# A Building System for Active Settlement

## Development of Live-work Dwellings in Central Square, Cambridge

By
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February 1996

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Chairperson, Departmental committee on
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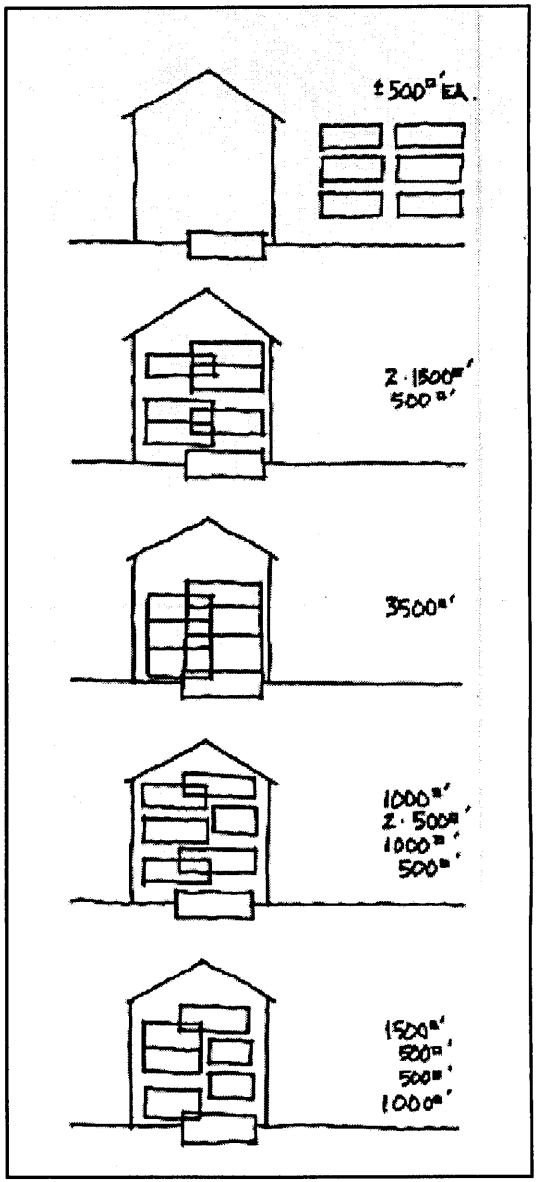
fig. 1




# ABSTRACT

*Physical manifestations of life are plastic and when they fail to suit the requirements of time and place they may be manipulated and changed by man. But that which is intangible is beyond the power of man, existing as a permanent resevoir from which the potential of life may be drawn as the need arises*[1].

—Amos Ih Tiao Chang
The Tao ofArchitecture

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**Abstract**

Advances in technology, such as more powerful affordable computers and flexiblecommunication, along with social and economical changes have led to the decentralization of the workplace and have made it possible for , and in some cases have forced, more professionals to work at home.

With greater and varied demands on the home, people will require more control over their environmnets to accomodate multiple uses, including those of professional work. A dwelling for living and working, therefore, must be adaptable. Architecturally this suggests a building that may support a range of programs and ownership.

A means of achieving this is to provide a framework in which physical issues of structure, the delivery of services, along with architectural issues of circulation, transition, and context are addressed. My investigation is inspired by urban housing types that have proven adaptable in use and ownership, while maintaining a clear identity, such as the row houses of Boston's Back Bay and the small number of nineteenth century dwelling types used in Cambridge, and most American cities. Because of their density and clear diagrams, these urban dwellings may be easily subdivided or combined to support many uses without dramatic alteration. The use of simple available systems allow these dwellings to mediate between built and assembled elements. The built elements represent the framework or more fixed elements of construction, while the assemblies are those elements that can be altered with relative ease in the interest of renwal or adaptation for future uses, including live-work dwellings.

fig. 2

fig. 3

Thesis Supervisor: Imre Halasz, Professor Emeritus

**Dedicated** to the memory of Kent Keegan, who I knew for too short a time , he was my teacher and will always guide me.

Also to Imre Halasz, who had absolute and unwavering confidence in my ability when I hadn't enough myself.

To my parents Steven and Cynthia Rissling, who I owe my life and probably about $150,000. in food, clothing and shelter, but above all, my eternal love.

To my 'other' parents, Uncle John and Auntie Marlene, your love is the greatest.

To my Grandmother, the late Julia Drag, who once said to me, "Jimmy, go". Thanks Grandma, I am still going.

And to Biss, aka S.B., I appreciate your support and selfless patience.



# CONTENTS

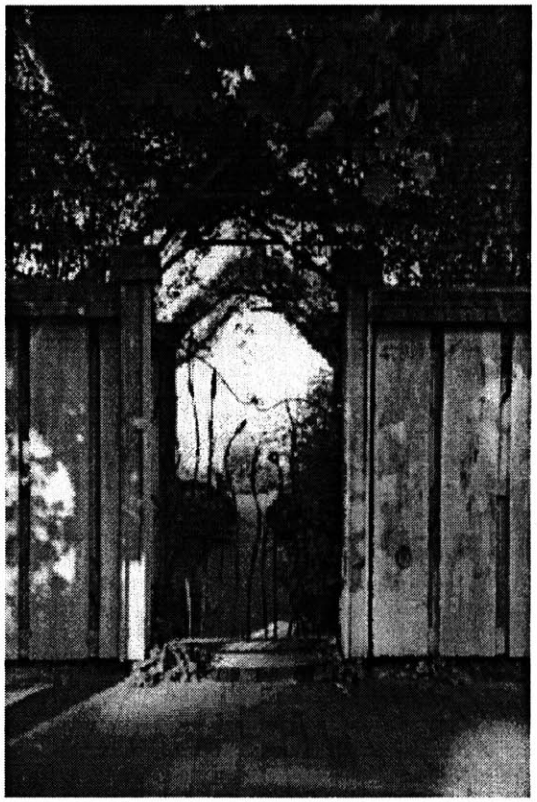
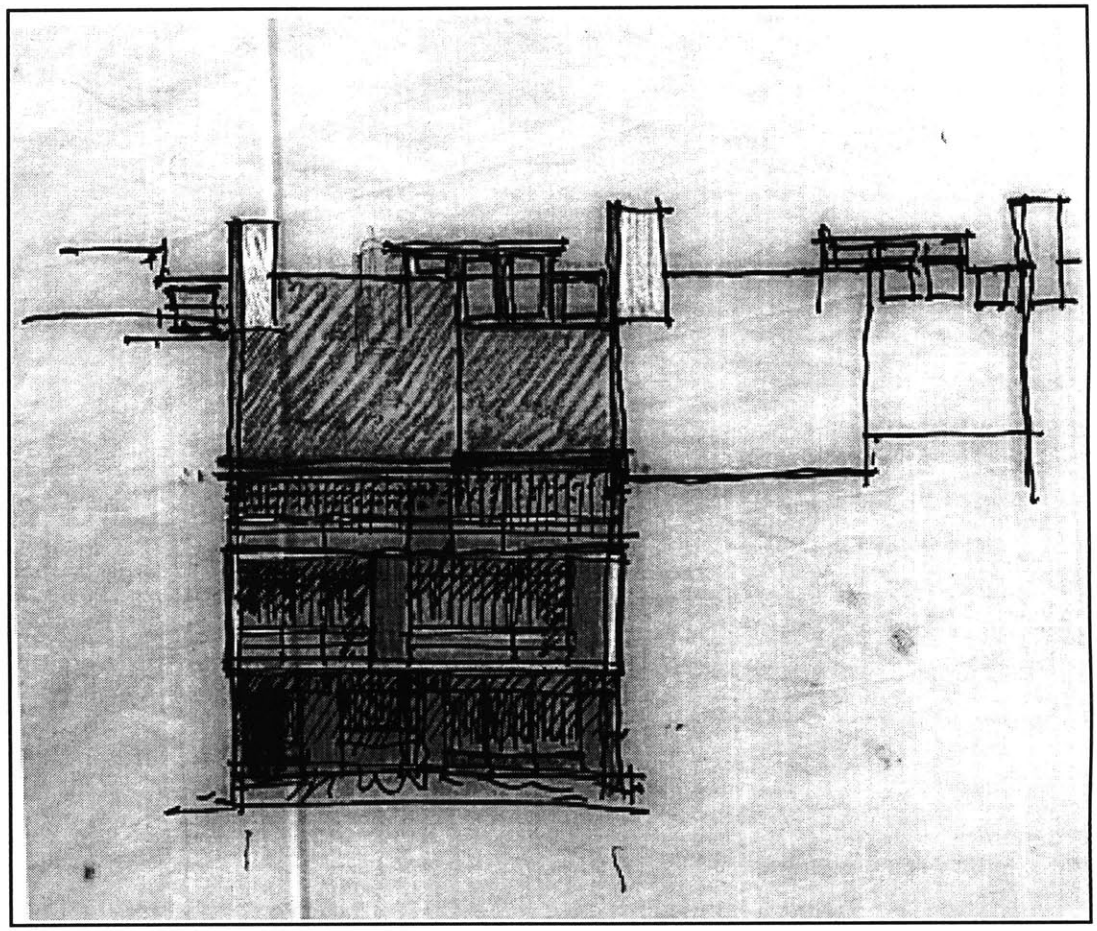


fig. 4

fig. 5 elevation study



*Every properly functioning human being transforms the visual signals that he receives from the outside into structured, meaningful entities. Without the perceptual ordering of his sense responses into images of things in space, man cannot orient himself. Without shaping his physical environment in accordance with these images, he cannot survive. His capacity to structure his environment according to his needs-that is, his ability to work out a rapport with his world-determines the quality of his life*[2].

—Gyorgy Kepes
INTRODUCTION of
Education of Vision

# INTRODUCTION

At the onset of this project I had certain ideas and expectations as to what I was exploring. Motivated by my interests in urban settlement and history, I knew I wanted to work within an urban fabric. An idea intrigued me; more and more we see in the news, in academic studies, as well as in practice, people are using their homes for work, education and worship. The thought that comes to mind is how could homes that have been, or are currently being built currently, support any other but a mythological residential use. Most contemporary homes provide the minimal spatial requirements with little or no slack and do not allow for flexibility of uses.

The trend appears to be that many jobs that were done "in house" for larger businesses are being farmed out to small contractors or firms in favor of cutting staff and overhead. Often these firms exist only as mailing addresses and phone numbers run by a sole proprietor much like the Wizard of Oz. Improvements in communication, not only of vioce, but of electronic information and printed word, as well as affordable computers and software make this possible. These jobs include designers, consultants of various fields, software developers, artists and craftspeople, accountants, editors and writers, and some medical practices, as a partial list.

At the onset I thought the concentration would be on the configuration of the units; a look at the social and cultural ramifications of these uses combined into shared spaces. However I found myself in the position, not as environmental psychologist, but as someone thinking of how it would be possible to provide buildings as systems that could provide opportunities for change yet would be cohesive and respectful to their neighbors.

The search here was for a structure and form generating system that could satisfy the demands placed on the home and workplace as examined by Ahrenzten. This suggested a "framework" that mediates between the largest system and its smallest outlets on one side and the largest system of small components on the other, or a vocabulary of elements, or protocol quite similar to a type, that within the "framework" exist the means to change and vary the type within a suggested format.

The importance of one to control and manipulate aspects of his environment is an important basis of this thesis. Here I must define the term 'adaptable' as its to be understood in this work. Somewhere between all the freedom to do as we wish and that which limits us, is the ability to adapt what is arround us allowing us to feel as though we're free. This is not a noble or lofty freedom but rather the ability to tailor a given environment, of any scale, to our specific needs. Many others have examined these needs and others will, hopefully add to this body of information. But this thesis is an atempt to merge physical and sometimes intellectual experiences into evidence of an idea. The idea of an underlying infrastructure that anchors dwellings to a place and time, translates systems into useful resources, and suggests form, yet invites intervention by others resulting in a recognizable yet adaptable form.

What is suggested is an intermediate level or framework which, as the deeds and deed restrictions of Bostons, Back Bay (circa 1857-1871), divided the larger urban fabric into "manageable" pieces in order to achieve the next magnitude in scale. In this project, a block long area is to be developed in the Riverside-Cambridgeport neighborhood of Cambridge to provide dwellings for living an working. Cambridge's development has occurred, quite unlike the Back Bay; it had been more rural and more suburban throughout its history, supporting primarily detatched dwellings restricted primarily by the size of the lot. The result is an interesting suburb of single and double family dwellings, speculative decker type buildings of the 1890's, and midrise buildings of this century.

James Rissling, January 1996

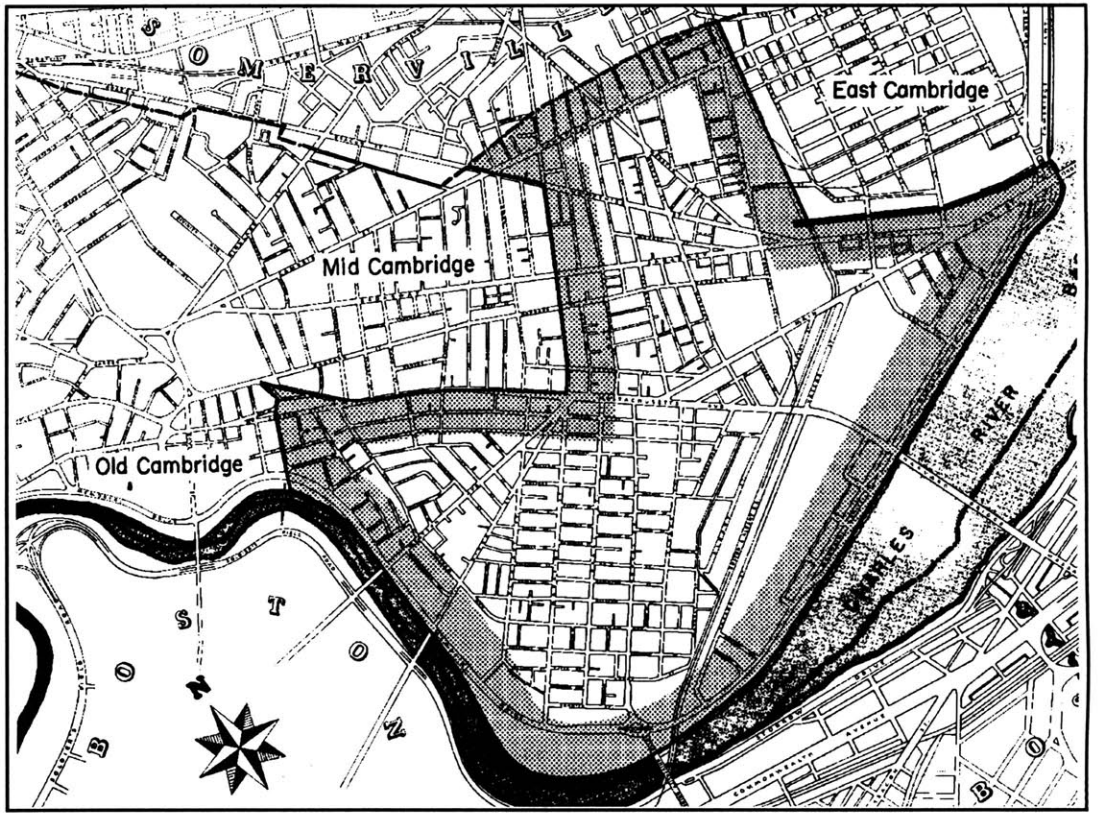
# History & Place

Cambridgeport

Site

Building Types

fig. 6




*When a society or a civilization perishes, one condition may always be found. They forgot where they came from. They lost sight of what brought them along. The hard beginnings were forgotten and the struggles farther along. They became satisfied with themselves. Unity and common understanding there had been, enough to overcome rot and dissolution, enough to break through their obstacles. But mockers came. And deniers were heard. And vision and hope faded. And the custom of greeting became 'what's the use?' And men whose forefathers would go anywhere, holding nothing impossible in the genius of man, joined the mockers and deniers. They forgot where they came from. they lost sight of what brought them along.*

—Carl Sandburg

# History & Place

Cambridge was founded in 1630, at that time, the area of Cambridgeport was primarily agricultural. This area consited of marshes, pine forests, and farms. The higher land was valuable as farm land and pastures while the low-lying marshes and river-beds yeilded salt hay and oysters. It was an adjunct to Old Cambridge, where Harvard was founded, until 1793 when it was linked to Boston via the West Boston bridge. At this time it was hoped that Cambridgeport would become a new commercial area and port. Although it became a commercial link between Boston and the agricultural communities of western Middlesex county, it would not become a port. Cambridgeport experienced it most significant growth in the later half of the nineteenth century when industry would move in and a large amount of housing would be built to accomodate the rapidly growing population. The area of Cambridgeport was bound by island like land masses rising from the marshes, the Neck, the site of present day East Cambridge, Pelham's Island, about twenty acres across present day Main Street at Lafayette square, Captain's Island, five acres at present day Magazine Beach, and Little Neck, about forty-five acres across Putnam Avenue. The low-lands between these islands would be filled from the late eighteenth century through the early twentieth century to what we now recognize as Cambridgeport. The land had been parceled into various sizes in 1630. The proprietors never intended to live on the land, but saw it rather as agricultural land and would remain in Old Cambridge. The early system of parcels was superceded by the mid-17th century when by this time Cambridgeport was divided into three large farms and much smaller landholdings concentrated at the intersections of present day Massachusetts Avenue and Prospect and Main Streets. The site used in this project was once at the edge of low-land that was on the Soden farm, sloping southward from Massachusetts Avenue. Below Kinnard street was a mill pond that would remain until the 1890's when the area south of the site was developed with speculative housing in response to the increasing population of Cambridge.

fig. 7, a housewright house that stood at 14 Magazine Street, c.1856

fig. 8, rowhouses on Pearl Street, c.1875

# Cambridgeport

*Into the Site*
*From the outside.*

*The parts make the whole*
*And the whole is a part:*
*Movement relative to the larger,*
*Stability relative to the smaller,*
*Makes Form.*

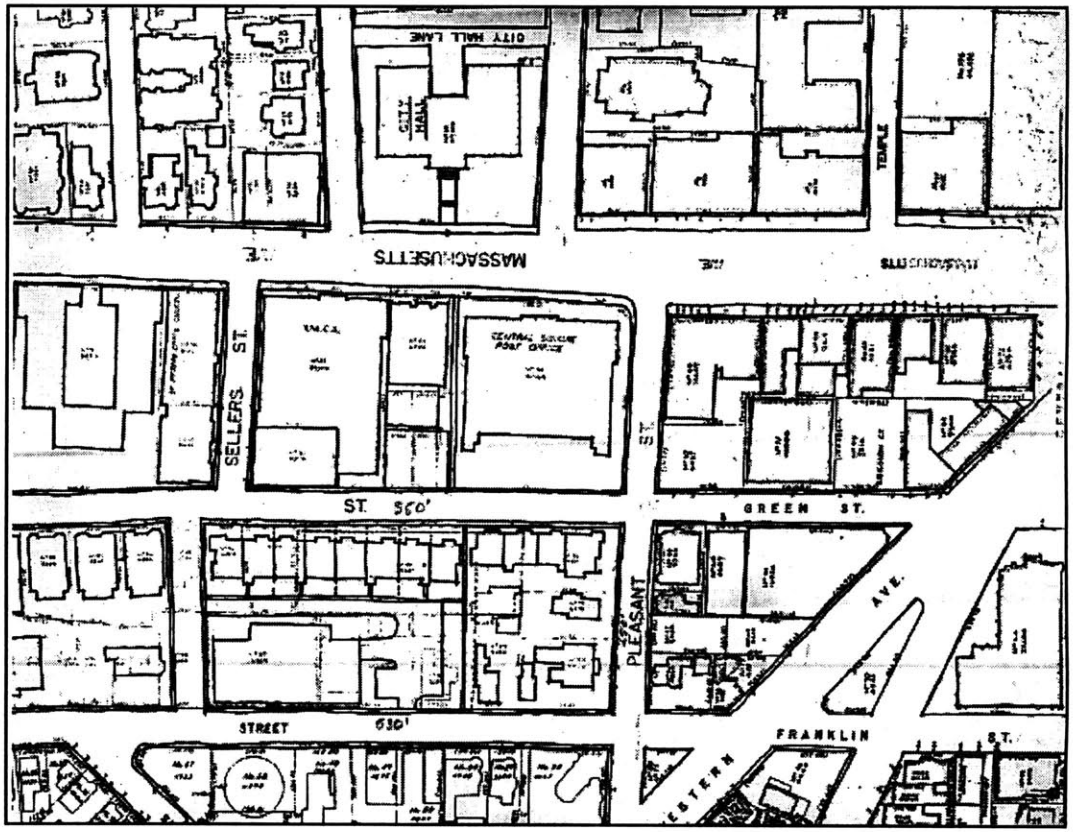
*The boundaries enclose the form*
*And the form becomes boundary:*
*Seclusion towards the outside,*
*But openness towards the inside,*
*Makes Place.*

