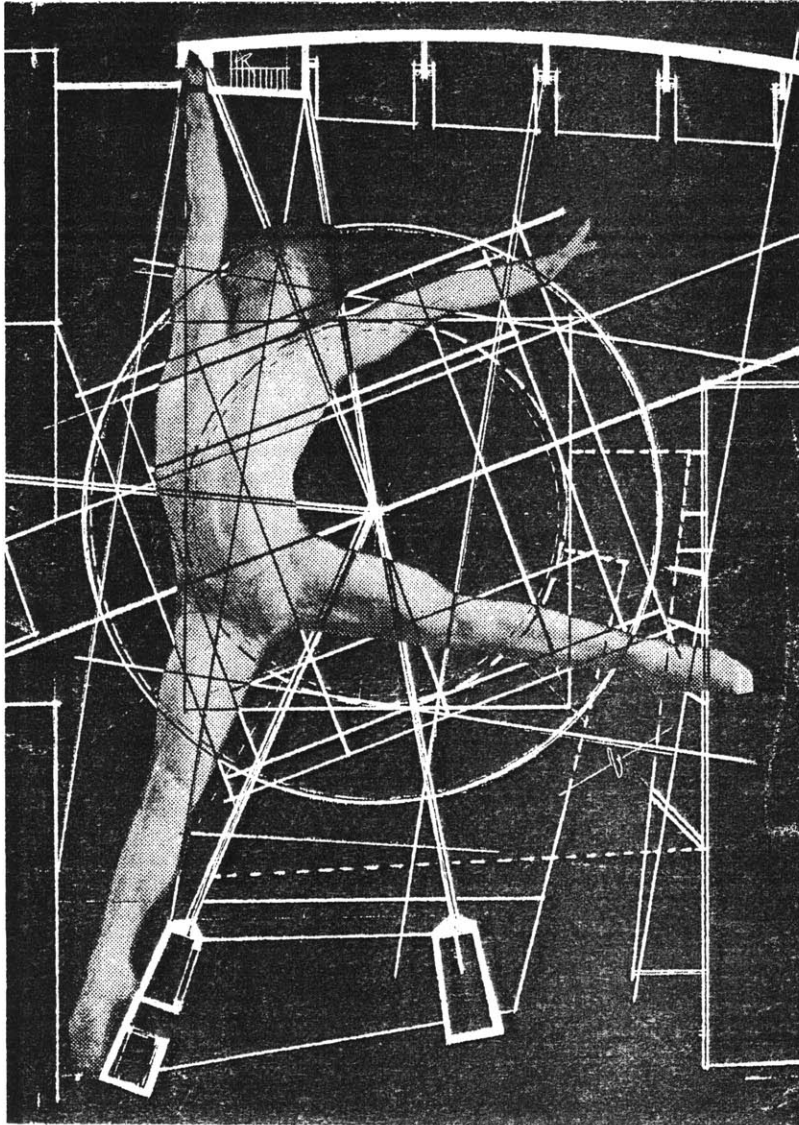


# BODY IN SPACE: The Sensual Experience of Architecture and Dance



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University of Florida, Gainesville, Florida 1988

Master of Building Construction  
University of Florida, Gainesville, Florida 1990

Submitted to the Department of Architecture in partial fulfillment of the requirement for the degree of Master of Architecture at the Massachusetts Institute of Technology, June 1991.

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MASSACHUSETTS INSTITUTE  
OF TECHNOLOGY

JUN 06 1991



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Submitted to the Department of Architecture June, 1991 In partial fulfillment of the requirements for the degree of Master of Architecture

## **ABSTRACT**

Dance and architecture are two disciplines of creativity that share a special relationship. Both disciplines define and use space as the main medium for creative interpretation. Dance is movement of the human body through space over time. Architecture and its spatial qualities are experienced by the human body through movement over time.

To think about space created for and by the body as the common linkage between dance and architecture, I utilized the dance performance theatre as a vehicle of design investigation. By employing spatial concepts as perceived in dance to inform the design of architectural space, I can address the creative process of design through the interchange of ideas from two artistic disciplines. The intent of this thesis is to find an architectural solution for the dance performance theatre that informs the users of dance and allows dance to inform the definition of the architectural space. In this reciprocal dialogue, I hope to expand the vision and interpretation of both architecture and dance.

Thesis Supervisor: Edward Levine  
Title: Professor of Visual Arts



## INTRODUCTION

Body in Space is an exploration of the making of space in architecture through the ideas of another creative discipline, dance. Throughout my education in architecture school, I have always been intrigued by the connection architecture has with other art forms. Although architecture is different from painting, sculpture, literature, music, and dance, etc., because each creative discipline has its own conventions and medium, it shares with all other art forms, a similar creative process. The creative process involves the conception of ideas, the development of the ideas, the making of the product, and the emotional and intellectual experience the work evokes from the observer or user. It is not linear and there is no definitive method. Because of this, I believe many concepts in various artistic disciplines are interchangeable and therefore, the ability for one art form to influence or enhance the development of another.

The formulation of this thesis was derived from three classes I participated in during my studies at the Massachusetts Institute of Technology: 1) an architectural design studio taught by Richard Tremaglio which emphasized the notion of interdisciplinary free play and free association as idea and space generator for architectural design, 2) a visual arts studio taught by Edward Levine which emphasized the process of making, how the work can inform the idea and how changes in scale, material, and structural logic can inform the experience of space, and 3) a seminar on Louis Kahn taught by Francesco Passanti which opened my eyes to thinking about architecture and design of space as having its own logic, defined through the ideas, and interprets the human spirit as much as the physical environment.

This thesis is about architecture and dance . But more importantly, it is about the exploration of the creative process. In exploring the creative process, I am not looking for a methodology or answers that will be applicable to future design problems. I am interested in finding out how, where, and what the process of the past semester has taken me. The work is far from complete even in its making but I do believe that I have come to understand my own process better.

The creative process is synergistic. The maker creates the work and the work informs the maker. The ideas that generate the design process of a project might be conceived in the mind but the end product is not. The ideas in their making acquire added dimensions as new sources and resources are discovered. The designed product will reach a stage of finishness when the maker stops working. However, it is far from complete without interpretations via experiential feedback of the users. It is through this interaction that a creative work finally comes into being.

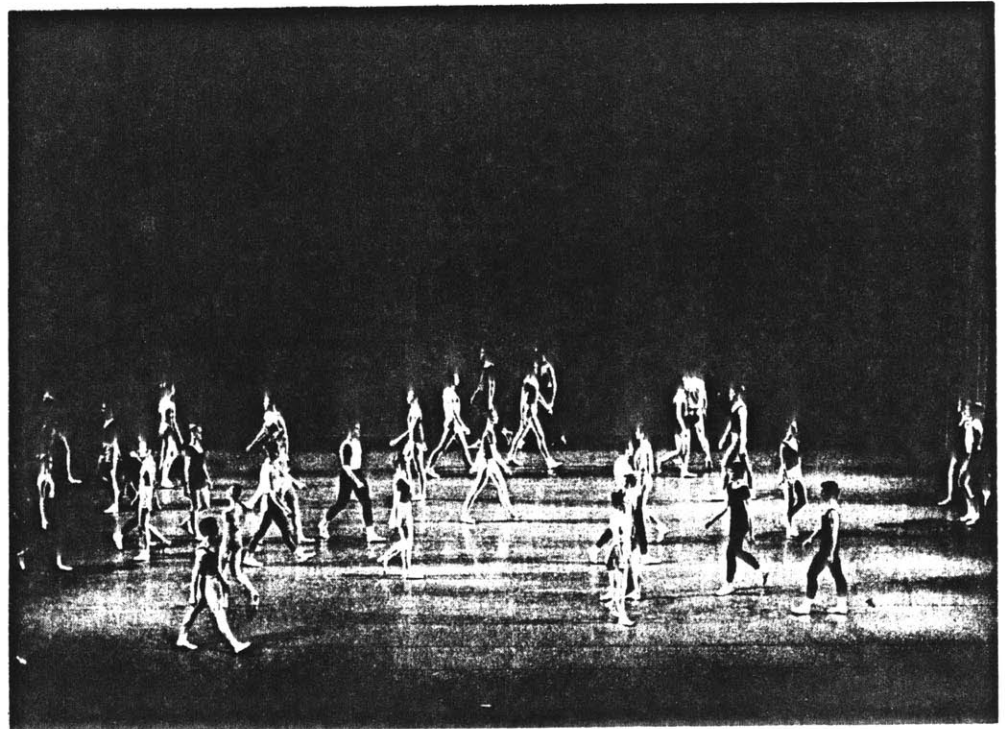
*"This means that in spite of everything, notwithstanding the hopes and the promises, we really only learn by doing: and in the work the how becomes more than a trail to follow, an encouragement. We only learn by experience and we realize that only the object in front of us, the object of the project, is capable of giving us the indications that we need....Thus each work of architecture is a different story; each project always starts over from nothing."*

Georgio Grassi <sup>1</sup>

**BODY IN SPACE: The Sensual Experience of  
Architecture and Dance**

## DANCE

Dance is a physical, psychological, cultural, and social behavior that has been and always will be an integral part of human existence. Perhaps more direct and essential than verbal communication, dance and the use of the body to convey meaning through nonverbal communication was evident in primitive man and is still evident today as the first behavior learned by children before they master the skill of speech.



Lois Greenfield

In our advanced and specialized age of information and technology, we no longer define dance in this broad sense. The innate reflex of our bodies to respond to rhythms and emotions has become suppressed and consequently, the movement of our bodies are subordinated and relegated to an instrument of control and work. Whereas the celebration of movement for primitive man was an essential part of his life, we now separate expressive and creative movement from everyday life through trivializing the grace of human movement and coordination in daily routines.

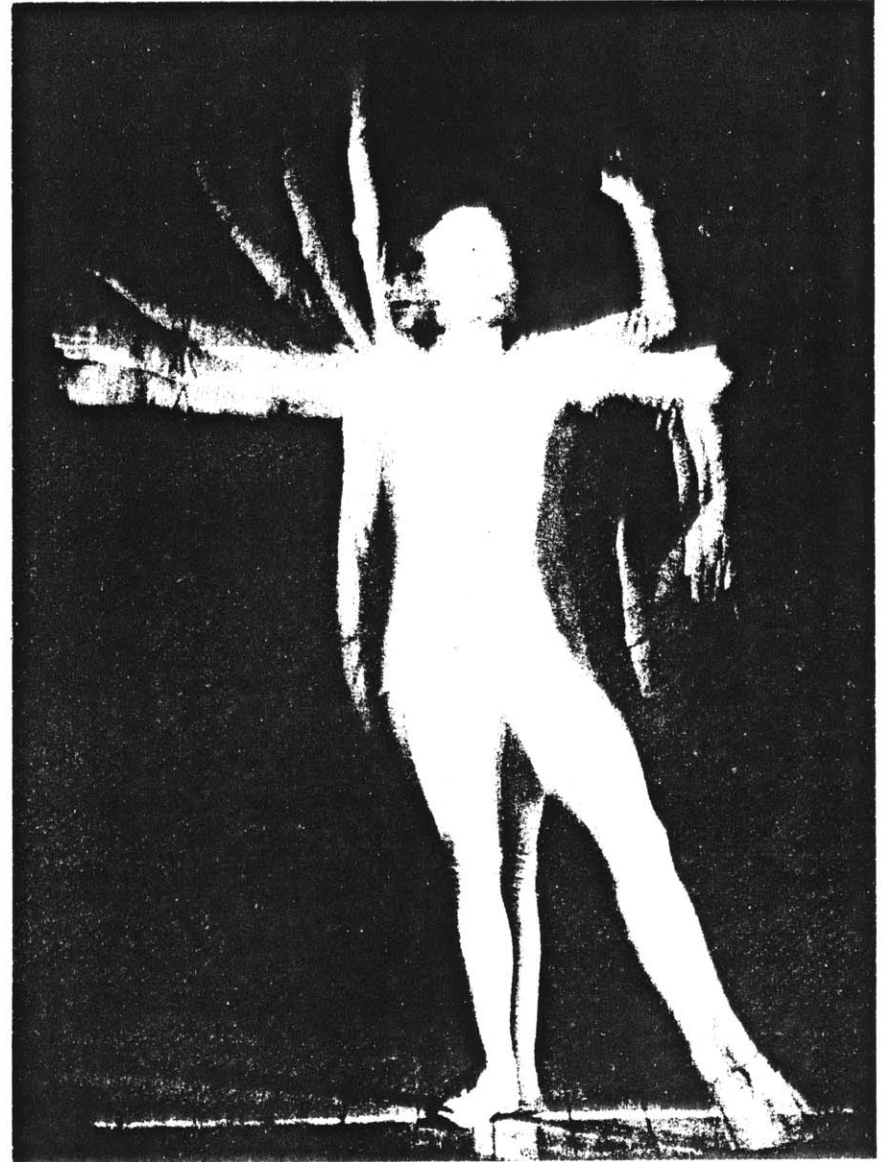


Place des Canons, Beirut  
Moussa Kobeissi

Dance is a human behavior inherent in all of us. It can be the activity of one unobserved individual or a highly stylized performance performed by a specially trained group for the rest of the public. Because of this, we must define dance in the broadest sense to include all cultures, styles, degrees of skill and sophistication. Before I present some of my assumptions about dance as they are used to provide the premise of this thesis, I would like to present definitions of dance from some of its foremost authorities:

*Dance can be most usefully defined as human behavior composed, from the dancer's perspective, of (1) purposeful, (2) intentionally rhythmical, and (3) culturally patterned sequences of (4) nonverbal body movements other than ordinary motor activities, the motion having inherent and aesthetic value. (Aesthetic refers to notions of appropriateness and competency held by the dancer's reference groups which act as a frame of reference for self-evaluation and attitude formation to guide the dancer's actions.)*

**Judith Lynne Hanna** 1



Man as dancer  
Oskar Schlemmer



*Dance is rhythmic movement having as its aim the creation of visual designs by a series of poses and tracing of patterns through space in the course of measured units of time, the two components, static and kinetic, receiving varying emphases ( as in ballet, natya, and modern dance) and being executed by different parts of the body in accordance with temperament, artistic precepts, and purpose. Gertrude Kurath 2*

*A transient mode of expression performed in a given form and style by the human body moving in space. Dance occurs through purposefully selected and controlled rhythmic movements; the resulting phenomenon is recognized as dance both by the performer and the observing members of a given group....It is understood that dance is an effective mode of expression which requires both time and space. It employs motor behavior in redundant patterns which are closely linked to the distinctive features of musicality.*

*Joann Wheeler Kealiinohomoku 3*

*Danced movement is patterned reinforcement of the habitual movement patterns of each culture or cultural area.... Dance is an adumbration of or derived communication about life, focussed on those favored dynamic patterns which most successfully and frequently animated the everyday activity of most of the people in a culture....*

*Alan Lomax 4*

*Dancing is essentially the termination, through action, of a certain kind of symbolic transformation of experience.... 'a dance' is a visually apprehended, kinesthetically felt, rhythmically ordered, spatially organized phenomenon which exists in three dimensions of space and at least one of time. It is articulated in terms of dancing on the level of the articulation of the dancers' bodies; in the body-instrument space which...is ninety-dimensional. It is articulated in terms of 'a dance' on the level of a pattern of interacting forces; the form space of a dance... is the empirically perceivable structure which modulates in time....Whatever its surface characteristics, a dance has limitations, 'rules' within which it exists and which govern any of its idiomatic or stylistic expressions.*

*Drid Williams 5*



In all of the cited definitions, there is a consensus that dance comprises of a series of movement elements and is inseparable from motion, space, and time. What is not clear is what separates dance from walking, playing, emotional expression, and or communication by body language. Dance must exist in time and space and is affected by elements of the physical environment that define space: light, scale, topography, the tactile quality of materials and the larger context. Like all other phenomenological experiences, dance engages the body in all its senses. Unlike many forms of creativity, the instrument of dance is the human body.

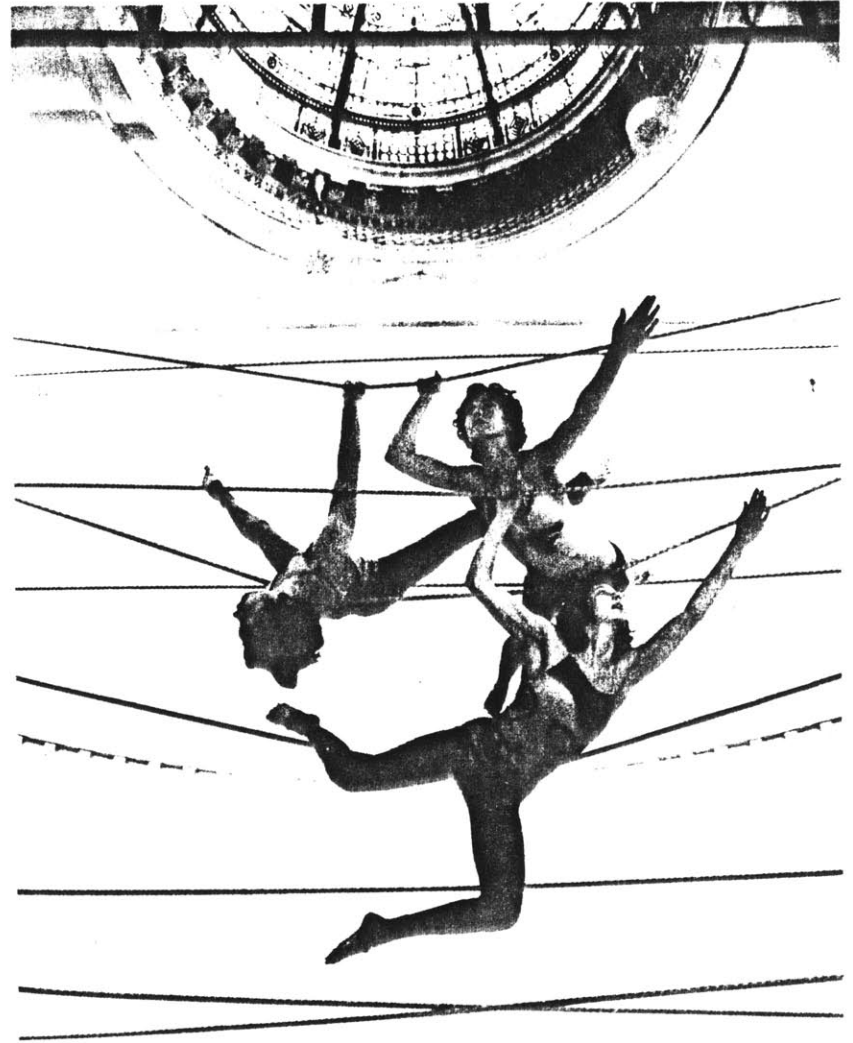
The premise of this thesis would like to address dance simply as *human thought and behavior performed by the human body for human purposes.*<sup>6</sup> Humans reflect upon themselves through different forms of creativity; dance is one such form. I would like to consider dance as a phenomenon that has evolved into a specific art but one that originated from a larger order of humanity, a primal order that is associated with satisfying our physical and psychological needs. In this respect, we can look more at the purpose of dance rather than analyzing its abstract concepts. It is in this frame of reference that I will compare the many shared themes between dance and architecture.

## **MOVEMENT, SPACE, TIME**

Movement, space, and time are the three most salient characteristics shared by dance and architecture. All three elements are inseparable and must be present for dance and architecture to exist.



