CONTINUITY and CHANGE through TRANSFORMATION: A mixed-use design in a Cape Cod harbor

By Peter Alastair Haig

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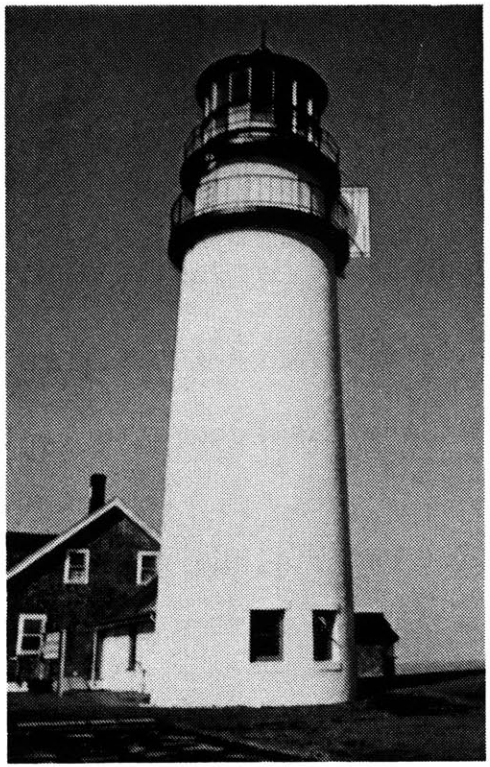

2.

ABSTRACT

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Design of a mixed-use development in a Cape Cod Harbor

By Peter Alastair Haig

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Change is an ongoing, unavoidable process that may occur for many reasons and in many ways. In this world of uncertainty and often unwanted surprises it is comforting to know that there are some aspects of our physical and social environment that remain constant while others are changing.

This thesis examines various attitudes towards new and old, towards continuity and change. It then centers on the idea of transformation which acknowledges the necessity of change while still respecting the positive aspects of what exists.

This idea of transformation is demonstrated in general through diagrams, and specifically through a design of a mixed-use development in the harbor at Woods Hole on Cape Cod.

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Christy for her infinite patience

Jill and David for all their help

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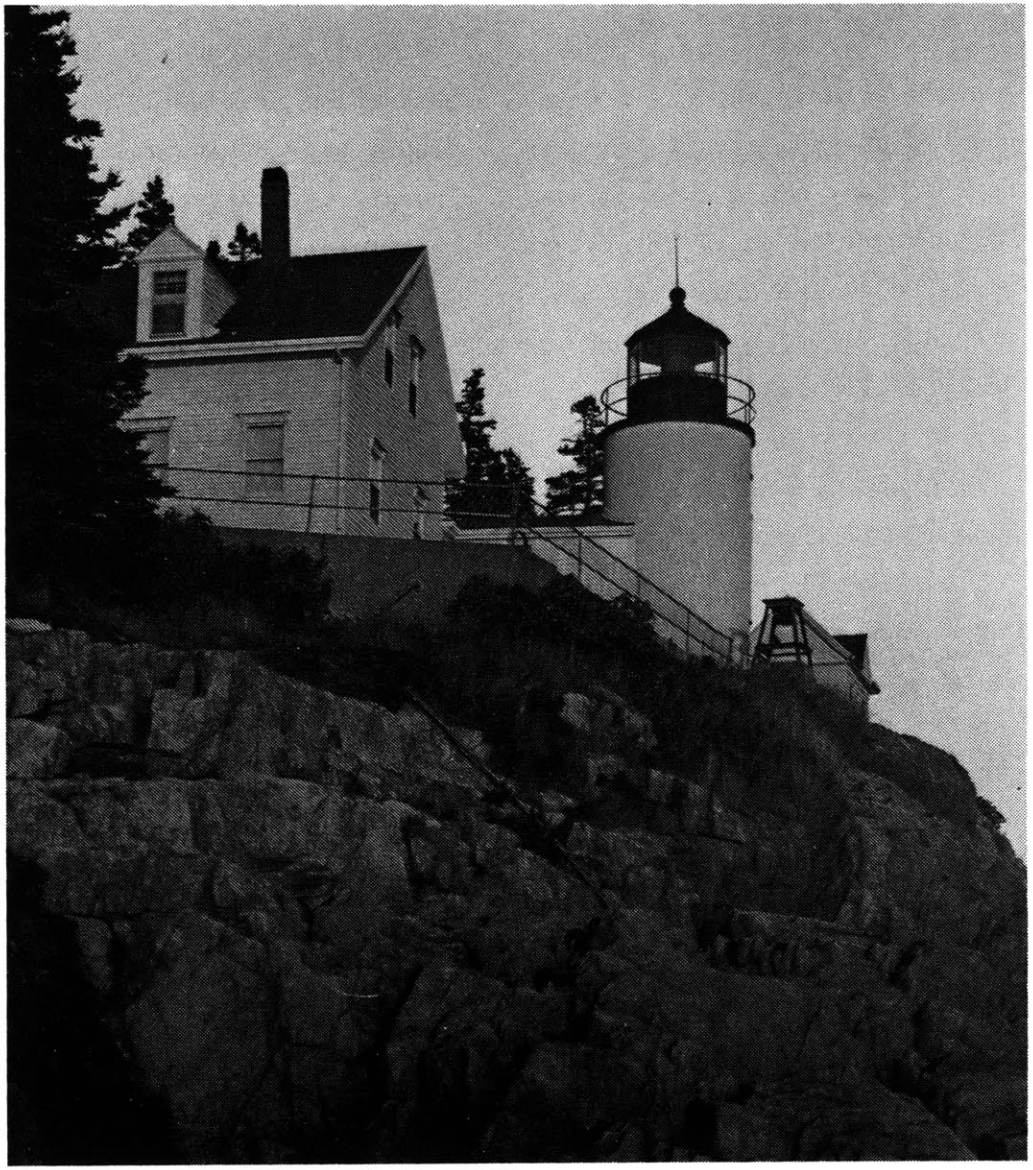
6.

ON CHANGE

Change is inevitable, it cannot be prevented, and need not be promoted. It will happen.

Architecture has always been an expression of the social, intellectual and spiritual state of a culture manifested through available technology, in response to the environmental forces and philosophical movements of the time. Past intelligent cultures left pieces of architectural form which chronicled their spiritual and intellectual consciousness and the environmental conditions in which these cultures developed.

The forms were appropriate at the time but were not and are not perfect. At no time is an architectural form permanently or ultimately sacred. The continual evolution of cultures and the ever-changing environment demand a continuous transformation in the



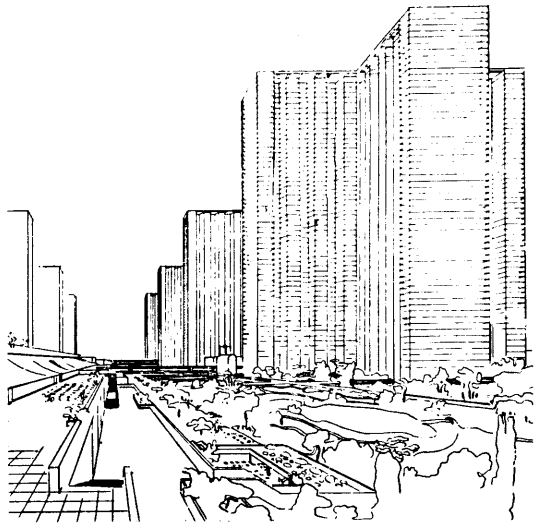
forms of architecture.

If we could look at the history of architecture from a great distance, architecture in this century would appear as a disturbance in the line of time. Since we evolve from what has preceded, a brief look back might help to illuminate our present way in architecture.

Between 1914 and 1945 occurred some of the greatest global traumas of all time. First, World War I, second the Depression, third the Second World War, and fourth, the first Marxist Revolution.

The wretched smell of war-ravaged Europe left the populations eager to forget the past and all that led up to these recent disasters. "Let's wipe the slate clean," "let's begin again," "let's start from zero," became the mottos of the post-war years as the populations rushed off to rebuild Europe. In many places, "starting from zero" was not hard. There was nothing left but the people themselves. So there was war-torn Europe, with centuries of architectural heritage in ruins, trying to disassociate itself from centuries of development - something akin to a cultural "lobotomy."

Meanwhile several young architects of the leftist persuasions found some difficulty with the architecturally proficient but intellectually stagnant Beaux Arts tradition of teaching. They seized the opportunity for a new and totally "Modern Movement" in architecture. Here was the Architect's"ultimate dream" "to start from zero." The recent rise of the machine age equipped these architects with the tools to do just that.



LeCourbusier's "Dream of An American City", 1925

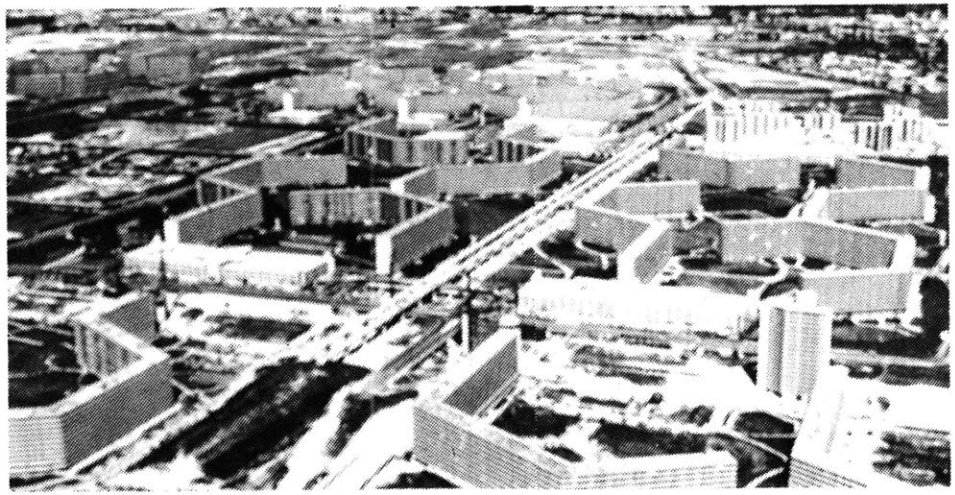
One of the goals of the new "modern" architecture was to be non-bourgeoise as possible. "Less was More." Everything of (what had historically been called) beauty, which was synonomous with the wealth and prestige of the bourgeoise was stripped off. Anything which smacked of decoration or elaboration would receive the ultimate berailment: "how bourgeoise." In came the purely

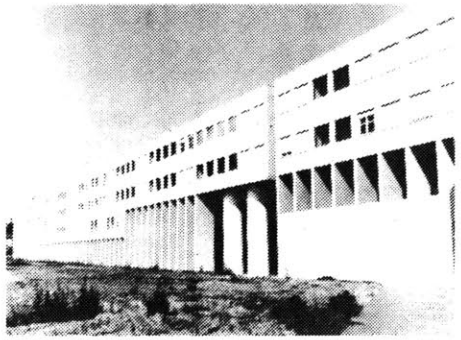
functional-nonornamental glass boxes of all shapes and sizes for any and all purposes.

To admit you didn't like the latest selection of architectural boxes was to incriminate yourself as bourgeoise. Many accepted the new architecture with as much enthusiasm as a child taking medicine. But the western governments and peoples quietly endured as the young self-taught architects set off in search of their utopian architecture.

The great destruction of Europe created a tremendous need for architects. An unprecidented amount of control and responsibility fell to these designers. So Modern Architects handed out their boxes and many were as eager to accept them as the Emperor was his new clothes. A people without a past were trusting in the hopefully competent and visionary modern architects.

Post war European housing





Housing by Aldo Rossi

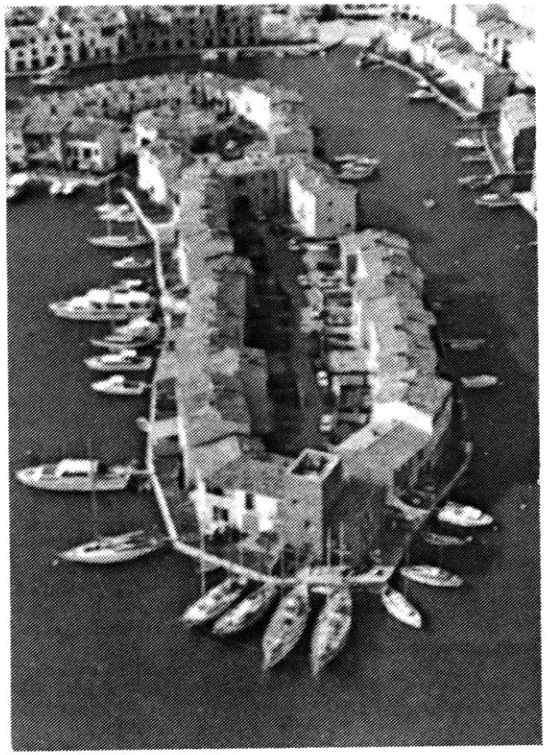
Meanwhile, across the Atlantic the rather uncultured and materialistic Americans seemed not to be as interested in buying wholesale into "modern" architecture as their European counterparts. After all, there weren't any bombs dropped on American cities. A few glass box skyscrappers did go up but most Americans either didn't notice, didn't care, or thought they were kind-of-interesting. The occasional flat top cubic house met with curious opposition. After all, it wasn't

the image of the American dream home. An occasional disgusted snear or curious glance seemed to ask "why is it flat like that?" The Europeans might have answered..."antibourgeoisie, isn't it obvious?"

After several decades and many glass boxes, people began to realize their dislike for modern architecture was neither unenlightened or unusual. They couldn't seem to appreciate the disassociative and faceless forms of the thin curtin walls no matter how hard they tried... at some point people realized and admitted that the Emperor was naked after all. It is difficult to say, how, and where the fraud was discovered, but the evidence that it has happened is clear. There is now an almost epidemic case of historicism. It is as though this Emperor when shocked with the reality of his nakedness has run full-speed back to his old familiar clothes, vowing never to change them again! And there he sits clinging to the old familiar garments.

People have lost faith in architects much as the emperor lost faith in his tailors.

The world believes it can manage without a strong direction in the design of our environments. There is currently very little emphasis on design in our cities. Architects may have lost their powerful visionary role and credibility for some time to come.



Port Grimaud, designed as an "instant" fishing village in the French Riviera by Francois Spoerry, Architect. A certain case of "epidemic historicism".

I do not suggest a counter or a counter-counter revolution--God forbid. Too many babies have been thrown out with the bath water already. We cannot return to the quaint pre-war village architecture. The recent historicism may serve to return us to where architecture went "wrong". But from there it must continue on.

Change will occur but it must be by a continual prodding, bit by bit process that neither stagnates nor destabilizes the existing familiar organization. This requires a continuous transformation process, of building on the past in a forward looking manner. Accepting that which is good and/or appropriate about what exists and transforming and changing that which is unsuitable in the current situation. This argument has returned us to my second paragraph about architecture.

"Architecture has always been, and still should be an expression of the spiritual and intellectual state of a culture as manifested through available technology in response to the environmental forces and philosophical movements of the time."

If change is an inevitable process, let it be one that doesn't always start over again. Let it be "continuous."

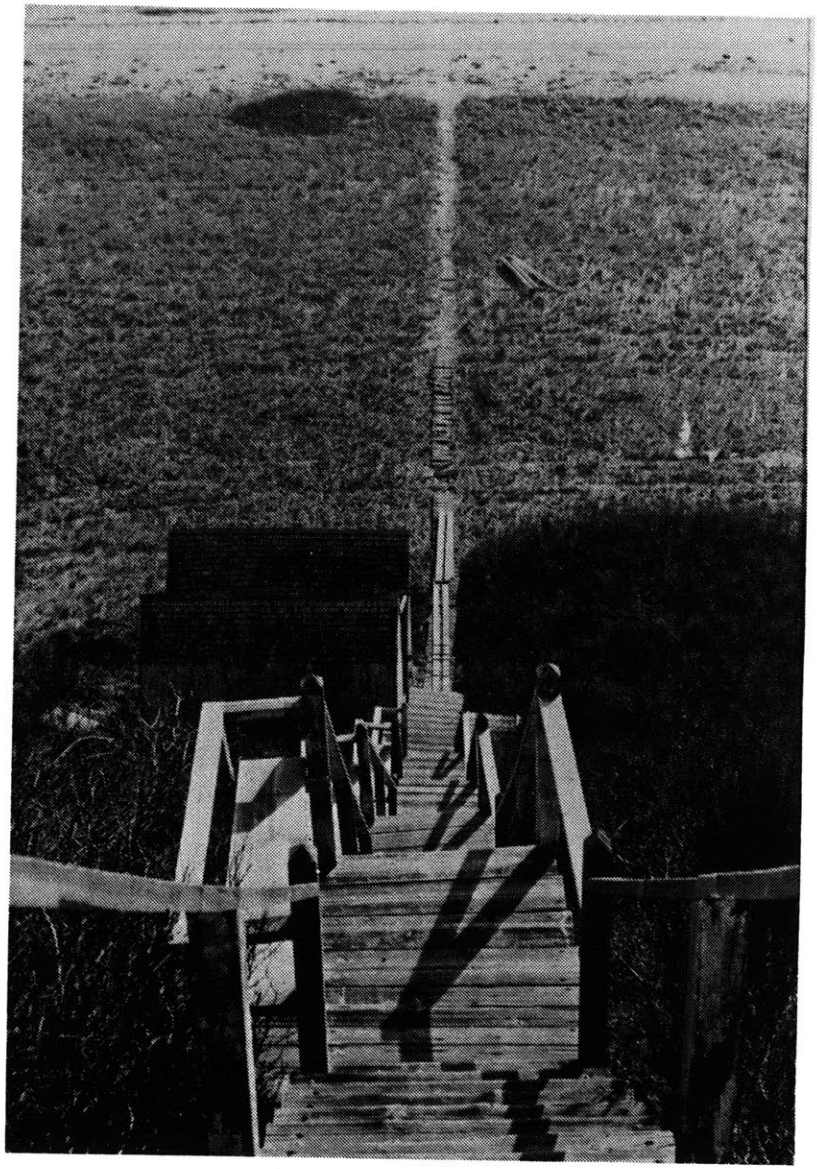
12.

ON CONTINUITY

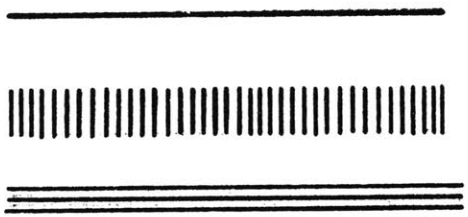
Definition: The state or quality of being extended or prolonged; without a breaking; an unbroken series or succession; Connection; uninterrupted cohesion or close union of parts.

Continuity is more difficult to describe and explain than change since it is not an everyday concept as in changing clothes, chairs, jobs and so on. Continuity requires change otherwise it would be constant.

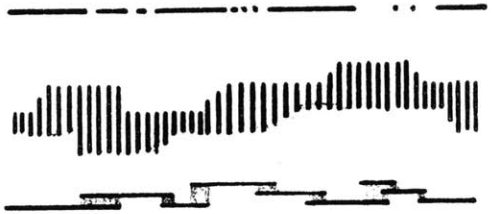
Constancy requires that all characteristics remain unchanged whereas continuity requires that only some of the essential characteristics be maintained. The continuity can be fierce and obvious or subtle and questionable depending upon the number and relative importance of these essential overlapping characteristics. Constancy



constant:



continuous:



Back Bay row houses, Boston.

demands uniformity whereas continuity allows for variation and change.

This continuity may be an overlap of characteristics through either time or space. For example, a temporal continuity might be the succession of a family name or genetic traits, or the repetition of cultural customs. It's similarity is evident through time.

Spacial continuity is a similarity which is evident through space. For example the continuity of Back Bay row houses is not only the line that they collectively define but the similarity of form which makes up that line. A second example of spacial continuity is the similarity in the accents among Scottish clans. Both these examples of continuity are observed through space at the same time.

Spacial and temporal continuity may be physical or non-physical, for example, the Back Bay row houses are actively connected or physically continuous whereas the characteristic accent of the Scottish clans is not physical, although it is observable.

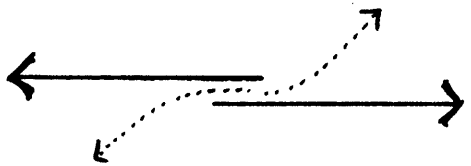
I am not listing these types of continuities in order to begin to classify continuities under these categories. This is to show the range of meanings for which this idea of "continuity" may be applied. All of these meanings are important, from the continuity and overlap of indoor-outdoor space in a building to the continuity of the design process which reinforces the positive aspects of that which exists and transforms or deletes the negative aspects.

Although the non-physical continuity of Scottish accents may be of interest to a designer working in Scotland, physical continuities will be of most importance to architects. I will show a few categories into which physical continuities may fall:

a. a line is "literally" continuous by linear extension

b. a line may be "virtually" continuous by partial definition

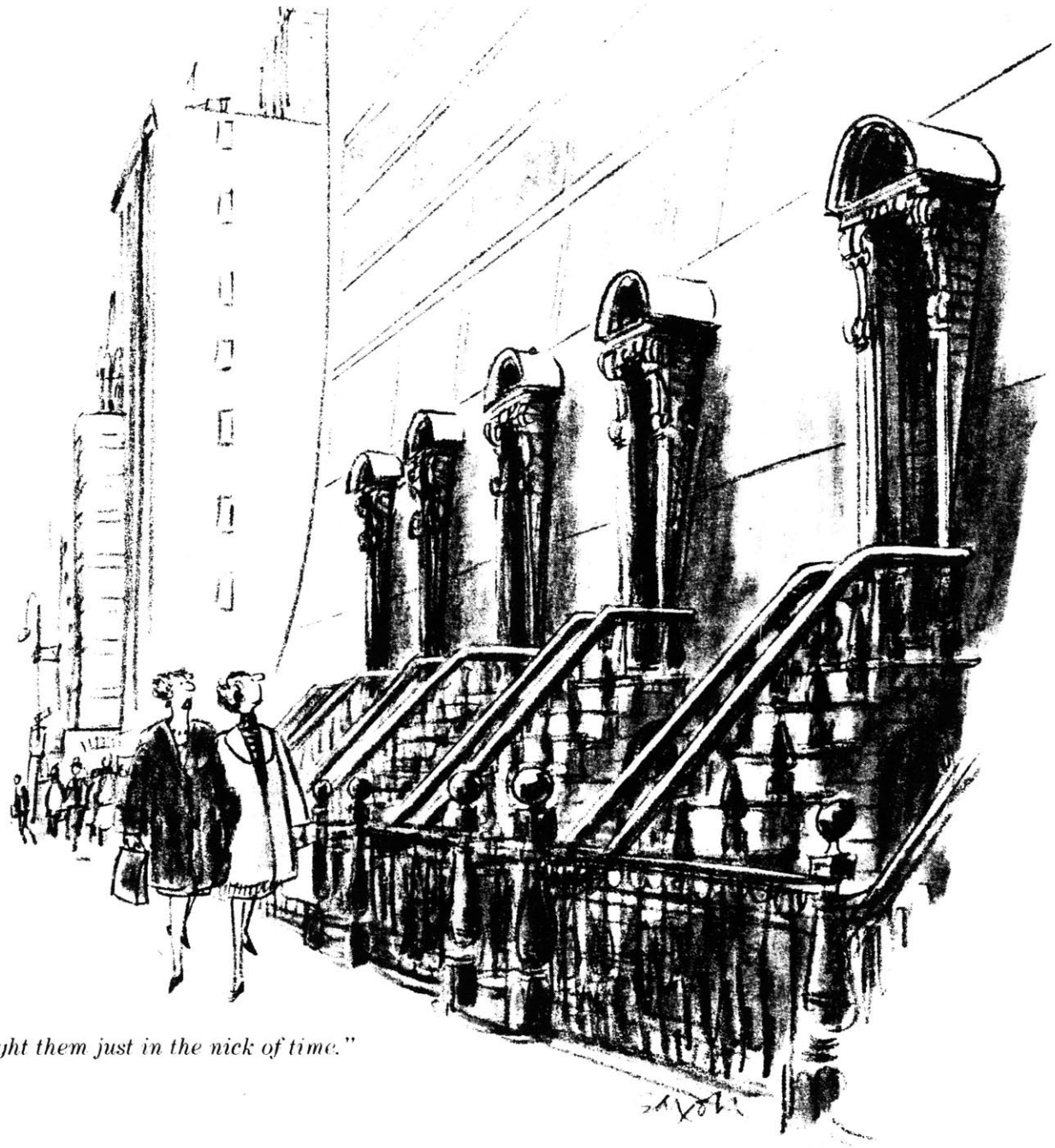
c. a line may be "spacially" continuous by overlap



Given the confusion that is generated by these categories, and sub-categories of continuity, the following short definition for continuity may be helpful.

"When something changes (in either space or time) then something must stay the same."

"When something remains constant, other things may vary."



"The Landmarks Commission caught them just in the nick of time."

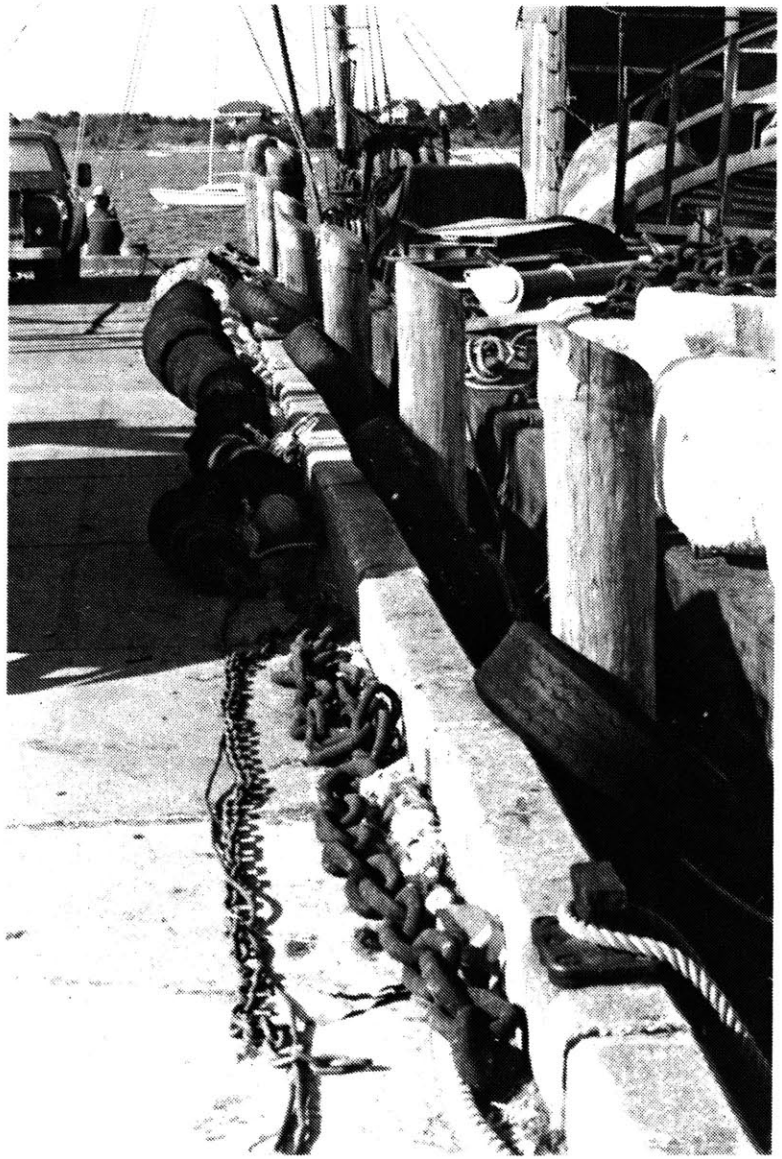
16.

NEW & OLD

Attitudes towards addition & change

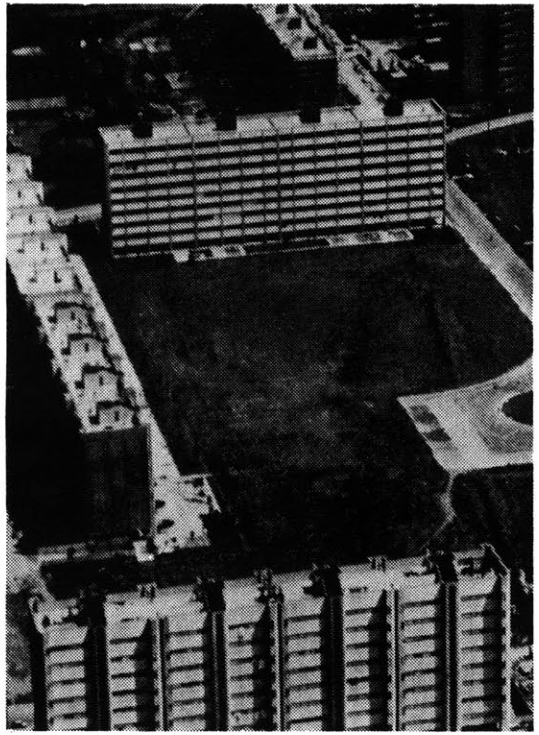
In looking at the issue of continuity and change in architecture many different attitudes toward the relationship of the new with the old become obvious. Some of these attitudes are similar while some are very different, but nonetheless they are distinguishable. They also represent different degrees of continuity and discontinuity in terms of the physical connection of new and old and the historical (temporal) relationship of new and old.

None of these attitudes toward new and old is inherently right or wrong. It depends on many factors such as: 1. Conditions of the existing. 2. Does the old leave clues or possibilities for later growth and change? 3. How much exists and

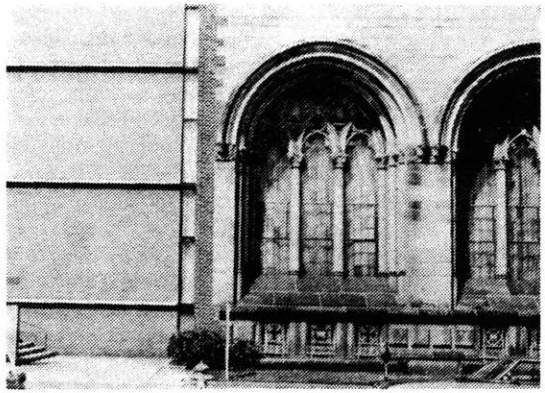


how much is to be added. And the list continues..There are many good and bad examples of each of these attitudes. Some examples of these are shown to more clearly demonstrate the various attitudes:

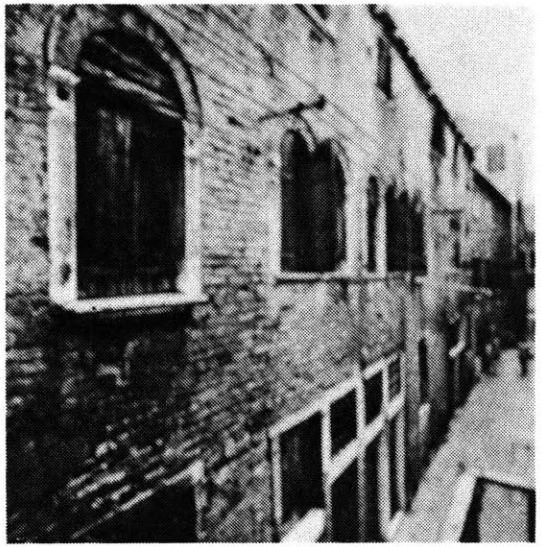
a. Remove existing entirely (and "start from zero")

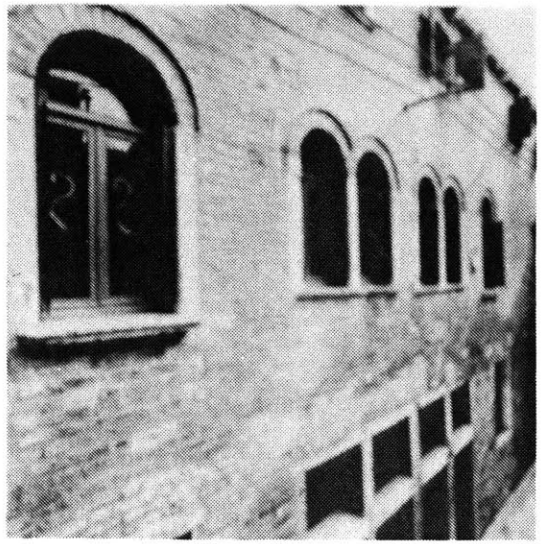


b. Pretend the precedent of context doesn't exist.