*The rules define the similarities*
*And the differences share the rules:*
*Sameness in time and space,*
*Without repetition*
*Makes Understanding*

*The site is space and material:*
*Form, Place and understanding*
*Make the Site*[3]

—John Habraken
PROLOGUE from
Transformations of the Site

fig. 9



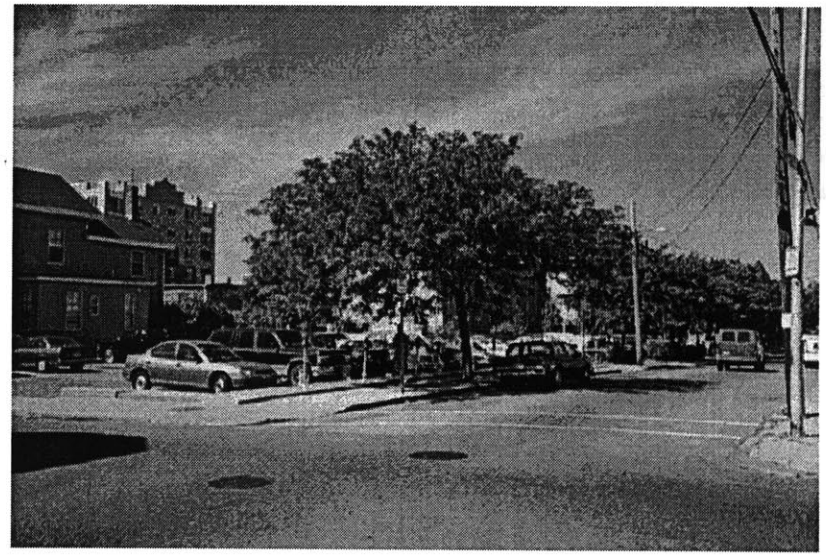

# History & Place

The 41,000 sq. ft. site is presently a series of parking lots behind the Central Square branch post-office on Green Street. Green Street is a moderately busy one-way parallel to Massachusetts Avenue (fig.s 10 & 11). The proximity to the post-office's loading area may present a potential noise problem affecting the design and organization of the site.

Central Square offers a variety of conditions, it is vital with a relatively densely built environment. Therefore, the option of endless expansion is not viable. The neighborhood offers many of the services desired for business and dwelling. The existing scale will be sympathetic to any possible building traffic. The context includes mid-19th to early twentieth century commercial buildings, large detached homes, with rowhouses and apartment buildings near Massachusetts Avenue.

fig. 10

fig. 11



# Site

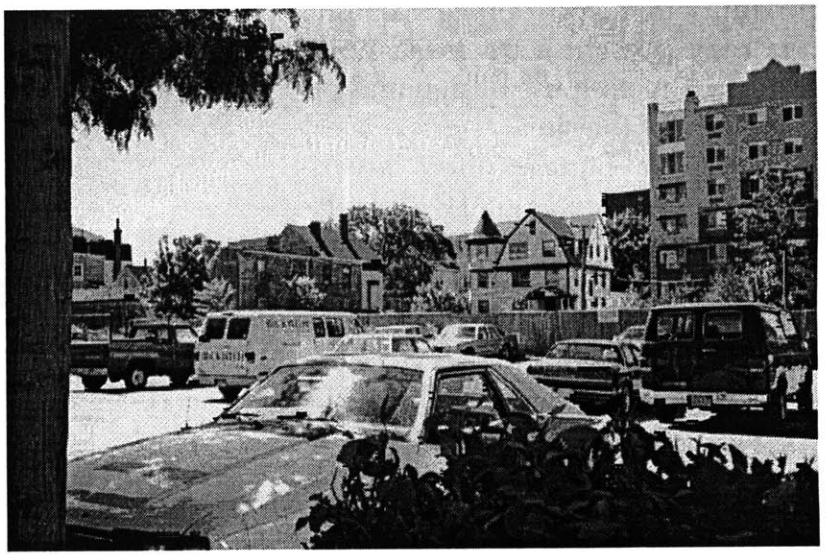


fig.s 12 & 13

# History & Place

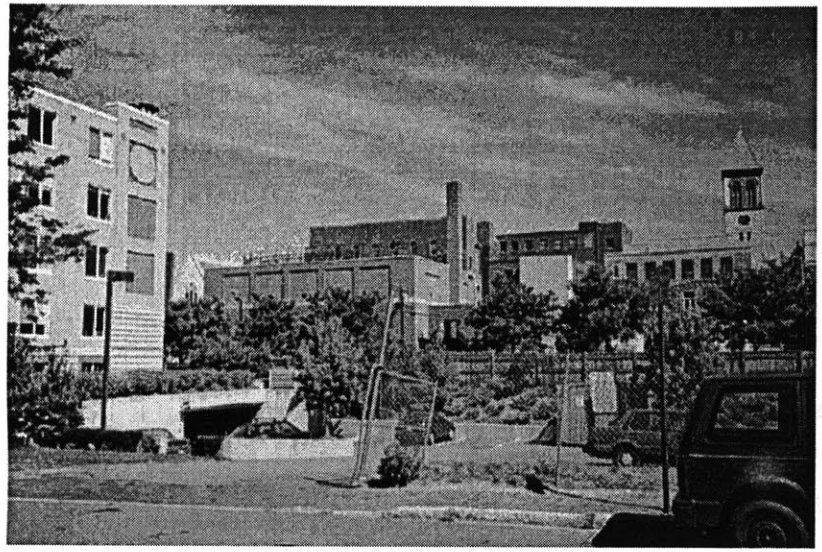


fig.s 14 & 15

The site fronts Green Street to the north and Pleasant Street on the east, sloping gradually downward, to the west and south (fig. 11).

To the south the site abuts the rear lots of a few frame dwelling and a large mid-rise apartment building (fig.s 12, 13 & 16).

fig. 16

# Site

## The Power of the Field

*"Study the built field, it will be there without you, but you can contribute to it.*

*Study the field as a living organism, it has form but it has structure. Find its structure and form will come.*

*The field has continuity, merge with it and others will join you. Because the field has continuity no job is large or small, all you do is adding to the field.*

*Nobody builds alone. When you do something large leave the small to others. When you do something small enhance the large.*

*Respond to those before you. When you find structure inhabit it. When you find type play with it. When you find patterns seek to continue them.*

*Be hospitable to those after you. Give structure as well as form.*

*The more you seek to continue what was done by others already the more you will be recognized for it, the more others will continue what you did.*

*Cooperate. When you can borrow from others borrow and praise them, when you can steal from others steal and admit it freely. No matter what you do your work will be your own.*

*Avoid style, leave it to critics and historians. Choose method, it's what you share with your peers.*

*Forget self expression. It is a delusion. What ever you do will be recognized by others as your expression. Don't give it a thought.*

*Do what the field needs[4]."*

—John Habraken



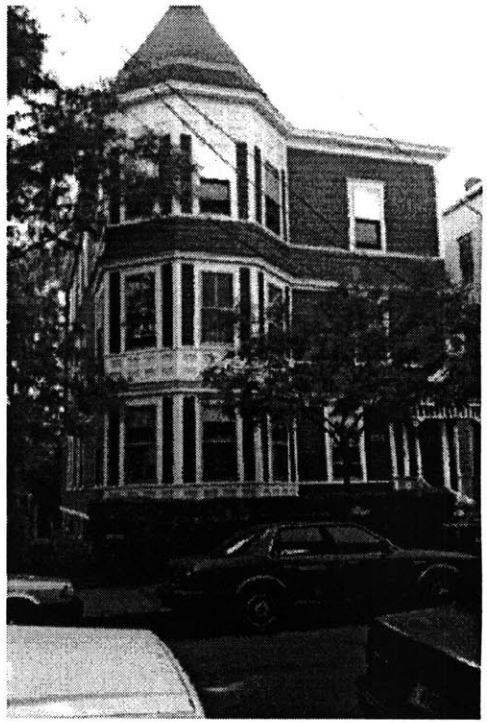


fig. 17

# History & Place

# Building Types

Cambridgeport, like most American cities, was laid out with rectangular lots deeper than wide, fronting onto straight streets. Unlike Many American cities though, the layout of these streeets was not necessarily planned but, but the result of the quickest path between two destinations. And along these paths to say Brighton, Harvard or Watertown the grid was filled in creating an intricate and seemingly haphazard settlement pattern. All housing types acknowledged this land pattern, from single houses to the triple-deckers of the late ninetenth century. Most of Cambridge's housing is light-frame construction with masonary basements or foundations, some nineteenth century buildings attain a large scale even though they are executed entirely of wood. Many of the commercial and multifamily residences on or near Massachusetts Avenue are constructed of masonary, as are most muli-family residences built since the early twentieth century.

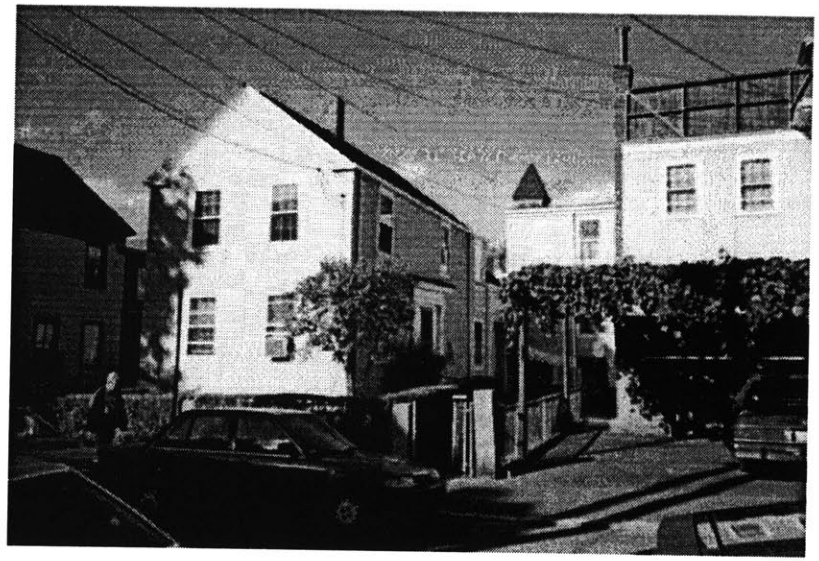
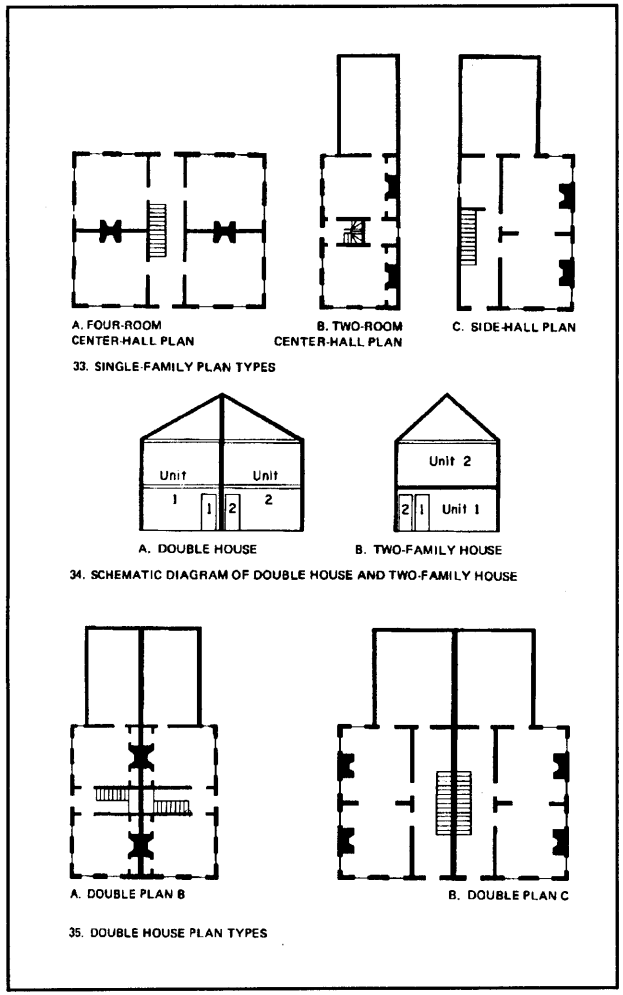


fig. 18

fig. 19

fig. 20




Cambridgeport's housing consists of three types of one family houses as outlined in the Survey of Architecture in Cambridge, Report Three, on Cambridgeport; the single house, the double house, and the row house.

The single house or detached house intended for occupancy by one family, makes up the majority and was the most historically prominent. Three types of the single house are clearly identifiable until about 1880 (see fig. 20). The single plan A, in which four rooms are arranged about a center hall containing the stair, this plan type was not as common in Cambridgeport because of the narrow lots, however if there was enough room it was often situated with a narrow side fronting the street and its entrance on the side. In the second single house plan, B, two rooms flank a center hall or stair hall. This type is most commonly situated on the site with a narrow side fronting the street.

# History & Place

The third type, emerged circa1840s, in this case two rooms are accessed through a side hall that is entered off the front of the house (see plan C, fig. 20).

The double house is similar to the single house but is intended for two separate families to occupy. This type differs from two family houses which are usually separated horizontaly; the double houses are separated vertically so that the house and the land it sits on may be owned separately, further subdividing or combining two lots with the house division on the lot line (see again, fig. 20).

The third one family house type is the row house, this type an adaptation of the C plan single house (fig. 21) is less common in Cambridgeport because at the time of its popularity it was considered an urban housing form and Cambridgeport hardly exhibited the urban character it may be said to possess now. However examples do exist and compliment the density of Cambridge's commercial streets. Figure 22 shows an example at Pearl and Green Streets, just steps from busy Massachusetts Avenue. The row houses in Cambridgeport were generally built by one owner and were not usually owned separately as in the Back Bay, but rather by a single landlord who had a ssembled a few lots and built a group in numbers of 4-6 houses.

The next group of housing types are multi-family houses. These Include, the tenament, the duplex and triple-decker types. The plans of these are less easily characterized as the one family types, but do share common organizations. The tenament is the result of further subdivision of the row house, whereas the row house is characterized by divisions of its units, the tenament is also divided horizontally.

The duplex and the triple-deckers are basically one floor plan extruded two or three times, and sometimes four times, so that hte units each occupy a full floor separated horizontally. These types generally sit on a piece of land that along with the building is owned by a single owner.

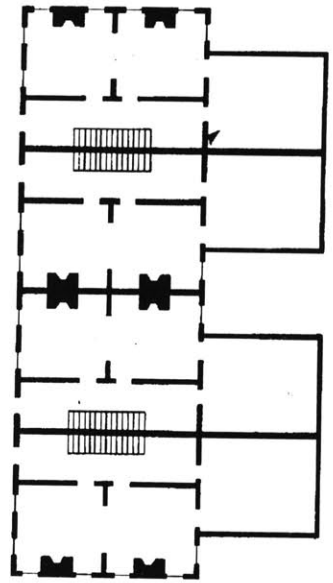


fig. 21, row house, based on C plan

fig.22, row houses at Pearl and Green Sts.

# Building Types

fig. 23

# Precedents & Approaches

*We investigate the methods by which another has created his work, in order to set ourselves in motion. This approach should save us from regarding a work of art as something rigid, something fixed and unchanging. Exercises of this kind will guard us against creeping up to a finished product hoping to pick off what is most striking, and make off with it.*

—Paul Klee
The Thinking Eye

Built as a solution to the housing demand of WWII in America, the Eames house incorporates materials and methods developed for nonresidential architecture that represented American ingenuity and craft. The Eames house and studio (fig.s 23-25) is an example of a framework and infill system assembled of of-the-shelf components. The use of off-the-shelf components suggests that the components are interchangable and allow for alterations and repair as necesary. The structure assembly rests on a foundation that defines the site and orients the building (fig. 24). The structure supports the the various panels, which vary in their levels of transparency and function. The panels may be selected to provide closure and openings as desired for the various uses supported in the house.