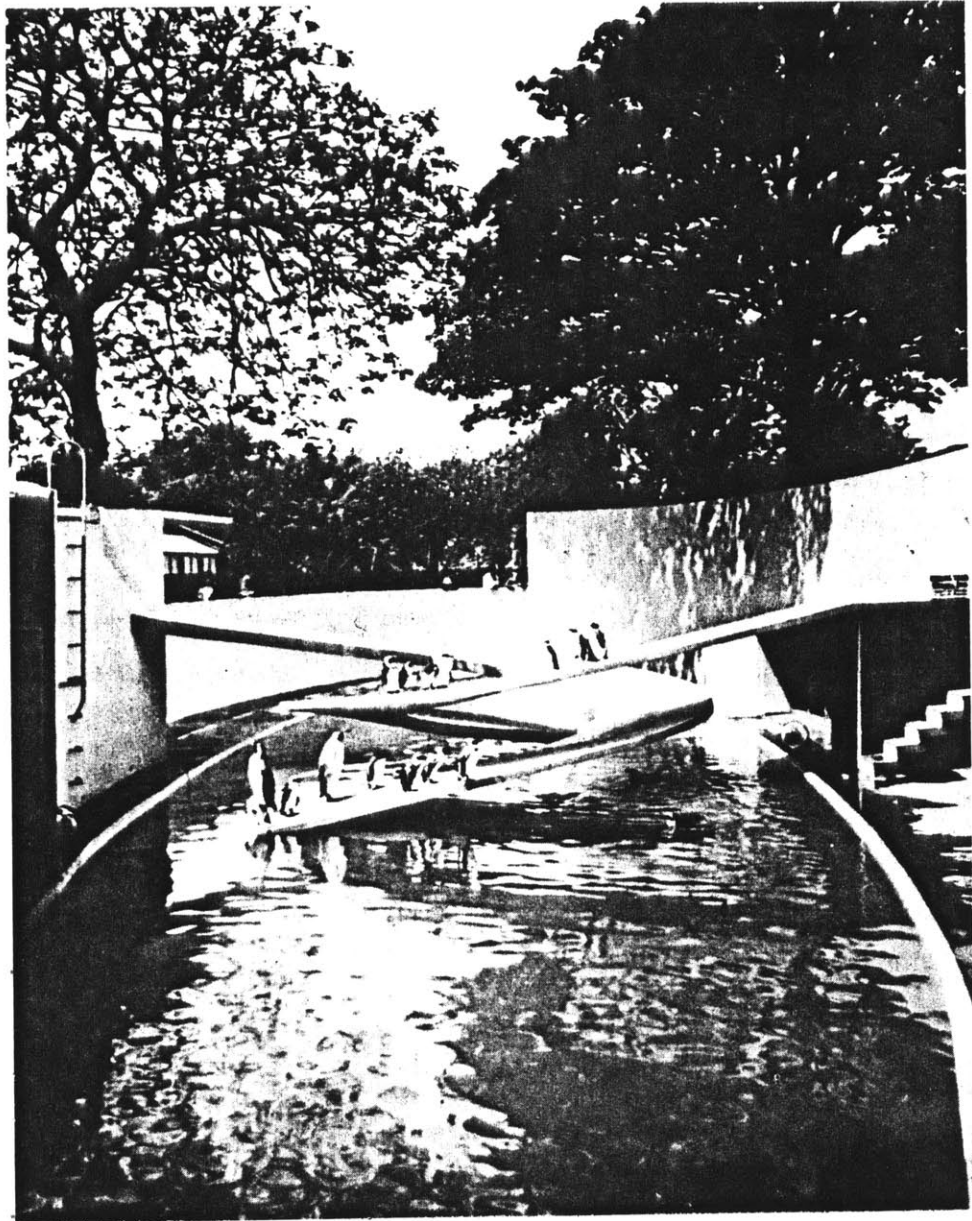
Mexico City subway  
Diego Goldberg/Sygma



"Aerodance" by Stephanie Evanitsky  
Charles Dexter

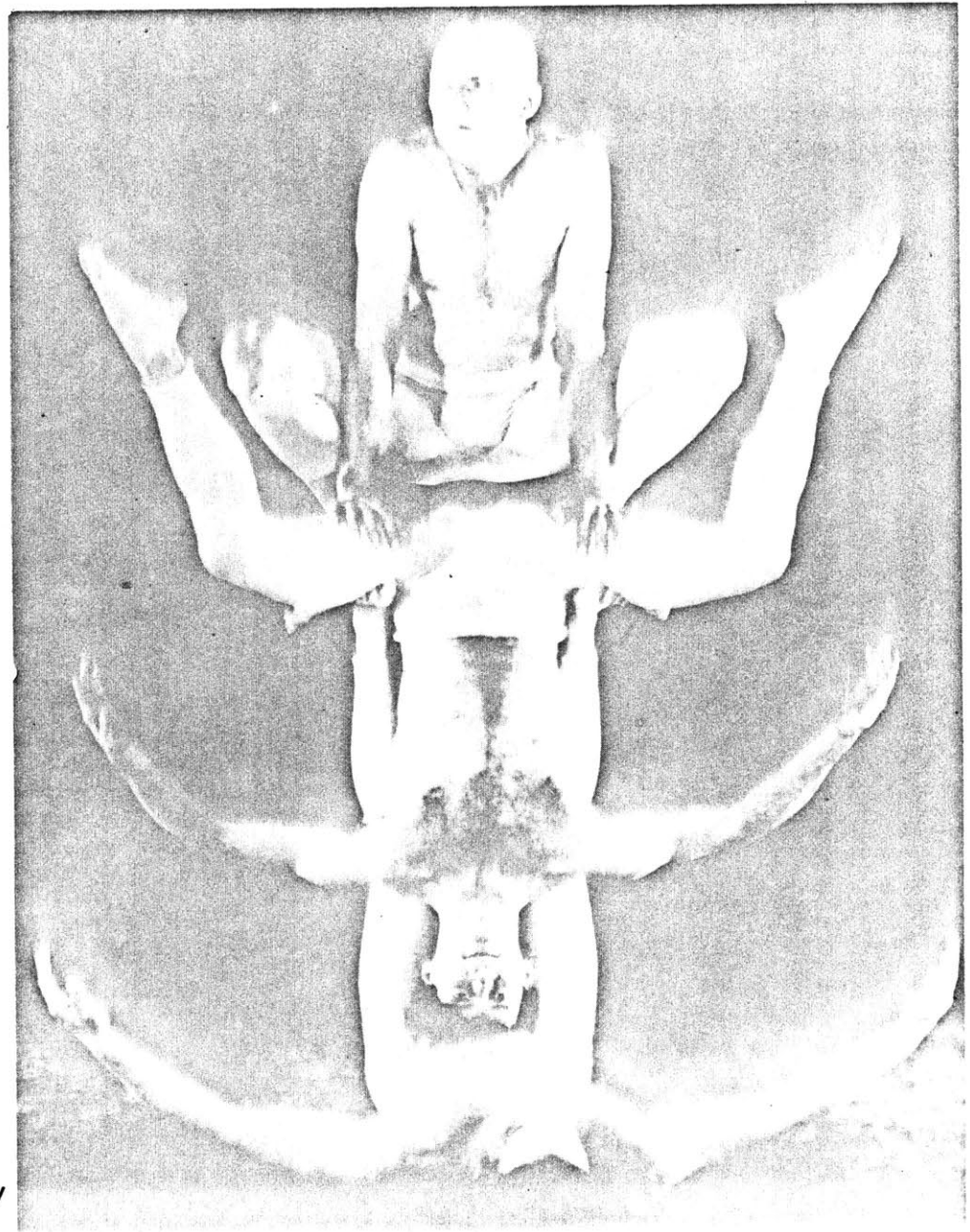
Movement defines space in dance.

Movement manifests the experience of spatial qualities in architecture.



Tecton Penguin Pool, Regent's Park Pool

Space in dance is perceived in this way: "Dance, a faculty of motion, feeds on space..." The human body brings space into life and dance into being. Choreography and the choreographic placement of dancers' bodies create the space in which dance is performed.<sup>7</sup> The empty space between each dancer is as important as the space each dancer's body occupies. In the words of the famous choreographer George Balanchine, "Space is everything."



Second Hand Dance Company  
Neil Sailer

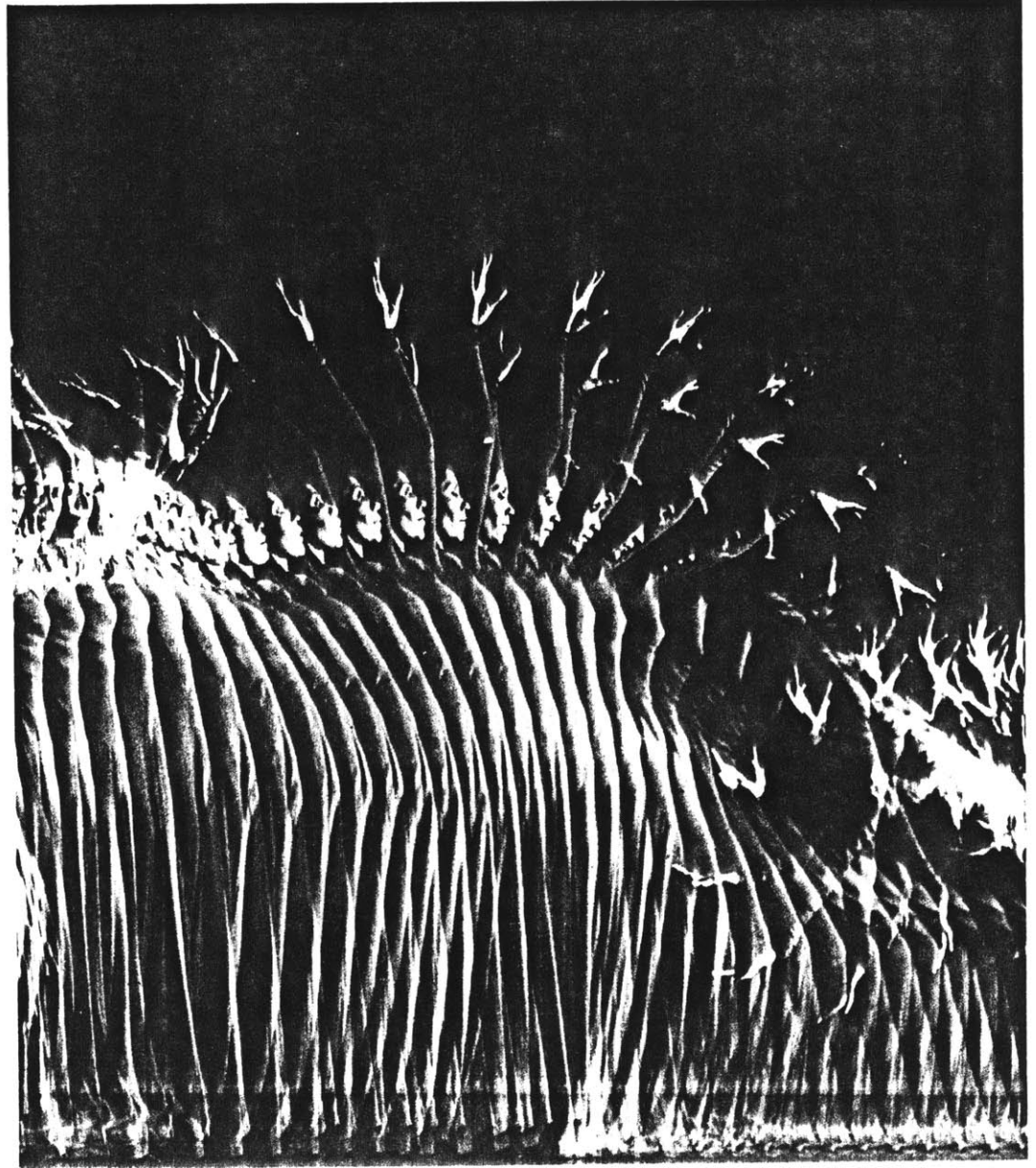


Architecture designed via space frees the building from formal considerations. It is through the negative element, the space, that the architectonic form becomes meaningful and defined.<sup>8</sup> The spatial experience in architecture is what determines and allows for human interactions. The characteristic of spaces set up the parameters for dynamics in social relationships. Meaning of space can only be gauged and experienced through human sensibilities of sight, touch, smell, hearing, and movement.

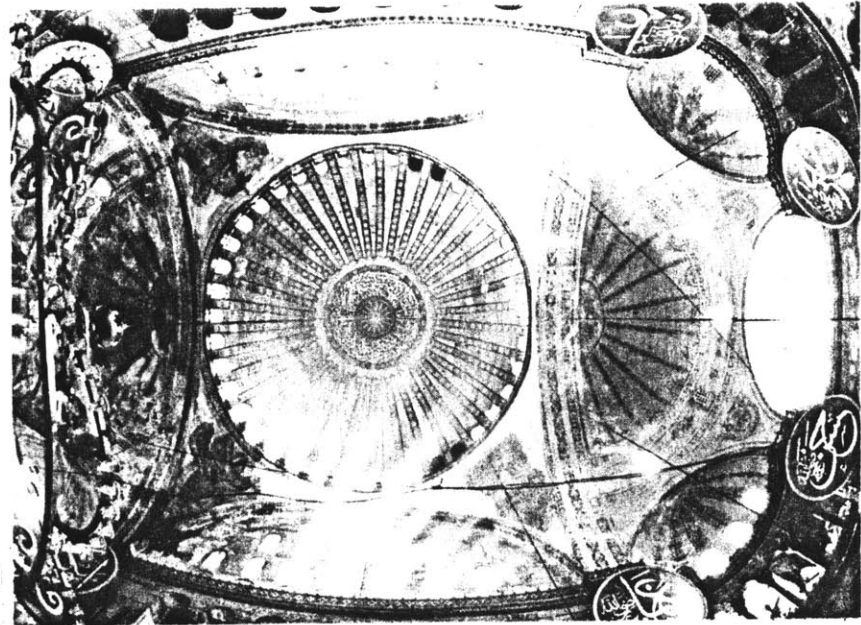


Cathedral, Laon

Time in dance establishes rhythm. Time in dance gives order to motion. Dance may be perceived as ephemeral at its time of performance, but it is through its making: conceptualization, process, medium, and product that it becomes temporal. Dance transcends time through experience and memory.



Time in architecture reveals spatial qualities. Time in architecture allows for generosity and growth. Architecture is temporal in its utility. Architecture transcends time through the collection of memories that deposits itself in archetypal spaces.



Anathemius of Tralles. Hagia Sophia  
Bruno Balestrini



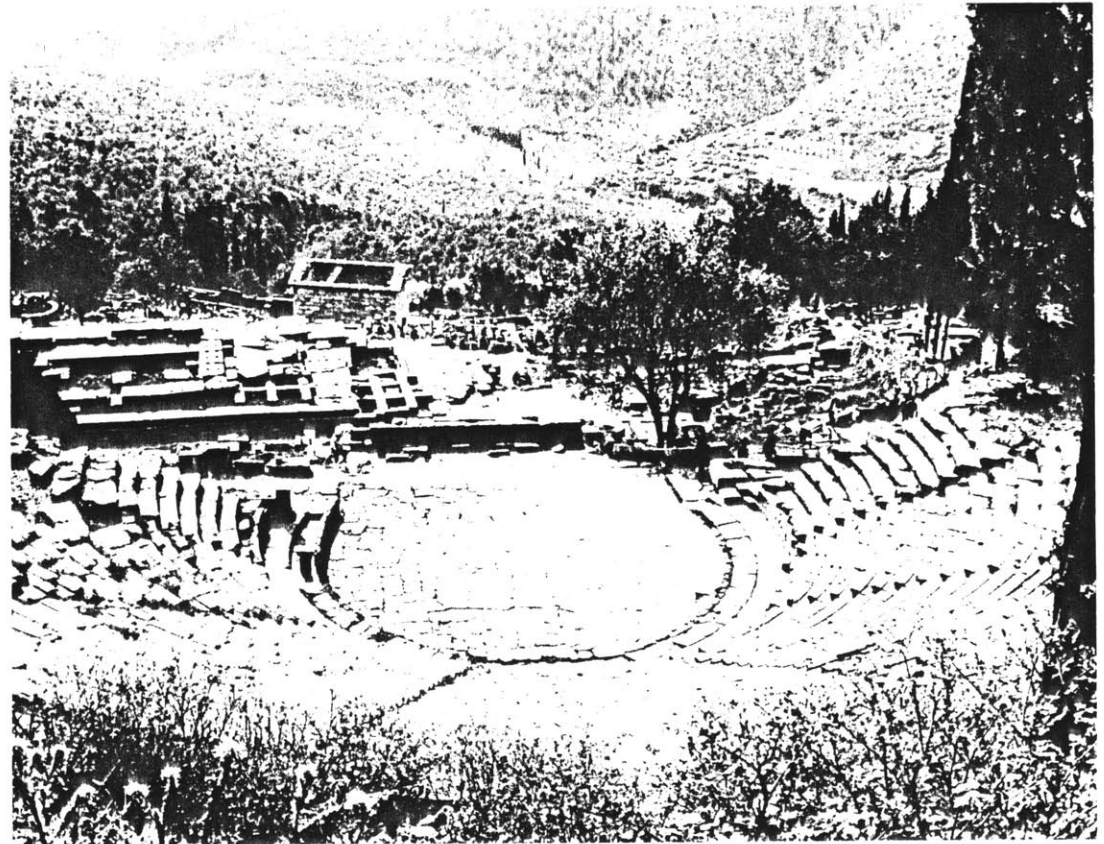
Temple of Fortuna Primigenia, Palestrina

## THEATRE

*Man dances...*

*after the activities that secure to primitive peoples the material necessities, food and shelter, the dance comes first. It is the earliest outlet of emotion, and the beginning of the arts... Primitive man, poor in means of expression, with only the rudimentary beginnings of spoken language, universally expressed his deeper feelings through measured movement. Nature about him moved rhythmically, in the wave motion of the waters and in the wind-blown fields; the sun and moon rose and fell; his own heart-beats were rhythmic movement to externalize any felt joy.*

*He danced for pleasure and as ritual. He spoke in dance to his gods, he prayed in dance and gave thanks in dance. By no means all this activity was dramatic or theatric; but in his designed movement was the germ of drama and of the theatre.... Wherever "primitive peoples" are found and their customs studied, there is ritual and usually dramatic dance....<sup>9</sup>*



Theatre of Delphi  
Christos Athanapulos

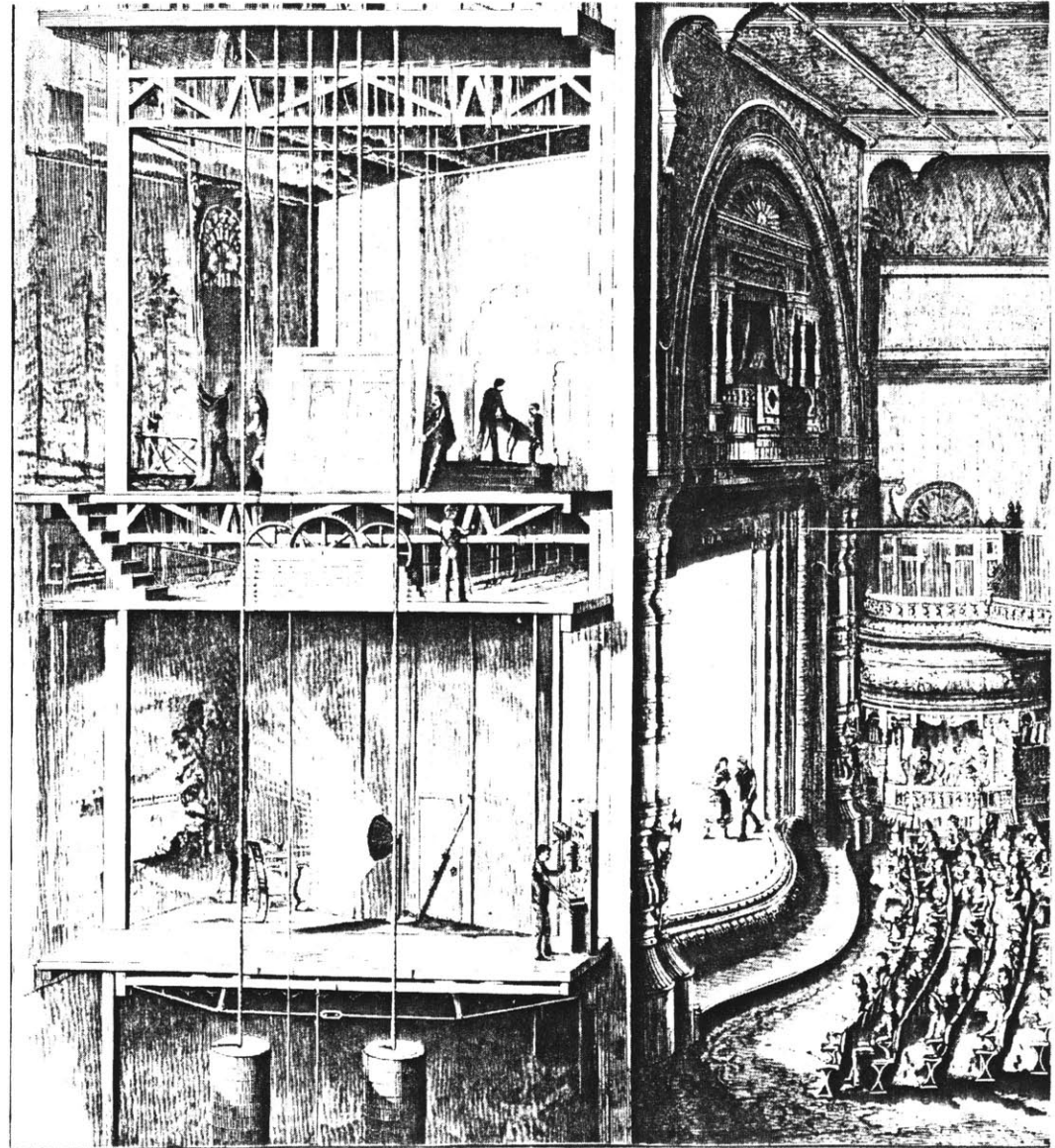
The art of theatre has been in existence since the beginning of recorded history. It reflects the image of man and the evolution of his/her society. In the course of doing so, the concept of theatre has also undergone an evolution that has defined and redefined its role in society.

Throughout history, theatre and the performance arts addressed and challenged social, intellectual, and political values. In times of human complacency, the role of theatre was reduced to the purpose of entertainment, accepting social conventions and reinforcing the status quo of the social establishment. The latter situation seems to prevail in the current state of theatre. But lately, as significant progress is being made in all areas of the Arts, there is renewed confidence to overcome the feeling of impotency that PostModernism has cast on our creativity. The time seems appropriate for a reassessment of performing arts and their role in our culture.

Theatre is an artistic concept of multiple notions packaged into one presentation. It gathers in itself many other art forms: architecture, scenography, dance, music, poetry, literature, spoken words, and is expressed through the conscious effort of their synthesis. Theatre emphasizes the collective spirit of culture as well. It links the allied arts with the community. The audience or public, as it observes and listens to the expressions and movements of the performers form a shared experience with the spirit and emotions of the artists. This experience of collectiveness defined through artistic expressions creates another world of realities designed for the human spirit.



