

INTEGRAL PIECES: AN ELEMENTAL APPROACH TO ARCHITECTURE

by

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**(ABSTRACT)**

The roles of the individual elements and their constituent pieces that form the basis for the language of architecture were investigated. Walls, stairs, floors, beams, and other elements are the primary means necessary for the expression of ideas in architectural terms. To effectively use these elements, an understanding of their material properties and characteristics is essential.

The role of the wall in architecture was especially important in this thesis. Walls have been considered primarily in response to their physical and material properties. Other elements were dealt with according to how they react with the wall.

The project is a complex of multi-use buildings to be shared by the university and the town of Blacksburg and is located on the site of the current parking lot of the Continuing Education Center at the corner of College Avenue and Otey Street in Blacksburg.

### Acknowledgements

I would like to thank the following people for their help in making this book possible:

- My parents, who gave financial support and, more importantly, the encouragement to keep going when it all seemed overwhelming.
- Likewise, to my grandparents, brother and sister-in-law who were always supportive during this time.
- My classmates, who helped make the whole experience of learning architecture more enjoyable.
- The staff, particularly those in the shop, who assisted me in several projects.
- The faculty members who had patience with me as I struggled to find my own way to approach architecture. I am particularly indebted to them.

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# **Chapter One**

## **Some Thoughts on Architecture**

This thesis has relied on the role of the piece as integral to the process of creating architecture. As primarily a constructive endeavor, architecture may acquire a multiplicity of forms and meanings through the materials used and the manner in which they are assembled. Form is in part shaped by physical and material properties; these factors are manifested in the appearance of the building. Many levels of complexity may be achieved through the intelligent use of architectural elements and their inherent properties. It is in this context that the role of the piece assumes a critical dimension. The architect has a choice of many materials; the choice of any given material or element is never arbitrary. Skillful manipulation of materials and appropriate means of assembly may form a basis for architecture. The pieces may be articulated in ways that go a step beyond mere physical or material concerns. Clues about the character of materials may be given in response to many circumstances, such as after a spring rain or at sunset. Shadows may reveal aspects of the building in different ways. Such factors are in the architect's control and they allow for great opportunities to impart richness and character to architecture. Understanding the individual pieces at a very elementary level of thought is essential for the architect to have any measure of control over his work.

Since the architect must deal with certain physical and material realities, he is necessarily forced to deal with limitations imposed upon him by the nature of the materials. An emphasis on an elemental architecture makes it especially critical to understand materiality. With this as a basis, the challenge becomes to use the architectural vocabulary to create meaningful form. If, for example, one wants to deal with ideas about the permanency of architecture, the choice of materials and the way they are physically manipulated might be vastly different than if one were dealing with architecture on a more philosophical or poetic level. Different ideas and situations may be dealt with in different ways, but it is important to respond appropriately to the complex and often interrelating demands of form, function, and

programmatic needs, and yet at the same time allow for intangible or experiential qualities that are essential characteristics of architecture. One means that the architect has to bring about a desired environment is through the choice of architectural elements and the way they are employed. Even if one chooses not to be primarily concerned with an elemental architecture, or if one wants to consciously violate the inherent nature and character of materials, a basic and fundamental understanding of materiality is essential. If one chooses to consciously violate these principles, it is necessary to first have an understanding of the thing that is to be violated.

A building is the result of a rational process of thought; there must be logical underlying principles behind its existence. The individual pieces that form the building are subject to certain forces that cannot be changed. As architects, we must work within a fixed and immutable framework. Regardless of one's approach to architecture, be it philosophic, artistic, or pragmatic, there are still a common set of laws that must be obeyed. Whether or not we try to use these factors as part of our work is an individual choice that presupposes an attitude toward materials and the way they are affected by universal laws and principles. Working within such a framework requires that the materials be treated in ways that are consistent with their character. When one carries this way of thinking to a logical end, the result can be a powerful demonstration about the character and potential of a material. An attitude develops that begins to guide one's decisions. It is necessary to consider what the nature of the material will allow it to do. At the very minimum, the expectations for the material must be reasonable and within its limits. This is not meant to imply that the material must always be constrained by its inherent nature; in some instances it may be desirable to contradict material properties altogether. Understanding what the material "wants to be" and treating it in a way that is sympathetic to its nature can result in profound and meaningful architecture. There can be no better example of this than Louis Kahn asking a brick what it wants to be. The brick replies

that it wants to be an arch (1). Without some level of understanding of the basic vocabulary of architecture, the designer will rarely achieve anything greater than mediocrity.

The elements and their constituent pieces are the primary means used to form an architectural whole. A building is perceived in many different ways and the choice of pieces is very important. By trying to take control of color, texture, mass, shadow, and many other qualities, the architect is able to make a statement about what is important to him. The individual elements and their constituent pieces are the starting point in the development of any hierarchy. It is difficult, if not impossible, for an overall sense of order and hierarchy to emerge if there is no such concern at the smallest level. Once certain initial decisions have been made, the choice of materials and the manner in which they are assembled can be determined, based upon the appropriate physical and structural laws. These are naturally important in the process of assembly and one must always have them in mind. An awareness of these properties is essential, but if this awareness becomes the only factor in the design process, it may lead to a building that is devoid of the qualities that characterize architecture. When one is able to successfully combine a sensitivity of materials with a greater idea, it is possible to create architecture. Otherwise, the result may be a dull and lifeless building with no spirit or sense of drama.

One way of looking at architecture is as an assemblage; the architect is responsible for imposing harmony and order on a system that may be chaotic and disordered. In this sense, the architect is very much a "bricoleur." as described by Levi-Strauss (2). He (the architect) collects a group of objects and combines them in a meaningful way that results in the formation of a new entity with its own identity. Each element possesses its own fundamental and individual identity and can make a substantial contribution to an overall sense of order and purpose. No real relationship exists between the other objects until they are combined to form a whole. When they are

brought together, new relationships are formed and the pieces acquire a new meaning both as individual objects, and as a whole. Although each piece is critically important in itself, the ultimate and most important dimension is the creation of a unitary whole whose value far exceeds the sum of its individual pieces.

As an example, the wall has been at the heart of this project and an attempt has been made to try to demonstrate an understanding of it. Other elements have primarily been explored in their relationship to the wall. The questions are many and cannot always be answered with a simple answer. What material is the wall made of and why is this so? What does the wall do and what sort of wall is it? What does it need to merely stand up and how can this be accomplished through architectural means that glorify the wall and give it meaning? How does the wall react when it meets other elements? What sort of space is defined by the wall? ...? Such questions may in turn be asked of all the elements of architecture. This is the manner in which I choose to approach architecture.

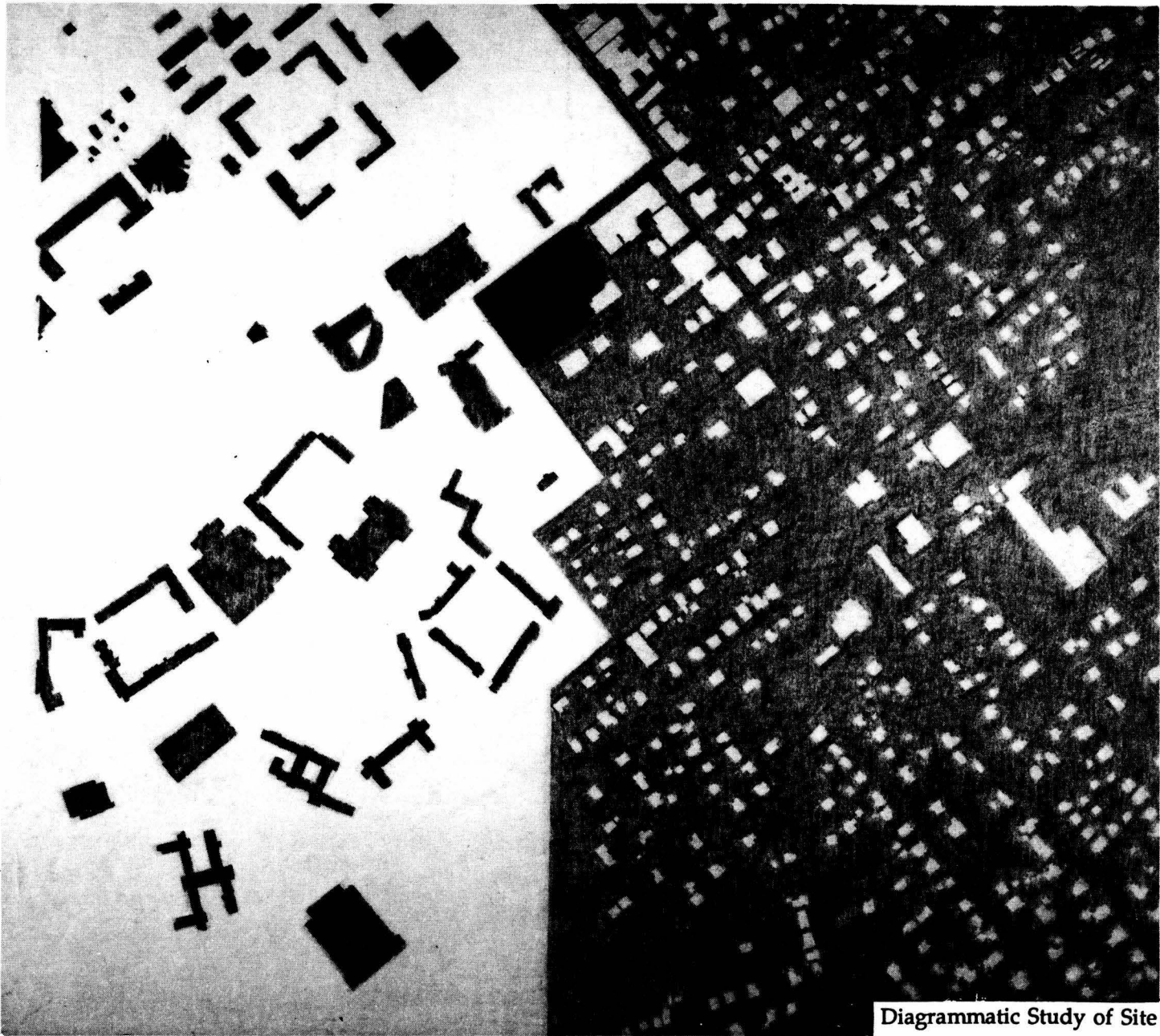
My ultimate aim is to create architecture that is simple without being simplistic and that can make a place for itself without gimmicks or pretence. In many ways, it could be classified as architecture that is truthful and honest about what it is. Like Louis Kahn, I want to understand what the brick wants to be and use it accordingly. The development of a better understanding of an elemental architecture has been the driving idea behind this thesis. Without this sense of purpose, I can go nowhere.

1 John Lobell, Between Silence and Light: Spirit in the Architecture of Louis I. Kahn (Boston: Shambala Publications, Inc., 1985), p. 40.

2 Claude Levi-Strauss, The Savage Mind (Chicago: University of Chicago Press, Inc., 1962), pp. 16-18.

## **Chapter Two**

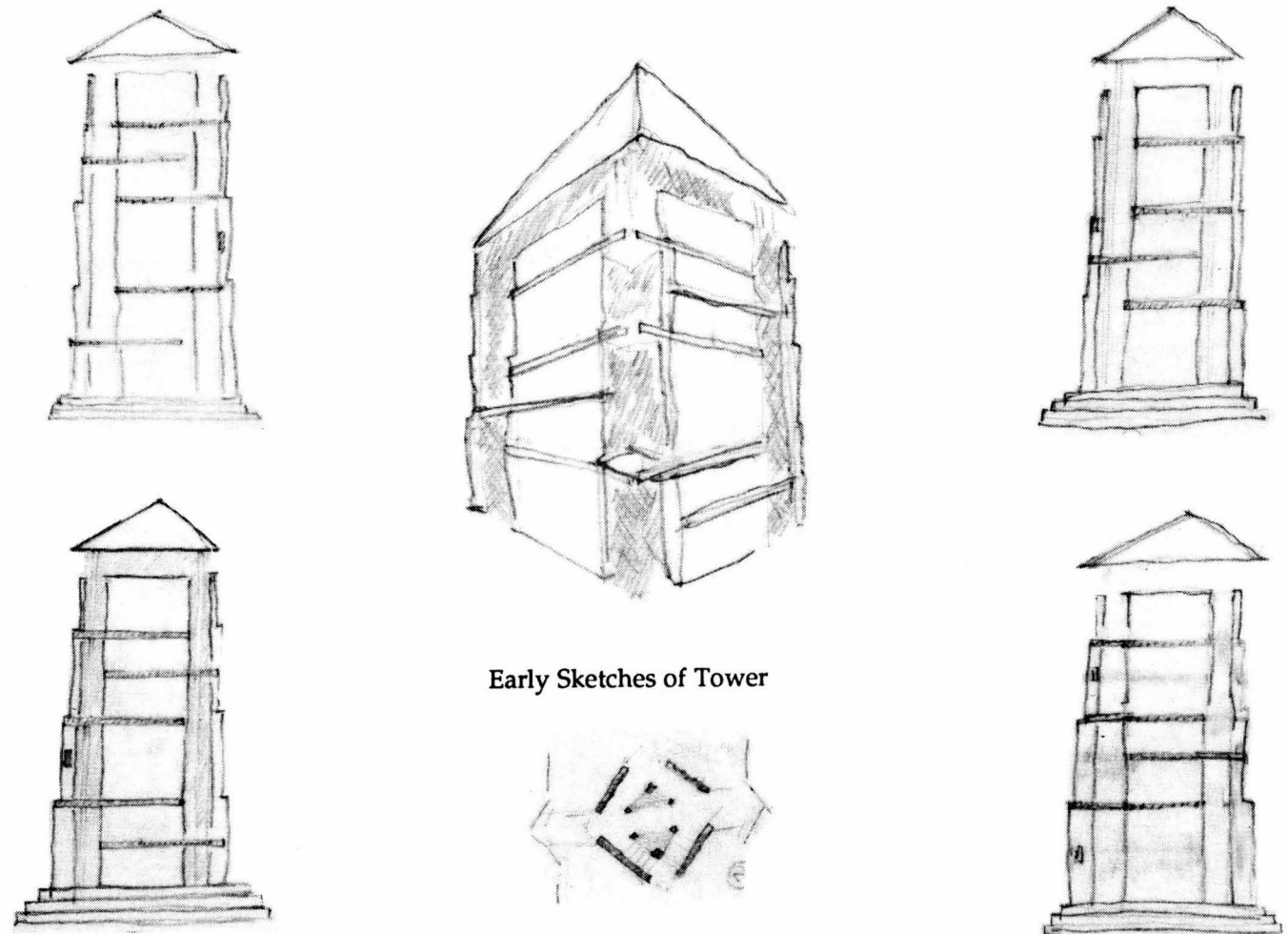
### **Beginnings**



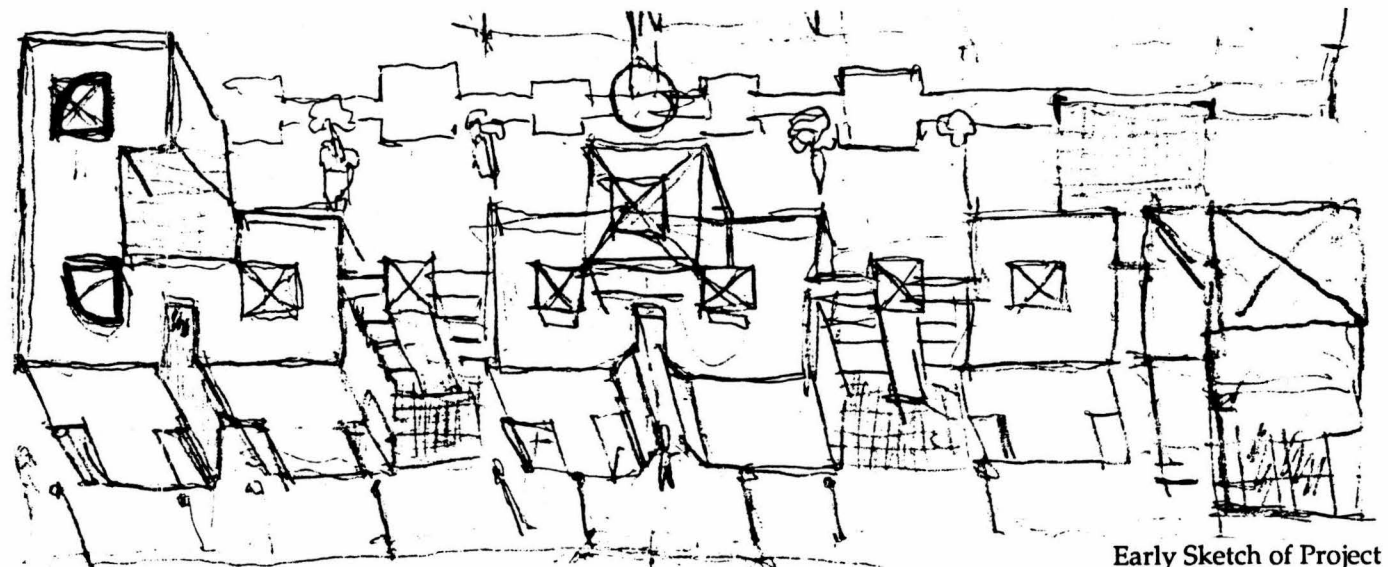
Diagrammatic Study of Site

In its early stages, this thesis was intended to be primarily responsive to its site, which is currently occupied by the parking lot of the Continuing Education Center at the corner of College Avenue and Otey Street in downtown Blacksburg, Va. As the project progressed, context became less important as an issue and architecture as object became the predominate concern. Although site was not the most critical issue, it did seem appropriate to draw on some of the strengths of the existing town structure and scale. This is the reason for using the size and scale of the town's commercial area in these buildings. Likewise, it was desirable to give the university a greater role within the boundaries of the town. To accomplish these goals, stores would occupy the first floor of these buildings. The upper floors would be used as faculty offices and classrooms and the roof might be used almost as a plaza might be. A theater for the Performing Arts Department was proposed to be located in the interior of the site, although this part of the scheme was not designed (nor was it intended to be.) The smaller scale buildings that address College Avenue correspond to the scale of the town and would obscure the presence of a future and larger scale building that would be built behind them. Scale and size of the existing buildings remained as important issues for the project and they have been addressed. One contextual factor of the site that is particularly strong and deserves to be respected is the presence of a column at the corner of several buildings. These aspects of the site were considered to be important and they have been respected. The contextual factors were not nearly as important as the desire to develop a meaningful basis for the expression of architectural ideas through the constituent elements.

