concerned with the movement among them. The territorial distance found in Japanese architecture is not achieved spontaneously from any single point in space or time. Rather, by choreographing human movement, space is revealed sequentially, as a penetration through layers. Matsuo Inoue calls this Japanese sensibility "movement space", as opposed to the sensibility of "geometric space" found in Western and other Asian countries. In geometric space, the compositional elements relate to an overall ordering framework, revealed by "prospects" and "vistas". In movement space, on the other hand, "what is important are the positions of elements relative to each other.... Successive observation is the principle upon which this type of architectural space is based. Space is never revealed in its full extent all at once but is shown instead a bit at a time.... A new scene is discovered at every turn and left behind at the next." 6 (fig. 1.1)

The sensibility of movement-oriented space is a highly refined art in Japan, characterized by specific compositional and space-ordering principles. These have been described and interpreted in detail and include such principles as *aesthetic triangle, alternating turns, recessed space, unparrallel system, symbolical eyestop,* and *borrowed space.* 7 All of these relate to the perception of space through movement. These principles can most readily be seen in the gardens which surround villas and the residential quarters of Buddhist temples, and in the careful site planning of Shinto shrines.

The fragmentation of spatial experience is grounded in a fundamental philosophical conception of the dynamic nature of the universe. Again I turn to Inoue for a description of this connection:

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The twisting, turning movement of Japanese architecture has its spiritual parallel in the idea of mutability. The Buddhist concepts such as the transmigration of the soul or the law of cause and effect imply, by their nature, a flow based on temporal extension. *Sangai ruten* refers to the flowing movement of all living things through the three worlds of past, present, and future. Thus in Buddhism there is a tendency to regard human life as basically a fluid phenomenon. However, when the idea of this flowing movement is expressed by the words *shog yo mujo* ("all things are impermanent"), it takes on a special nuance. The flow is characterized by what the word *mujo* literally means: "no constancy"; it is not simply a movement of constant speed in a single, fixed direction, but a deflected, discontinuous movement. 8

This movement-oriented or temporal conception of space is also illustrated in the Japanese word *kamae*, which was the closest equivalent to the western notion of *facade* in traditional Japan. *Kamae* describes the public aspect of a building, but not just its physical surface. It refers more to the disposition of the building and other elements on the site, and refers to the entire entry sequence and its psychological impact. In architecture it refers to the public zone of the building as visible from the exterior, and includes entry elements such as gates, walls, gardens, the "facade" or building skin, and transitional zones that take one further into the interior. Kamae can also be defined as a physical and psychological readiness, or mental set. Psychologically it refers to the outer-most "layers" of one's personality. It is used to describe the initial stance taken by someone participating in a martial art, or the defensive mechanisms exhibited by some animals. All of these meanings add a sense of expectation or destination to the notion of spatial layers created by the fragmentation described above. This sense of destination, or purpose is what ties the fragmentation of space to the sense of inner focus. One penetrates the outer layers of *kamae* , which creates a tone or set of expectations as to the distance and nature of a building's *oku*.
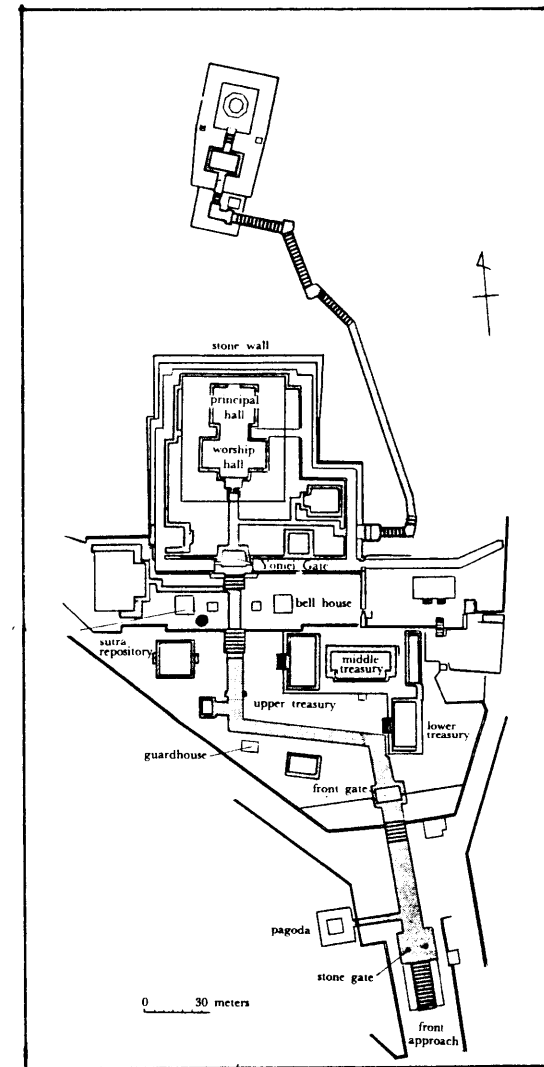

Nikko Toshogu shrine. Source: Inoue, p. 106
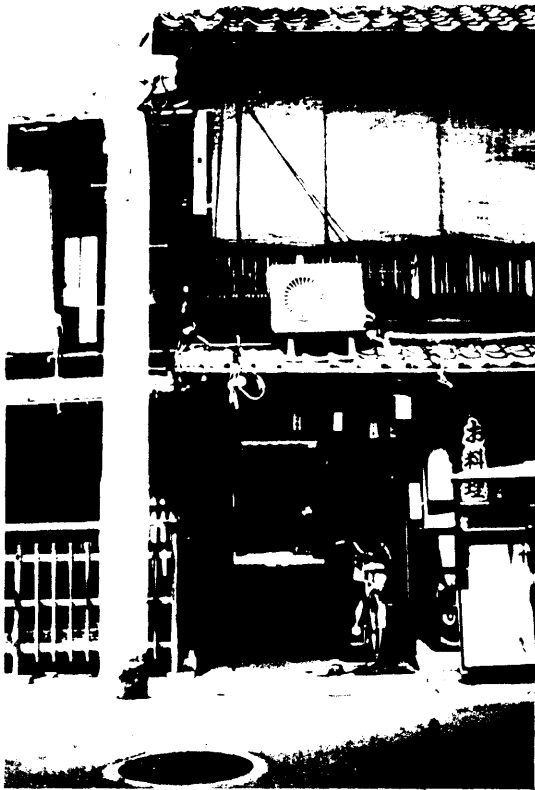
Machiya

Though the literal meaing of *machiya* is "town house", the type has always been closely associated with the merchant class as both a place of residence and of commerce. They first appeared lining the main streets of towns, with a shop in front and the shopkeepers home to the rear. In Kyoto, the *machiya* originally lined the edges of the large blocks, layed out according to Chinese grid-planning principles, leaving an open area at the center. During the Muromachi period, the square blocks were transformed into long rectangular blocks to create more street frontage, and the buildings and their gardens filled the middle of the blocks, creating a densely-packed urban tissue of long, narrow rowhouses. 9 Common dimensions of *machiya* range from about sixteen to twenty-six feet wide, and seventy to up to two hundred feet deep. 10 These exceedingly long proportions lead them to be refered to as "eels dens". 11 Originally they were one story in height, but eventually grew to two stories. A shop, or *mise-no-ma*, and living and entertaining spaces are commonly on the ground floor, with sleeping spaces above. A six to eight foot access and cooking space (*tooriniwa*), with a concrete or earthen floor at the same level as the ground, lines one wall, with the living spaces organized in a serial fashion parallel to it. The living spaces are separated by sliding *fusuma* panels and are raised above the ground about two feet, with a wood or *tatami* mat surface. The primary spatial components of the ground floor of a large *machiya* include the entry vestibule (*genkan*), anteroom, reception room, eating and/or living room, and formal entertaining room (*zashiki*), with its picture recess (*tokonoma*) and ornamental shelves. Smaller homes may only have one or two living spaces, which perform all of the above functions. Upstairs, rooms near the street are sometimes used for storage or for guests, while those toward the inside of the lot are living/sleeping space for the family. In addition to the interior rooms, a very important element of the *machiya* are its garden(s). While most homes have one garden, more prosperous merchants had two. In this case, the *tsuboniwa* often separates the shop in front from the living spaces, while the *okuniwa* is positioned beyond the *zashiki* and forms the heart

of the house. 12 Diane Durston describes the garden of the *machiya* as a "private, limited space located deep in the interior always a refreshing surprise. Here the master of the house could create a small paradise of his own." 13 Bathing functions and the large, fireproof storehouse (*kura*) fill out the lot to the rear. (fig. 1.2)

Plan of 1st floor
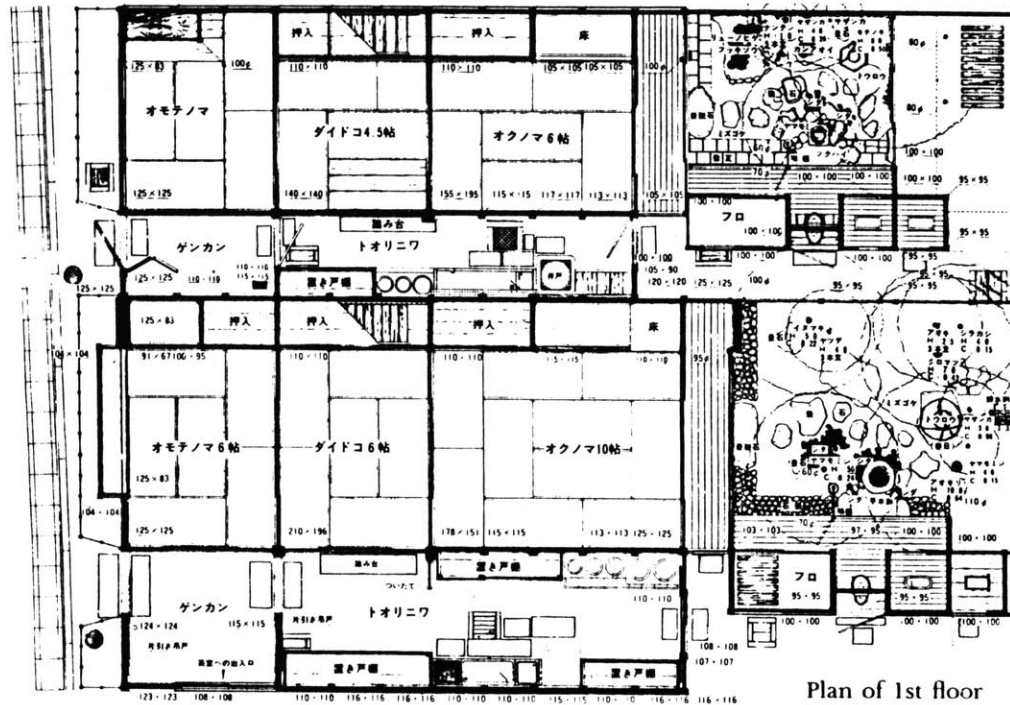
1.2 Typical *machiya*. A serial arrangement of rooms, progressing toward the garden. Source: Ashihara, p. 128

The construction system of the *machiya* is wooden post and beam, dimensionally based on the *ken* module - structural unit that marks the basic column interval, measuring approximately three feet by three feet. Spatial units are measured in *tsubo*, which is the area of 2 *tatami*, approximately 6X6 feet, although variations in the size of the *tatami* exist in different regions of the country. A high gabled roof, with its ridge running parallel to the street, covers the main building, with other roofs, sometimes running perpendicularly, covering the smaller buildings at the interior of the lot. The facade generally has two eaves; one from the main roof over the second floor, and the other a small attached eave over the first floor for additional shade and weather protection. Fire has always been a major threat to the *machiya* and for this reason the exterior street wall is often made of heavy clay and plaster over the wooden frame, like the construction of the *kura*. Wooden lattices and reed screens overlay this wall, providing visual privacy and ventilation, and are an important part of the formal rhythm of the townscape.

1.3 Diamond-shaped territorial structure of Kyoto, depicting *cho* and *gakku* (larger territories). Source: Ueda, p. 229
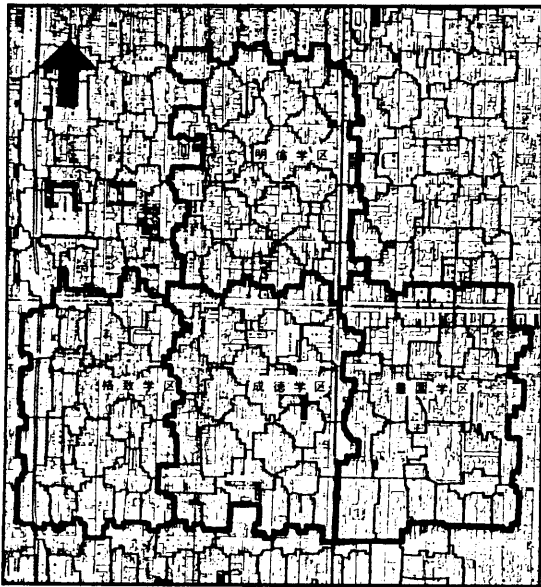
The filling in of the rectangular blocks of Kyoto has resulted in a roughly diamond-shaped urban tissue with longer rowhouses at the middle of the block and shorter houses, overlapping one another, near the corners. (fig. 1.3) This physical structure, or *machinami* (literally "city rows") is related to the social structure of the city. The basic social unit is the *chonai* ("inner town"), or simply *cho*. It consists of around forty households which line a street, in one of the approximate diamond shapes. The *cho* is divided into a smaller social unit, the *gonin-gumi*, consisting of five neighboring households which police one another and is "accredited with much of the responsibility for the safety of Kyoto's city streets." 14 Above the *cho* we find the *gakku*, or school district, and the *ku*, a district comparable in scale to the South End or Back Bay in Boston. The smallest social unit is the family. Within the realm of the house, the family lives and works as a single unit, without the privacy of individual rooms and sound-proof walls. The role of individual family members is defined so as to facilitate the smooth operation of the family unit. This is primarily illustrative of a cultural emphasis on the

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group over the individual, and it is reinforced by the lightness of construction of the *machiya*, in which most interior partitions are limited to removable sliding paper doors.

This hierarchical social structure is related to the terms *uchi* ("inner") and *soto* ("outer"). *Uchi* refers to an inner circle or group to which one belongs, and *soto* represents all that is outside of that circle. These are relative terms, thus one may think of expanding circles, the smallest of which is the family or workplace, the largest being the nation. Behavior is strongly influenced by the standards of each *uchi*, both with respect to members of the inner group, and to those from the outside realm. The word for stranger, *tanin* (*ta* refers to other or elsewhere and *nin* means person, thus *tanin* means literally, "a person from outside or elsewhere"). The word for foreigner, *gaijin* is also related to the notion of *uchi* and *soto*, *gai* refering to outside, another reading for the character for *soto*. Yet these are all relative terms. "Whereas a stranger might be another Japanese person in the same town outside of one's group; in another, larger group definition with respect to one's town or country, a person from a different town or country might be considered the stranger."15

The behavioral standards of *uchi* may call for quite different conduct relative to other members of the inner group or to *tanin* or *gaijin*. There is a self-critical saying among the Japanese that the Japanese are "only polite with their shoes off," refering to the care with which group members and their guests treat each other within their respective territories, the *uchi*, or inside where one is familiar enough to relax and remove one's shoes. This is in marked contrast with the behavior that the casual visitor to Japan sees at any train station during rush hour. Then the sea of "strangers" with whom one has no connection or relation is ignored, and each person fights tooth and nail for his or her space on the train.

Territorial Distance

Territorial depth: inner focus

The relative social terms of *uchi* and *soto* can be interpreted territorially as different hierarchical levels of public and private space, which are also relative terms. The layers of social circles to which one belongs creates a territorial depth which puts some psychological distance between oneself and the larger "outside world". This psychological distance is sometimes made physical by the use of ceremonial gates at the entrance to a neighborhood, and by a change in dimension and/or direction of the path. As one walks down the narrow, winding streets radiating from Ikebukuro station in Tokyo, for instance, elaborate, colorful gates overhead mark the beginning of new districts. These districts are further reinforced by the use of repetitive lighting fixtures or plantings.

Territorial depth: fragmentation

The phenomenon of fragmentation in the *machiya* is primarily established as a function of the physical diagrams, and traditions of use and construction. The intensifications of the gates of territorial layers discussed above heightens the fragmentation of experience, but beyond that territorial depth is more related to the notion of inner focus. Furthermore, because of the limited dimensions of the *machiya*, the traditions of construction and use become more important. Since fragmentation through manipulation of the physical diagram usually involves the dimensions and direction of access, there is only so much that can be done in a small physical distance.