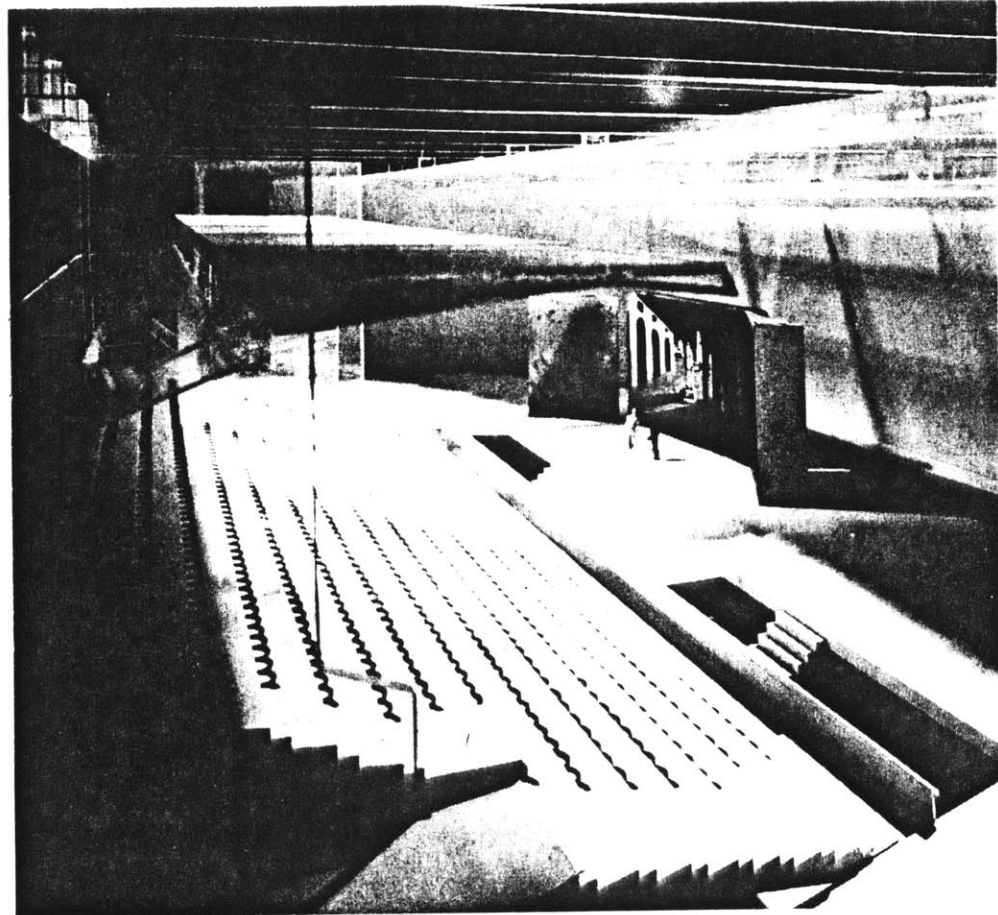
The architecture of the theatre has and always will attempt to embody these special relationships. In fact, the design of the physical condition of theatrical space is crucial to the development of theatrical art. In the past, theatrical space was defined by the stage, its entrances, its size, and shape. Little consideration was given to the rest of the auditorium in terms of its role in helping to define and enhance the experience of theatre. However, the truth is that with every event we encounter, it is the total experience that conditions our behavior. The theatrical experience is a global and sociocultural event whose meaning is not solely conveyed on the stage. Interpretation of performances are entrenched in the total event of the assembly of people and the sharing of a creative work. This thesis seeks to explore the implications and influences the physical surrounding can have on the performance. The environment can start to reflect the social and cultural concerns of the community, the artists, and more importantly, how the theatrical space can redefine or stimulate certain intentions or notions of what theatre art is.



Steel Mackaye's two stages at Madison Square Theatre, N.Y.  
British Museum

This approach to thinking about theatre in a holistic manner requires a different attitude about the place of performance which may or may not be a traditional theatre building. The entire theatre, its positioning of audience and performer, arrangement of public and private spaces, its physical appearance and even its location within a city are important elements of the process by which the audience and consequently the society make meaning of theatre.

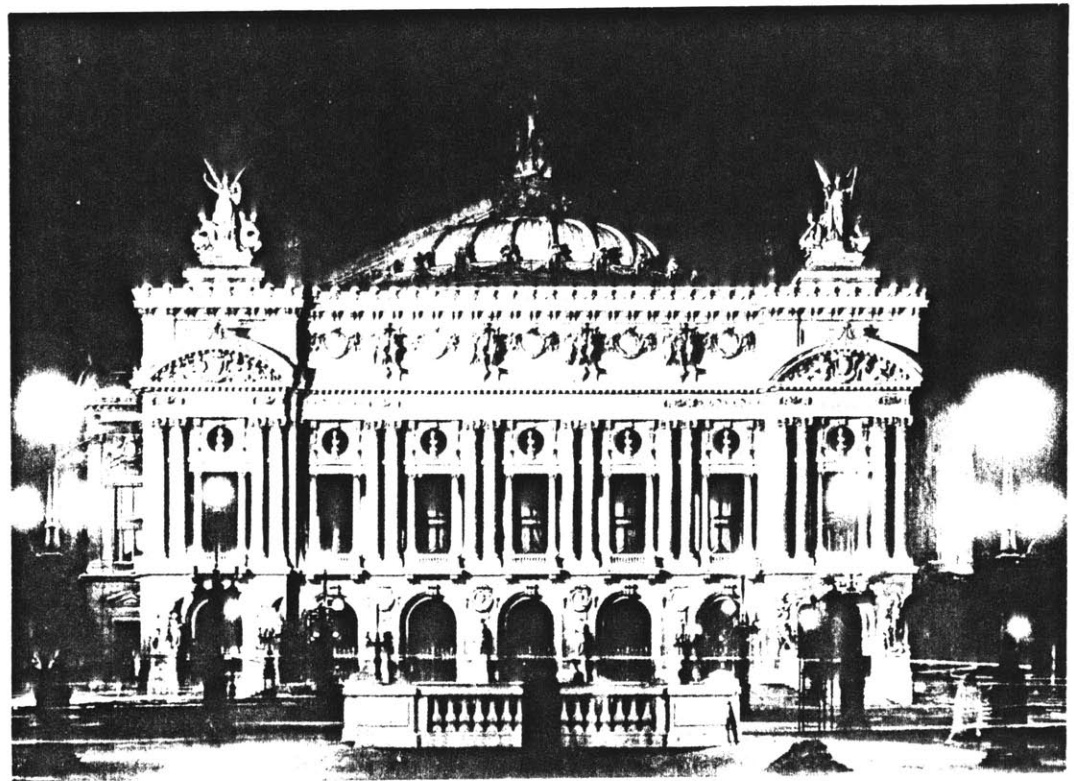
The theatre as a building type has been in the urban environment for a long period of time. A utilitarian and public building like markets and baths, it embodies the act of gathering. But more than that, the theatre is about the ritualistic gathering of people to celebrate an event of shared emotion and spirit, a ritualistic gathering to participate in the creation of another world. For these reasons, the theatre has always been a distinctive and objectified piece of architecture that can be immediately recognized in the urban city-scape.



Ben Schlanger's theater without proscenium  
Ben Schlanger

The typology of theatre and theatrical space has not remained constant. Because of its simultaneous need to provide a social gathering place as well as be a space that defines the dramatic arts, the form of the theatre has always echoed this dichotomy. Its resultant form has always reflected the priorities of the times with either an emphasis on the gathering space for the audience or an emphasis on the stage. A brief glance at history tells us that the theatre has served as cultural monument, a site of display for the dominant classes, an emblem of depravity and vice, a center of political activities, or a haven of retreat from everyday reality. In recent designs of theatre architecture, the dual nature of the theatre is still reflected in its form. Little consideration has been given to the approach of enhancing the performance experience through the design of a *total theatrical space*. Not since the time of the Bauhaus has there been significant efforts made to create a new *ideal* theatre space that tries to define the germinal notion of theatre.

10

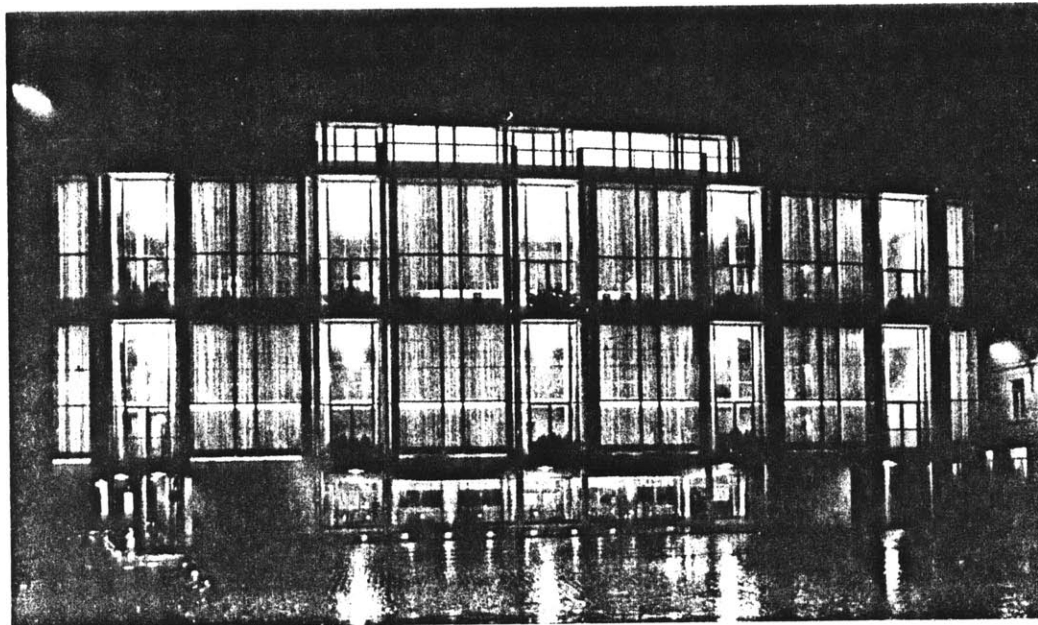


Paris Opera  
Bibliothèque Nationale





Circle Repertory Theater, Sheridan Square  
Lynn Doherty



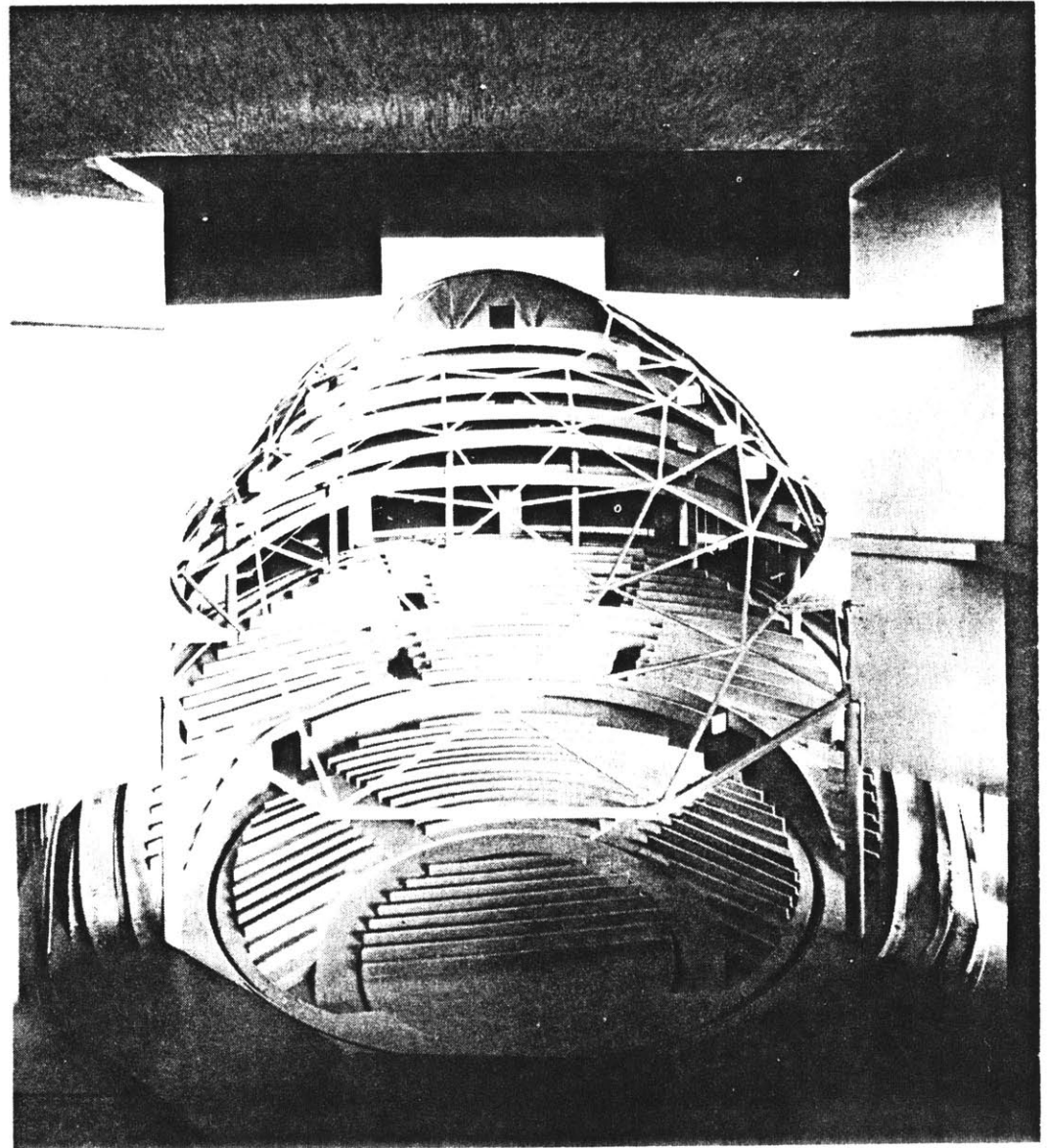
State Opera House  
Ulrico Hoepli



Early theater signage  
Museum of the City of New York

## TOTAL THEATRICAL SPACE

The word *theatre* - a place where one observes, suggests a spatial relationship. Many theorists and historians have stressed the importance of the implied dialectic of the space of *the observer* to the space of *the observed*. Richard Southern in *The Seven Ages of Theatre*, proposes to peel off the various accretions the theatre has accumulated during the centuries and finds at the essential core two separate but linked pieces, the performer and the audience.<sup>11</sup>



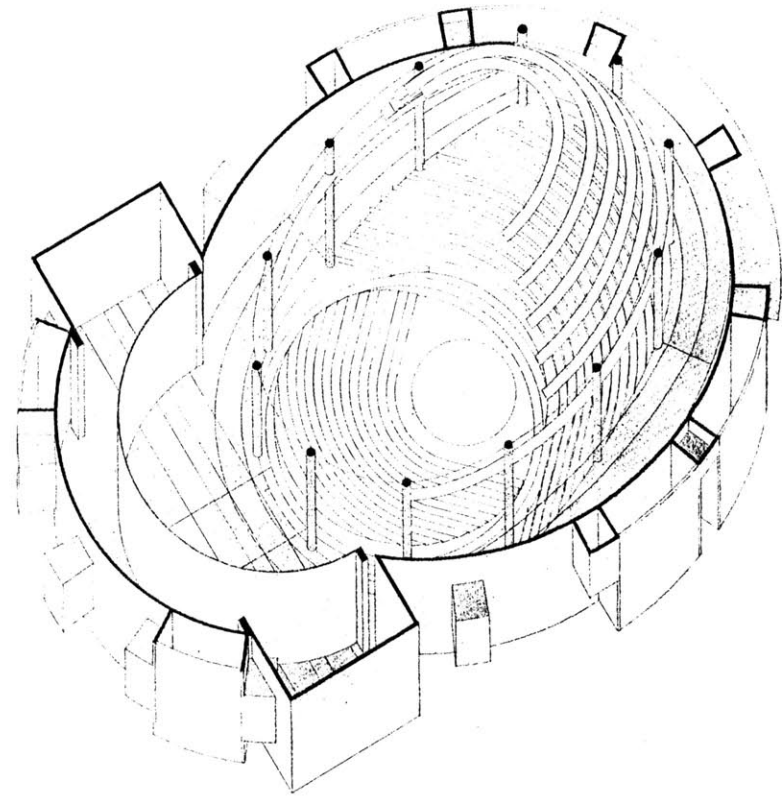
Totaltheater  
Mrs. Walter Gropius

*A impersonates B while C looks on.*

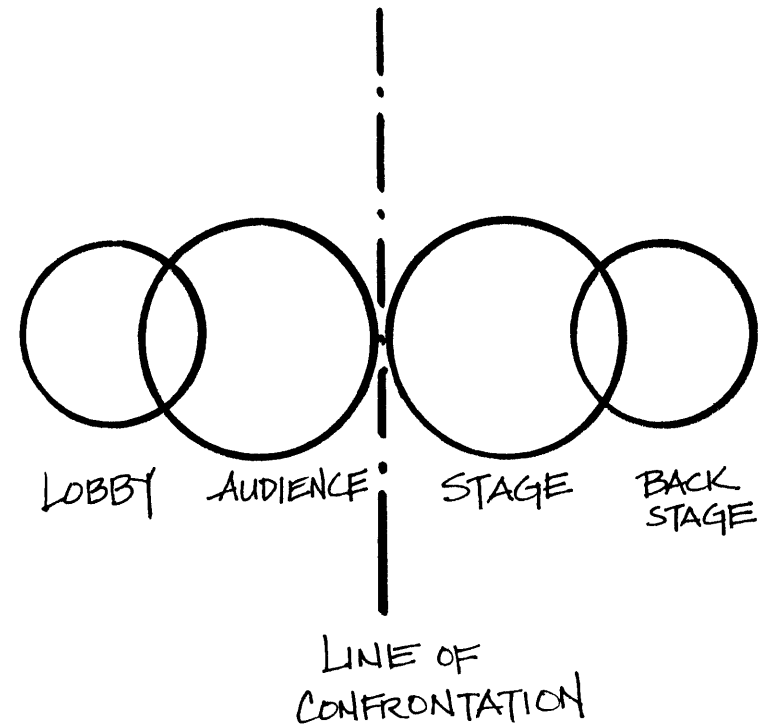
**Eric Bentley** <sup>12</sup>

*Theatre occurs in a mystic place created by the confrontation of the two worlds (the observer and the observed)- the uncanny, dangerous, and fascinating space of the archetypical *illus tempus* inhabited by our representative shaman/actor and the duller and safer world of everyday reality from which we observe him. It is not these separate spaces for players and observer which make theatre, but their simultaneous presence and confrontation....*

**David Cole** <sup>13</sup>



From these interpretations of the essence of theatrical space, I have set up a simple diagram of the social and spatial relationships of a typical theatre. I believe that it is the *simultaneous presence* of the observer and the observed that makes the theatre environment. The *confrontation* exists by our self awareness of each others' roles. However, I do not believe that the *confrontation* needs to be delineated or enhanced physically by spatial definition. In fact, I propose that the line or plane of confrontation set up by the stage and curtain hinders the theatrical experience because the observer and the observed never physically inhabit the same space. This problem is especially crucial in dance since dance is about movement conveyed through space and time.



My notion of total theatrical space simply suggests that the spatial embodiment of *theatre experience: the act of gathering to share in the creation and experience of another world*, should be the most important agenda of a space designed for theatrical performances. Therefore, the whole theatre, regardless of the parts and their function should contribute to this idea. It is my assumption that thinking about theatre in this manner can help to define and enhance both the theatre as architecture and theatre as creative performance.

The intentions of this thesis is not to deny the long-standing history of the theatre nor its evolution socially, functionally, and iconically. In fact, the exploration of a new theatre design from my point of view, affirms the importance of the role theatre has in society and history. My exploration is not concerned with precedents in theatre design nor is it derived from research in social implications and attitudes of the current time. Rather, I am more concerned with defining and expressing the notion of a *total theatrical space*. However, I can not over emphasize the fact that this project is by its nature a product of the legacy of theatre.

## SPACE FOR DANCE

In the evolution of the performance arts, drama became the dominant force that influenced theatre form. More and more, the design of theatrical space became concerned with the spoken word and its presentation. Voice projection and the need to see facial expressions on the actor/actress became the decisive factor on how the audience is positioned in relation to the performer. The frontal view of the performers and the stage became a position of choice and consequently, the shape of the theatre began to take on a directional emphasis towards the stage. Seating arrangements became elongated to maximize the frontal or privileged view. The proscenium stage, with its forced perspective and at times tilted floor, transformed the stage into a visual space rather than a physically habitable space. The medium of dance is space. Yet the proscenium stage collapses it:

*The stage space, when left without movement, is essentially perceived by the audience in two dimensions. It is the movement of the dancers that reveals to them the presence of the third dimension.*

**Rouben Ter Artunian, scenic designer** <sup>14</sup>

Consequently, theatrical stage for drama became less and less suitable for dance.

As drama took the lime light with middle-class society, dance continues to lose popularity with the general population. With increasing emphasis placed on the development of the mind rather than the body, dance became viewed as either an instrument of sexual pleasure for the profane or the esoteric patronage of the elite.

Because of this lack of support, the dance establishment has been forced to design and perform their art in places not designed with dance in mind. Many theatres, rather than help the choreographer and scenic designer to maximize the notion of dance as movement through space and time, most often serve as obstacles to their task.

In theatres designed solely for dance, the emphasis should be placed on unobstructed space.<sup>15</sup> If movement through space and time is indeed the essence of dance, then a theatre designed for dance should convey this essence as its priority. To develop this thought one step further, I would like to apply the concept of *total theatrical space* to the notion of unobstructed space such that the whole theatre is conceived of in respect to free space and not just the stage. In a performance, the ability of the observer to have unobstructed visual space is as important as the dancers' need to have unobstructed physical space. A theatre designed for dance should be a place that promotes and enhances the relationship between movement and space for everyone engaged in the experience.