The discovery of the role of the piece as critically important to any architectural whole became the central focus of the project. It is at this level that the architect must begin to assume control of his work, even if he chooses not to express these constituent pieces in their relationship to each other and the resulting whole. This project attempts to utilize these characteristics. Practically all of



Early Sketches of Tower



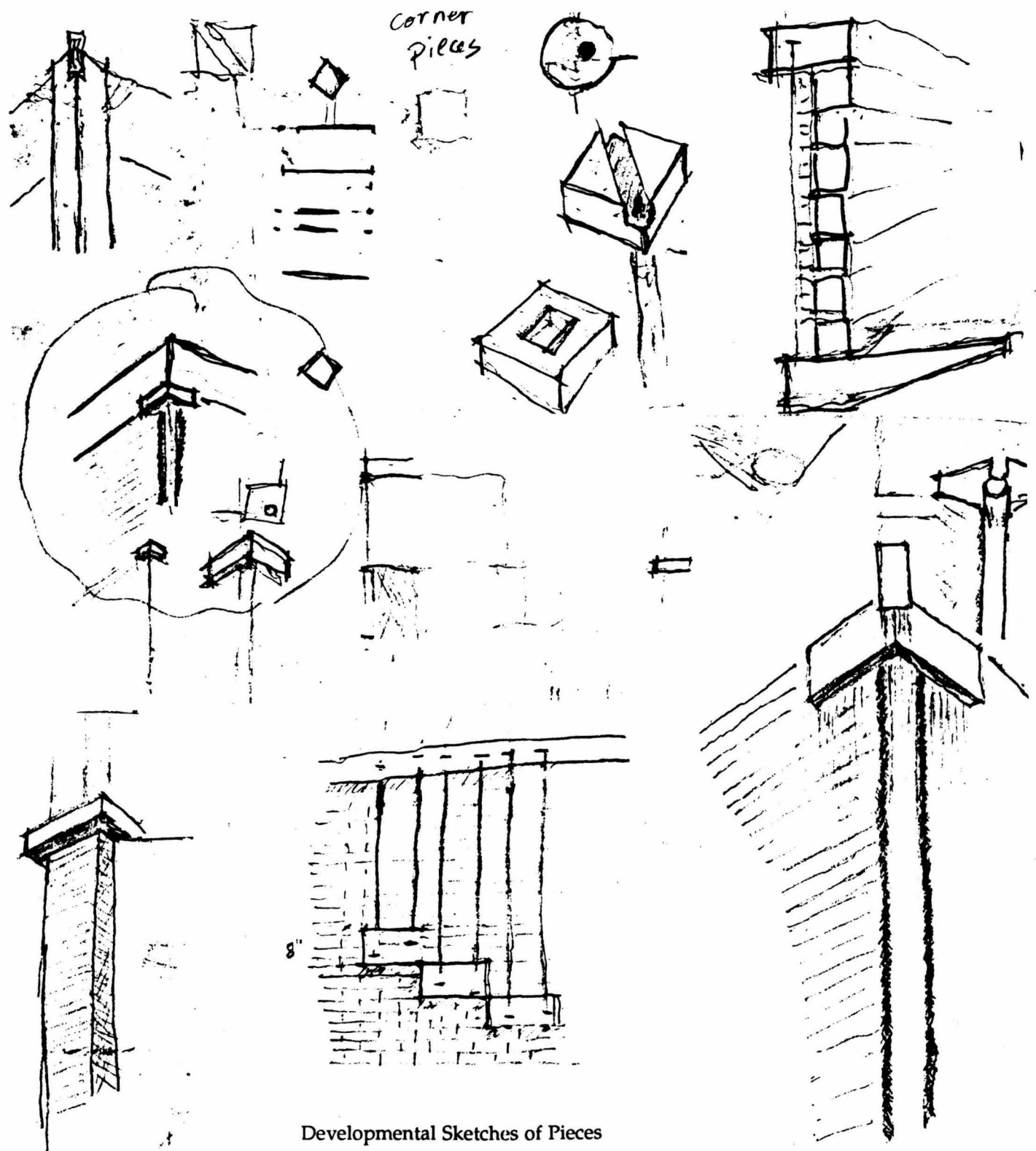
Early Sketch of Project

the elements in this project are composed of a collection of pieces, instead of being a unitary material like site-poured concrete (technically, concrete is also composed of smaller pieces or elements - for my purposes I am considering it to be a single entity.)

The desire to use particular architectural pieces was an important factor in determining how the elements were formed. Two pieces - the cantilevered step and the corner piece on the buildings - were especially critical. From the very beginning, the cantilevered step was explored in a variety of ways. It was not until a relationship between elements was established that it became possible to achieve architecture. An opportunity presented itself in the way the individual steps could be held in place. Brick's inherent quality of mass could be exploited to do this, or other alternatives might be used that would accomplish the same goal. Post-tensioning, for example, might work equally well to hold the individual steps in place, but this seemed less appropriate architecturally. The brick could assume a greater role by allowing it do what it is capable of doing. This quality could be expressed in its relationship to the steps and in the way the wall itself was formed.

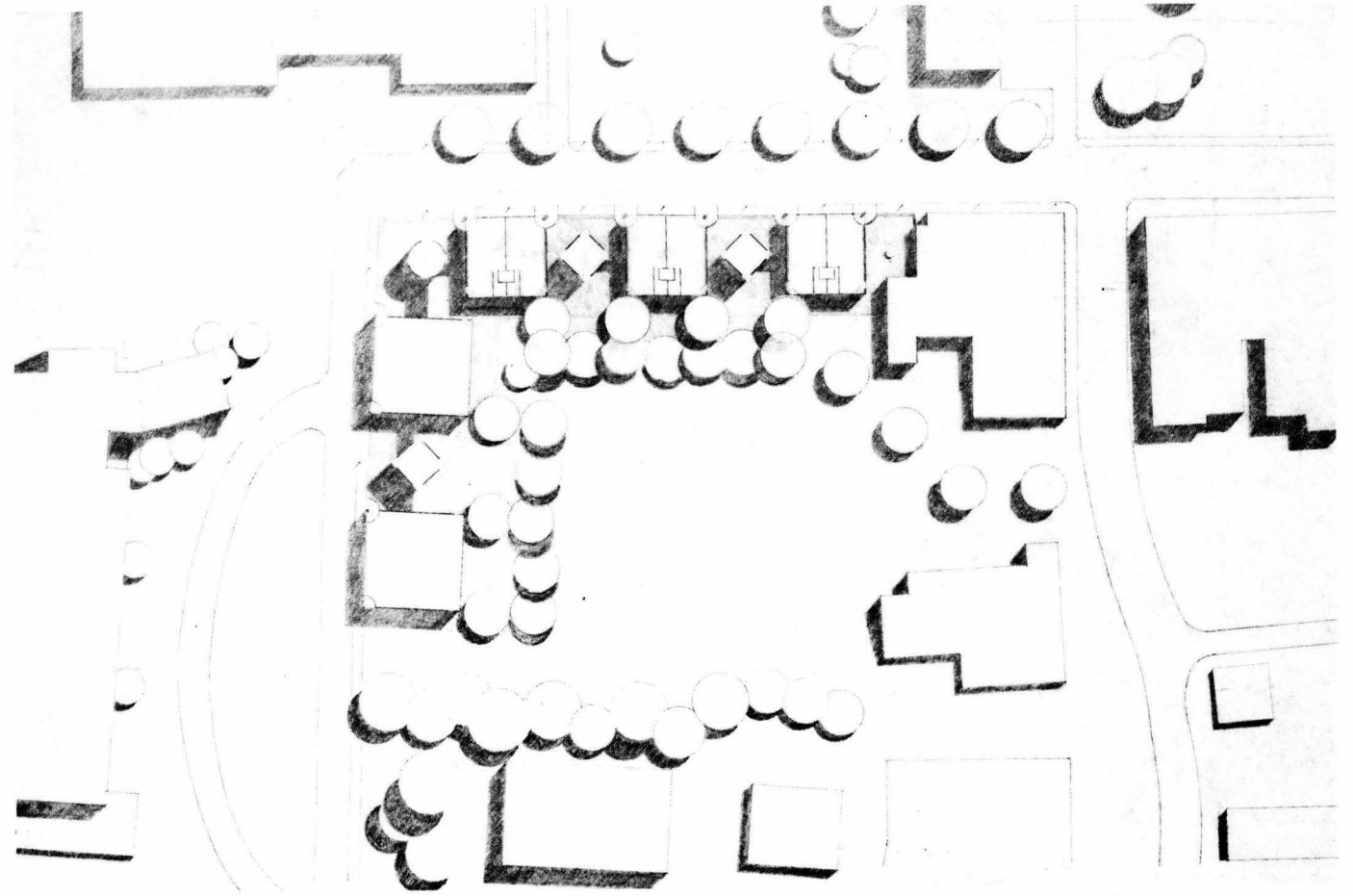
Also, the desire to use the column as a way of calling attention to the store entrances was seen as a means of using an architectural element to address a functional issue. Pieces became more than mere structural elements. They provided a variety of architectural opportunities that began to make design decisions easier and more logical.

Chronologically, the stair tower was the first and most developed part of the project. The architectural insights that guided the development of the stair tower were used later in the other parts of the project. Being the most fully developed part of this project, the towers is the best embodiment of the thesis that architecture is a whole that is infinitely greater than the sum of its pieces. This is demonstrated in the articulation of the pieces

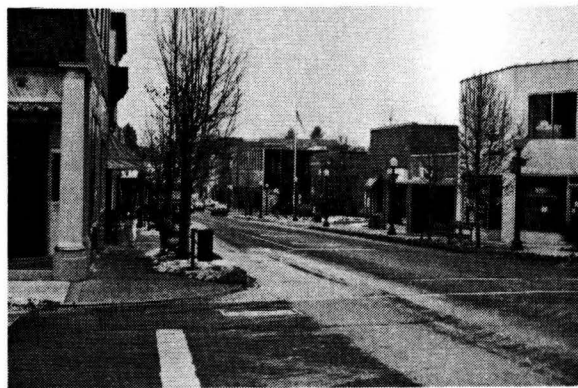


Developmental Sketches of Pieces

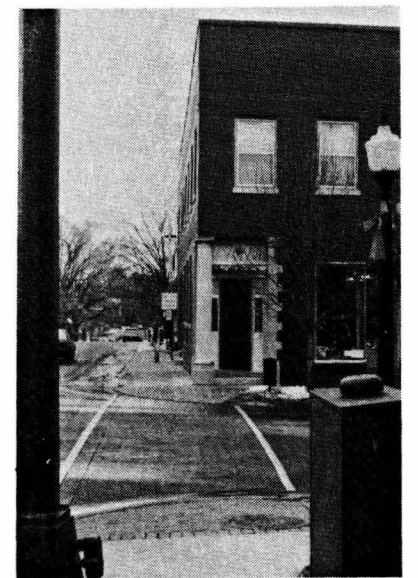
as a response to their role in a greater hierarchy. Pieces (step, brick, beam, etc.) were assembled to form the tower's wall. Once the wall was formed as a response to the properties of the individual pieces, it could be combined with other elements (roof, floor, hand rails, columns, etc.) to create an architectural whole. The elements interacted with one another to achieve the functional issue of circulation, but something much greater was attained. The tower has a strong presence of its own as an object-in-itself. As such, it strives to be expressive of its function and structure in a subtle way that transcends material and structural issues. A mundane act was transformed into something special, something with meaning and substance. This is the role of architecture can play in our everyday lives.



Site Plan - Downtown Blacksburg



Downtown Blacksburg



The Blacksburg Corner

## **Chapter Three**

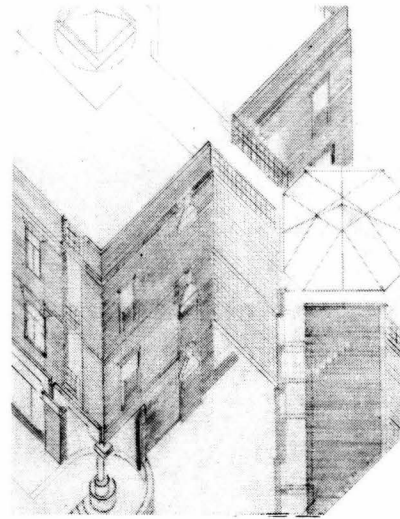
### **The Elements (Pieces)**

## Walls

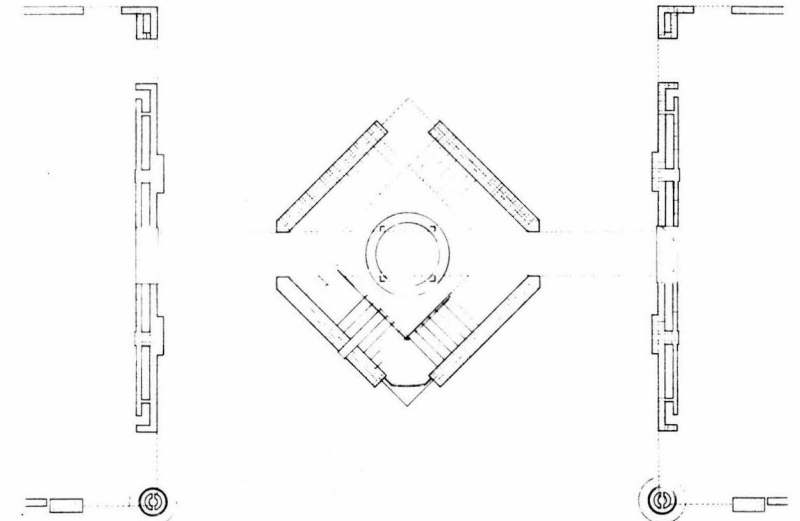
A wall, like any architectural element, may be formed from pieces. It may be constructed of essentially plastic materials like concrete or mud, or it may be formed from pieces. Brick, block, mortar, glass, wood, steel, and stone are among the materials that may be used to create walls. All walls have some common characteristics: they must be able to support their own weight and they are a primary means of enclosing and defining space. However, not all walls are equal. Some walls must only define space and have no other obligation except to carry their own weight. Other walls must not only bear their own weight; they must also transfer floor loads to the ground. The form a wall assumes may be a response to its composition and to the way in which the wall is intended to be used. Brick walls, for example, have certain limitations imposed upon them because of the inherent mass of the brick. The heaviness of the brick requires consideration about the way the wall meets the ground, in that it is necessary to have a foundation to support the wall. Self-supporting masonry walls must be extremely thick, perhaps unreasonably so, to be of substantial height. The Monadnock building in Chicago, for example, demonstrates both the limitations and opportunities of the brick very ably.

In order to mediate climate and allow contact with the environment, it may be desirable to create openings in the wall. Openings in walls should be consistent with what the material will allow. The way that openings are created in masonry walls is vastly different than the way they are created in a wood frame wall, for example.