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Physical diagrams: inner focus

A diagram of just the built and open spaces of a typical *machiya* is one that could represent an introverted territorial structure, creating a long, narrow path to the *okuniwa,* which acts as an inner focus for the private spaces. (fig. 1.4) This would imply that the garden was the public space of the machiya territory, through which one passed before moving into the private spaces. But, as was stated earlier, the *okuniwa* can not really be interpreted as a territorial element. Perhaps a more accurate diagram of the territorial structure of the machiya is a series of distinct spatial units, experienced sequentially, and progressing in use from less to more private. (fig. 1.5) The destination is the tea room, looking out into the inner garden.The resulting physical diagram is similar to Inoue's diagram of movement-oriented space (fig. 1.1)

While the *okuniwa* represents a visible *oku,* another physical diagram found in the *machinami* of Kyoto illuminates Maki's notion of an "invisible center". The dense city blocks often have a temple or large merchant's or landlord's house at its center, accessed through a narrow alley. It is outside the territory of the rowhouses that surround it, and relates to portions of several different *cho,* but serves as an unseen focus. Maki addresses this phenomenon when he describes the city as a "territorial group which envelops numerous places of *oku,* sometimes public and sometimes private. Cities have developed as an aggregate of numerous territories of a social unit that protects the *oku,* and not as a place with an absolute center to cluster around." 16 Other examples of this "protective" physical diagram can be found. For instance, the shop in front of the *machiya,* sometimes assisted by the *tsuboniwa,* acts as a buffer in a similar way. Also, a common model of the high-density *machinami* is the "stacking" of one house in front of another. The house nearest the street will often have a small restaurant or other public function on the ground floor, while the rear house will be an inn or a private residence. (fig. 1.6) One territory is "blocking" another territory of equivalent hierarchical level from the public space of the next higher level. Thus, the access to the protected territory
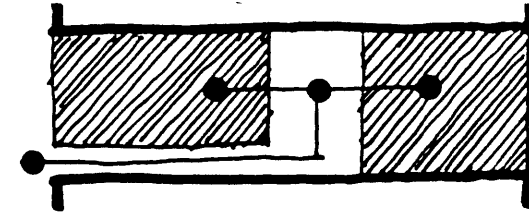
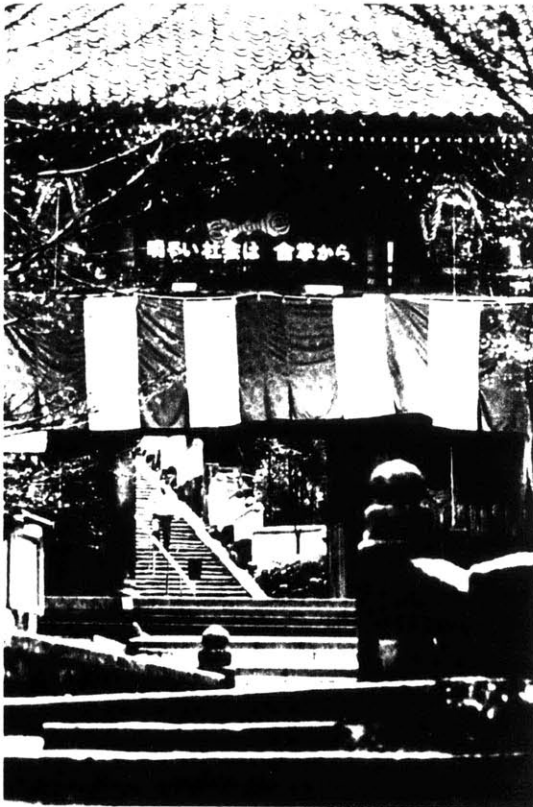1.4 An introverted territorial structure based on the courtyard as public space. *Not* the diagram of the *machiya.*
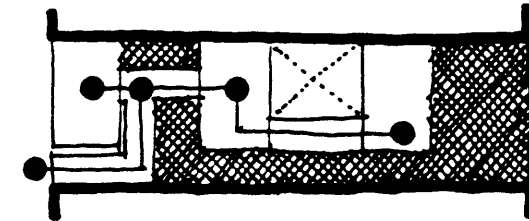
1.5 *Machiya* physical diagram - a series of distinct spatial units, progressing toward *oku.*
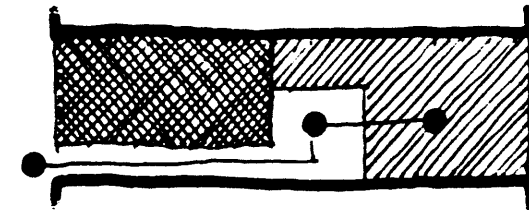
1.6 A "protective" physical diagram.

becomes long, narrow, and perpendicular to the direction of the larger territory -all adding territorial distance to it.

Physical diagrams: fragmentation

Physical diagrams which promote territorial distance through inner focus generally also enhance fragmentation. In such diagrams, the length of the path from the public space of the street realm to the public space of the house realm is inevitably longer because of the removal of the house public space from direct association with the street. The other dimensions of width and height of this path are also often manipulated to heighten the removal. These long, narrow paths are found at all levels of the urban landscape of Kyoto. Residential streets or commercial streets relating to a particular district exist in the midst of major shopping districts, or near expressways, and yet maintain an intimate human scale by their narrow width and high height to width ratio. If they are not enclosed over head as a pedestrian market, as is often the case, they may have a sense of enclosure by projecting eaves and innumerable electrical wires, signs, lamps, and decorations. Dark passageways and covered alleys leading to an unseen world are common in the neighborhoods of Gion and Sanneizaka. And the entry passageways to individual dwellings may be even smaller, sometimes offering a glimpse through a wooden lattice gate of a small entry garden at the end.

Direction and change in direction is also an important aspect of fragmentation. The same streets mentioned above will often have an abrupt ninety-degree relation to the public thoroughfare, and may also have a lateral shift at some point. The shift temporarily blocks one's view of what lies beyond, and may signal the beginning of another territorial layer. Plans of the individual *machiya* sometimes show a shift of the access from the service zone of the ground floor across to the other party wall of the house before encountering the stairs to the upper floor.

Tradition: inner focus

One form of tradition found in Japan which reinforces the phenomenon of inner focus is ritual, through formalized behavior. Simple acts of everyday life are refined to their essential attributes and performed with the great care and deliberateness generally only present in Western society in religious ceremonies. Engel explains that "the simple and commonplace life in its most trivial aspect can become art. For art is not a matter of skill or training, but a matter of inner attitude." 17

The exchange of money at a bank gives a glimpse. It begins, as with all transactions, with a bow and a polite greeting. The announcement of the customer's intentions brings forth a form and a pen on a small green plastic tray with short rubber nubs on the inside to fascilitate picking up its cargo. The tray is slid across the counter and retracted when the form has been completed and returned to it. Nothing is exchanged directly from hand to hand, but only through the intermediary of the tray, refining and focusing the many kinds of transactions to this simple object and action. The tray is treated full of care, always using both hands to push it across the counter, and to take it to a superviser for approval. The transaction ends as it was begun, with a bow and a salutation.

The high level of formalization in social behavior may be related to the prominence of ritual in traditional Japan. No doubt the most famous of Japanese rituals, and perhaps the most indicative of the notion of an inner focus, is that of the tea ceremony.

The cult of tea was brought to Japan from China by Zen Buddhist monks during the sixteenth century, "but the basic philosophy fit the Japanese people like a psychic glove."18 The tea ceremony ritualizes the act of making tea by "symbolizing and refining each of the constituent acts which lead to, and culminate in, the cup of tea." 19 While tea itself is a commonplace

thing, Engel reminds us that it is also representative of the simple life of "the ordinary farmer, from which both the motif and form of tea were taken." 20 Engel further states that "the Japanese residence, unless it is the bare minimum for existence, has materialized its awareness of seclusion in building thorugh one of the very distinct achievements of Japanese architecture: the tearoom.... the tearoom in its pure form is inwardly oriented and shuns external experience." 21 In the *machiya*, the tearoom, typically four and one-half tatami, or approximately nine by nine feet, is positioned next to the *okuniwa* at the heart of the house. It is a space used only by the head of the household for personal introspection or for entertaining guests.

Tradition: fragmentation

As explained above, traditions of use are very important in creating a sense of mystery in *machiya*. The most ubiquitous example is the practice of taking off one's shoes at the entry (*genkan*). This act was originally simply a practical way of keeping mud out of the house in the rainy climate of Japan, but has achieved more deep-rooted meaning as one of the many rituals of daily living. Besides affecting a change in the mode of travel, it also causes a pause and a turn back toward the outside before continuing on. The raised floor at the entry, a tradition of building also originating from the same practical considerations, further heightens the act of transition from outside to inside. The formal entry sequence is often articualted into several discrete acts. These are embodied by the series of entry vestibule (*genkan*), and the anteroom and reception rooms, all associated with the receiving of guests. The sequential nature of this process is reinforced by another tradition of building, the use of opaque *fusuma* panels and translucent *shoji* screens for the vertical definition of space. These elements divide space into a sequence of layers which are peeled back in succession and closed again, so as not to expose the whole spatial composition of the building at once.

Ryokan Hinomoto

Ryokan Hinomoto, a family-run inn in Shimagyo-ku in Kyoto, offers a good example of the phenomena of inner focus and fragmentation at several levels. The short street it is on runs roughly parallel to and only slightly (around 100 feet) removed from Kawaramachi Dori, the major North-South commercial thoroughfare that follows the Kamo river. (fig. 1.7) While its parallel direction does not reinforce its territorial removal from Kawaramachi, the entrances to the street, at both ends, are quite abrupt and at right angles to a secondary element that mefiates between the publicness of Kawaramachi and the intimacy of Hinomoto's street. At the North end this mediating element is Matsubara avenue, a medium-sized East-West street with a mix of commercial and residential, which intersects Kawaramachi. At the South end it is a triangular parking lot leftover for its odd shape and size.

●

As soon as one moves into the neighborhood of Hinomoto's street, the sights and sounds of Kawaramachi fall off because of the intimate dimensions and proportions of the street. In the middle, there is a lateral shift, effectively dividing the street into two territories. Hinomoto is situated directly in the shift, facing back towards the beginning of the street. As such its physical position is fairly prominent within this inner world and thus not as removed as other buildings.

The entrance and reception desk are in the garage. From there guests take a very steep flight of stairs up to the guest rooms. The rooms are positioned along a corridor which takes two 180 degree turns and a lateral shift before continuing in the primary direction. To shower or bathe one must go down a dark back stair, penetrating into the family realm, and find one's way to the bath rooms. The fusuma panels which define the rooms are rarely left casually open, not only hiding their contents, but also casting the corridor on darkness. (fig. 1.8)
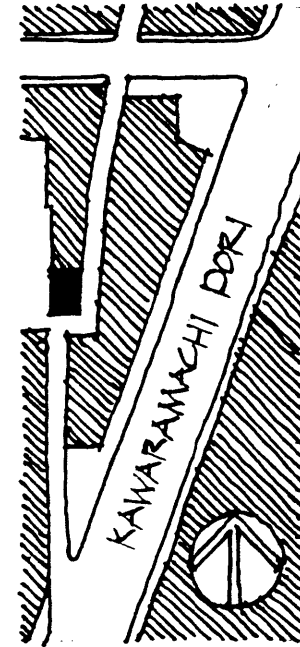

1.7 Context of Ryokan Hinomoto.

RYOKAN HINOMOTO
FIRST FLOOR

SECOND FLOOR
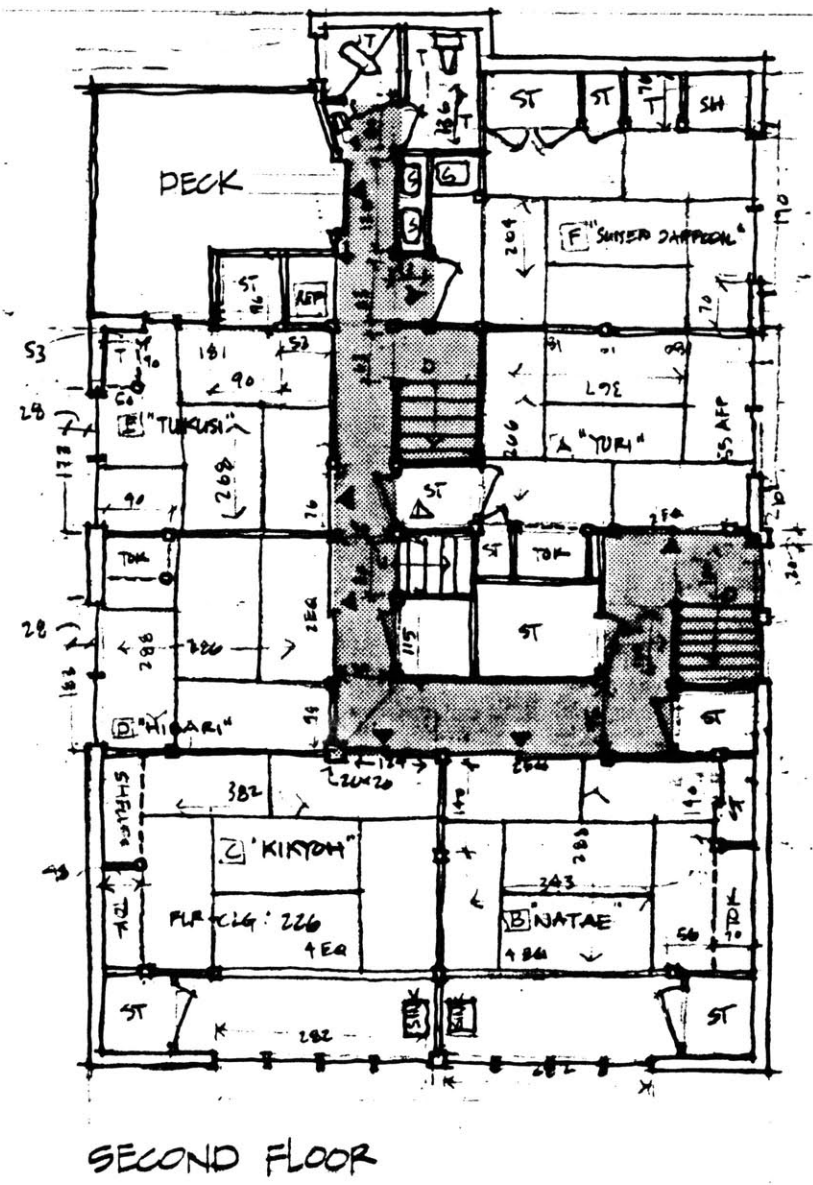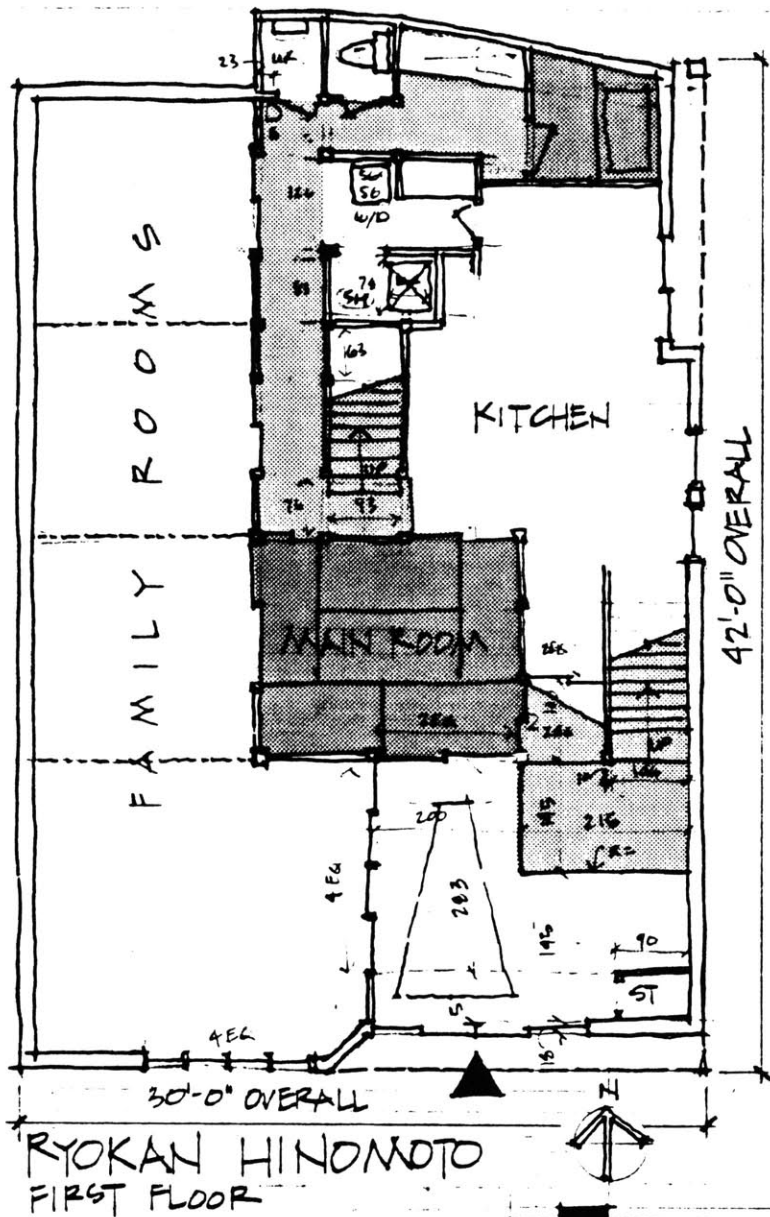
1.8 Field notes of the plans of Hinomoto.