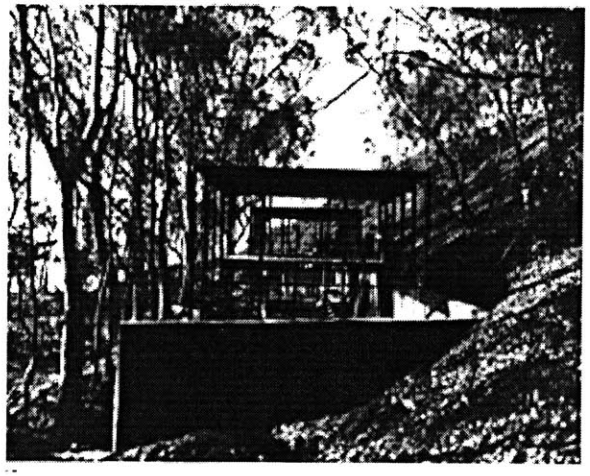


fig. 24

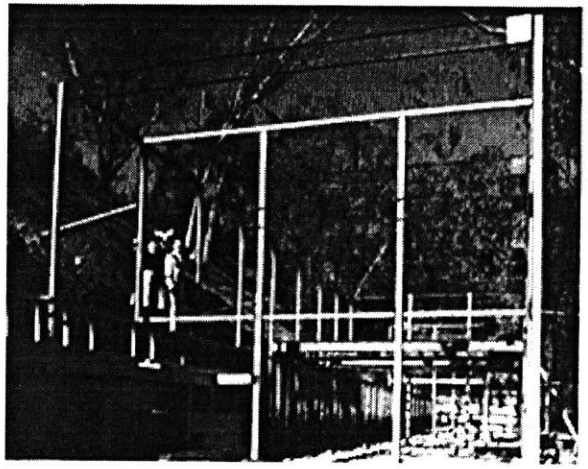


fig.25

## Charles and Ray Eames House and Studio

Pasedena, California, 1945

fig.s 27 & 28

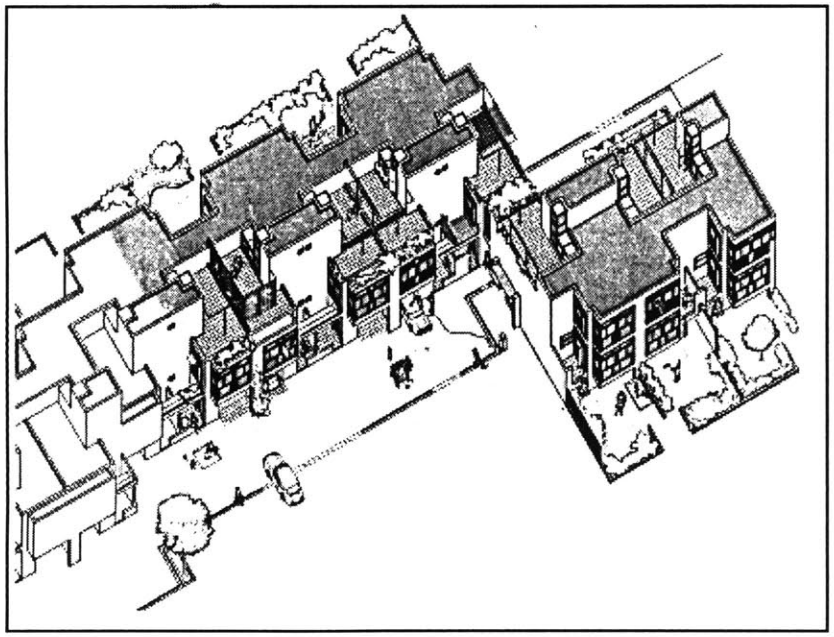


fig. 26

# Precedents & Approaches

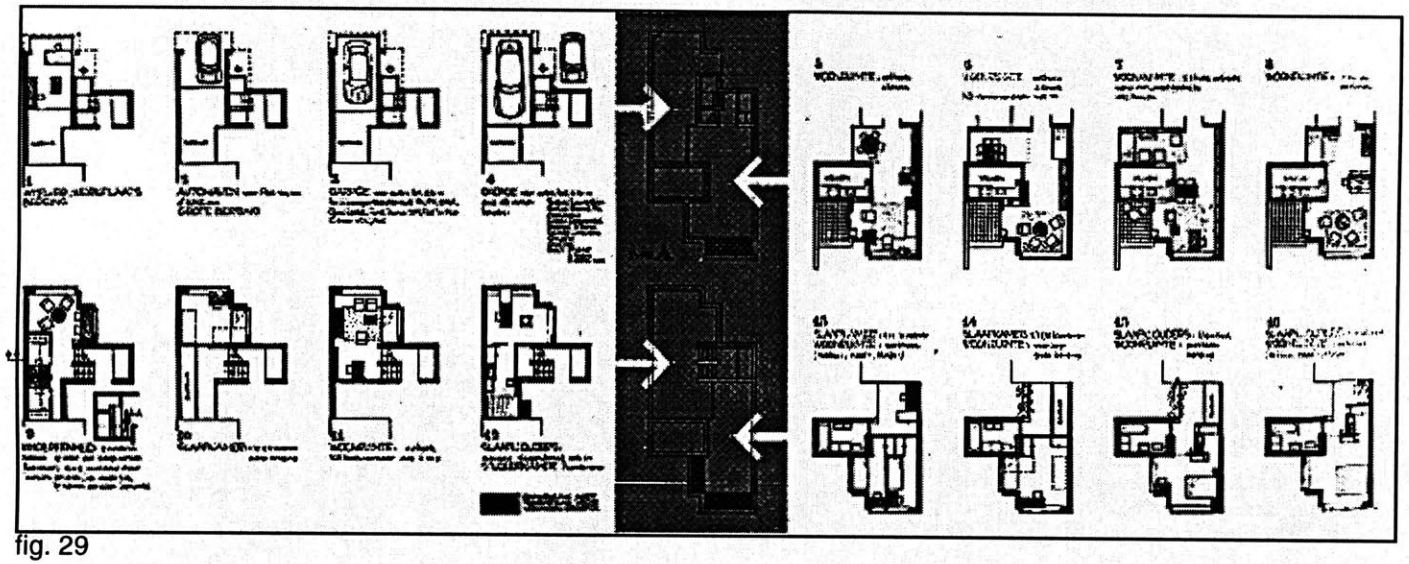


fig. 29

Hertzberger's Diagoon Dwellings (fig.s 26-30) are embeded with clues that allow its residents to alter and transform the spaces into personalized territories. The transformations are executed with a palete of materials that are devices for enclsing the structural framework. Along with the structure, surfaces such as the rooftops become spaces which may be occupied and altered, to create a rich and varied fabric of dwellings that still conform to a few principles. These include unit sizes, zones of entry and various levels of privacy.

## Diagoon Dwellings

Herman Hertzberger

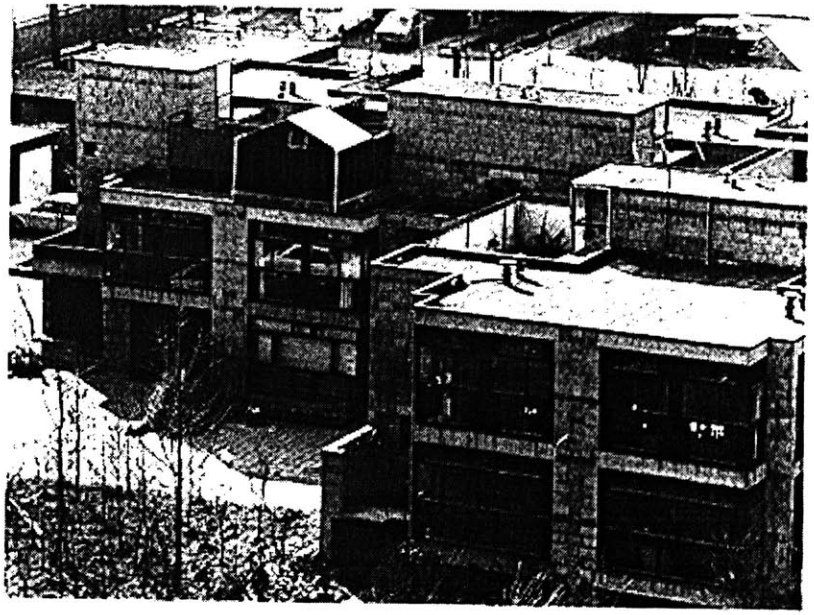


fig. 30

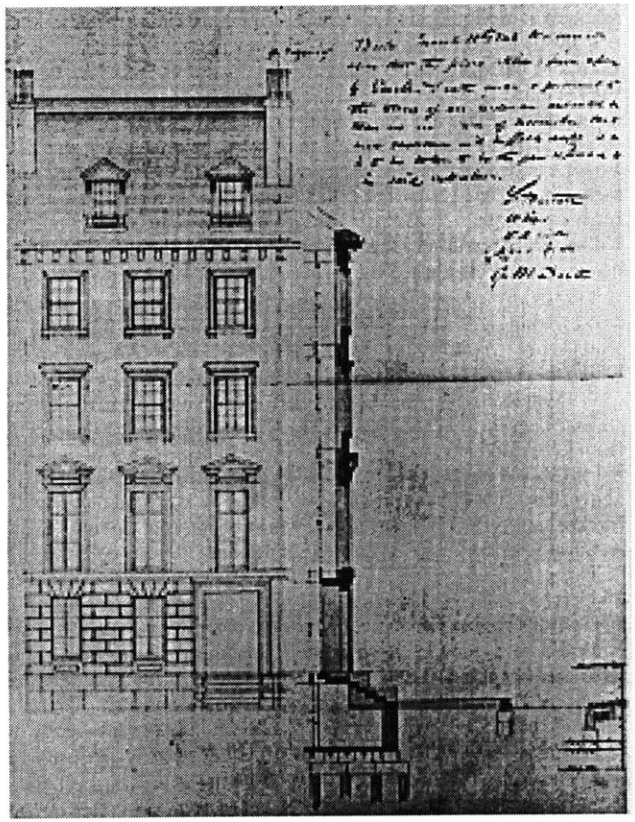


fig. 31 design for 92-99 Beacon Street, March18,1848

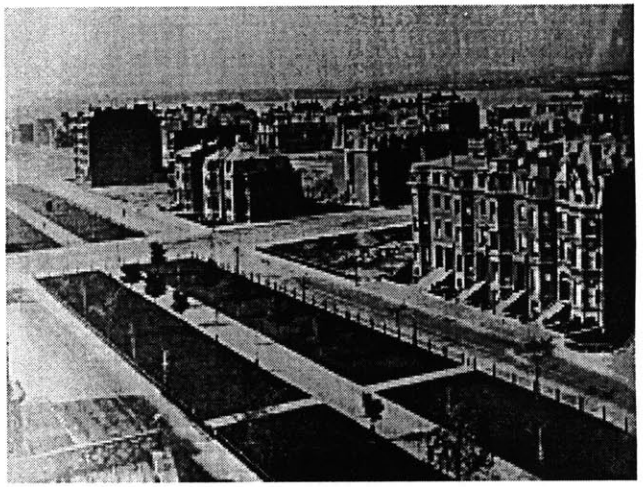


fig. 32 Commonwealth Avenue and Dartmouth Street, 1877

# Precedents & Approaches

The row houses of Boston's back are probably at first thought an unlikely precedent. But like many early developments in this country, the row houses represent variations of a type that has been continually occupied, reparied and adapteded to a variety of uses. This example could be the row houses of Philidelphia's Society Hill, the victorians of San Francisco, or the Sears and Roerbuck mail order catalogue houses of many American cities.

The Back Bay row house clearly illustrates some of the ideas explored in this thesis of 'built' and 'assembled' elements. The built elements, although they may be repaired, are fixed and generally are made up of bulk materials such as masonary and brick. The assembled units are those that are set into or adjacent to the built elements. These are generally linear or sheet in form and are repaired and replaced most often. Examples in the Back Bay row house, may be windows, doors, stairs, partitions, and floors, to some extent.

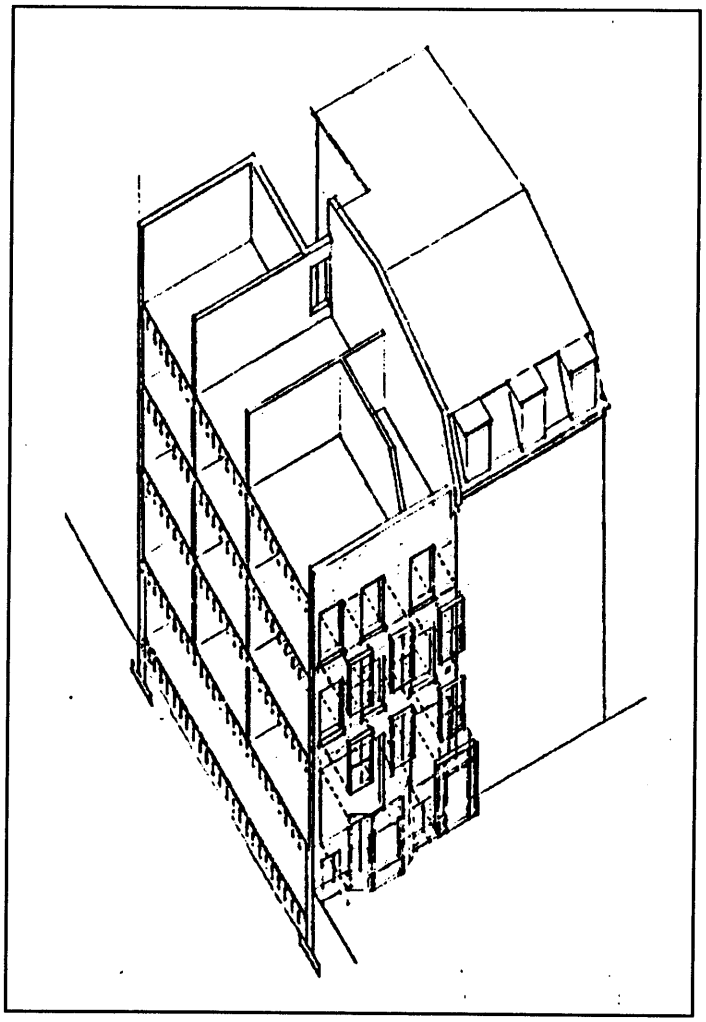


fig. 33

## Row houses

of Boston's Back Bay c.1840-1910

# An Exploration

Concept

Site

Structure

Systems

Sections

Plans

Elevations

*The Poet's eye, in a fine frenzy*
*rolling,*
*Doth glance from heaven to earth,*
*from earth to heaven;*
*And as imagination bodies forth*
*The forms of things unknown, the*
*poet's pen*
*Turns them to shapes, gives to airy*
*nothing*
*A local habitation and a name*[5].

—William Shakespeare
A Midsummer Night's Dream

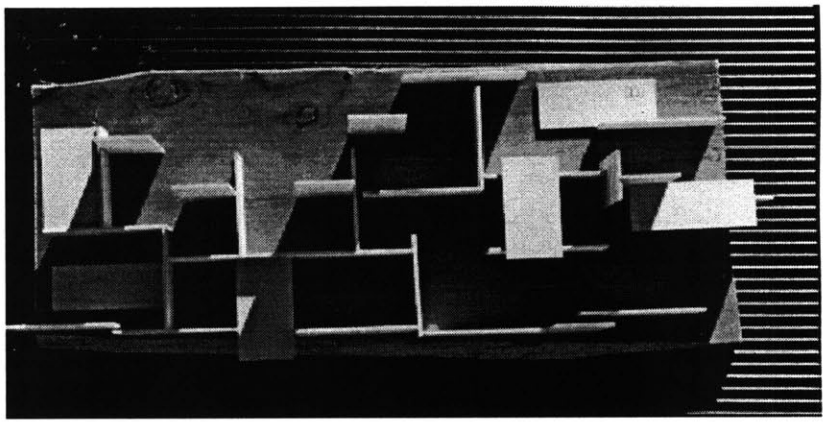


fig. 34

# An Exploration

The approach was to incorporate the ideas of a system based on a few elements with a set of constraints, and the constraints from some outside source. Together the exercises atempt to explore a concept of flexibility in three dimension within some structure.

In (figure 34) system was made up of 1:2 rectangles. The constraints were the base, which might represent the site or outside constraint, and the constraints applied to the use of rectangles based on the orthagonal properties of the rectangles.

In (figures 35 and 36) the system included, again, rectangles but also upright pieces or posts. The site was complicated by the three elements. These elements created a set of two dimensions in the site that suggested the placement of the upright elements.

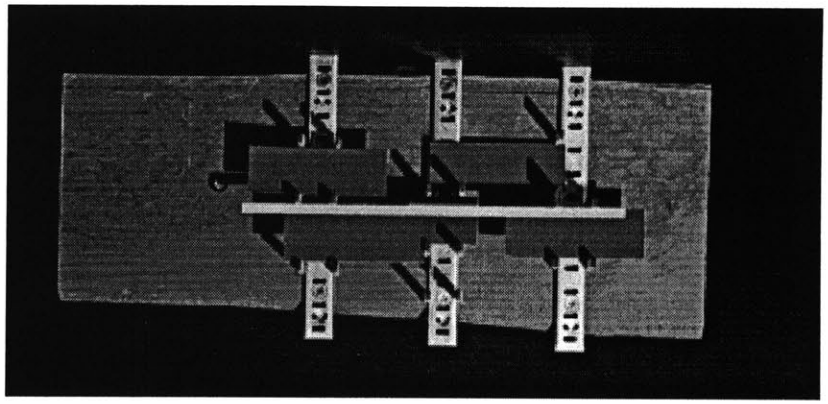


fig. 35

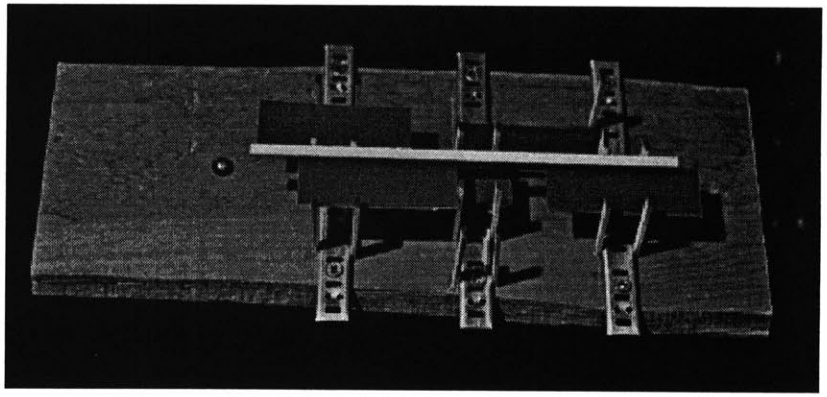
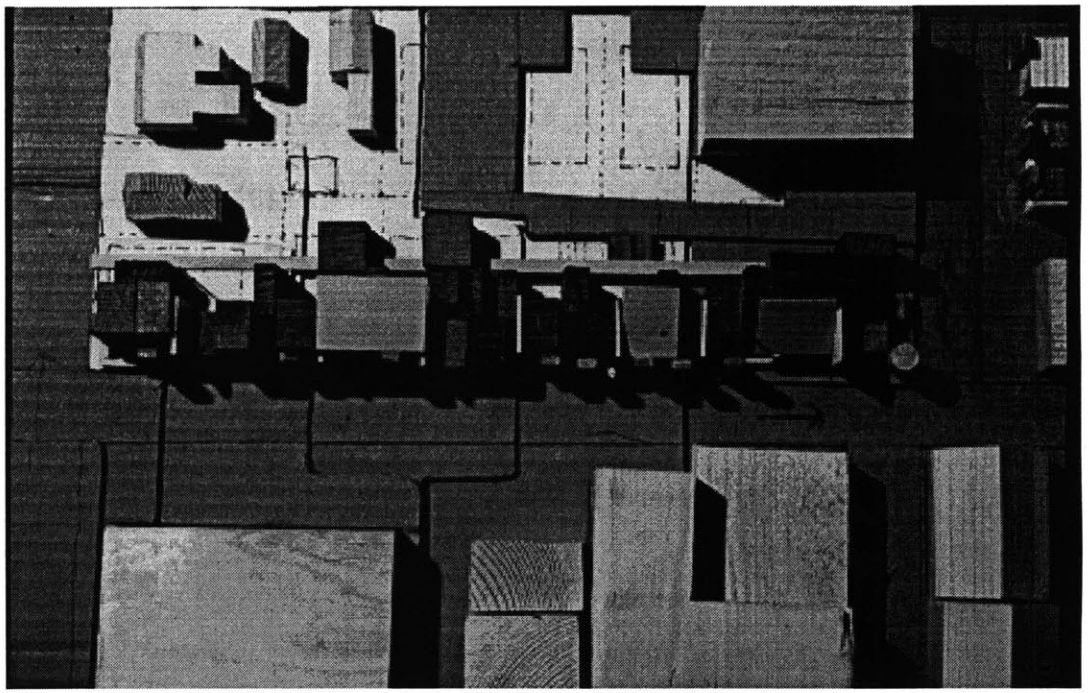


fig. 36

# Concept

fig. 37 plan view



# An Exploration

This model, (figures 37-42), made up of blocks incorporate the major elements of the site and explores the potential massing made up of smaller units that represent dwelling sizes of approximately 1500-2000 sq. ft. The units were anchored by a zone at the street level that represents the entry or street facade. The placement of the units was further guided by party-wall elements that comprise fire safety and ownership zones (fig. 40). The street elevation includes paired vertical elements that respond to the rythmn of the existing facades (fig.s 41 & 42). Across the rear of the units a linear element indicates the overall dimension of the site an potentially shared functions , such as parking common yards or gardens (fig.s 37 & 40). Possibly in conflict with this idea are the more freely arranged units facing the garden side (fig. 39, center).