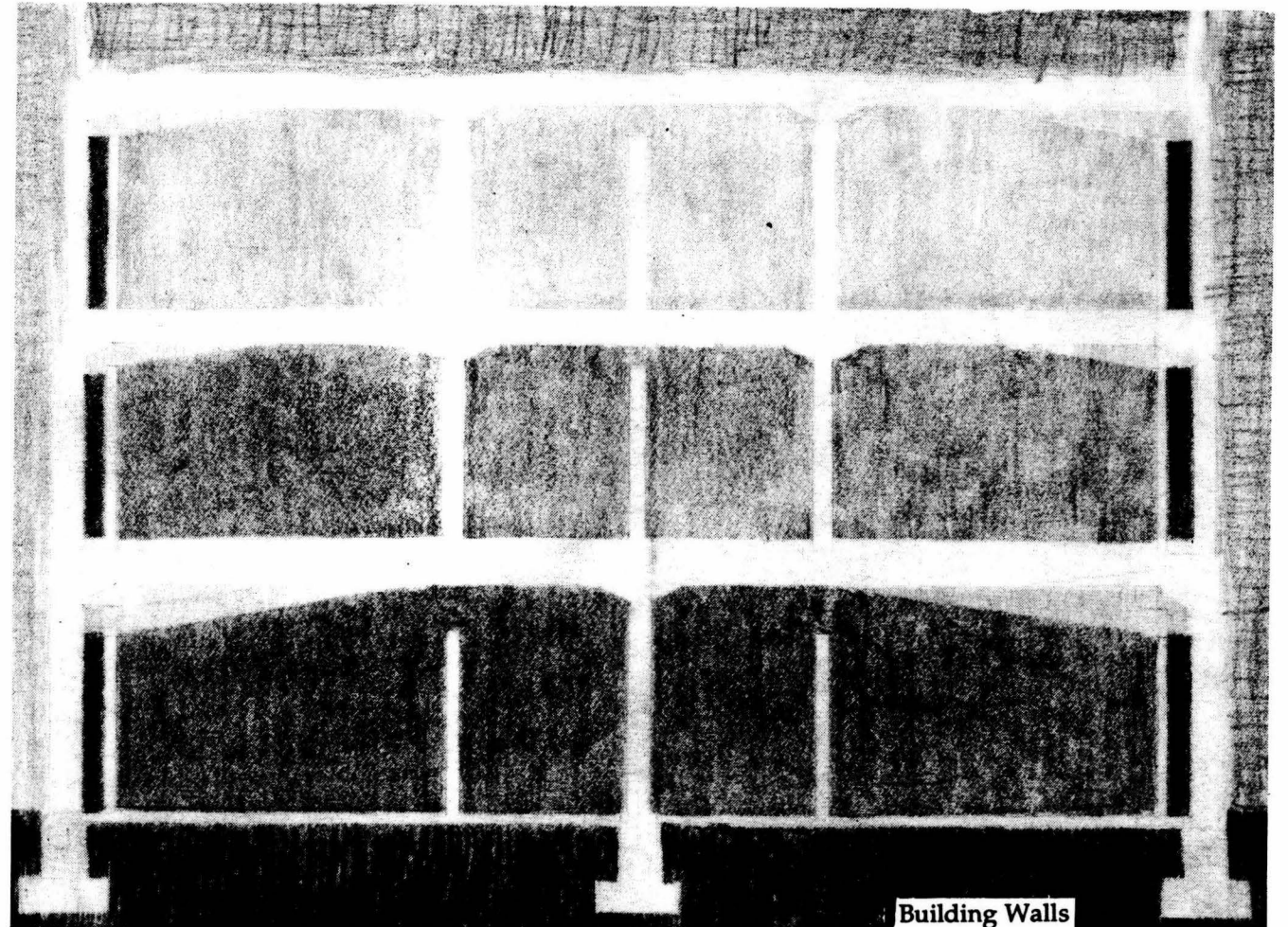
Other walls may play completely different roles and, as a result, are quite different. An interior wall's sole function may be to provide privacy, even if only in a symbolic way. Such a wall may be thinner than an exterior one since it doesn't come into contact with the outside environment. Structural obligations may not exist at all. The paper walls of a Japanese



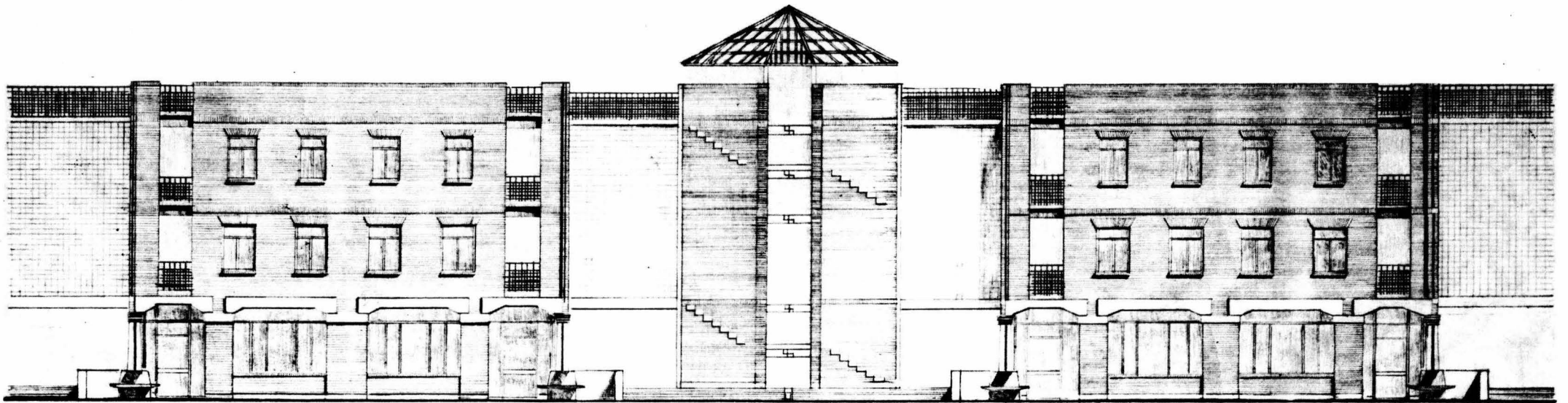
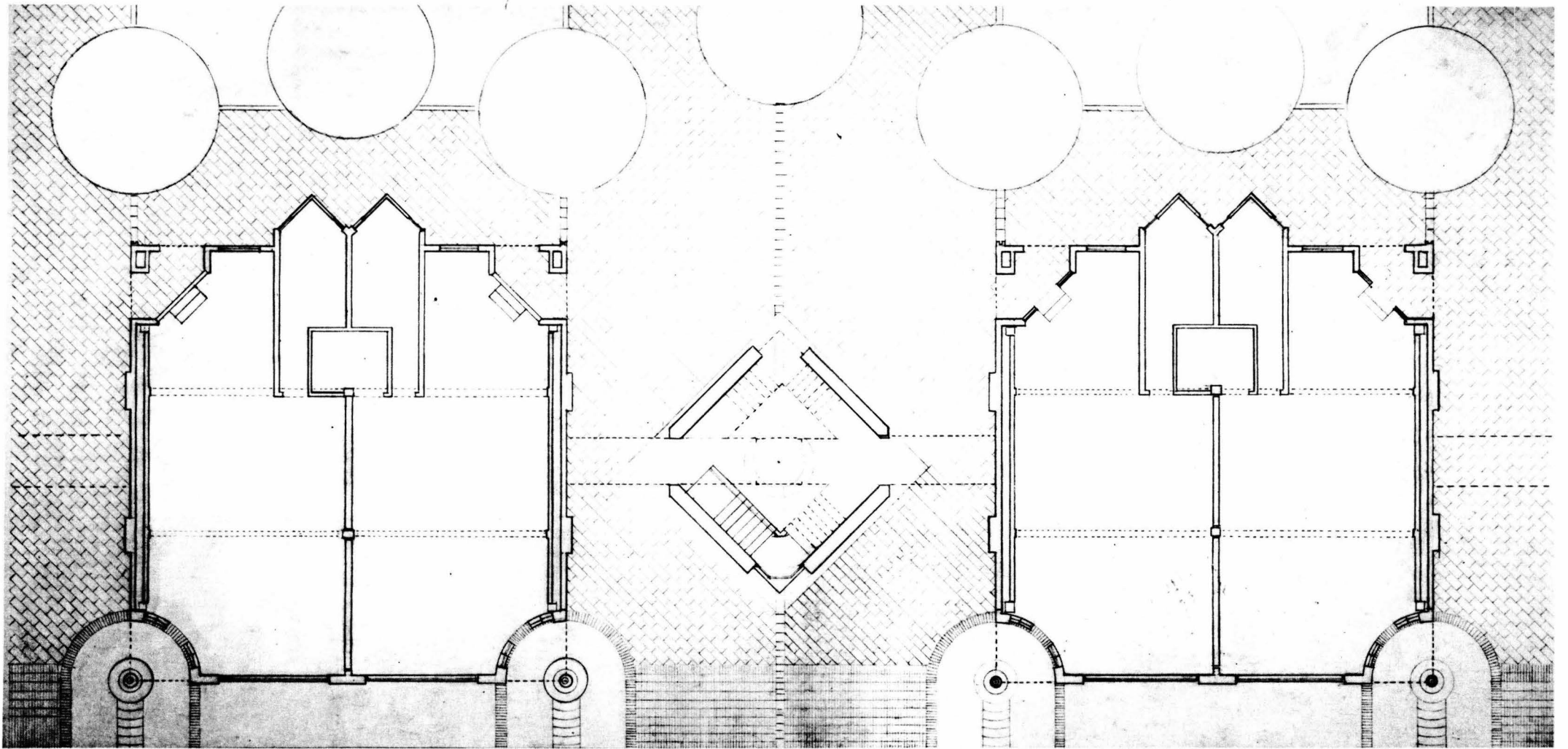
Building Walls



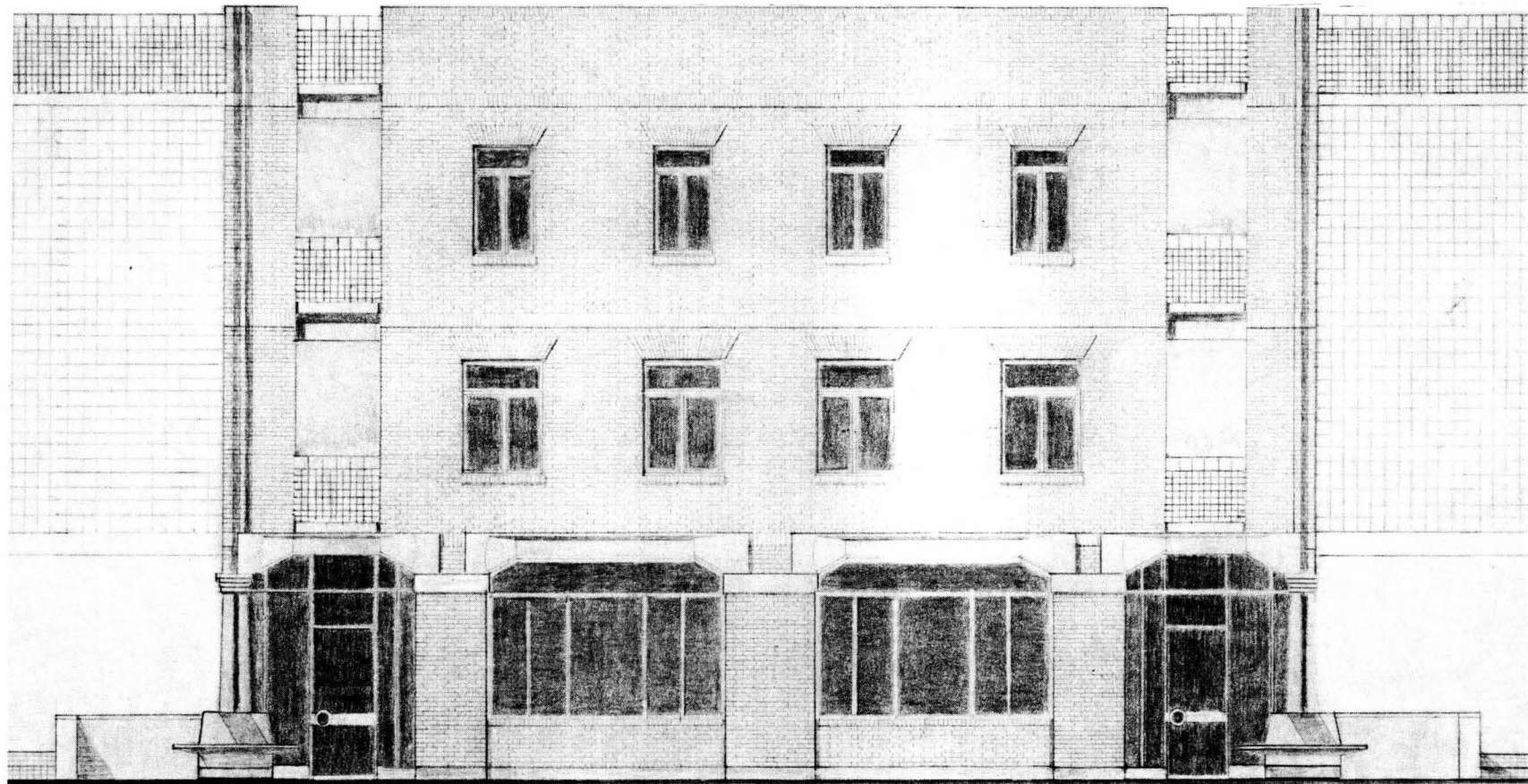
Diagrammatic Study of Walls



Building Walls



First Level Plan and Front Elevation

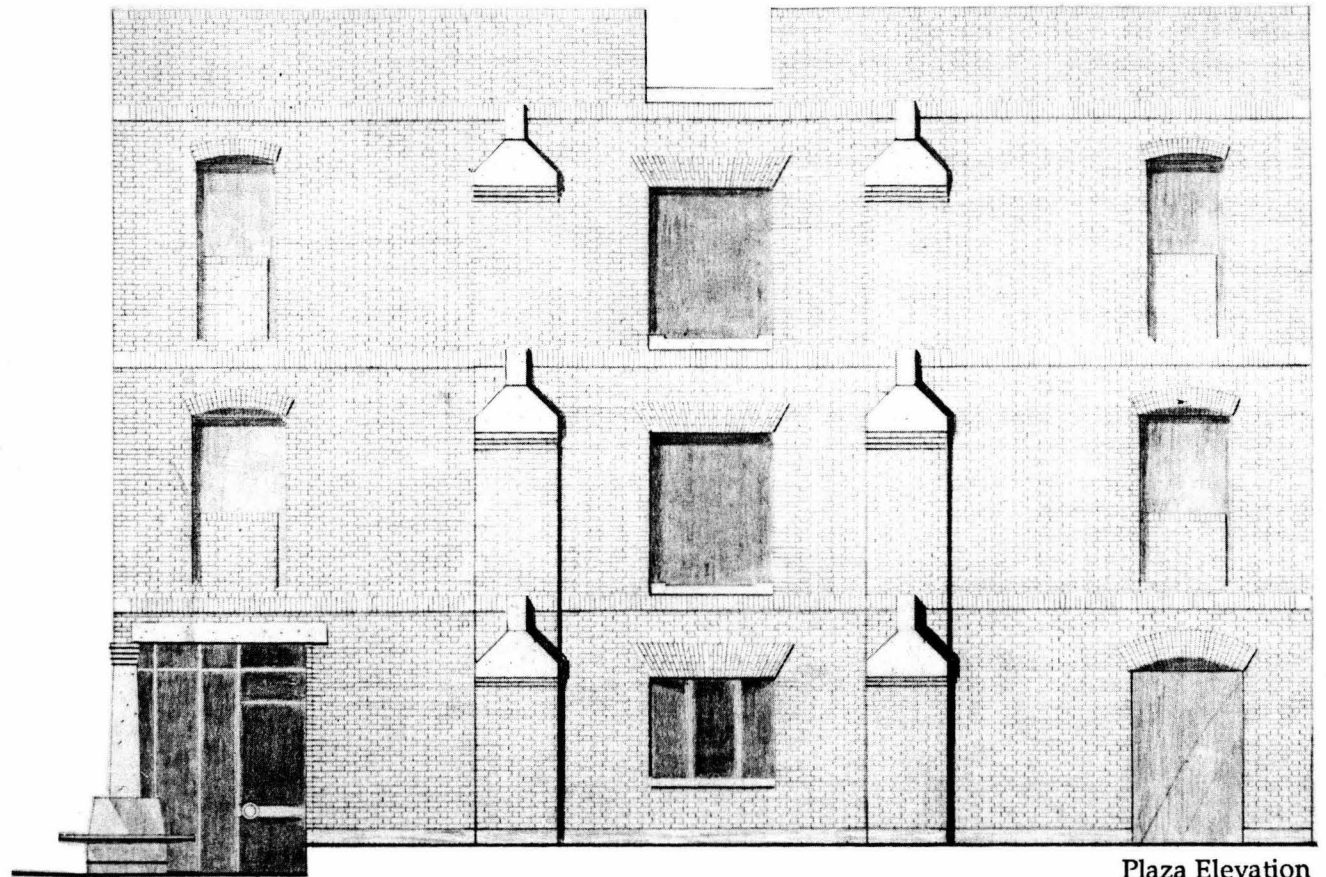


Front Elevation

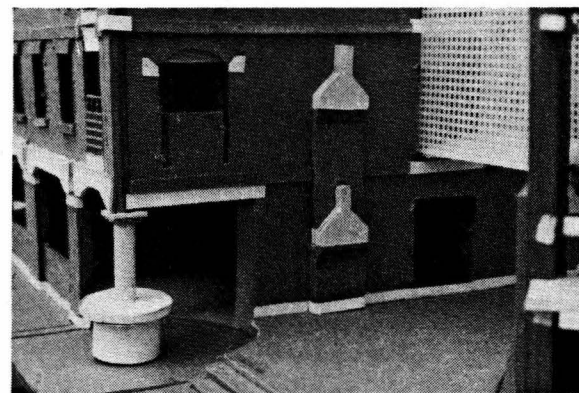
house, for instance, aren't very substantial, yet they are able to create and define private spaces very effectively.