30

The sense of mystery of this place is captured by the use of the main public space of the family realm, an eight-tatami room just off the garage. From the garage one can see light and movement through the room's translucent walls, and from most of the guest rooms upstairs one can hear the noises of television, meals, conversation throughout the day. The guest is not afforded a glimpse inside except for during breakfast, which is served in this room. However the experience is somewhat disappointing relative to the sense of anticipation from the prospect of entering the heart of the family realm. The feeling is that in fact one has not entered the family realm at all. Rather, the family realm has pulled back and temporarily relinquished control of its public space to its guests. To get there, it would have been most direct to go down the rear stairs, however it is understood that one should go down the front stairs to the garage - almost in the territory of the street - and enter from that side. (fig. 1.9) One enters to find a simple breakfast of toast and coffee waiting on a low table, with an English-language newspaper beside it. While eating, no one enters, except other guests. It is only upon having slid the paper panel closed behind as one leaves that one hears the proprietress enter from the rear to clear the dishes.
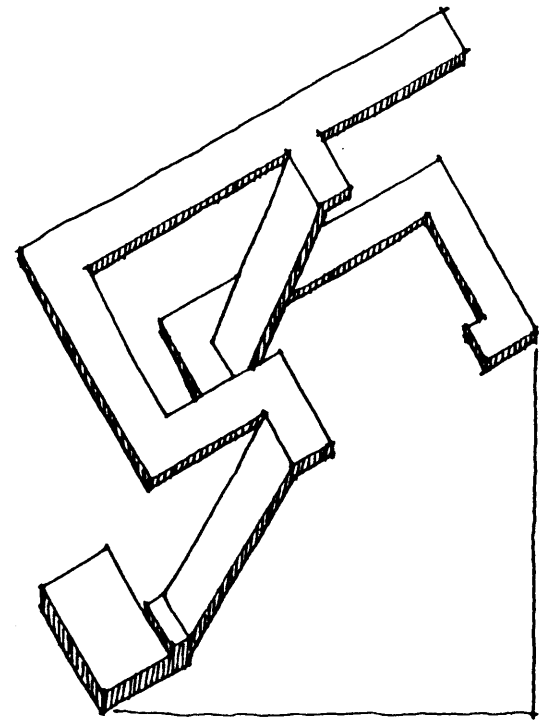
1.9 Axonometric of the access of Hinomoto.

2.1 South End map. Source: Caminos, p. 62

APPROX SCALE

0   400   800

Chapter 2:

The South End

Description

Geographically, the South End is situated on almost entirely filled land. Boston was originally a penninsula, barely connected to the mainland by a narrow "neck" of land which was sometimes flooded at high tide. Beginning in the eighteenth century, plans were considered to fill part of the Back Bay, to the North and West, and the South Bay, to the East. The intentions were initially to stop the erosion of the necklands, and later to create revenue from the development of the marshy land, and to provide attractive new housing to stem the flow of the middle and upper classes from the city to the rising suburbs. Several plans were considered over the years before development began in earnest in the mid-nineteenth century. Today the only physical remnant of the original geography of this part of Boston is Washington Street, which, for two hundred years, was the only road to Boston. 22 Its roughly Northeast-Southwest direction, connecting the city with Roxbury and the suburbs, however, is echoed in the eventual street layout of the South End.

While individual rowhouses were developed privately and gradually, the street infrastructure was planned and layed out by the city as one large development. Ideally, the urban design consists of major urban arteries roughly parallel to Washington Street, connected perpendicularly by long residential streets. This results in relatively narrow blocks, oriented

EDGE MARGIN | LIGHT ZONE | DARK ZONE | LIGHT ZONE | EDGE MARGIN

ACCESS LIVING
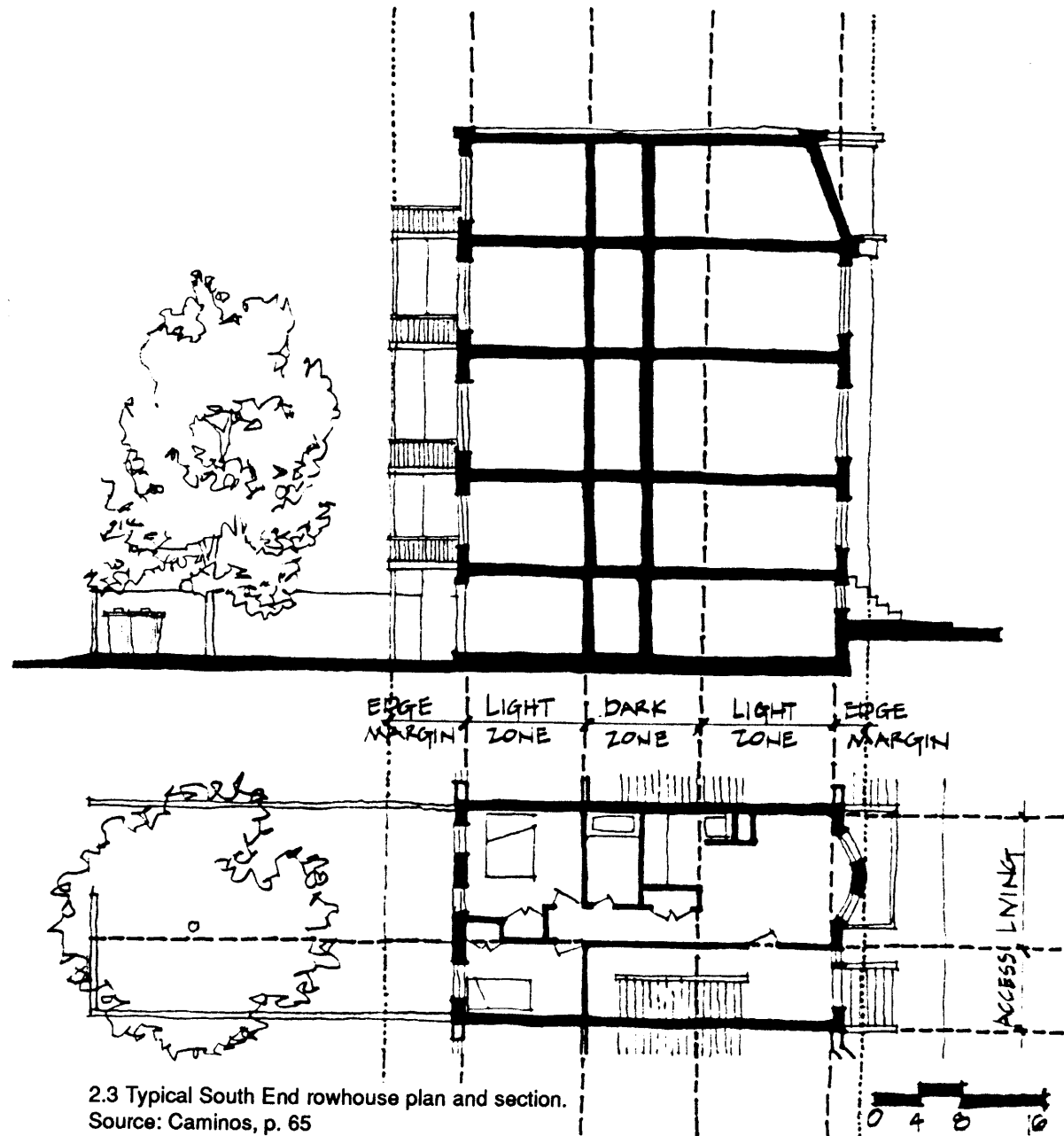
2.3 Typical South End rowhouse plan and section.
Source: Caminos, p. 65

0 4 8 16

against the urban direction, which were in turn bisected by a service alley. Most rowhouses, therefore face onto a residential street, either to the Northeast or Southwest. This ideal, however, was modified, as "the street pattern as it actually developed in the South End was due more to traffic and topographical considerations than to a preconceived grid." 23 (fig. 2.1)

Since the South End was developed on filled land, the streets were graded ten to fifteen feet higher than the block interior to allow for drainage away from the streets, and a service entrance from the basement. The arteries range from sixty to one hundred twenty feet wide; the residential streets from thirty five to fifty feet; the alleys are twenty feet wide.

The dimensions of the individual building lots are similar to those of the *machiya of* Kyoto, ranging from twenty to thirty feet wide and about seventy to one hundred feet deep. The buildings themselves, however, generally do not fill the entire lot, but range from forty to fifty feet in depth. 24 In the space of the back yards, one often finds small ancillary buildings such as garages, storage, or an additional apartment, with a roof deck. (fig. 2.2)

One finds a hierarchy of open space in the South End, from the front and backyards of the rowhouses, to the large public parks of Franklin and Blackstone Squares on Washington street, measuring over three hundred feet square. Between these scales are found a variety of smaller parcels of open space. Often a community park occurs in a gap where one or more rowhouse are missing from the block. Also, community gardens are an important and frequently occuring type of open space. Another type of open space found is the residential square, a narrow strip of green space located in the center of one of the residential streets, causing the street to split, and creating a wider open area in the center of the block than normal. The largest of these are Chester Square, in Massachusetts Avenue, Worcester Square, and Union Park.
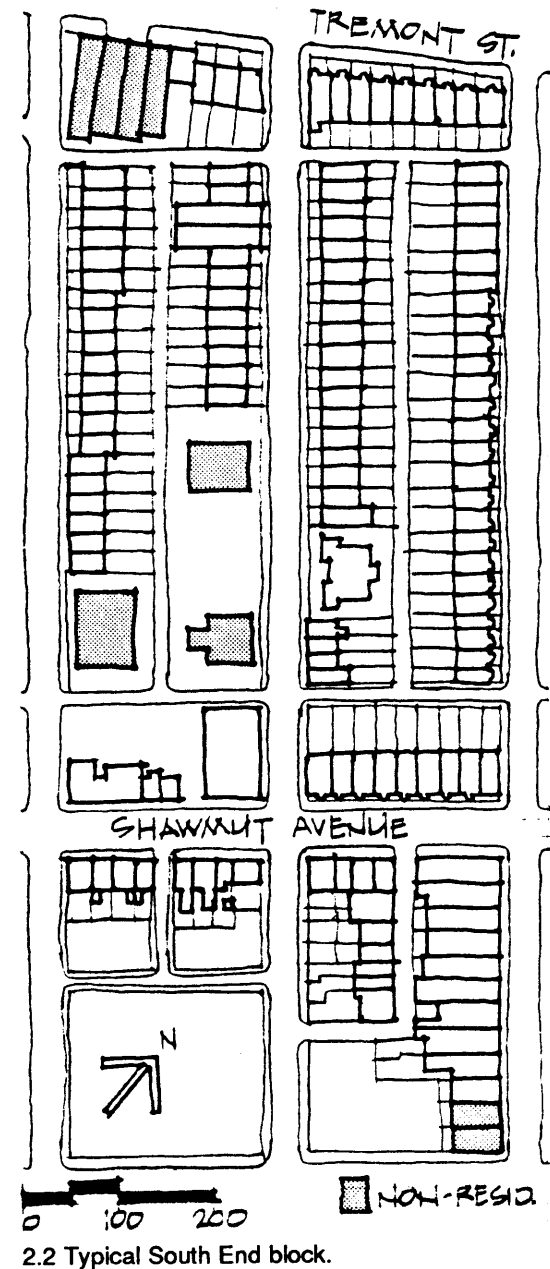

2.2 Typical South End block.

The South End rowhouse is a masonry building supported by party walls and spanned by wood or concrete floor systems. The twenty to thirty foot bay is further divided, like the *machiya*, into about an eight foot access zone and a living zone. This dimension is usually, though not always, expressed on the facade by a projecting bay or bow. The plan can also be thought of as being zoned into light, living zones at the exterior, and a smaller service zone in the middle of the forty - fifty foot depth. Vertically, the facade is articulated into base, middle, and top. The base, in stone or concrete, contains the entry stoop. The roof, usually of slate or metal, is found as a mansard in front of a flat roof, or as a low-pitched gable. Both roof types utilize dormers to bring light into attic. (fig. 2.3) Though the South End rowhouse is primarily a residential type, it, again like the *machiya*, can accomodate commercial use, usually at or below grade, and facing one of the urban arteries.

The intentions of the city planners who developed the South End was that it would be an exclusive neighborhood attractive to the middle and upper classes of Boston. Though it began that way, the increasing popularity of the suburbs and the development of the Back Bay soon lead to the economic decline of the South End. An influx of immigrants and working class families lead to the transformation of what were originally single-family townhouses into multi-family buildings with flats. Until the middle of the twentieth century the area remained a stable working class neighborhood. However, according to a report by the mayor's office, "the neighborhood's relative harmony and balance was shattered in 1960 by three powerful external forces: urban renewal, construction of the Prudential Center, and an awakening of interest in inner city neighborhoods." 25 Today the South End is socially and economically quite diverse - "one of Boston's most richly varied and complex neighborhoods." 26 Within the area one finds pockets of ethnic cohesion, representing Chinese, Black, Greek, and Hispanic, and other groups. Economically, there is a wide spectrum, from the Pine Street Inn for the homeless, to luxury renovated townhouses in Union Square. Gentrification has raised

property values and thus housing costs in the whole area, and has caused tensions between the district's newcomers and its lower-income residents.

Physically, the South End has also seen some change and diversification over the years. The rowhouse type, while remaining fairly strong, has been interupted occàsionally by new models of urban housing. Two large projects are the Villa Victoria development to the Northwest of Blackstone Square, and the Cathedral public housing project, adjacent to Franklin Square and Washington Street. Neither attempts to work with the existing rowhouse type in form or material, however the former, a low-density rather suburban development of three-story duplexes, departs in a much less damaging way. Its humanly-scaled buildings and generous open spaces are welcome in the community, and it also works as an infill between existing rowhouses occassionally. The Cathedral housing project, on the other hand, is a sadly typical example of bleak, monolithic public housing imposed over a site, whose open space consists of shaded, paved areas leftover between buildings ranging from three to ten stories in height.
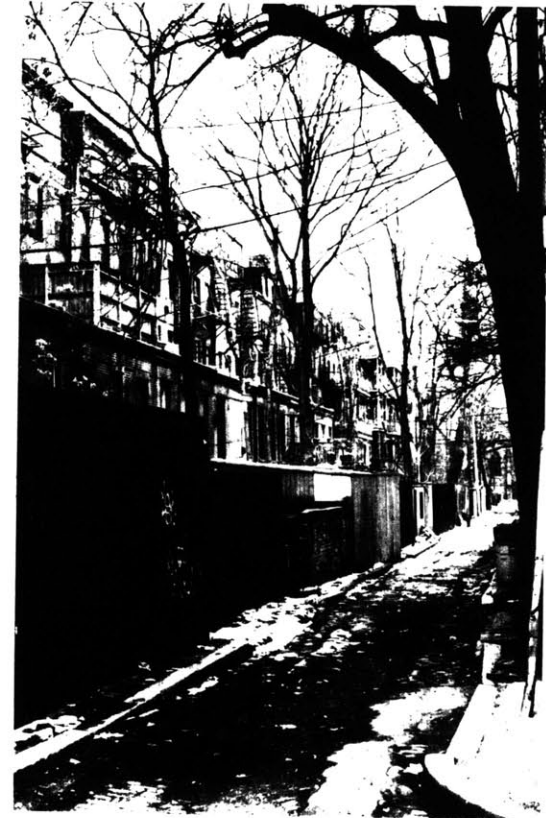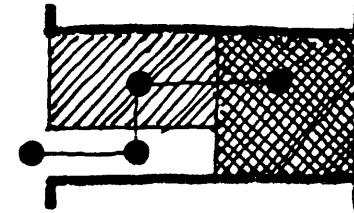
Territorial Distance

Territorial depth

Because of the mix of ethnic and economic backgrounds the layers of social structure are less defined and less consistent in the South End than in Kyoto. There are pockets of strong social cohesion, usually along ethnic or economic lines, which begin to form larger community territories, but because of the changing nature of the South End, these are not always reinforced by the physical environment. The block-sized residential parks such as Union Park and Worcester Square are the most coherent examples of attempts to establish an urban territorial structure with increased depth. "The South End parks were not connected in a park system. Instead, each park was a focal point of a neighborhood which extended outward for several streets in all directions." 27 With these exceptions, and the loose ethnic community territories not reinforced by physical structure, the territorial diagram of most of the South End consists of levels at the city, the building, the dwelling, and room levels.

Physical Diagrams

Most of the territorial distance achieved in the South End rowhouse fabric occurs at the urban scale. The building itself has a very direct physical diagram - public space directly associated with the street. Consequently, the length and other qualities of the access is relatively abrupt and direct as well. Also, though the direction of the building access makes a ninety degree turn of privacy from the street direction, the individual dwellings are oriented the same direction as the building. One might expect this to indicate either a highly communal living arrangement, where included territories want to feel closely associated with the public space of their common territory, or such a passive, unused public space that making a strong move of privacy from it is unneccessary. The latter is more likely in this case. The actual reason for the configuration probably has to do with the fact that today's multi-family rowhouses were converted from single-family townhouses. What is now the whole public space of the building territory used to be only the access of a larger dwelling territory - still public space, but only part of it. Thus, even if the different tenants of one of today's rowhouses wanted to use the public space more actively, its dimensions and light inhibits this. The back yards of the rowhouse are another part of their public space, but they are inevitably unmaintained and unused except for storage. This is probably also a result of the division into multiple units. Originally the backyards were clearly controlled by the family living in the townhouse. However, when several tenants occupy the same building, the control of the backyard becomes ambiguous.

At the urban scale the street infrastructure assists in creating territorial distance for the building territories by the length and direction of the residential streets. In the case of the residential parks, the squeezing in of the ends to provide a sense of place to the block interior is similar to the fragmentation found in Japan of passing through a narrowing in the access to get to an inner focusing element.