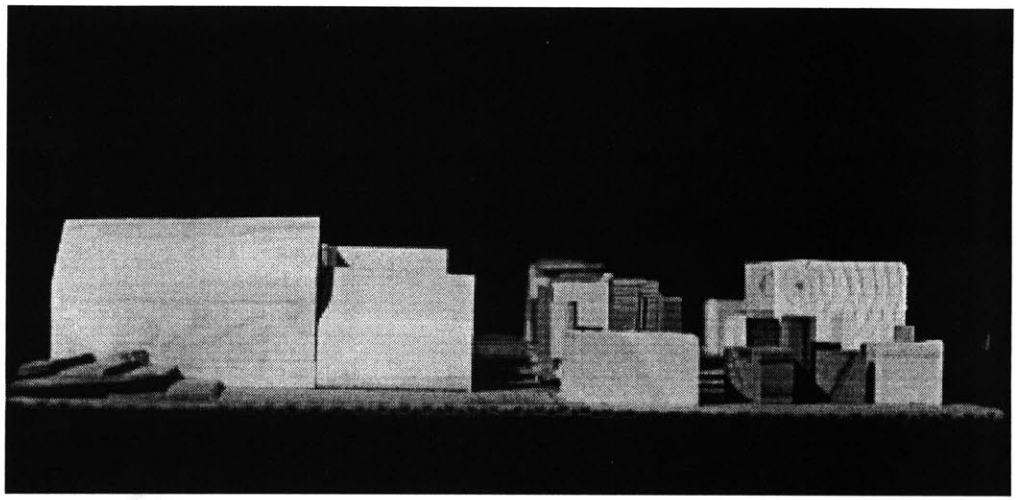


fig. 38 GreenStreet eastward

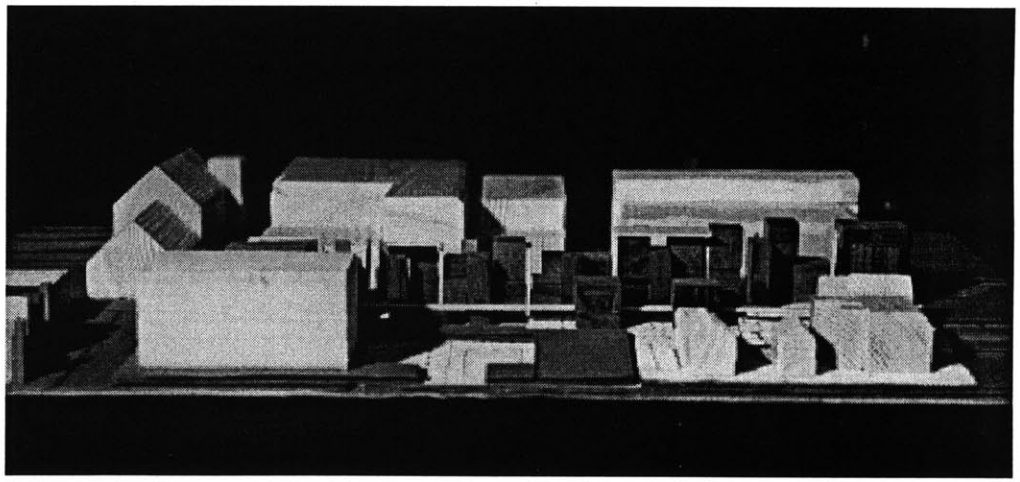
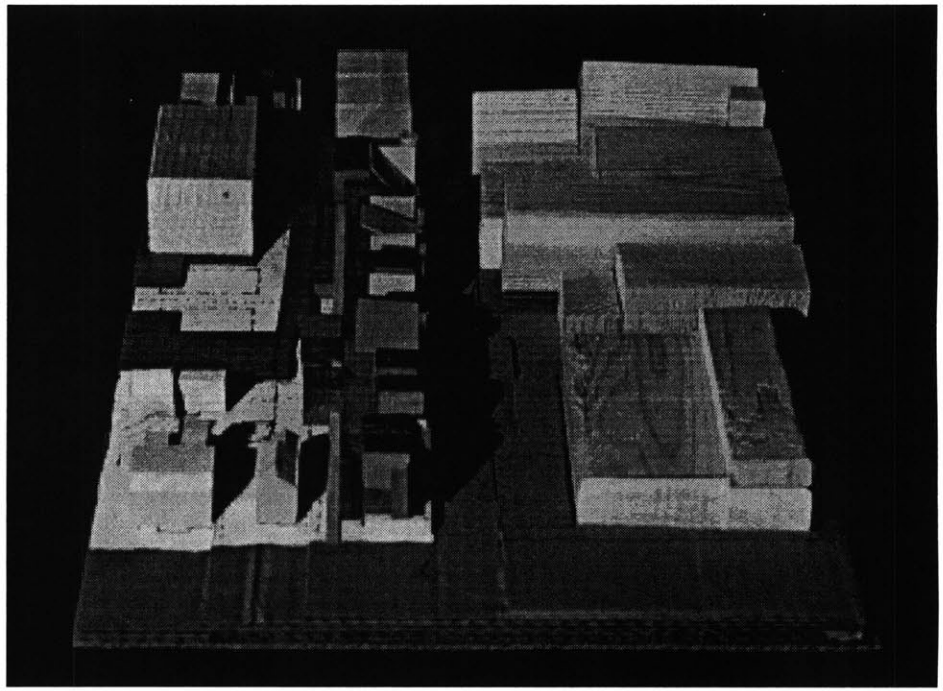


fig. 39 Franklin Street

# Concept

fig. 40



# An Exploration

Figure 41 (right-top) view of site towards south, the Central Square post office is in the bottom right corner.

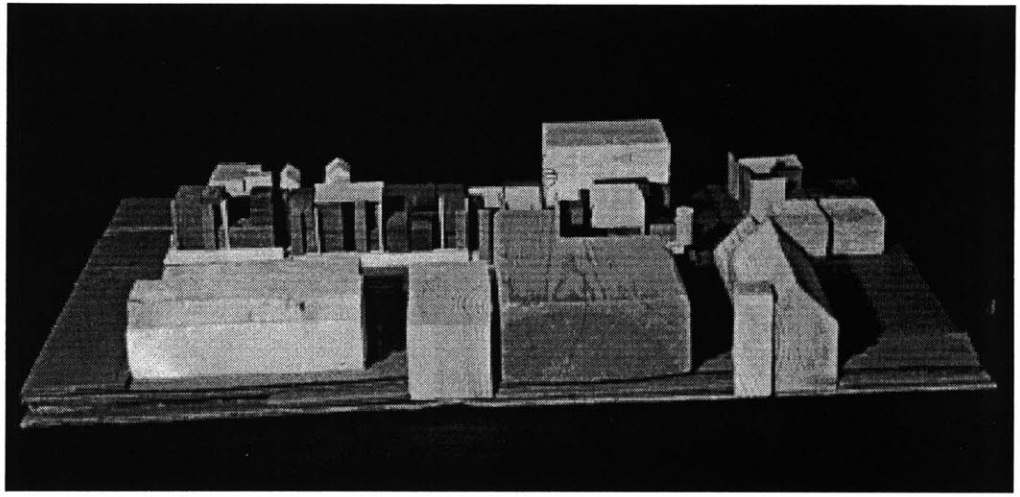


fig. 41

Figure 40 (left) view of site towards west, Pleasant Street at bottom.

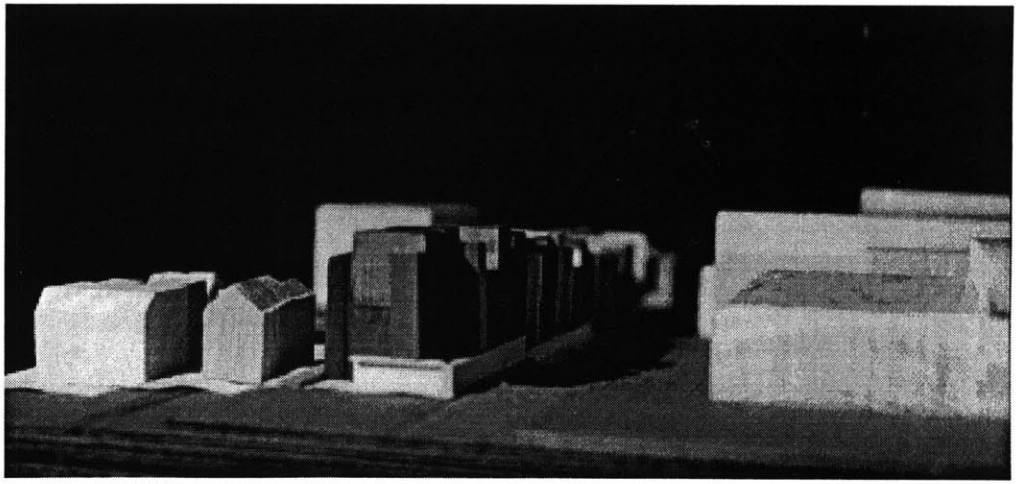
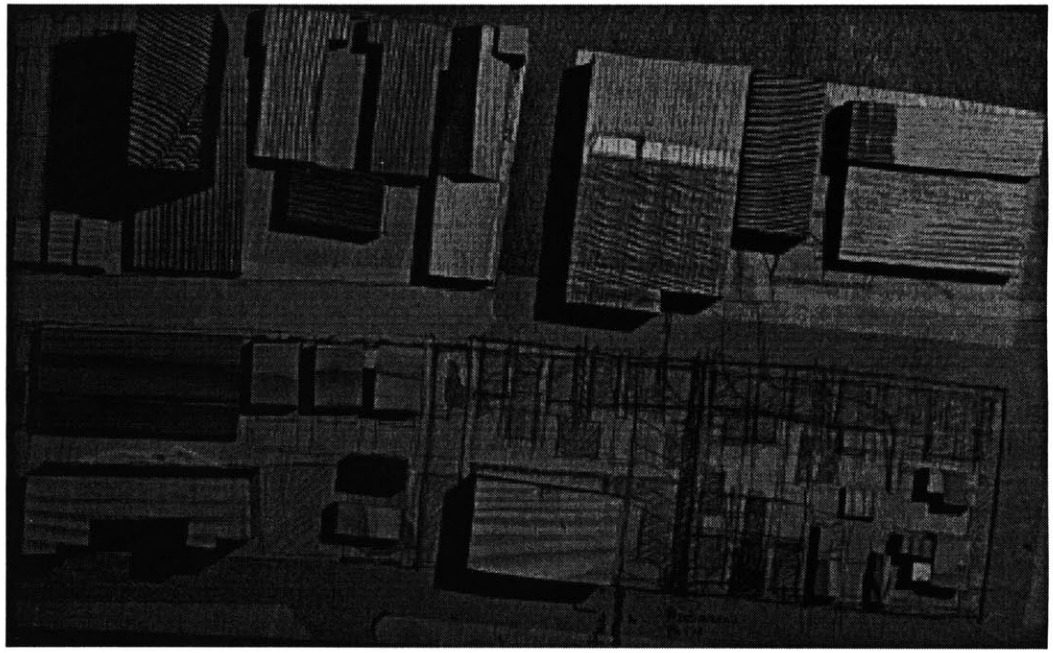


fig. 42

Figure 42 (right-bottom) view at corner of Pleasant and Green Streets.

# Concept

fig. 43



# An Exploration

The organization of the site is to be in keeping with the land use patterns already in existence. The front yards act as a transition zone or buffer between the dwellings and the street. The rear yards are intended to be more private, these yards may be sectioned of to creating private outdoor spaces that include private parking off an access road or alley that can acommodate some temporary guest parking. This area is linked to the front yards by a pedestrian path that breaks the row of houses. Here one set moves further back from the street to relate to the residential nature of the existing housing and the other set remains closer to the street to support more commercial traffic. The path continues across the street and between the Post Office and Senior Center to link the development to the square and the services it offers.

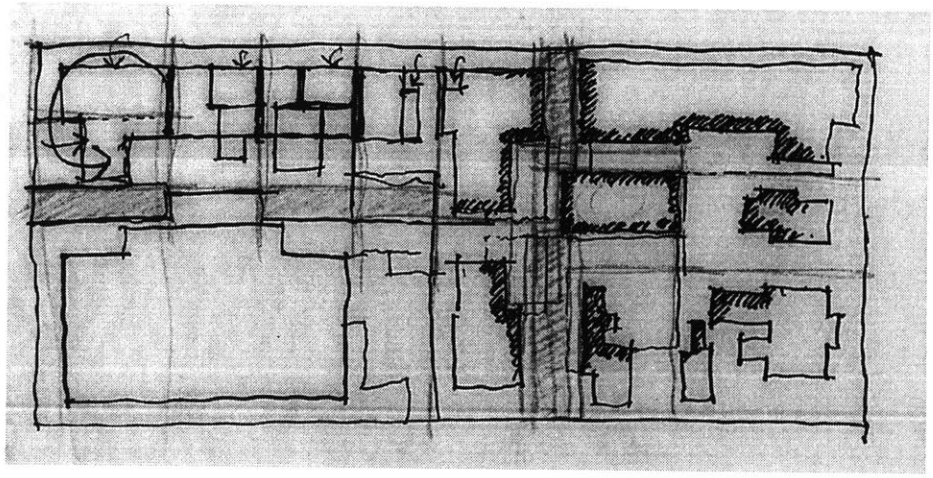
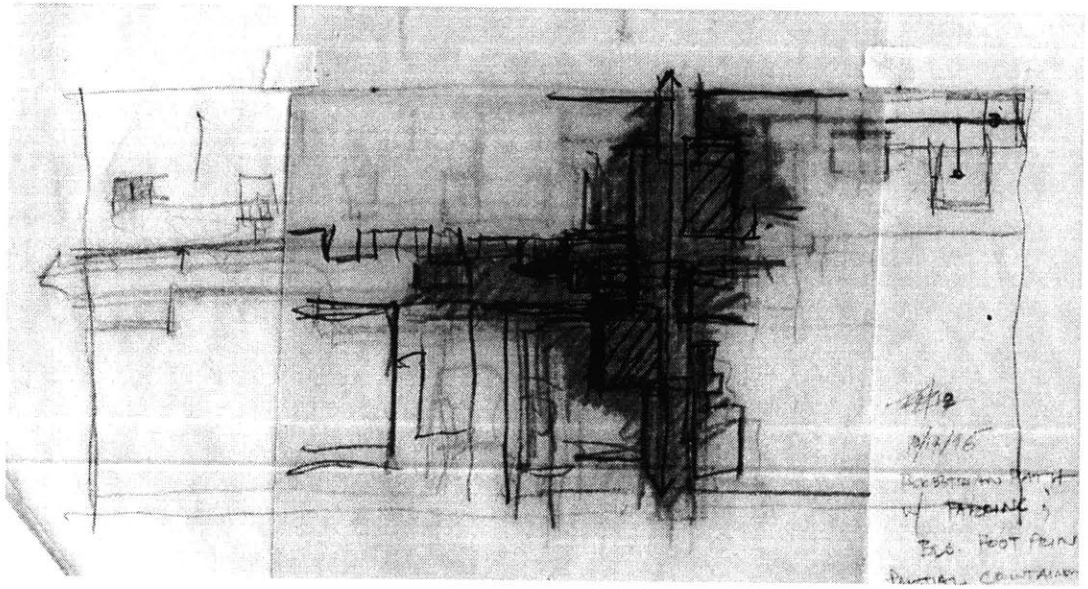