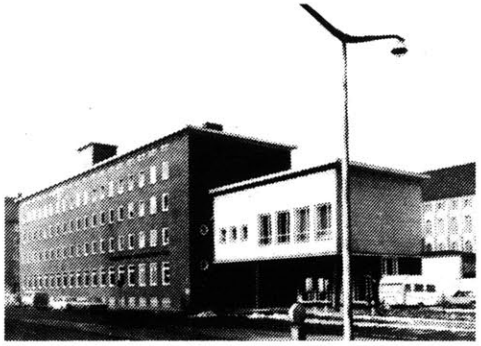


c. Restore old to new look.



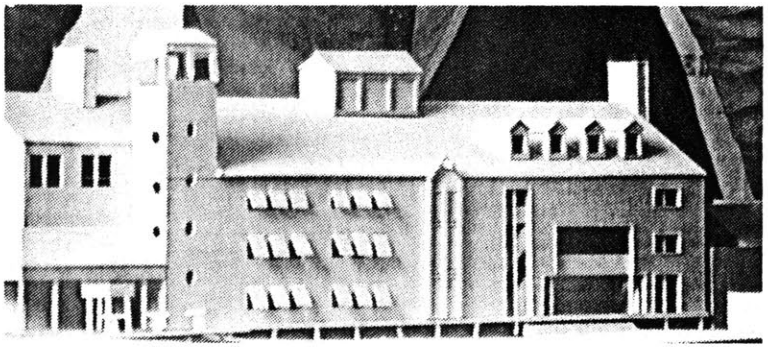


d. Reshape old with similar to new

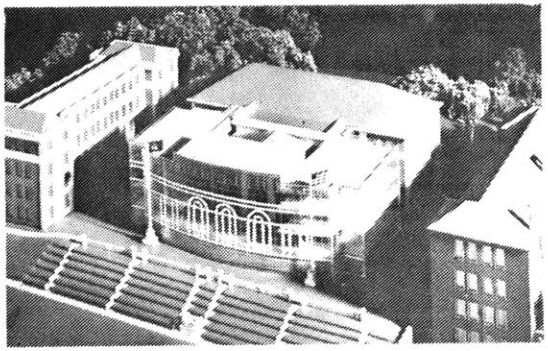


e. Make a more old looking or authentically historical building than the existing.

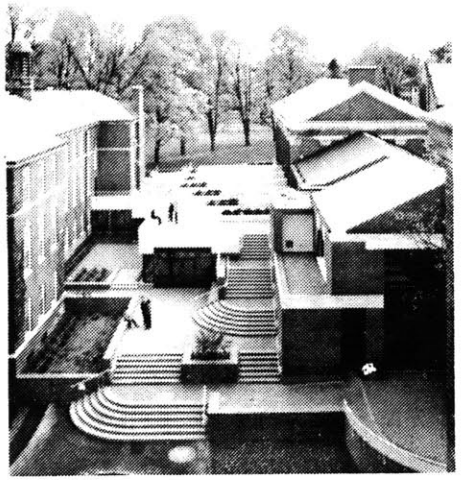
f. Direct use of historical forms.



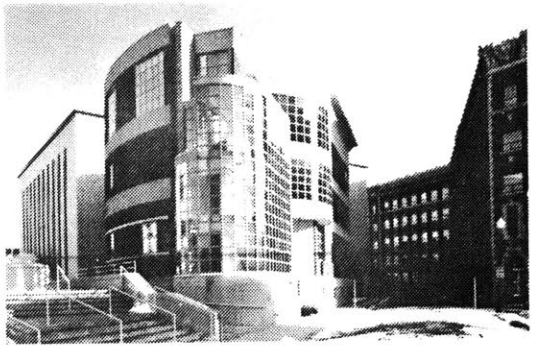
g. Contrast new with old by total reversal.

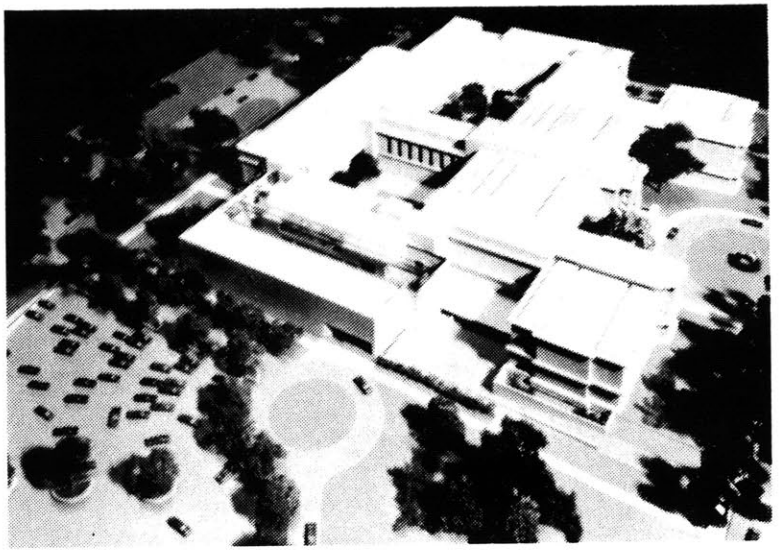


h. Pretend the new is not there.

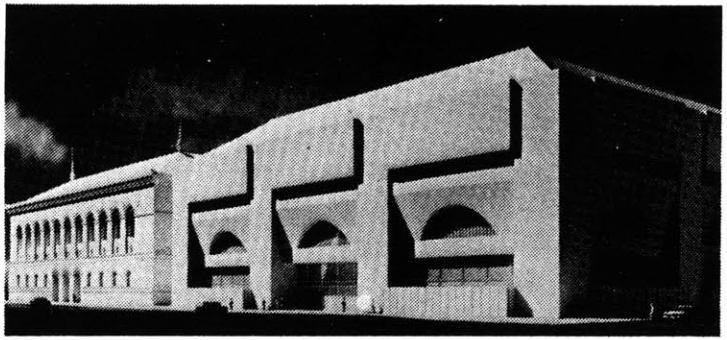


i. Formally respond to everything around it.

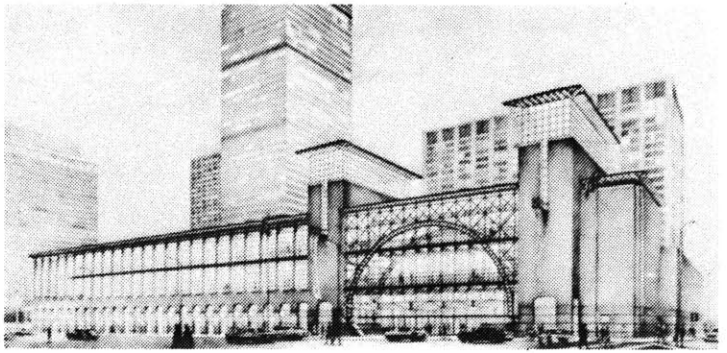




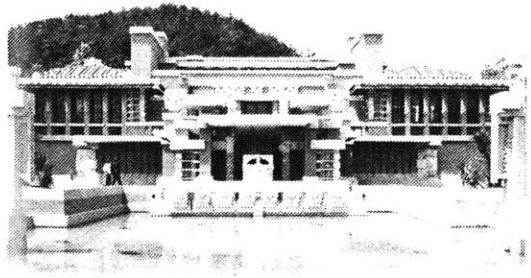
i. Contest new with old with some similarities.

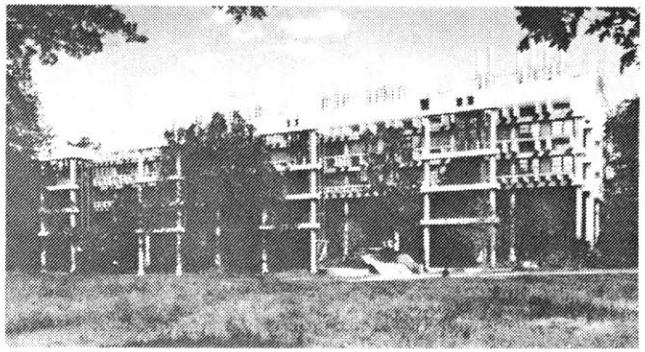


j. Recover old with new



k. Transformation of the available forms and references.





l. Treat old as museum piece in the fabric of the new.

These are a few of perhaps many more attitudes toward the relationship of new and old ranging from the total removal of the old to a direct copy. Some of these are more spacially and historically (or temporally) continuous than others. The one I find most interesting and of greatest potential is the one which embodies the idea of transformation.

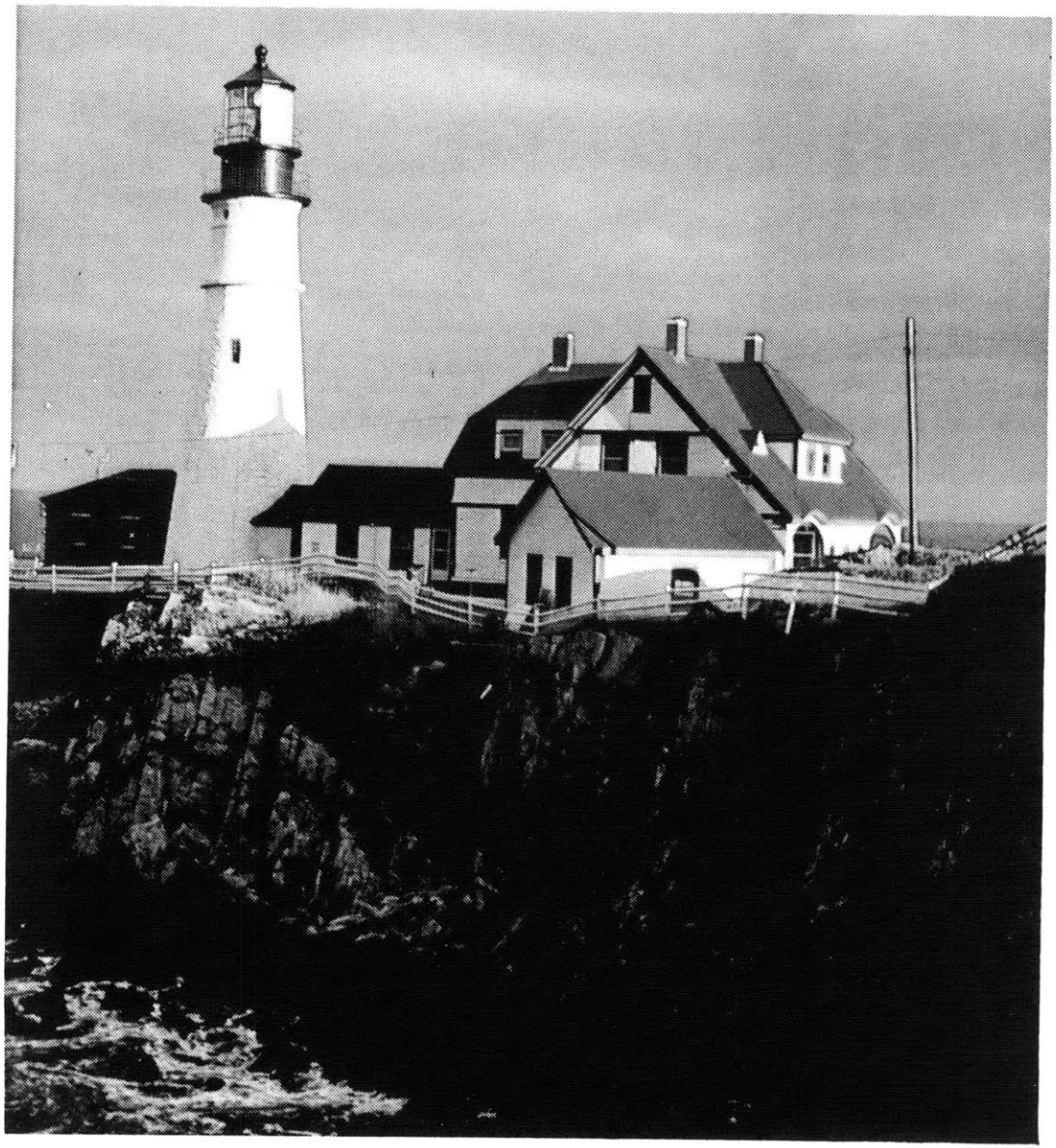
22.

ON TRANSFORMATION

The term "transformation" in architecture can be as wide ranging as "continuity" has been shown to be.

Definition: The process of changing into another equivalent or similar; to become changed.

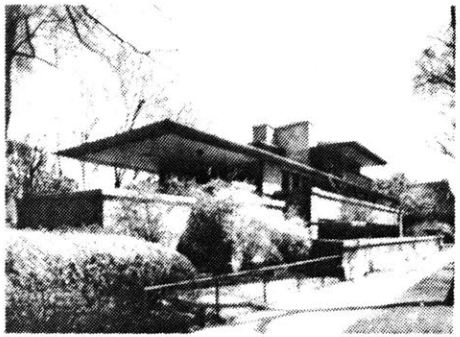
In my earlier discussion on change I described architecture as the expression of the social, intellectual and spiritual state of a culture manifested through available technology in response to current environmental forces and philosophical movements. This is to say that there are many factors acting together that create our ever changing environment. An architectural form developed in response to one combination of these factors may be perfectly



appropriate for a seemingly long period of time. However, this combination of factors will eventually change requiring an alteration in the form of the architecture. This alteration whether small or drastic is a transformation. A drastic change in the balance of these factors will require a drastic change in form whereas a small deviation may require only a minimal transformation.

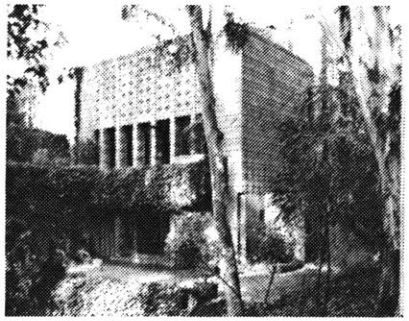
This section will look at several types of architectural transformations and show examples of several masters of transformations.

Frank Lloyd Wright set many goals, one of which was to design homes that were distinctly American. Starting from early American houses, which were transformations of our European



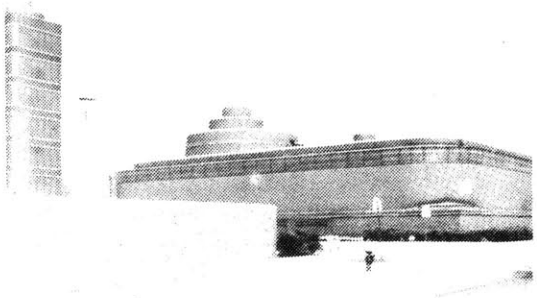
predecessors, he set out to design a form more suitable to the isolation of suburbia and the vast open space in the American landscape. His prairie houses seemed to reach out in all directions to capture the continuous space. The massive central fireplace and inner core took reference from the early American homes, and were used as an anchor to tie the building to the ground. He "broke down the box" of the urban inward-looking skin, and transformed it into an outward-looking "American" form. The central fireplace notion remained and was in fact strengthened because the attitude toward the building edge was reversed. What was once a continuous skin was transformed into a penetrable screen.

Romeo and Juliet Windmill tower, by F.L.Wright. Transformation of the traditional rural windmill.



Wright's later Usonian houses were a transformation of another type. Rather than transforming the building form as in the above example, he used the distinctively North American Aztec Indian and the adobe building system for his references. With these image references and the current technology of custom block manufacturing he developed a new housing type that was once again distinctly American.

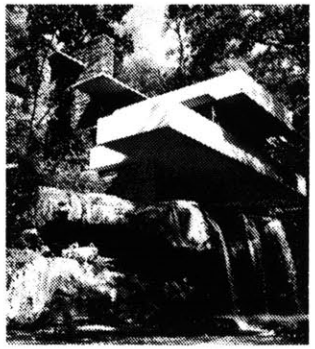
The Johnson Wax building seems to be a literal translation of a dynamic manufacturing machine. The curving walls and circular forms look like the



moving pulleys and fly wheels.

Wright's greatest known masterpiece, the "Falling Water" house demonstrated a transformation of the landscape context. The indigenous masonry walls rose up from the ground mooring the horizontal planes which float as the water below them.

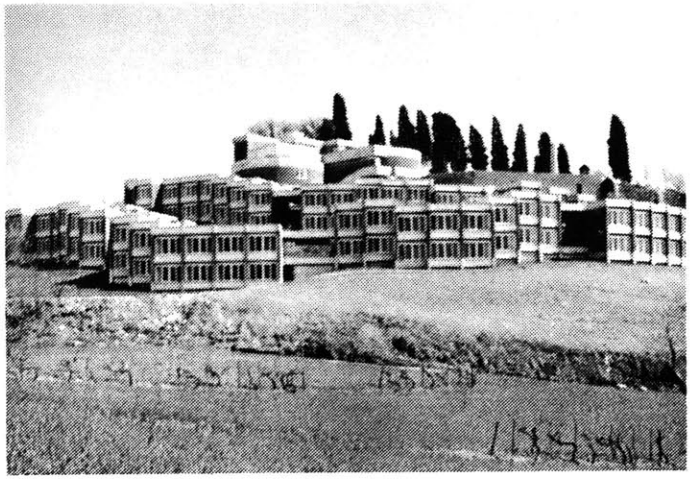
In Wright's work, the context was not just the ephemeral visual images of that which existed nearby. Those forms were superficial. He addressed the broader sense of what the context meant. This approach is vastly different from the current historicism.



Aldo van Eyck was another master of context transformations.

His subsidized housing for old folks finds references in the existing forms but transforms them and applies them to the plan, or organization that he felt was appropriate to old people. The small covered porches closely face one another where residents can sit and exchange memorabilia and stories about their grandchildren. Again, another transformation of the individual urban window seat or apartment balcony in response to a particular use.

The connection of new and old in Van Eyck's Home for Unwed Mothers is an equally interesting transformation. The project involved the rehabing of an existing five-story townhouse structure and the design of an almost equal sized new building beside. The new portion accepted and echoed various aspects of the existing building such as floor heights, and building massing while reversing other characteristics. For example, the existing building is a continuous surface masonry structure where the walls appear much stronger than the openings. The new addition is clearly a frame structure where the openings read more prominently than the closed wall portions. Despite the contrast between the new frame structure and the old continuous surface building there is a clear unity between the two. They appear to belong together.

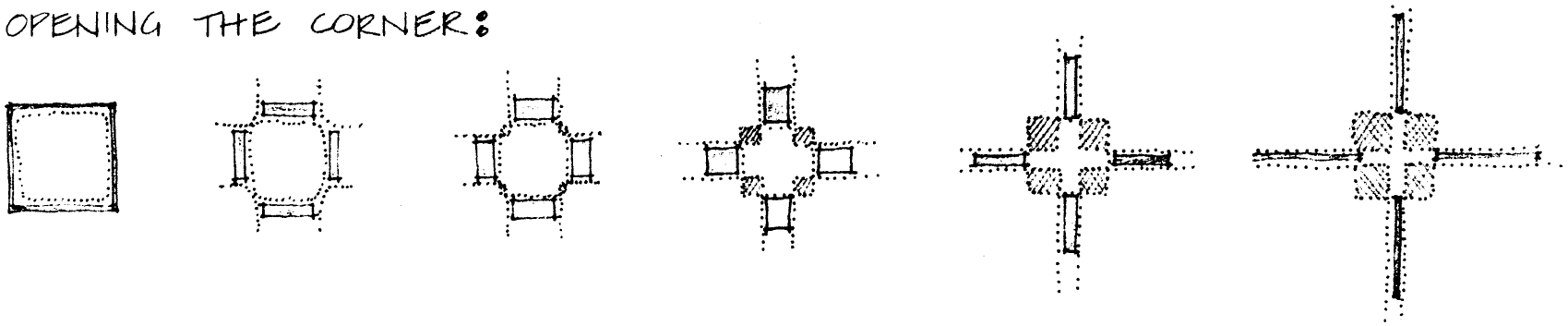


Gian Carlo Di Carlo's work in Urbino is another example of a transformation. His hill-top dormitory is a marvellous balance of the machine age repeatability of units and the appearance of the neighboring Italian hill towns. The modern materials resemble the nearby stone and stucco structures. The overall appearance is clearly new yet recognizable as a transformation of the old.

There are no step-by-step methods of transforming what exists. All the transformations discussed are different in approach and result. However, each architect seemed to look for some aspects of the existing form and organization that could be used as a clue for where to begin. These aspects provided a sense of continuity with the old as well as a departure point for the new. For example, Wright's prairie houses kept the central mass concept but reversed the quality of the edge from continuous surface to a screen. Van Eyck kept the relative massing in his home for unwed mothers but reversed building closure from the pre-industrial masonry to a post-war frame system. Di Carlo maintained the building's visual quality and typical hillside village organization while changing the building method. What is clear and most important about these designs is the seeming "appropriateness" of the buildings. They seem to fit in, yet there is no difficulty in discerning the new from the old.

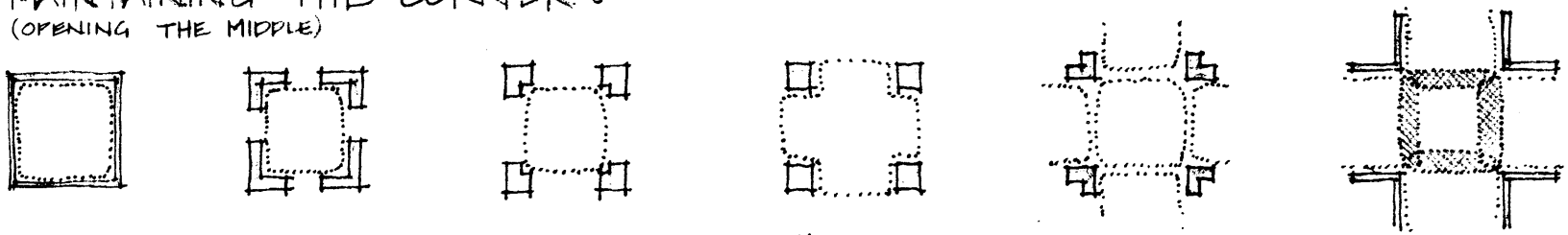
The following diagrams describe abstract transformations of an object:

OPENING THE CORNER:



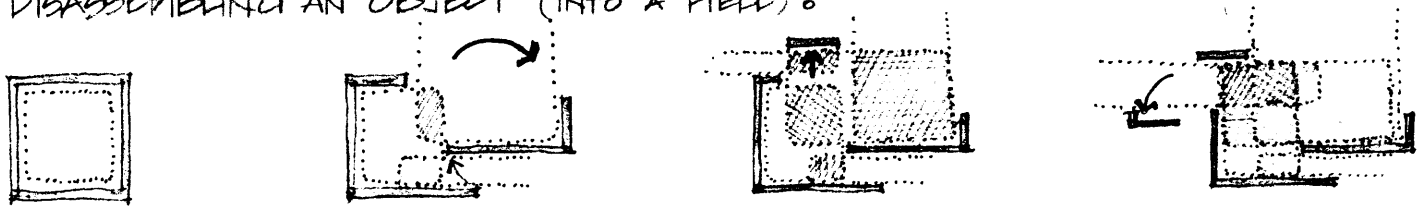
The rule in these three transformations is to keep the same amount or area of line definition. The first transformation of opening the corner abstractly demonstrates what Frank Lloyd Wright was trying to do in his prarie houses.

MAINTAINING THE CORNER:
(OPENING THE MIDDLE)



It is clear that opening the corners forces a much stronger connection between inside and outside than does the transformation by maintaining the corner.

DISASSEMBLING AN OBJECT (INTO A FIELD):



Although there are no cookbook steps to good transformations here are some fundamental attitudes that transformations require. Finding and using clues at every scale and stage of design as well as leaving clues for later design decisions will reinforce the continuity of what existed before with that which may follow. These clues may be in many forms: the direction of circulation or building systems, the organization that exists or those that exist in similar places, the patterns of growth, existing materials or local technologies, as well as micro and macro climate forces.

It is often important to know why a building type or system was developed in an area before that system is reused or ignored. Sometimes the forces that contributed to their development may no longer be in force, consequently the old form may not be appropriate. At other times designers have been unaware of the dynamics that take place which are critical to that environment's stability. For instance, the low-income families who were moved from their urban walkup townhouses into the Pruit-Igoe projects in St. Louis were removed from the physical organization that had been necessary for stability to these people. The architects in their eagerness to modernize the environment neglected the basic organization of the neighborhood.

Transformations require an understandability - a reason for taking place. People are generally interested in figuring out how and why something is different. Distorting and chopping up an understandable form for the sake of interest or novelty is an egocentric and immature rational for design. Vernacular architecture has evolved for some tangible reason, be it environmental, social, political or even visual. People often made small variations in their architecture to show individuality, such as color, texture, trim and so on but these variations were within the family of vernacular orders. The natural transformation of this overall vernacular order takes place through greater outside forces.

The post-modern movement is indeed interested in the transformation of form. Their's however, is a playful manipulation of forms that are purely surface ornamentation done in an almost tongue-in-cheek manner. The purpose for which the form is altered and used is obscure and I gather that is part of the "fun" of it. It is almost a sadistic attempt to have form not relate to people by obscuring the meaning of the forms. It is an architecture that is not developed by the environment - it comes from the exclusive world of academia.

The transformation process requires a willingness to build positively on whatever is existing rather than continually starting over again. This does not mean that everything existing is sacred and must remain. Those pieces, concepts, or existing organizations that can function

as clues should be kept and intensified while other portions may have to be removed.

The transformation process is not unlike the design process itself. The layering design process requires a linear sequence of decisions. Like a chess player who evaluates certain moves by imagining the sequence of moves that would follow, a designer weighs different alternatives while not actually executing all of them. The inability of a designer or chess player to pursue all possible alternatives to their conclusions makes the early organizational and/or large scale decisions critical. Having made the initial decisions the designers then encounter a second series of alternatives not unlike the first.

The "starting from zero" mentality would imply that whenever the designer had a new idea or experienced some difficulty with the problem at hand he or she would begin again. Considering the number of possible ideas available and the number of problems confronted in any design process, it would be impossible to ever finish the design using this "start from zero" mentality.

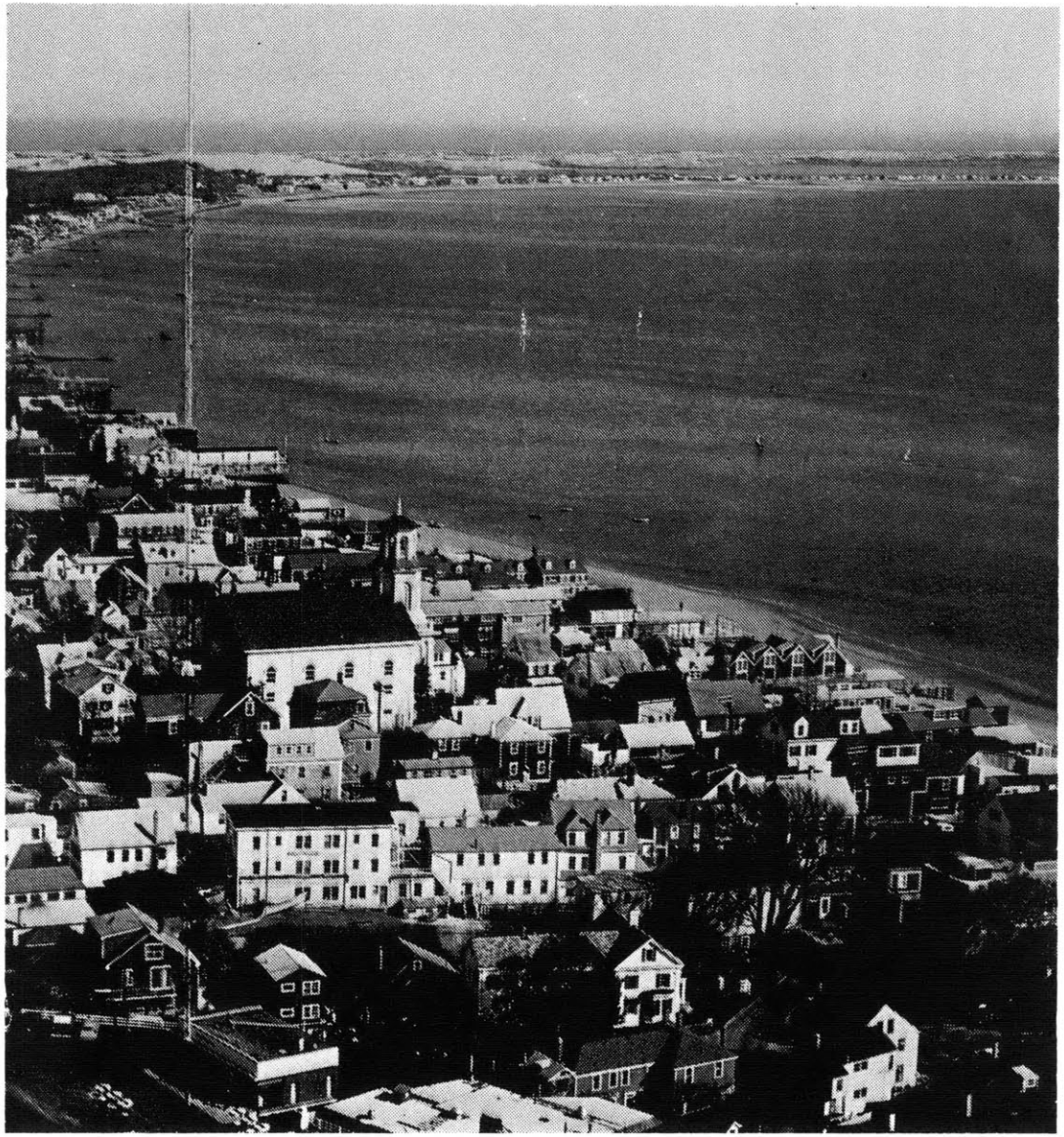
But how about starting the design? How and why do you make the first line? Do you draw a favorite place and work from that or do you spill your coffee on the clean paper and trace the outline? Again, the designers must work positively with what exists, reinforcing earlier decisions that are considered good and transforming former mistakes. The designer may think of precedents or references of similar situations whose solutions may be applicable in the case at hand. Lessons learned from references must also be transformed for the specific case at hand. Literal copies may have the visual image of the reference but may totally miss the quality for which the reference was cited.