In the stair tower, the treatment of the wall reveals that the wall has no structural obligation to the roof. In a sense, the hovering roof negates the function of the wall in the traditional sense of being a supporting member for the roof. The column supports the roof, not the wall. As a structural element, the wall's responsibility is to support itself, the cantilevered steps, and the part of the floor structure that connects the tower to the main buildings.

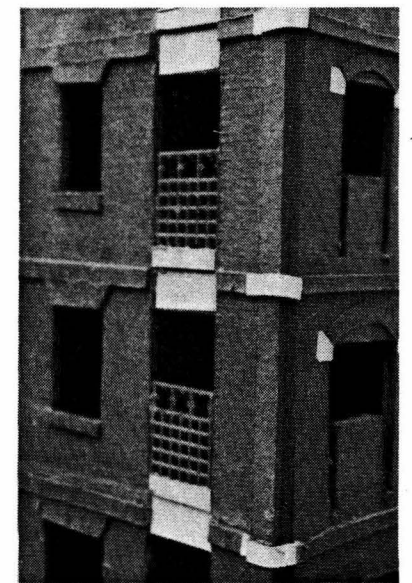
The way the tower wall lightens as it meets the sky reveals the structural logic of the brick; the wall thickness is intentionally exaggerated to show some of the essential properties of brick. Where the exterior walls of the building need to be more massive to handle heavier loads, they thicken to become piers. These plaza walls are hollow to allow room for mechanical systems for the buildings. In addition, they must be self-supporting and serve as a barrier between inside and outside. Direction of motion and definition of passage are also achieved by these walls. The tower and plaza walls work together to direct circulation into the private garden area behind the street. The side walls of the buildings help to form a negative space - a large outside room. Within the plaza, there is a semi-circular wall that creates another outdoor room at the corners of the buildings (at the store fronts). This area serves as a transition space between outside and inside. The tower walls serve as an anchor for this plaza and helps to mark passage from one realm to another. In the towers, the walls never touch each other; in the buildings they do. A distinction is made between the walls that face the street and those that belong to the plaza. A reveal where the two walls intersect shows that they are separate entities, with the plaza walls being most important. Shadows will be formed because of the slight reveal and they will give the building a different character with the passage of time. Internally, the walls only requirement is to divide and define space. This is



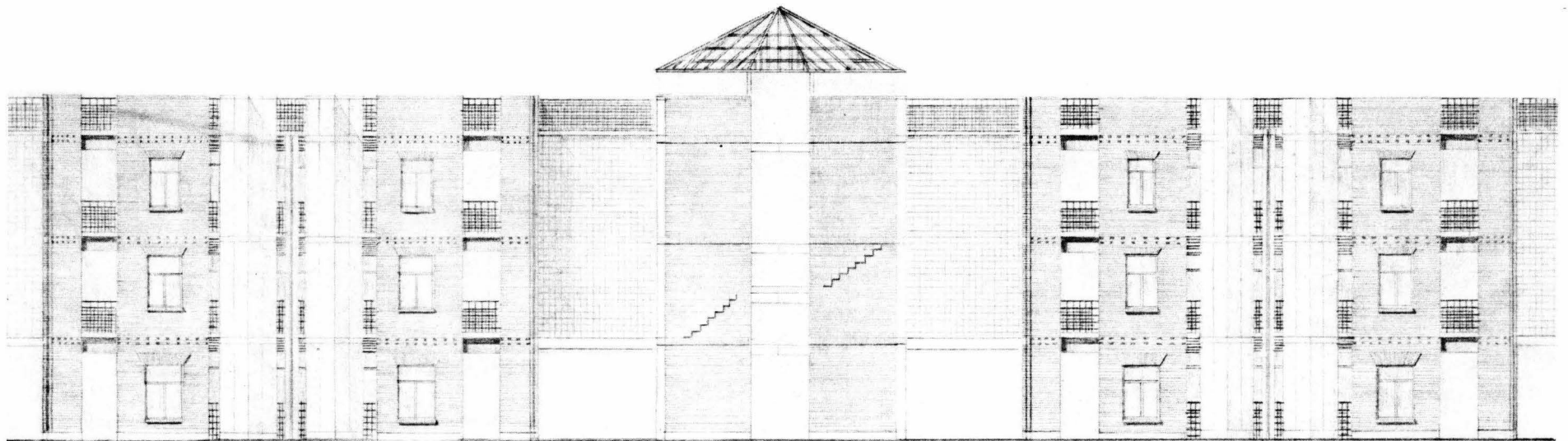
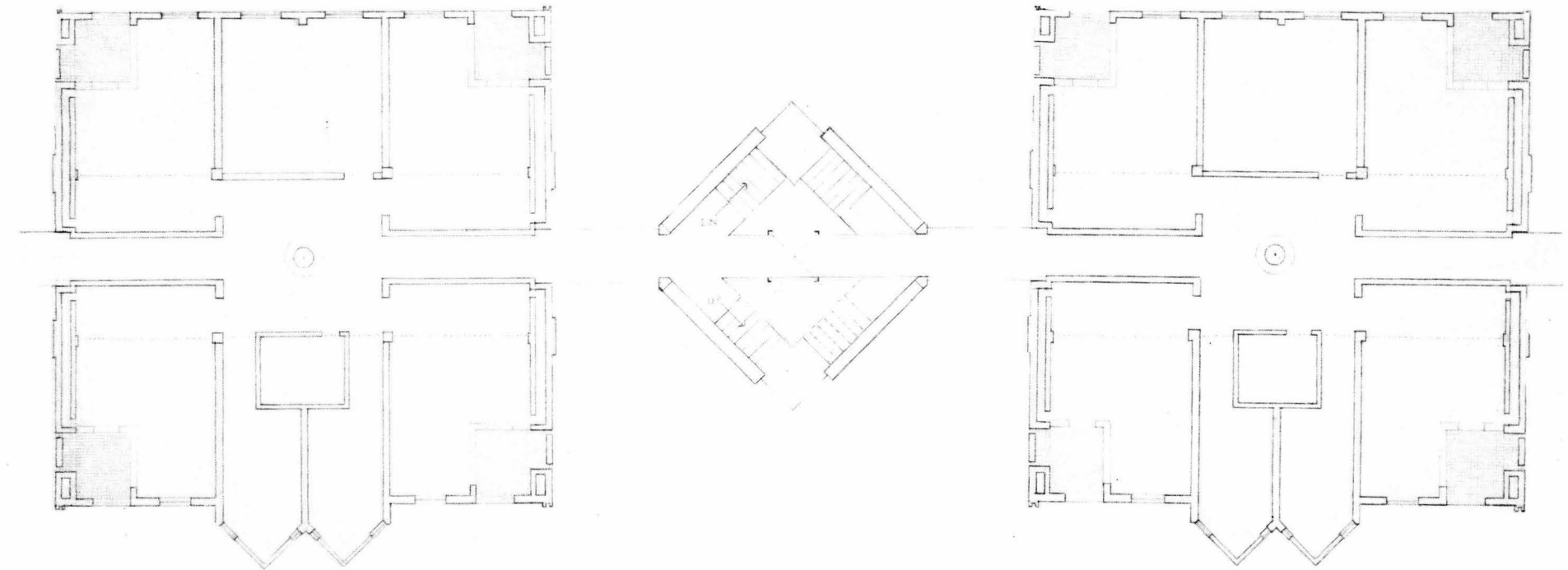
Plaza Elevation



Model - Plaza Detail

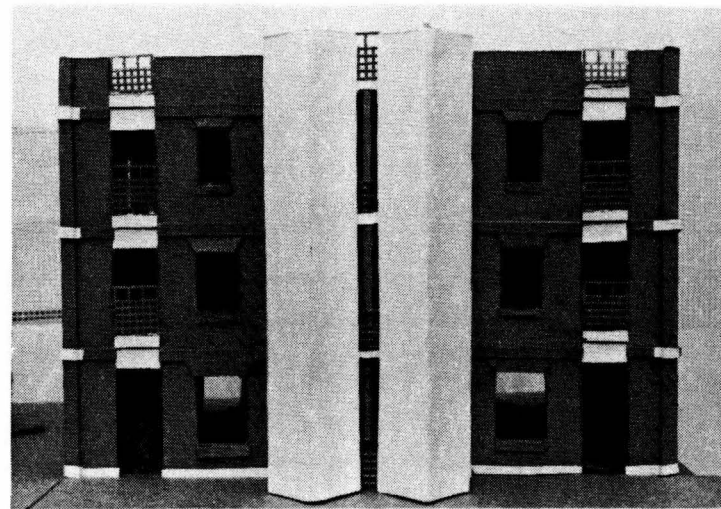


Model - Building Corner

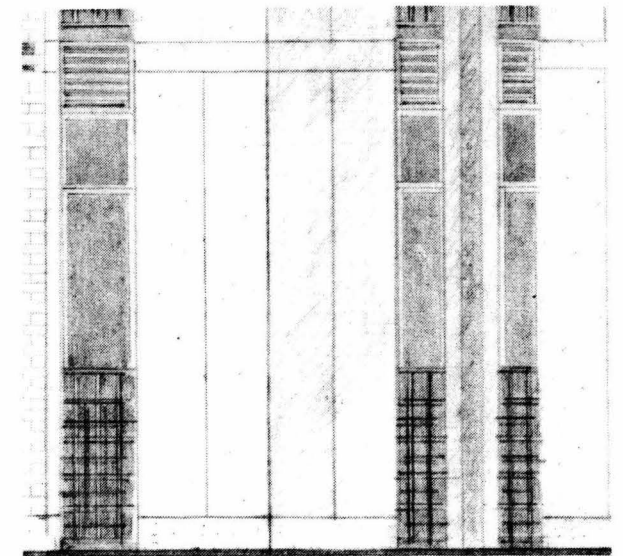


Second and Third Level Plan and Rear Elevation

emphasized by the use of glass at the point where the wall meets the ceiling. Since glass cannot be used as a bearing member, there can be no doubt as to the nature of these walls. Floor loads are transmitted to the ground by columns and the exterior walls. Likewise, glass block is used for the walls in the hallways between the towers. Once again, this treatment shows that the wall exists merely to contain a certain space and to define a path. The beams that support the glass block are clearly articulated and the glass block only has to support itself. The translucent quality of the block allows for a barrier that obscures the users of the hall from sight, but that at the same time allows a sense of motion between the buildings to be expressed.



Model - Rear Elevation



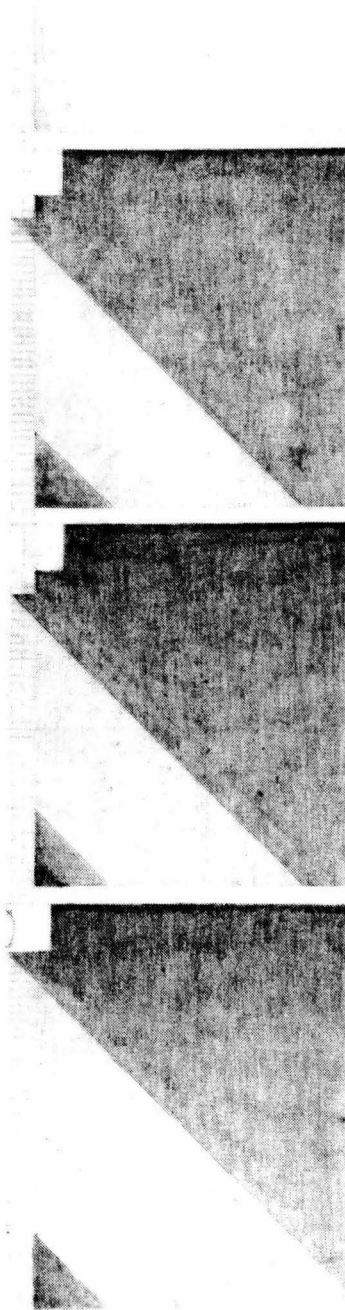
Rear Detail



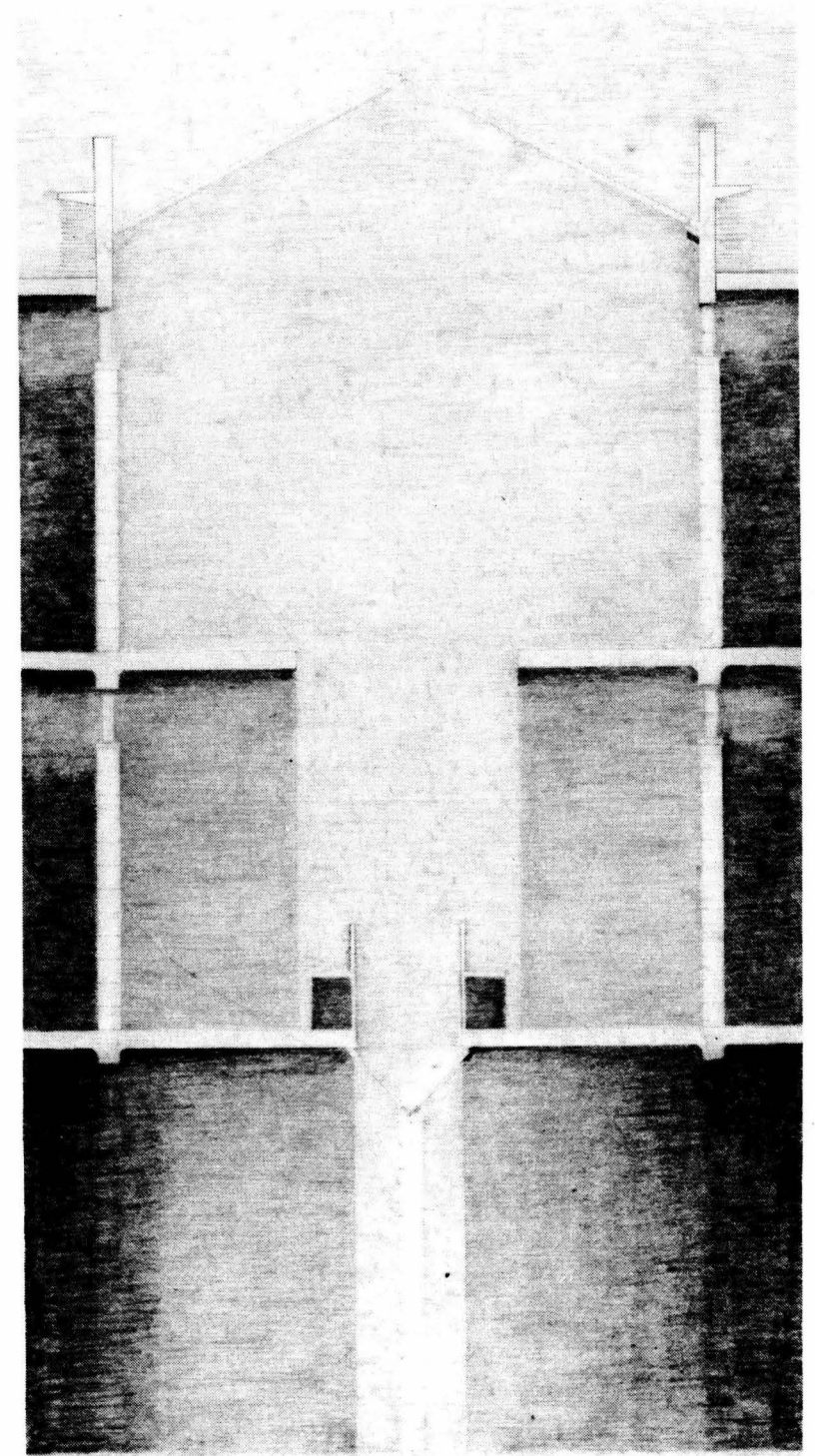
Rear Elevation

*I do not believe that ever any building was truly great, unless it had mighty masses, vigorous and deep, of shadow mingled with its surface. And among the first habits that a young architect should learn is that of thinking in shadow, not looking at a design in its miserable liny skeleton; but conceiving it as it will be when the lights it, and the dusk leaves it.*

John Ruskin  
The Seven Lamps of  
Architecture



Building Section - Front Wall



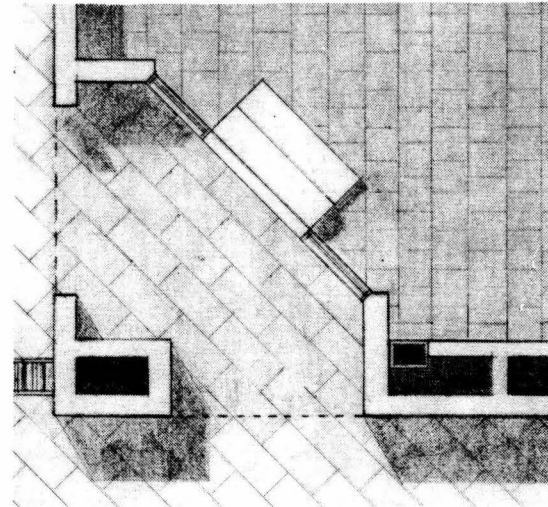
Building Section - Center Light Well

## Floors

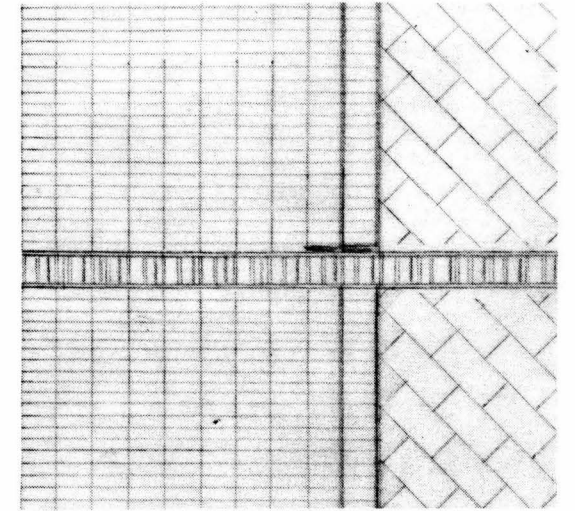
Floors can be much more than just a horizontal surface. They may be used to show aspects of the plan that one wants to reinforce or they may help in the transition from one space to another. They may call attention to an entrance or they may show paths of circulation. They may be used to show differences in spaces. Tactile qualities may be especially important in the choice of material for the floor since it is the one element that is most frequently in direct contact with the human body.