## THE IDEA

*In design is the means- where,  
with what,  
when,  
with how much*

*The nature of space reflects what it  
wants to be*

*Is the auditorium a  
Stradivarius*

*or is it an ear*

*Is the auditorium a  
creative instrument  
keyed to Bach or Bartok  
played by the  
conductor*

*or is it a convention hall*

*In the nature of space is the spirit and  
the will to exist a certain way*

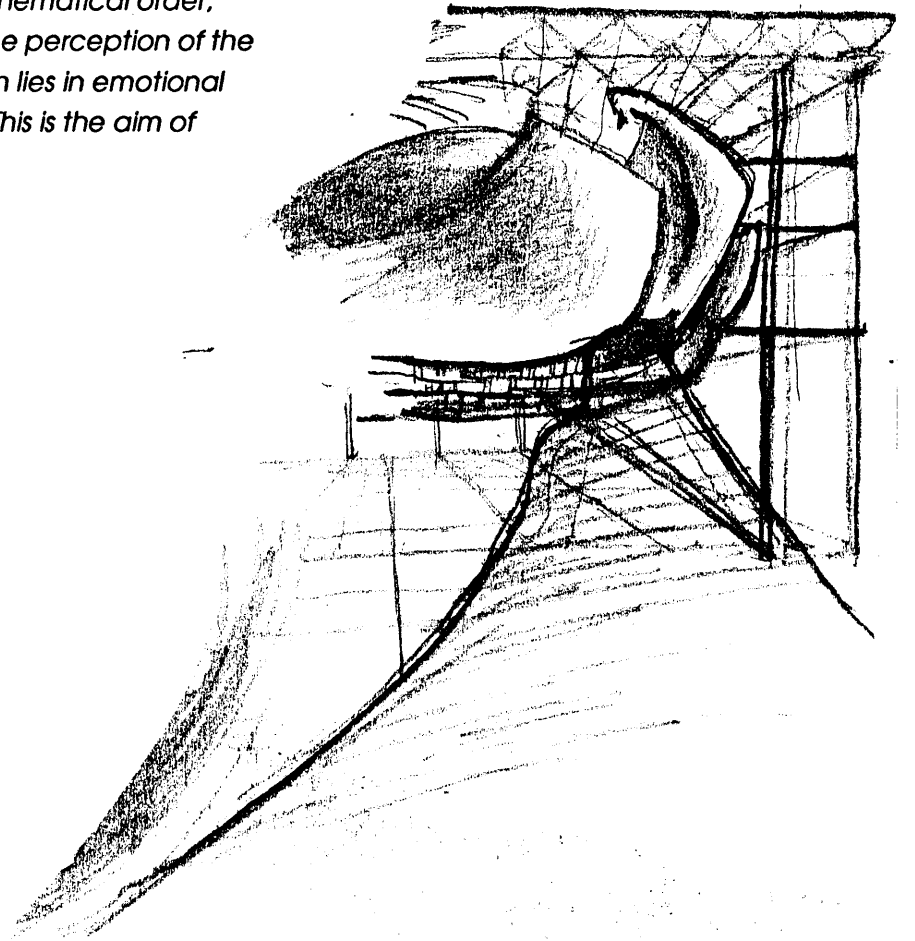
*Design must closely follow that  
will....*

**Louis Kahn** <sup>16</sup>

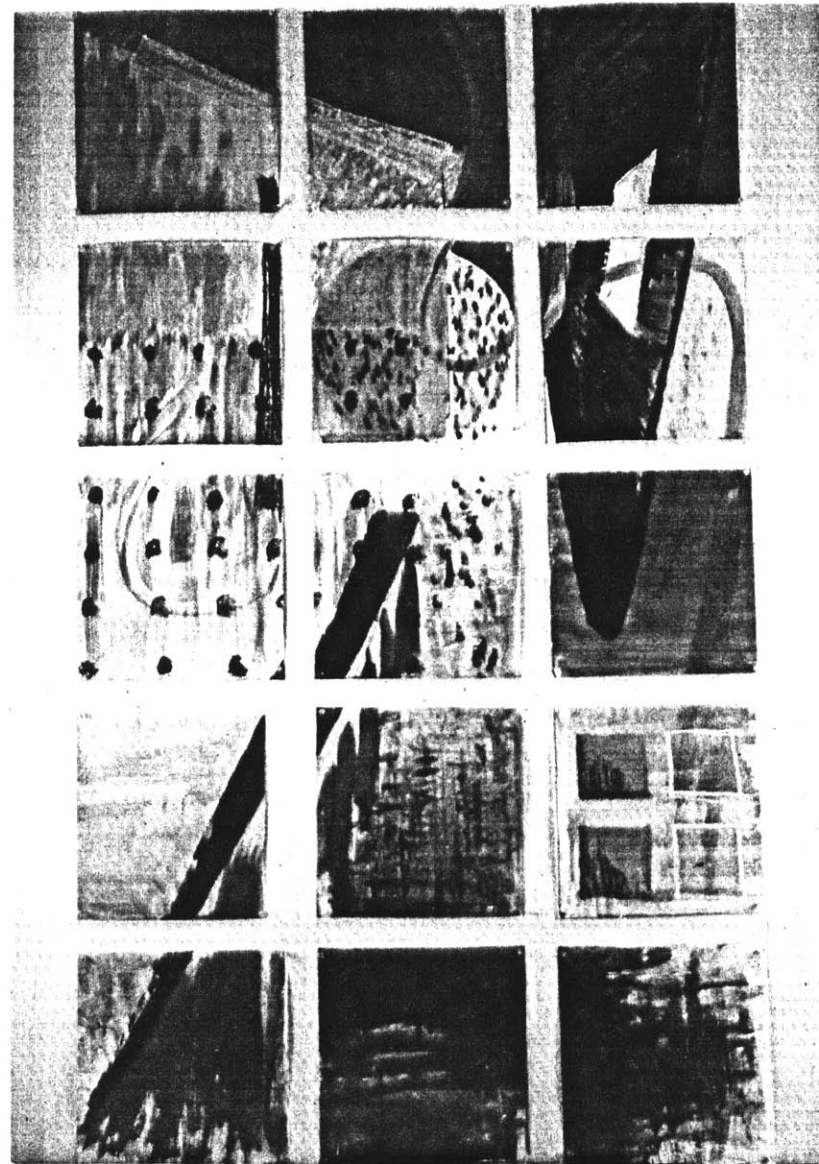
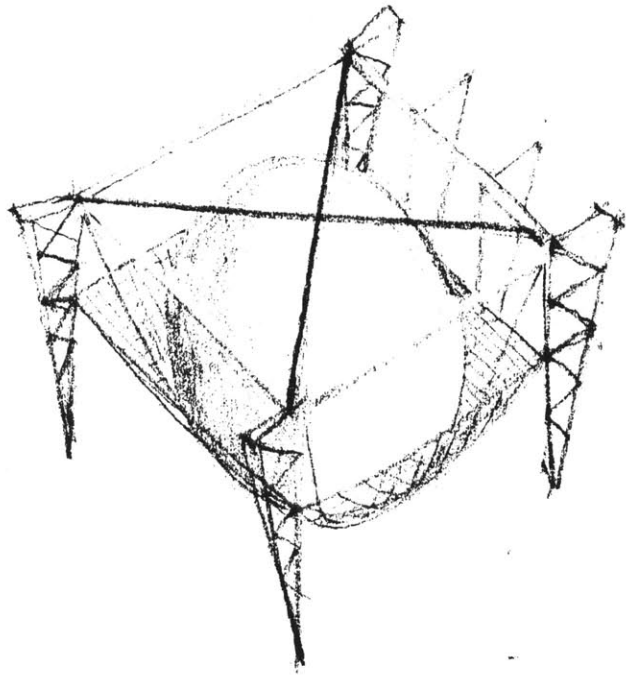
*Architecture has another meaning and  
other ends to pursue than showing  
construction and responding to needs  
(and by 'needs' I mean utility, comfort  
and practical arrangement).*

*Architecture is the art above all others  
which achieves a state of platonic  
grandeur, mathematical order,  
speculation, the perception of the  
harmony which lies in emotional  
relationships. This is the aim of  
architecture.*

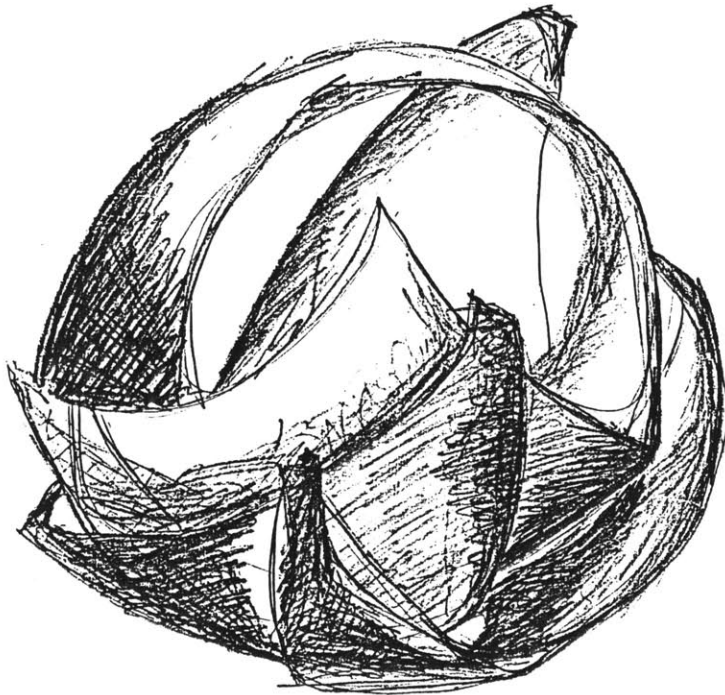
**Le Corbusier** <sup>17</sup>







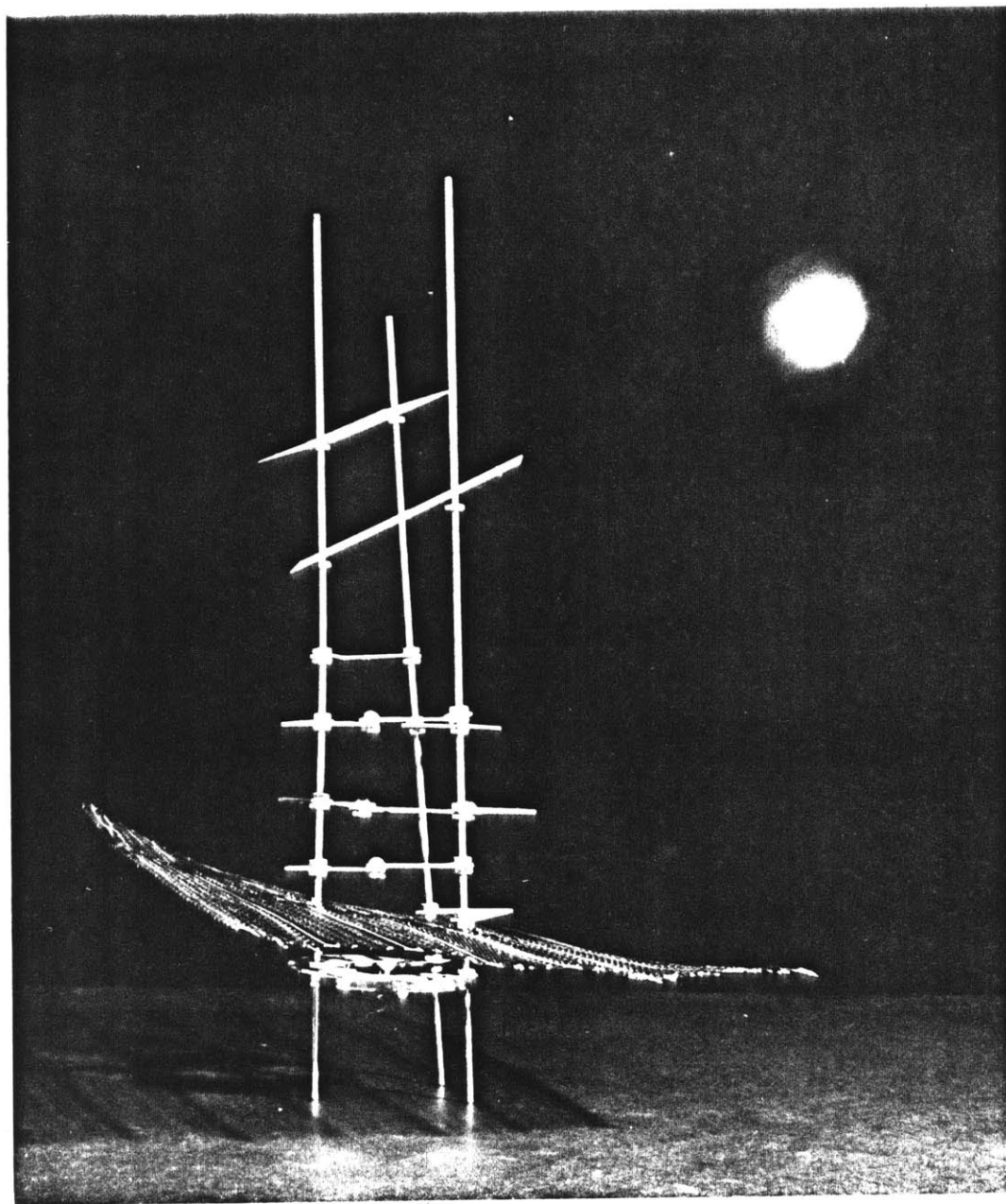
Architecture is its own discipline. It has its own concepts, processes, mediums, and products. However, like other creative human endeavors such as dance, it originated from a larger order of primal needs, physical as well as psychological. It is in this realm that architecture is related to all other aspects of humanity and it is also in this realm that it transcends the role of building as shelter.



Architecture is about space that houses the body, mind and spirit. The spaces, defined through architectonic forms, suggest and enhance human activities for human purposes. But it is also the human activities that inspired the nature of the space. There exists a cyclical relationship between the entity that generates architectural space and how the space informs the entity.

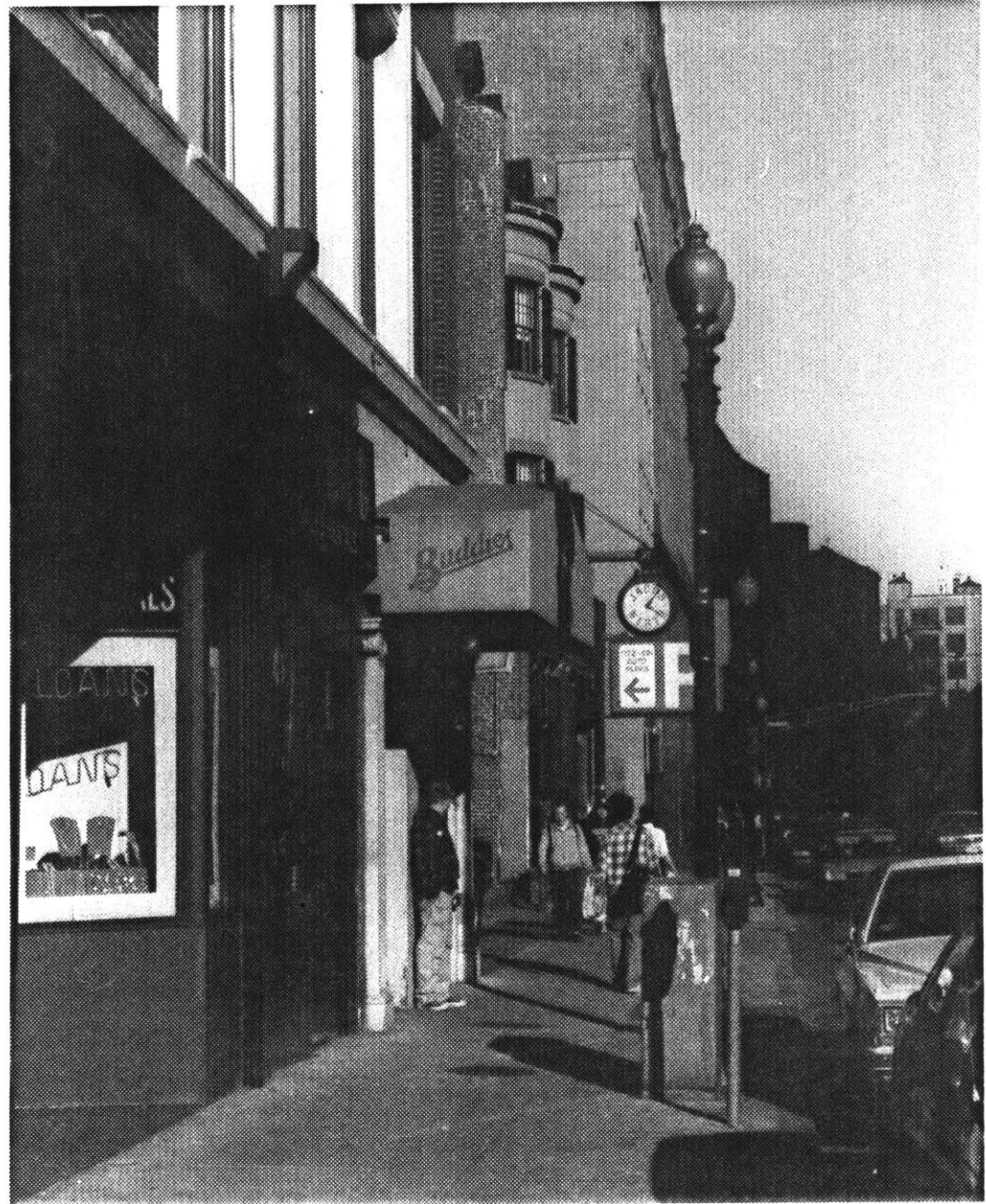
However, in this reciprocal dialogue, there must be ample room for interpretation of meaning and use. In setting up the reciprocal relationship of architecture and dance it is important that one discipline does not become illustrative of another and consequently lose the ability to inform and enhance the other.

The essence of the design is to embody the act of gathering and sharing in the creation and experience of the world of *dance: bodily movement through space and time.*



## THE SITE

The site chosen for the dance theatre borders the edge of the Theater District in the City of Boston. Located on Kneeland Street, it is an infill parcel between existing commercial buildings built at the turn of the century. Currently a parking lot, the site has four distinctive edge conditions. The front edge faces Kneeland Street and is directly across from the back stage of the Wang Center for Performing Arts. This is a very busy thoroughfare of vehicular and pedestrian traffic. The scale of this street varies from two story buildings to twenty story buildings. The blocks are very dense. The two sides of the site are defined by existing commercial structures. The rear of the site faces a delivery alley with much narrower dimensions and less exposure to activity than Kneeland Street.





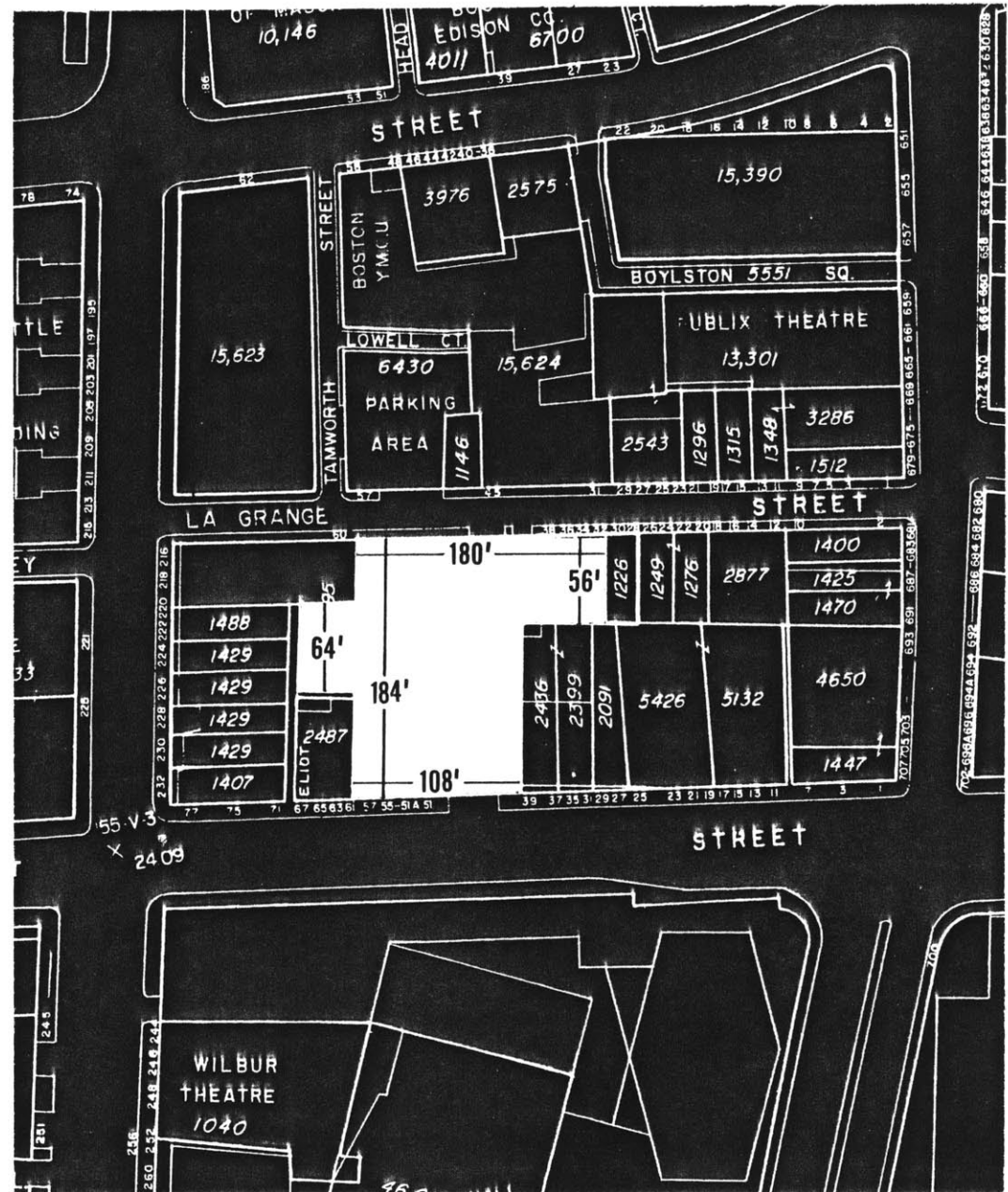


In choosing the site for the dance theatre, my primary concerns were:

-To place the theatre at a location that will allow it to engage in a dialogue with other theatres. This would contrast most clearly the design intentions of this thesis to existing theatres. Of special interest is the back stage (black box) of the Wang Center for the Performance Arts directly across Kneeland Street.