2.4 Physical diagram of a rowhouse.
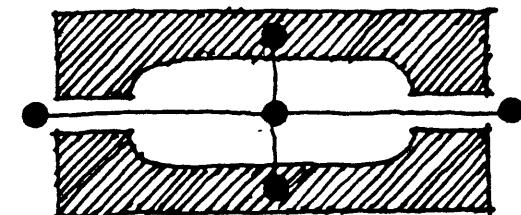
2.5 Physical diagram of a South End residential square.

39

Relative to the *machinami* of Kyoto, much less territorial distance is achieved in the progression from public to private territory in the South End. However, it is interesting to note that, relative to the rowhouse structure of the nearby Back Bay, developed shortly after the South End, the South End exhibits much more of an introverted territorial structure. The major difference is again related to the direction of access at the urban scale. Unlike the long residential streets running perpendicular to the urban arteries found in the South End, the Back Bay infrastructure is characterized by grand avenues, all in the primary urban direction, with minor connector streets between. The rowhouses face the avenues and thus have a very shallow removal from the public realm. In fact, the dwellings are basically included territories within the metropolitan territory, with no intermediate layers. Commonwealth Avenue, for example, the central axis of the Back Bay, with its generous mall in the center, is almost exclusively residential in use, but it can hardly be interpreted as anything other than an element of an urban order. Rather than focus a neighborhood inward it is "a link between the older parks of the Common and Public Garden and the newer Fenway Park, which ultimately joined Franklin Park in the Metropolitan Park System." [28]

Tradition

Again, because of the heterogeneity of the American culture, the phenomenon of ritual, as a refined, deliberate practice of the essence of an act, does not take place in every day life. Ritual is relegated to the church. "In the West, a church is a sacred place, built as a house to god; a person's own house cannot be a sacred place in the same way. There is a strict distinction between sacred and secular place." 29 Individuals may develop regimens of behavior which approach a sense of ritual and which relate to simple, daily acts; but what is not found in the West is widely-shared ritual at more broad social levels.

The physical traditions of the South End add somewhat to the territorial distance of the rowhouse, although in a more direct, frontal way than in the *machiya*. The frontyard, absent in the *machiya*, mediates between the street and the house. The stoop, an extension of the base, crosses the "moat" of the lawn and brings the visitor up to the building. The wall of the building itself makes a strong, unmistakable distinction between inside and outside, as opposed to the multi-layered facades of the *machiya*. Thus, the rowhouse creates an unambiguous sense of entry and of leaving the street, but without the depth of experience found in Kyoto.

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Projections

Preface:

Working Method

Agenda

In order to begin working with the territorial structure of the South End I needed to clarify and elaborate on my agenda. My general intention was to try to achieve some of the qualities of the Japanese territorial structure within the social and typological context of the South End. Specifically, those qualities were the phenomena of inner focus and fragmentation. Since the specific traditions of building and use in Kyoto were not of particular relevance in the South End, I would focus on using its territorial and physical diagrams to achieve the qualities I sought. As has been shown, some of those are similar to some found in the South End, so I would try to reinforce those. The South End traditions of building and use were, of course, relevant and those would also inform the design of the territorial structure and building system.

The focus of my work began at studying the potential for developing territorial distance at the level of an individual rowhouse. This scale is comparable to that of the *machiya*, and could be thought of as an infill approach. It seemed likely from the start that individual bays of rowhouses might become aggregated into a larger territory, so I use the term "cluster" rather than "building" to avoid confusion. I was also interested in considering the larger urban scale, to see how one might begin to create larger communities of inner focus, and to repair some of the physical scars of urban renewal. Finally, though the *machiya* is generally a single territorial level - the family - the South End rowhouse contains included territories at the dwelling level,

which in turn contains included territories at the room level. So I also chose to look at territorial distance at these lower levels.

Thus, to organize my work I settled on "inner focus", "fragmentation", and "building system" as the three specific issues of my agenda which would be addressed at the levels of dwelling, cluster, and urban tissue.

Method

In order to cover such a wide range of levels in a relatively short period of time I chose to use a working method known as *thematic design*. This approach, developed by the Stichting Architecten Research (Foundation for Architects' Research; SAR) "sees the environment as based on systemic rules that incorporate a 'theme' that can be recognized by the observer. Each intervention can be a 'variation' on this theme; a unique intervention yet a contribution to the whole." 30 Both the South End rowhouse fabric and the *machinami* of Kyoto are examples of thematic systems, which have become deeply ingrained in their respective physical and social contexts, to become known and accepted as *types*. The notion of a system is based on defining "specific elements which relate to each other according to specific rules."(Grunsfeld, 3) Once the elements and rules are agreed upon it is possible to make many variations of the system. By using a thematic system to organize myself, I could develop rules which would, in general, give rise to an introverted teritorial structure, and yet allow me to consider a wide range of interpretations, at different levels.

The following chapters present the various aspects of the thematic system which I developed to work with, and then projections of that system as an infill development, and as a large scale redevelopment of a parcel in the South End.
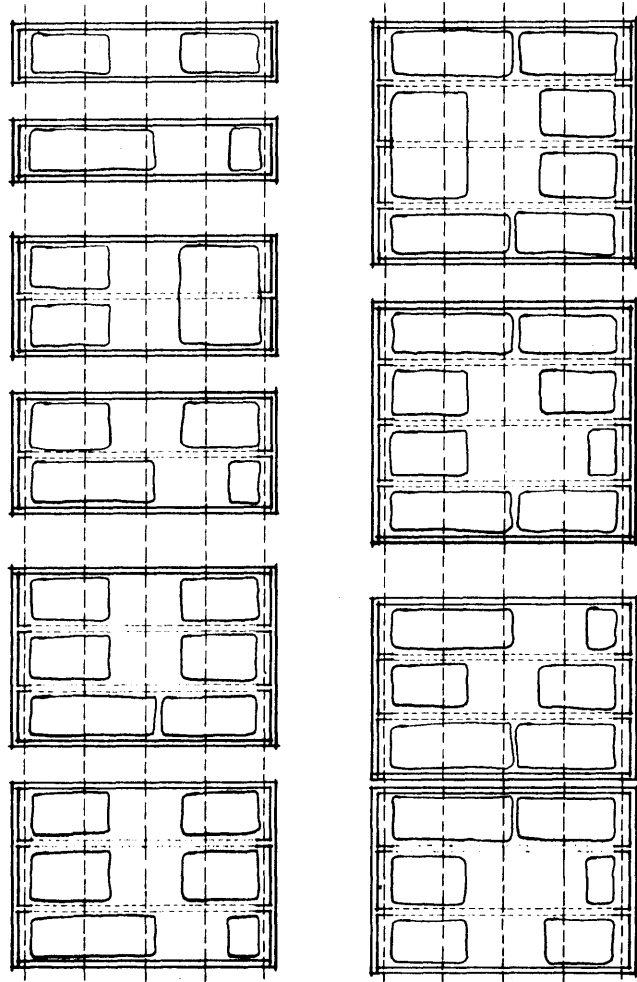
CLUSTER PLANS

CLUSTER SECTIONS

3.1 Cluster plans
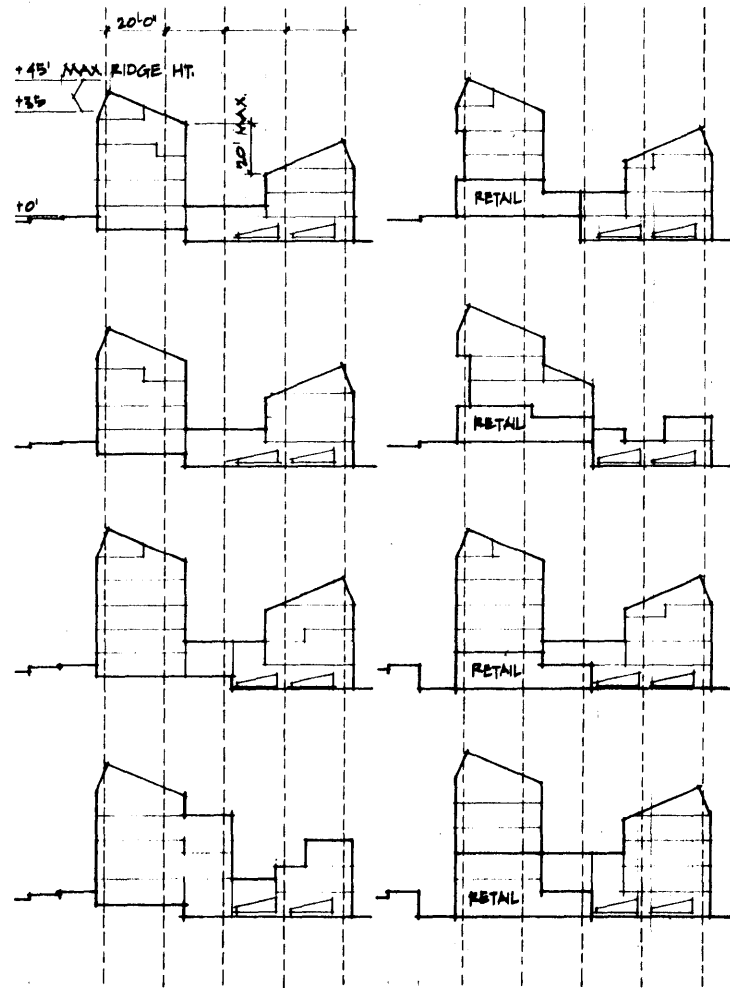
3.2 Cluster sections

Chapter 3:

# the Thematic System

Cluster level

Being a sort of middle ground between the intimate and the urban, the level of a cluster of dwellings seemed to be a logical and comfortable place to begin working with the territorial structure of the South End rowhouse. For that reason, the rules that came out of this level were more specific and extensive, and had a strong influence on the other levels.

Inner focus

An early decision with respect to the level of a cluster of dwellings was to use the back building, occasionally seen in the South End, and the space between it and the main rowhouse building, as a positive part of the theme. The longer front building can be shortened to bring in more light to the court, which creates an inner focus for the dwellings. The court element does not actually increase the territorial depth of the rowhouse, but rather the size and use capabilities of its public space. The public space of the existing building type has been reconfigured not only to satisfy my own agenda, but also to increase the chance that it will be used. In section, the front building is taller, reinforcing the inward focus of the cluster. Rules of relative heights of the buildings are shown in the diagrams. Since the court is intended to be a part of the public space of the territory, at least some of the tenants should

go through it to gain entry to their dwelling. If this were not the case, it would become one of the ambiguous, unclaimed spaces like the backyards of the existing rowhouses. If all of the dwellings enter from the court, it becomes a very lively space, with the drawback that it "kills the street". If the dwellings of the front building enter from the street, with the dwellings of the back building entering from the court, the cluster takes on a "protective" physical diagram like those seen in Kyoto. The street has its front stoops, but the units which enter from the street are not really a part of the cluster territory. On the other hand, this is a good diagram for the case where retail occurs within the building. (figures 3.1, 3.2)

Depending on how the territorial structure of the urban scale is interpreted, the main entry to the cluster could come from the street or the alley. At the scale of an infill development, of course, entry from the street would be the only option. When more than one bay of rowhouses are aggregated, sharing the same court, it inevitably becomes larger and might be split into two or more areas, one being more of a roof terrace, the other more of an access zone. One area might be lower than the other to make a transition down to the alley, or higher to get more sun.

ACCESS TYPES
STREET VERTICAL ALLEY
3m 4m 3m 2m 4m 3m

20'-0" 20'-0" 20'-0" 20'-0"
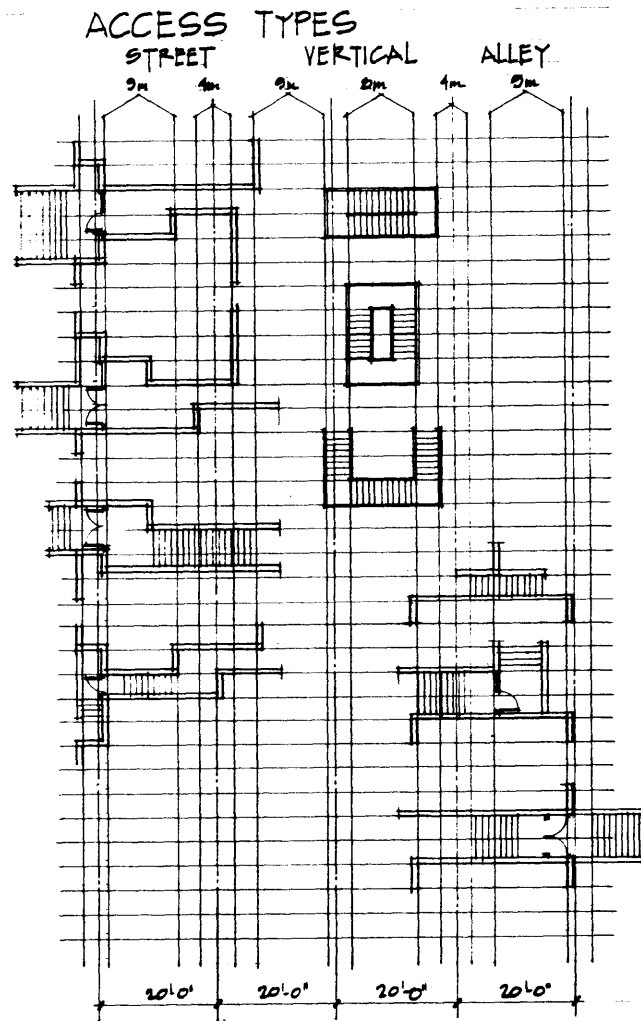
3.3 Access types
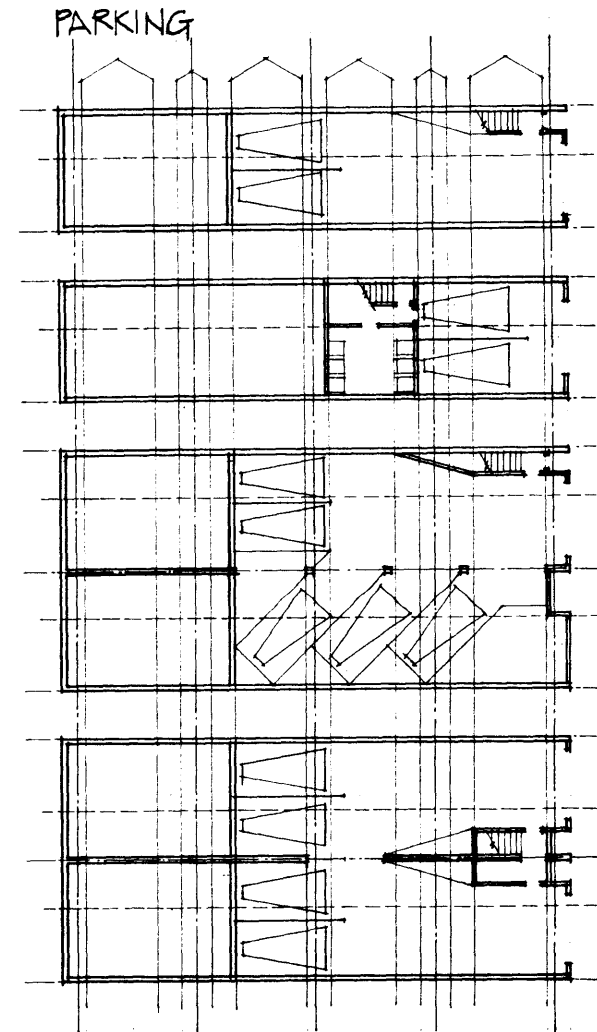
PARKING

3.4 Parking

Fragmentation

The eight-foot access zone found in the existing model is maintained. Entry to the cluster from the street takes place here, as well as stairs for second means of egress, as required. Besides this passage being narrow, it would also rise four to eight feet to the court, and may have lateral shifts to further remove the court from the street, especially where a cluster faces onto a busy commercial street. Vertical access from the court to the upper dwelling units occurs in the zone between the front and back buildings. The maximum climb from garage to the highest dwelling entry should be limited by building height and unit configuration to four floors. (figures 3.3, 3.4)

The direction of access in this model is different than that of the existing rowhouses. The primary direction of the cluster, especially when more than one bay has been aggregated, is parallel to the street, which would indicate maintaining a publicness to it. But it is also removed horizontally and vertically by the narrow passage, which increases the privacy. The primary direction of the dwellings is perpendicular to the cluster direction, making a private move away from the more active court. As discussed earlier, in the existing prototype, the building access makes the privacy, whereas the dwellings maintain the same direction as the building acccess.