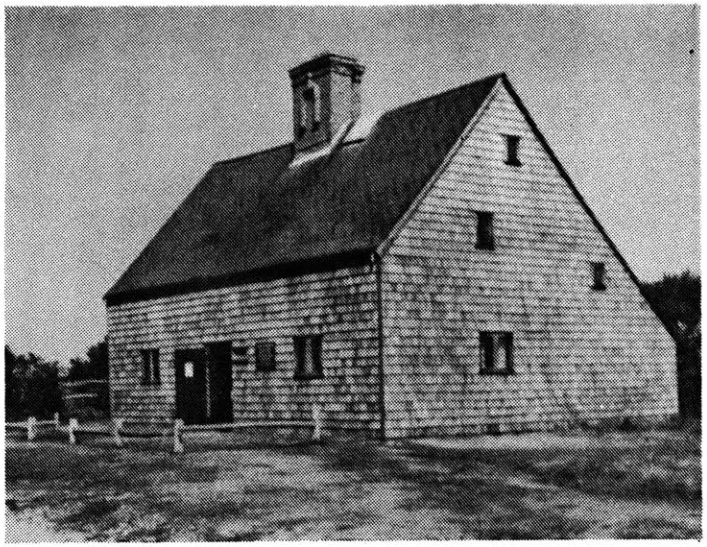
The very concept of starting from zero runs totally contrary to the process of learning that all are constantly engaged in it. Whether we are aware or not we have been and continue to be affected by that which is around us and the experiences we have endured.

ON CAPE COD

The Cape Cod vernacular is one of the most recognizable and popular styles in North America. Its historical development illustrates a process of transformation as discussed earlier. A brief look at its development may help to determine where it is now evolving.

Like most American architecture, its vernacular roots are in Europe, yet its early buildings show the clear effect of the raw New England climate. Cold winters and the expense of glass made small windows and central fireplaces common practices. Available materials and the skills of the builders dictated the quality of construction yet there was a consistent effort or impulse to use forms, materials and techniques from the old world as a



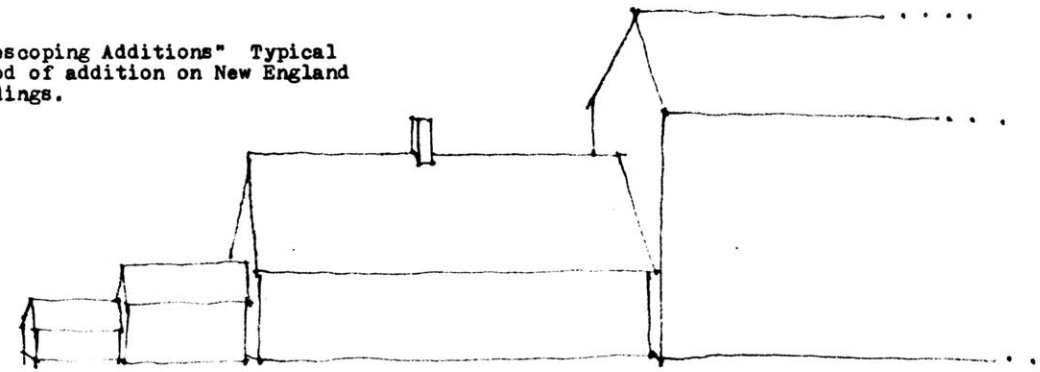


Jethro Coffin house,
Nantucket.

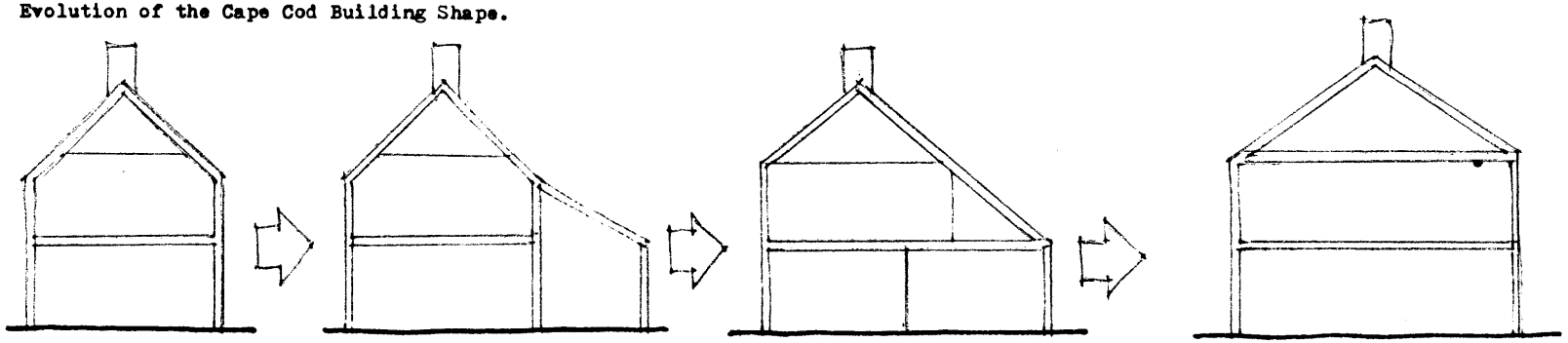
Elihu Coleman house,
Nantucket.

wanted association with the past. As times passed, and the colonies became more stable, ornamentation that was particular to Cape Cod began to grace the formerly stark conservative forms. Cape Cod developed a look of its own - with 8 in 12 roof pitches, central fireplaces and picket fences. The "Cape Cod" is particularly notable for its constant change. The basic box house is expected to be added to with one addition added to the last one.

"Telescoping Additions" Typical method of addition on New England buildings.



Evolution of the Cape Cod Building Shape.

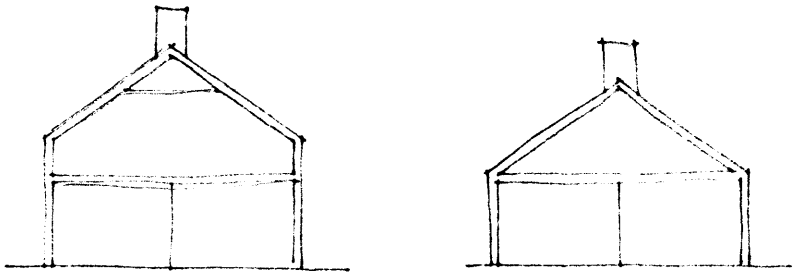


Old English

Added Lean-to

Integral Lean-to
"Salt Box"

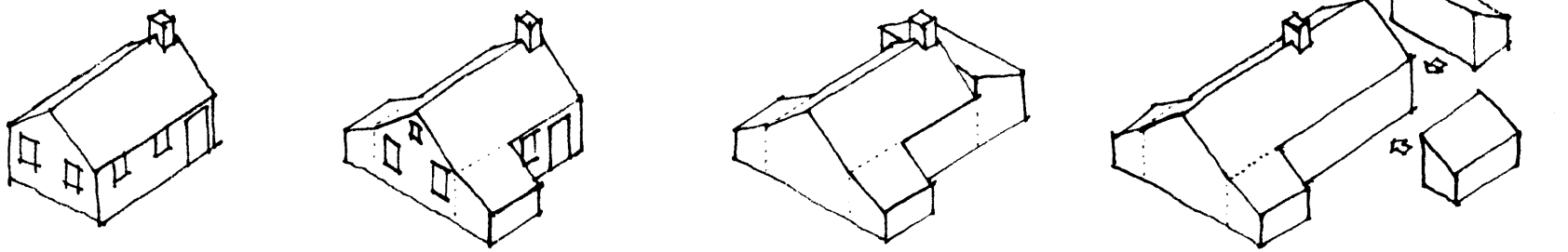
2½-story gable



1¾-story gable

1½-story gable

Addition to and Evolution of the Siasconset fishing hut on Nantucket.



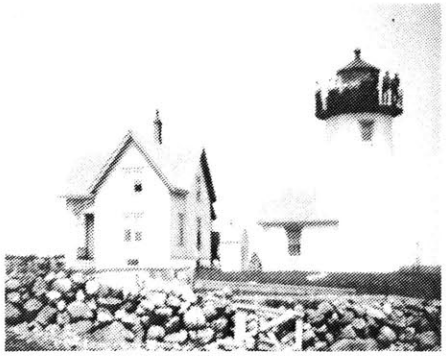
Initial simple fishing hut.

Enlarged hut by added "warts".

Expansion, adaptation.

Highly individual incremental variation.

Pieces of a context: Cape Cod



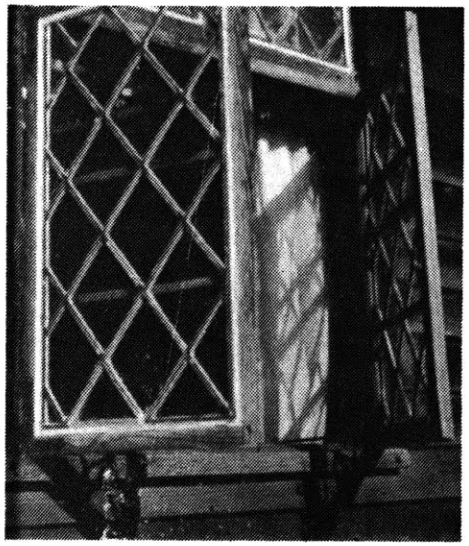
Like much of American architecture, the Cape Cod form survived the assaults of the modern movement.

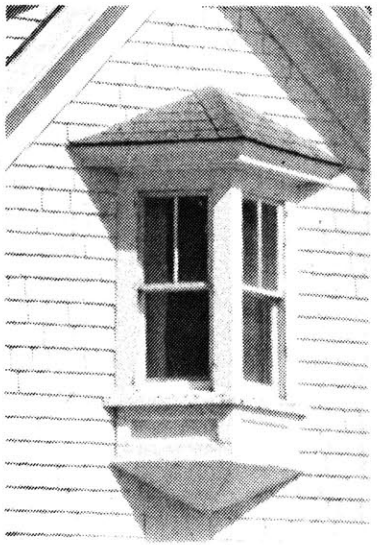
The recent wave of historicism has hit Cape Cod with a violent fury. The vernacular has become fixed and frozen at a period in its evolution as though this were sacred.

I appreciate and support the historical design review boards and their efforts for the "Cause" of Cape Cod architecture. I am also aware of the financial reasons for the maintenance of the Cape Cod look. But at no time can architecture be frozen, no type is sacred. The existing forms were developed from forces and associations that were in effect and to which the forms needed to be appropriate. Times change and so must the forms.

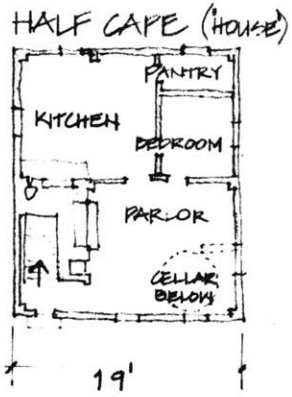
Then the questions are: How have the times changed and how would these changes effect the forms? I'll try to answer the first question in these next paragraphs and begin to suggest some possibilities for the second question in the design part of this thesis.

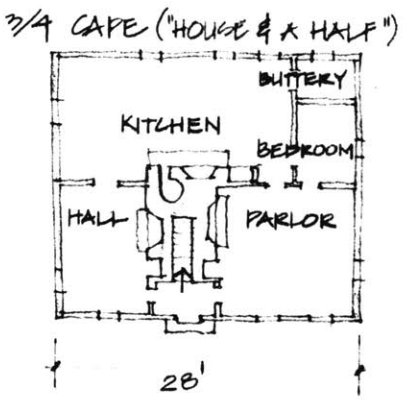
Cape Cod is experiencing a need and interest in increasing density. The exclusive condominiums and time-sharing developments that are sprinkling the Cape tend to isolate themselves and detract from the village-like sense of community which is "Cape Cod". The Cape needs to respond to this problem by either stopping this type of exclusive development or provide opportunity for more dense developments in the town in a way that can increase the characteristic village sense.

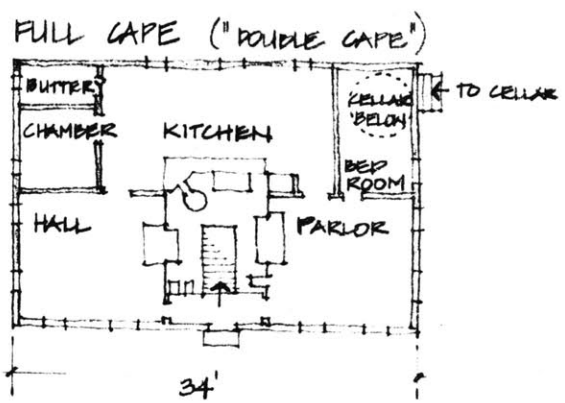




Below are shown the typical plans of the three common Cape Cod houses. It is believed that the Half Cape was the original cape house. This was later added-to, to first form the three-quarter Cape and finally the Full Cape. Notice the rectangular object-like form and the strong "continuous surface" edge. This form defines only the interior space. This strong edge eliminates the possibility of overlap of interior and exterior space.





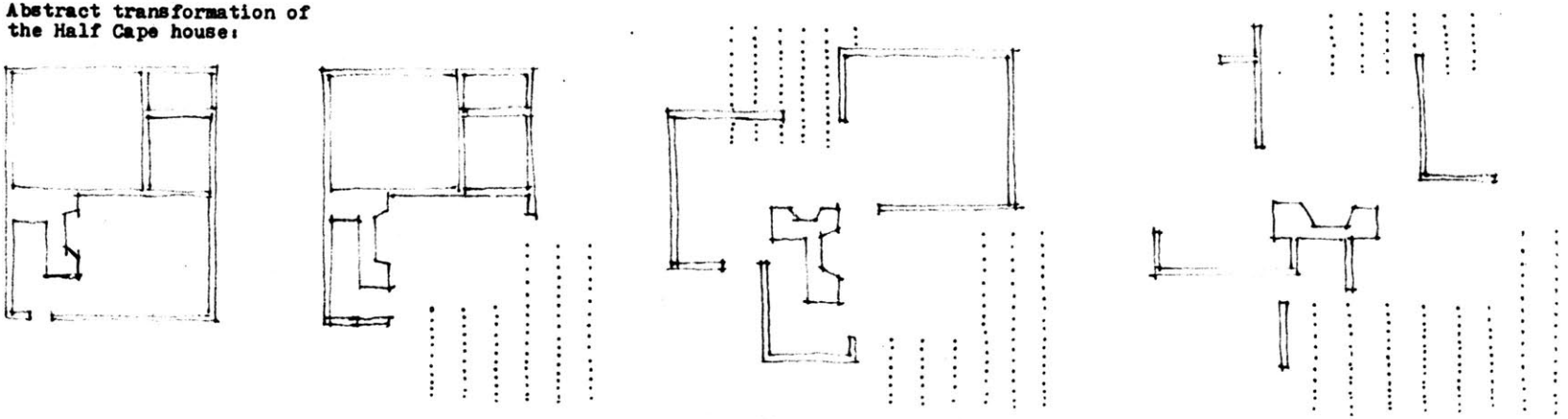


The Cape Cod house was developed through the centuries for a population of people who were year-round residents of this isolated spit of land. Recent years have seen an increase in tourism and seasonal development, bringing in other ideas about architecture, and a need for more open and seasonal building forms. The traditional continuous surface Cape Cod home that was developed through the harsh New England winters is not appreciated by the martini-sipping sunbather in August. There is a need to replace the closed quality of the Cape house with the more open quality of a seasonal building.

Since the process of transformation builds positively on whatever is existing and on new intellectual developments, it is necessary to build on the lessons that the modern movement taught us as well. There was a profound reversal in the thinking of architecture as the space defined by the architectural form and not the form itself. There began a feverish interest in the designing of

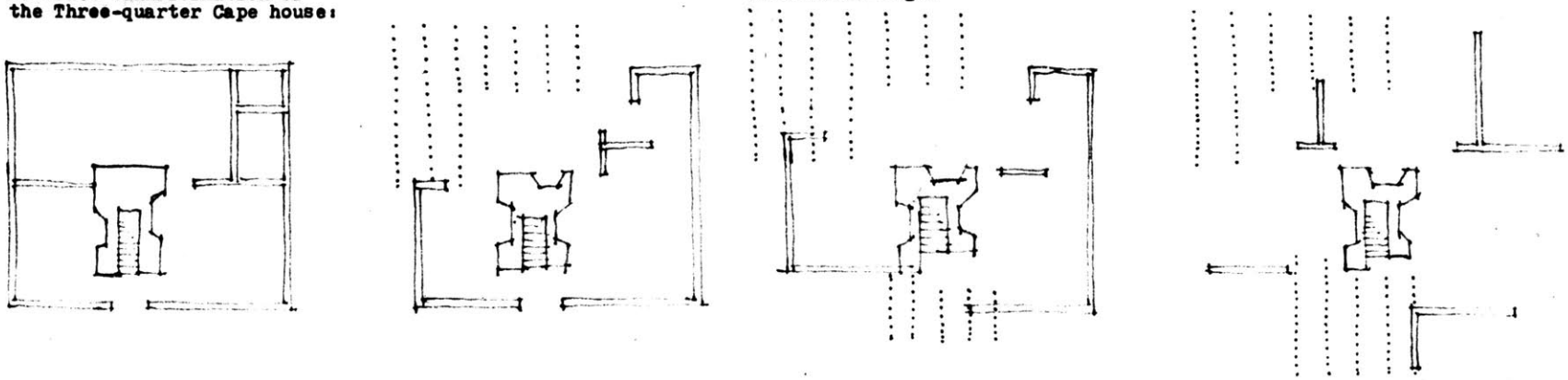
architecture of continous space rather than the designing of that which defined the space. Consequently ornamentation was an extra frill that displayed the old unenlightened way of thinking. Cape Cod forms must address this profound reversal of architectural thinking if its recent gain in popularity through historicism is to be any more than a fad.

Abstract transformation of the Half Cape house:

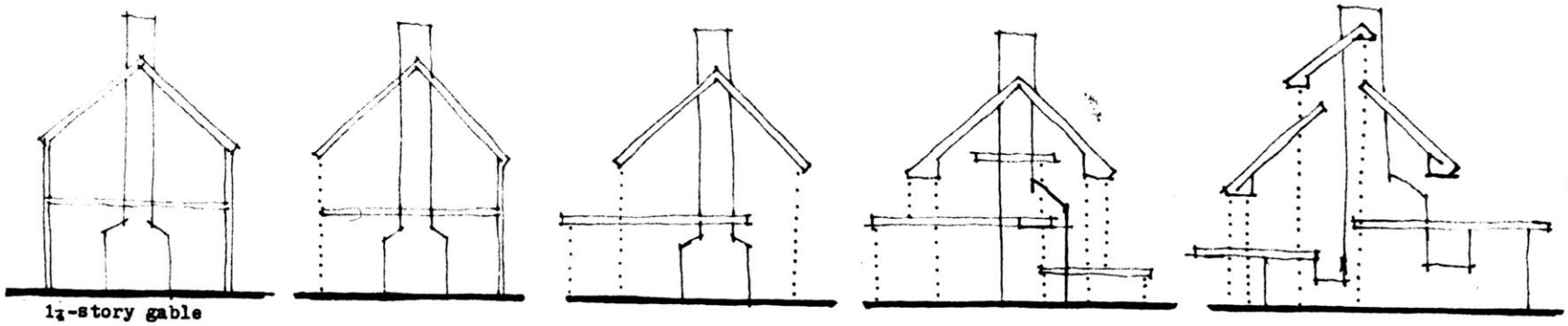


These transformations attempt to disassemble the object-like forms into forms which define interior and exterior space simultaneously, and to substitute some of the continuous surface edge with a more open screen-like edge.

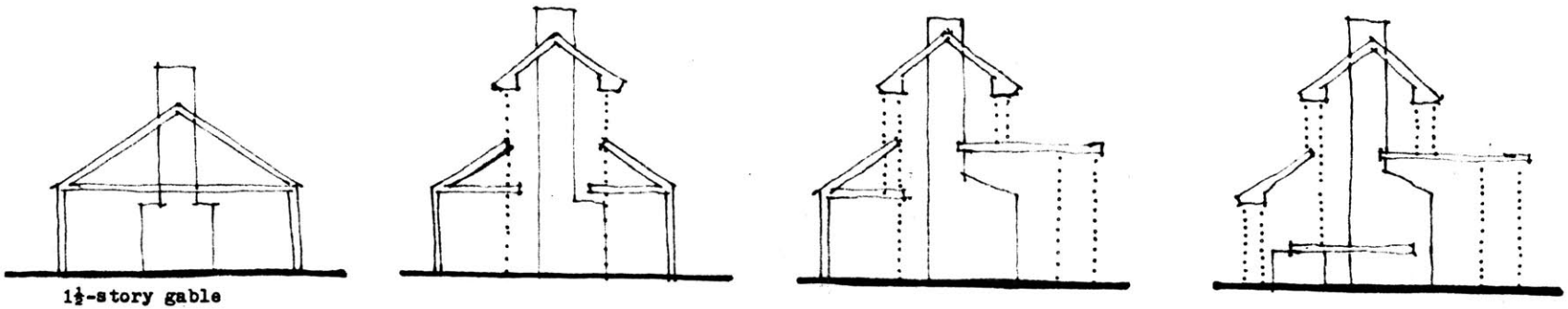
Abstract transformation of the Three-quarter Cape house:



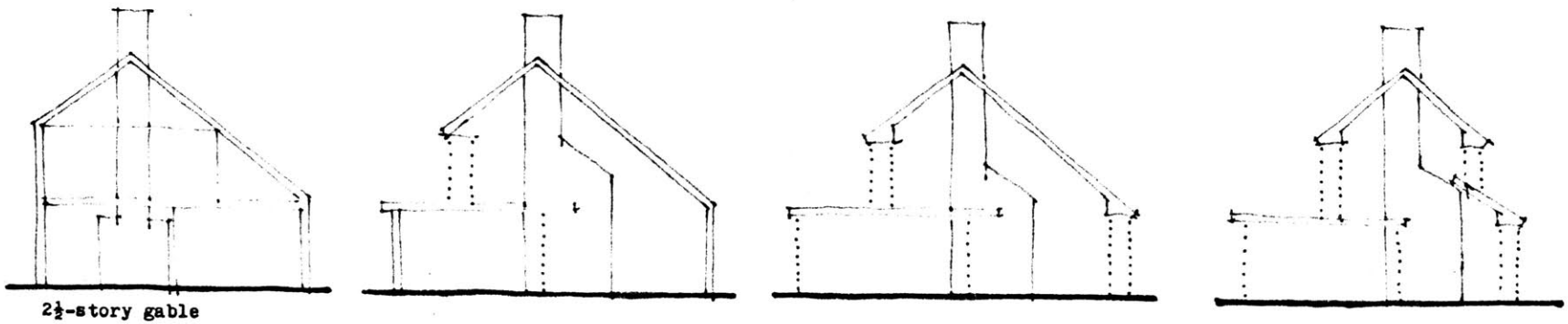
Abstract transformation of the Sections:



1¼-story gable

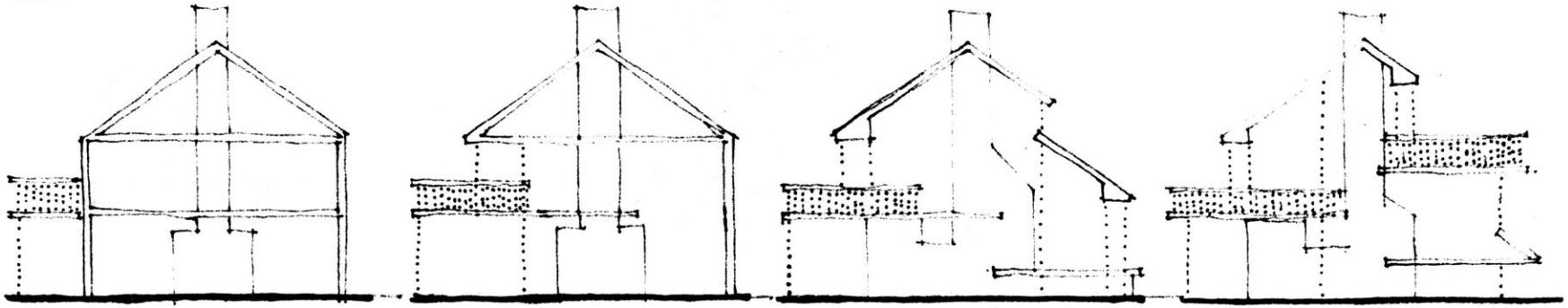


1½-story gable

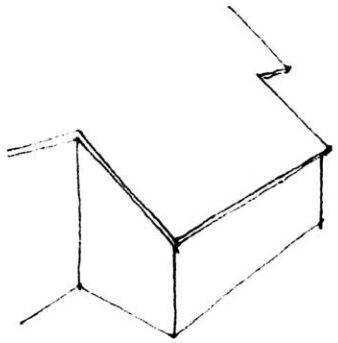


2½-story gable

Salt Box

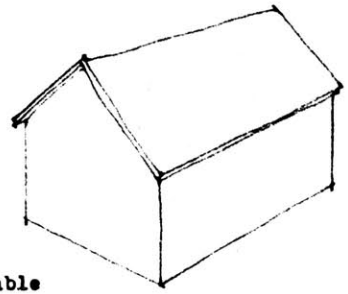


The site on Cape Cod with its strong architectural vocabulary provides a catalyst for examining ways of building continuities through transformations. First of all, a site is necessary as a means of demonstration, something must be there to be in continuity with and to transform from. The stronger the context, the greater the number of clues, and the easier the task of building continuities. Cape Cod's strong form vocabulary can provide an ideal

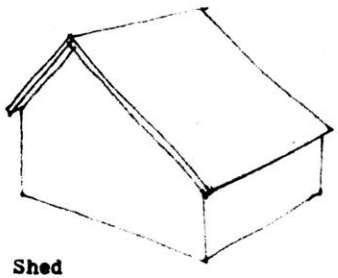


Salt Box

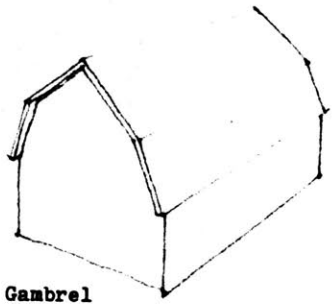
Vocabulary of Cape Cod roof forms:



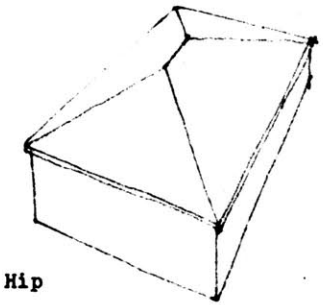
Gable



Shed

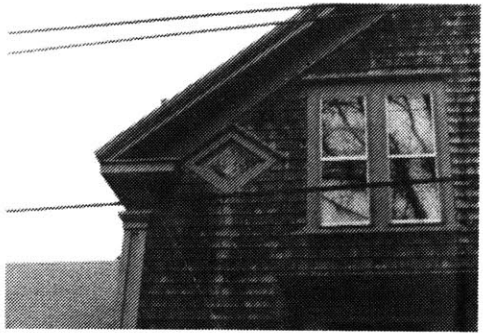


Gambrel



Hip

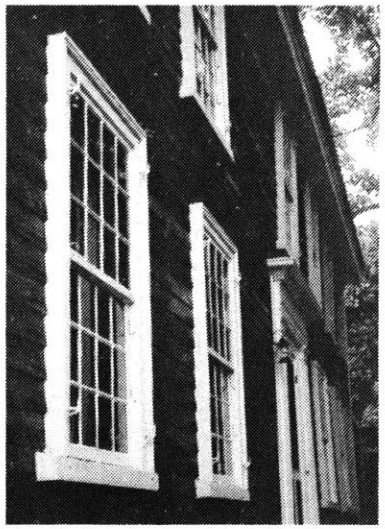
Pieces of a context: continuous surface vocabulary

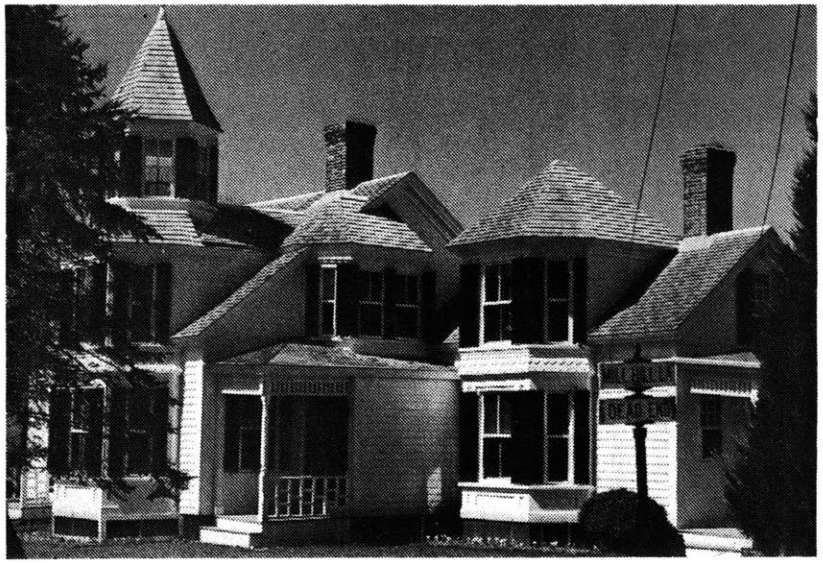


departure point for the transformation into twentieth century architectural forms while still maintaining contextural continuity.

Current zoning regulations forcing low densities have reinforced the object nature of the individual buildings by their distance from one another. Since the total buildable land area is limited, the parcelling of land into one-fourth and one-half acre lots has begun to deplete the land supply. Consequently, land prices have gone up forcing a displacement of the local residents by the wealthier summer folks. This thesis design attempts to integrate a more dense housing pattern with the transformed vernacular forms of Cape Cod in a more village-like alternative to the exclusive condominium developments.