-To place the theatre within a context such that it will not be perceived as a cultural icon or an object in the urban landscape but an integrated piece of the whole city. The reason for this decision is to minimize external readings that might be attached to the project through its relationship to contextual issues. I also feel that in exploring the essence of a building type, other roles that a building can play must be minimized.

SITE PLAN

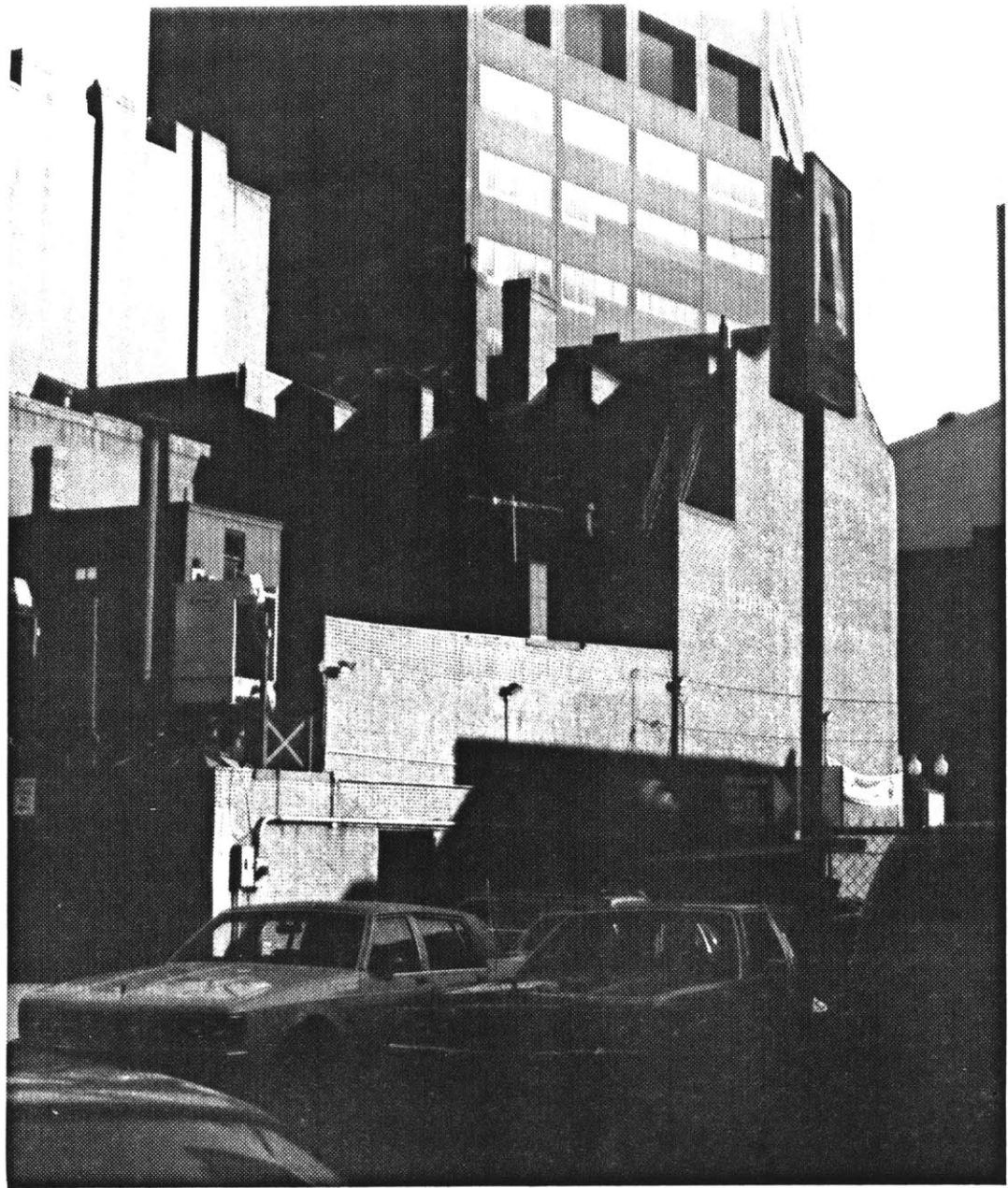








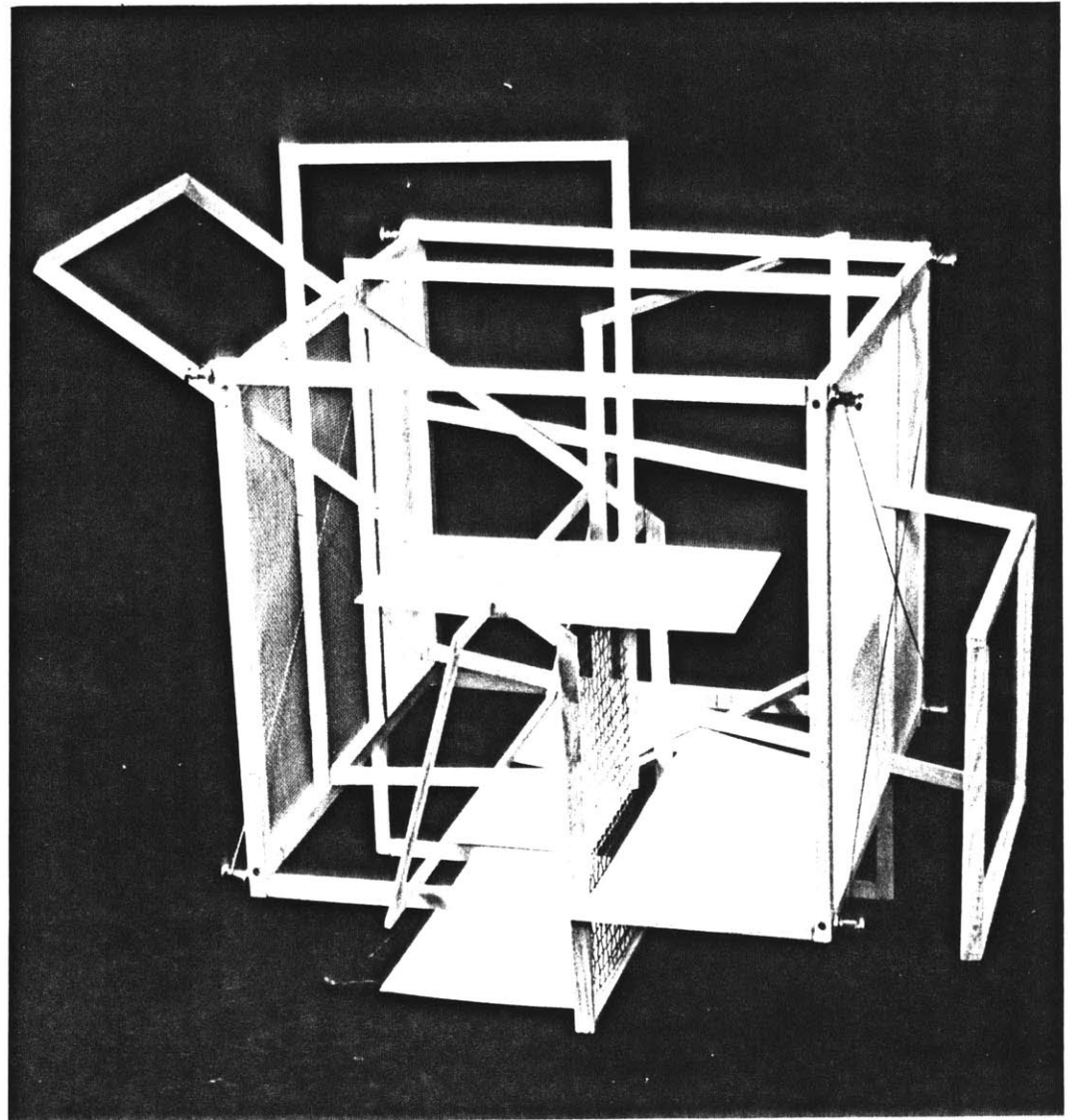
-To place the theatre at a location that is within walking distance by the urban population. So that the passage to the theatre becomes a dance-like movement, I would like to extend the idea beyond the theatre and into the city context. The best way to do this would be to include the district, the street, and the sidewalk as part of the procession of movement through space and time.



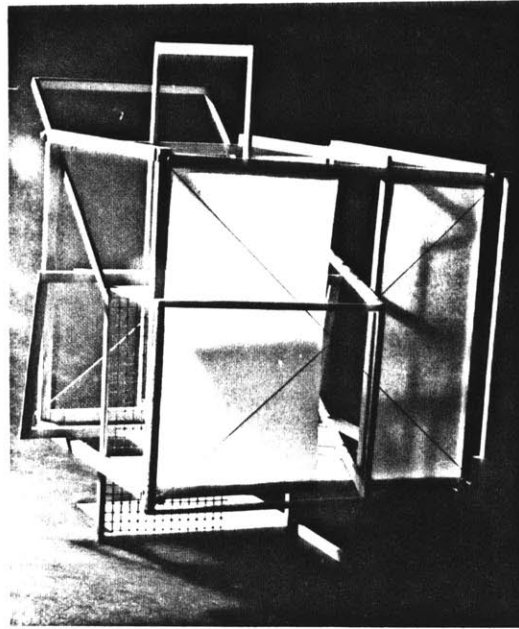
## THE MAKING

The initial approach was to start from two ends, a sketch model that demonstrates some concepts about theatre and a sketch model that considers the site and how the project can incorporate site characteristics.

The theatre is a different world removed from everyday reality. The floating cube, elevated from the ground plane, suggests and defines the zone of the other world. The entrance is something that comes out to receive you.

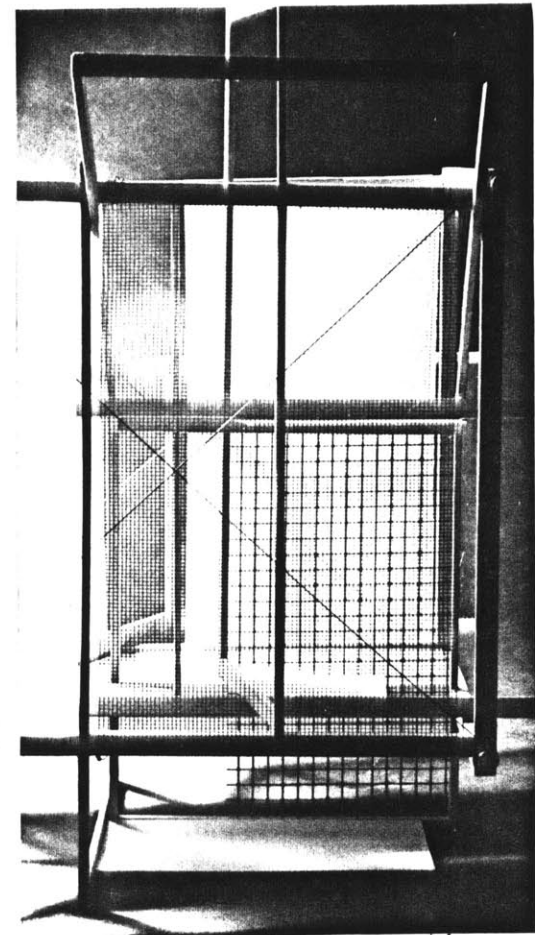


In breaking down the zones as delineated by traditional theatres, a new sense of theatre, new sense of audience, and new sense of performance, are defined spatially.



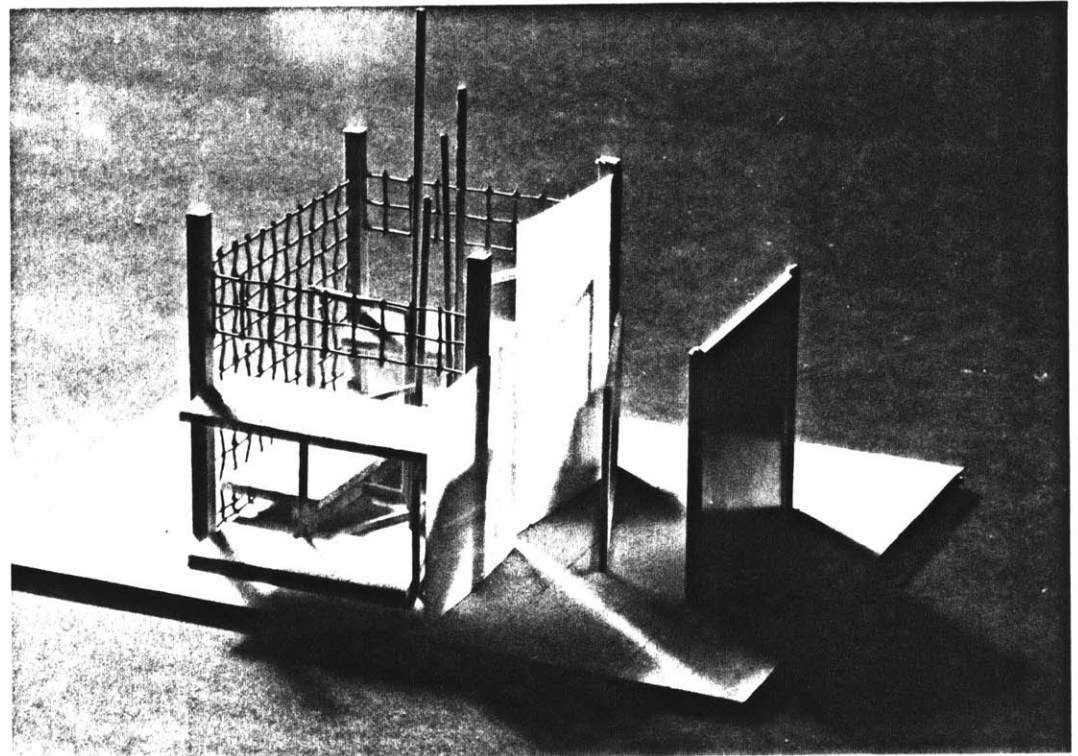
*A choreographer will create for proscenium stage only if there is nothing else to create for.*  
**Carolyn Brown, Dean of Dance, SUNY, Purchase**

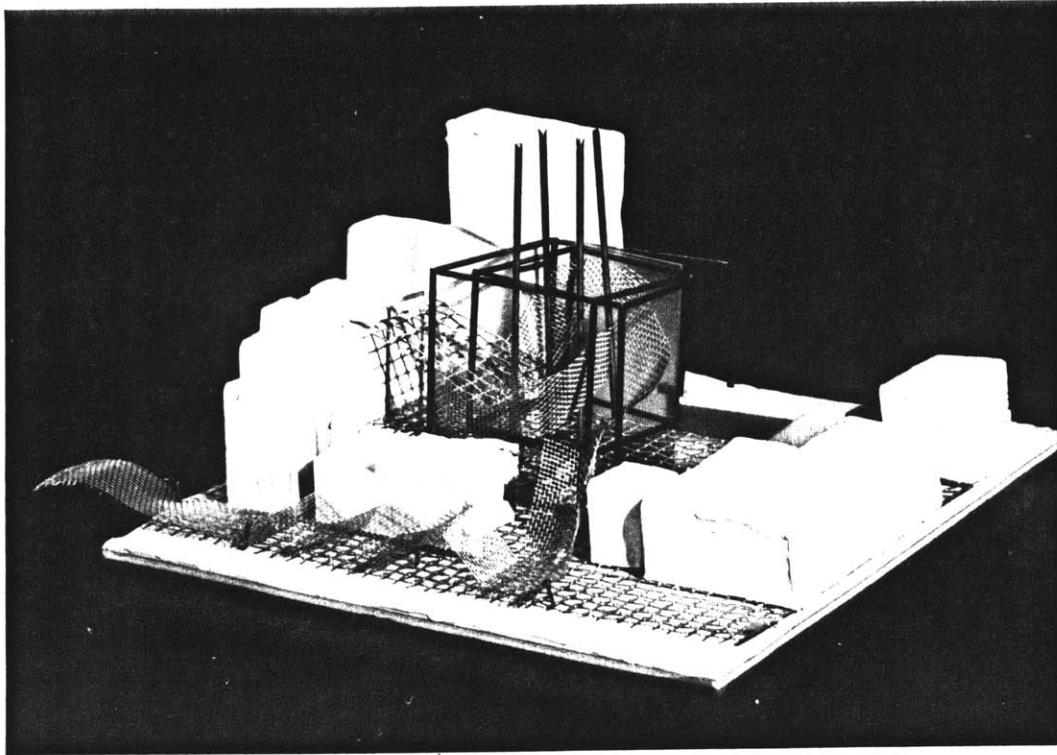
*The more unique the space, the more unique the work will have to be that's made for it.*  
**Beverly Emmons, Lighting Designer**



We gather in a different world to experience dance. There is no definition or distinction of roles, we are immersed in them. I am the audience, the dancer, the performer, the choreographer, the architect.

In a dance performance, the magic is inevitably on the floor, the horizontal plane, the place where the movement defies gravity and fatigue. The only element that prevails is lightness. The floor is the center of attention. A floor suspended in lightness. The sprung floor for the dancer is essential. Yet the construction of the sprung floor is never seen as it is hidden and boxed in by the stage.





*The purpose of my pieces are to create another world.... There is something out there that I am looking for.*

***Susan Marshall, Choreographer,  
Dancer***

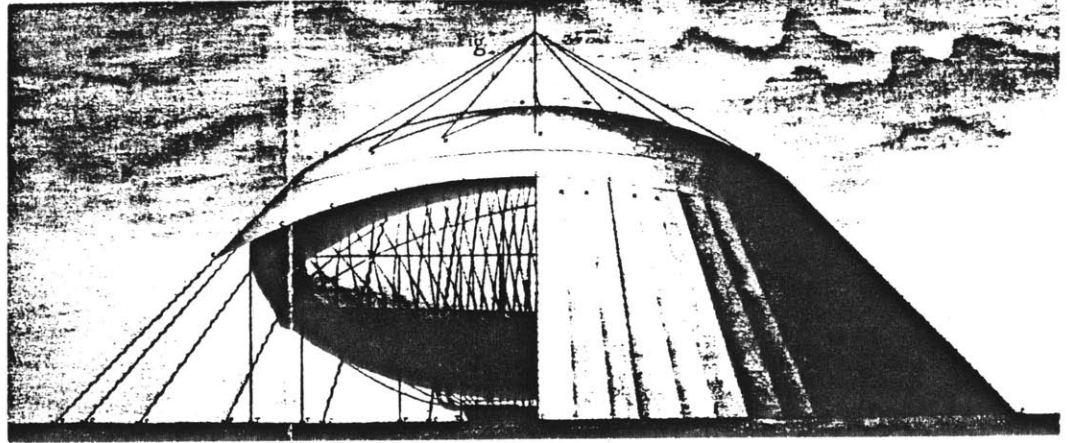
*The feeling of gathering and wholeness can be conveyed through sharing the same floor plane.*

***Richard Tremaglio, Architect, Professor***

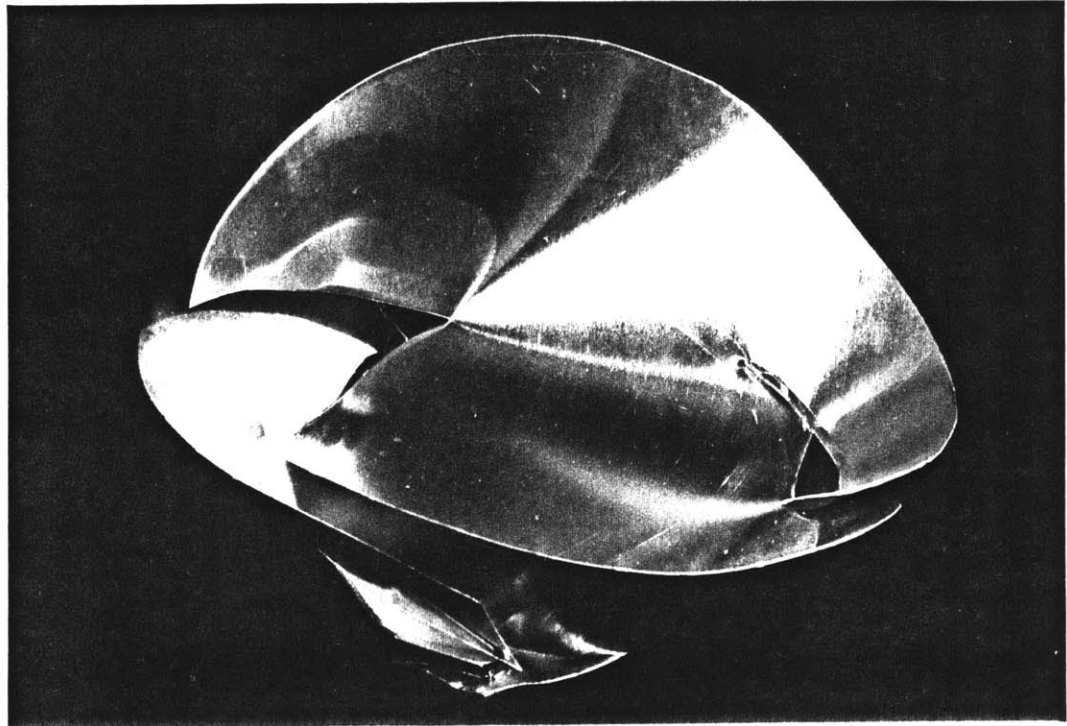


## Another World

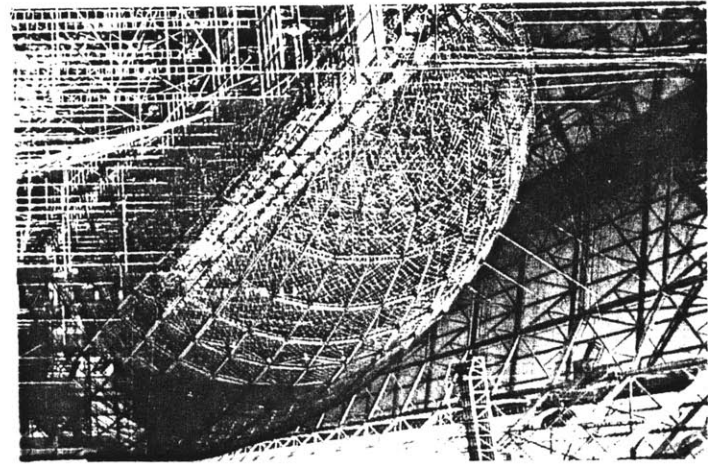
The shape and form of the theatre is a metaphor of the hand, the air ship, the boat, the egg. It aims at creating *another world* where the space speaks of surfaces and the notion of enveloping the body. There is no sharp distinction between floor and seating. There is an ambiguity between the horizontal and vertical plane. The entrances are slots at the folding of the structure. There is no directional or hierarchical distinction between the entrances. The dancers and the audience enter in the same manner. Everyone enters directly onto the dance floor.