PRIMARY STRUCTURE

- SPACING OF PARTY WALLS
  16' MINIMUM FOR DWELLING
  4' MINIMUM FOR ACCESS

- MINIMUM SUPPORT
  MIN. SUPPORT FALLS IN
  4' MARGINS. PIER IS SPLIT
  WHERE ACCESS IS REQ'D
- EGRESS STAIRS - IN ACCESS ZONE.
  SAME POSITIONS FOR PUBLIC
  STAIRS TO UPPER UNITS
- PLUMBING CHASE - ON PARTY WALL
  IN SERVICE ZONE
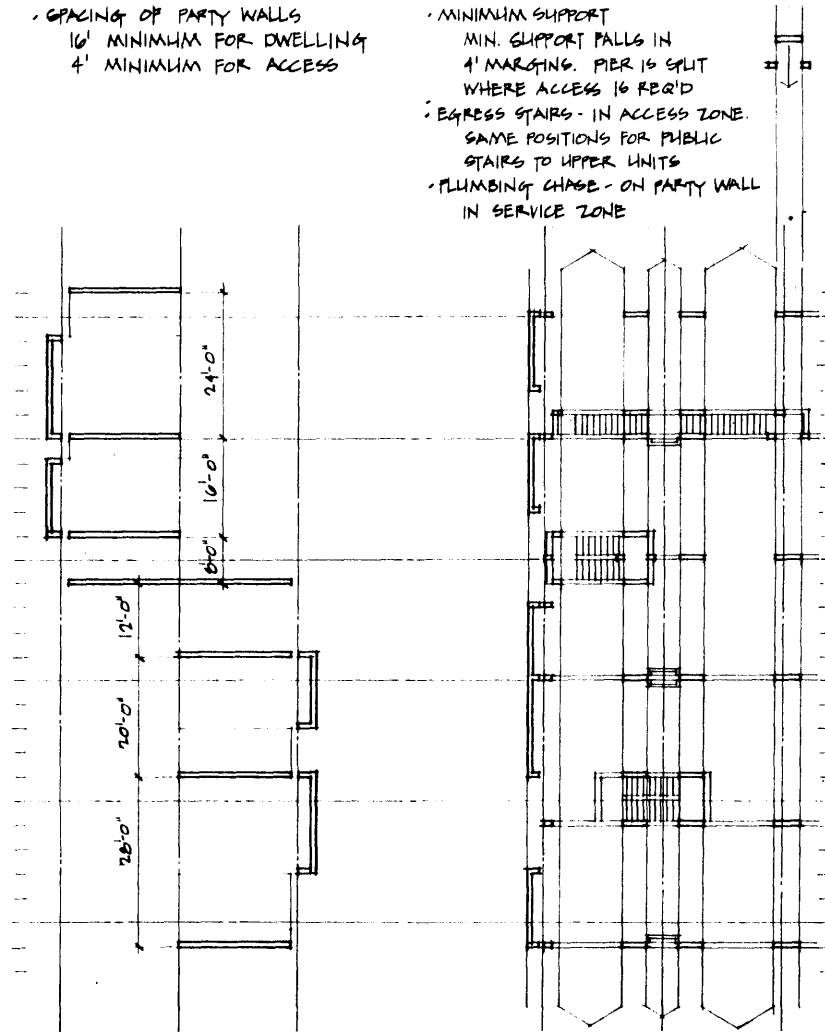
3.5 primary structure

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Building system

Conceptually, each cluster consists of wood buildings, containing the dwelling units, between masonry party walls. The accompanying diagrams illustrate the rules developed for positioning of party walls and egress stairs. The bay projection on the street side, not structural with respect to the overall party wall construction, was included to allow a continuity in form and material with the context, and to provide a hard, protective layer between the lighter-weight buildings and the street. In section, there is a concrete base zone including the parking and lower dwelling levels, a larger middle zone of the lighter-weight construction, and the top roof zone. The form of the roofs was derived from a desire to maintain the mansard form to the street, while using pitched roofs to the inside to shed water and to reinforce the inward focus of the cluster. (figure 3.5, 3.6)

The base/middle/top articulation is carried out in the street elevation with the same kinds of elements found in the existing context. A system based on a sixteen inch module (to accomodate masonry and wood construction) was used to inform the size and position of facade elements. The sixteen inch module was broken down into six-inch and ten-inch bands. Elements of the wood system are to be positioned with their edges one inch inside of one of the six-inch bands, while elements of the masonry system are to begin one inch inside of a ten-inch band. This system of modular coordination suggests certain standard dimensions for the sizes and placement of material, and allows one to work very quickly over a 6-10-6-10 tartan grid. The minimum dimension between elements of the wood system is four inches; eight inches in the masonry system. Mullion 'A', therefore, occurs as the minimum between two elements of the masonry system, or wherever an interior partition intersects a wood wall between two facade elements. Mullion 'B' is the minimum between two elements of the wood system without an intersecting partition. Mullion 'C' is a "transitional" element of the wood system to allow mullions 'A' and 'B' to occur in the same wall. (figure 3.6, 3.7)
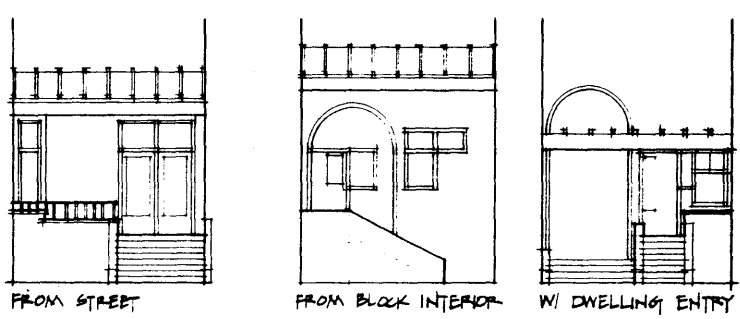
FACADE ELEMENTS
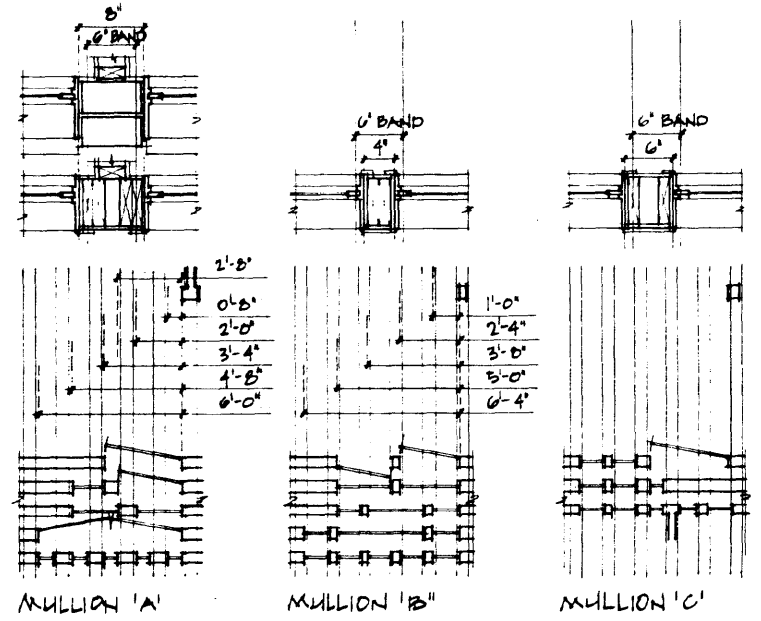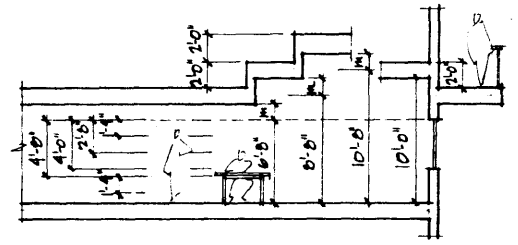## TOP : ROOFS & DORMERS

MIDDLE : WINDOWS & PORCHES

8" CONC. LINTEL
IN MASONRY SYSTEM

BASE : CLUSTER ENTRIES

FROM STREET   FROM BLOCK INTERIOR   W/ DWELLING ENTRY
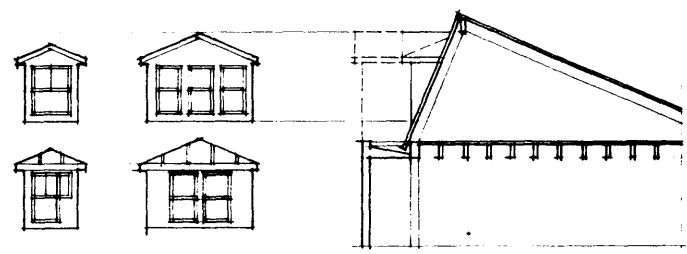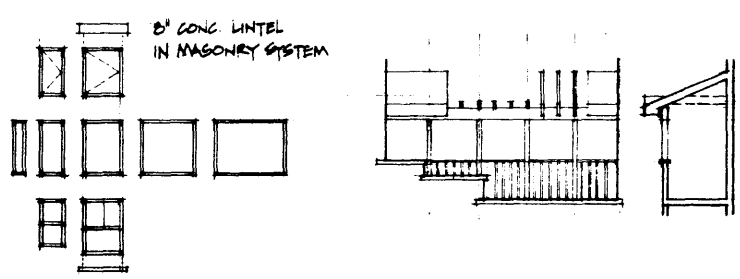
3.6 Facade elements

FACADE RULES
HORIZONTAL SIZES & POSITIONS

8"
6" BAND

6" BAND
4"

6" BAND
6"

2'-8"
0'-8"
2'-0"
3'-4"
4'-8"
6'-0"

1'-0"
2'-4"
3'-0"
5'-0"
6'-4"

MULLION 'A'   MULLION 'B'   MULLION 'C'

VERTICAL SIZES & POSITIONS

3.7 Facade rules

UNIT TYPES
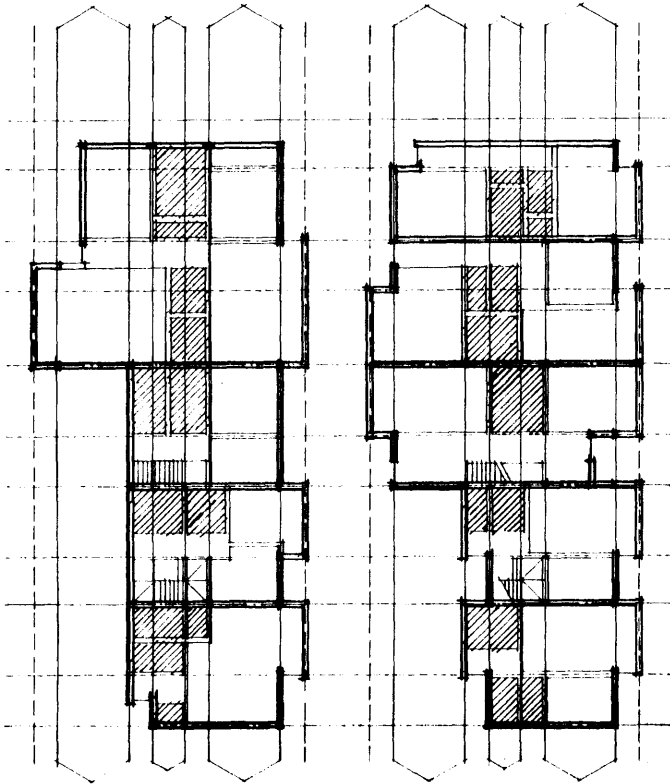
3.14 Unit types

ZONES

m = 16"   9m   4m   9m

3m   3m   3m   3m
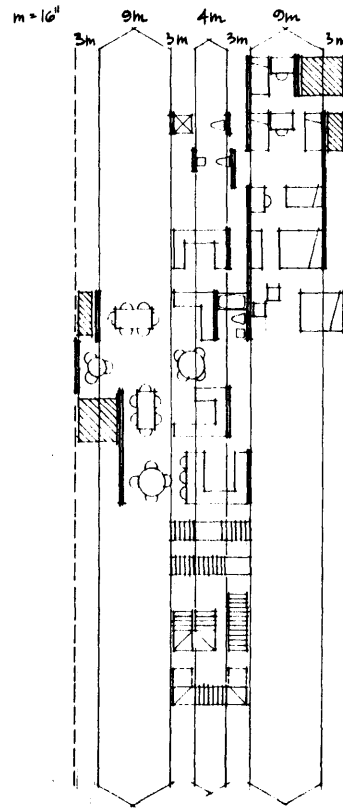
3.15 Zones

DWELLING ENTRIES

COURT   PLAN   SECTION   ELEVATION

STREET
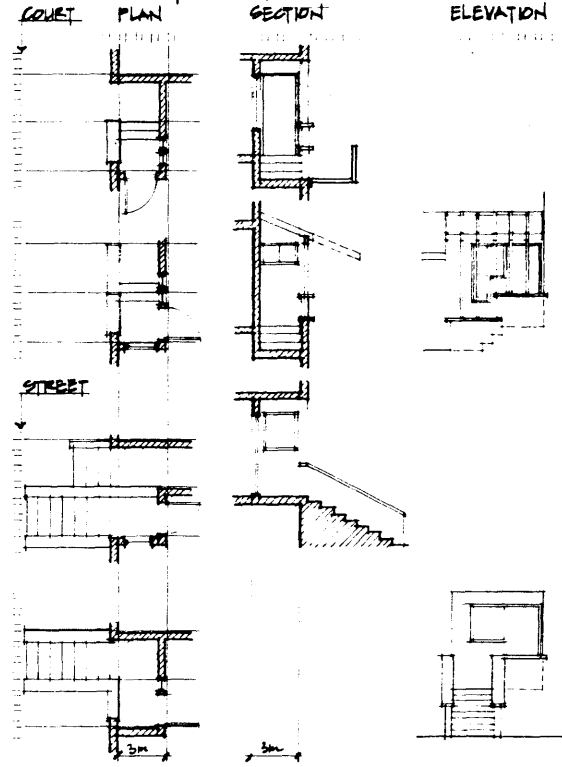
3.16 Unit entries

Dwelling Level

I utilized the concept of zones to provide a framework to inform the positioning of the various spatial elements of the dwelling units, while allowing a variety of specific dwelling configurations. The sizes of the zones were determined by studying their capacity for accomodating various uses, and how they worked within the sixteen inch modular system. A living zone of nine sixteen inch modules (or twelve feet), and a service/access zone of four modules were selected. (figure 3.15) The zones are positioned with margins of three modules (four feet) between them. The long units of the front building contain two living zones at the ends, and a service/access zone in the middle. Units of the back buildings and shortened units in the front buildings consist of one of each zone. The distribution of zones informed where the placement of minimal structure of the party walls would occur. In order to maintain maximum possibility for lateral connection across party walls within units, this minimal structure was placed in the four foot margins. These piers can be split to the outsides of the margin if necessary.

Territorially, this configuration of zones allows a variety of dwelling types. The long units have an elongated access, but their public space is right up front, directly associated with the next territory. The short units, on the other hand, have a more abrupt access, but it passes through the service zone first, thus removing the public space from the outside more. (figure 3.14) The internal access of the units can reinforce territorial distance within the unit through level changes in the same floor, and using a second floor. In the latter case, a change in direction with the stair adds more removal.