Material changes in the floor, particularly where two planes intersect, emphasize change or transition. This has occurred most frequently in the plaza floor. Brick has been used as the material where the first transition takes place; brick extends from the curb to the steps leading up to the plaza from the street level. The presence of a material different than the concrete sidewalk calls attention to this as the point where entry to the plaza begins. At this point, a different geometry and a different material are introduced to give the plaza a distinct identity. The diagonal pattern corresponds to the geometry of the tower rather than that of the buildings and is used to reinforce the relationship of the tower to the plaza. Where the plaza surface meets the buildings, a special piece reconciles the conflicting geometries.

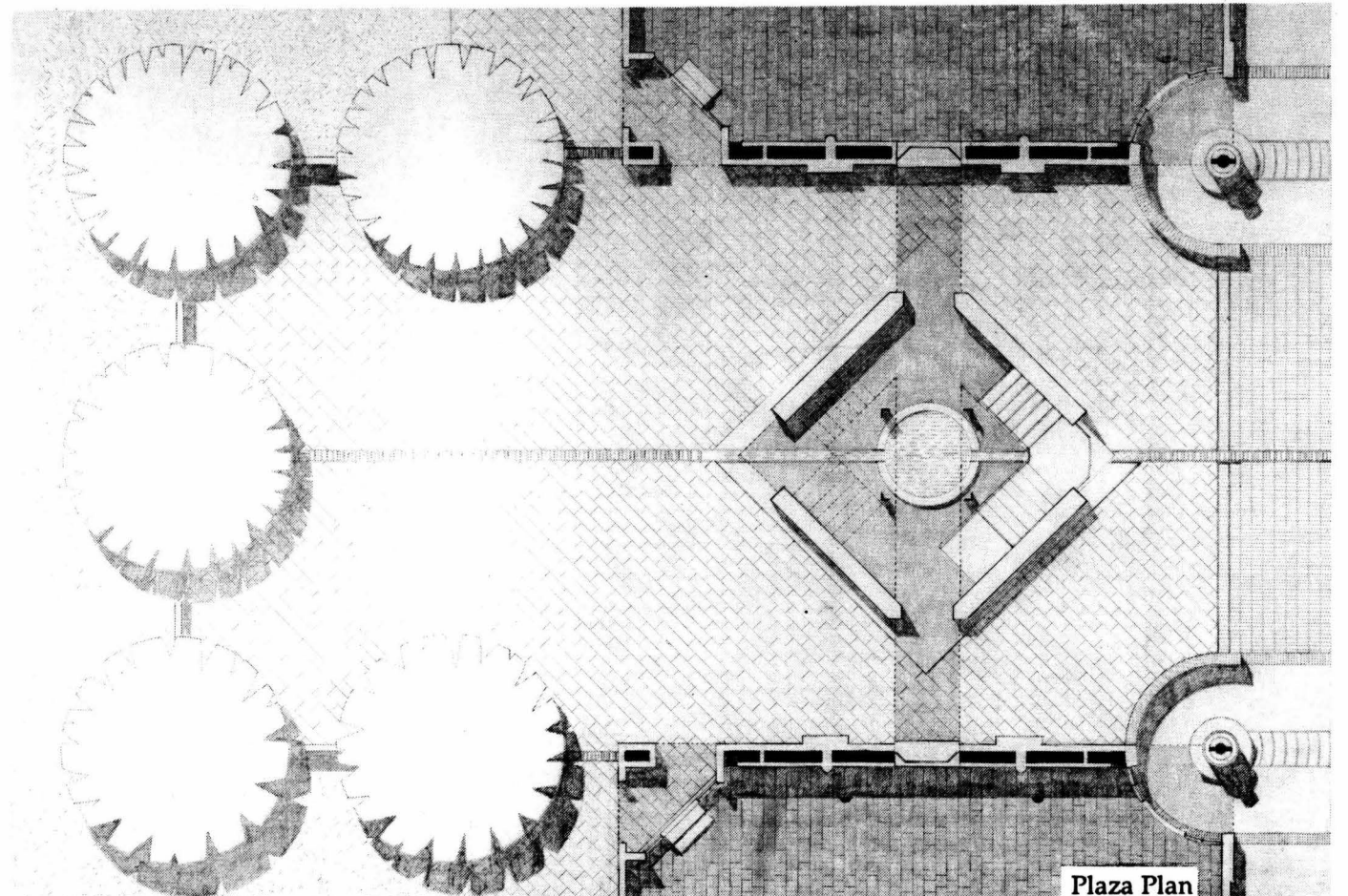
Within the building, the floors don't make as many transitions as they do in the plaza. Because the nature of the first floor is different from those above it, the floor is different here. All of these horizontal surfaces respond to the grid. In the upper floors, the circulation areas have different surfaces than the office rooms. Wood was chosen as the flooring material for the offices because of its tactile qualities. It is only where the wood surface meets the wall that a transition occurs. A small strip of concrete between the wood and the wall reveals the presence of the concrete beam below.



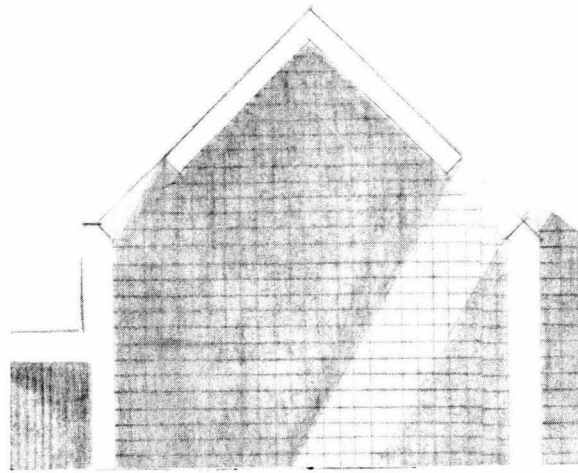
Partial Building Plan at Rear



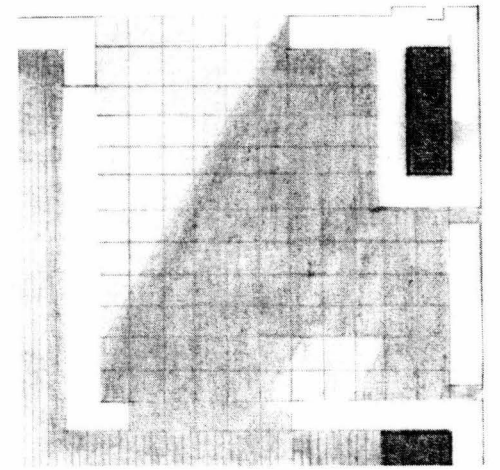
Detail - Plaza



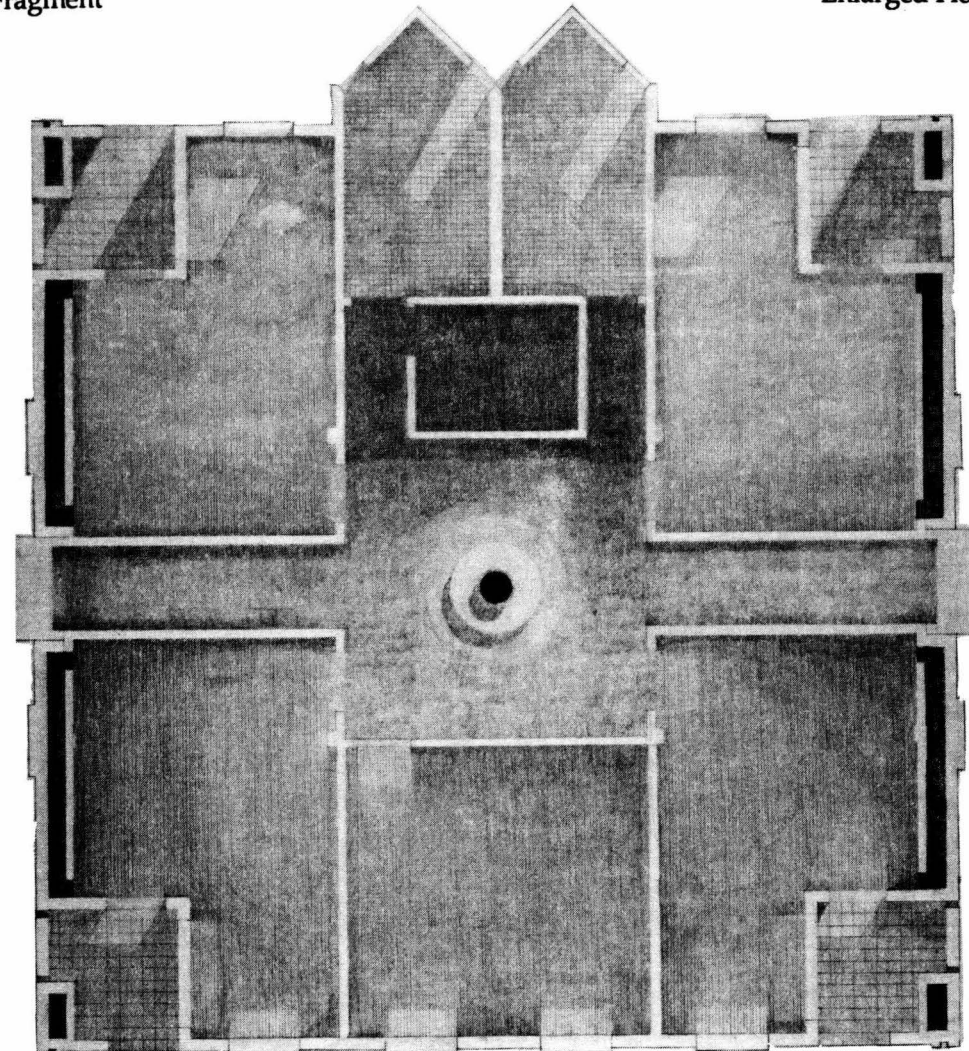
Plaza Plan



Enlarged Floor Fragment



Enlarged Floor Fragment



Second Floor Plan

*The character of a work of architecture is therefore first of all determined by the kind of construction used; whether it is skeletal, open and transparent (potentially or in fact), or massive and enclosed. And secondly by making as such: the joining, erecting etc. These processes express how the meaning of the work becomes a "thing". Thus Mies van der Rohe said: "Architecture starts when you put two bricks carefully upon each other."*

**Christian Norberg-Schulz**  
Genius Loci: Towards A  
Phenomenology of Archi-  
tecture

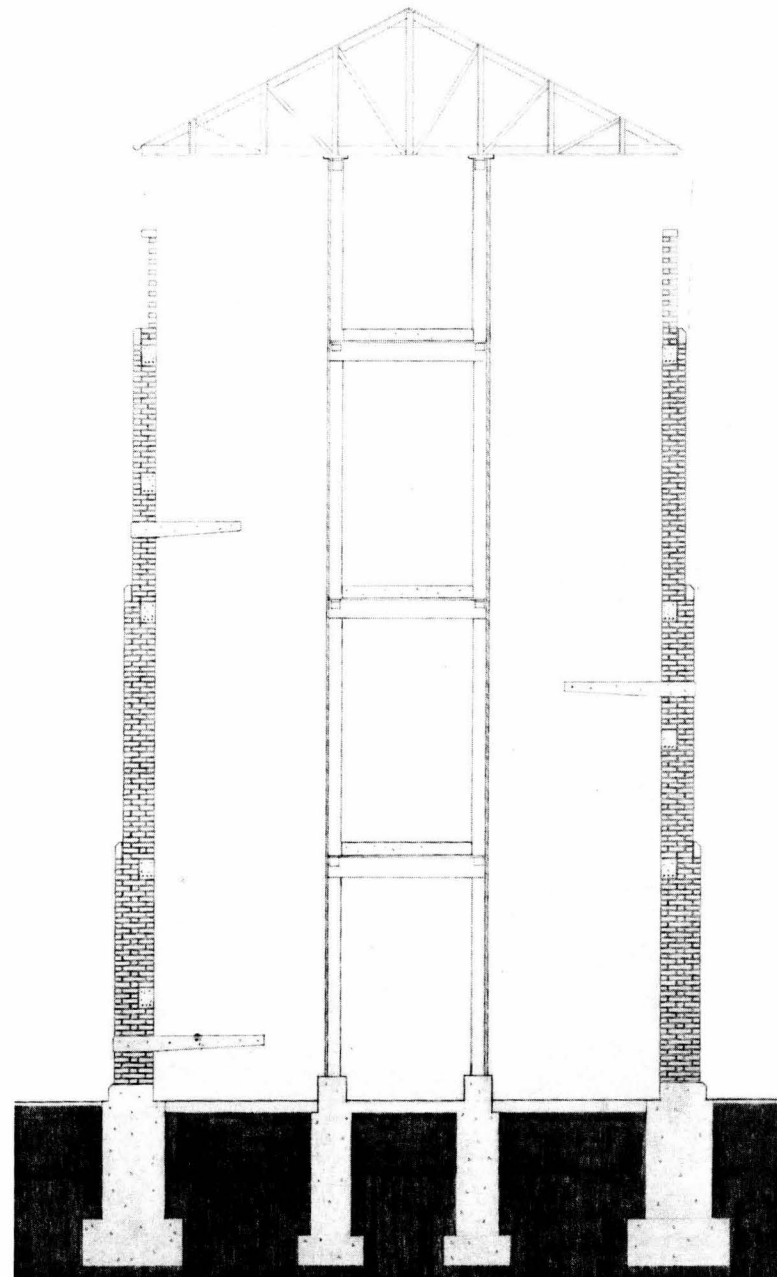
## Columns

The column may be used to achieve some of the same functions as the wall, but in a different way. A wall defines space by enclosing a discrete volume. Columns, in contrast, liberate space by concentrating gravity loads at a particular point, thus eliminating the space that would be occupied by a wall. A bearing wall distributes loads over a larger area and accordingly occupies more space. The column can be employed as a means of marking the importance of a particular point or path and it may also be used to show a building's organization.

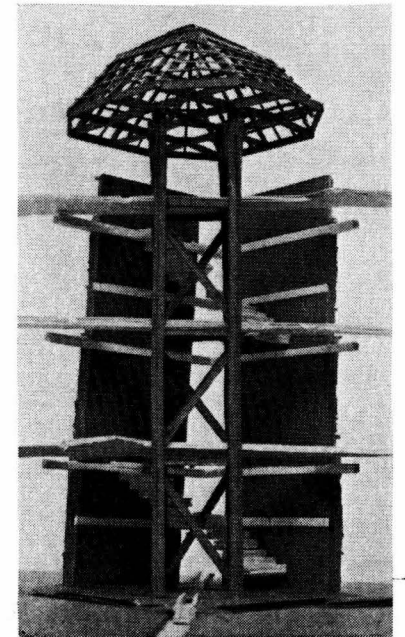
The main entrances to the buildings are marked by columns. This is in part a gesture to site ("the Blacksburg Corner".) In addition to calling attention to these entrances, columns serve as structural elements. Heavy walls bear directly on beams, which in turn bear on the columns. These columns are oversized for several reasons. Because they are hollow, they must be much thicker than would be required if they were solid. A slit in these columns reveals this hollowness. The large diameter was chosen not only for structural reasons, but also for visual impact and to allow the column to assume other functions. For instance, drainage from the roofs of the buildings is accomplished by downspouts imbedded in the hollow wall, which in turn empty into the column and flow through it to gutters in the sidewalk.

These columns are also the center of an outside room, which serves to provide a transition from outside to inside. The column is slightly tapered, again mostly for visual reasons. The column base functions as a seat within this room.