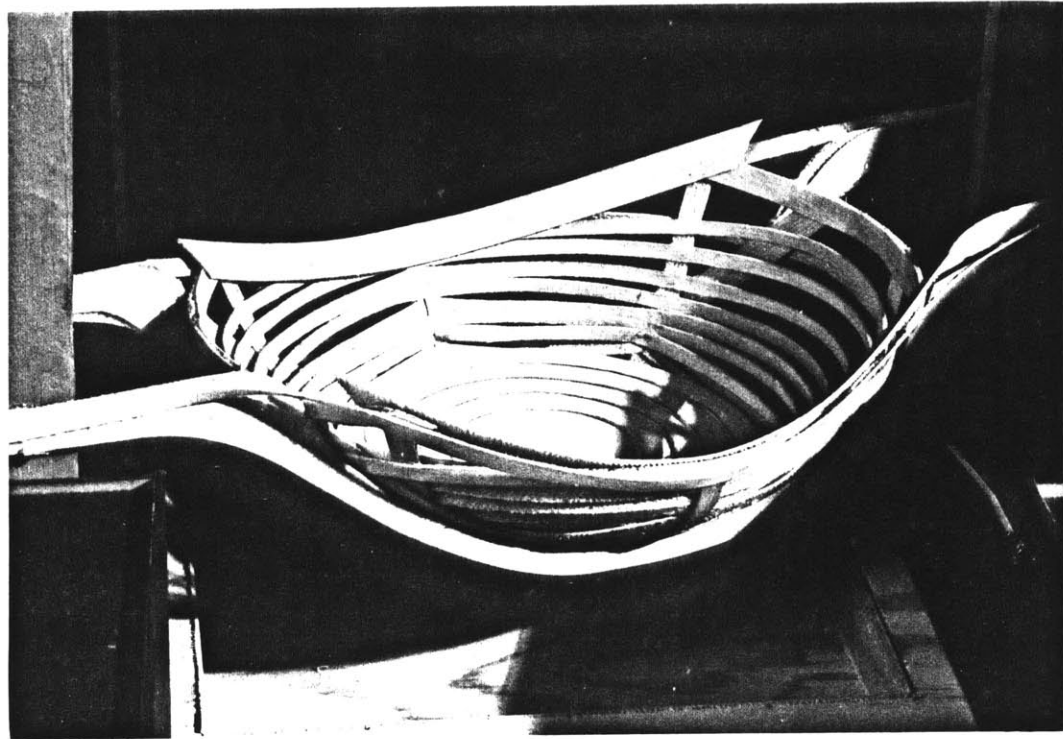
Meusnier *tente abrie* c.1784

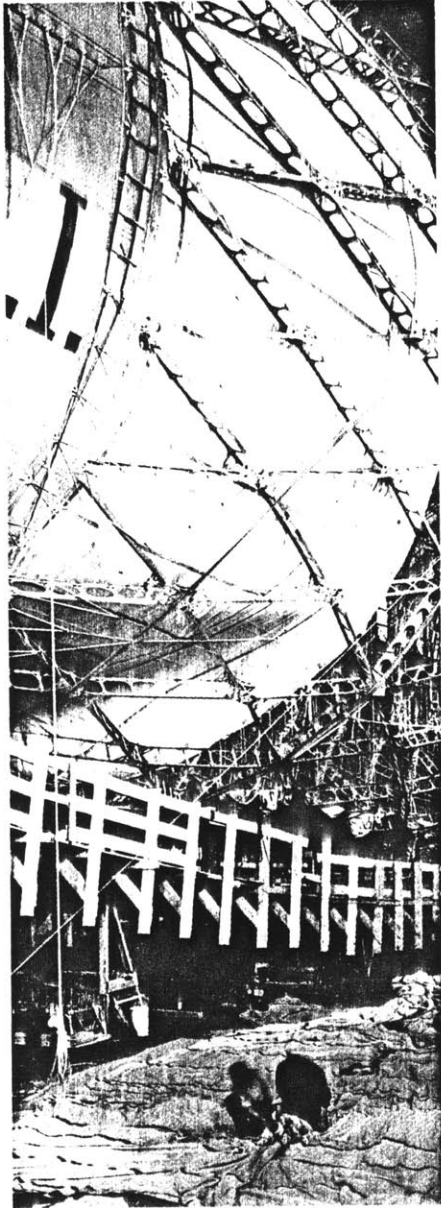


On the dance floor, movement is measured. Bodies are measured against other bodies. Few are measured against many. Ordered movement is measured against random movement. Highly specialized and stylized movements can be compared to walking and standing.

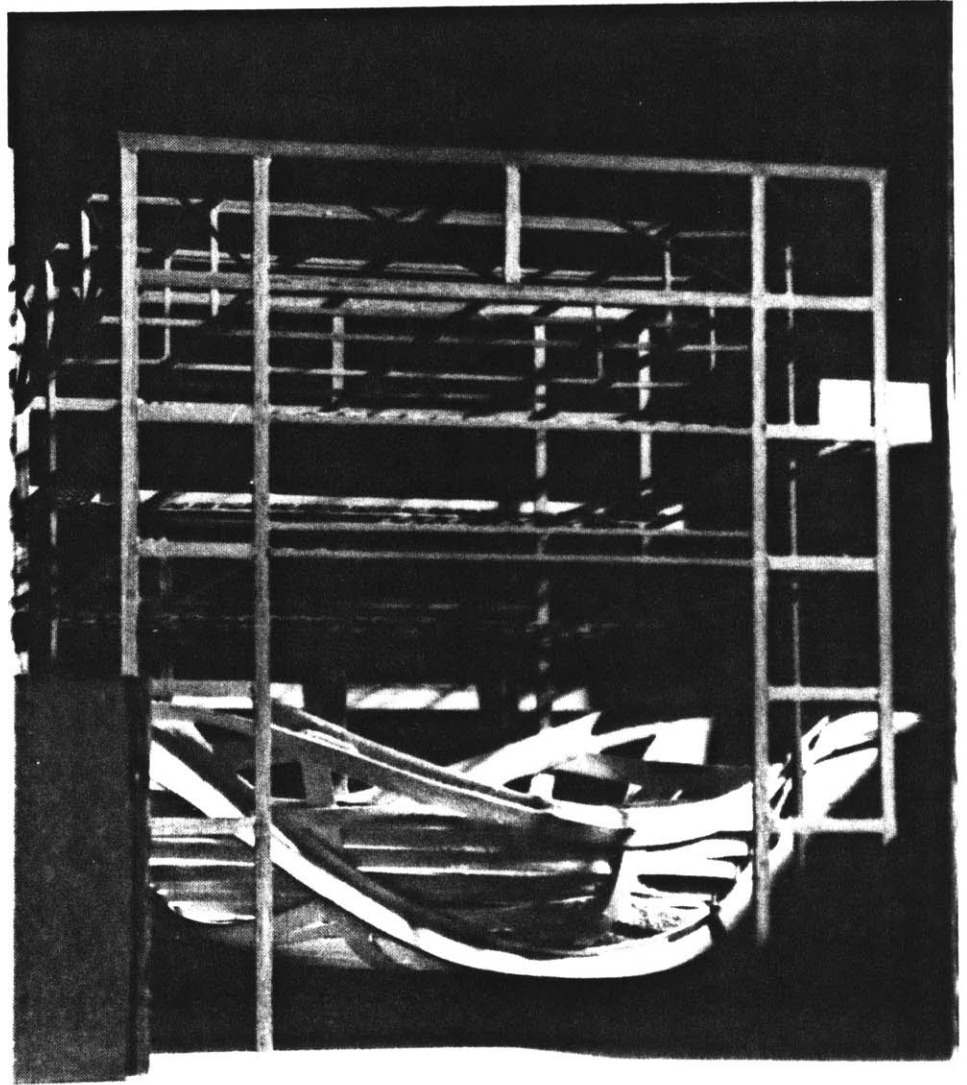


Construction of *Hindenburg* at Friedrichshafen



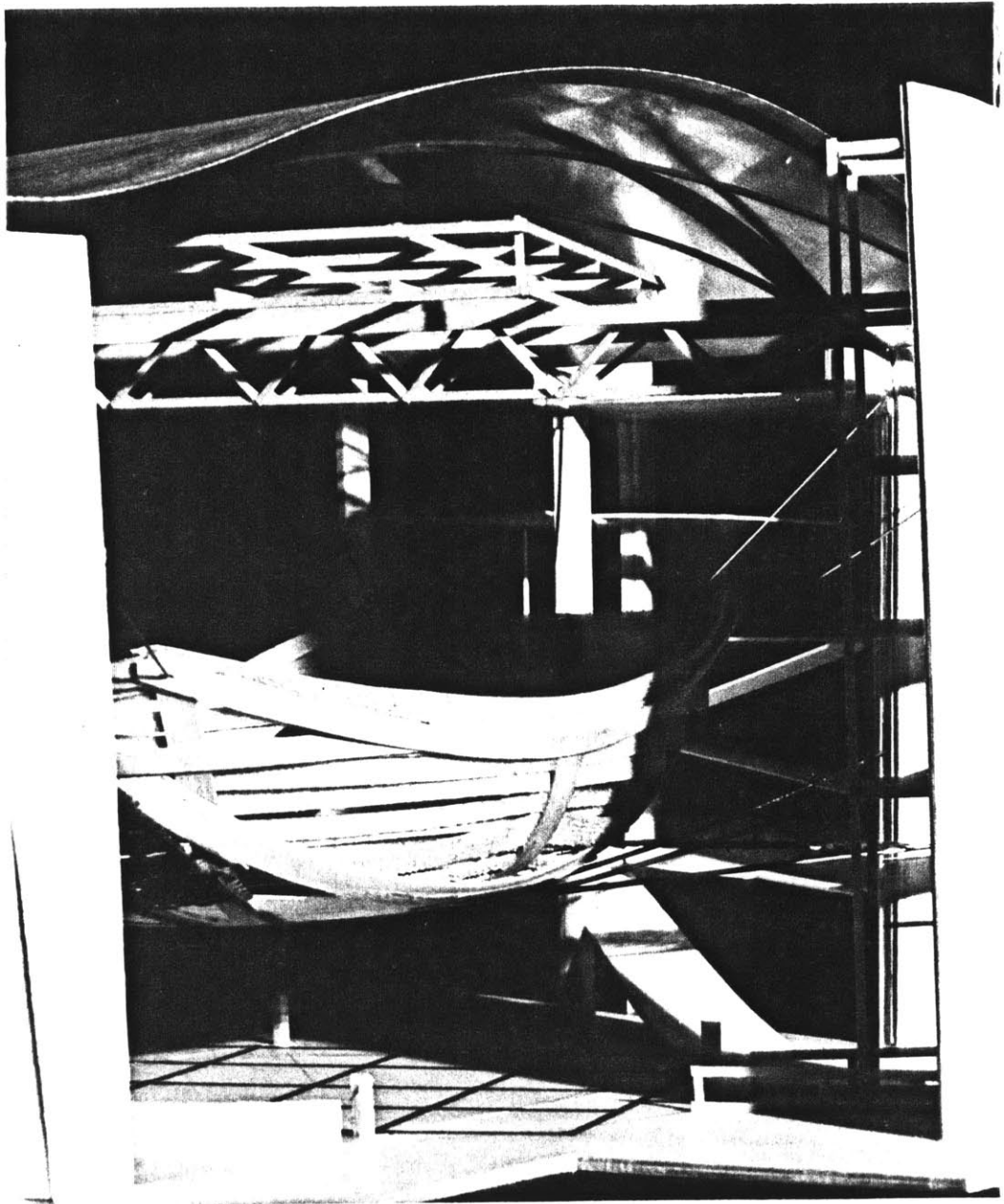


Construction of R-23 airship





All the activities do not take place simultaneously. They take place through the passage of time. The theatre space takes on different qualities during the day and night. The theatre takes on different activities before, during, and after the performance. Before the performance, the dance floor is a gathering place. It is a place to stop and search for seats and a place to see other theatre goers. During the performance, the dance floor is the stage. It becomes the center of attention and the source of the magic of theatre and dance. After the performance, the dance floor is a place of memory. It is an empty stage that encourages the audience to reflect on the experience of the performance and to become the dancer. The physicality of the performance and the stage is felt with one's entire body. Through these activities, the movement of bodies in space is revealed over time.



## The Structure

*A Form emerges from the structural elements inherent in the form.*

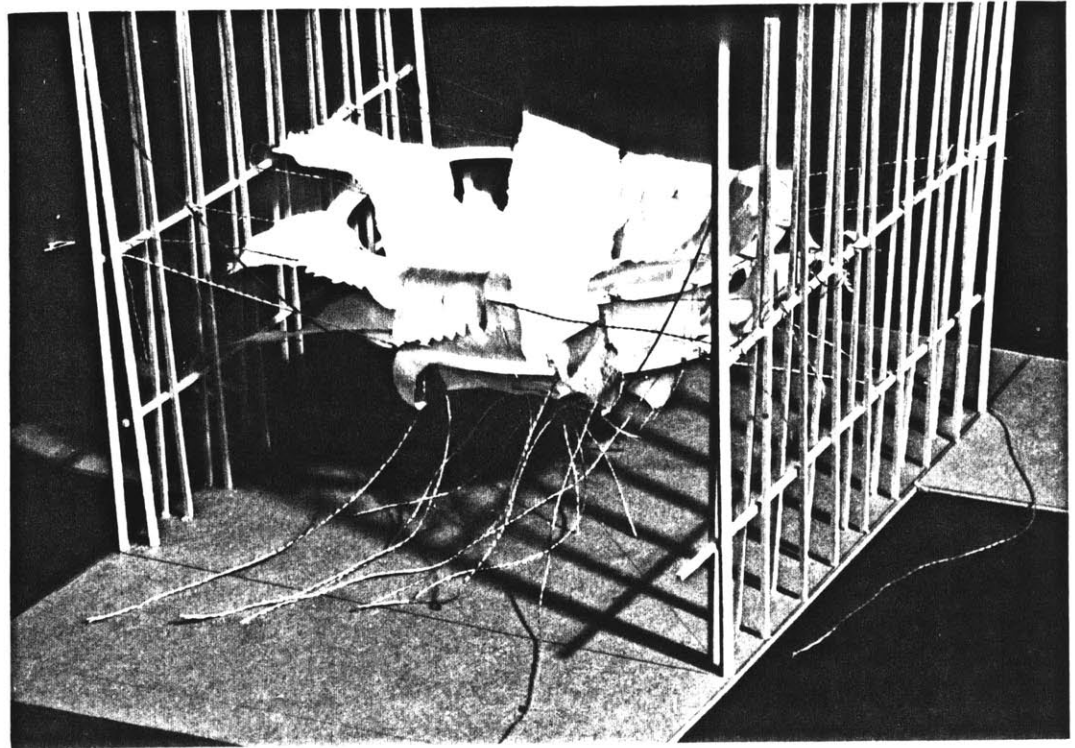
*A dome is not conceived when questions arise how to build it.*

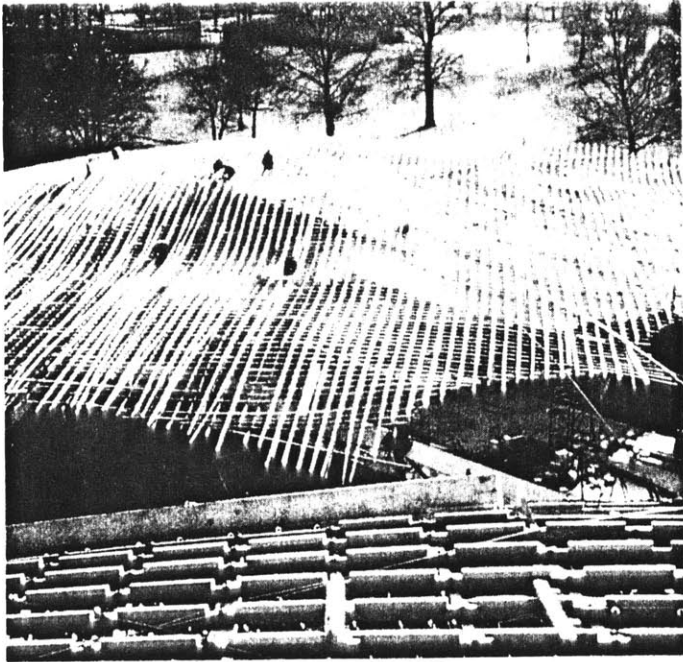
*Nervi grows an arch,*

*Fuller grows a dome....*

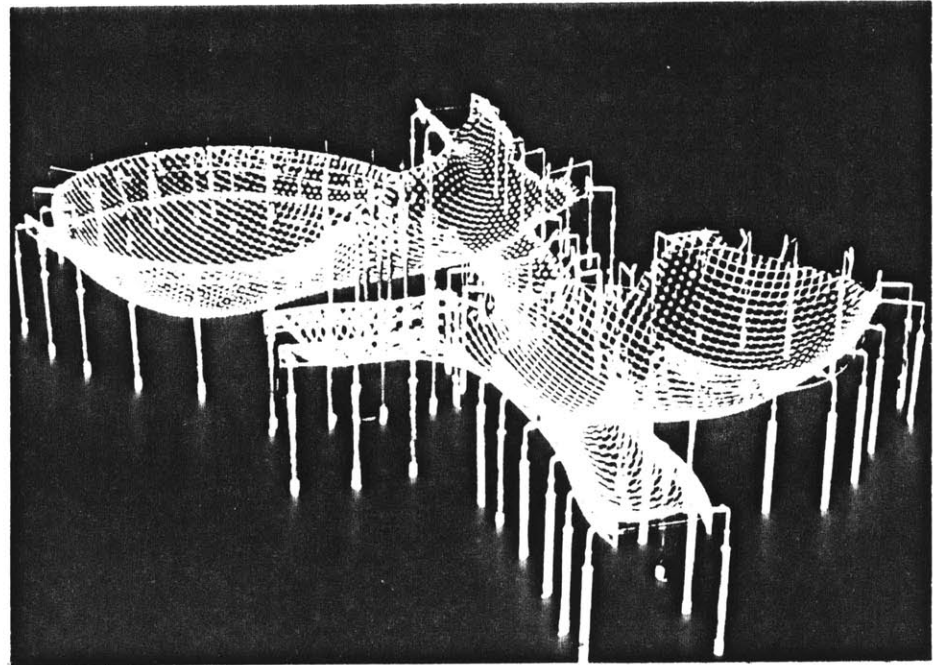
**Louis Kahn** <sup>18</sup>

The structure of the vessel was the first consideration. The vessel has to be considered as a whole entity with a bent floor that becomes seating. The integrity of the structure is analogous to that of an aircraft or ship. The dance floor must be sprung and made of resilient material. A timber lattice network will be most appropriate for this purpose. By using this woven container, the true construction of sprung dance floor can be revealed and the surface of the vessel becomes tactile and habitable without the introduction of another material for seating. On this continuous shell, the vibration of movements can be felt. Movement therefore is conveyed physically in this space as well as visually.