3.8 Cluster arrangements
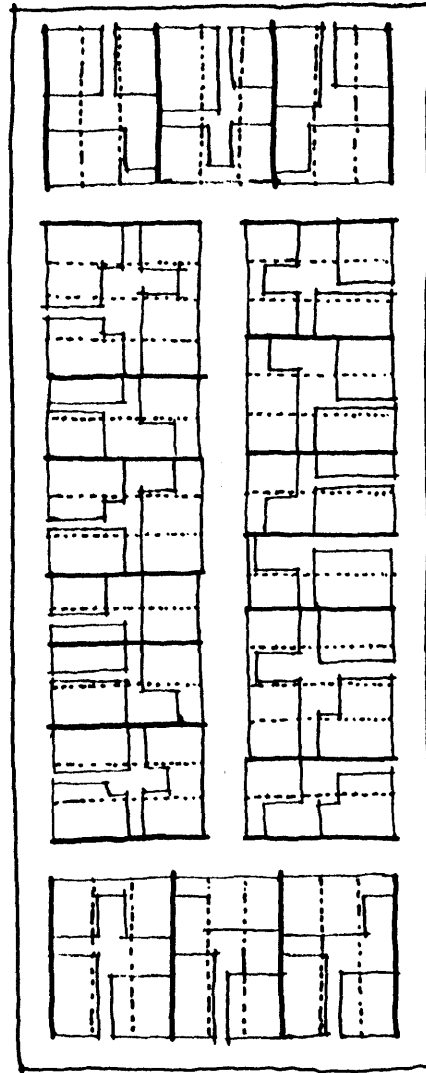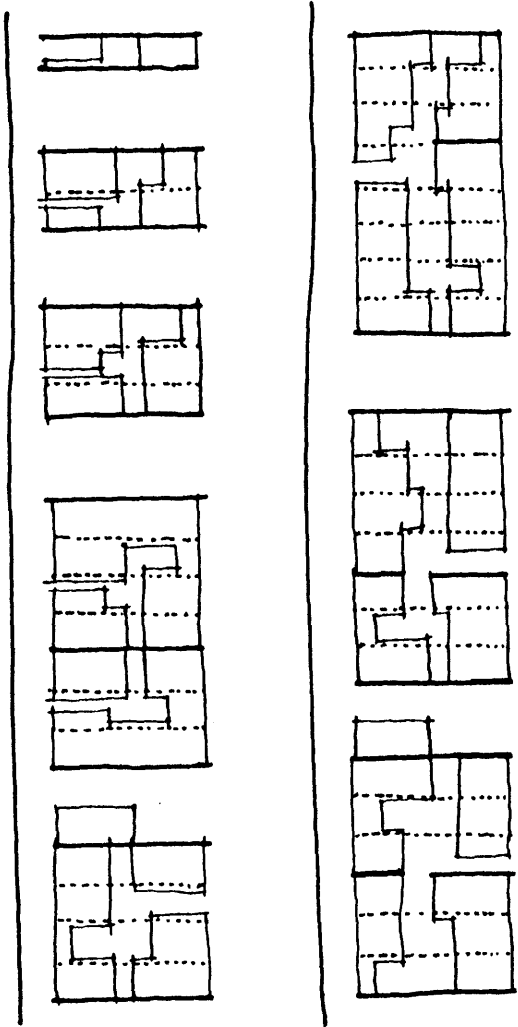
3.9 Block alternative
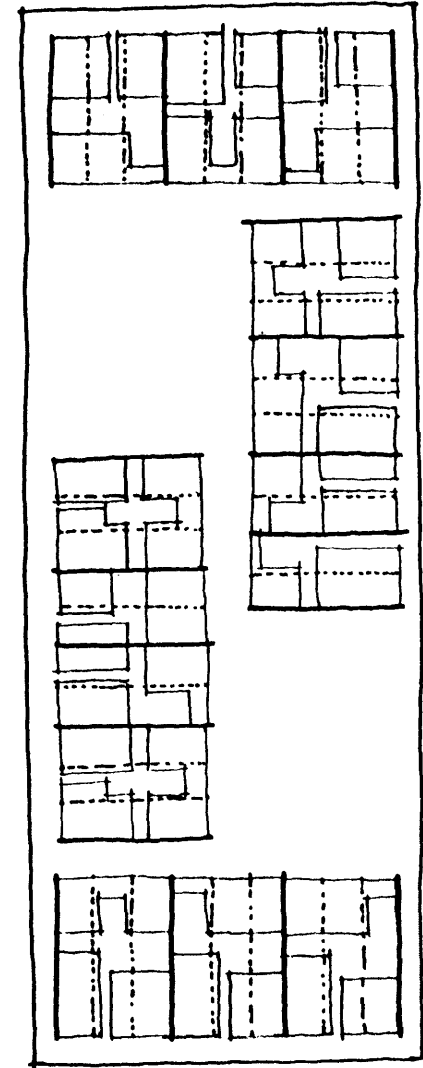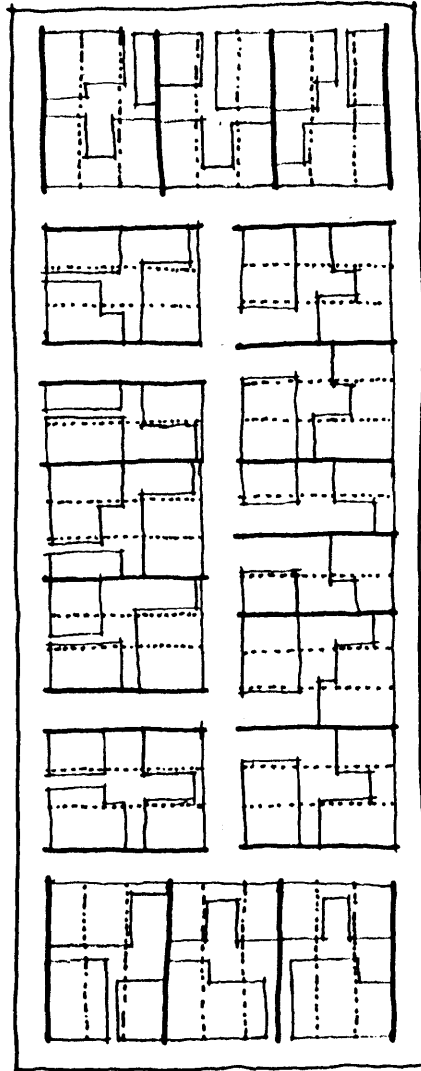
3.10 Block alternative

Urban Tissue Level

When considering a larger piece of the built environment there is much more opportunity to experiment with different territorial interpretations, and mixing physical diagrams. The issues to explore are combining clusters of dwellings into larger territories, the position of the public space of these new layers, and the character of the access to and through them.

The series of diagrams on the following pages proposes five interpretations of the territorial structure of a typical block in the South End, using the clusters of dwellings generated by this thematic system as the basic unit of aggregation. The first column shows that four bays was deemed the maximum for one cluster, and that, by introducing pedestrian access from the street to the alley, the clusters could have their entry from the alley. The second column of diagrams explores the joining of two clusters into a higher-level territory. (figure 3.8)

The first block diagram is an introverted scheme, similar to the existing model except for the use of the clusters. (figure 3.9) Entries to the clusters are from the street. This scheme would be very dense and not allow much light into the alley, or useable open space, so the next interpretation shows the same scheme with several bays left out to create public open space. (figure 3.10) This is a common pattern seen in the South End. In these first two schemes no new teritorial layers have been added to the territorial structure. What territorial distance is gained is due to the physical diagram of the clusters themselves. In the next scheme, an introverted block is demonstrated. (figure 3.11) In this case, all of the clusters have their entries from a raised pedestrian street over the alley. Access to the pedestrian street is
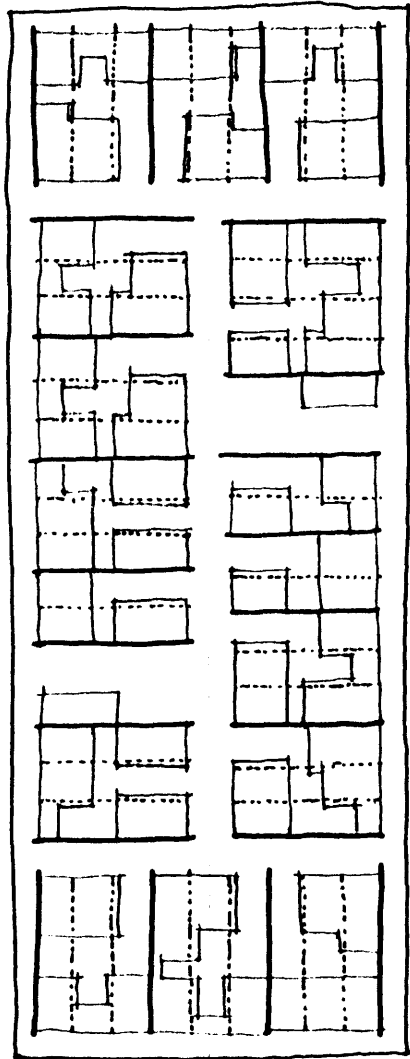
3.11 Block alternative

3.12 Block alternative
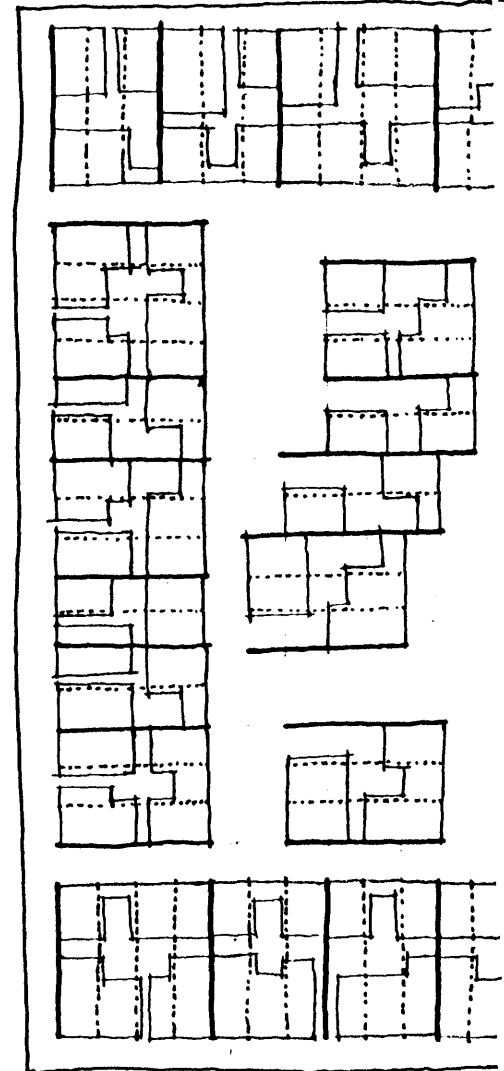
3.13 Block alternative

through gaps left in the rowhouses on both sides of the block. This internal street forms the public space of a new territorial level, and one can imagine that, at its ends especially, clusters might start aggregating into larger territories. In deference to the "life of the street", the next scheme proposes a mixed territorial structure with the clusters on one side of the block entering from the residential street, while the ones on the other side enter from the alley. (figure 3.12) Since the "protected" clusters must enter the interior pedestrian street from the residential street on the left side of the block, the street on the right side of the block becomes unnecessary. The final interpretation eliminates this street, allowing the interior clusters to shift and make more room in the alley, eliminating the need for the raised pedestrian street above the alley. (figure 3.13)

Concerning the building system, the only new thematic element of the system introduced at the level of urban tissue is the raised pedesetrian street, which is treated as an extension of the base element of the building system. Other adjustments to the system for special site conditions would be treated on an individual basis.
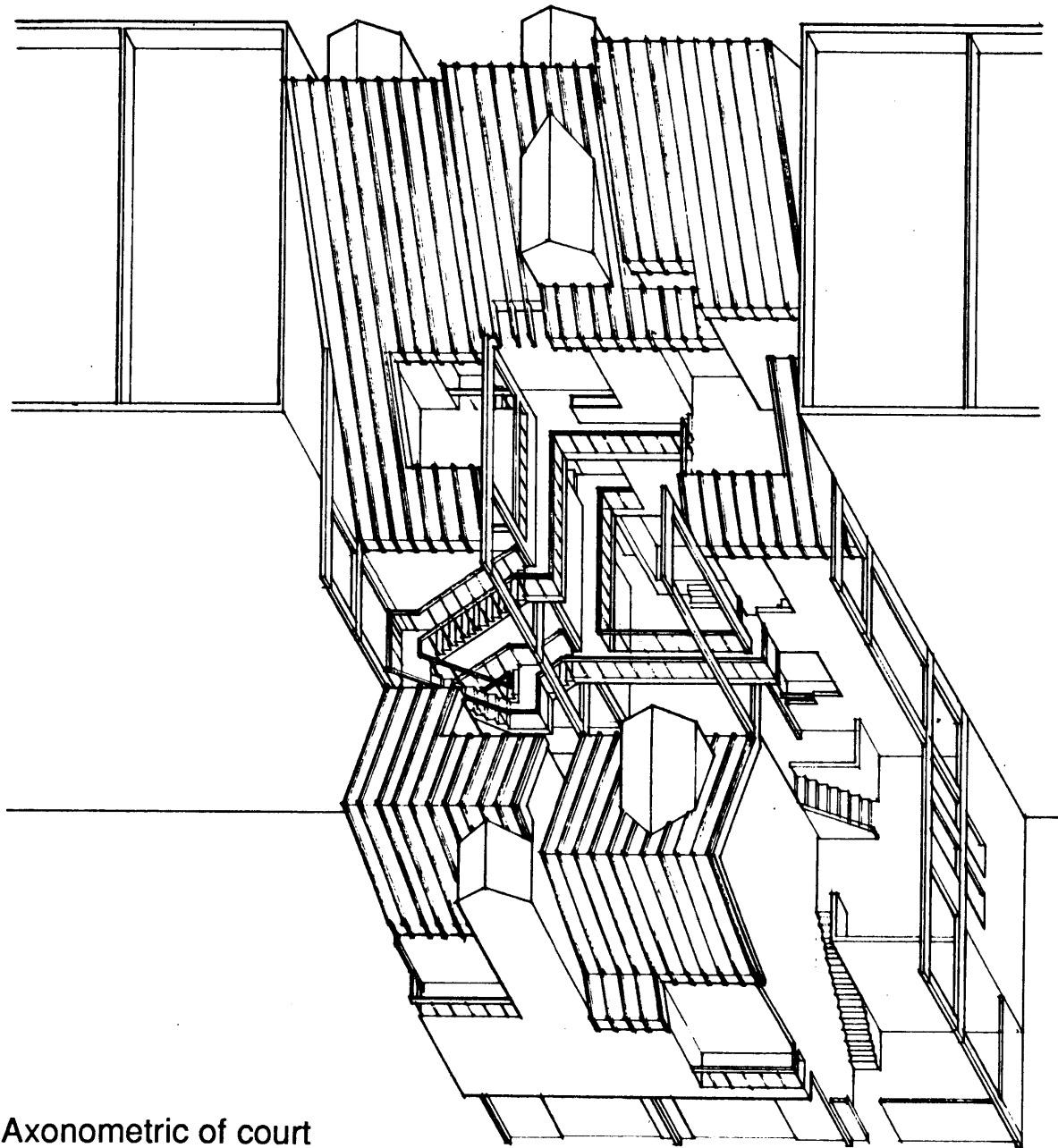
Axonometric of court

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Chapter 4:

the Cluster

The intention of the projection at the level of a cluster of dwellings was to see how the thematic system might work as an infill approach within the existing rowhouse fabric in the South End. A three-bay cluster was selected, with eleven units. Though the site is generic, it was given a location on the Northwest side of a residential block. The open space moves through the cluster in a diagonal, towards the South. The first portion of the public space of the cluster is the vestibule/mail room at the top of the stoop, four feet above the level of the sidewalk. The central court is primarily given to access, with the public stairs and all of the entries to units off of it. I decided to have all of the dwelling units enter from the court so as not to compromise the sense of a common inner focus. Five of the nine units adjacent to the street have their public spaces facing out to the street, and I felt that this, combined with the large common stoop would keep the street facade lively. The next court is four feet below the central one - back at street level, but still a full story above the alley. This court is more exposed to the sun, and is conceived as a common area for small vegetable plots and barbeques. Stairs down from this level lead to bicycle storage, trash cans, and the garage.
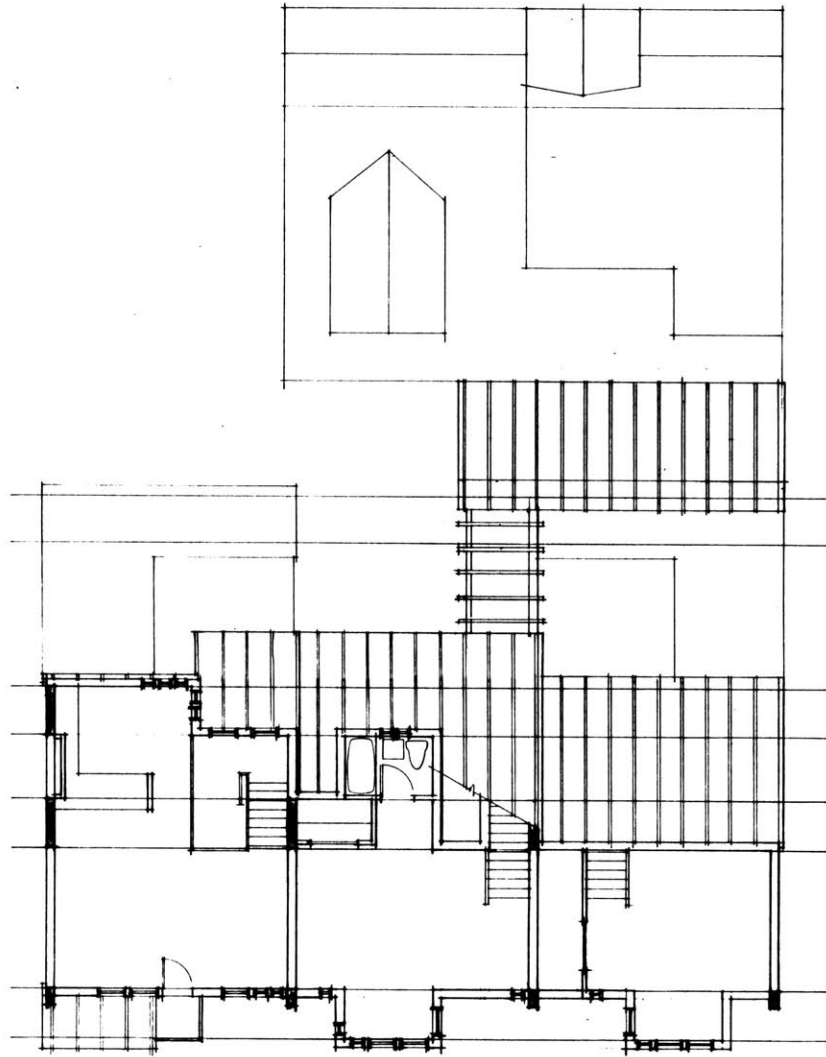
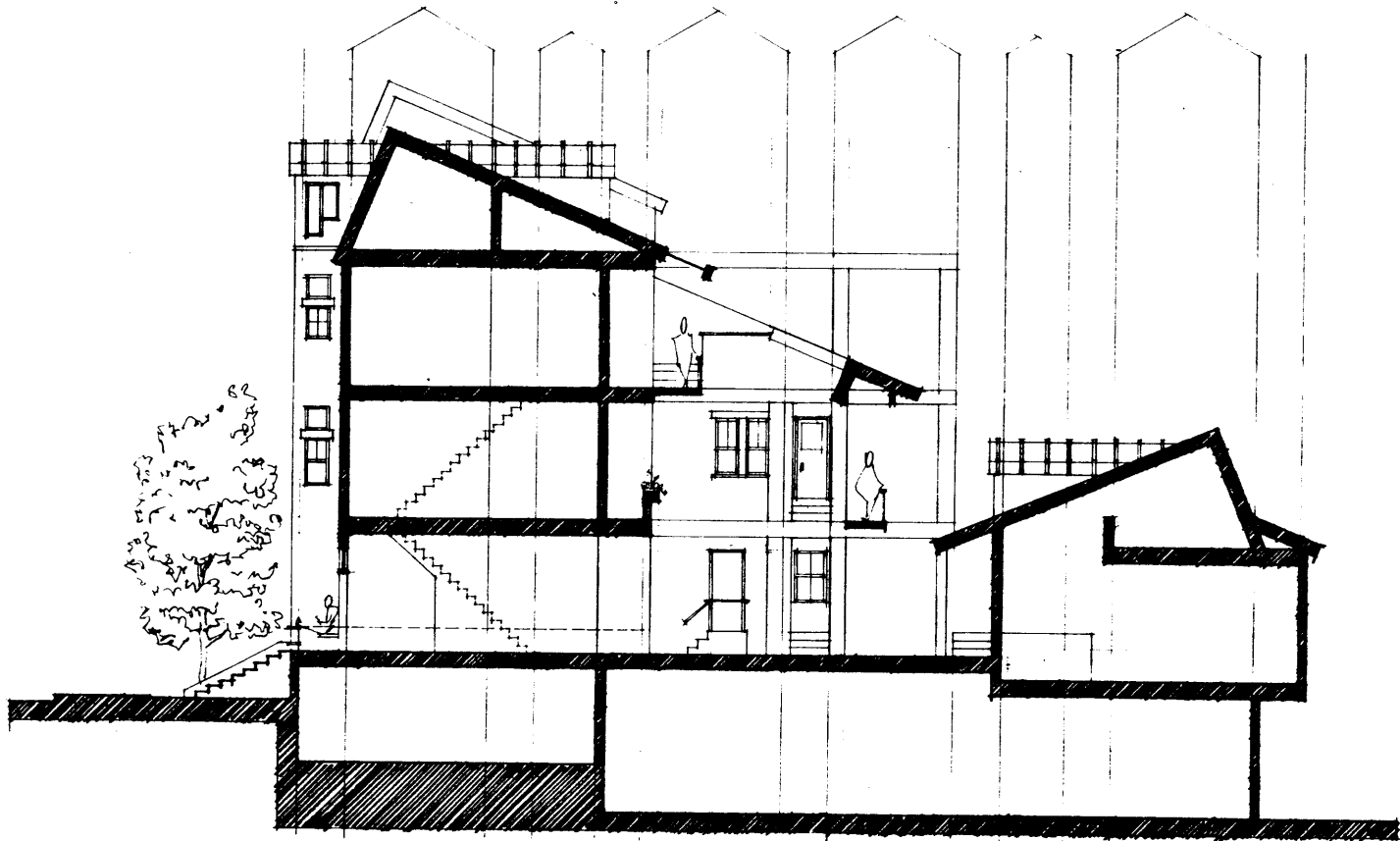**Basement**