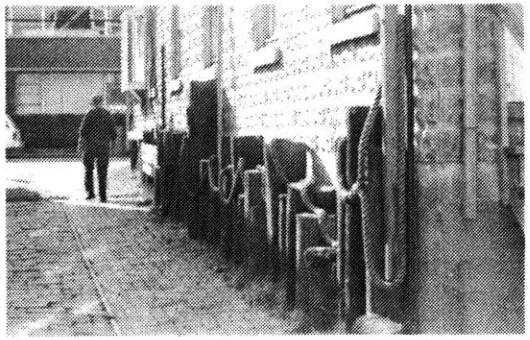
A harbor village site was chosen for several reasons. First, the strong landscape forms that occur at the transition between water and land can give powerful clues for design decisions. Second, most Cape Cod architecture is object-like, partly by the distances from one form to the next and partly by the continuous surface material that wraps most of these buildings. Clapboards, shakes, shingles, brick, ship lap, stones, and masonry are all part of the historical continuous surface vocabulary. There are few references for framework or screen-structures that are larger than picket fences, stair ballisters, or widow's walk - most of these are territory dividers and not inhabitable themselves. The

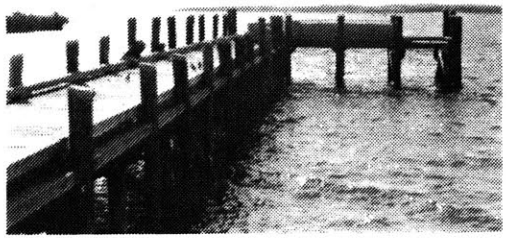


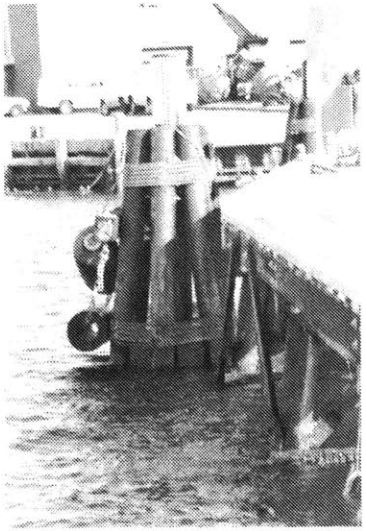


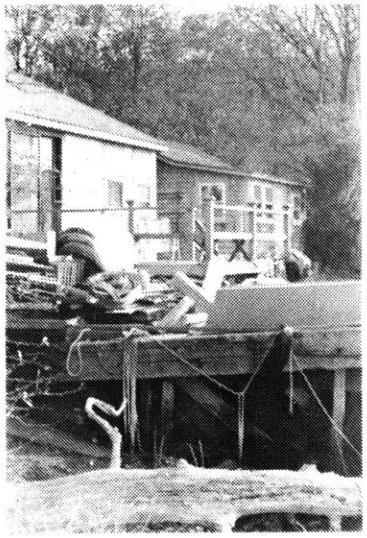
best and perhaps the only vernacular framework references on Cape Cod are the old fishing piers and the old sailing vessels themselves.

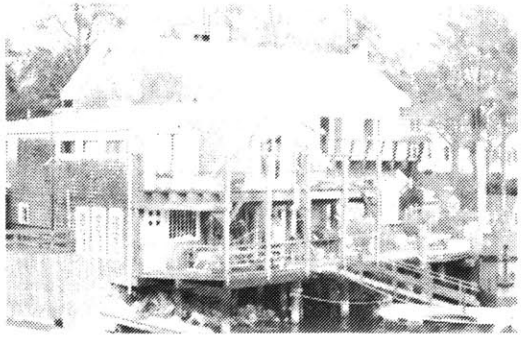
Pieces of a Context: screen vocabulary







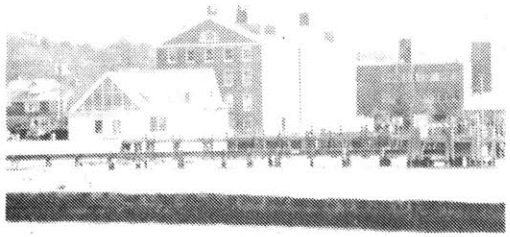




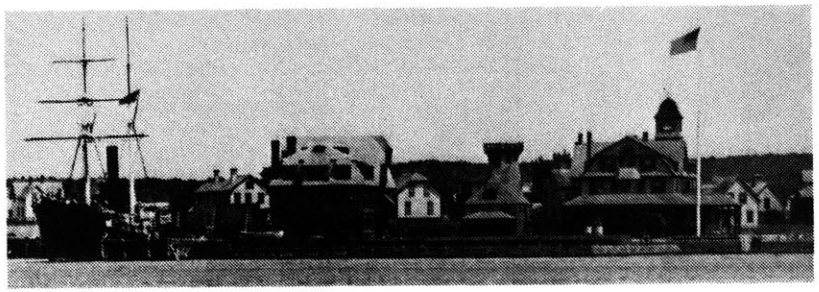
Nantucket: Pieces of a precedent

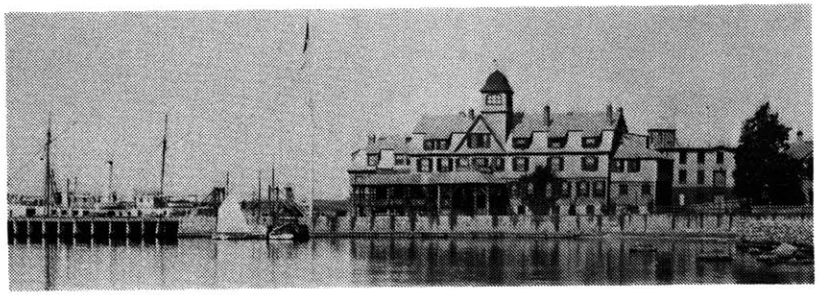
a reference for Cape Cod forms and site organization.

Finally, Wood's Hole was chosen for its own set of reasons. It is not only a Cape Cod harbor town with a strong natural and built landscape, it has a variety of attributes that make it easier for this intervention. First, it is a mixed-use town which boasts a large tourist industry - justifying an interest in the public territory. Second, there is a scarcity of buildable land and a notable housing shortage - suggesting a precedent of greater density. Third, there is an active community group interested in suggestions for improving the streets and public space in the town. Yet Woods Hole provides something more... one of the difficulties in building continuities at larger than the building size on Cape Cod is that the existing buildings themselves are so small. A strong landscape may help reinforce as overall continuity between these small object-like buildings. The only man-made form large enough to tie these small structures together are the fishing piers. But here, Woods Hole has something more to offer - a precedent for larger buildings.



Large building references. Property of W.H.O.I.

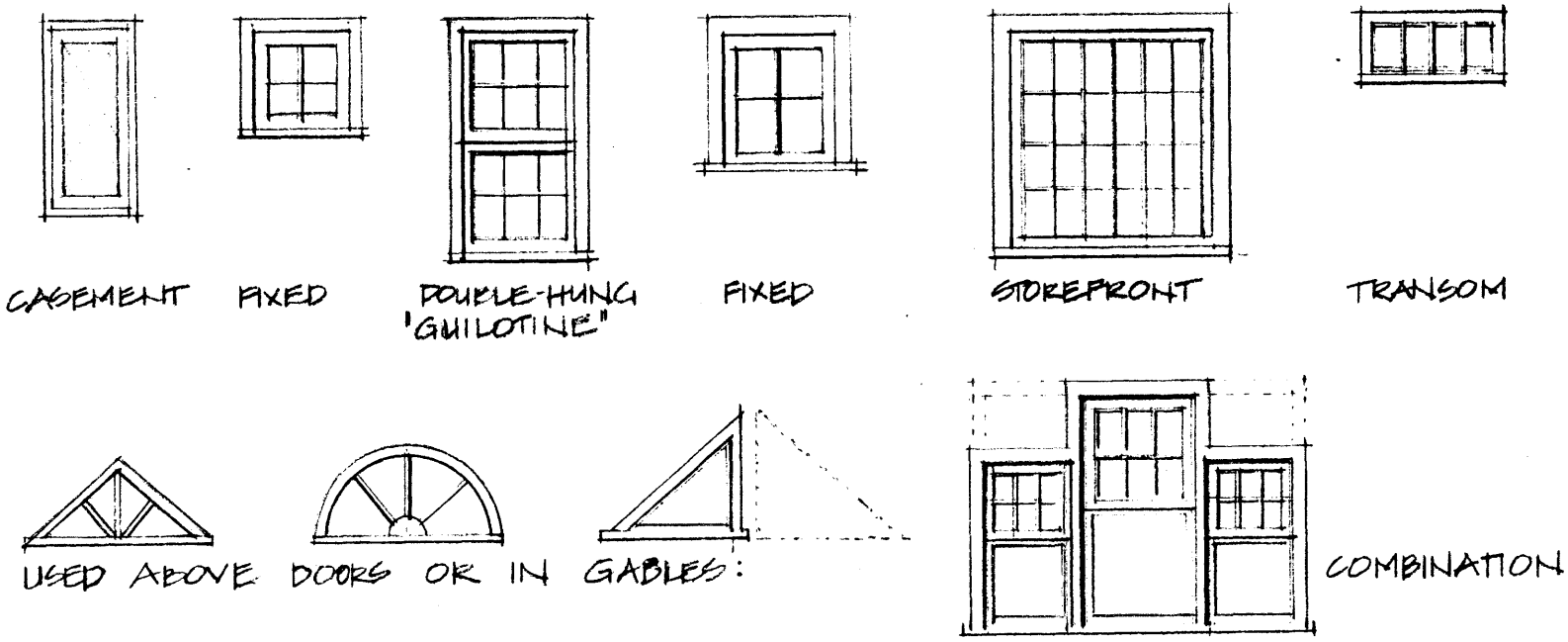




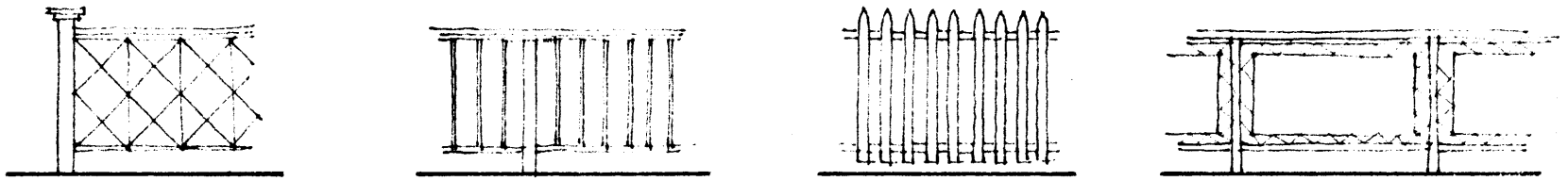
Former U.S. Fisheries Commision buildings destroyed by hurricane in 1938. Building was later replaced by a locally despised "shoe-box" building shown on page 54.

Much of the architecture on the Cape has been kept in check by historical design review committees. The historical boards enforce the continuity with the Cape Cod context by dictating external qualities such as roof pitch, materials, window size and type, and shutter color. Although I understand and support their purpose in general, their tight reigned method of limiting shutter color (for example) maintains the status quo in design. Although they keep out the occasional steel building and the Miami Beach-type hotel, they tend to freeze the architecture at a popular period in its development.

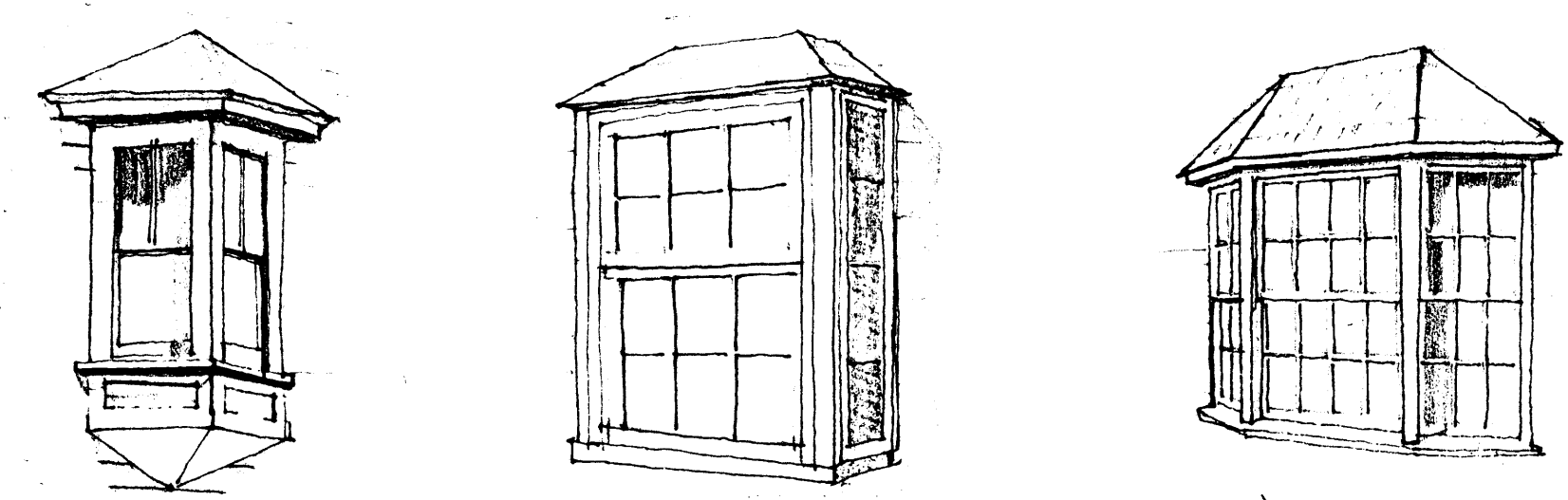
Typical Cape Cod window vocabulary:



Typical Cape Cod handrail and/or fence vocabulary:



Typical Cape Cod Bay window vocabulary:

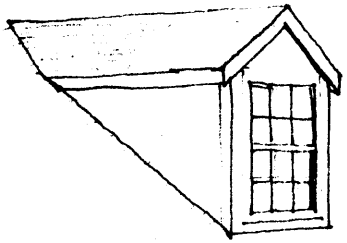


ORIEL ~~BAY~~

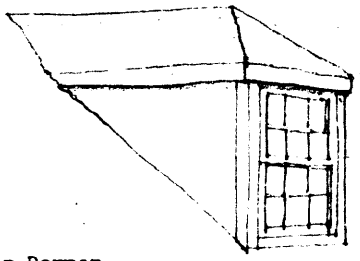
BOX BAY

45°(30°) ANGLE BAY

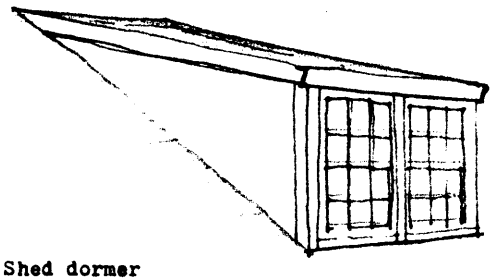
Typical Cape Cod Dormer vocabulary:



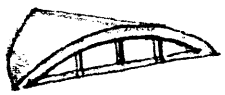
Gable or "Dog House" dormer



Hip Dormer



Shed dormer



"Eye Brow" dormer

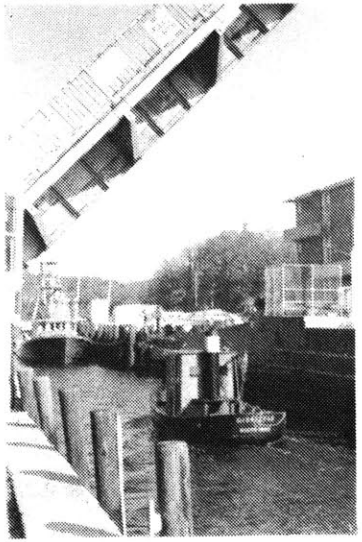
It is understandable that the recent transformation of Cape Cod from a quaint out-of-the-way place into a tourist center has prompted many old time locals to try to assure themselves that some of the character of the Cape will survive. And the all-to-recent memory of the destruction of urban renewal brought on by the modern movement has left the people in out of the way places like Cape Cod, skeptical of change and development. There is also great pressure to maintain the Cape Cod look. Tourism, the Cape's largest industry, demands this "quaintness".

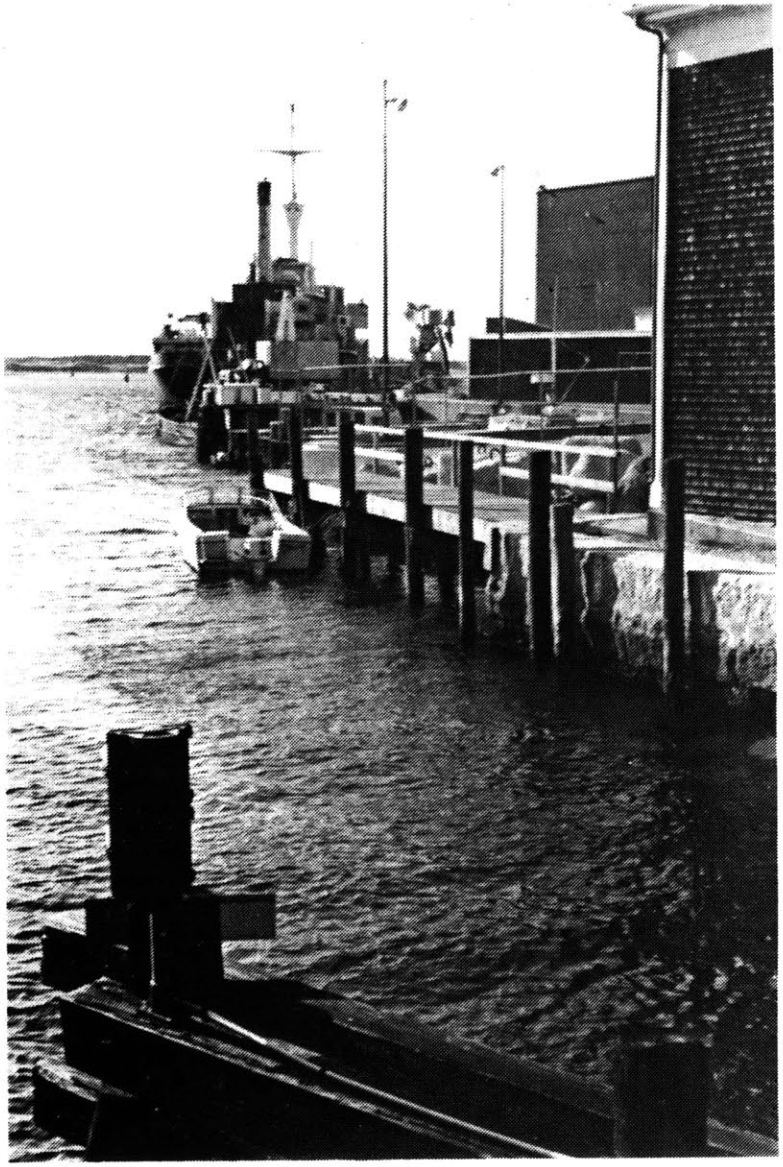
But as I said earlier, change is inevitable. Limiting what is considered negative change is not a comprehensive plan for the future. It is also necessary to encourage some positive directions as well.

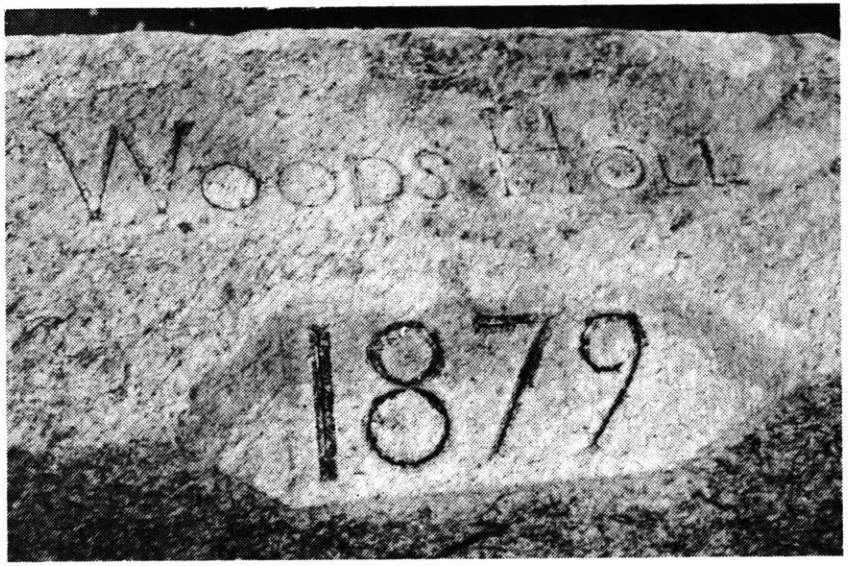
This thesis attempts to design what I am calling "recognizable transformations of existing forms". "Recognizable" in order to build continuity with the past and "transformation" in order to deal with the needs of twentieth century buildings.

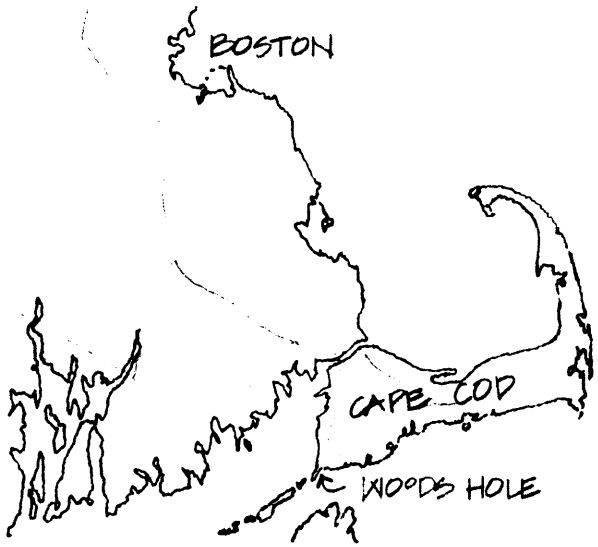
The design in this thesis will attempt to illustrate transformations of the vernacular Cape Cod form into one which responds the current environmental, political and intellectual forces of the 1980's while maintaining a recognizable continuity with the context.

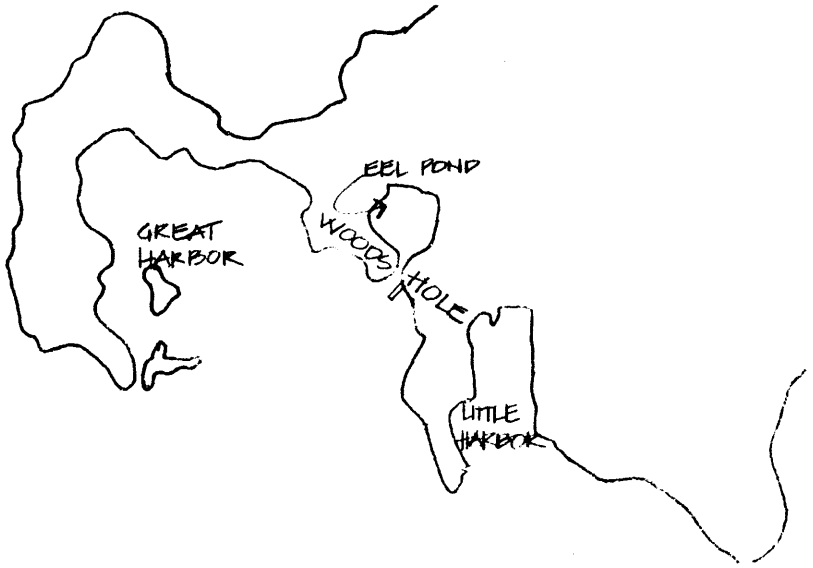
THE SITE









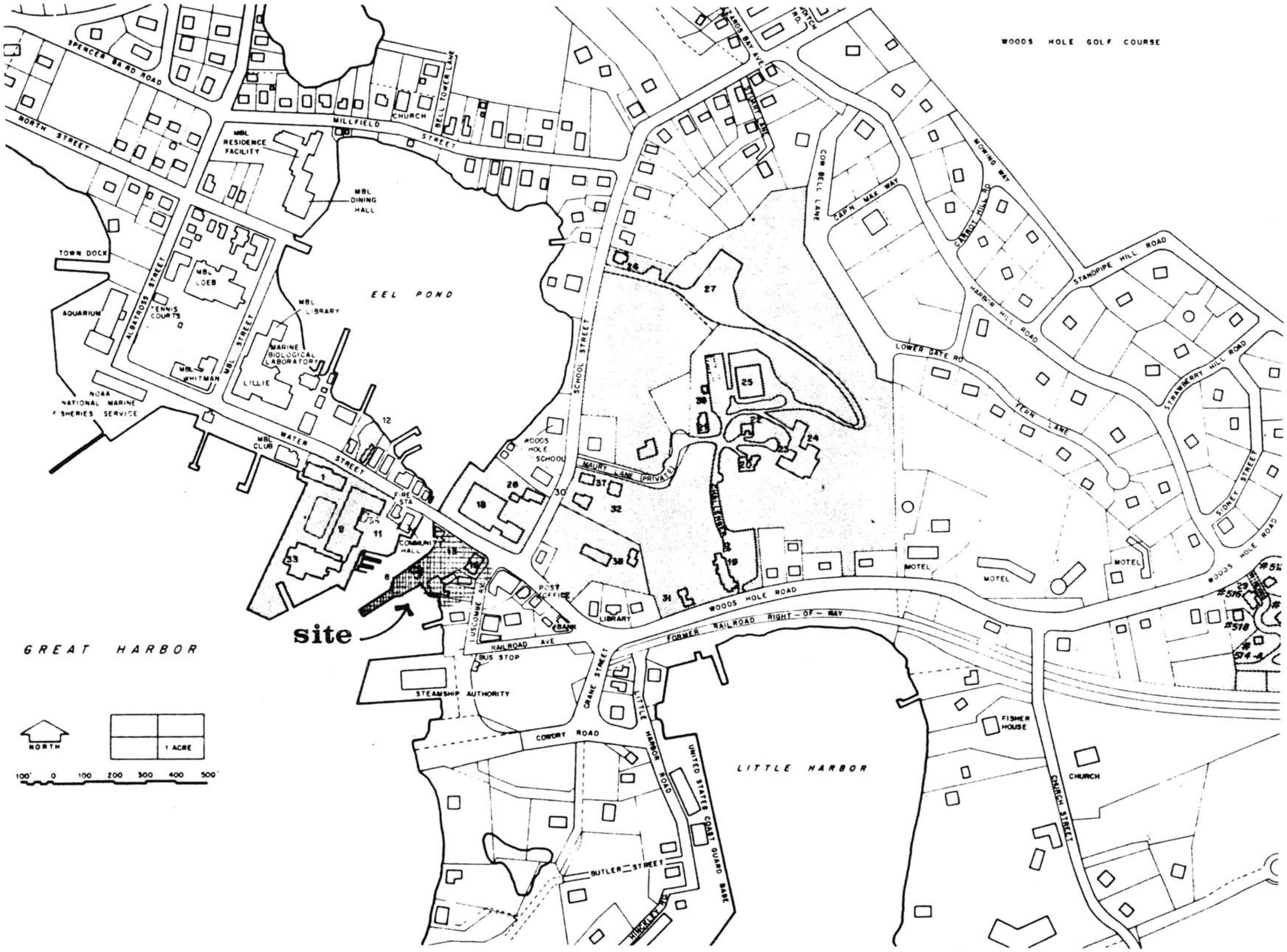


Woods Hole is a small harbor town on the southern tip of Cape Cod, near the mouth of the Cape Cod Canal. Despite its small size and population it is world famous for its marine research centers:

The Woods Hole Oceanographic Institute
The Marine Biological Institute and
The U.S. Department of Fisheries

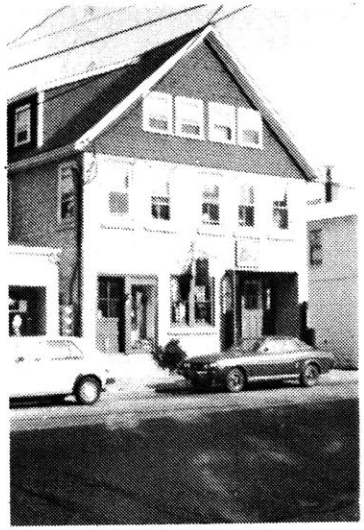
Woods Hole has boasted many industries throughout its long life, from fishing to candles, but its current industry is primarily the support of the research facilities and secondarily, tourism.

The village center of Woods Hole stretches about 300 yards along Water Street from the first few stores to the aquarium near the town pier.

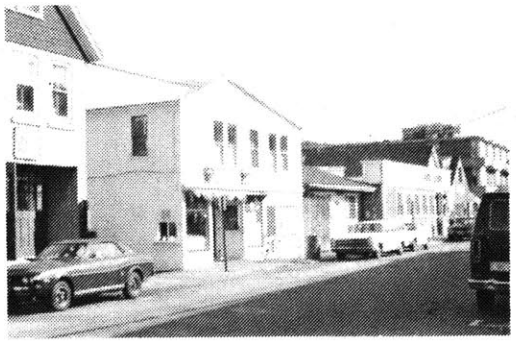

WOODS HOLE GOLF COURSE
SPENCER BAIRD ROAD
NORTH STREET
MILLFIELD STREET
CHURCH
BELL TOWER LANE
MBL RESIDENCE FACILITY
MBL DINING HALL
TOWN DOCK
EEL POND
MBL LOEB
MBL LIBRARY
AQUARIUM
ALBATROSS STREET
TENNIS COURTS
MBL STREET
MARINE BIOLOGICAL LABORATORY
MBL WHITMAN
LILLIE
NOAA NATIONAL MARINE FISHERIES SERVICE
MBL CLUB
WATER STREET
FIRE STA
COMMUNITY HALL
WOODS HOLE SCHOOL
SCHOOL STREET
MAURY LANE (PRIVATE)
COW BELL LANE
CAP'N MAX WAY
CARROT HILL RD
MOWING WAY
STANDPIPE HILL ROAD
HARBOR HILL ROAD
LOWER GATE RD
FERN LANE
STRAWBERRY HILL ROAD
SIDNEY STREET
MOTEL
WOODS HOLE ROAD
POST OFFICE
BANK
LIBRARY
USCOMBE AVE
FORMER RAILROAD RIGHT-OF-WAY
site
GREAT HARBOR
RAILROAD AVE
BUS STOP
STEAMSHIP AUTHORITY
CRANE STREET
LITTLE HARBOR ROAD
UNITED STATES COAST GUARD BASE
LITTLE HARBOR
FISHER HOUSE
CHURCH
CHURCH STREET
COWDRY ROAD
BUTLER STREET
NORTH
1 ACRE
100' 0 100 200 300 400 500'

At present there is a smattering of quaint stores and restaurants, fishing and boating facilities, museums, a ferry dock, an old elegant but run down inn, water-side eating places, and several research laboratory buildings.

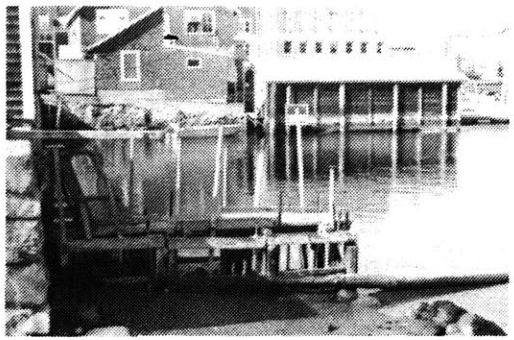
The research institutions involve or employ most of the local residents with the exception of a few commercial fisherman and a number of owners and employers from the restaurants and other small businesses. Tourist traffic is alleged to be very great - the small aquarium operated by the Department of Fisheries boasts a turnstile tally of over 200,000 persons per year. Most of the seasonal tourist traffic is fostered by the Steamship Authority ferries that travel to and from Martha's

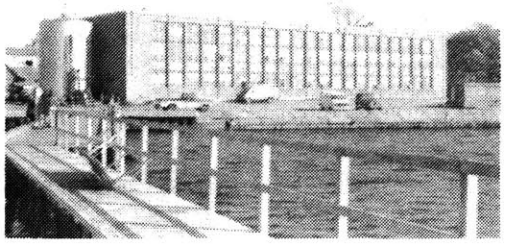


Vineyard and Nantucket dumping hundreds of thousands of tourists per year into the streets of Woods Hole. Local residents complain about the lack of public space, parking, and places to house and feed the hoards of demanding foreigners. Their streets are reportedly used as trash cans and their meagre Department of Public Works which has only enough money to replace ten feet of sidewalk per year is no match for the thousands of paper dropping travellers.