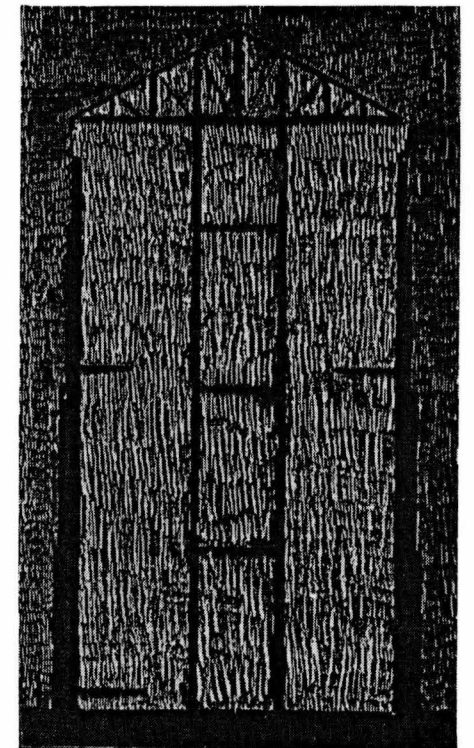
The glass roof of the tower is supported by four steel angles that are welded together to form a hollow square column. This was done to achieve the functional issue of circulation; otherwise passage through the column would not have been possible. This column was reduced to the bare minimum required to support the roof, in contrast to the wall, which was intentionally exaggerated in its thickness.



Section - Stair Tower

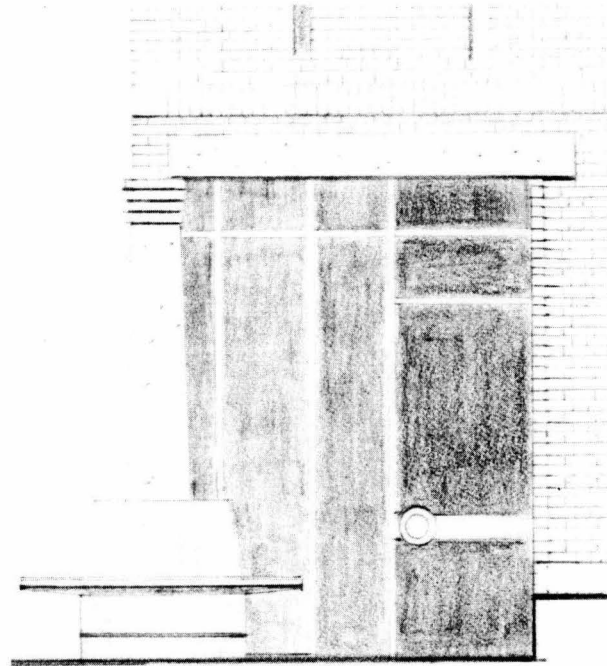


Model - Tower Column

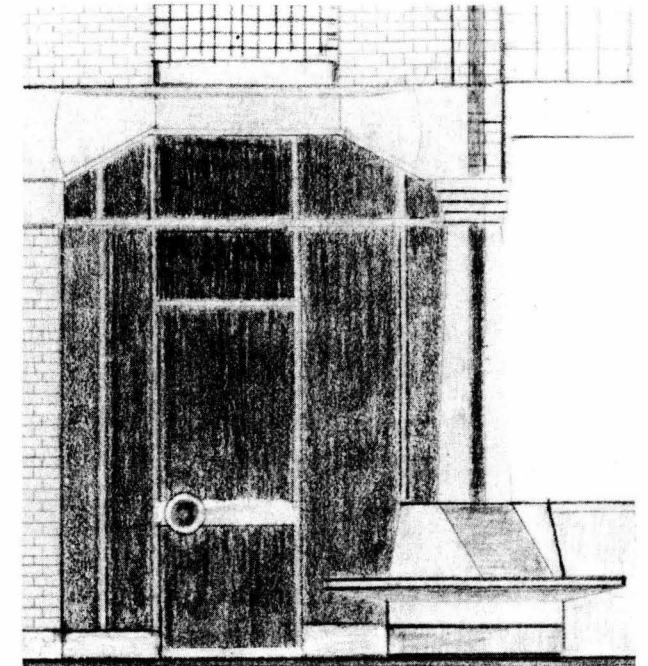


Section - Stair Tower

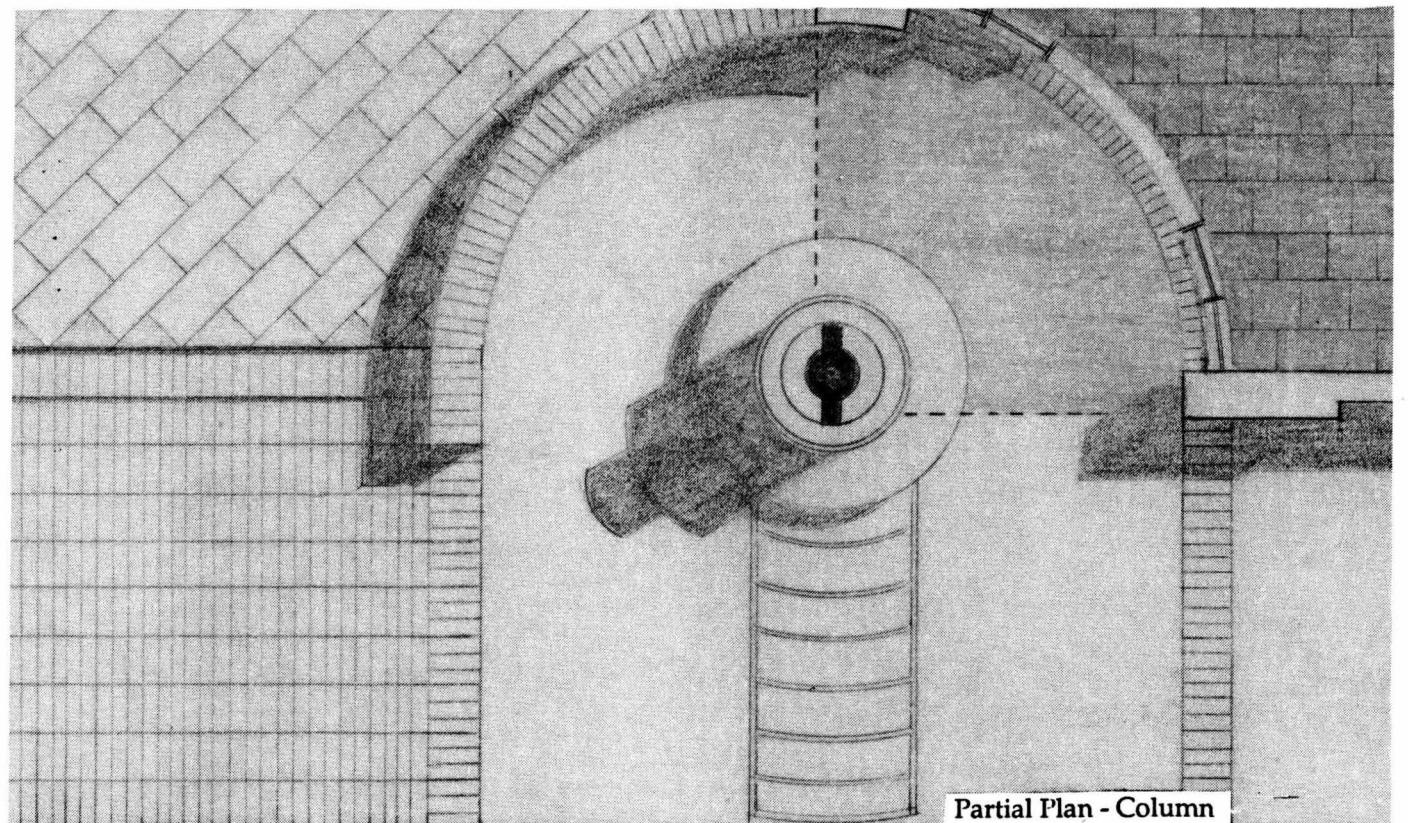
The columns in the building are solid and not over - scaled, as the exterior ones were. They are supporting floor and roof loads and do not have multiple roles. Since they are engaged, they stand out as distinct from the walls and are an intermediary element where these interior walls meet. Columns are always structural in this project, in contrast to the wall. Even when it serves other functions, the column is primarily intended to carry loads.



Column at Plaza



Column at Front



Partial Plan - Column

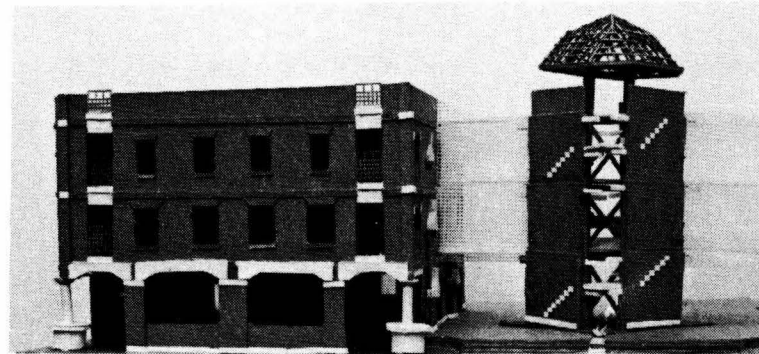
*A building is a man made work, a crystalline, constructed thing. It should not imitate nature - it should be in contrast to nature. A building has straight, geometric lines. Even where it follows free lines, it should be always clear that they are built - that they did not just grow. I can see no reason at all why buildings should imitate natural, organic or growth forms.*

Marcel Breuer  
Sun and Shadow

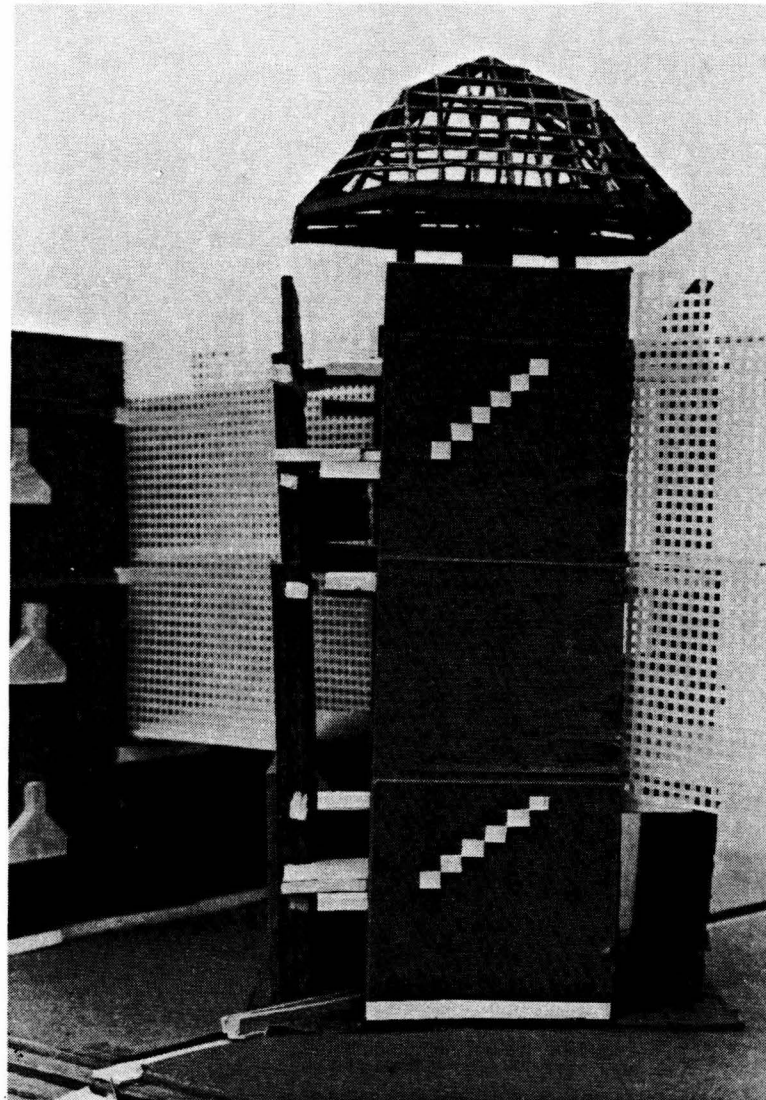
## Beams

Beams provide a way of transmitting loads to walls or columns. Their very presence implies the existence of a mass with which one must deal. Like any other element, the beam has certain physical properties that have an effect on the way it is formed. These factors can play a role in its general appearance. Different materials allow the beam to do different things. A wooden beam may not be practical to span long distances, due to the thickness the beam would have to assume. Other materials like steel or reinforced concrete may be more appropriate for such a purpose. The choice of material for the beam should not be merely a practical question. It must be based on the desire the architect has about the particular space he wants to create. Exposing the beam, for example, may give a space an entirely different character than covering it does.

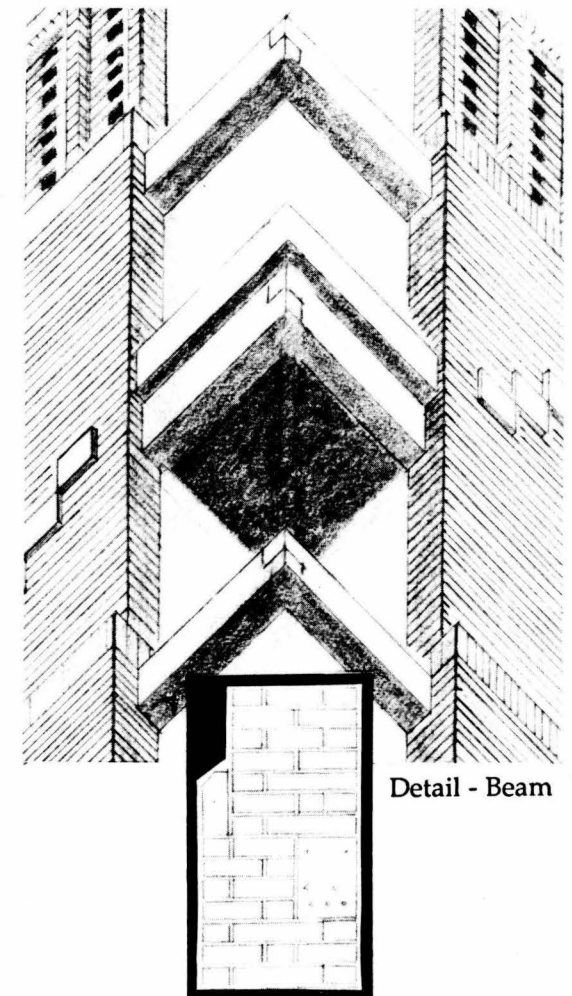
Beams have played a significant role, especially in the development of the tower. The desire to eliminate the corners of the stair towers created an apparent problem in that the way the tower was constructed posed the problem of how to support the landings at the corners, since the walls didn't meet. By imbedding the beams in the walls, it was possible to use the mass of the bricks to cantilever the beams from the two perpendicular walls. It is in this manner that the pre-cast landings are supported. The elements have functioned together for a single purpose. In fact, the beam becomes one with the wall as a component piece. At the same time, it is still articulated as a beam. The design of the exterior beams of the buildings tried to reflect the properties of the beam in a literal sense. This was desirable in order to use the beam not only to carry the weight of the bricks above, but also to help define the entrance into the buildings. This is in contrast to the beams of the stair tower, where the role of the beam was expressed differently. These exterior beams are also essentially a part of the wall and they are expressive of the load-carrying capacity of the beam. The same general shape of these beams