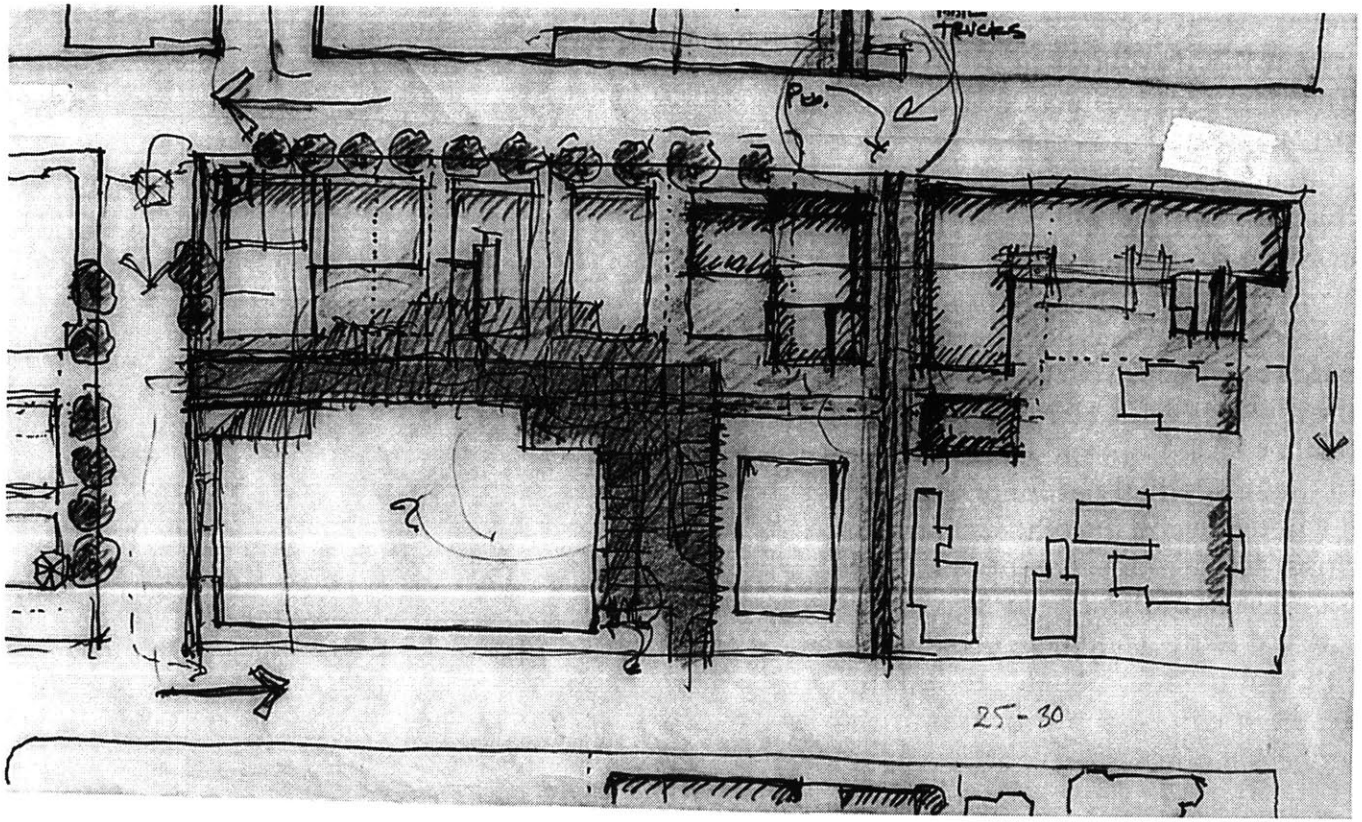
fig. 44

fig. 45

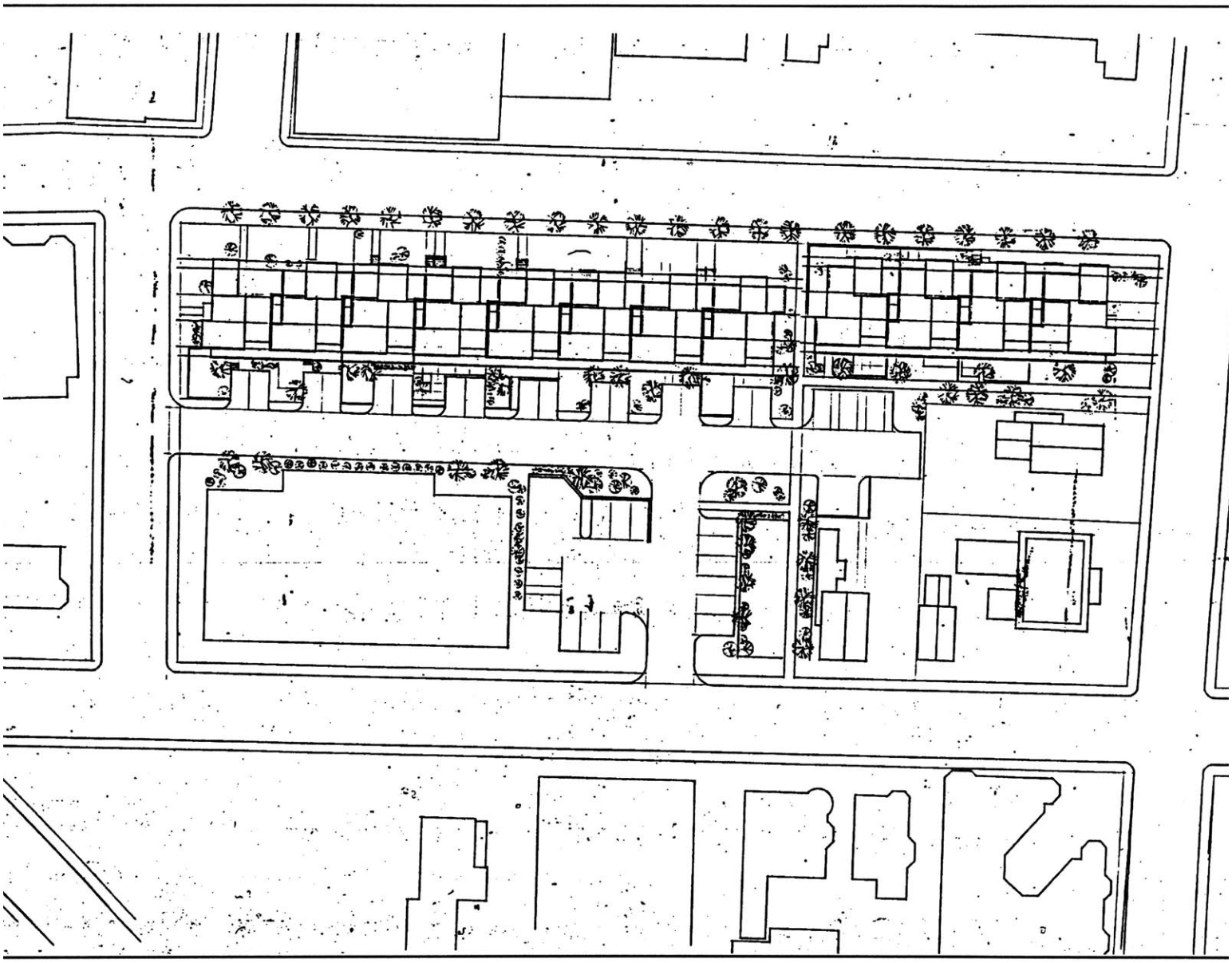


# Site

fig. 46




# An Exploration



**te**

fig. 4

fig. 48

# An Exploration

The nature of the structure determines the level of adaptability possible. Each system suggests its own set of advantages and disadvantages. These studies atempted to give further form to the idea of a system that allows for flexibility in three dimensions; giving the user the ability to adjust the floor levels with each intervention.

In (figures 48-50) the stair-core, which represents services and circulation within the dwelling, begins to indicate various zones for rooms and circulation as well as various levels of privacy. The structural concept was a post and beam system with infill panels. The pairing of the stair, separated by the firewall, seemed redundent but could have allowed for passage laterally from fire zone to fire zone. The structure of post and beams would behave independently of the party walls. The pitfalls of this system include the potentially obtrusive placement of the columns and the large size of many of the members.

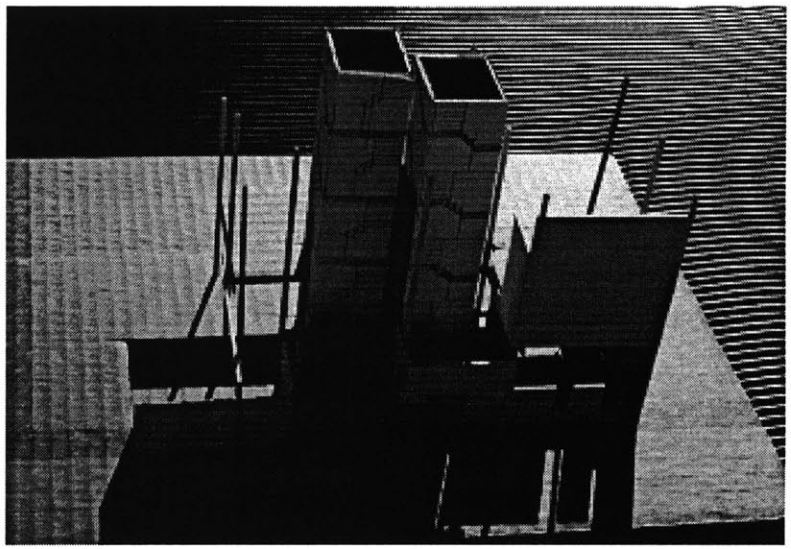


fig. 49

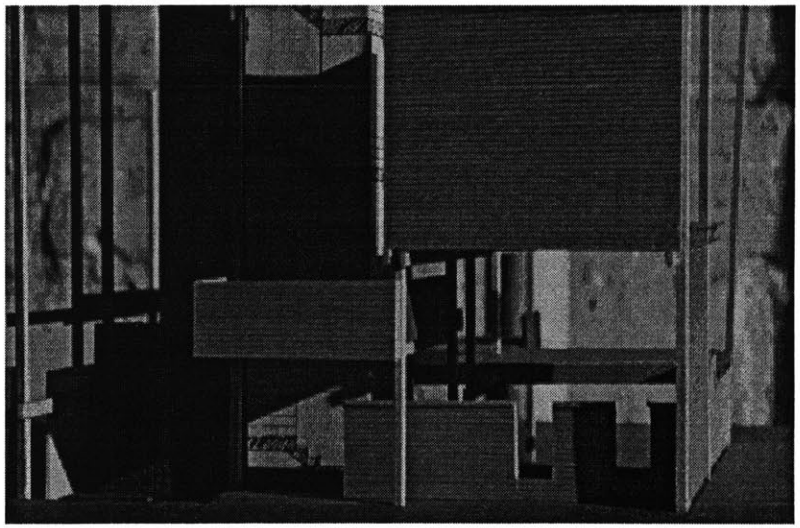


fig. 50

# Structure

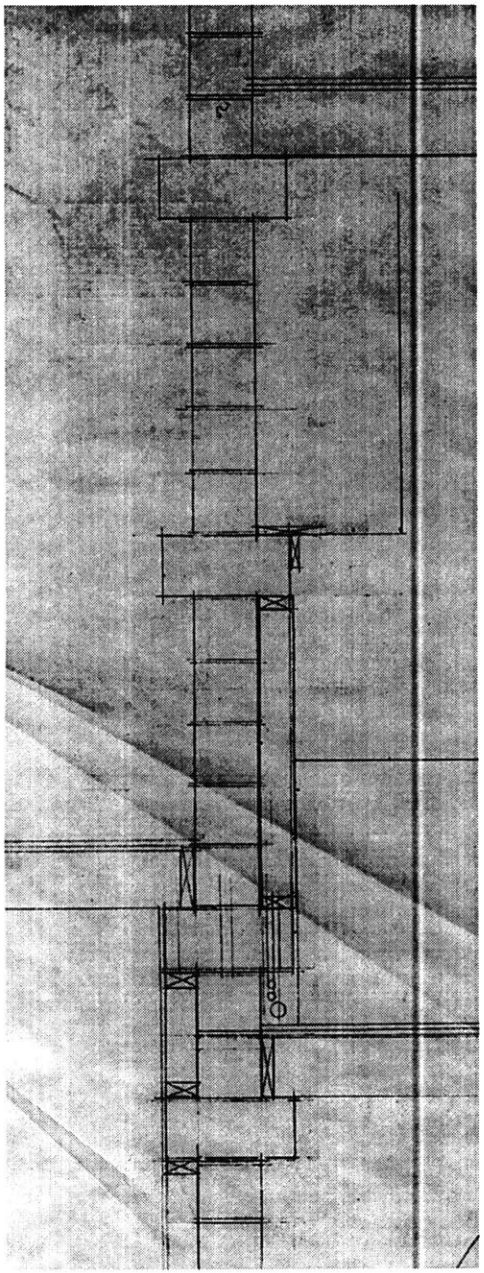


fig. 51

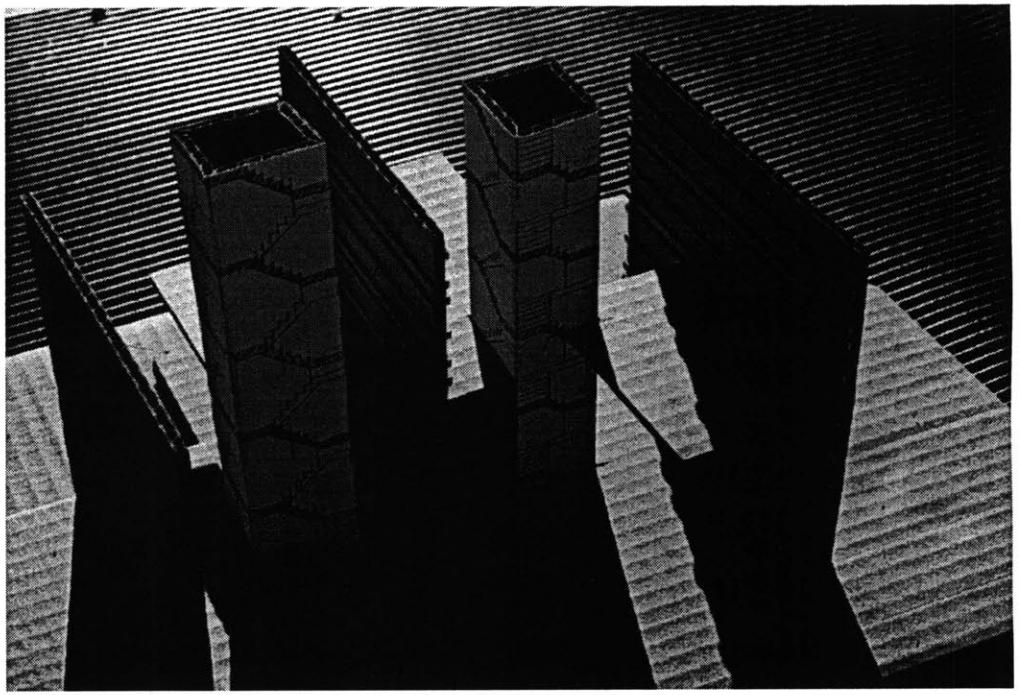


fig. 52

# An Exploration

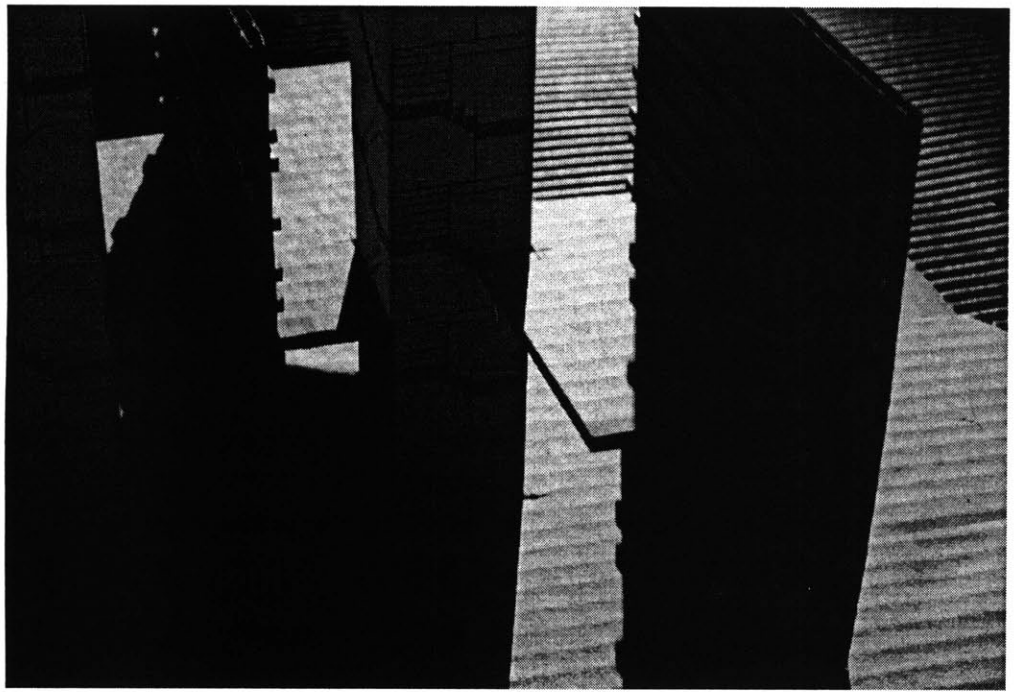


fig. 53

The system explored here (figures 51-53) was intended to work with commonplace building materials. The system a bearing wall system, incorporates conventional floor systems with concrete masonary units. The masonary wall is corbeled, these corbels occur at two different increments to provide a range of hieghts. The increments are driven by the 8" nominal size of the concrete units. So the corbels occur at 2'and 4' distances. The levels created would be served by a stair with three landings per story; two 4' total rises and one 2' total rise. It was intended that in the space created in the section of the wall by the corbeling services could be routed horizontally (fig. 51). These spaces could also be filled by stud construction to provide increased insulation or as desired. The appearance of the wall could be maintained to exhibit the systems potential to be changed.

# Structure

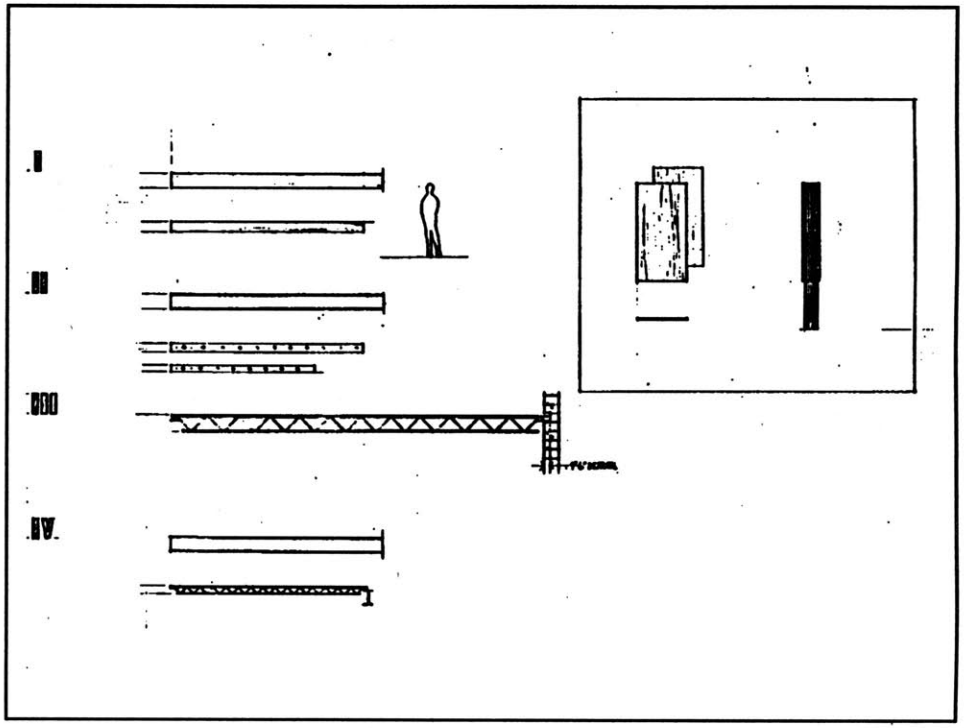


fig. 54

# An Exploration

The relationship of the size of the structural elements to the user is particularly inportant. Simply put, the larger the element the less likely it may be altered in any way. Unfortunately the larger elements can do more work with less frequency than the smaller elements given the similar task. This is the basis of these drawings (figures 54-56).

Two structural systems were considered other than the previously mentioned. Both are bearing wall systems, with different flooring systems (Fig.s 55 & 56). In (figure 55) a conventional woodframe or light gauge system is shown. A beam is required in either to span larger distances. The beam could fit into pockets in the wall provided at various levels. The primary problem of this flooring system is the distribution of services.
The other, (fig. 56) is an open web joist flooring system. The web joists acommodate services more reaily but do present problems in size and when partitioning spaces.

fig. 55

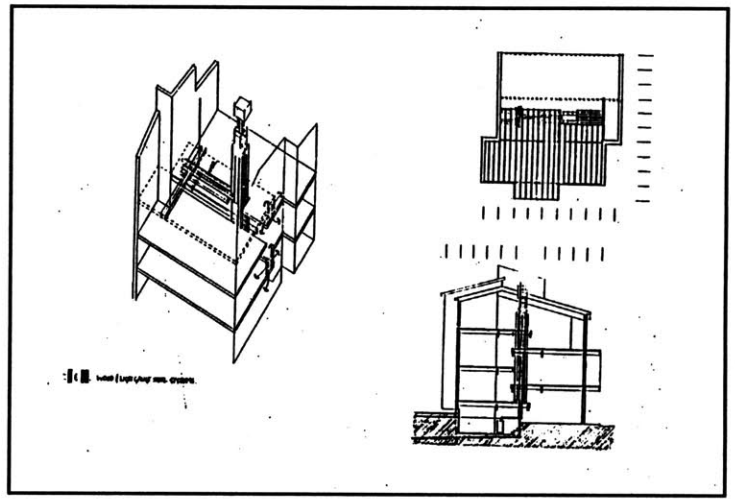
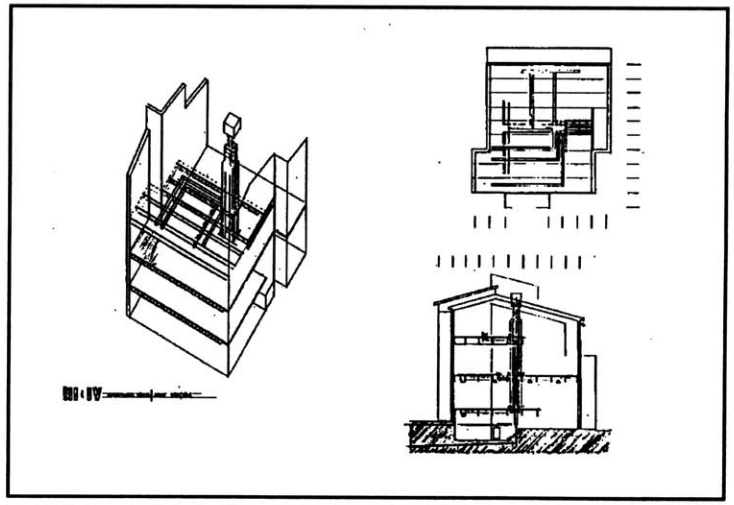