64
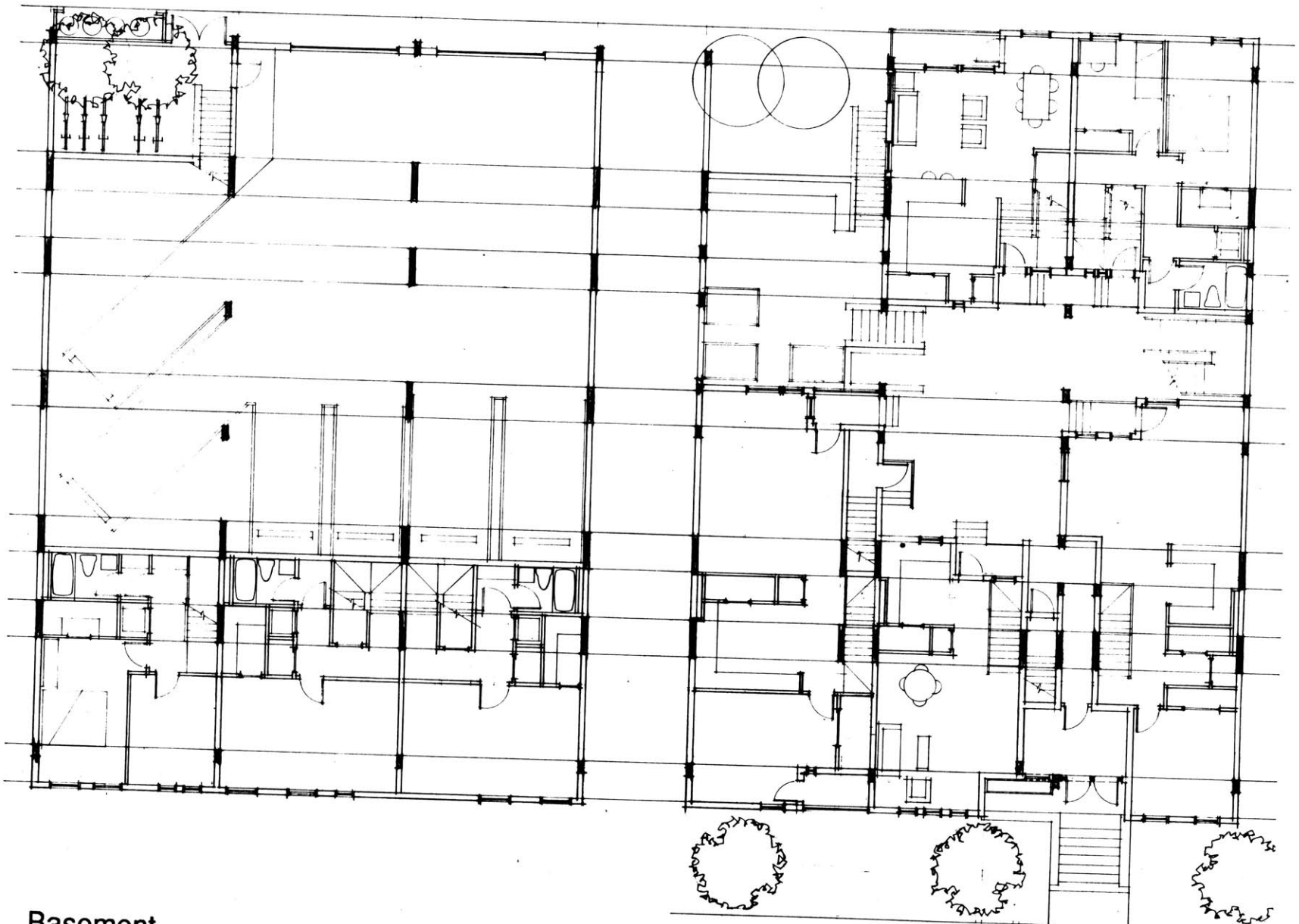
First floor
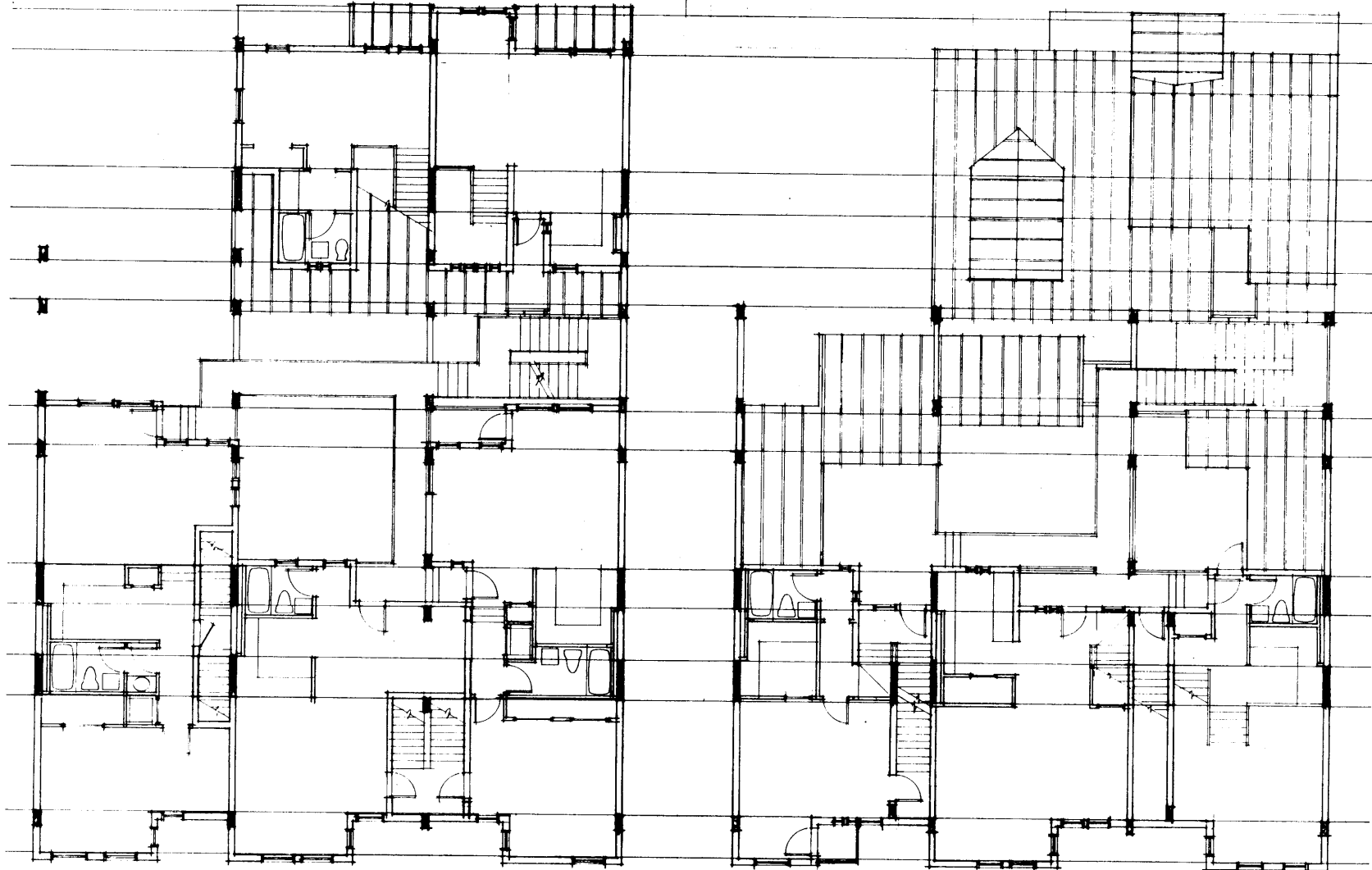
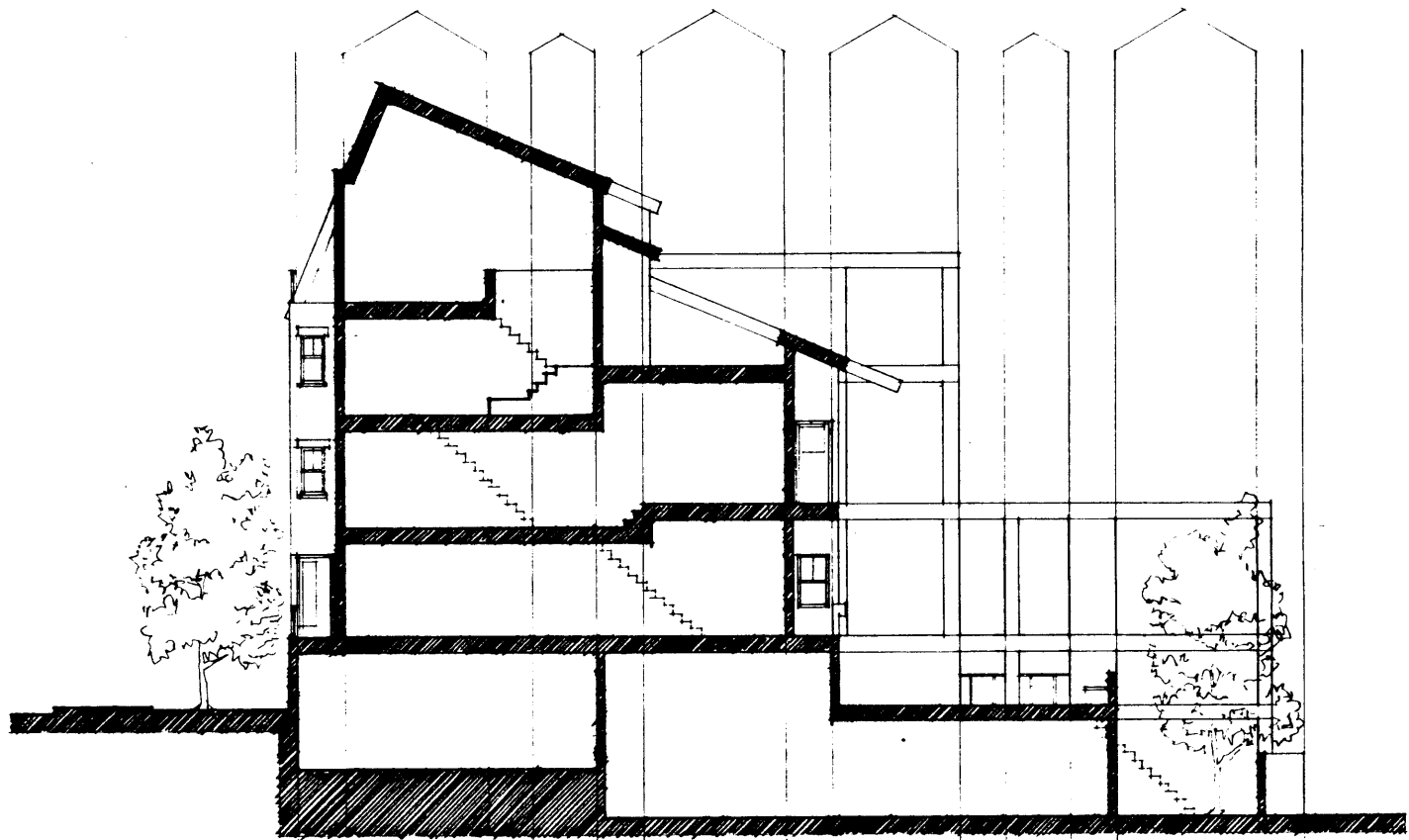Second floor

Third floor

Fourth floor

Elevation

Section through upper court

Section through lower court

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Chapter 5:

the Urban Tissue

To discover how my thematic system could work at the urban tissue level, I chose to focus on an actual site in the South End - that of the Cathedral housing project described earlier. It is large enough to begin to see the system as a tissue, and yet has some irregularities which tested its ability to adapt to local conditions, like any type can. The site is bounded by the large urban arteries of Washington and Harrison Avenues, and by Monsignor Reynolds Way and East Brookline. The residential streets of East Canton, East Dedham, and Plympton used to cut through the site until the housing project was developed. In the immediate vicinity of the site are Franklin Square across East Brookline, the Blackstone Community School across Washington, Holy Cross Cathedral across Monseignor Reynolds, and vacant lots and mostly industrial development across Harrison.