Pieces of a Context: Woods Hole



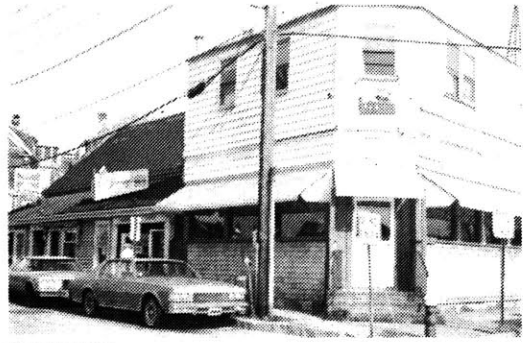


The site for the design portion of this thesis is primarily on a neglected maintenance pier which currently belongs to the Woods Hole Oceanographic Institute. This site includes the area bounded by Water Street to the north, Tuscombe Avenue to the east, and the Eel Pond Channel to the west. The Fishmonger Restaurant, the Woods Hole Pharmacy and the old Woods Hole Inn are kept to become part of the design whereas the other existing structures are assumed to have been destroyed by a hurricane.

Fishmonger Restaurant
retained

Woods Hole Pharmacy
retained

Back-side of Woods Hole Inn
retained

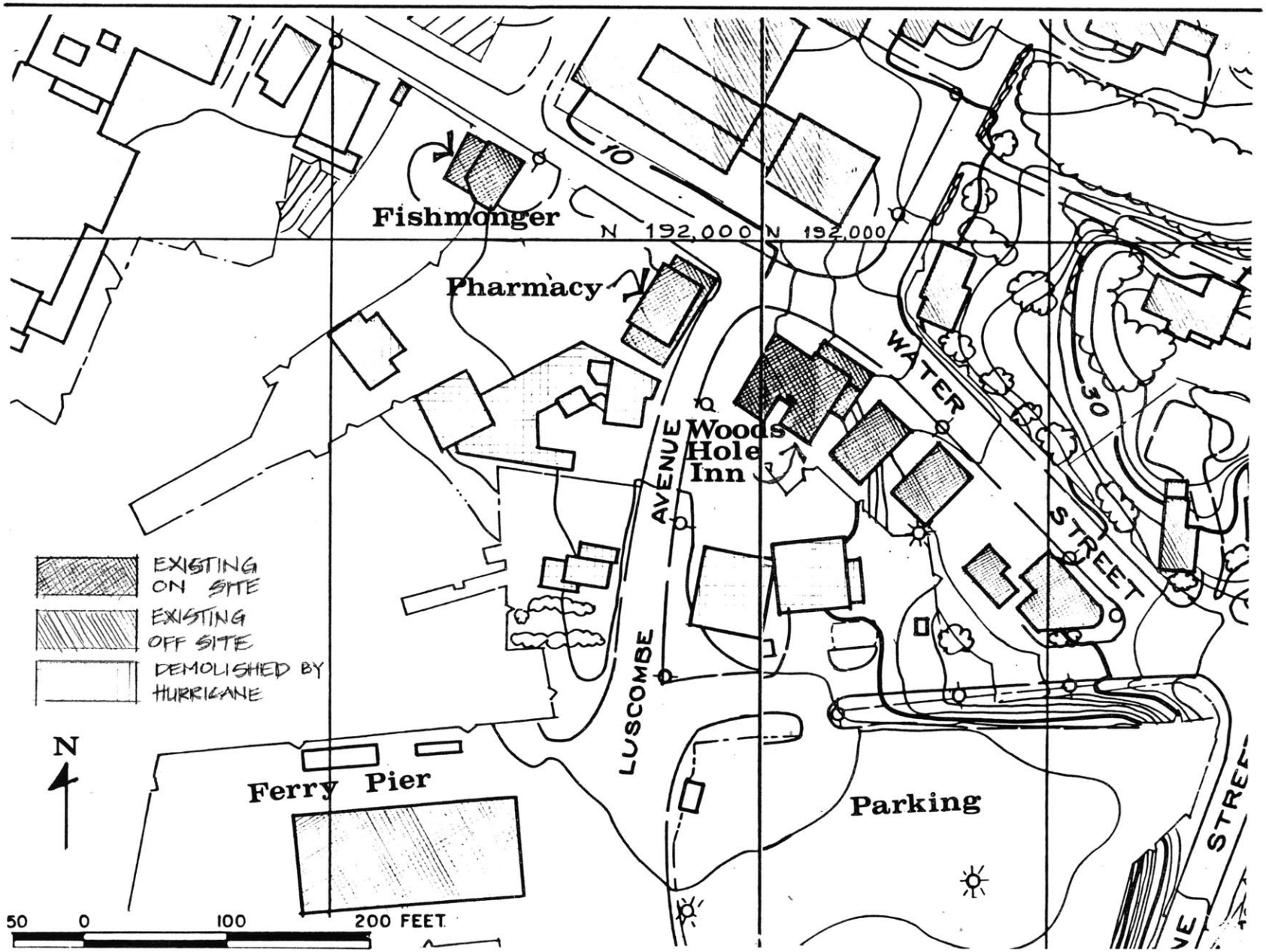


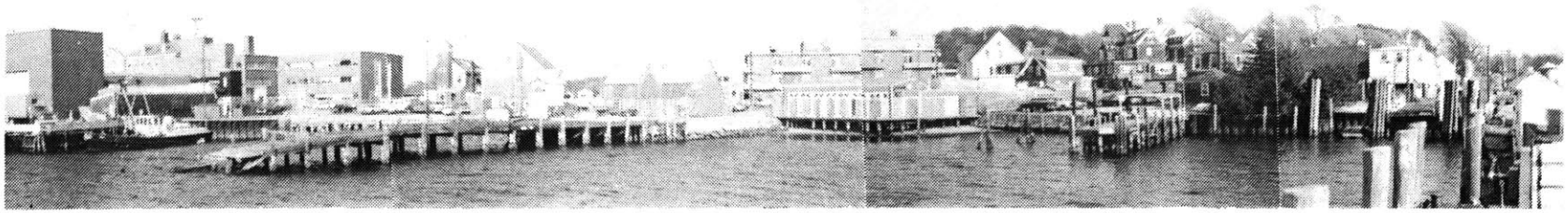
destroyed

Maintenence Shed
destroyed

destroyed

destroyed

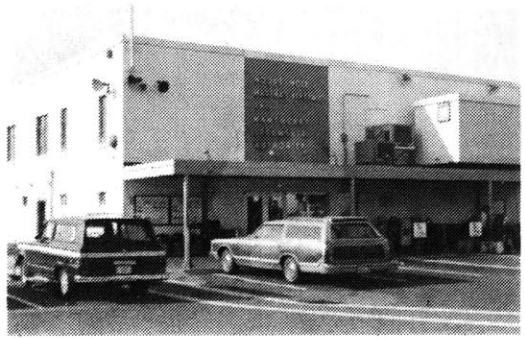

Fishmonger
Pharmacy
N 192,000
N 192,000
10
30
WATER
STREET
Woods Hole Inn
AVENUE
LUSCOMBE
Parking
Ferry Pier
EXISTING ON SITE
EXISTING OFF SITE
DEMOLISHED BY HURRICANE
N
50 0 100 200 FEET



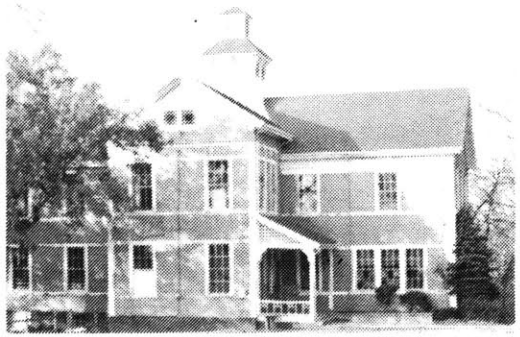
W.H.O.I. buildings existing pier pharmacy and Inn in background

The view above is a 90 degree panoramic view of the "cove" looking from the end of the ferry pier.

Although the primary emphasis of the design was in the vicinity of the old maintenance pier, a larger scale site plan was completed in order to set the context for the new public pier. The larger site plan addresses the problem of parking by proposing that a large parking area be built about 500 feet up School Street across from the old abandoned Woods Hole School. A linear pedestrian street complete with shops, housing, boat facilities and community buildings is proposed to connect the parking area with this new dock side development and the Steam Ship Authority building next door. This parking area will relieve the intense parking problems near the Steam Ship Authority building, and lead to increased parking revenues. The linear pedestrian street could cater to tourists during the summer months and to the research institution folk and "locals" during the off-season. At present most of the existing tourist traffic is concentrated

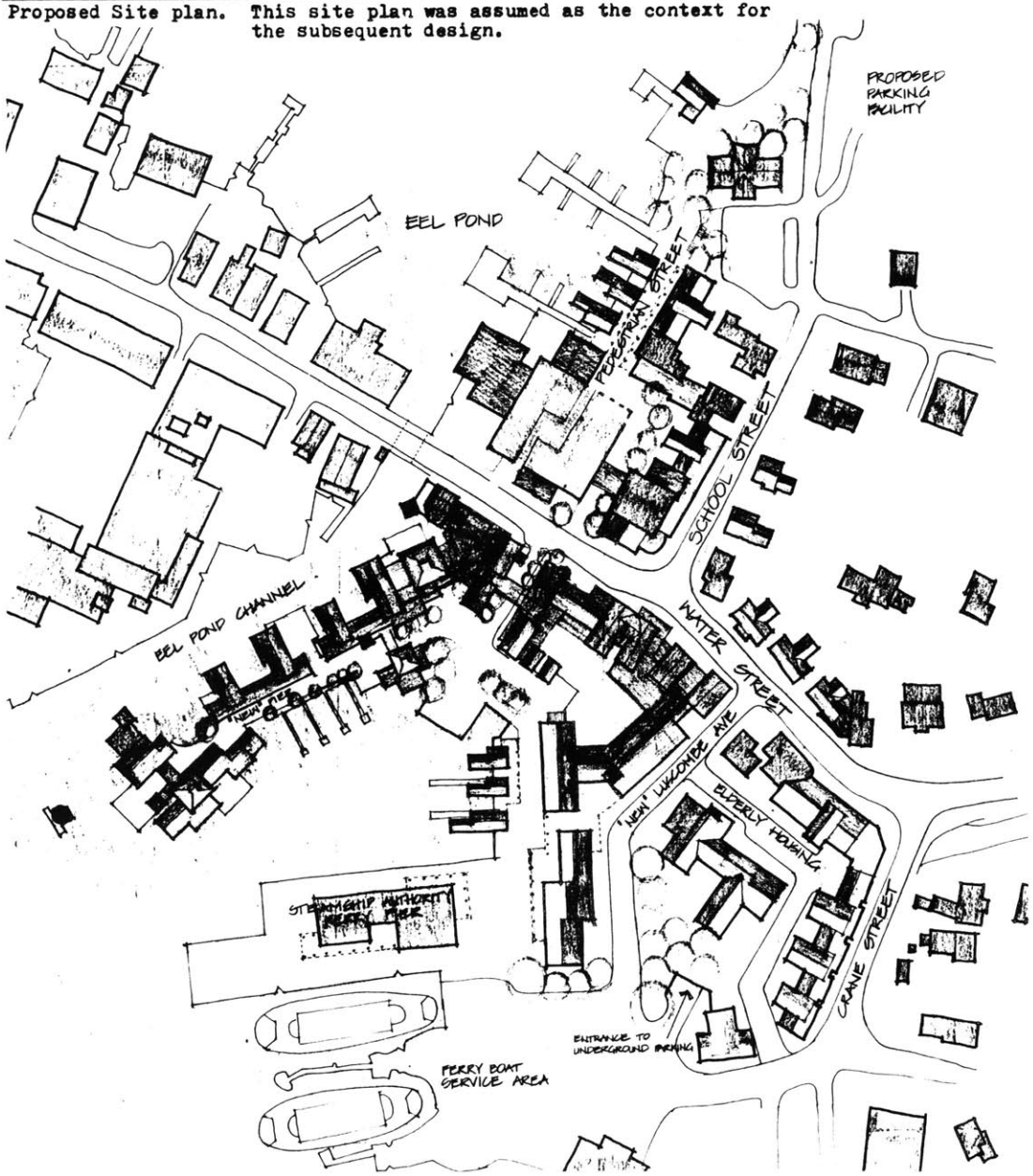


Steamship Authority Building



Woods Hole School

Proposed Site plan. This site plan was assumed as the context for the subsequent design.



in one neglected and unsightly area near the Steamship Authority dock. This singular concentration serves to protect the surrounding areas from the over running of tourists. However, this concentration also means that most of the revenue from the Ferry traffic is taken by the Steam Ship Authority itself. Very little is received by Woods Hole. This proposal would not only solve the parking problem, it would generate the revenue to pay for itself as well.

The streets and traffic patterns in the area West of Crane Street, south of Water Street and East of the Eel Pond draw bridge are changed to relieve traffic congestion and to intensify the village-like quality near the water. The "sea"

The "Sea of parking", The first view of Woods Hole for the incoming motorist.

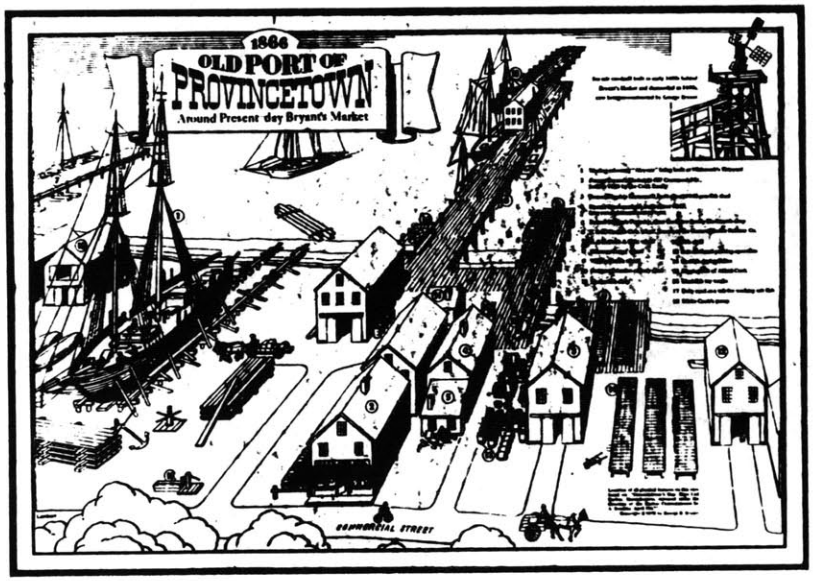
of parking next to the Steamship Authority building is to become underground parking with housing for elderly on top. From this point, the elderly residents will have close access to the town's shops and activities, and a spectacular view of Eel Pond, the Great Harbor, the Little Harbor and the surrounding area. Several layers of underground parking will increase the amount of parking revenue as well as remove the unsightly view of parked cars that presently confronts the incoming visitor or resident.

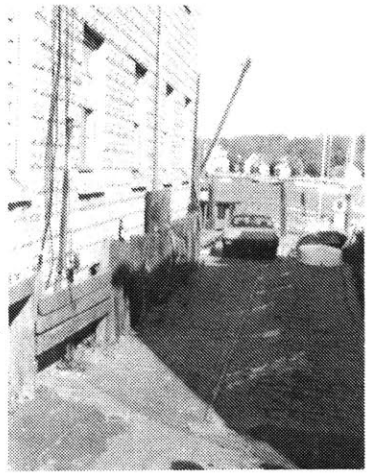
All phases of the design seek to emphasize and intensify positive aspects of that which exists while removing, altering or ignoring negative features. At each stage these "existing" aspects may be either the currently existing physical features, or those proposed in an earlier phase of the design. At no stage in the design process is any "existing" feature (either existing or previously proposed) ultimately fixed or permanent, however efforts are made to work with what is there. Consequently each stage in the design accepts earlier stages as if they were a new context to be worked with and altered if necessary. The attitude towards the design problem at hand is similar regardless of the size of the project. The designer attempts to improve those areas over which he has control at any one time. Those aspects beyond his control may have been fixed by outside forces or even his own earlier large scale design. In short, the process is one that does not always "start from zero."

THE DESIGN

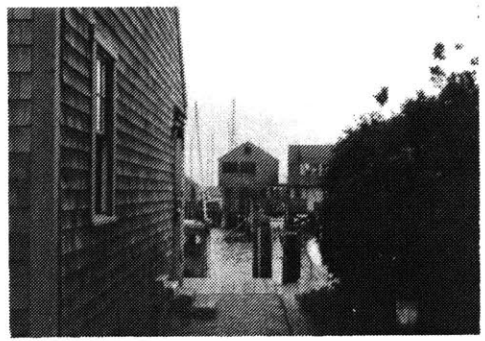
In beginning a design that is concerned with continuity and context it is necessary to examine the site for clues and to look for precedents or references where a similar problem has been confronted.

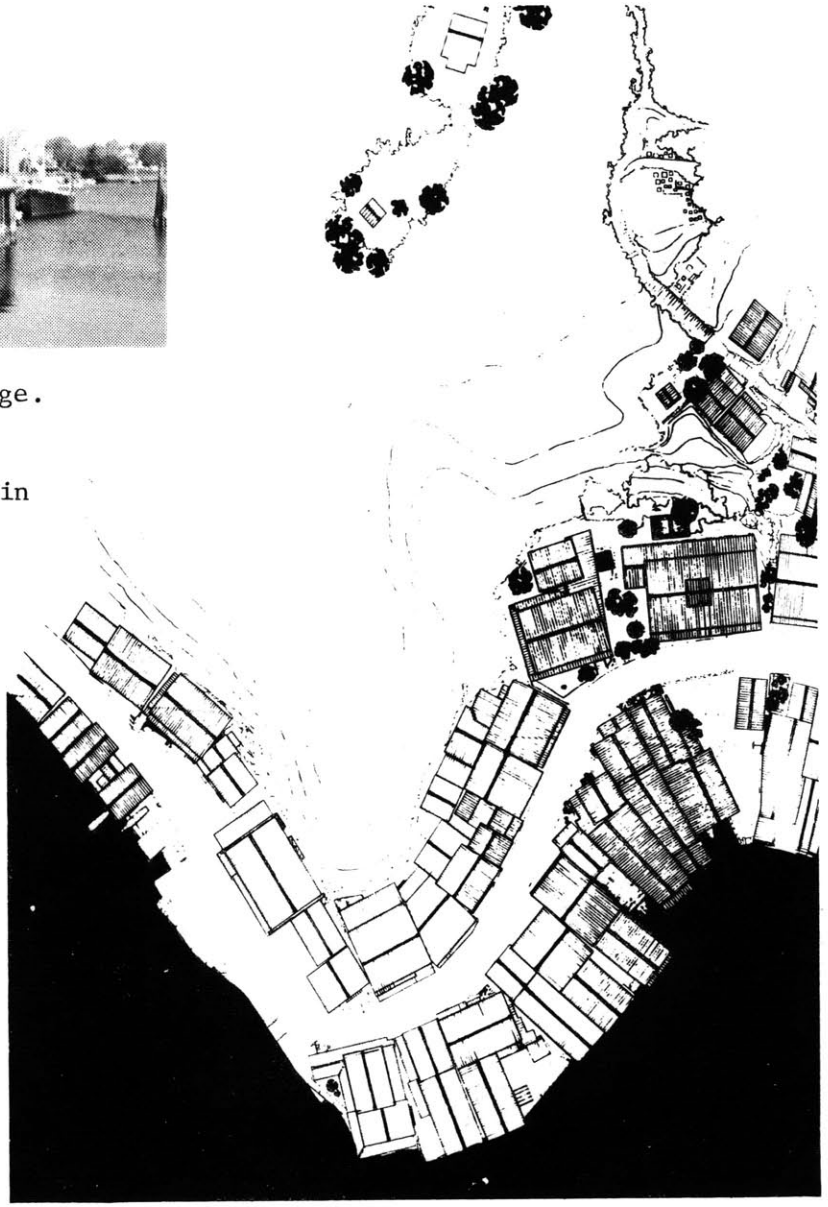
The general pattern of growth of Woods Hole and many other Harbor towns is clear. Given a harbor condition which is protected from the sea, the





object is to maximize the edge. This principle of maximizing the edge was the first clue in this design.



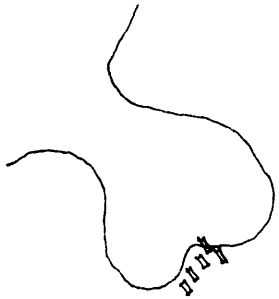


A Japanese Village: notice the direction of the buildings at the water's edge compared to those inland.

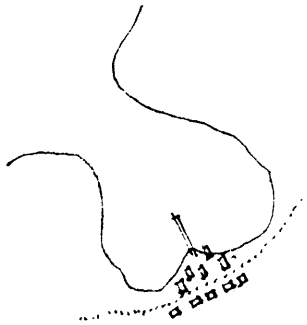
The Evolution of a Harbor:

1 GIVEN A HARBOR CONDITION

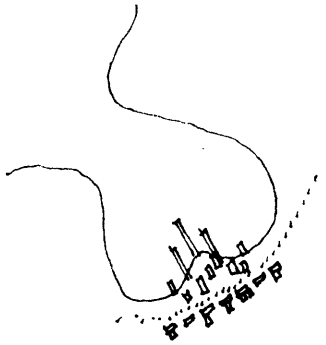
2 SETTLEMENT OCCURS AT MAXIMUM EDGE



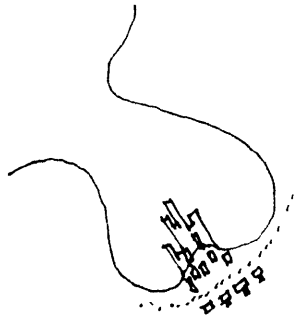
3 DOCKS PUSH OUT TO INCREASE EDGE



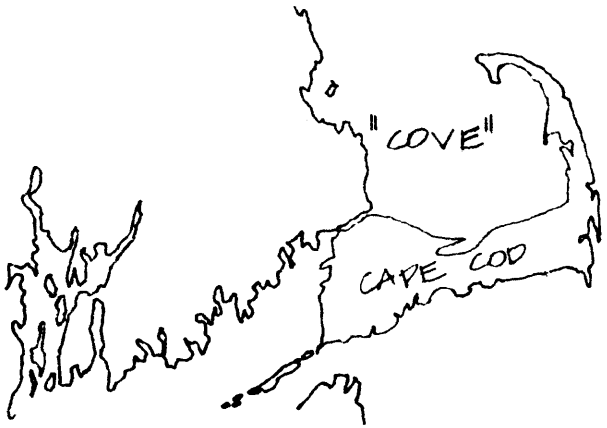
4 NUMBER OF DOCKS INCREASE



5 AS SETTLEMENT INCREASES, DOCKS BECOME LONGER AND GET FILL-IN BETWEEN

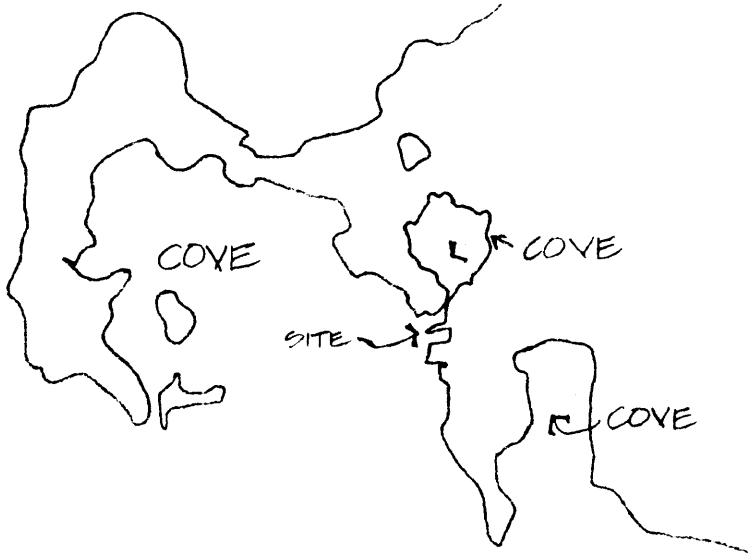


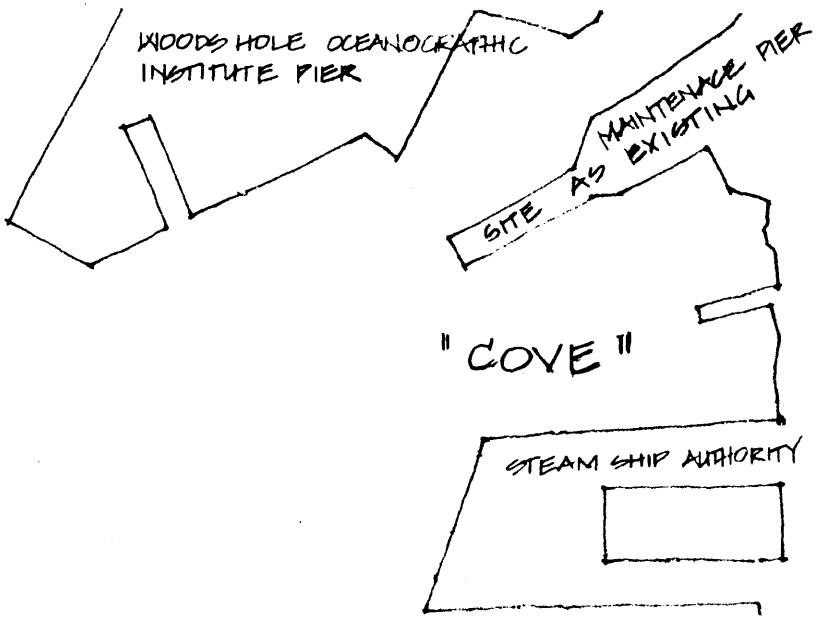
6 WHEN PIER BECOMES SO LARGE THAT IT BECOMES NEW GROUND, THE EDGE MAY BE FURTHER INCREASED BY MOVING LATERALLY. THIS DEPENDS ON THE SIZE OF THE VESSELS BEING HARBORED



The second clue came from the larger surrounding, landscape. The form of the "cove".

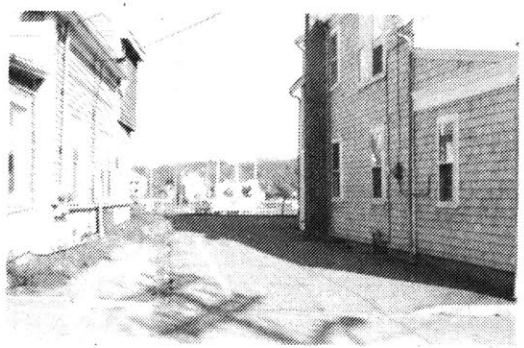
The pier was not only going to increase the edge, it was to define a protected cove for public activities.

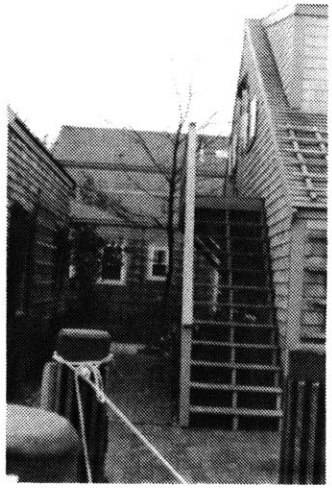


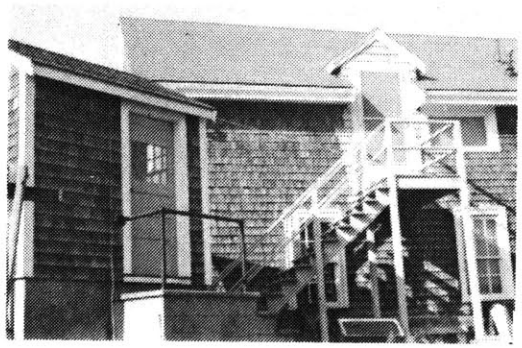


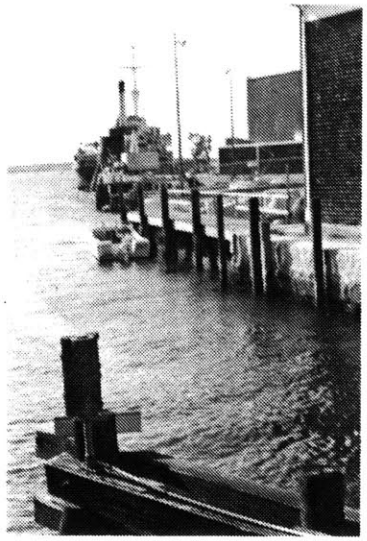
Pieces of a Context: direction and access

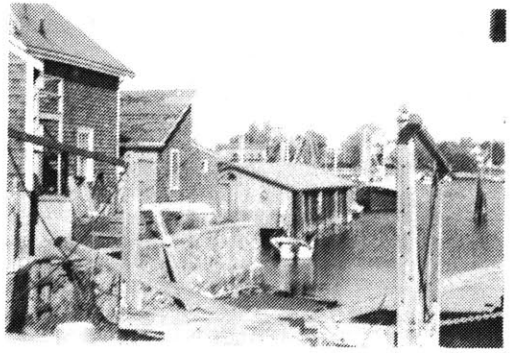
The nearby landscape provided other references: the general direction of the land; the access (including streets, paths, and open space); and the existing maintenance pier. These provided clues for the direction of the path and the proposed buildings.

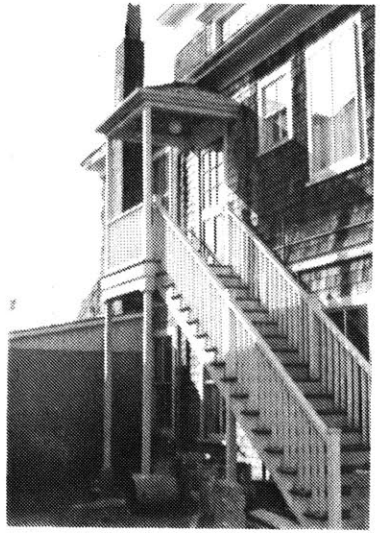






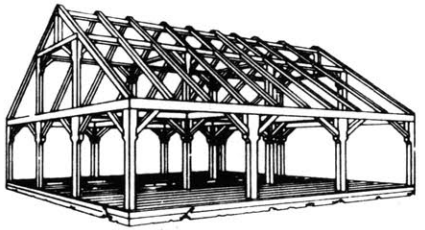




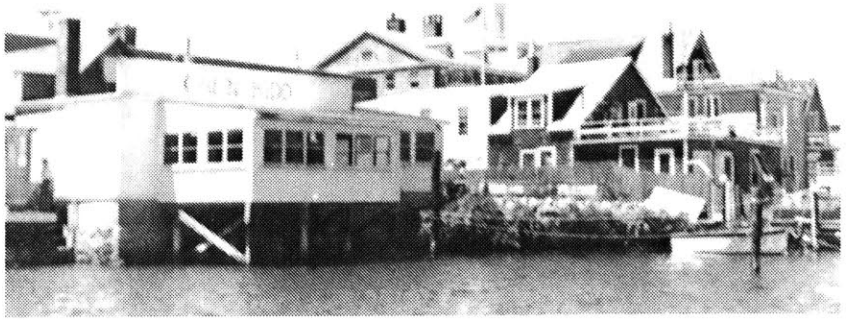


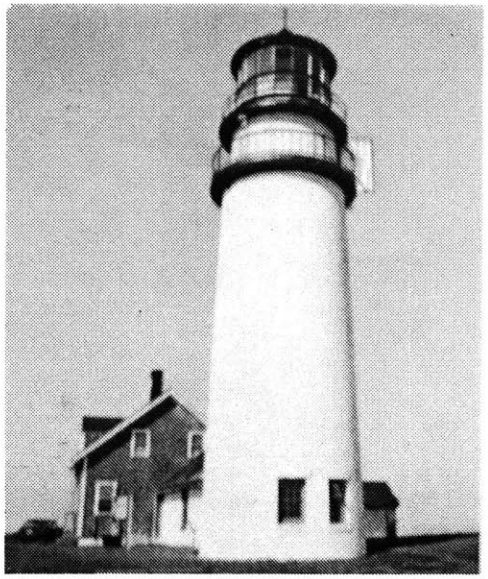
Given a program for a mixed use development, the "dog bone" principle was borrowed in order to get visitors to move out to the end. This public end will include several restaurants, a small convention facility, an open viewing area and a new light house tower.