fig. 56



# Structure

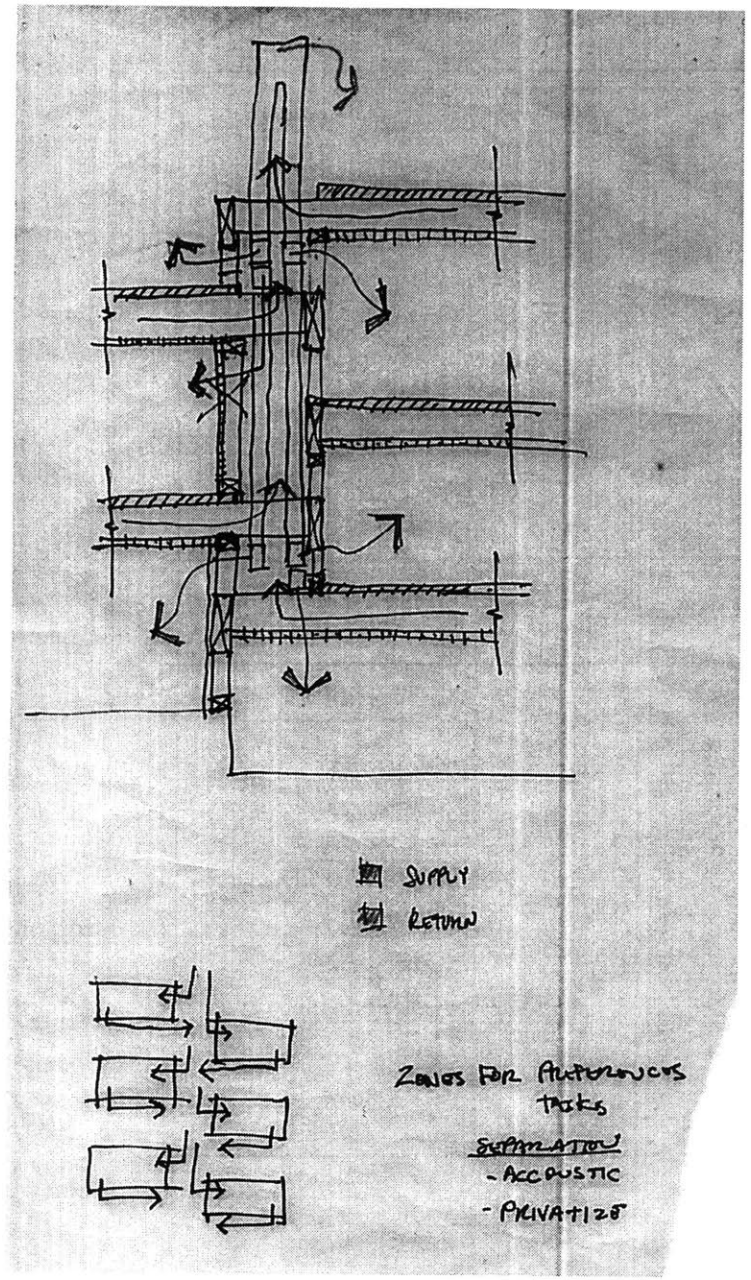



fig. 57

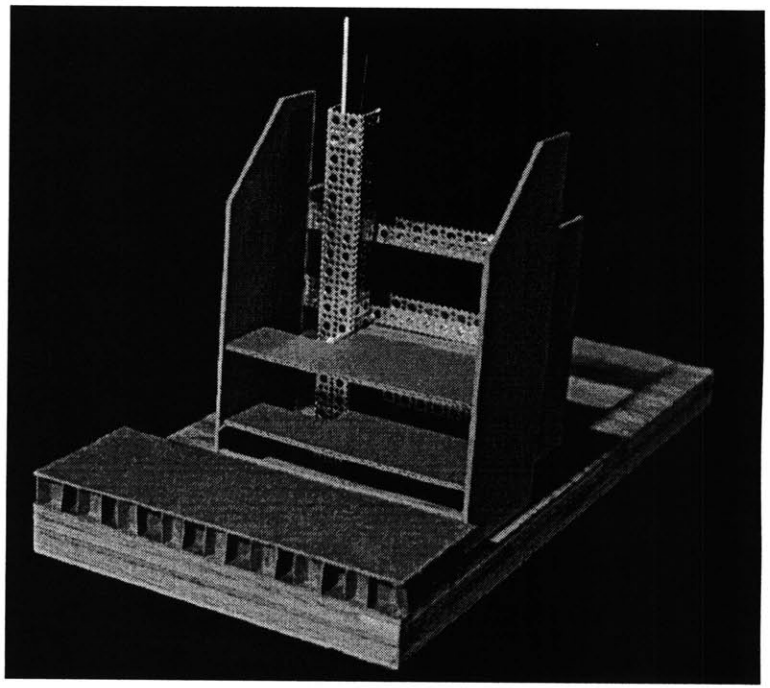


fig. 58

# An Exploration

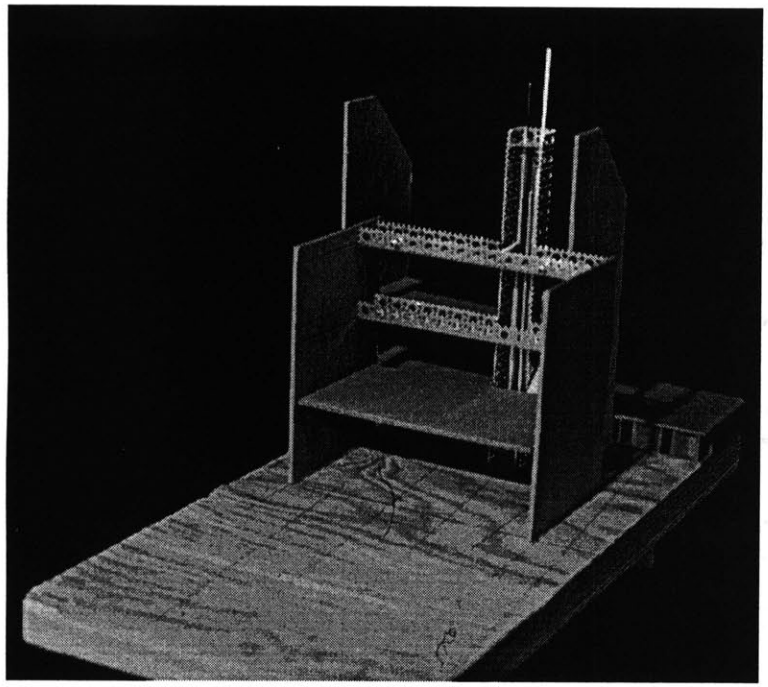


fig. 59

Together with the structure, the delivery of services such as HVAC, cabling, and water and sewer must be considered. A heat pump with auxilary heating and ventilation is used. The air trunks and the other services are combined into a vertical stack with two horizontal runs that serve all levels.

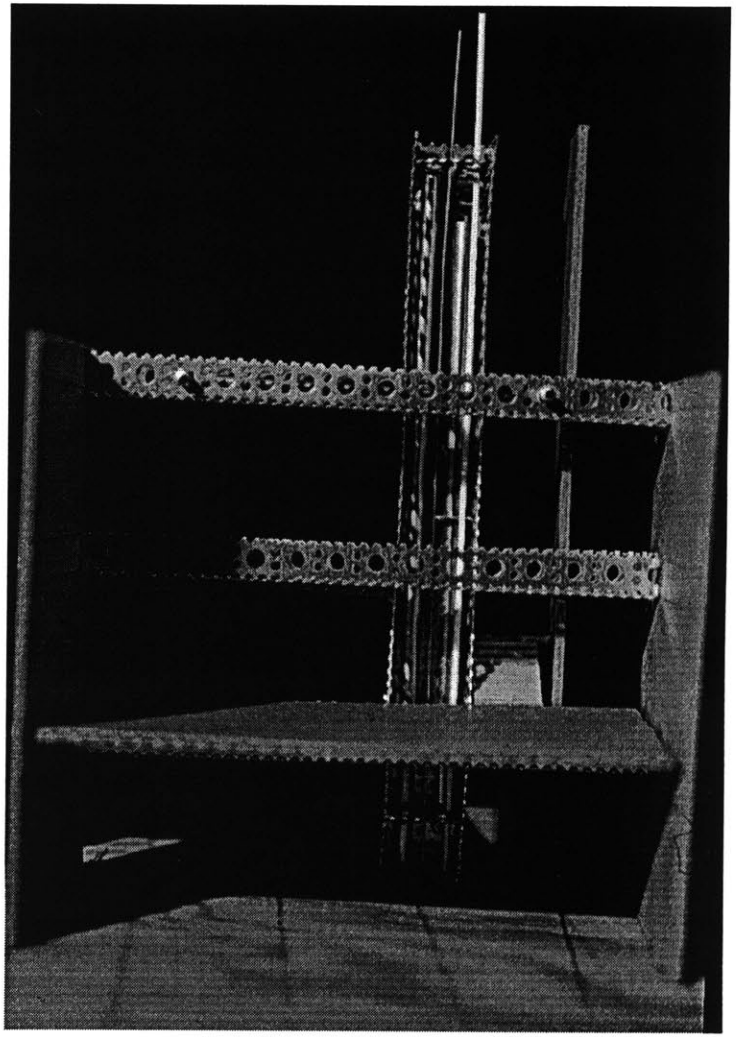


fig. 60

# Systems

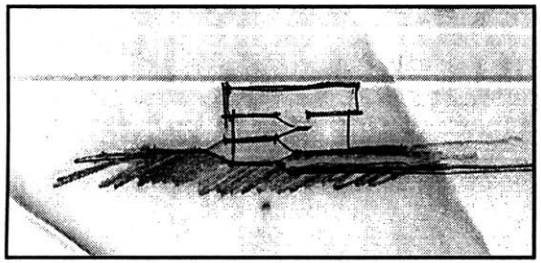


fig. 61

The section was a very important tool in the organization of the spaces. here issues of structure, services, and circulation can be examined.

In the initial sketch to the left (figure 61), there is a change in grade from the front to the back of the unit. This is a possibility over most of the site. Also in the early sketch the levels are split allowing for communication between levels as well as a variety of floorplate sizes and ceiling heights. The section begins to imply two zones, upper and lower. The zones could imply different degrees of privacy or even a units potential to be divided vertically. In the drawing to the right (figure 62) constraints have been added to the elevation, a fixed roof line, established by the local code, and a regulating line at top of the first story.

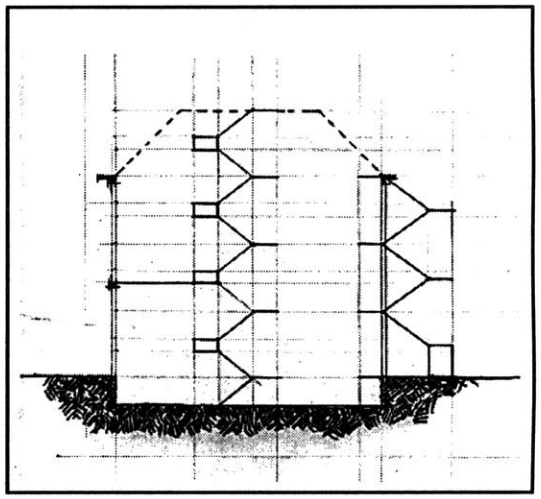


fig. 62

# An Exploration

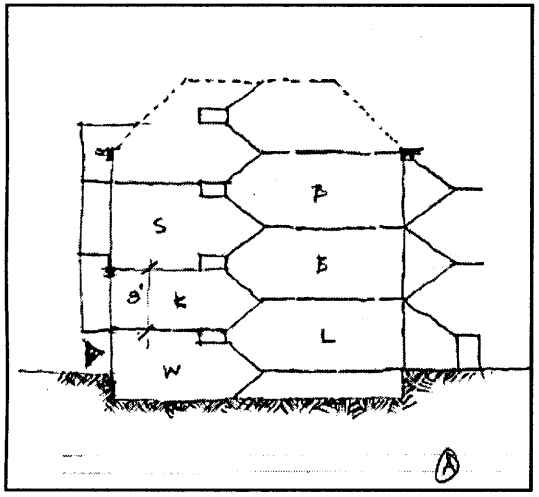



fig. 63

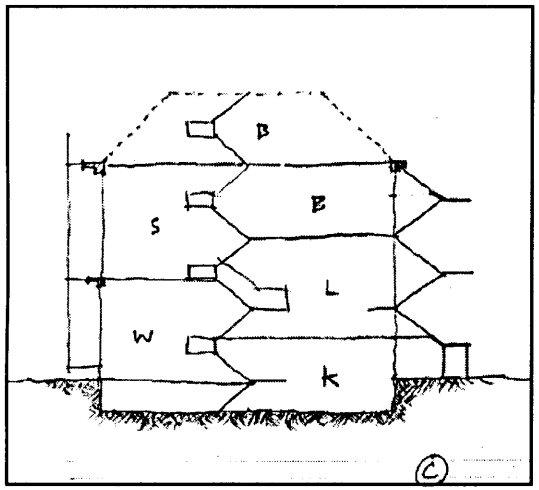



fig. 65

In these drawings (figures 63-66) possible configurations of program and units are explored. A variety of layouts are possible within the framework of circulation, services, and set building envelope established for this exercise.

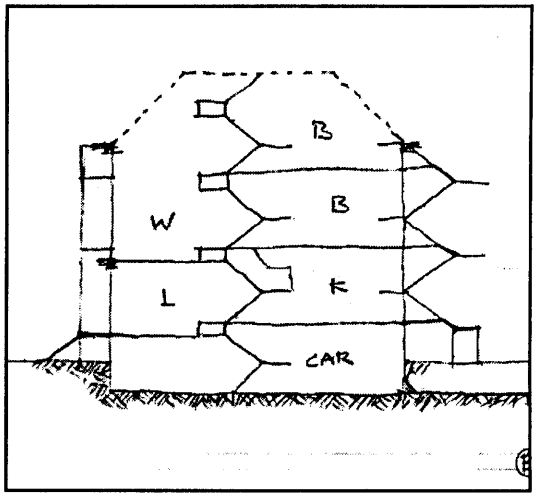



fig. 64

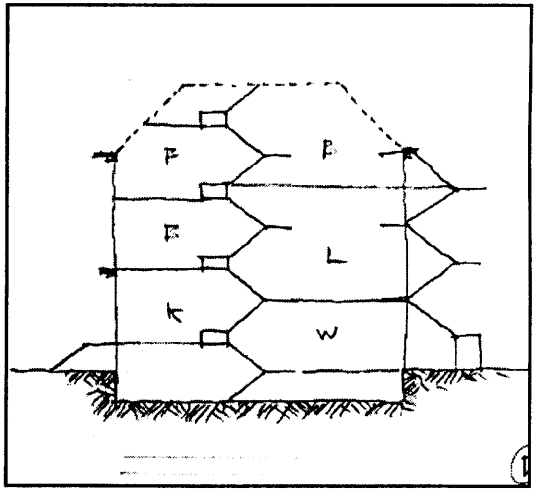



fig. 66

# Sections

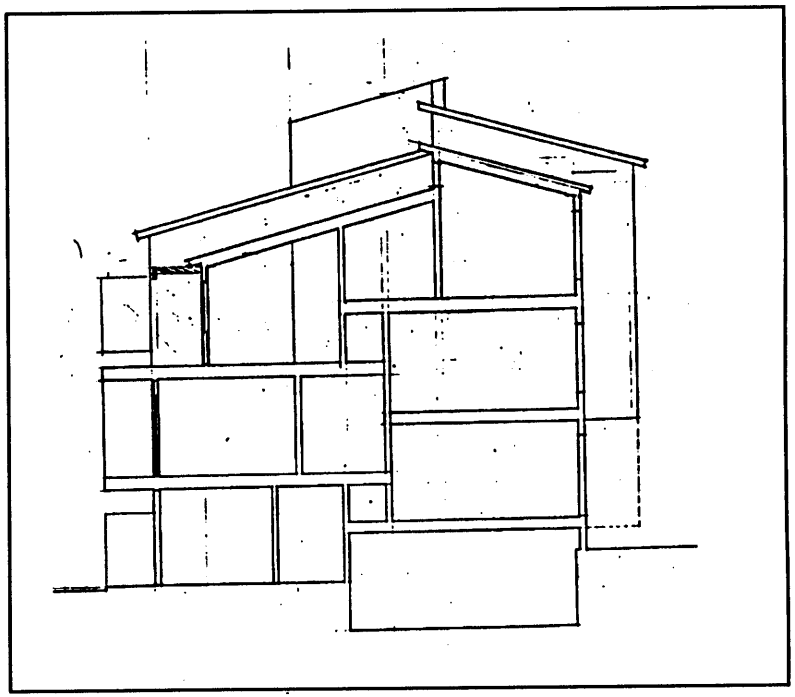


fig. 67

# An Exploration

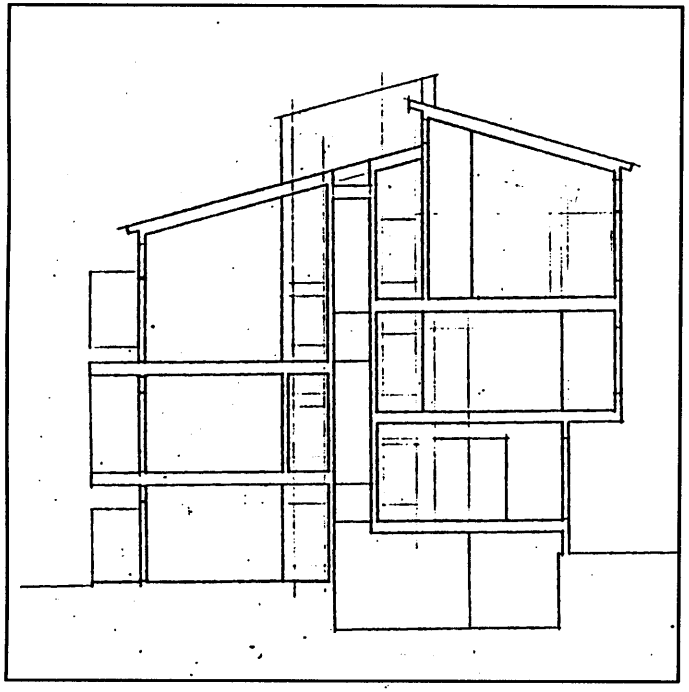


fig. 68

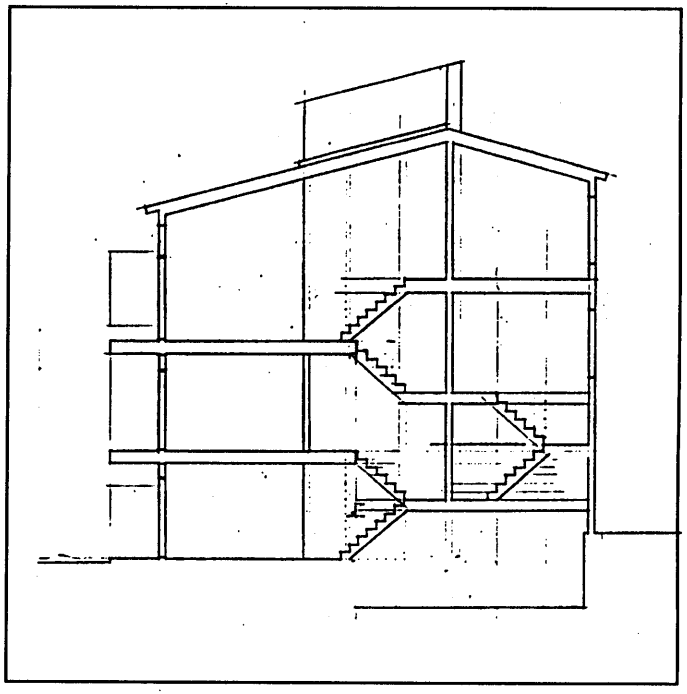
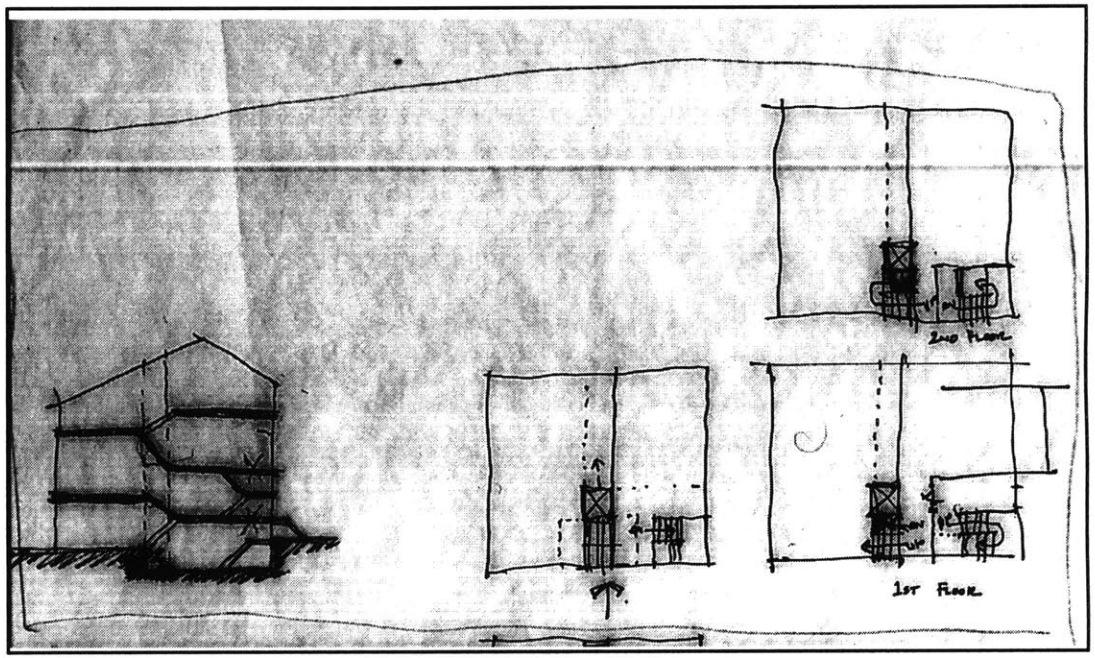


fig. 69

# Sections

fig. 70




# An Exploration

In the plans various shcemes were tested against a criteria of circulation, which can support multiple units, the location of private functions and 'wet' functions, dependent on the serivce trunks, and a satisfactory number of different sizes for different types of working conditions.