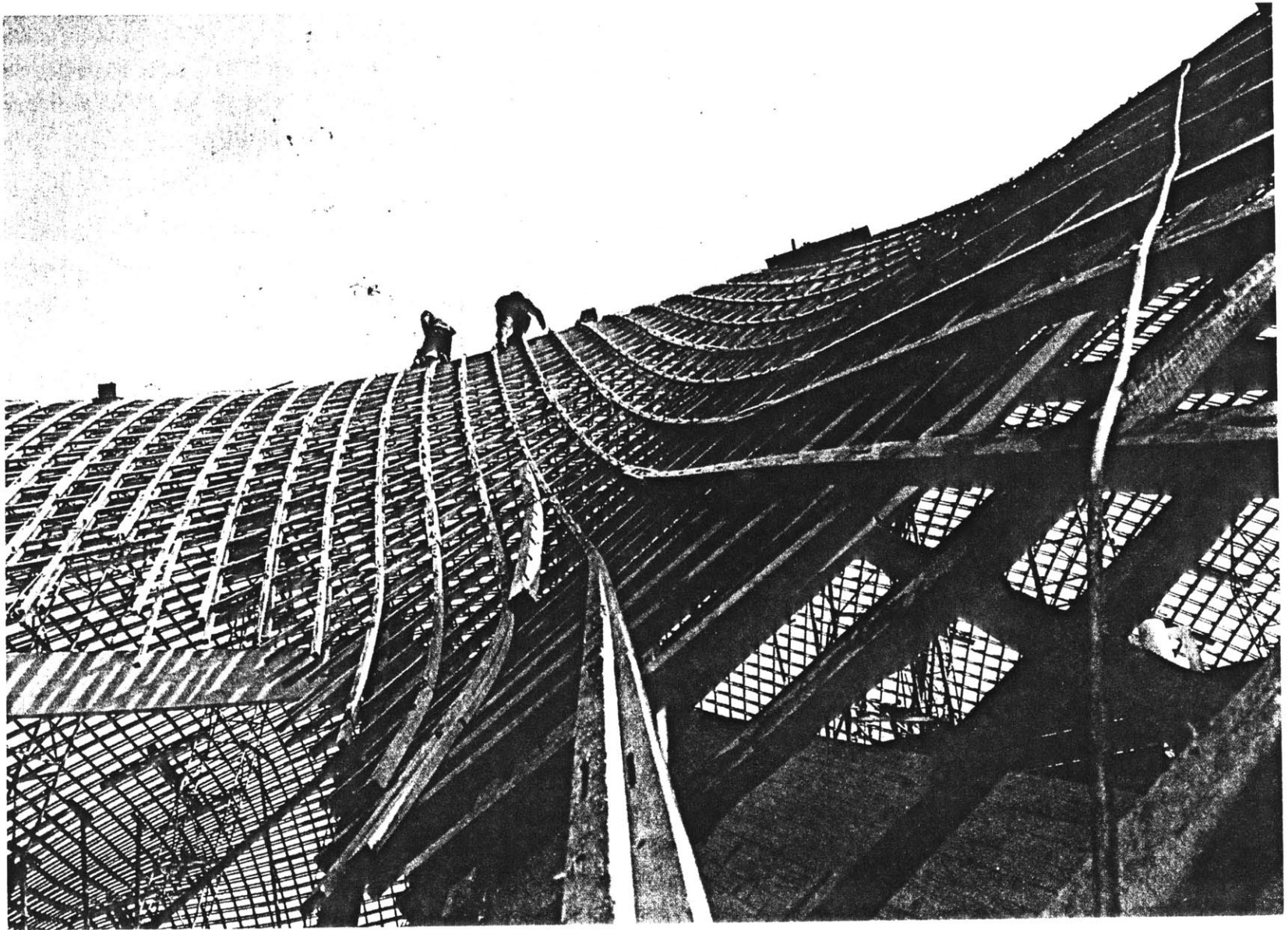




shell built with timber lathes, Frei Otto

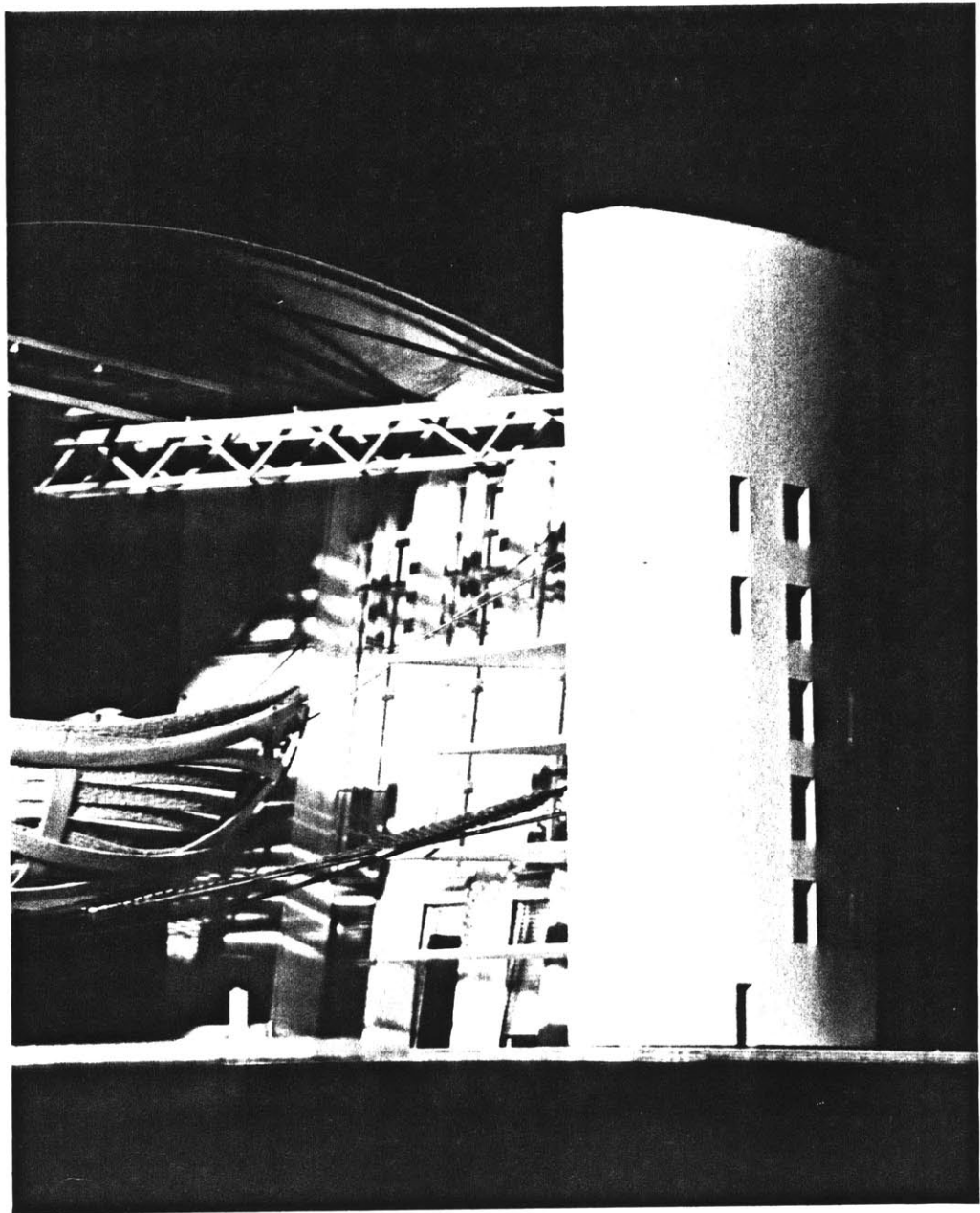


Tensile net form, Ove Arup and Partners

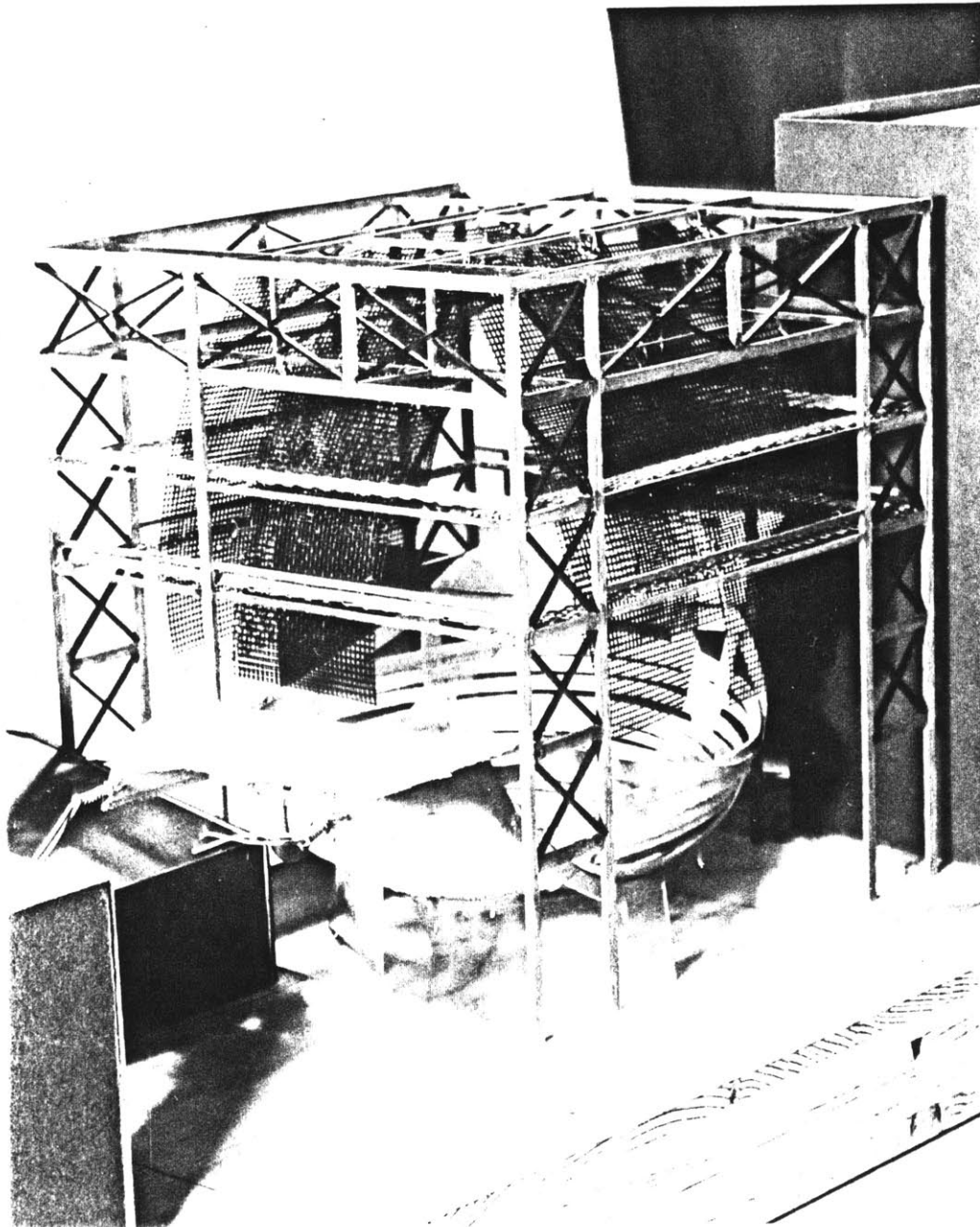


Construction of timber lattice, Frei Otto

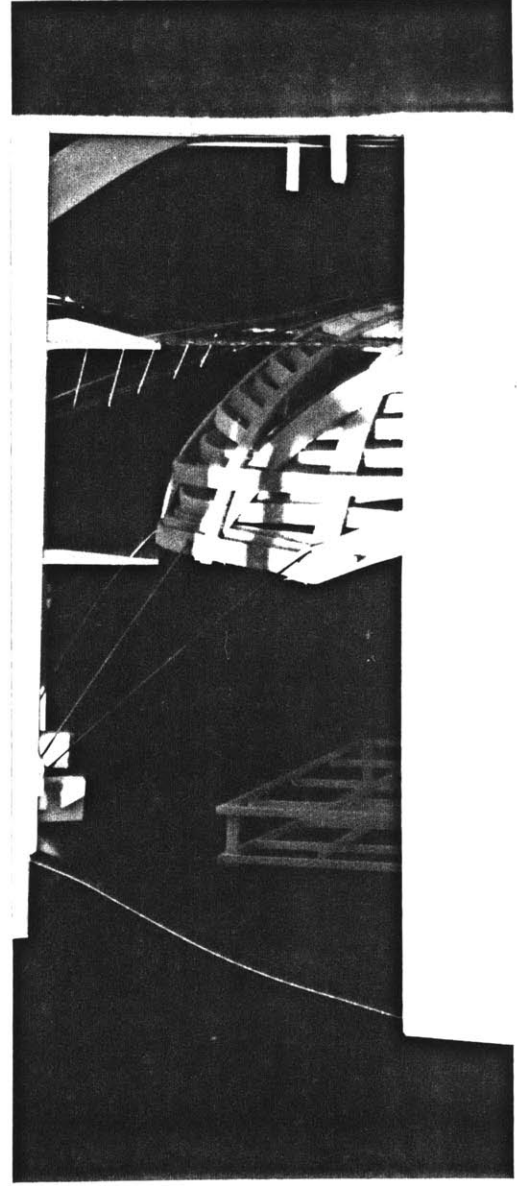
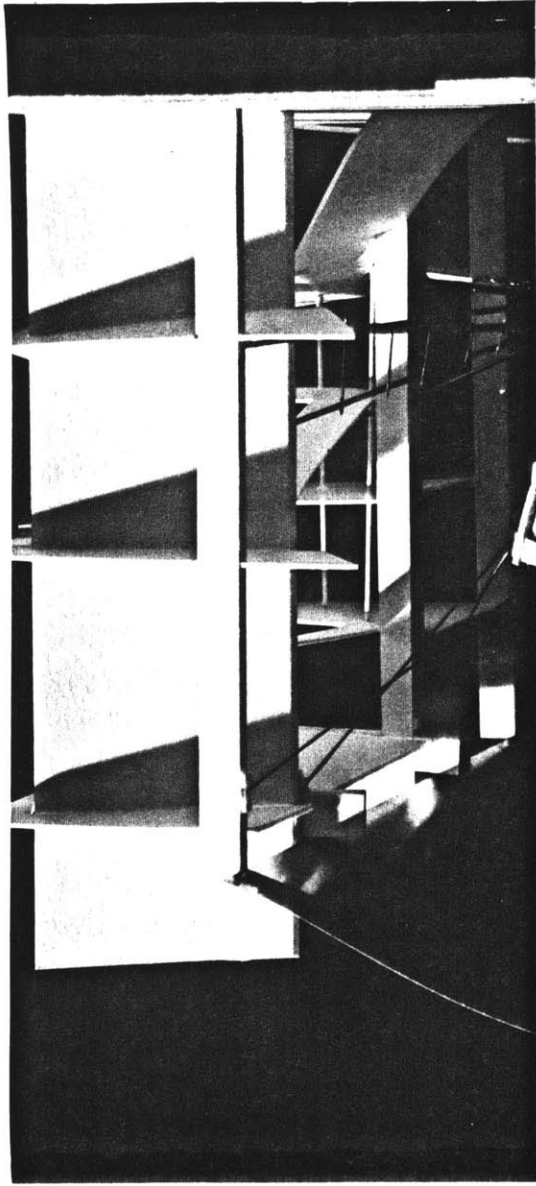
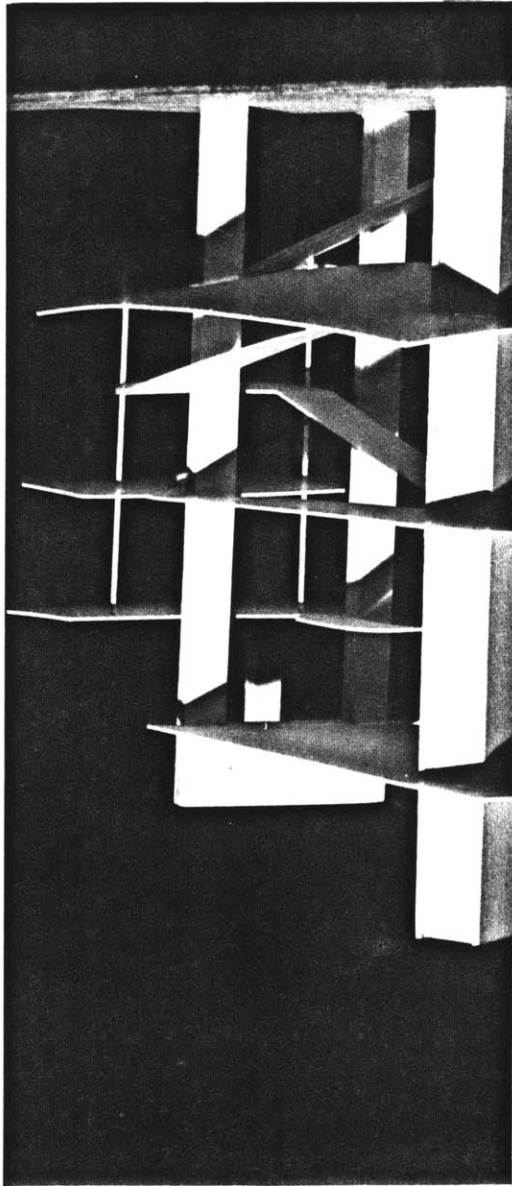
To reinforce the notion of feeling movement as well as seeing movement, the next issue became the transition of the floor. The task was to heighten the sense of body in space through the *giving away* of the ground. The procession from the city context into the sprung vessel becomes a crucial experience for the body. This idea can be manifested through the contrast of materials used in the building.







The use of material was conceptualized around the vessel. Concrete is the extension of the side walk and the exoskeleton of the building. Reinforced concrete's ability to span great distances and form continuous shapes and surfaces were reasons for my choice. It is the firm footing that first brings the user into the building. Next, a steel lattice section bridges the concrete to the vessel. Initially, the form and purpose of this zone was conceived to be a non-structural service section of the building, functioning much like scaffolds to aircraft under construction. Now it is a web of cables that suspends the vessel. The web is attached to concrete supports that serve as buttresses. Access to the vessel is integrated with the structural support. One enters the vessel by walking on the cables that suspend it. The web becomes the intermediate footing. Finally there is the vessel itself, suspended in mid-air, constructed of wood. It reverberates and reflects all movements within the space of the audience and the performer.



## **Spatial Organization**

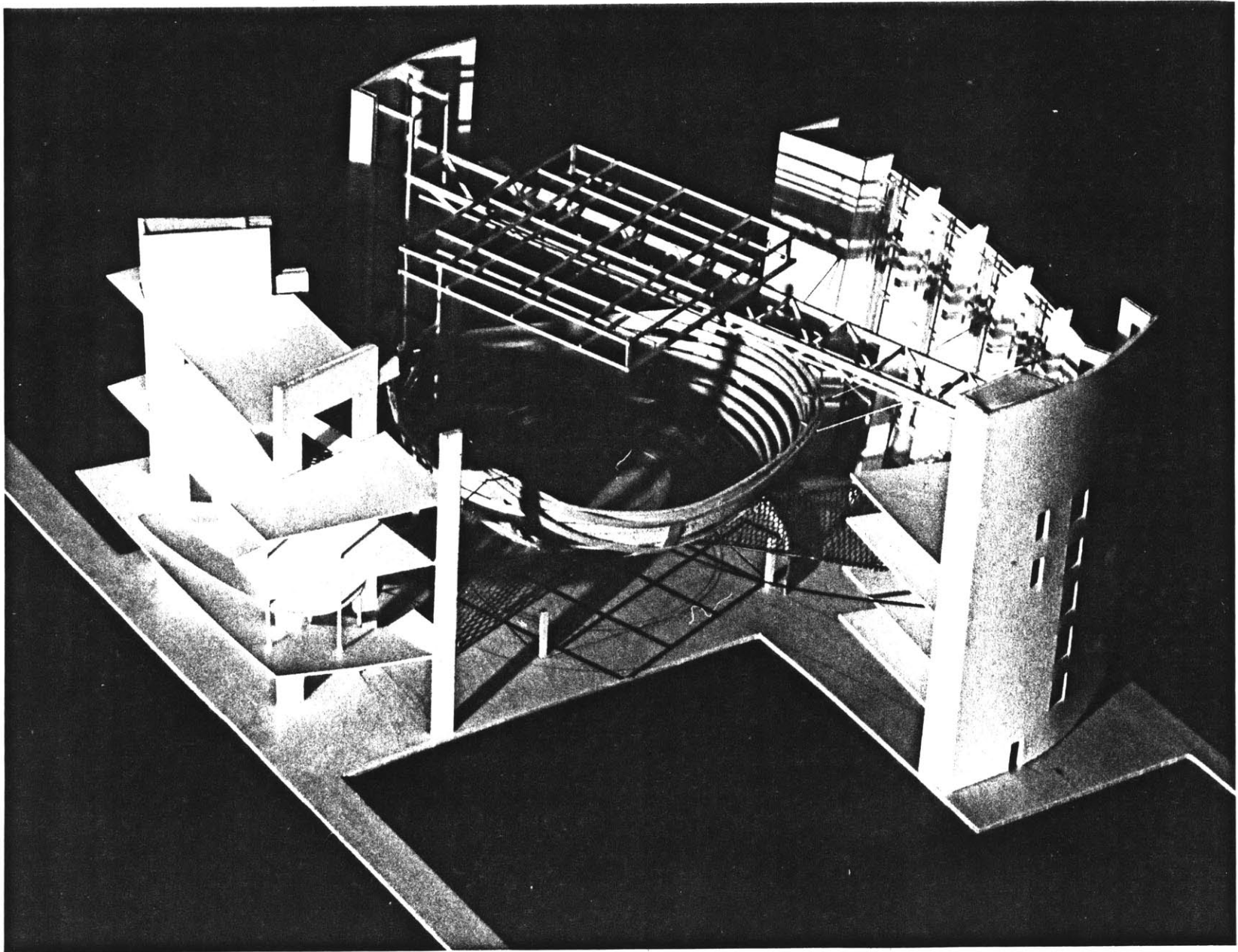
Dance is the result of the creative process: training of the body, choreography, making of the performance.... The theatre should be a place that reveals the process of dance.