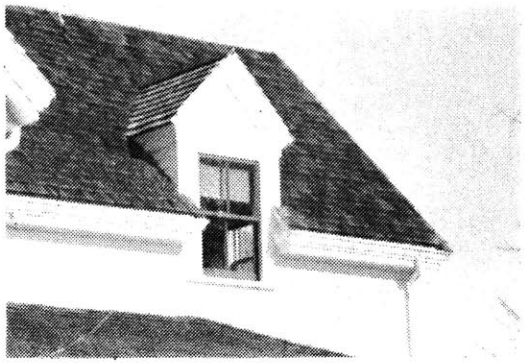
Having made several basic decisions at the site size the next major issue became "what will the buildings be like?": their size, their direction, their relationship to one another and to the path. Precedents were gathered from existing building forms, organizations, and patterns of growth and access. For each reference the question is not how to use this precedent directly but how can it be transformed for use at this time and in this place.

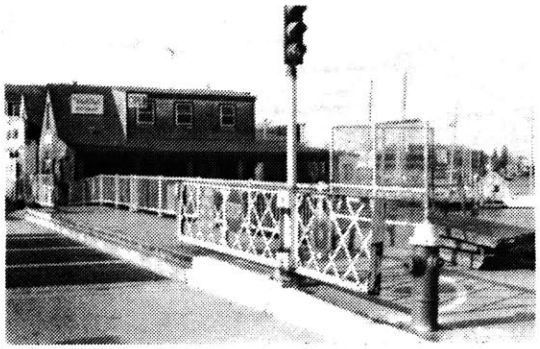


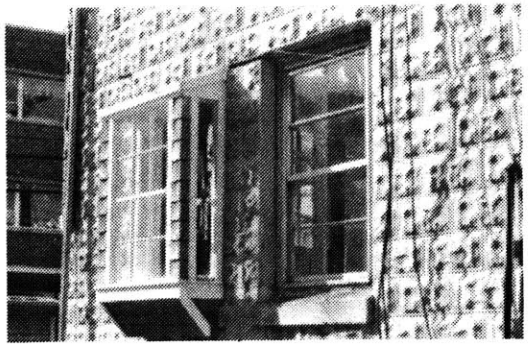
Early post and beam structure

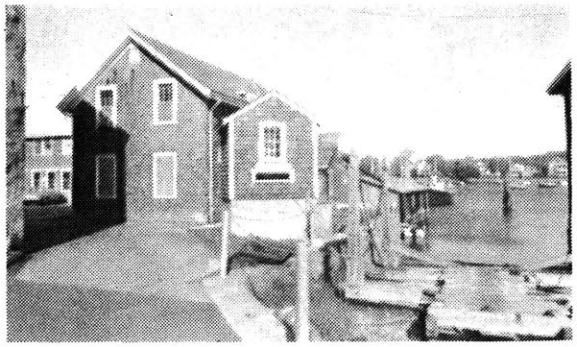


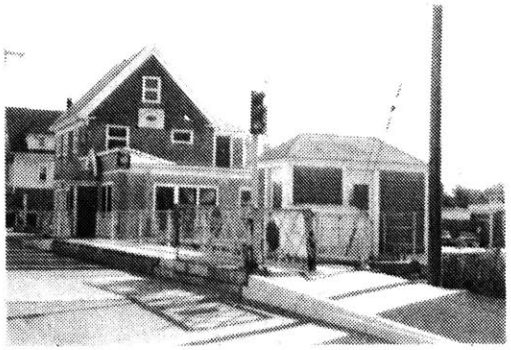




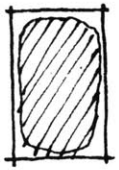






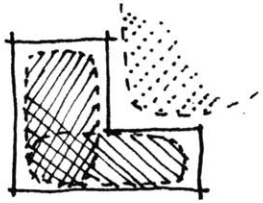


One major aspect of the Cape Cod form that is inappropriate is the closed object-like nature of the continuous surface building.



Object diagram:

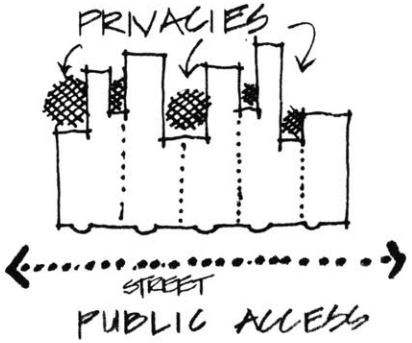
DEFINES INTERIOR SPACE ONLY



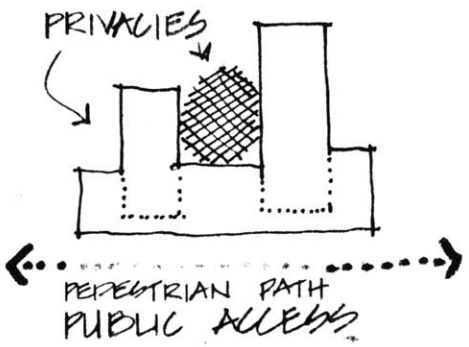
Transformed diagram:

DEFINES VARIOUS INTERIOR AND EXTERIOR SPACES

Row House diagram:



Transformed diagram:

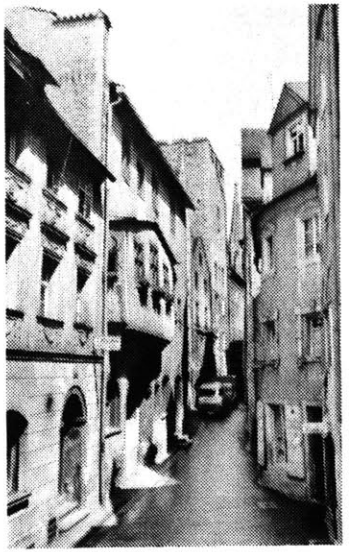


A clear precedent for this type of building that defines outside as well as inside space is the row house. The hard-linear fronts define the public street while their backs define the private space.

This notion of a hard linear edge along the path and a soft reciprocal back edge was borrowed in this design at a larger scale to differentiate the public path from the private place.

A linear spine form of circulation was used to intensify the directionality of the pier and to form a strong continuity along the path.

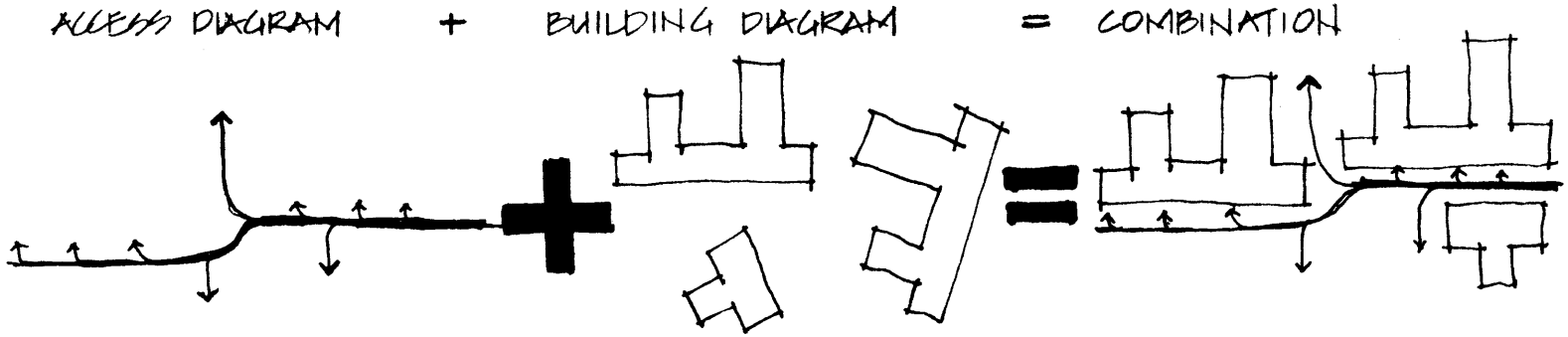
In many old European towns the access is the slack be-



tween the building. In "grid-iron" America the roads were laid-down first and the buildings were controlled by the roads. In the design of this pier it was possible to design both the buildings and the access simultaneously. Therefore each can and should define the other such that it is unclear as to which came first. Notice in the diagram that:

.the shift in buildings defines a shift in the path.

.the shift in the path defines the placement of the building.



The toughest issue of all manages to get put off till the end. "What does it look like?"

By looking for and incorporating various aspects of the context such as building dimensions, directions, organization and access patterns some measure of continuity already exists between the context and the proposed fishing pier. The most difficult and perhaps most subjective issue is how much continuity should there be. How much is too much, how much does it take to be copying.

There seems to be two intellectually different positions that can be taken concerning this issue of continuity change and transformation. Given that current trends require more open, spacially-continuous building on Cape Cod we could: 1) Transform

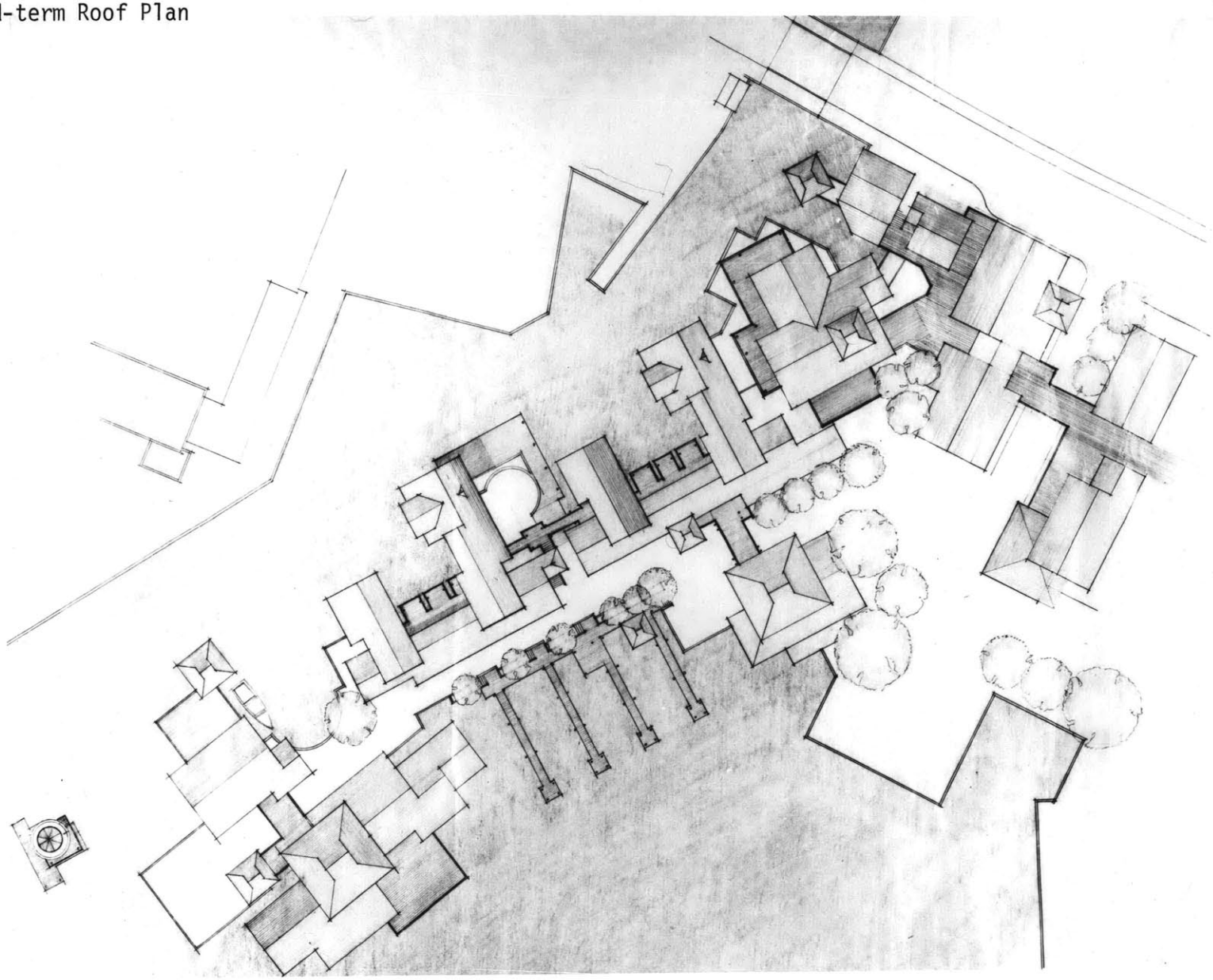
the building form to make it more spacial or 2) Design a more spacially continuous building and later "hang" the closure form that is particular to Cape Cod on this building.

The first method is an "intellectual rehab", whereas the second seems dangerously similar to the current Post Modernist Method of hanging unrelated and often mutilated classical form on their buildings.

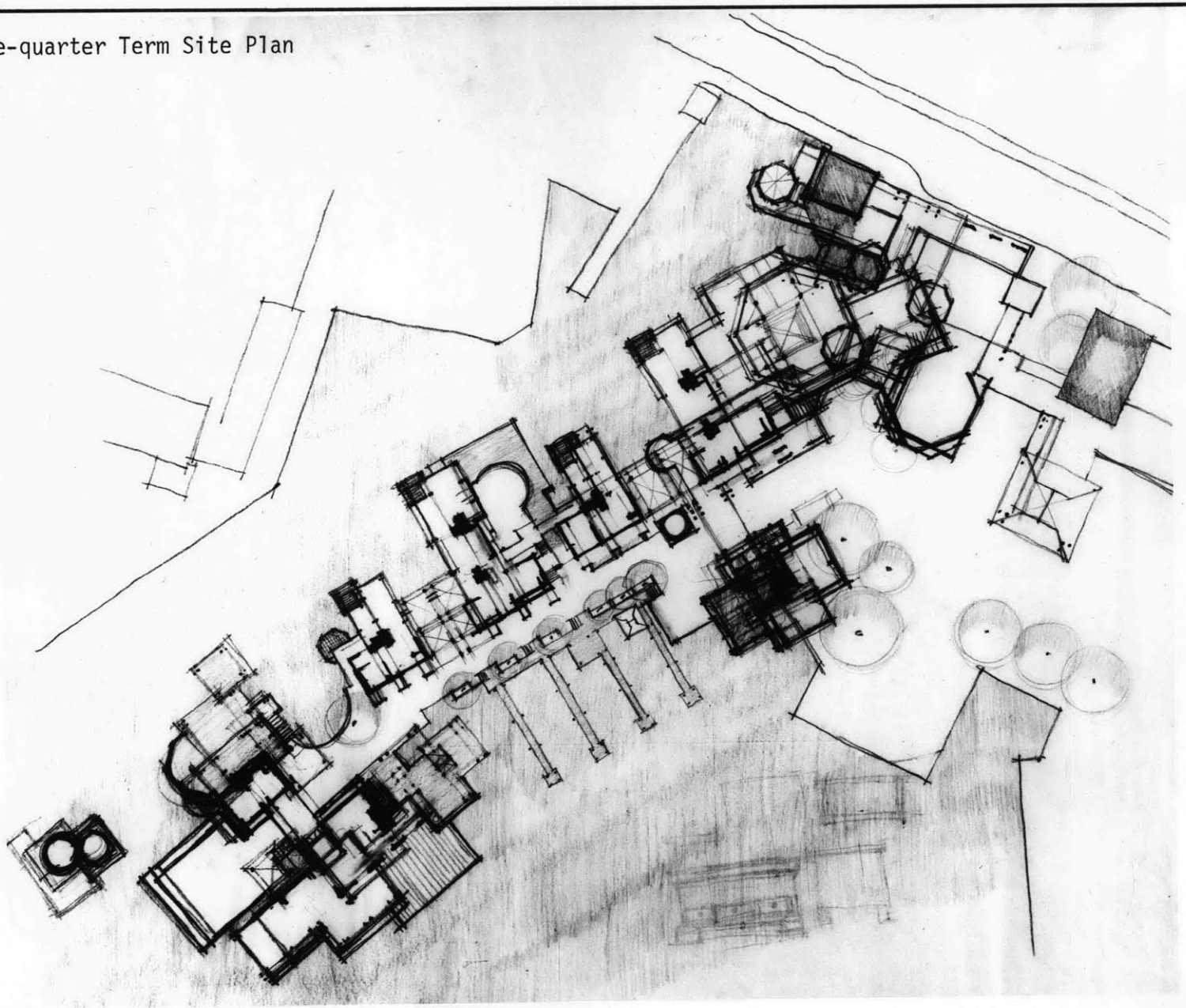
It seems to be necessary to transform both the building form and the form vocabulary according to uses and environmental forces. The transformations should allow some aspects of the building form and the vocabulary to be similar enough to the old to provide some continuity, while the distinctively new aspects will allow the new development to be distinguished from the old.- A recognizable transformation.