Figure 72, at right, is a sketch of different entry conifgurations. The stratedgy at this point in the project was to have a minimal unit size of 500 sq. ft. so that a combination of these could yeild a variety of dwelling sizes and ownership conditions. Together the units add up to 3500 sq. ft. a dwelling size that could hold two home offices and a number bedrooms. As needed the dwelling could be subdivided into smaller units. At one point it seemed desirable to allow lateral movemnet into adjacent units, the party walls creating fire zones. Unfortunately this idea went undeveloped.

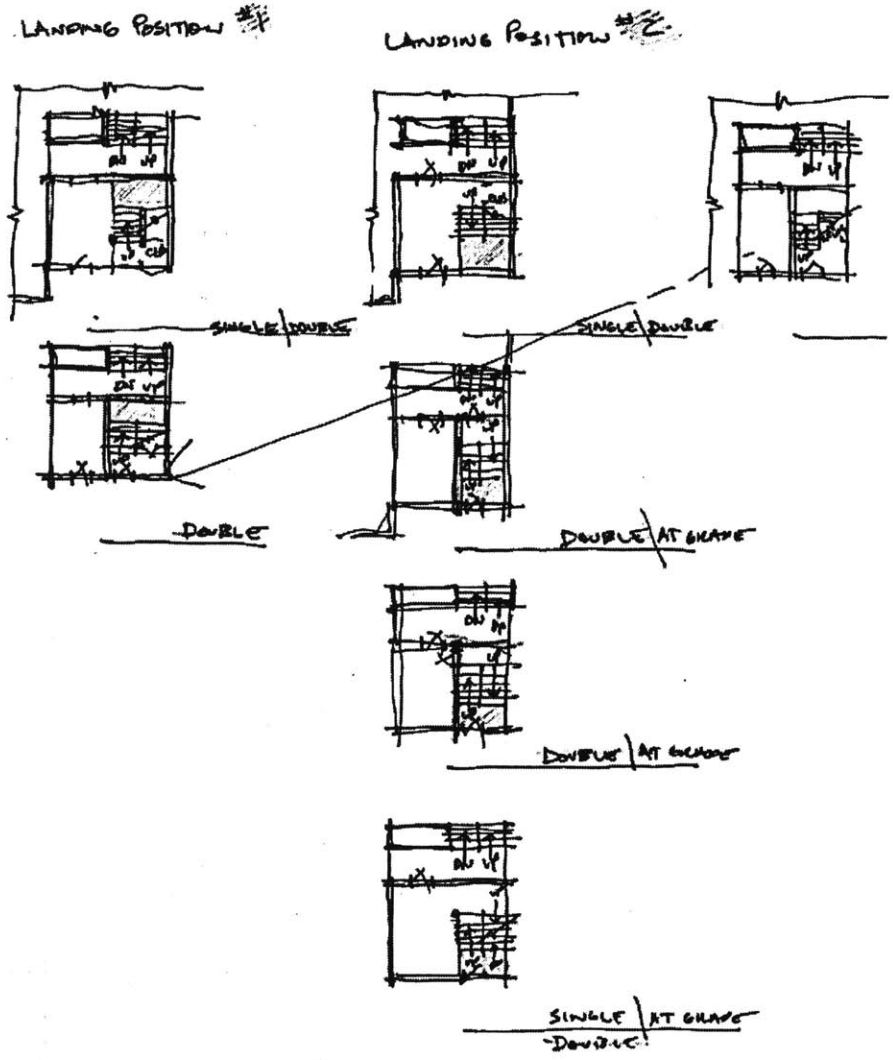



fig. 71

# Plans

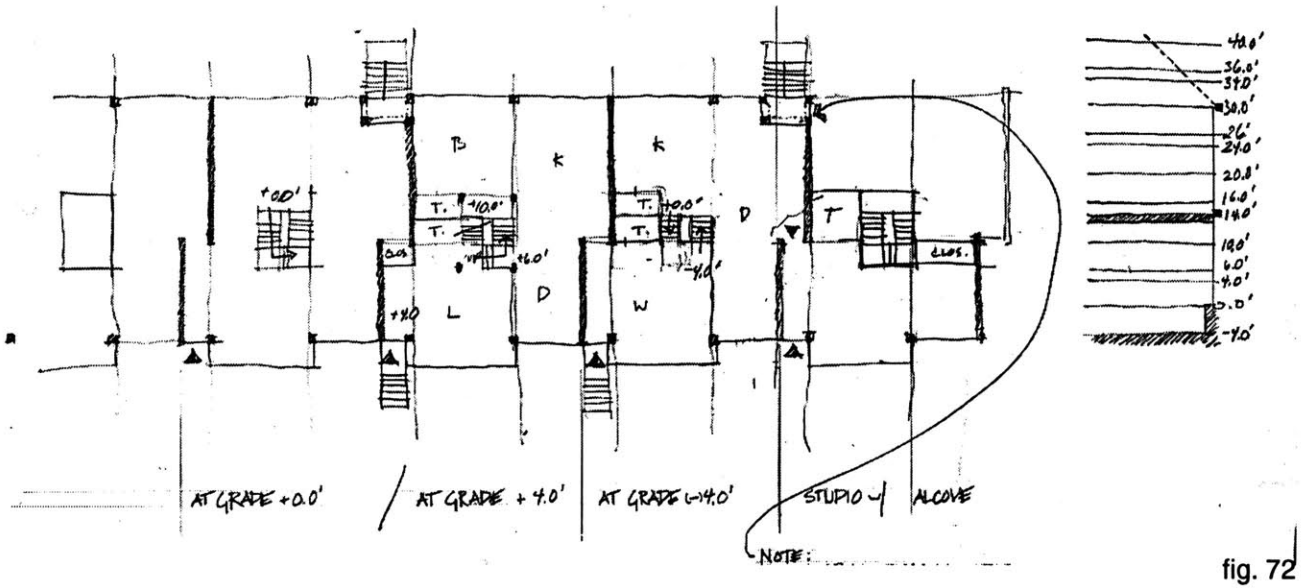



fig. 72

How the units related to each other was tested with a similar criteria to the unit plans themselves. The conditions created by pairing, mirroring and repeating the patterns of the plans were looked at in (figures 72-74). The various types of enterances had different affects on the site and relationship of the units.

In (figure 72) units are repeated with the same orientation. Admittedly a long stretch of this would create a monotonous condition, however it seems more simpathetic to the present settlement patterns of Cambridge residential neighborhoods. Also the nature of the front yards are more defined.

# An Exploration

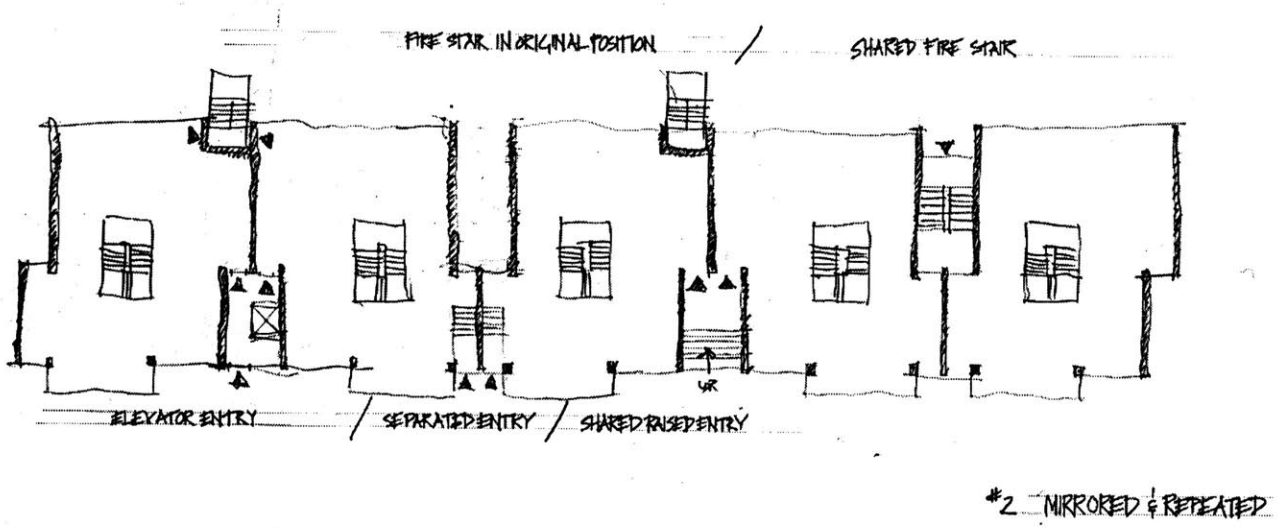



fig. 73

Mirrored and repeated units were explored in (figure 73). This relationship created ambiguous spaces outside the units whose ownership may be unclear, therefore creating undesirable conditions.

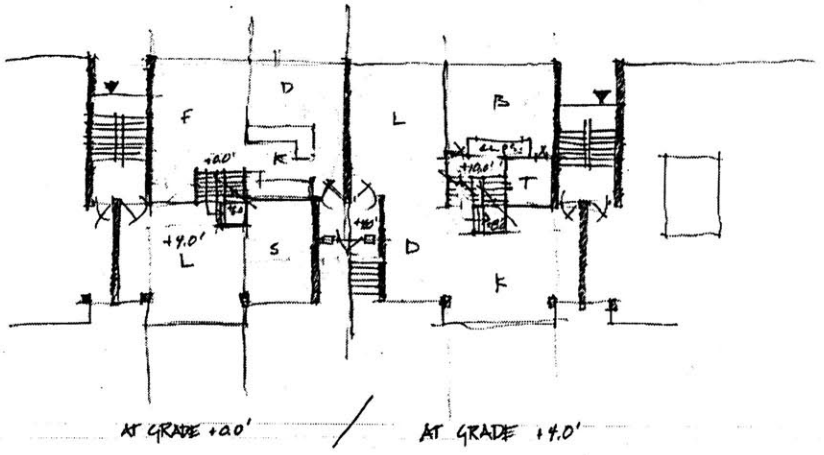



fig. 74

# Plans

# An Exploration

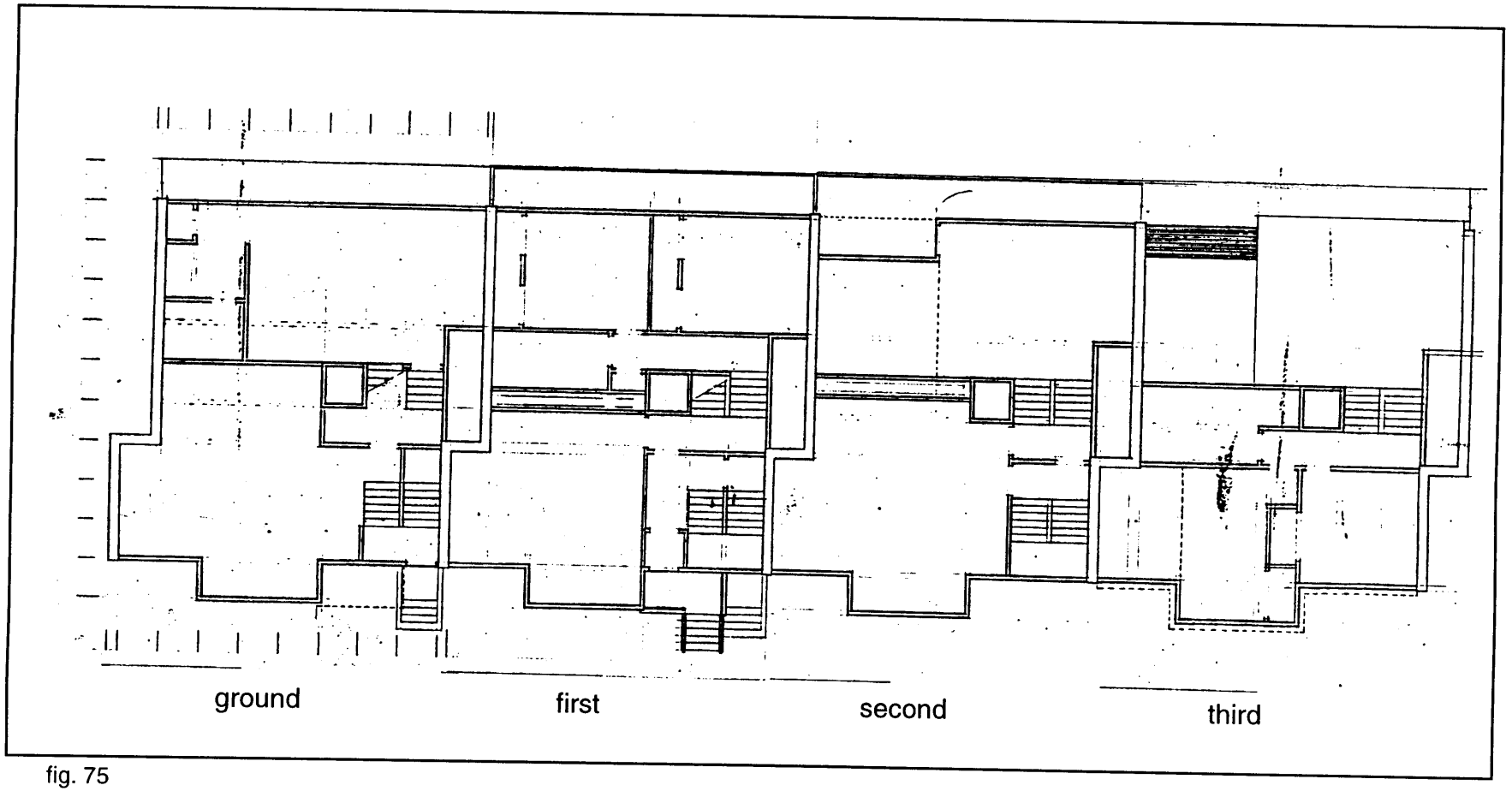
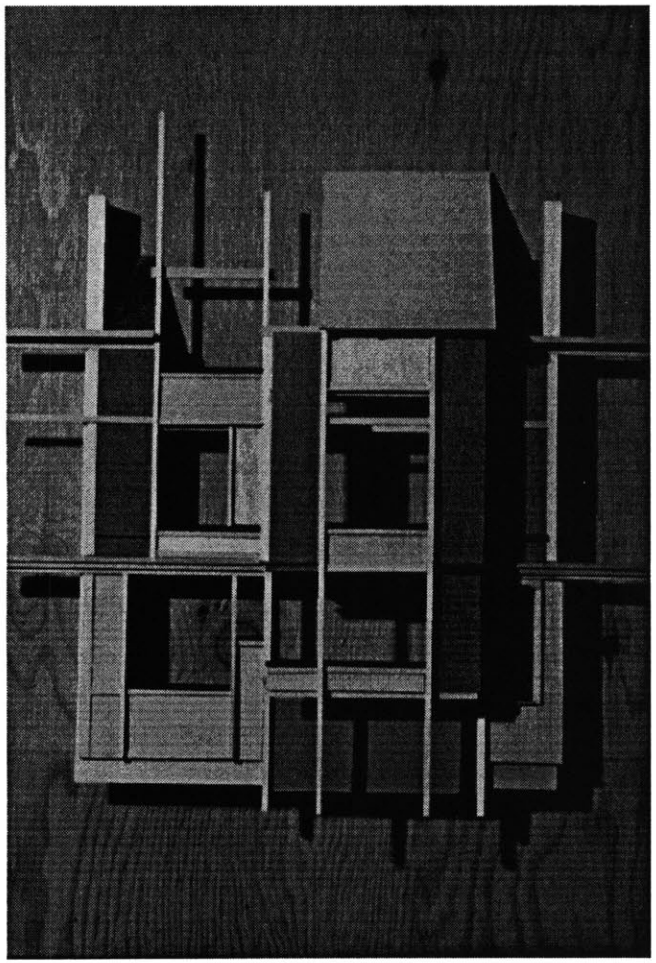