The buildings of the Cathedral housing project range from three stories high at the periphery, to ten stories in the center. Many of the units, including all of those in the tallest buildings, have been abandoned. There are currently plans to renovate many of the units, which would certainly be a challenging design problem, but, since my agenda was very specific and exploratory, my attitude toward the existing buildings and streets of the housing project was to ignore them.
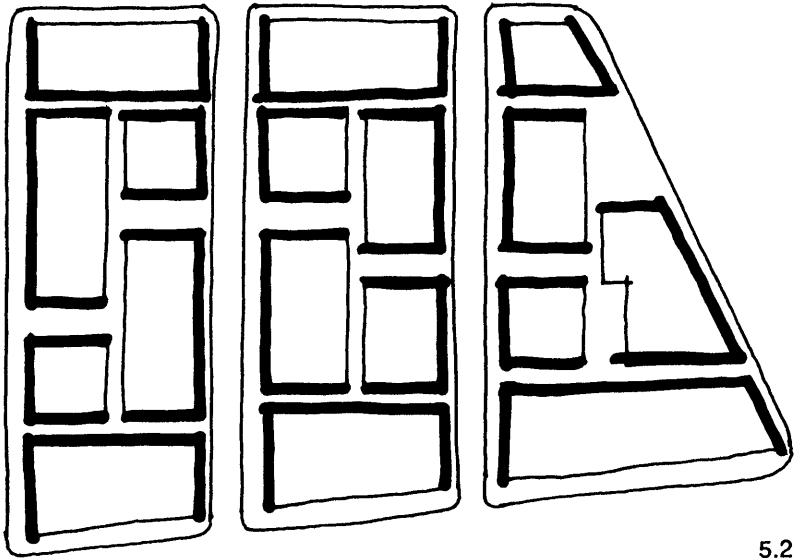
The series of diagrams shown gives four interpretations of the territorial structure of the site. The open side of each mass of buildings represents the entry side of the clusters in that
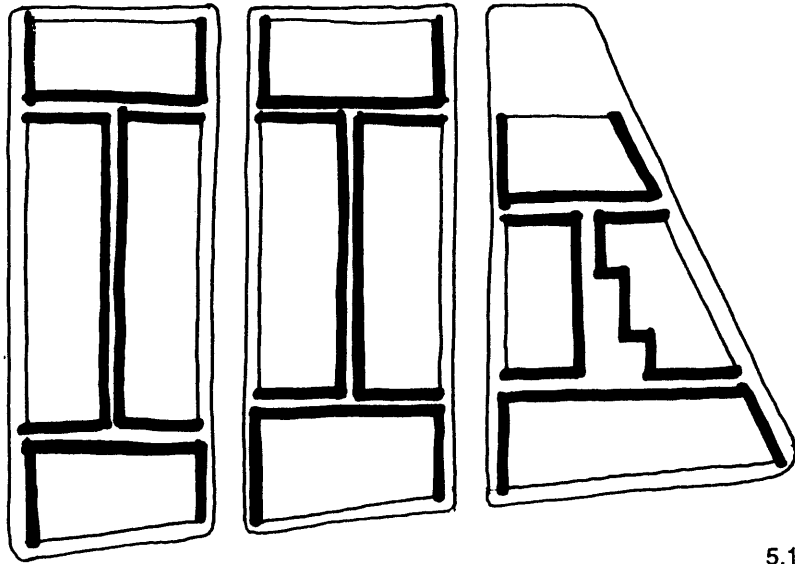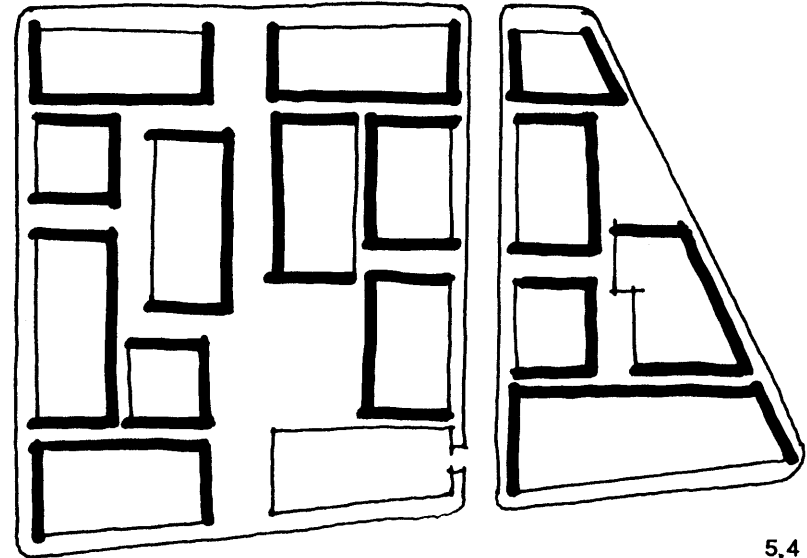
5.1
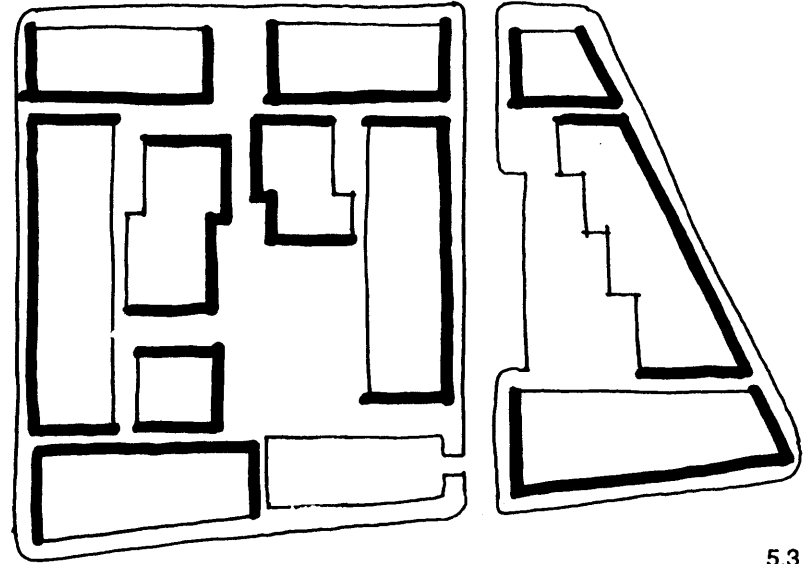
5.3

5.2

5.4

mass. In each case, because of the publicness of Washington and Harrison, I chose to orient the buildings which are adjacent to them toward the street. Commercial use would occur at street level, with the dwelling units having access from either the street, or from the block interior. (figure 5.1)

The first alternative is extroverted, extending the old streets through the site again, and proposing clusters with their entries from the streets. In the next scheme, the blocks have become introverted, adding a new territorial level. Also, the pedestrian access to the block interiors are coordinated to form a continuous pedestrian path across the blocks at approximately midpoint. The third interpretation exhibits the same orientation of the clusters, but eliminates one street, replacing its on-street parking with a parking lot at the block edge. This creates a large open space in the center of the site and allows two rows of clusters to shift. Vehicular access for residents is still through the alley, but visitors park in the lot and walk across what is now the front yard of a larger super-block territory. Territorially, this is similar to the existing models of Union Park and Worcester Square, with the street removed. The triangular piece of the site is also given its own larger open space, with additional parking along the extension of Plympton Street. The final alternative uses a mixed territorial structure, with the outermost clusters having access from the street, and the inner row of clusters having access from the pedestrian street over the alley. An open space is left in approximately the same place as the last scheme, but it no longer acts as a public space for a super-block because access to the clusters is not made through this space. Thus it belongs to the general public.
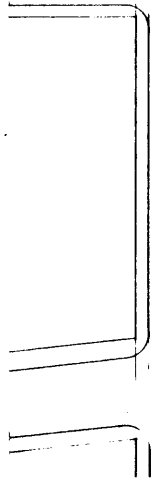
To study the potential of the thematic system in more depth, I chose to elaborate on the third scheme - the most introverted of the four. The site plan demonstrates a deployment of the primary support and the location of some non-thematic elements. Though there was no
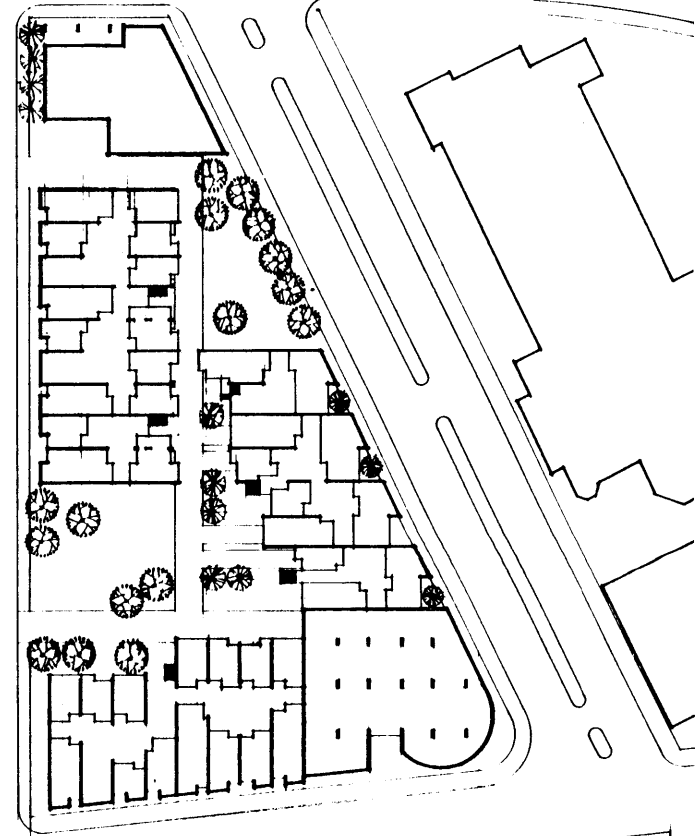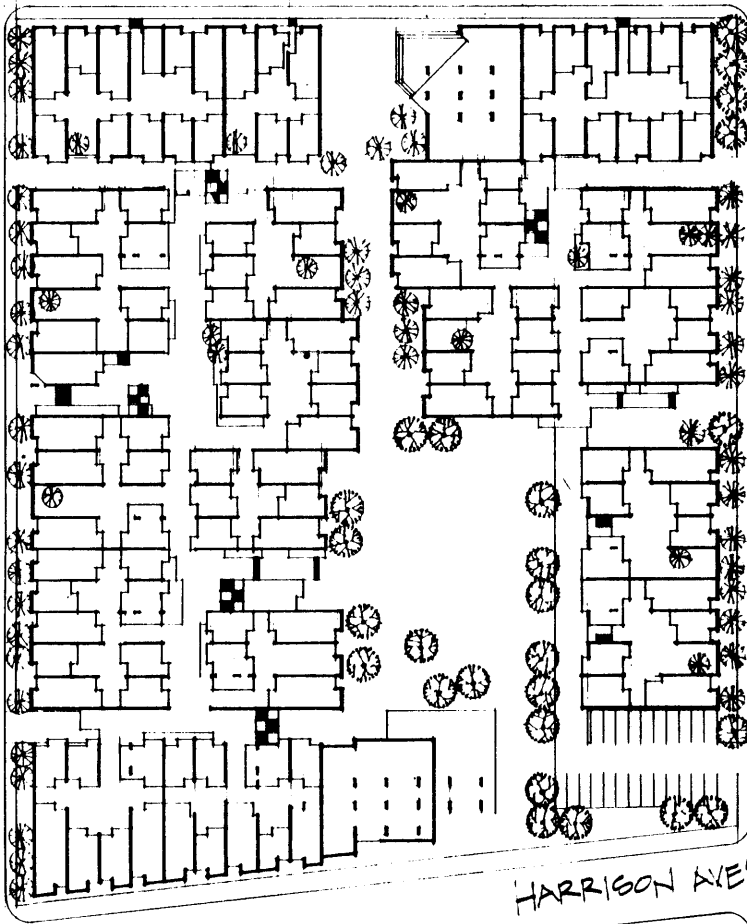
72
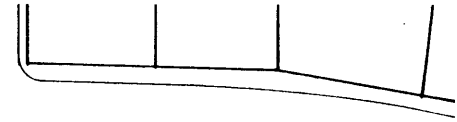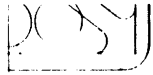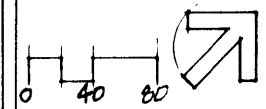
WASHINGTON STREET
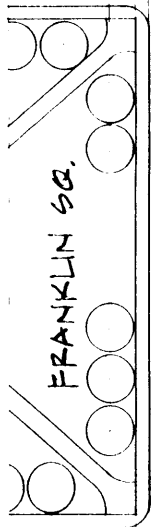
FRANKLIN SQ.

EAST BROOKLINE

HARRISON AVENUE

Site deployment

0   40   80

specific program for this projection these would be larger non-residential functions. One modification I made to the original diagram is that I retained the continuous pedestrian path across the site introduced in figure 5.2. This lessens the importance of the inner open space in that it is now possible to enter into some of the clusters without passing through it, but I felt that the mid-block connection to Franklin Square was desireable.

The site detail looks at an intersection between the pedestrian alley and a public vehicular street. These areas would be nodes of activity - a block-sized "stoop" - with stair and elevator acces to the parking level, and small retail functions such as laundry, grocery, or day care (at the block interior).

RETAIL   LAUNDRY

0 4 8   16   32
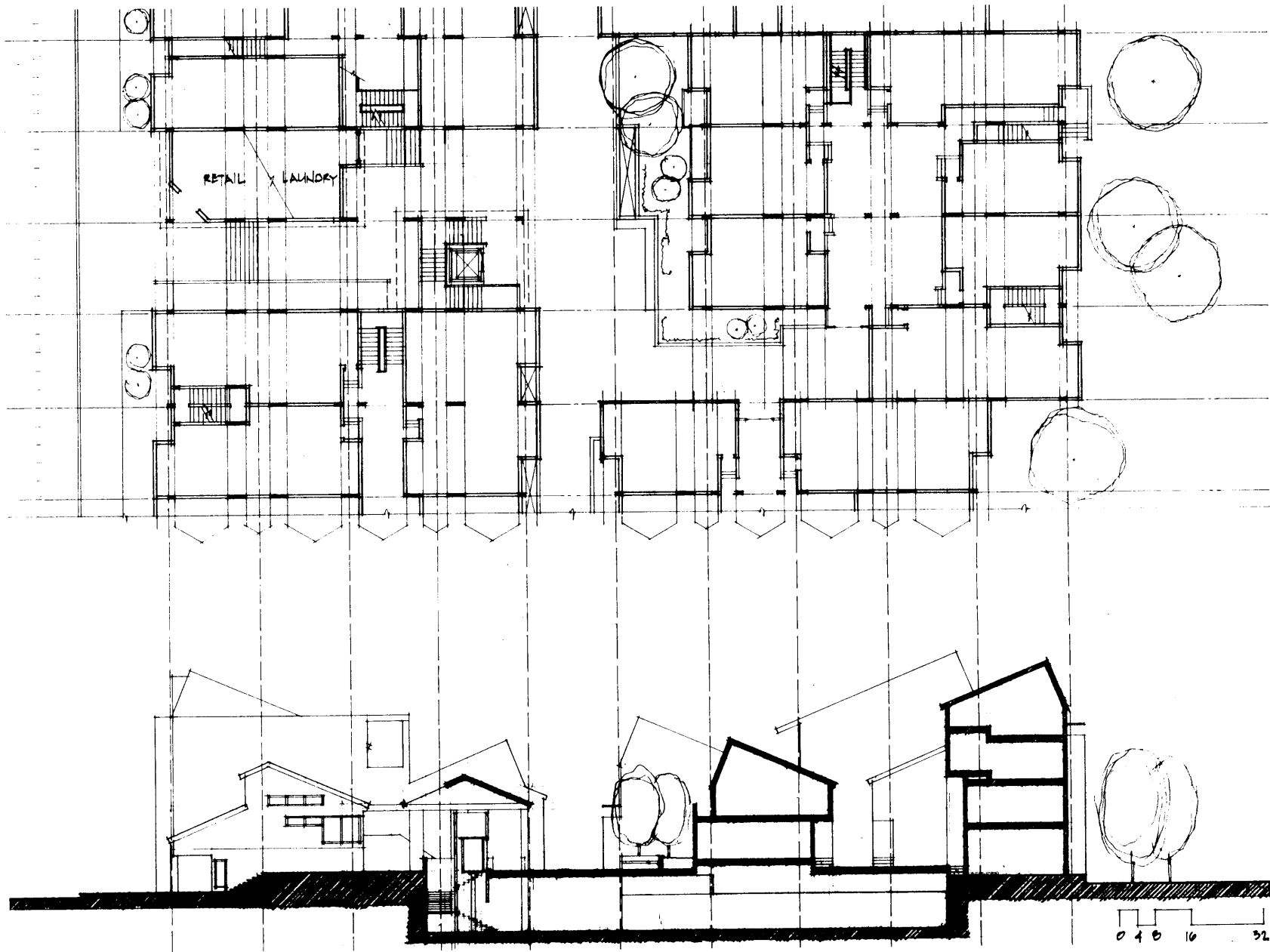
Implications

This thesis came about first as a desire to reach a reasonable understanding of the principles at work in the Japanese built environment which lead to an introverted territorial structure, and then an attempt to introduce some of them into another context. The premise was that principles of territorial structure are universal and, while much is culturally-determined, I have shown that a lot of it is generalizable. Once generalized it can be projected into another context. Having done that, it is important to ask what the implications are of such a proposition.

The increased territorial distance created by my proposed thematic system brings to mind several issues which should be addressed. One concerns the notion of territorial depth. The projections of the system have demonstrated the potential for new layers of territory at several scales. I chose to pursue these in order to demonstrate the system's potential. However this is not to say that one could go on forever. In reality, the degree of communal space projected for any intervention would vary depending on the completeness of information available about the end users. Speculative residential developments might be likely to make more modest increases in territorial distance, whereas developments with specific known users could tailor the physical configuration of the system to an intended territorial structure. While there is great physical variety in the existing rowhouse fabric of the South End, this flexibility of territorial depth is something that is not found.

Another issue related to the court concerns its use. It is not like the *okuniwa* of the *machiya* in that it is public space, moved through and inhabited by the tenants and their visitors daily. The *okuniwa*, rather, is a spatial void, not to be entered, but

reflected upon from without. The difference in use is expressed by the difference between the diagrams in figures 1.4 and 1.5. On the other hand, the court is also not like the public space of an existing South End rowhouse because it is territorially removed from the street realm, has more useable dimensions and light than the rowhouse stairwell, and is shared by several dwelling units.

Another important implication of introducing an introverted territorial structure in the South End is the character of the street. The most introverted interventions of the system pose the problem of a deadened street facade. Where this conflicts with a more lively context, it can be mitigated by utilizing dwelling entries from the street, or retail space at the street level - both common devices currently in use.

Both the South End and Kyoto have characteristics unique from each other and worthwhile on their own terms. The *machiya* offers a multi-layered retreat to an inner realm, whereas the South End presents a sturdy permanence from which to look out at the world. What I have proposed is neither purely of Kyoto, nor purely of the South End. Rather, it attempts to utilize some of strong qualities of both in a hybrid, which can then be deployed within a range of territorial intentions.
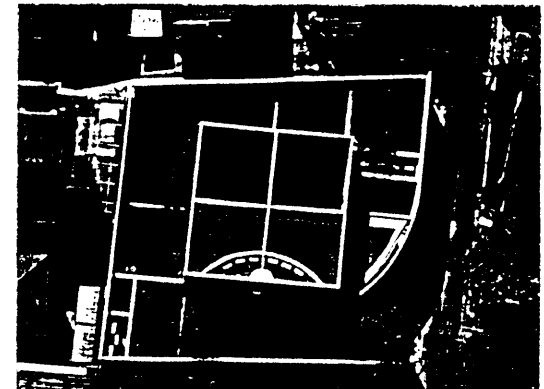
Appendix

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