Mid-term Site Plan

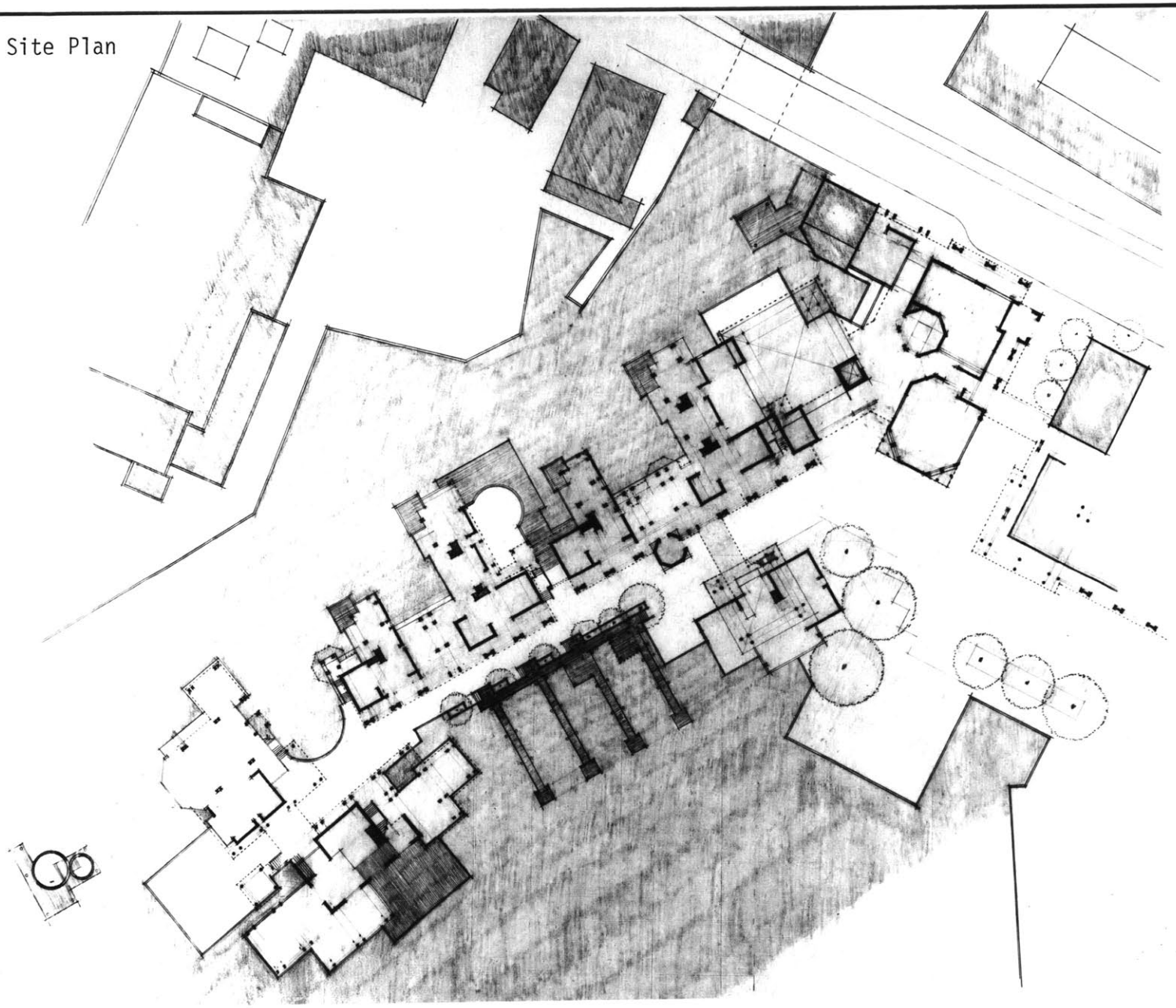
Mid-term Roof Plan

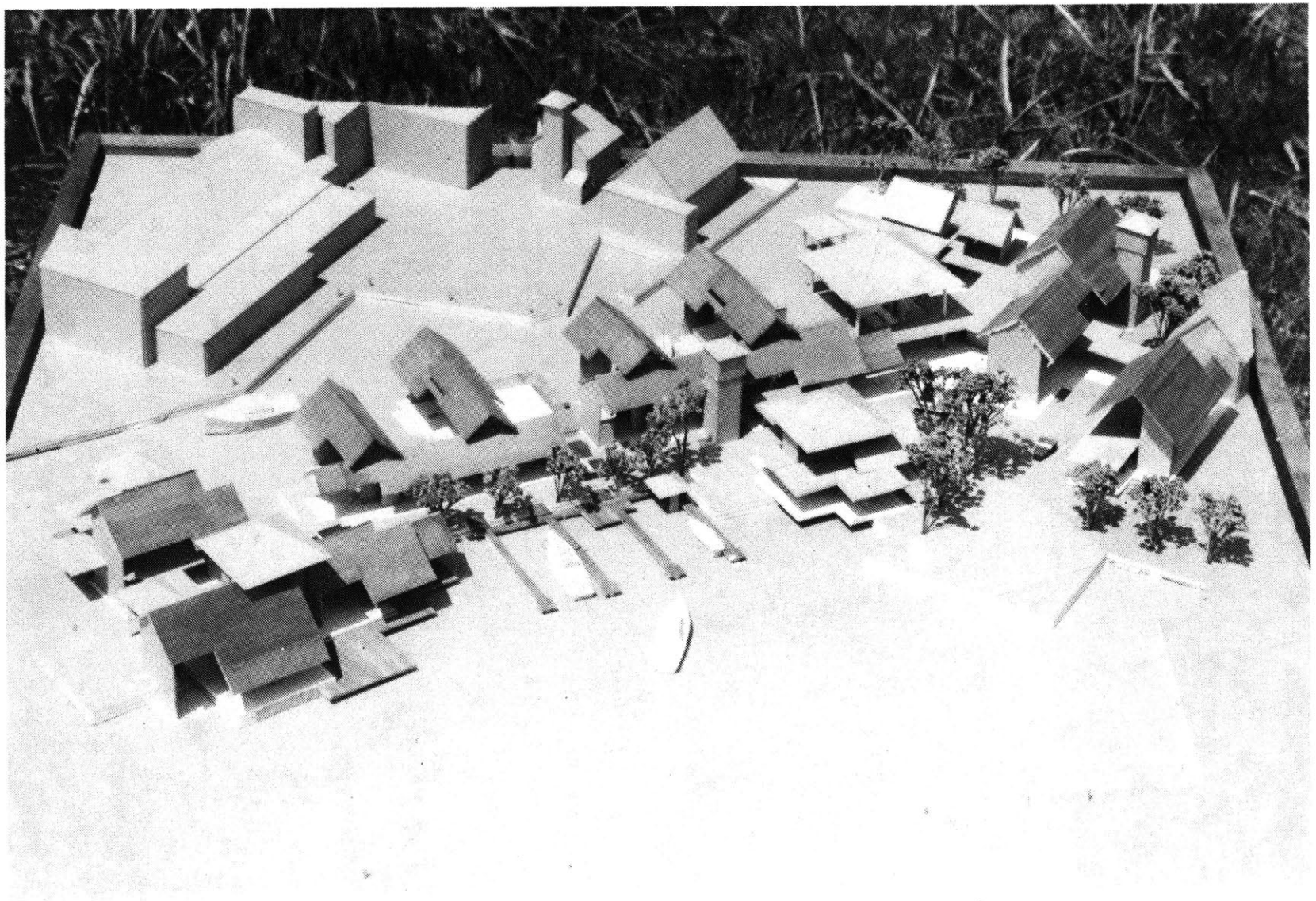


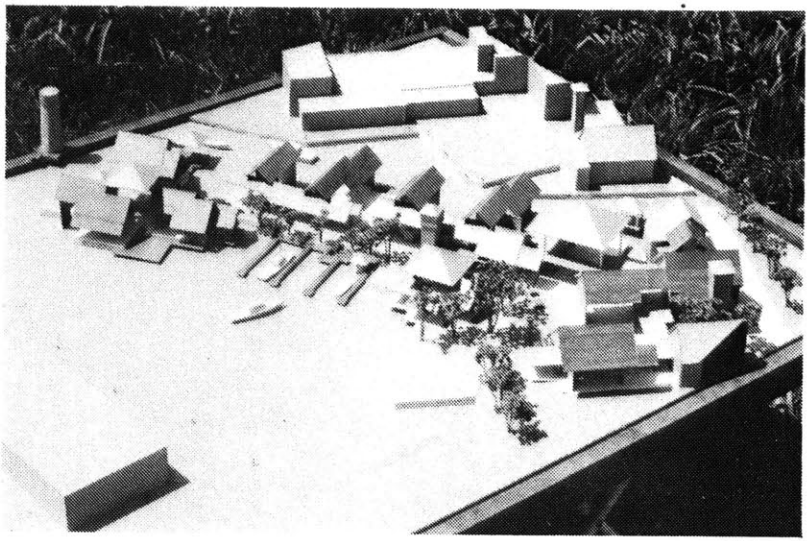
Three-quarter Term Site Plan

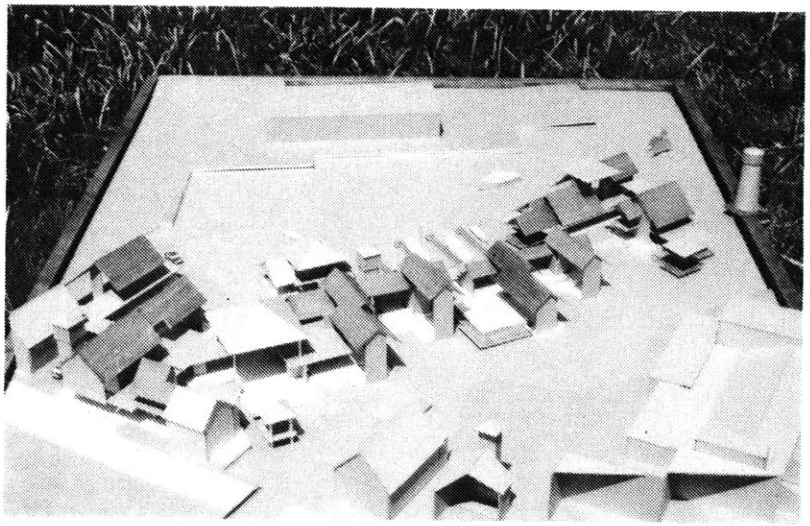


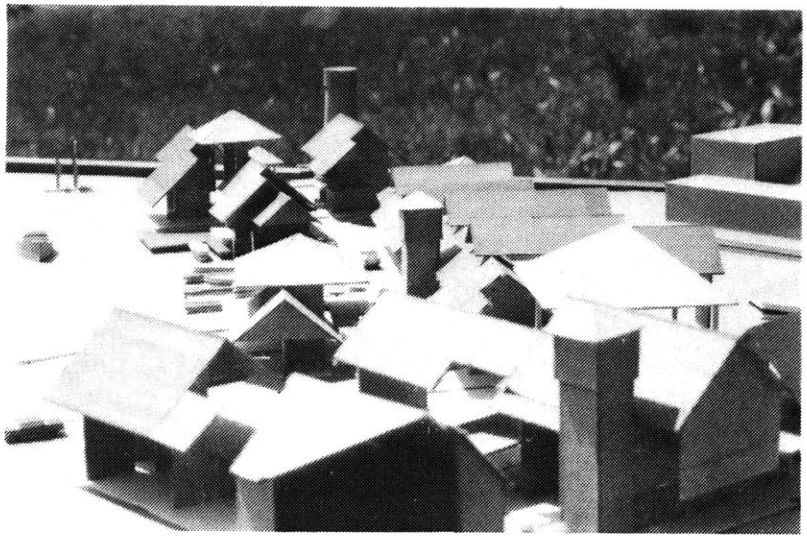
Final Site Plan

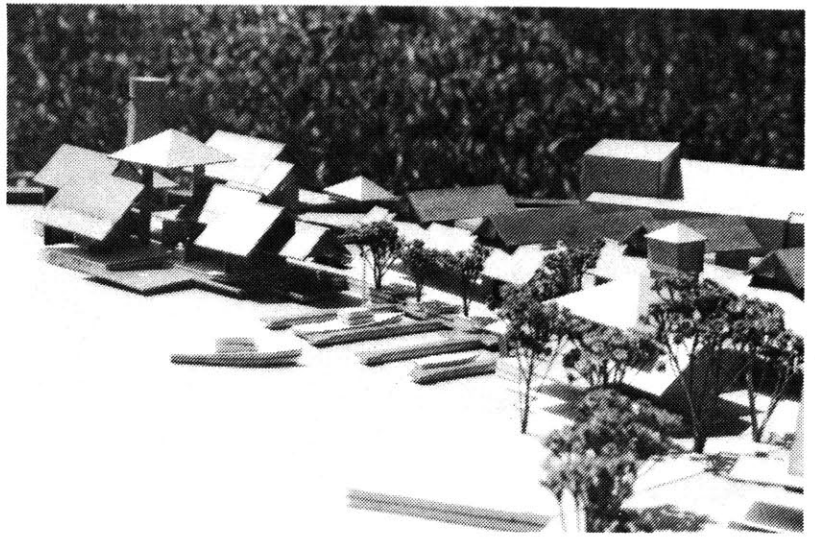


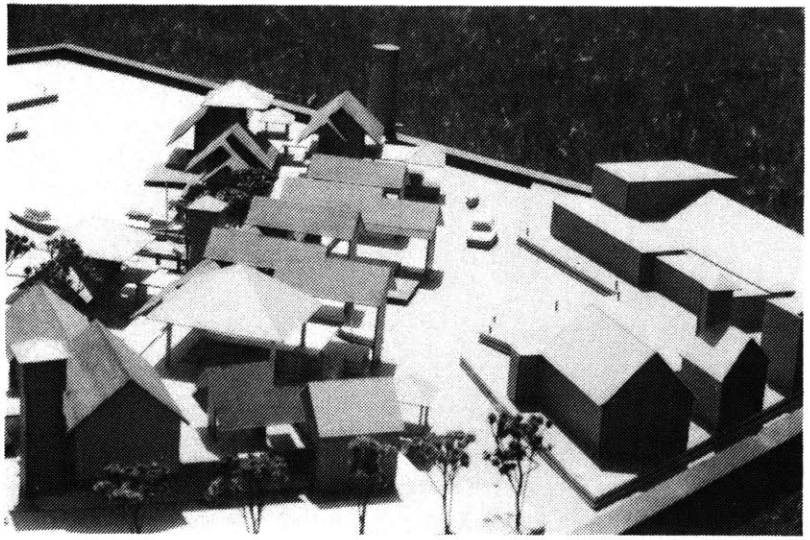


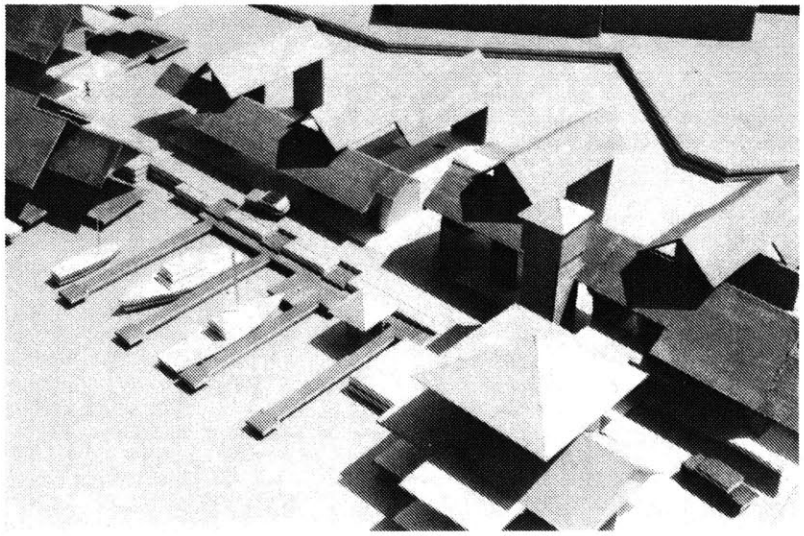


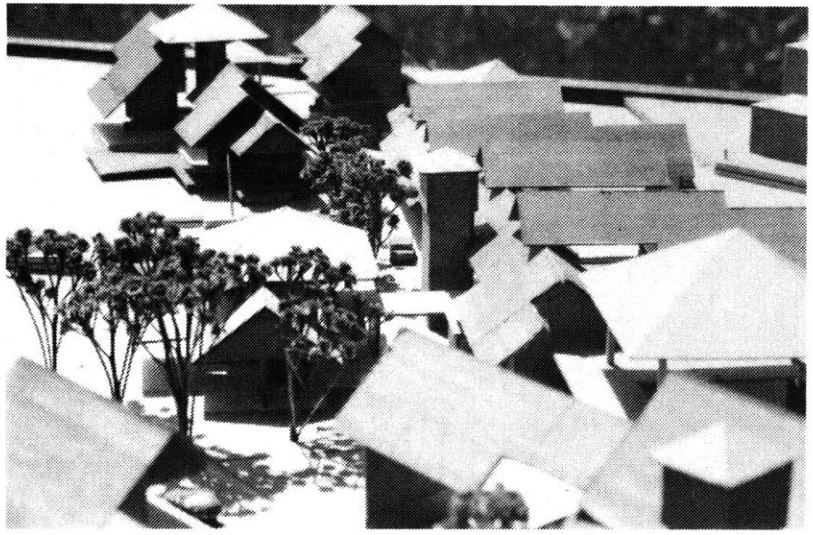




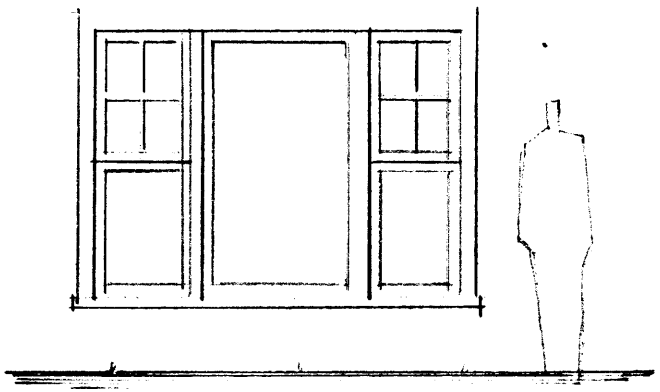




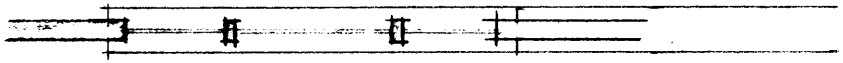




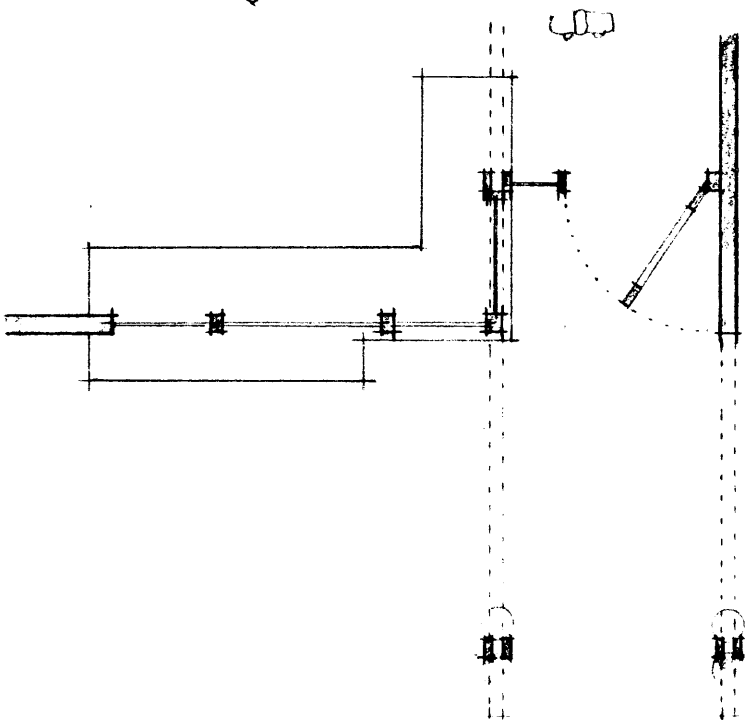
ELEVATION



PLAN



TRANSFORMED PLAN



TYPICAL VERNACULAR WINDOW:

- HOLE PUNCHED IN SURFACE
- MINIMAL CONNECTION / CONTINUITY BETWEEN INSIDE & OUT
- WINDOW SUBSTITUTES FOR WALL

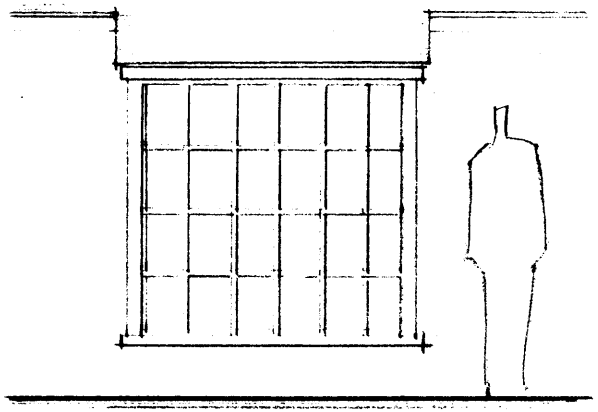
- ZONE OF CLOSURE (THICKNESS OF WINDOW UNIT)

TRANSFORMED WINDOW:

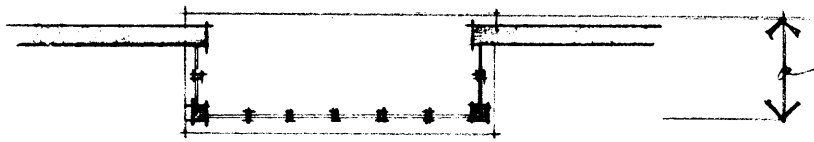
- INCREASE ZONE OF CLOSURE
- WINDOWS BECOME MORE THAN MERELY A SUBSTITUTION FOR THE WALL
- SETS UP NEW DIRECTION

(TOWARDS LIGHT/ ENTRY/ ACCESS)

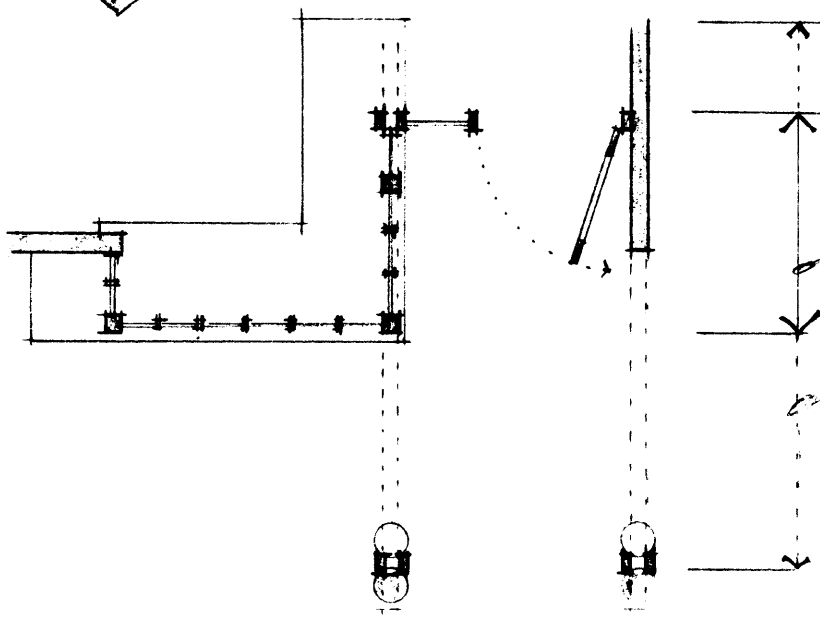
ELEVATION



PLAN



TRANSFORMED PLAN



TYPICAL VERNACULAR WINDOWS

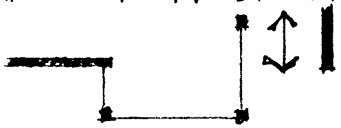
- SLIGHT PUSHING OUT OF CONTINUOUS WALL PLANE
  OR
- DISPLACEMENT OF PLANE

- SECONDARY DIRECTION BETWEEN INSIDE & OUTSIDE (TOWARD LIGHT)

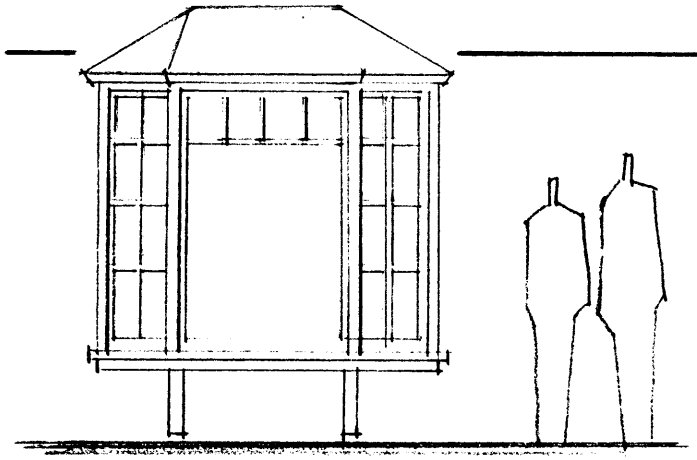
- ZONE OF CLOSURE (THICKNESS OF WINDOW UNIT)

TRANSFORMED WINDOW FORM:

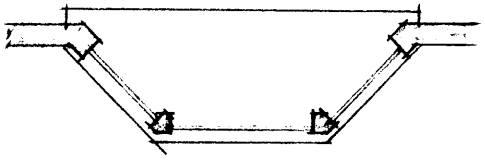
- NO WALL PLANE COUNTER TO INSIDE/OUTSIDE DIRECTION (ALLOWS MORE LIGHT)
- ZONE OF CLOSURE INCREASED
- INSIDE/OUTSIDE ZONE IS EVEN GREATER
- DIRECTION OF LIGHT/ACCESS/ENTRY IS INCREASED



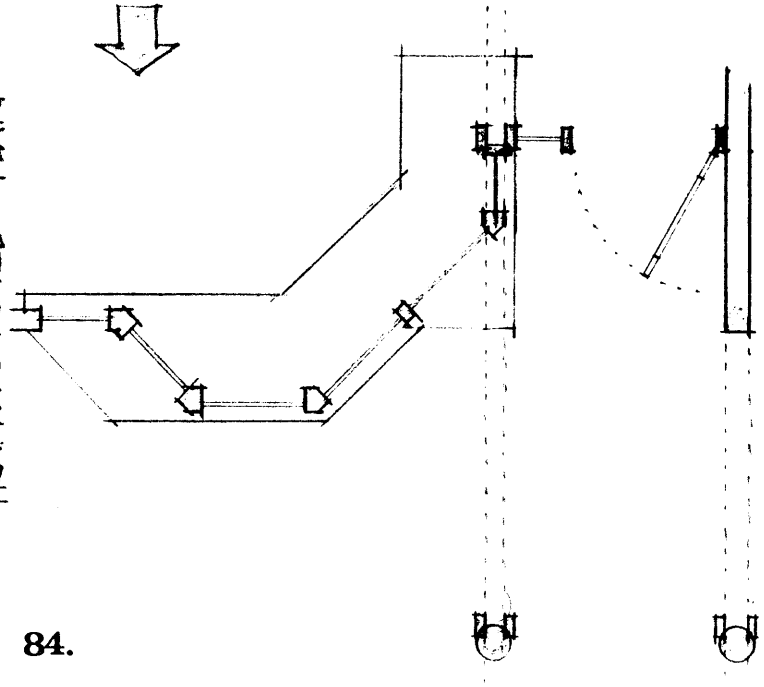
ELEVATION



PLAN



TRANSFORMED PLAN



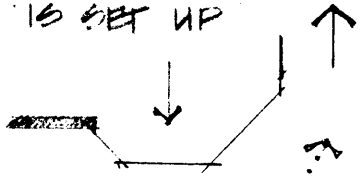
TYPICAL VERNACULAR WINDOW:

- BUBBLING-OUT OF CONTINUOUS WALL PLAN

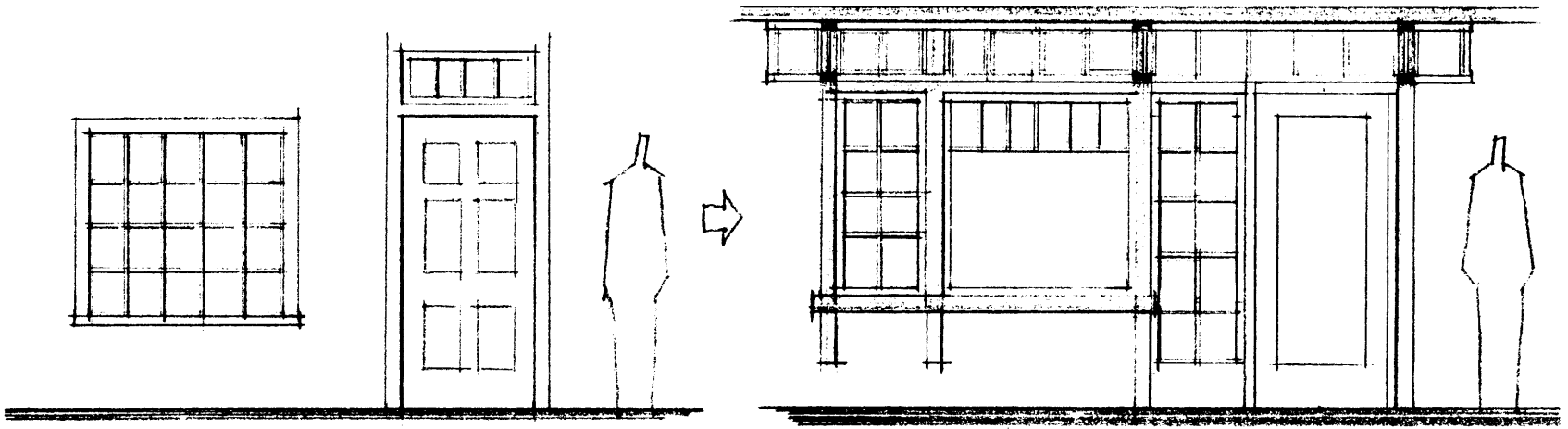
- ZONE OF CLOSURE (THICKNESS OF WINDOW UNIT

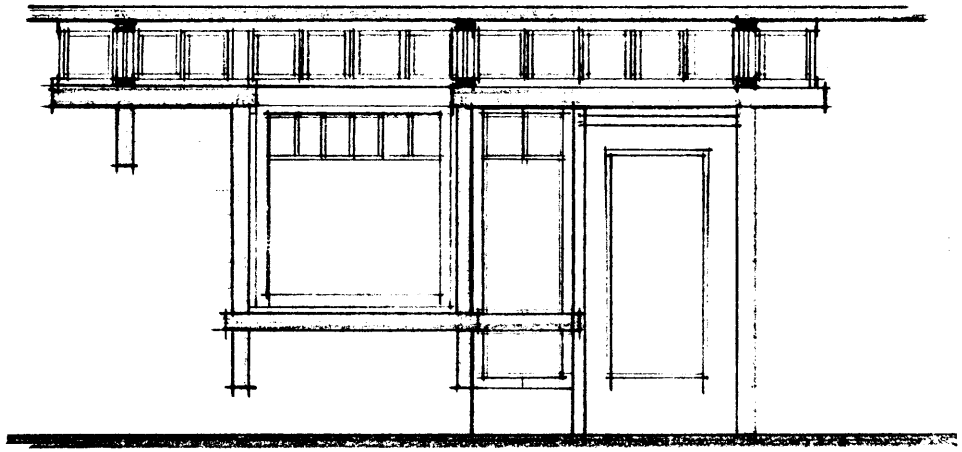
TRANSFORMED WINDOW FORM:

- NO STRONG WALL PLANE COUNTER TO INSIDE/OUTSIDE DIRECTION (LIGHT)
- ZONE OF CLOSURE INCREASED
- INSIDE/OUTSIDE ZONE INCREASED
- DIRECTION OF LIGHT/ACCESS/ENTRY IS SET UP



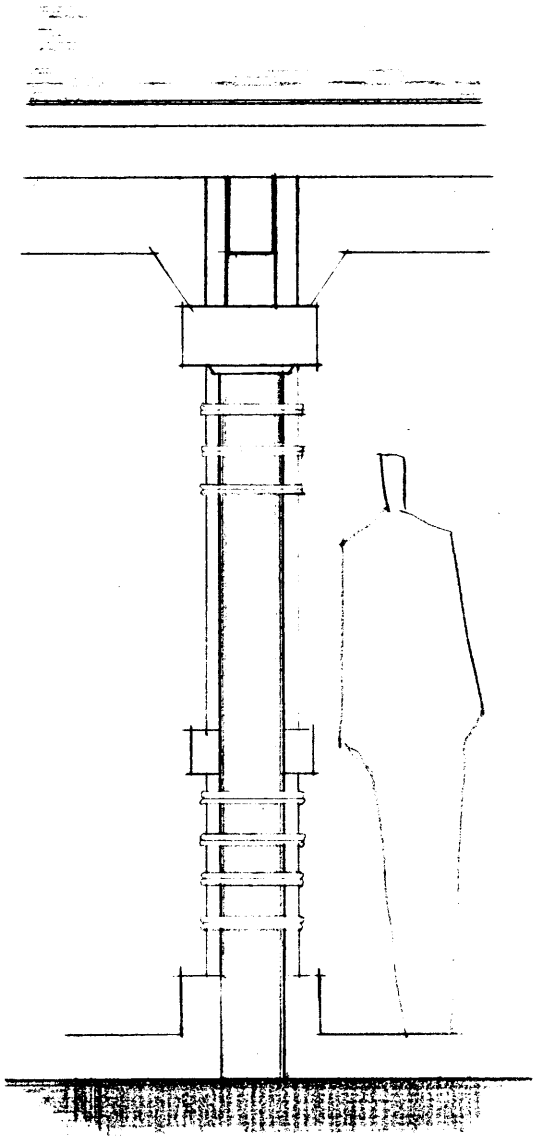
- 'BUBBLE FORM' BECOMES OBJECT WHICH IS MOVED AROUND

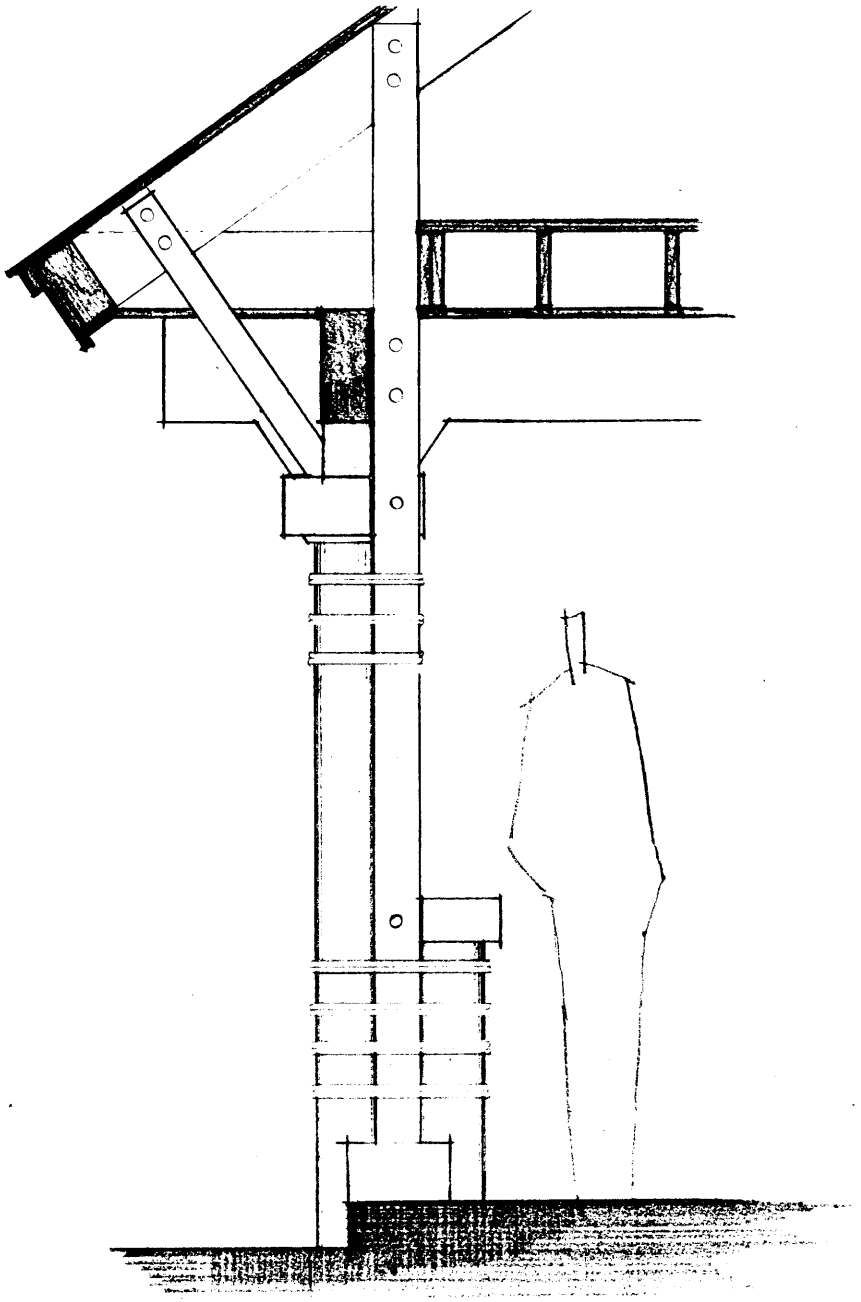


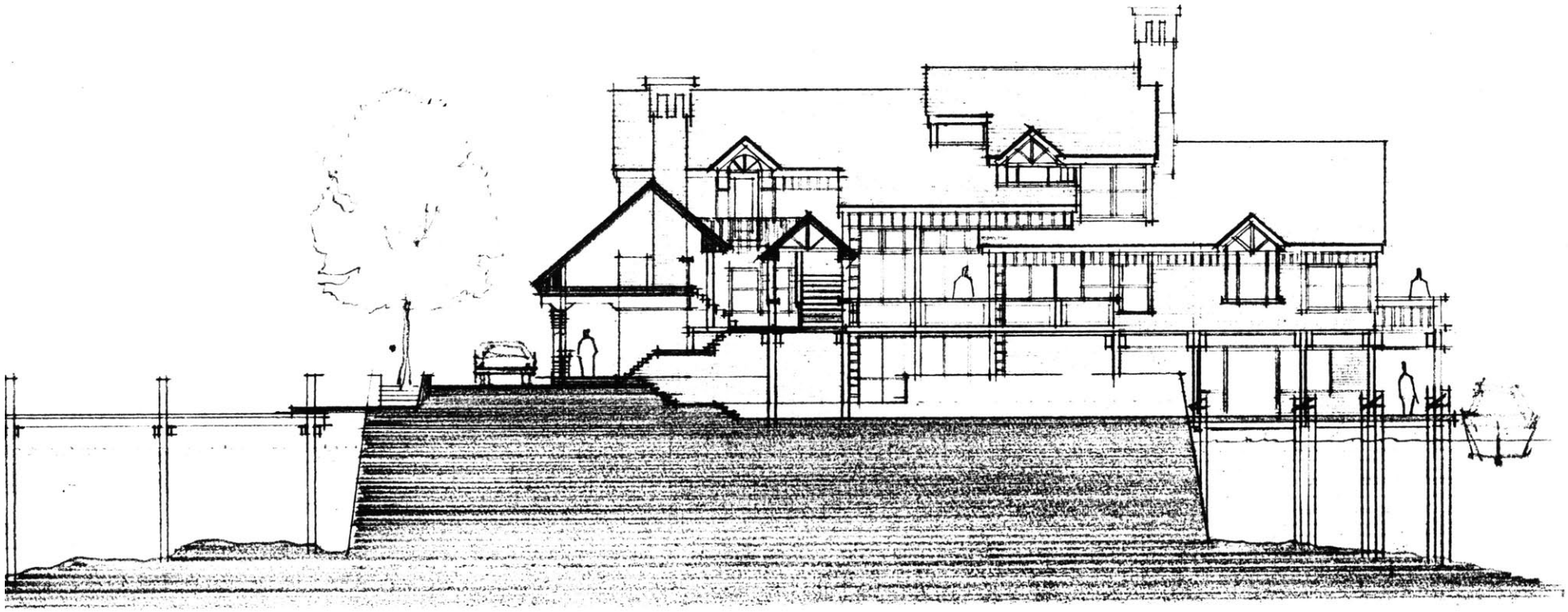


COLUMN detail, ½" scale.

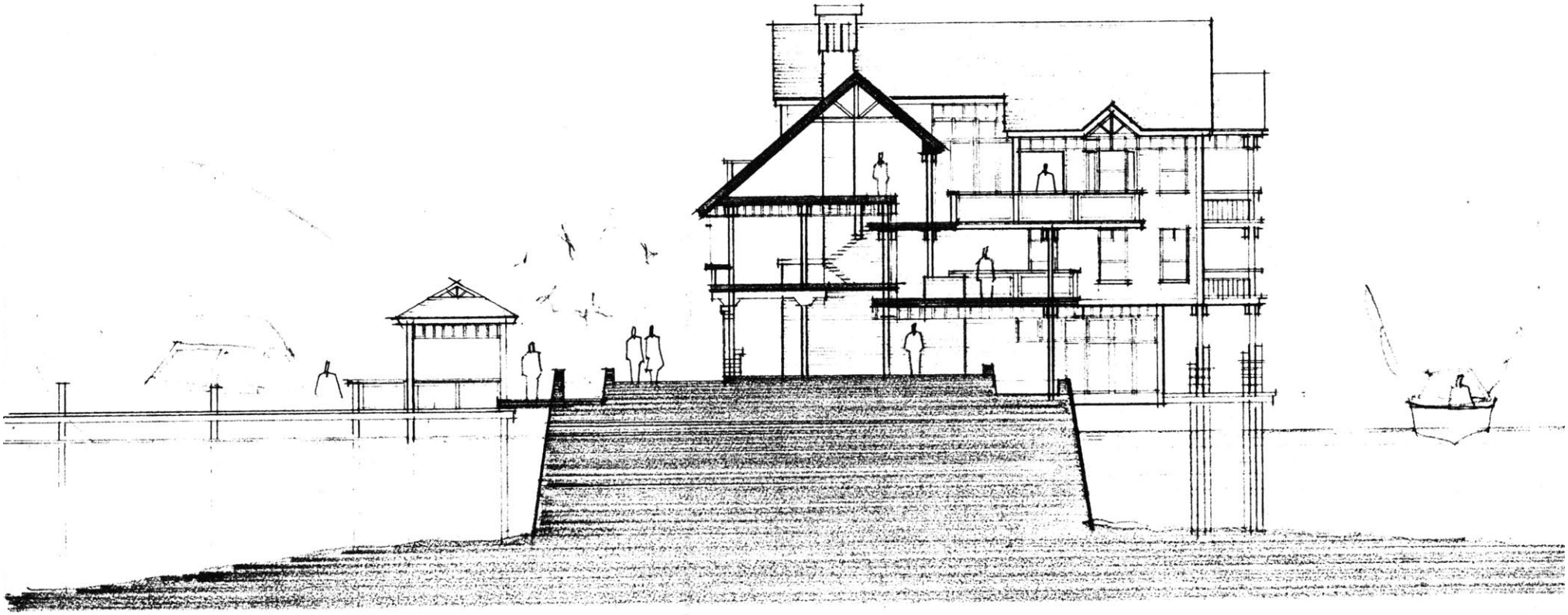
transformed pier



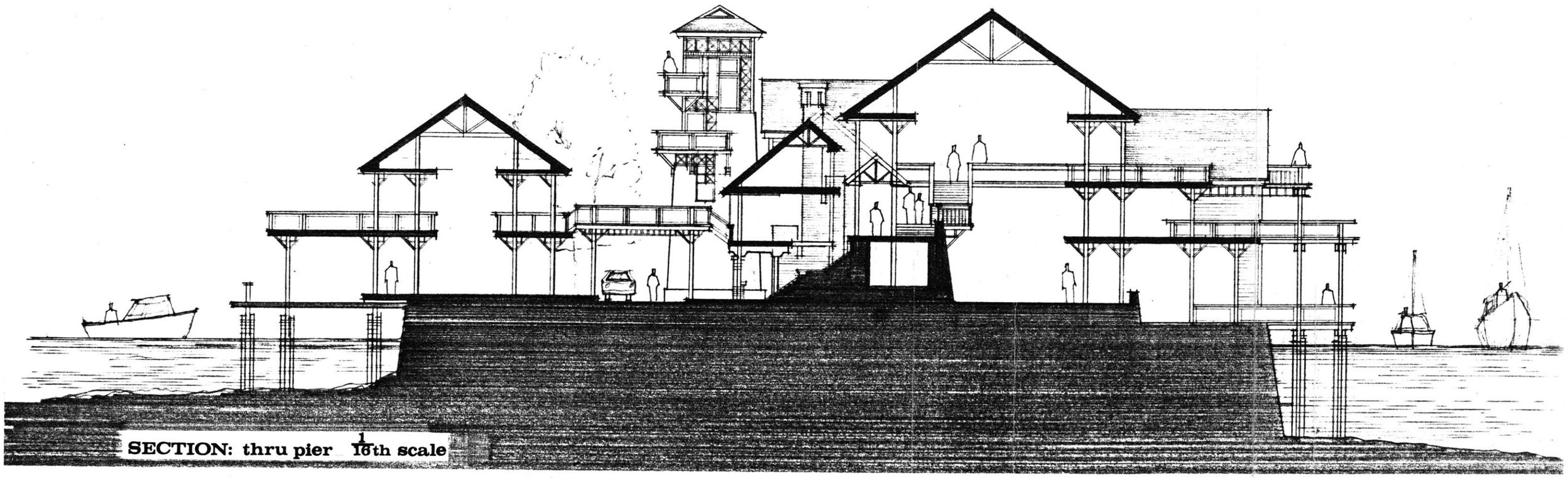




SECTION/ELEVATION, $\frac{1}{16}$" scale.