Model - Front Elevation

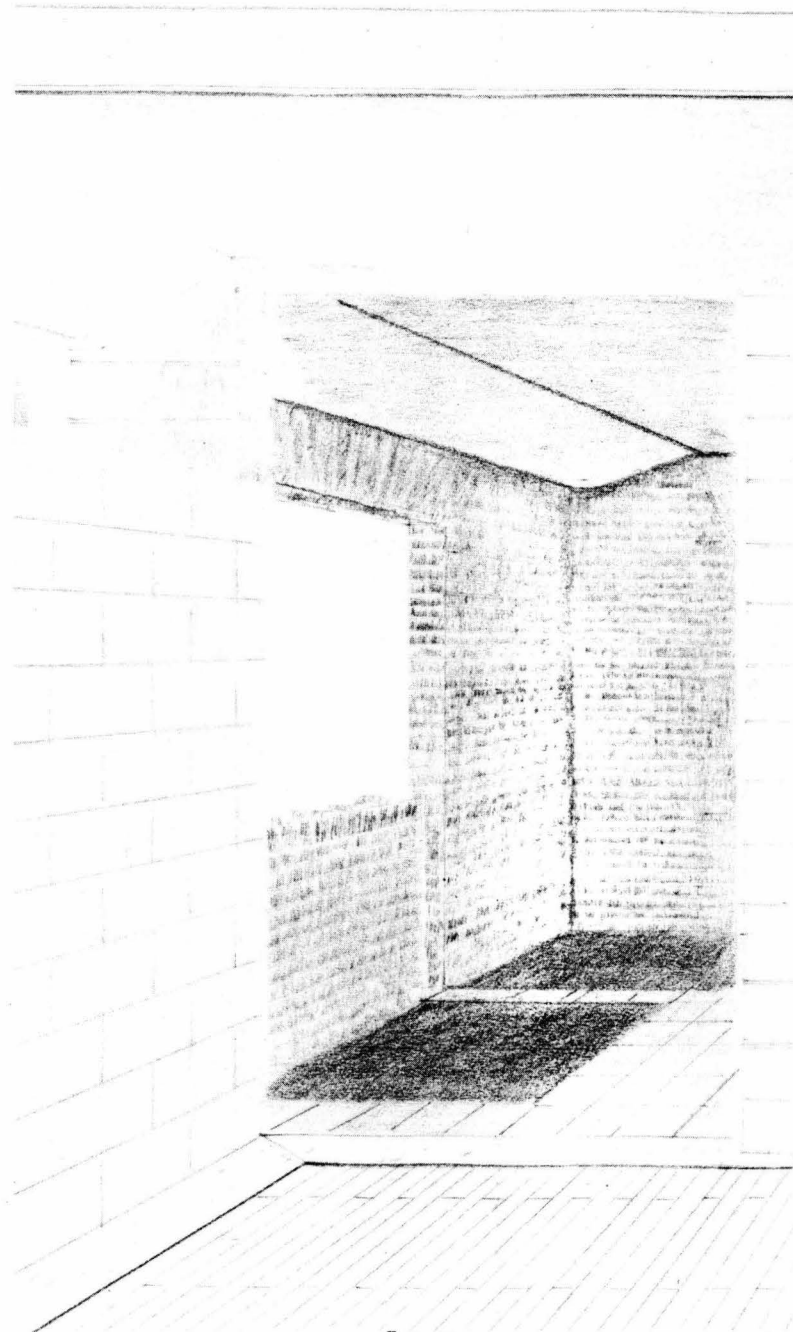


Model - Beam Detail

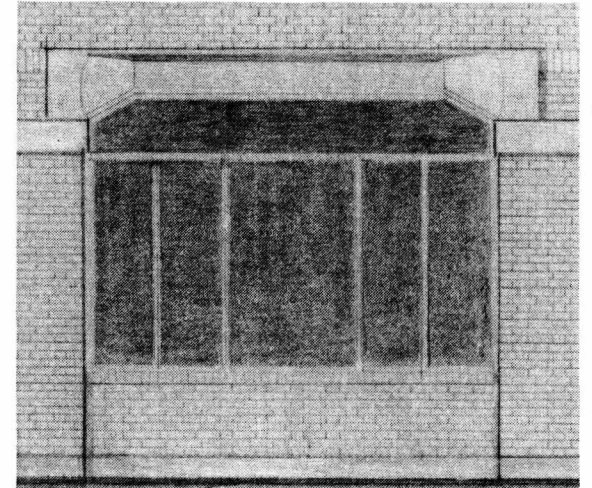


Detail - Beam

has been carried through to the interior of the buildings. The ceilings have taken on a vaulted character in response to the shape of the beam. The exterior beams in the plaza walls correspond to the beams in the tower wall.



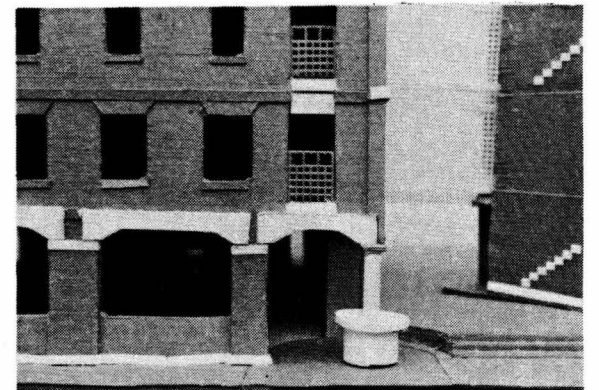
Building - Partial Office Interior



Front Detail

*It is important that honor you the material you use. You don't bandy it about as though to say, "Well, we have a lot of material, we can do it one way, we can do it another way." It's not true. You must honor and glorify the brick instead of short-changing it and giving it an inferior job to do in which it loses its character, as for example, when you use it as infill material, which I have done and you have done. Using brick so makes it feel as though it is a servant, and brick is a beautiful material....*

Louis I. Khan  
Quoted in:  
Between Silence  
and Light



Model - Front Detail

## Stairs

Stairs are an extension of the the floor and are used primarily to achieve vertical circulation. Depending on the nature of the project, the stair may assume different forms and may made of any of a variety of materials.

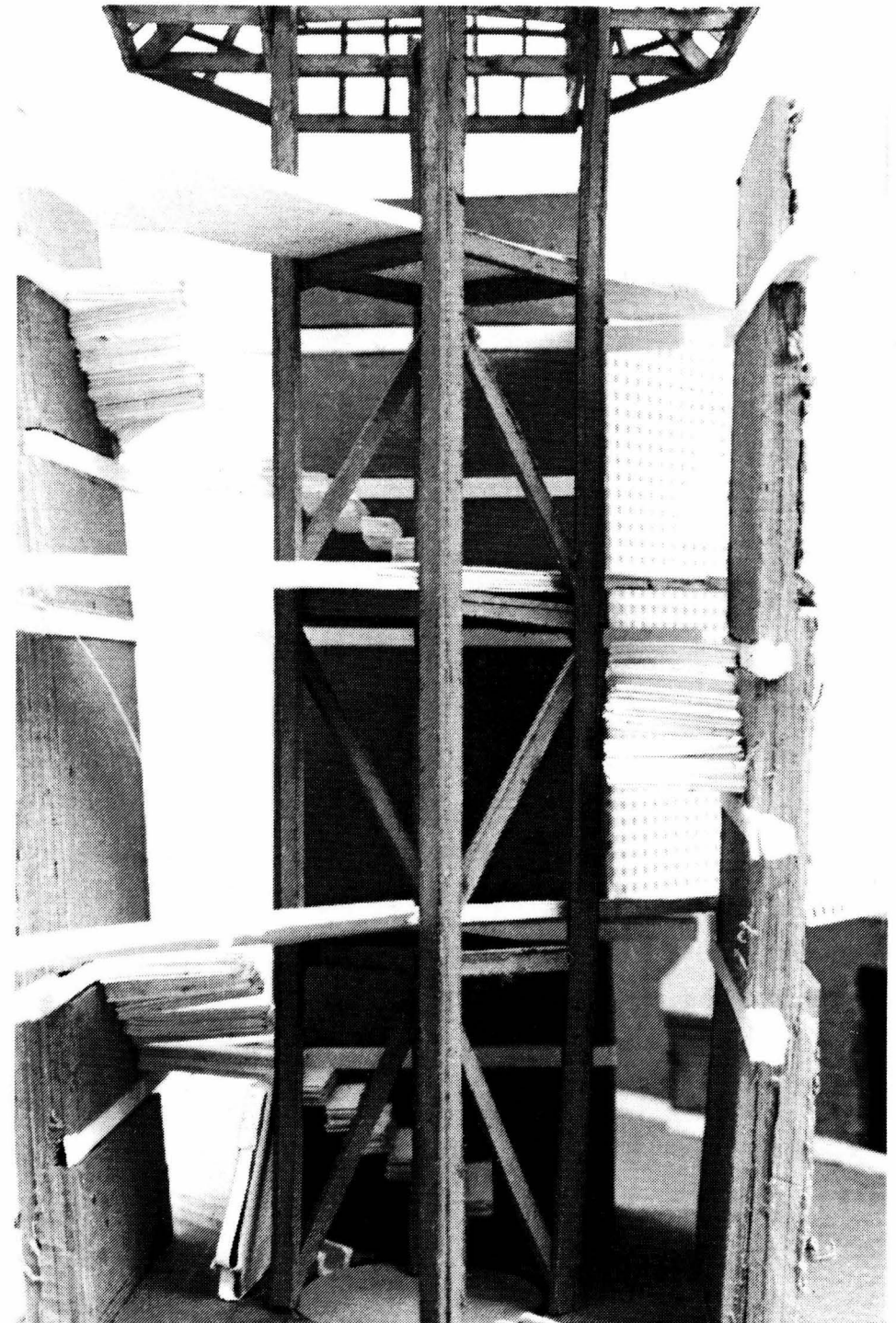
The individual step may be used to begin a transition, as in the entry to the plaza. These steps are intended to begin the act of vertical circulation in a gradual way. It is, in part, the role of the plaza to help in the transition from street level to the stair tower.

The sense of vertical movement within the stair tower is expressed in its facade. As pieces, the steps are articulated on both sides of the wall. On the inside, they are apparent more as a functional constituent of the wall. Piercing the exterior wall relieves the wall of some of its monotony and makes a literal statement as to what is going on inside the tower.

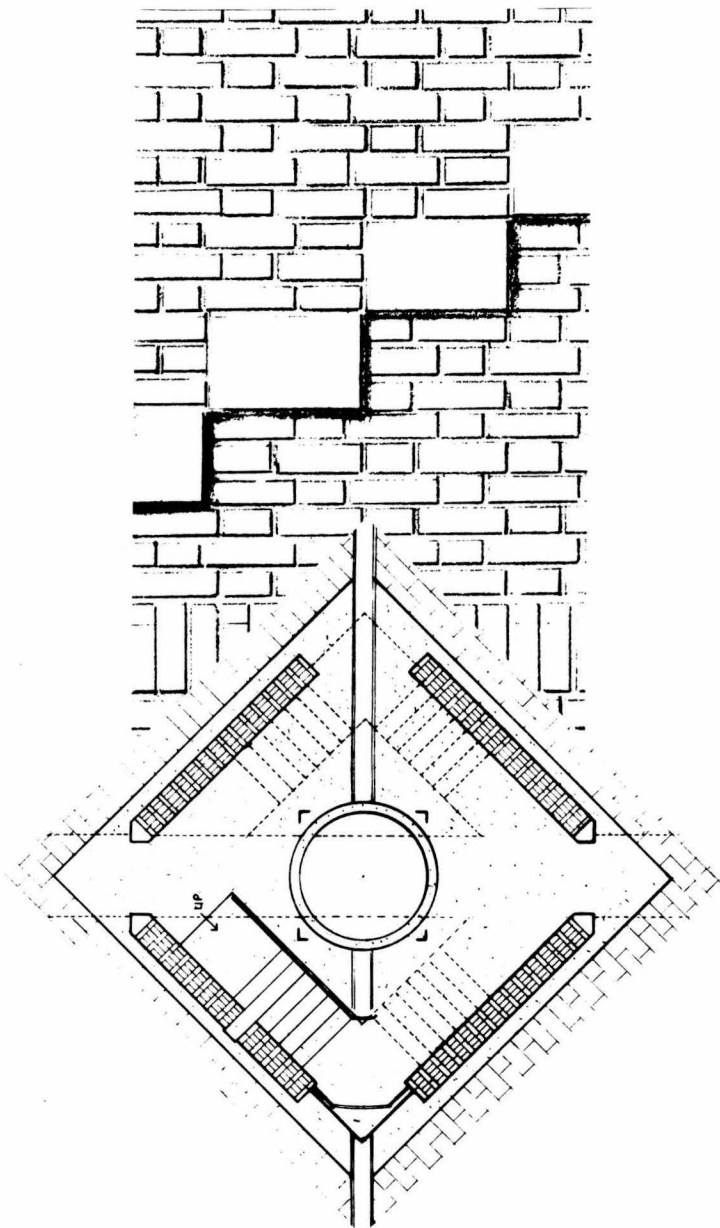
When an ordinary act is articulated in a way that is architecturally significant, the stair is able to reach a new level of meaning. An essential part of the success in this project stemmed from the desire to express such a mundane act in an architectural way.

*Materiality...reflects our intuition that for something to be real it ought to be (made of) "stuff," material having a palpability, a temperature, a weight and inertia, an inherent strength...*

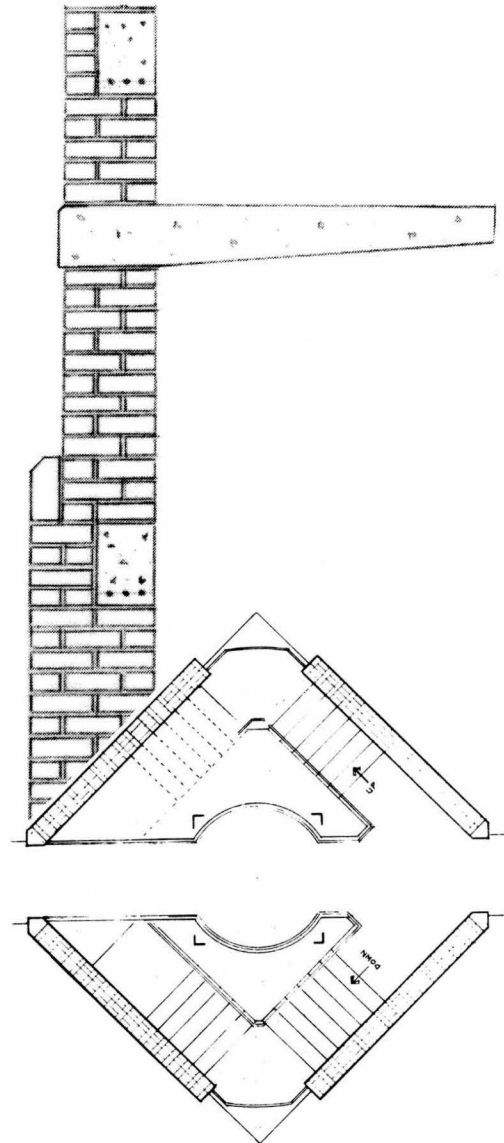
Michael Benedict  
For an Architecture  
of Reality



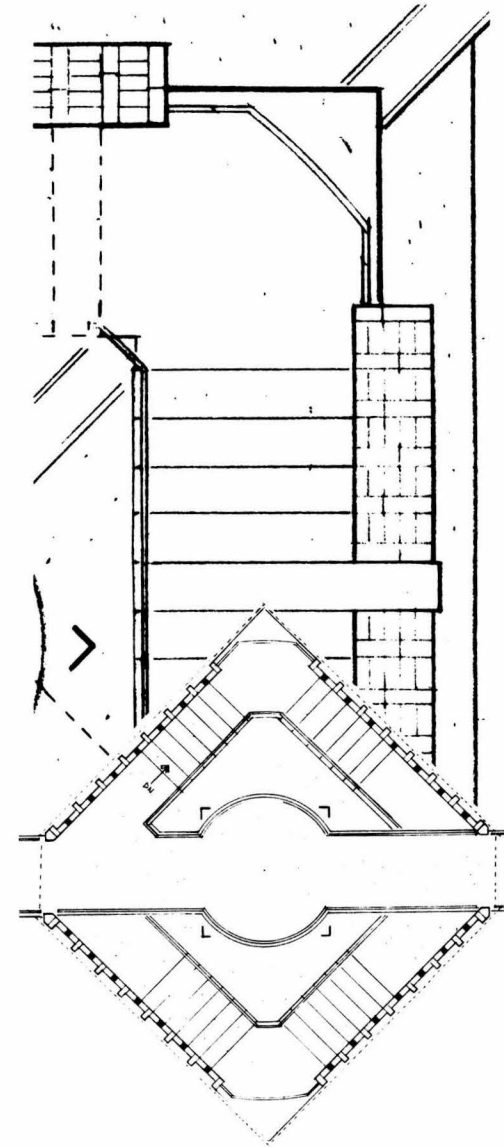
Model - Stair Tower



First Floor Plan / Partial Elevation



Second Floor Plan / Partial Section



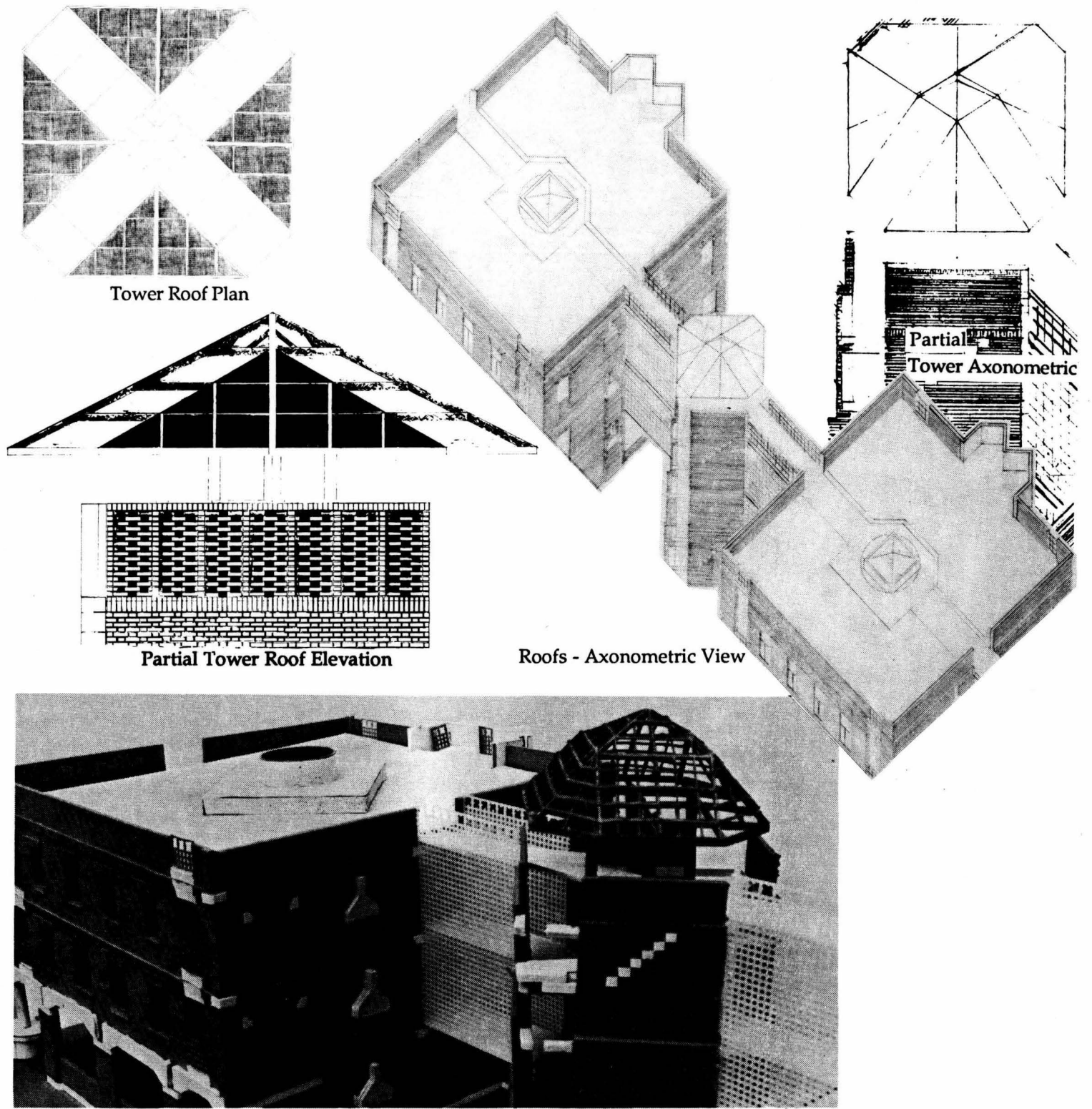
Third Floor Plan / Partial Plan

## Roofs

The roof is the element that embraces the building as a whole and serves to unify it. It has a special role as the place where the walls end and the sky begins. This gives it a very special character. A roof is the termination of the building; it needs to make a gesture to both the building and the sky. Its form may vary depending on its material character, climatic conditions, and the form of the building. Whatever shape it takes, it must be appropriate to the spirit of the building itself.