fig. 75

# Plans

fig. 76



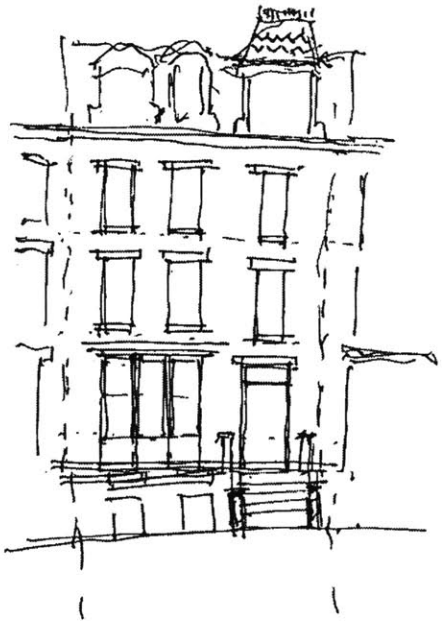
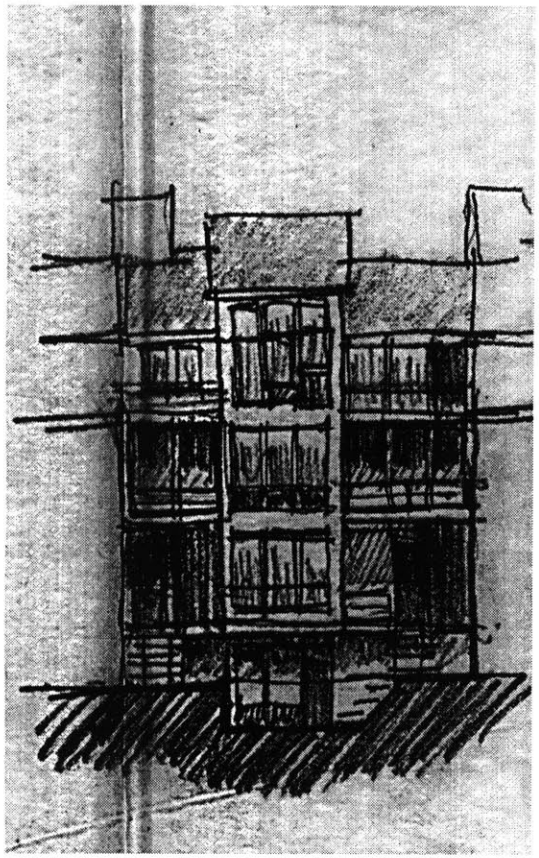
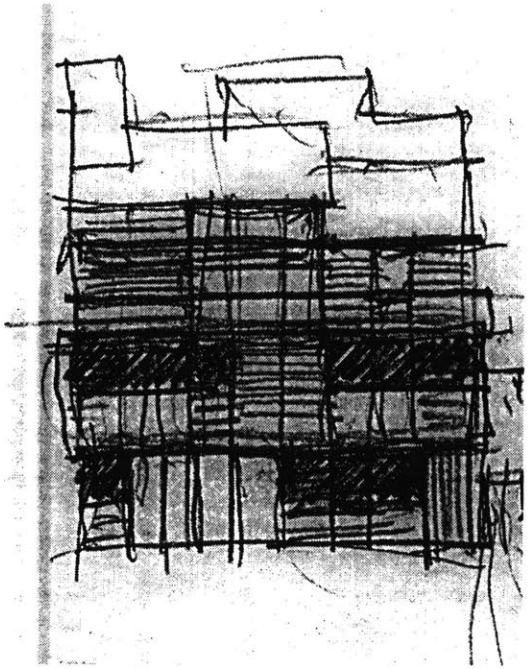


fig. 77

# An Exploration





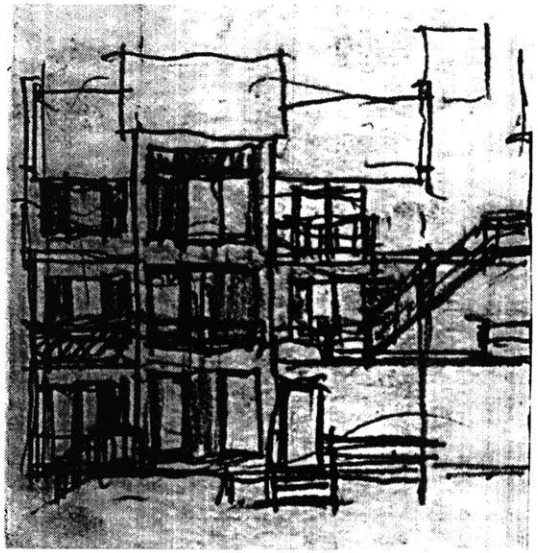


fig.s 78, 79, 80

# Elevations

The elevations proved to be the most difficult, here what people do with the interior meets the street . It seems this is one area of the design, aside from the structure, that the architect's influence should be very strong. The constraints should include sizes appropriate to the context, elements that are easy to replace and modify within the desired framework.

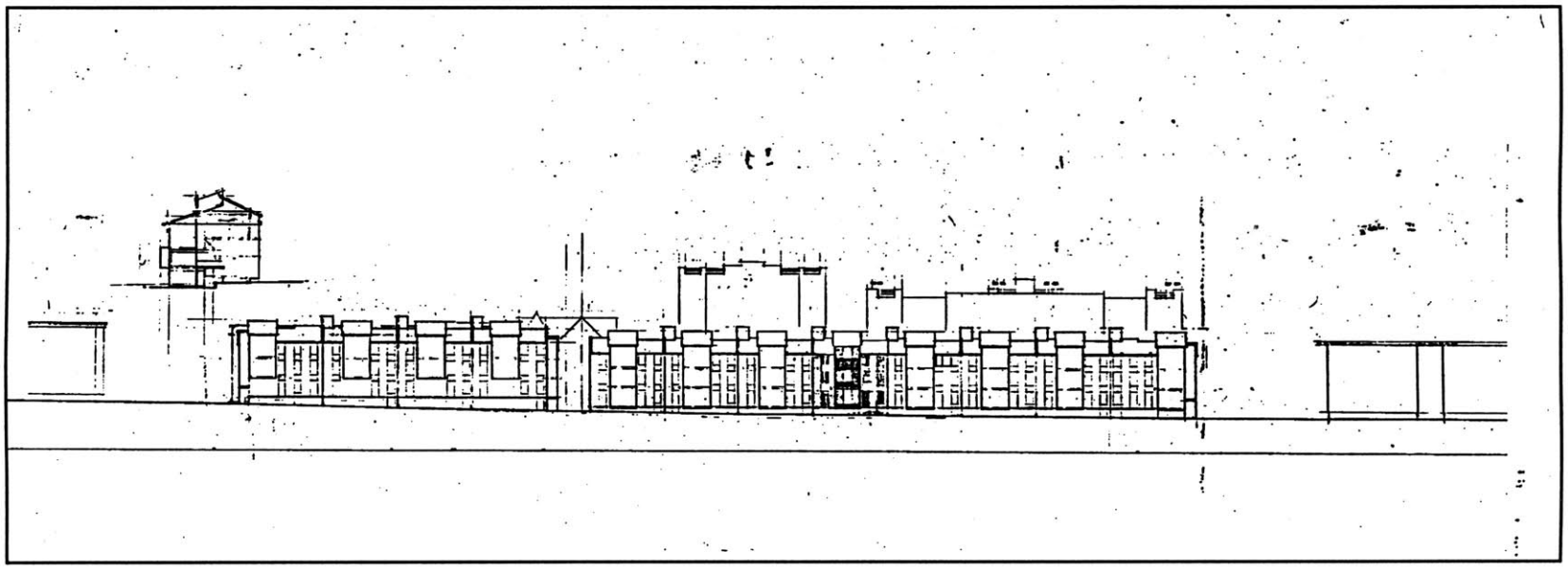


fig. 82

# An Exploration

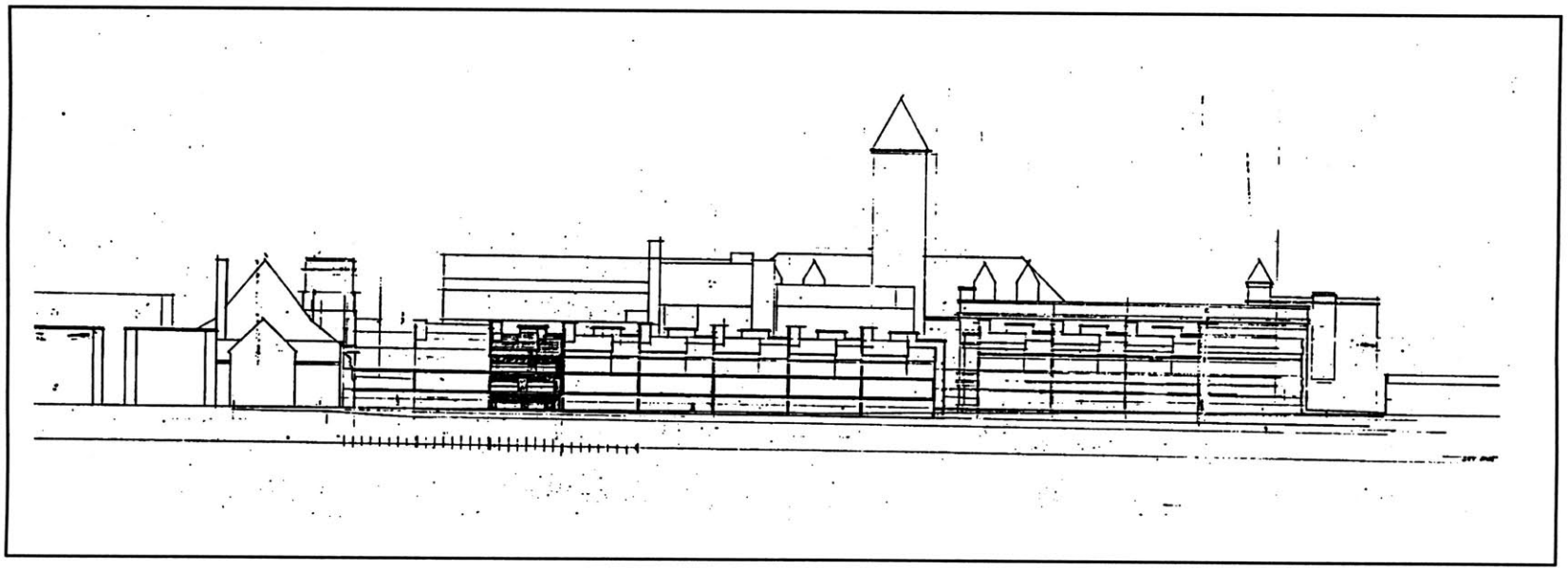
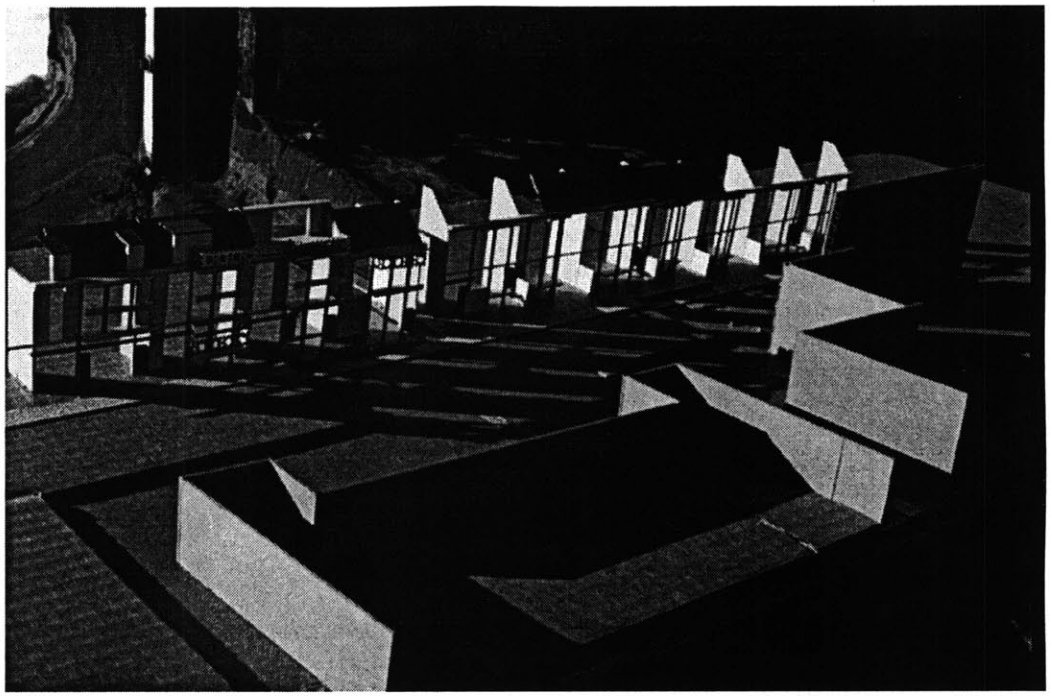


fig. 82

# Elevations

fig. 83



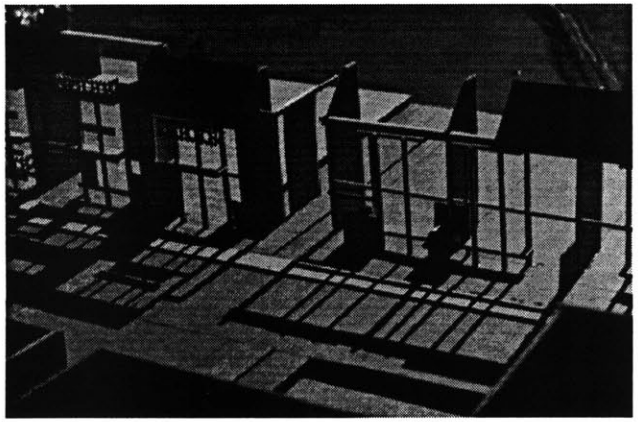


fig. 84

# An Exploration

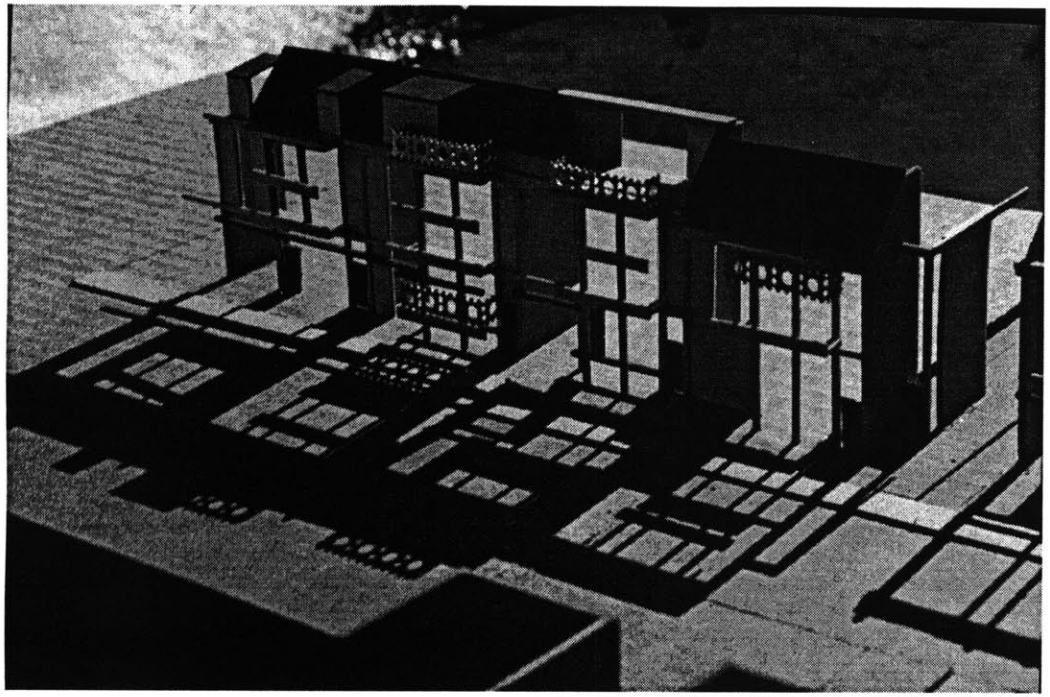


fig. 85

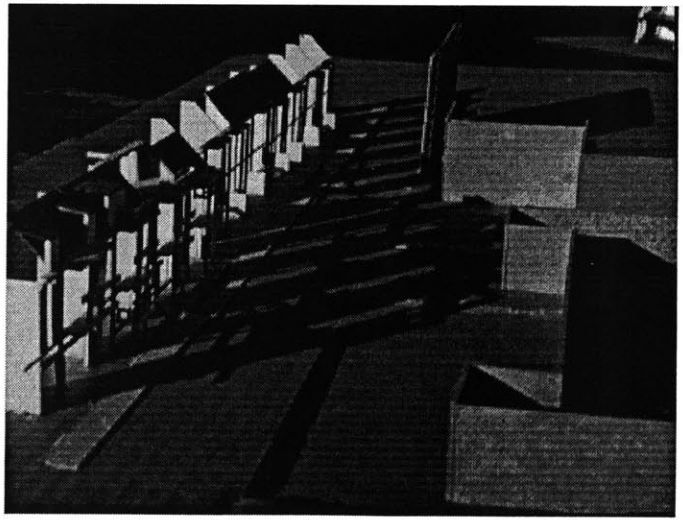


fig. 86

# Elevations

# CONCLUSION

*Retrospection, though suspect of being the preoccupation of conservators, can also serve as an active agent. As an antidote for an elated sense of progress that seizes us from time to time, it shows our achievements in proper proportion and makes it possible to observe where we have advanced, where not, and where, perhaps, we have retrogressed. It thus can suggest new areas of experimentation.*

—Anni Albers
On Design

How could one further this investigation or exploration is the question that comes to mind at the conclusion. This sentence echos in this author's mind as 'what I should've done.' Indeed, what I found I had done was to uncover more questions and fewer answers. The problem exploded from the seemingly simple organization of a dwelling type for somone choosing to work at home, into a larger examination of the role of an architect and an approach to design.

Standing somewhere rooted in the past, looking toward some future event marked by change and the expectant obsolecence of his design is the architect, revolving around him is a universe of the "intangible...existing as a permanent resevior from which the potential of life may be drawn..." Here the struggle becomes the ability to see and recognize not only what is wrong, but what is inherently good, tested by time and place. Any failure of the built environmnet may be noted as a misalignment of values, caused by outside forces or an initially defective reading. Our cities and building are artifacts of our governing, social and economic systems; the imprint of our values and the way we visualize our lives is embodied in them.

In order to build we must visualize, but how can one individual visualize an enumerable variety of lives. That is why design should be approached, not as the search for a closed solution, but a solution that enables others to question and find suitable and statisfactory solutions. But we must build and therefore we must make some decisions as to how. If our solutions are open and invite some level of intervention by others, we can rely on those solutions to provide a satifactory framework for our lives.

The architect can search for form that mediates between the structural and aesthetic concerns of a building, the restrictions imposed by law, time, and technology, that comprise its 'physical history' and that of the desires of its inhabitants. Within this form are levels or 'sites' of intervention where what the architect has left supports a range of element that can be changed. This can occur on various scales, representing various levels of control available to the inhabitant.

The task of an architectural thesis seems to be two-fold, that of a physical exploration and that of an idea supported by research and enriched by the thoughts and findings of others. During this thesis I tapped into an incredible universe of ideas and charting a small corner of that universe has been a large aspect of this thesis. The evidence of this is the bibliography, which was uncovered through a network of ideas by people choosing to think of architecture in non-finite terms but rather as an ongoing legacy of 'physical history' to be added to and studied.

# Notes

1. Chang, The Tao of Architecture, Princeton University Press, Introduction.
2. Kepes, Education of Vision,..., Introduction.
3. Habraken, Transformation of the Site, Atwater Press, Prologue.
4. Habraken, "The Power of the Feild", exerpted from a lecture given at MIT.

# Credits

All illustrations and photos by James Rissling (author) unless otherwise noted.

| | |
|---|---|
| fig. 6 | Bainbridge Bunting et al,Survey of Architectural History in Cambridge, Report Three: Cambridgeport, Cambridge His torical Commision, Distributed bt MIT Press, p. 11. |
| fig. 7 | Ibid., p. 67. |
| fig. 8 | Ibid., p. 58. |
| fig. 20 | Ibid., p. 39. |
| fig. 21 | Ibid., p. 40. |
| fig. 22 | Ibid., p. 67. |
| fig. 23 | James Steele, Eames House, Phaidon, p. 19 |
| fig. 24 | Ibid., p. 11. |
| fig. 25 | Ibid., p. 11. |
| fig. 26 | Herman Hertzberger, Lessons for Students in Architecture, Uitgeverij 010 Publishers, p. 158 |
| fig. 27 | Ibid., p. 159. |
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| fig. 29 | Ibid., p. 158. |
| fig. 30 | Ibid., p. 157. |
| fig. 31 | Bunting, Houses of Boston's Back Bay, Belknap Press, p. 55. |
| fig. 32 | Ibid., p. 36. |
| fig. 87 | Franz Maserel, The City, Schocken Press. |

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