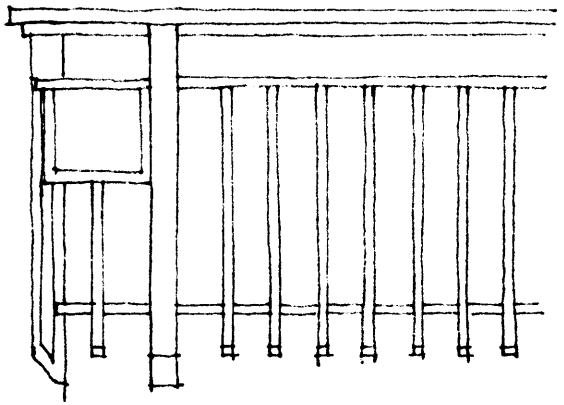


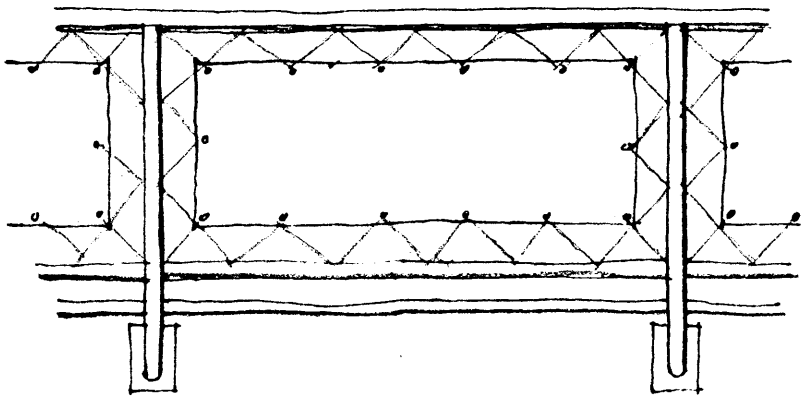
SECTION/ELEVATION: $\frac{1}{16}$ scale.
thru pier



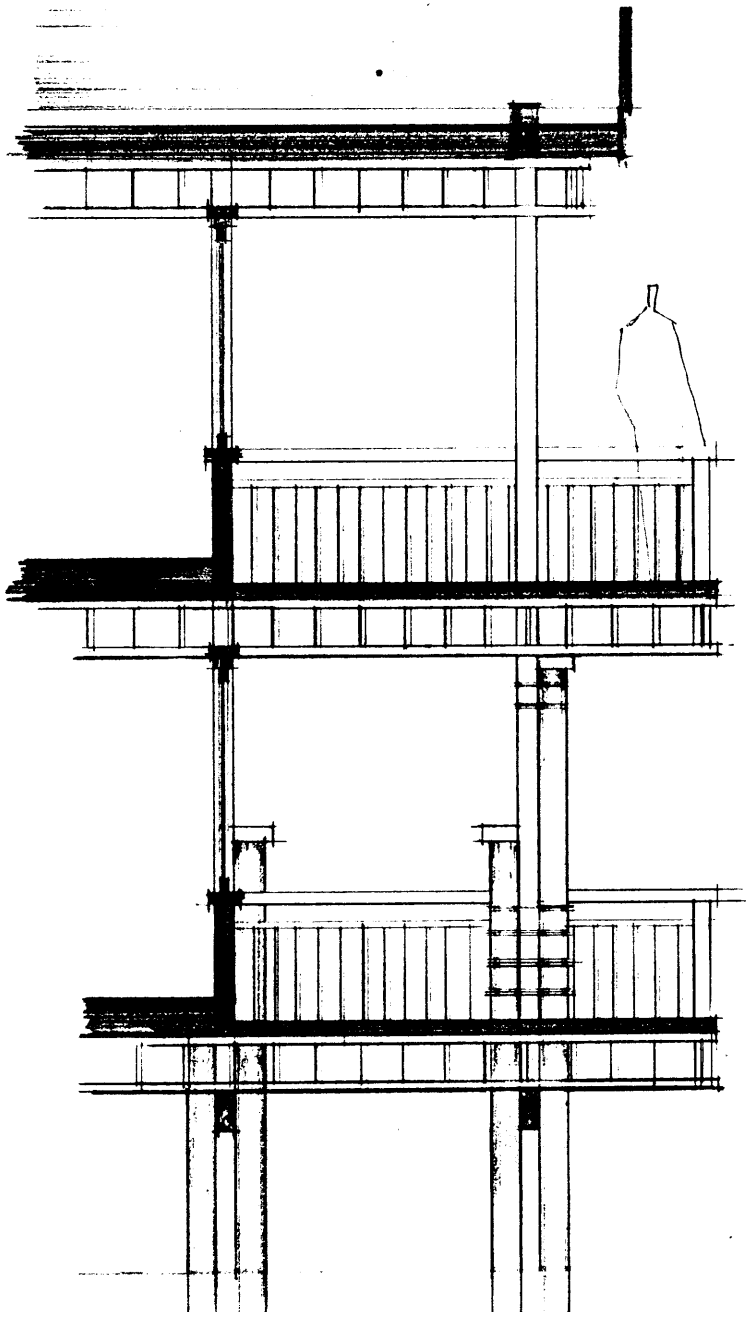
SECTION: thru pier 1/16th scale

RAILINGS: $\frac{1}{2}$" scale

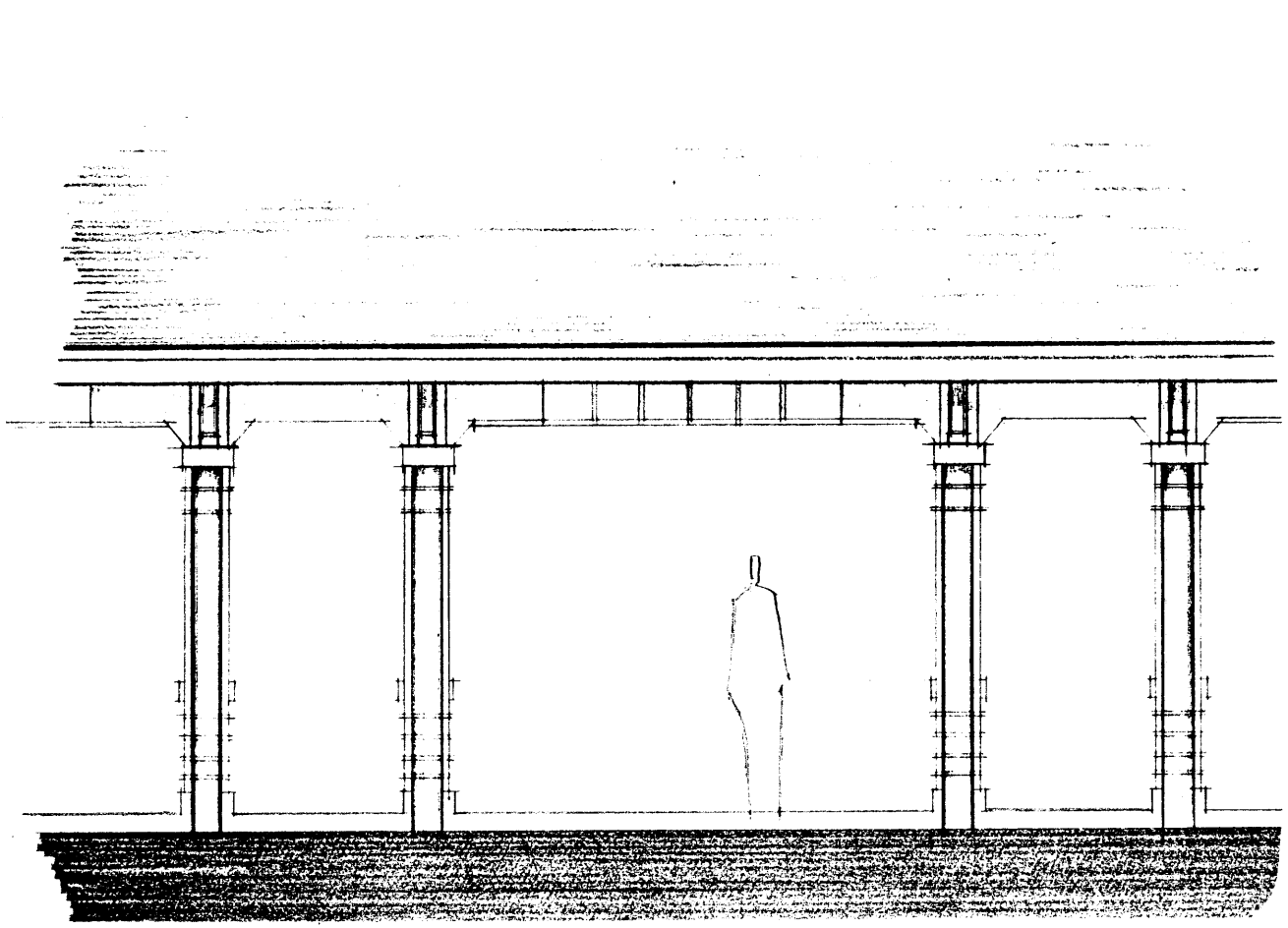


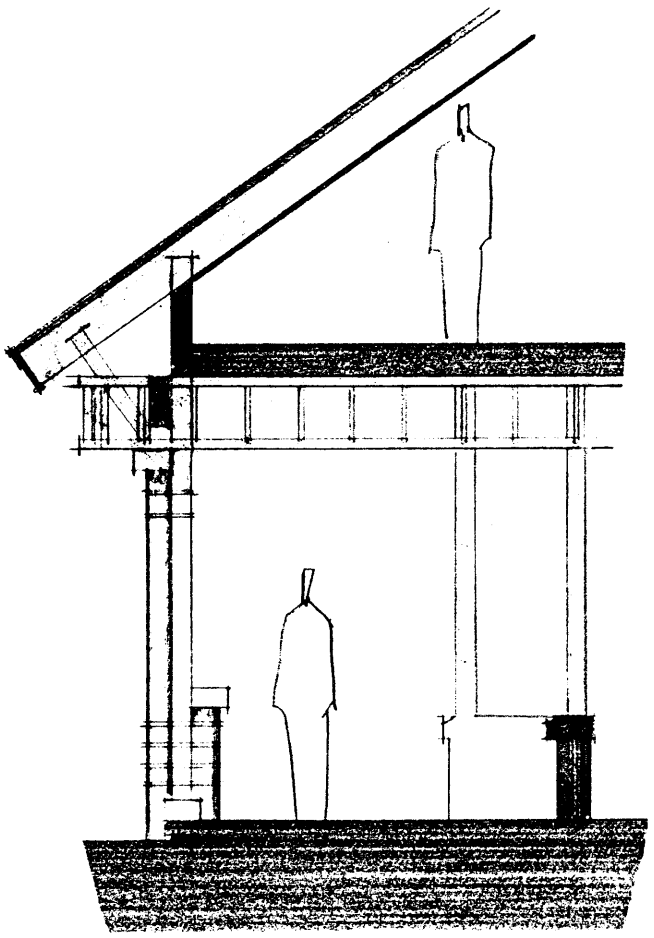


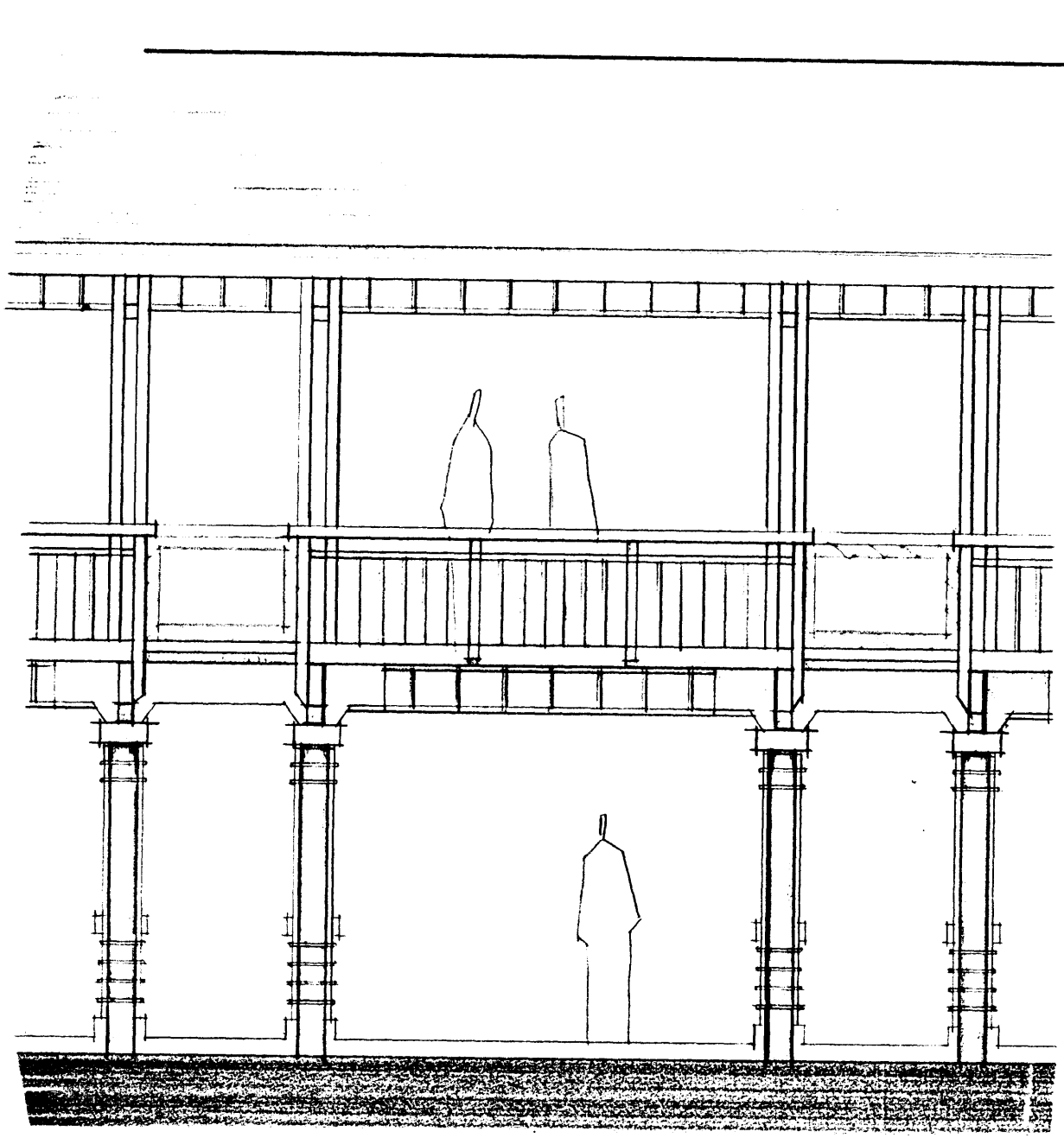
PARTIAL SECTION: $\frac{1}{4}$" scale

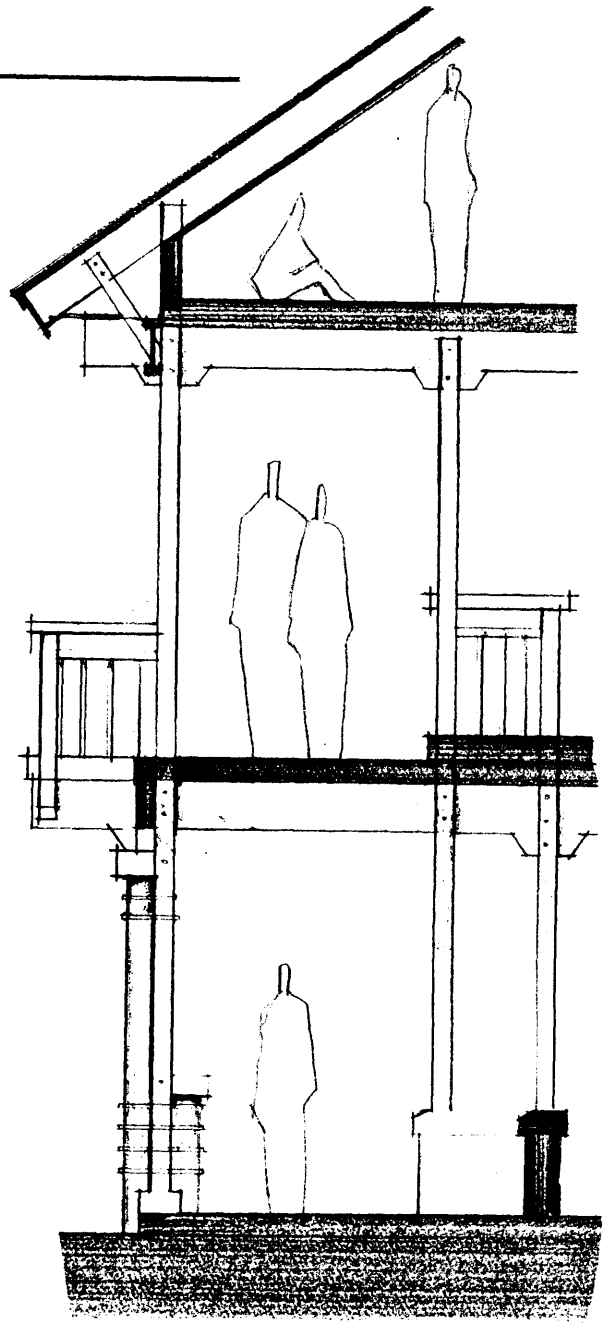


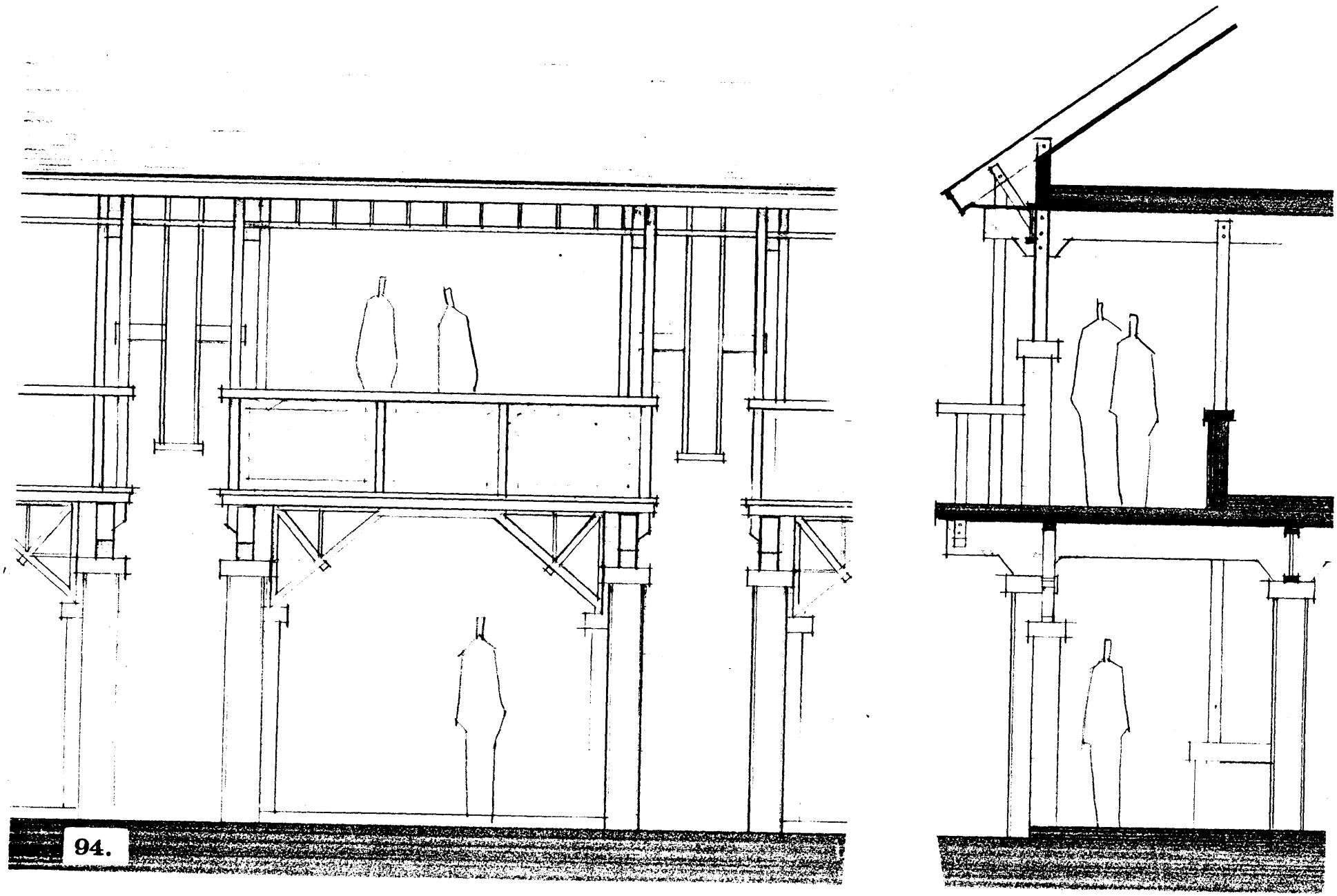
PARTIAL ELEVATION: $\frac{1}{4}$" **scale.**

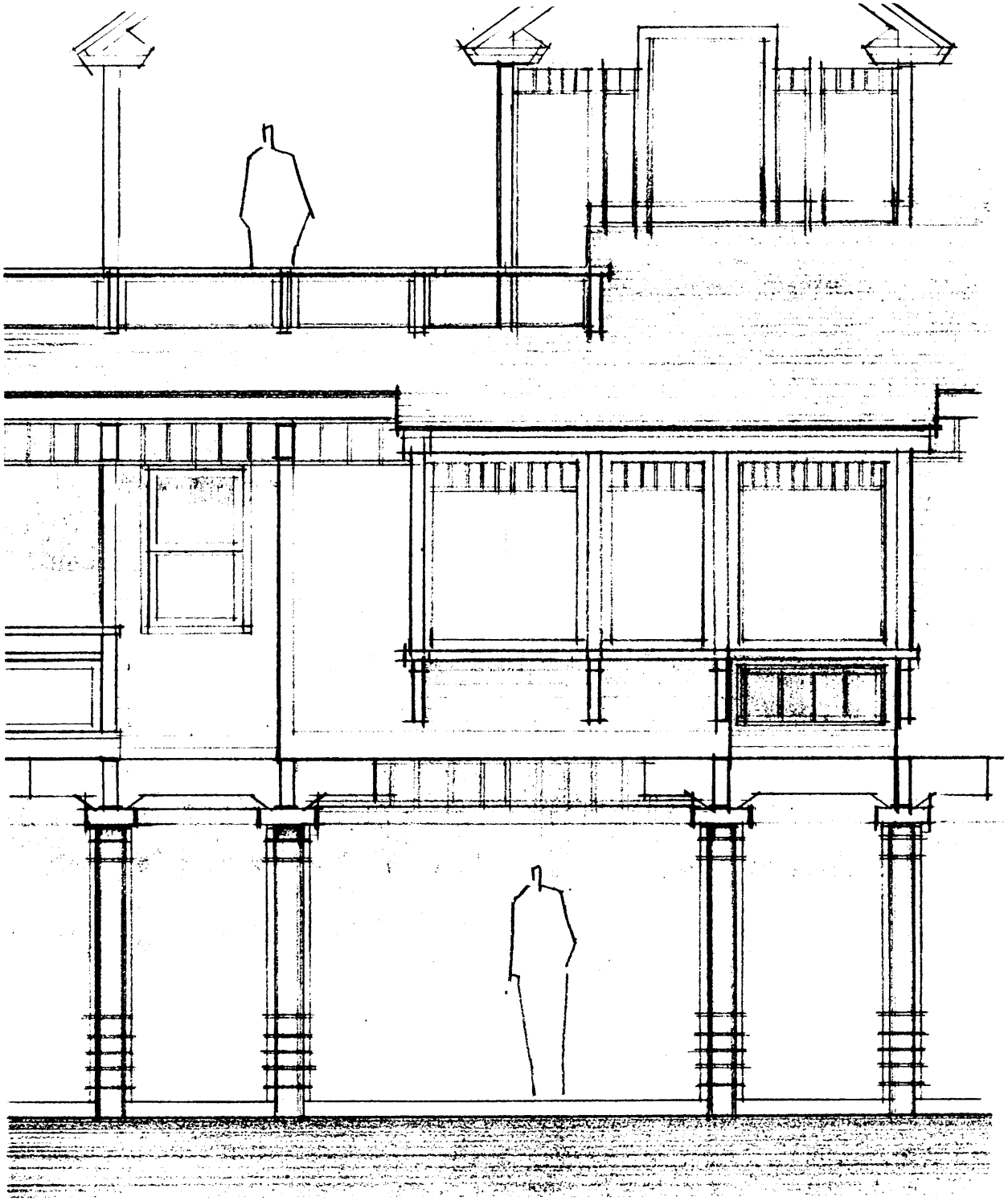


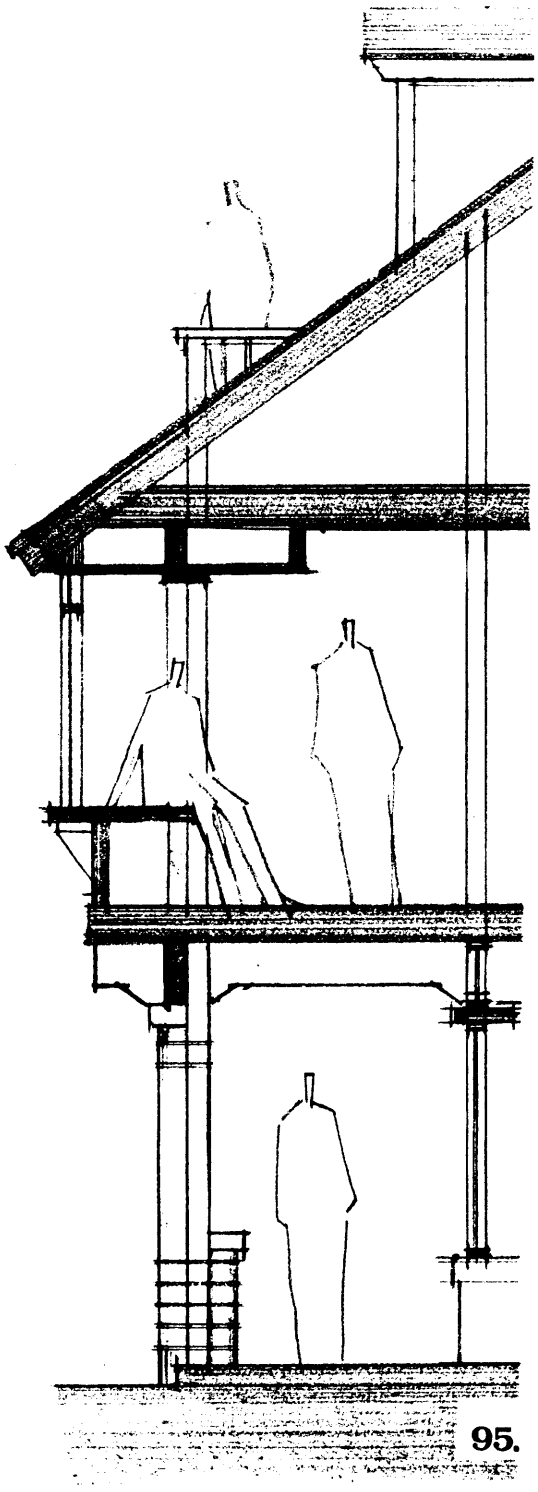




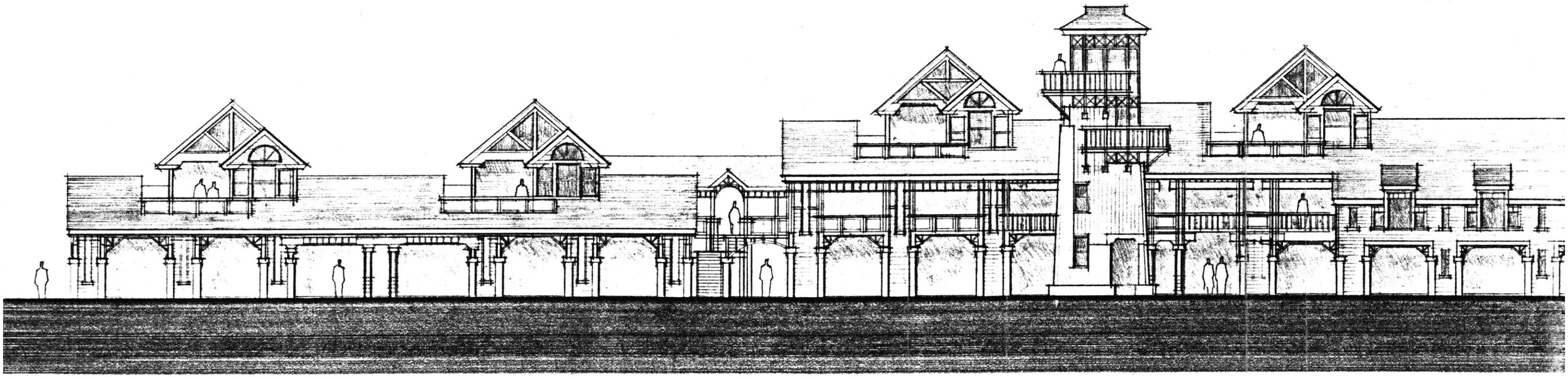








ELEVATION: looking west, $\frac{1}{16}$ scale.



SECTION / ELEVATION along pier looking west, 1/16" scale.

IN CONCLUSION

I hope that this discussion has demonstrated the wealth of opportunities available through the design of transformations. It seems to be an alternative to the frantic unending search for the new and novel and the fixed bonds of historicism.

This thesis is not intended to be a closed proof - it is not a final discussion of the subject of transformations. Hopefully, this can be another starting point or clue from which I and maybe someone else may continue to build in an ongoing positive way.

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