The tower walls progressively lighten as they approach the sky; the element that contains this building reflects the gradual disintegration of the wall. The lightness of the roof is the next step in this progression. Only minimal protection against the elements is provided by this glass roof. As it hovers over the walls, this roof becomes almost a part of the sky, rather than as something opposed to it. It exists independently of the wall.

On the roof of the buildings, the surface is topped with a stone ballast. Since the roof is intended to be used as a gathering place and will also be part of a circulation pattern, it is essentially flat. The area for the walkway is a different material.



Tower Roof Plan

Partial  
Tower Axonometric

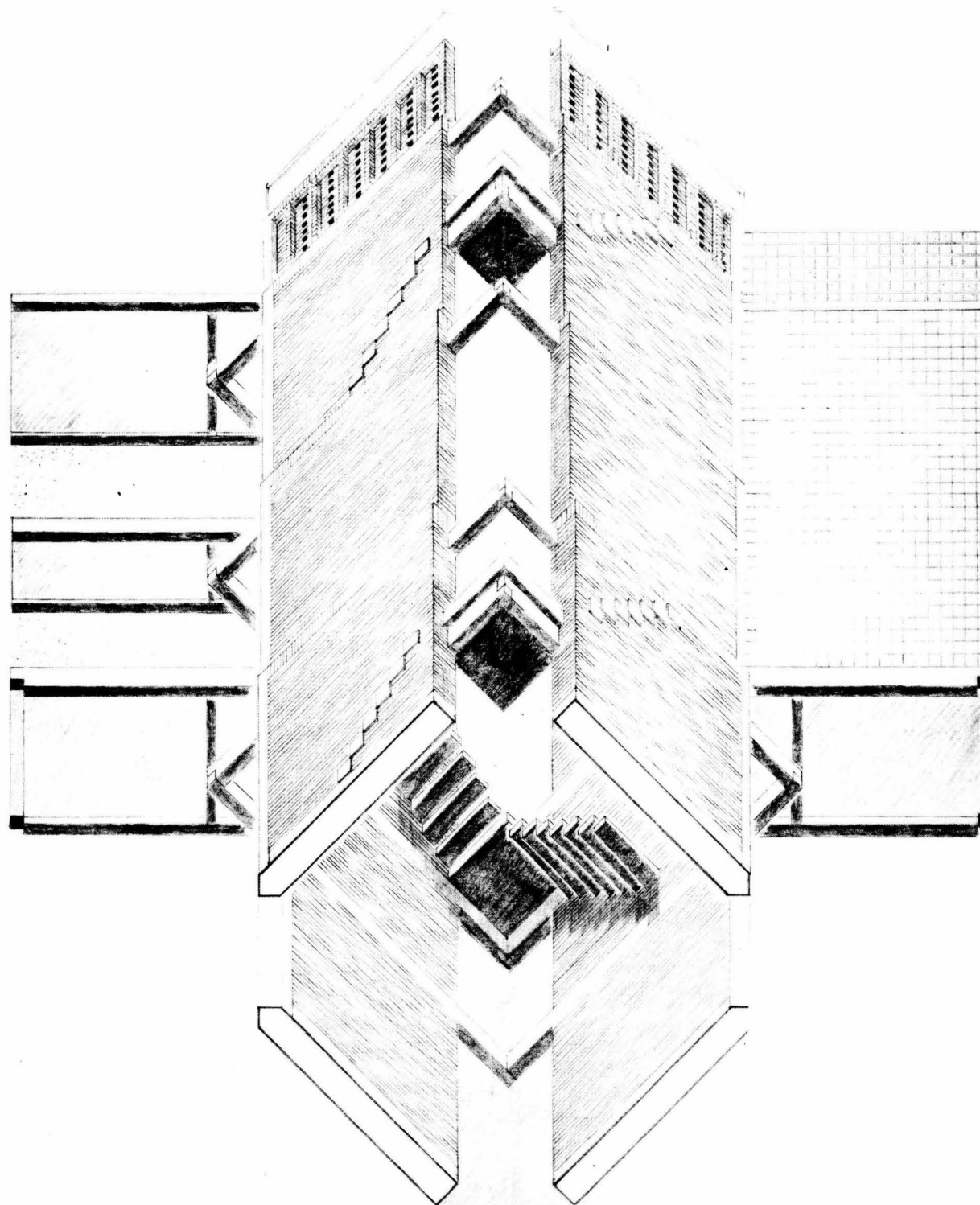
Partial Tower Roof Elevation

Roofs - Axonometric View

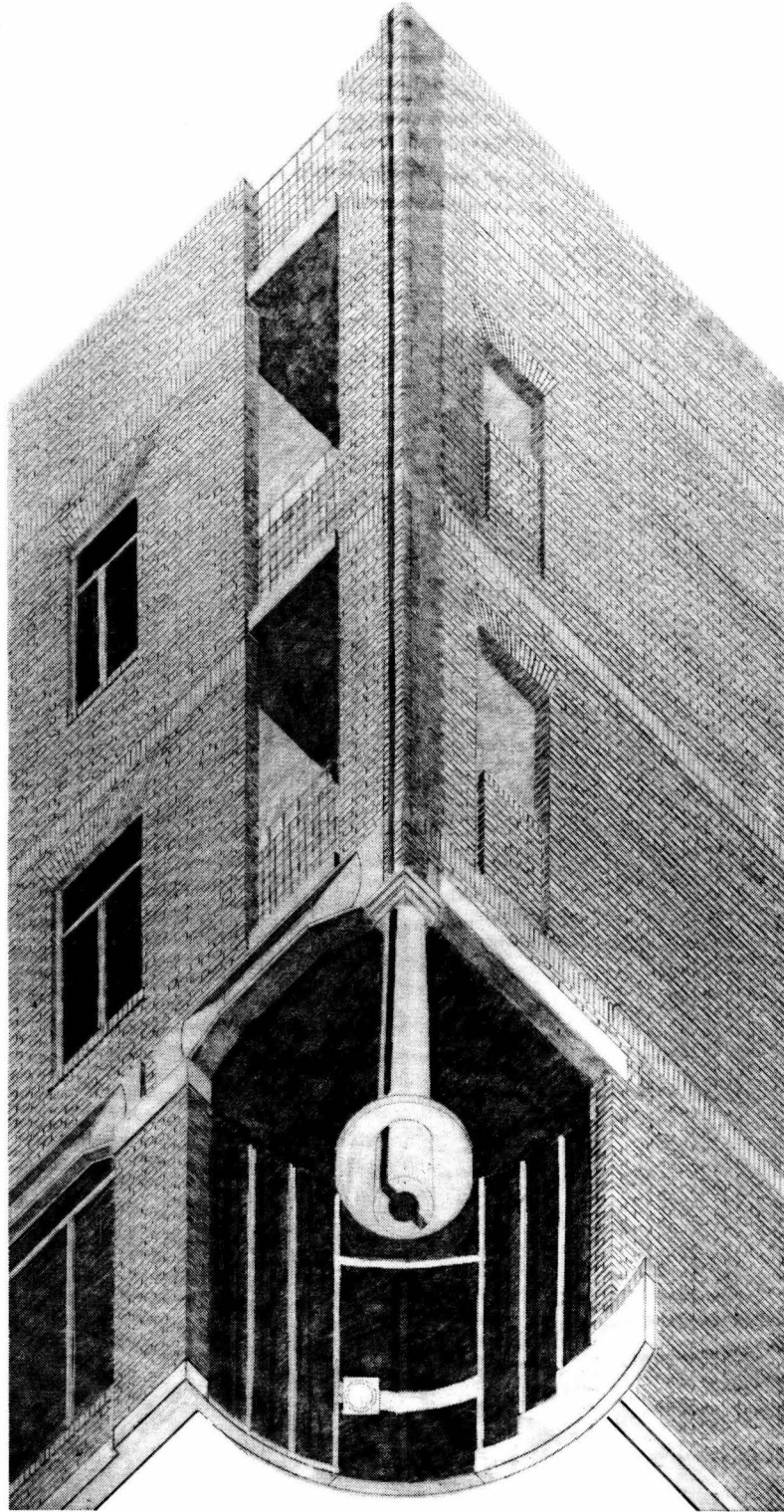
Model - Roofs

## **Chapter Four**

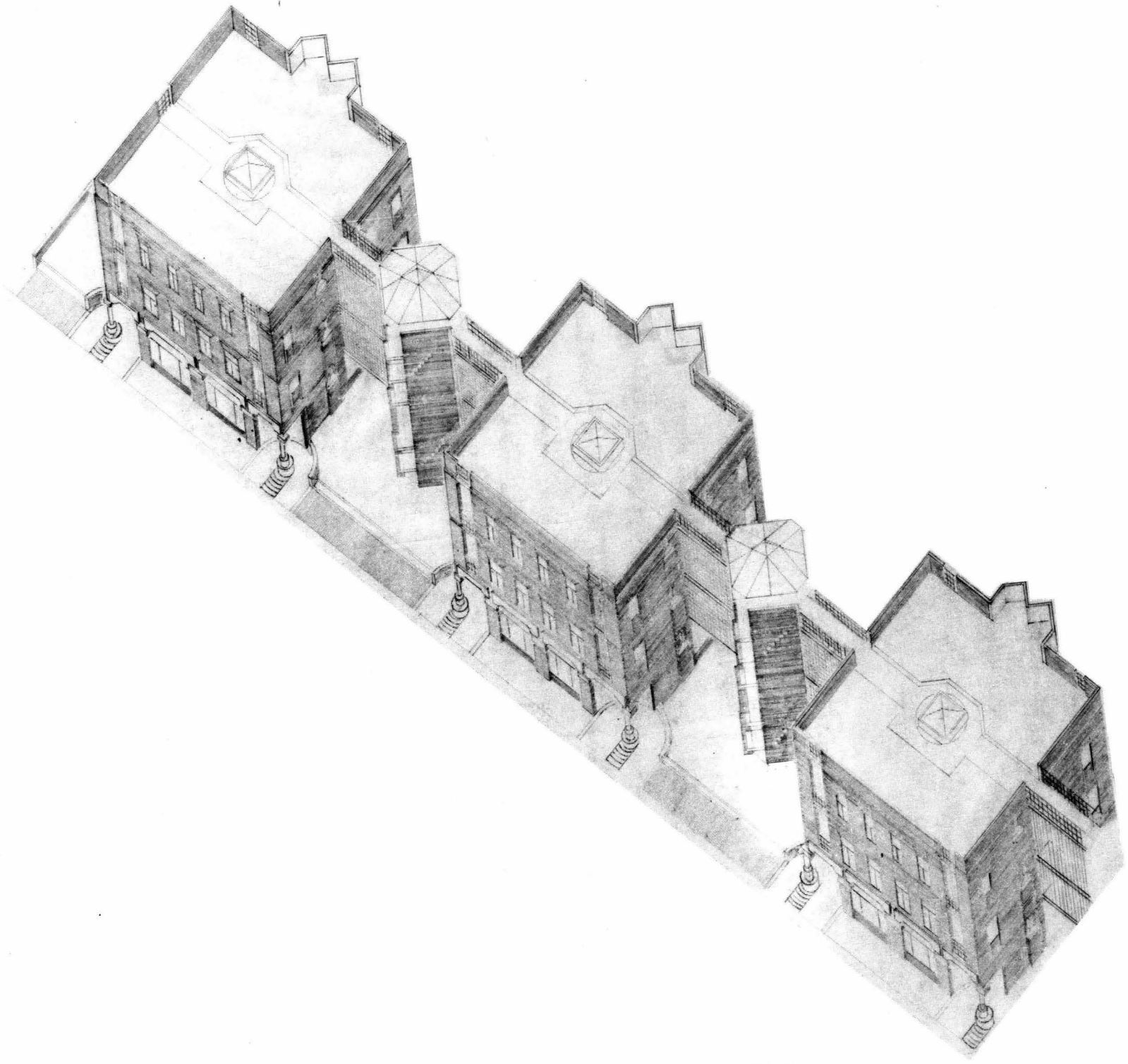
### **The Buildings (The Whole)**



Stair Tower - Axonometric View



Building Corner - Axonometric View



**Buildings - Axonometric View**

## **Chapter Five**

### **Final Thoughts**

Earlier in this book I attempted to explain the ideas and influences that were important in the development of this project. No attempt was made to base this work on a particular philosophy or on the work of a particular architect.

The major force behind this thesis was to develop an understanding of architecture at a very fundamental level. This is the reason that issues of structure and materials were explored. However, in a very general sense, the notion of the phenomenological reduction, as formulated by Edmund Husserl, did have some influence on the way in which some design decisions were made. It became very important to look at the chosen materials as things-in-themselves in order to get a clear understanding of what they are. The facts surrounding the object were of little importance. The inherent properties of the material were considered to be essential in trying to use them in a manner consistent with their nature. This was very important in this project and it will continue to be important as I progress as an architect.

Many students tend to view a thesis project as the end of an academic exercise, but I tend to regard it as the beginning of my own path in architecture. This thesis has allowed me to experiment with ideas in order to refine them to the point that they can be used in the continuing search to discover what architecture is and what it can be. These ideas and methods have proved themselves to be useful throughout the project, but I desire to move beyond the concerns of structure and materials, to create architecture that exists in another, more complex realm. Such a goal may be easily stated, but it is much harder to attain.

The goal or aim of architecture is really not so difficult or complex. Simply stated, architecture is a way of influencing our everyday lives. It has the ability to provide man a more meaningful life. The power that we as architects have is really tremendous; for this reason we are duty-bound to provide the best possible environment for any given need. Buildings, in contrast to monuments, are created to serve the needs of those that inhabit them.

As humans, we have basic needs and desires that must be satisfied to have a meaningful existence. As architects, we must follow principles of aesthetics, combined with the realities of physical laws and construction practices to achieve these goals. Merely satisfying these needs and desires in the easiest and simplest way may not necessarily result in architecture. A building must be imbued with a certain spirit or majesty. This may sometimes be intangible, but it is necessarily present in any work of architecture. Perhaps Vitruvius' criteria of "firmness, commodity, and delight" (1) is a useful way of describing what architecture should be. Using this as a basis for evaluating architecture seems appropriate in that it acknowledges the need for structural and material integrity at a reasonable cost, and at the same time respecting aesthetic sensibilities.

There are so many architects, past and present, that have helped guide my way in the search for a direction, that it would take a long time to acknowledge each one. If forced to choose one who I would most like to emulate, it would be Louis I. Kahn. The spirit embodied in his works and philosophy is something that can give me impetus as I continue to progress as an architect.

1 Marcus Pollio Vitruvius, The Ten Books on Architecture (New York: Dover Publishing, Inc., 1960), p. 17.

## **Chapter Six**

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