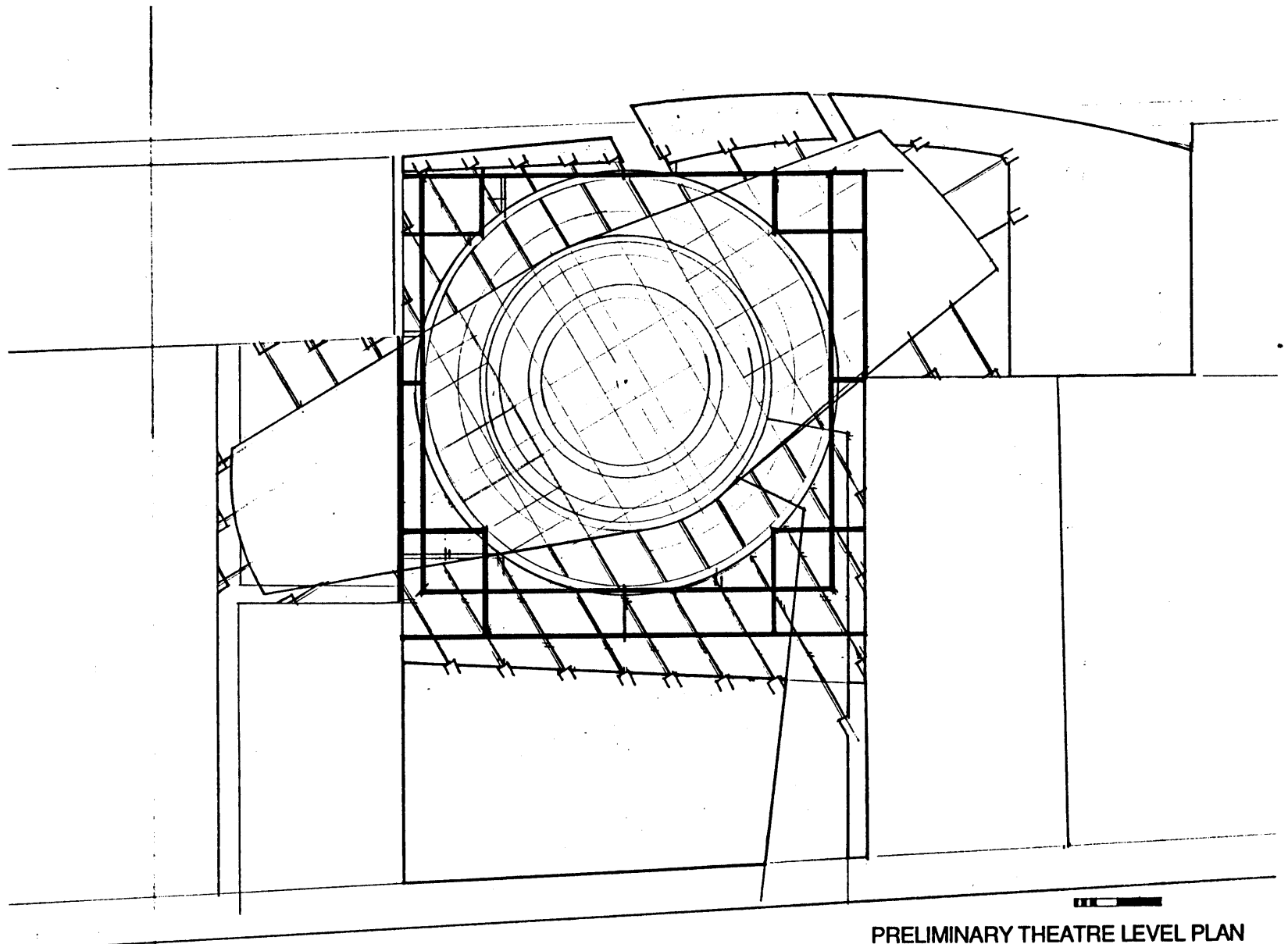
The theatre is a factory of dance. The center is the stage, the distributor of circulation and movement. The stage is accessible to everyone. The activity of the center floor is defined through time. The center is the lobby before and after the performance. The center is the stage during the performance.

The peripheral spaces are designed to house the technical equipments, the prop crane and the equipment lift, dressing rooms, prop rooms, and public accommodation. The spaces are zoned according to the edges of the site. The rear of the site houses private areas such as dressing rooms, rest rooms, material and equipment delivery zones. The side located on Kneeland street is left open for circulation and the celebration of movement.

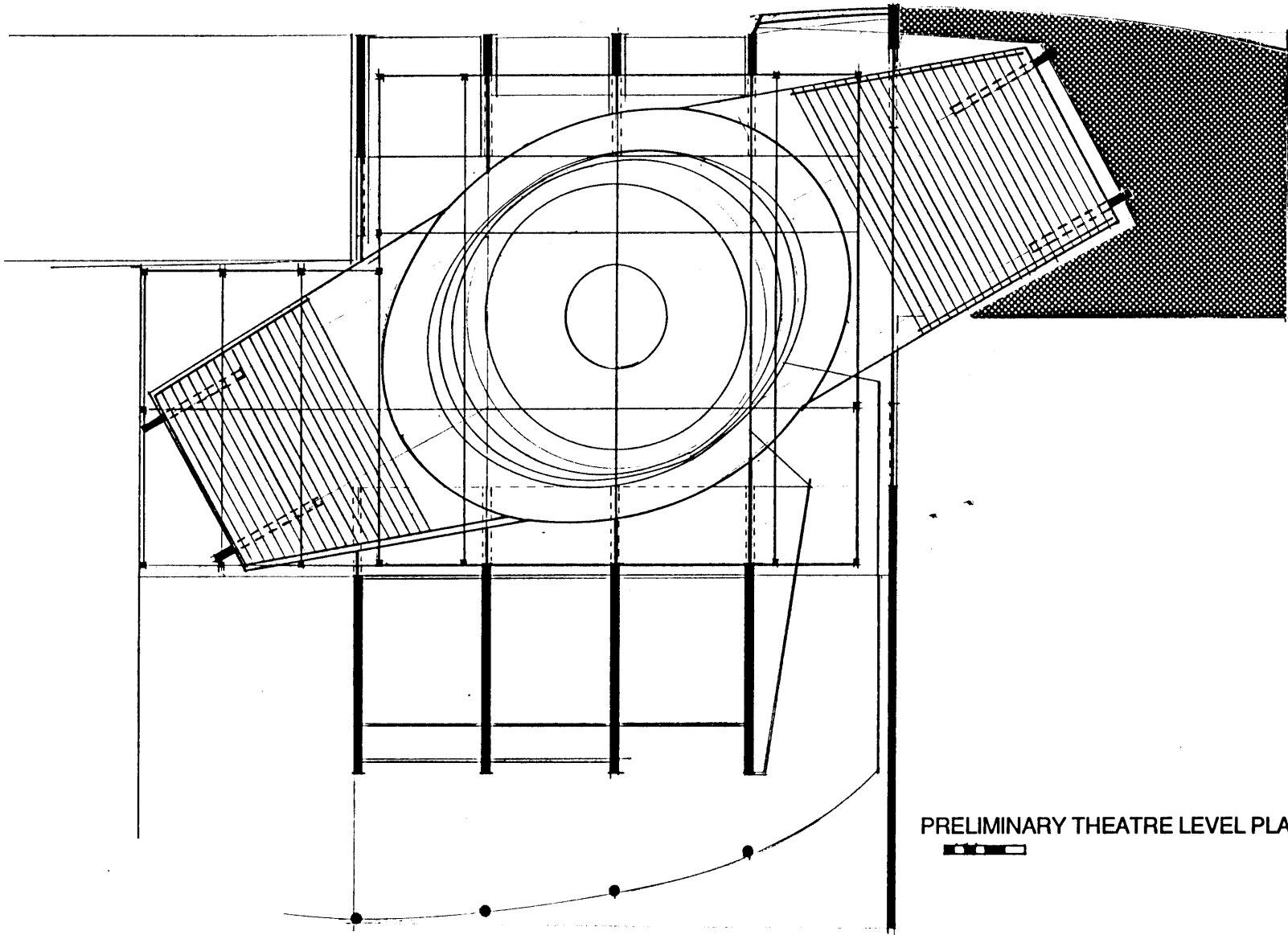
The ground floor is where the making of a dance performance takes place. The most dominant quality is the clear expanse of space. The floor is used from assembly of theatre sets to the layout of light and sound equipment. The floor is marked with the dimension of the dance floor, the dimension of the lighting frame and the location of the prop crane. The division of space is kept to a minimum to allow for maximum flexibility in use. A sprung floor made of movable palettes define the rehearsal studio directly underneath the dance floor above. The design stage sets can be carried out directly in the assembly space without any representation of the space on paper. The design of choreography can be carried out in a space the size of the stage, eliminating the task of dancers and choreographers simulating the performance in a smaller area.







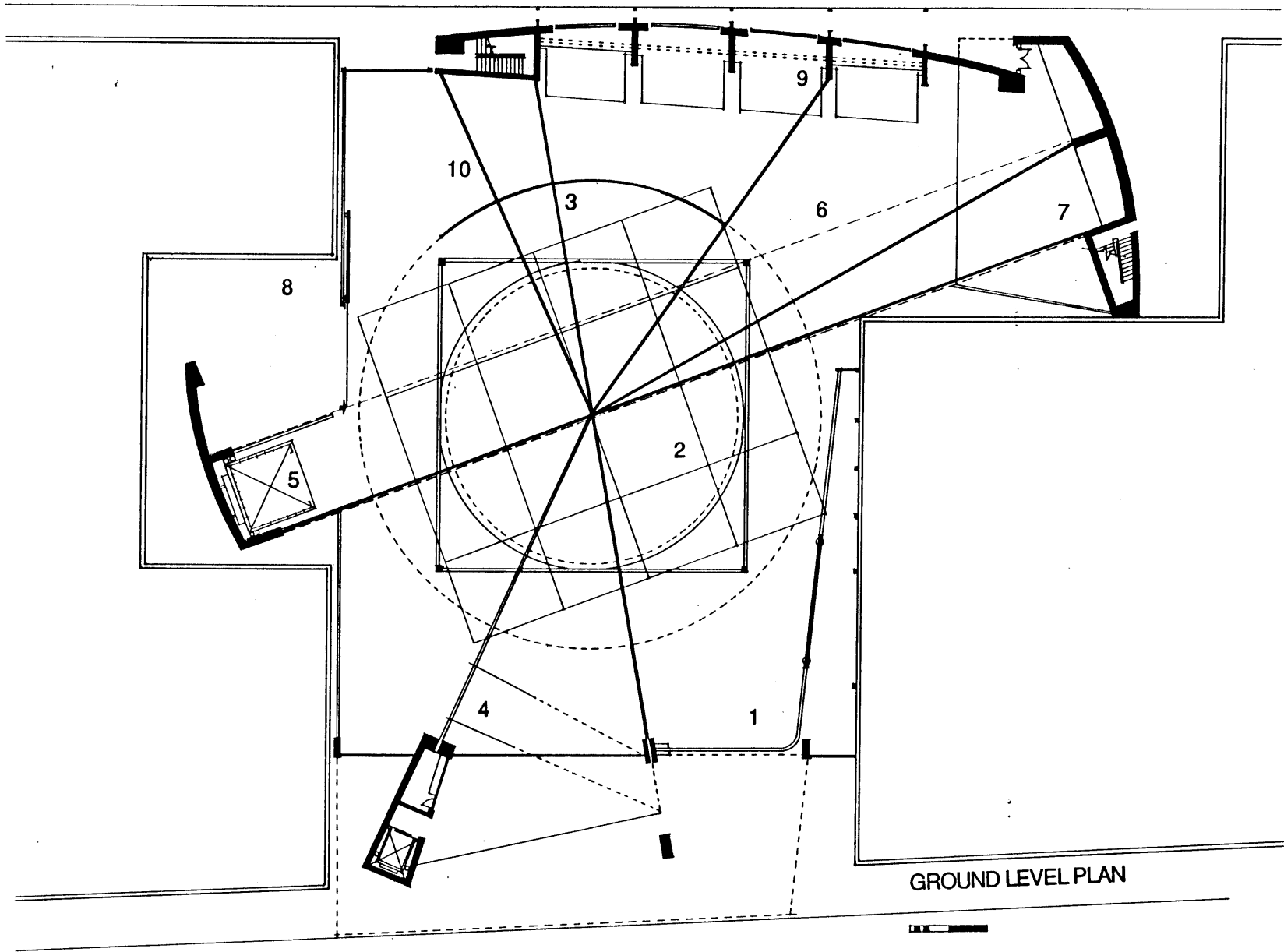
PRELIMINARY THEATRE LEVEL PLAN



PRELIMINARY THEATRE LEVEL PLAN

## GROUND LEVEL PLAN

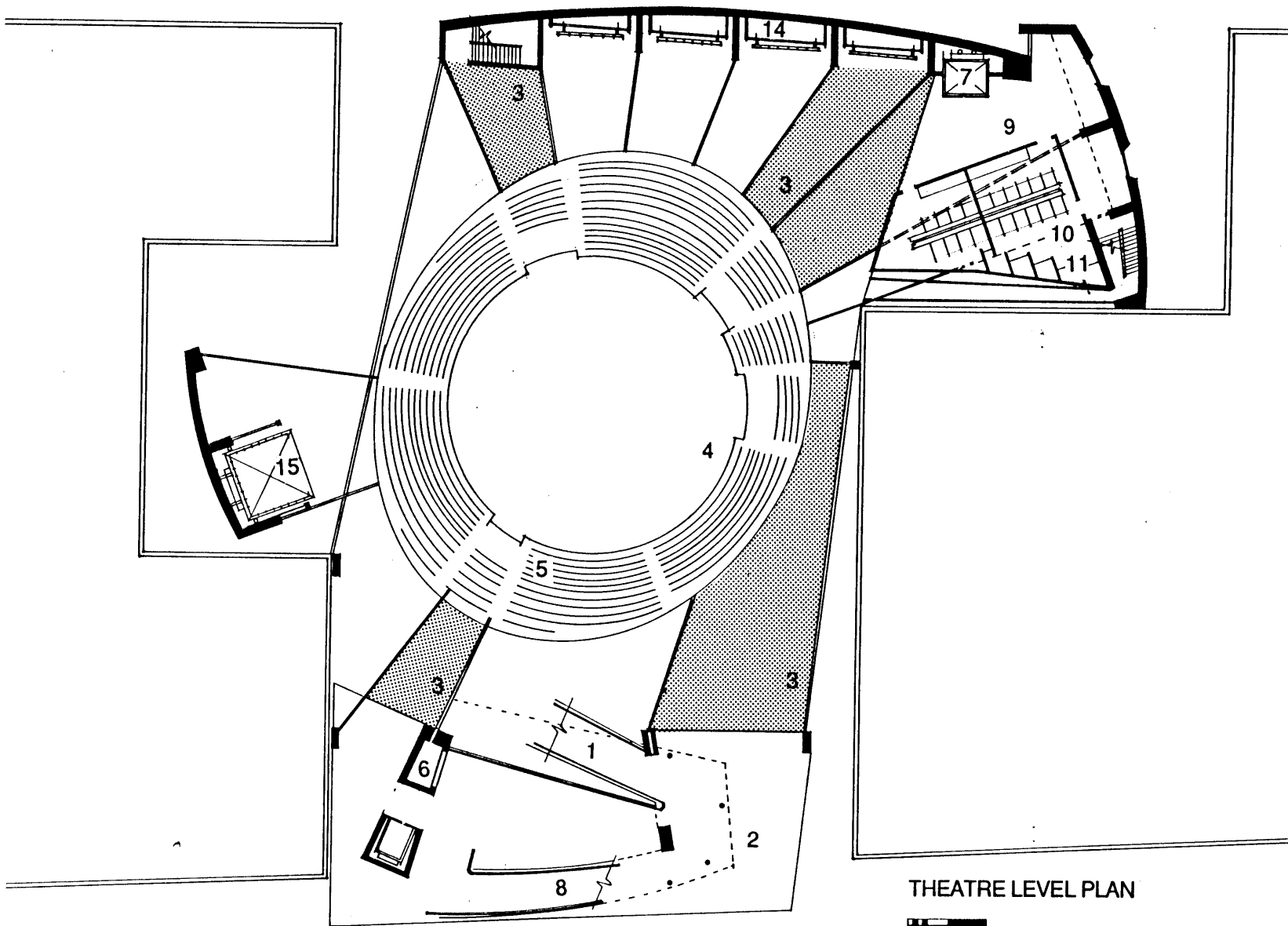
1. ENTRANCE
2. REHERSAL & PRACTICE STUDIO
3. MECHANICAL EQUIPTMENT STORAGE
4. RAMP TO DANCE THEATRE
5. FREIGHT LIFT
6. STAGE SET ASSEMBLY AREA
7. GREEN ROOM
8. OUTDOOR WORK AREA
9. DELIVERY AREA
10. BACK ENTRANCE
11. WORK AREA



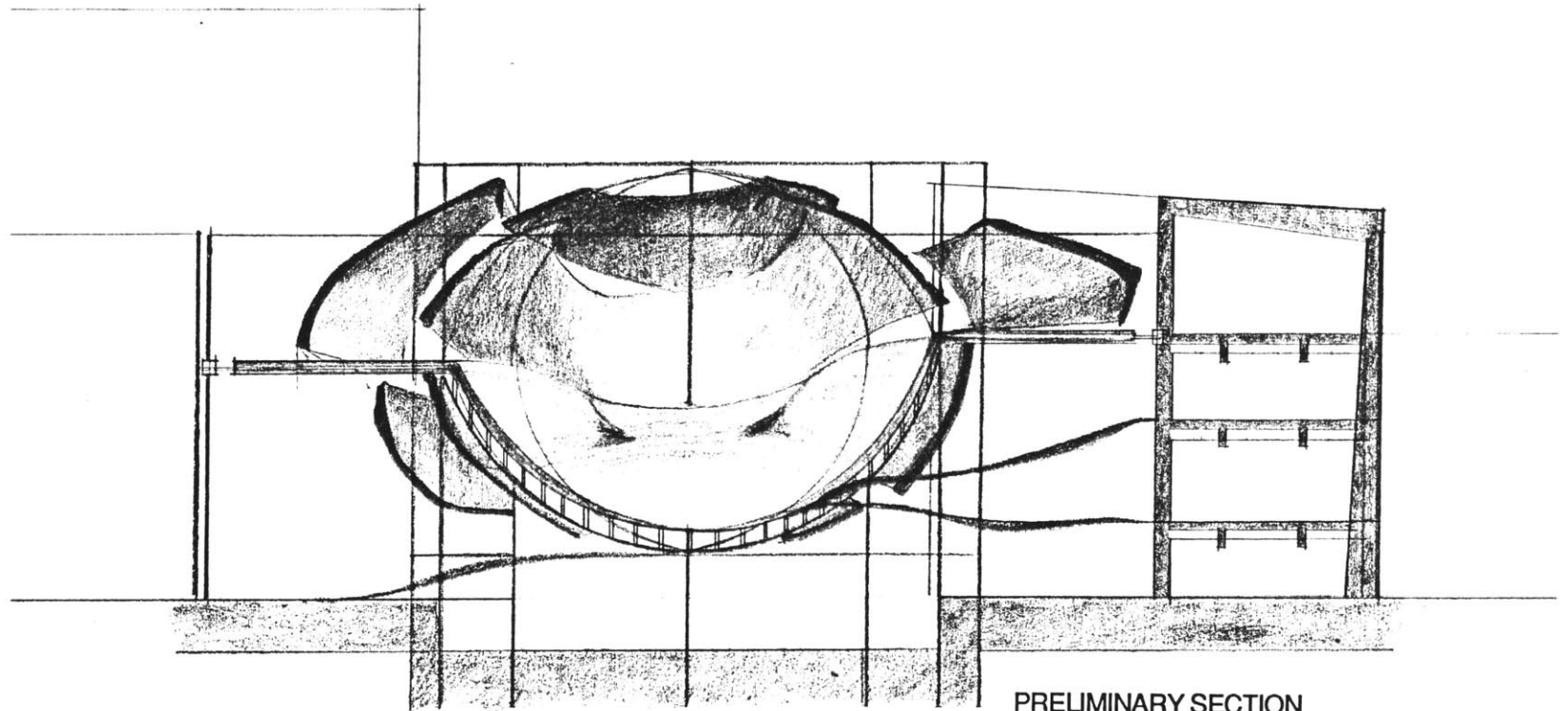
GROUND LEVEL PLAN

## THEATRE LEVEL PLAN

1. RAMP
2. WAITING AREA
3. WALKWAY TO THEATRE
4. THEATRE CENTER/STAGE
5. SEATING
6. COAT CHECK ROOM
7. PASSENGER ELEVATOR
8. RAMP TO UPPER LEVEL/ CONCESSION AREA
9. REST AREA
10. REST ROOMS
11. SHOWERS
13. ADDITIONAL FLOORS IN THIS ZONE ARE  
DANCERS' DRESSING ROOMS & PREPARATION AREA
14. LIGHT AND SOUND EQUIPMENT RIG
15. FREIGHT LIFT

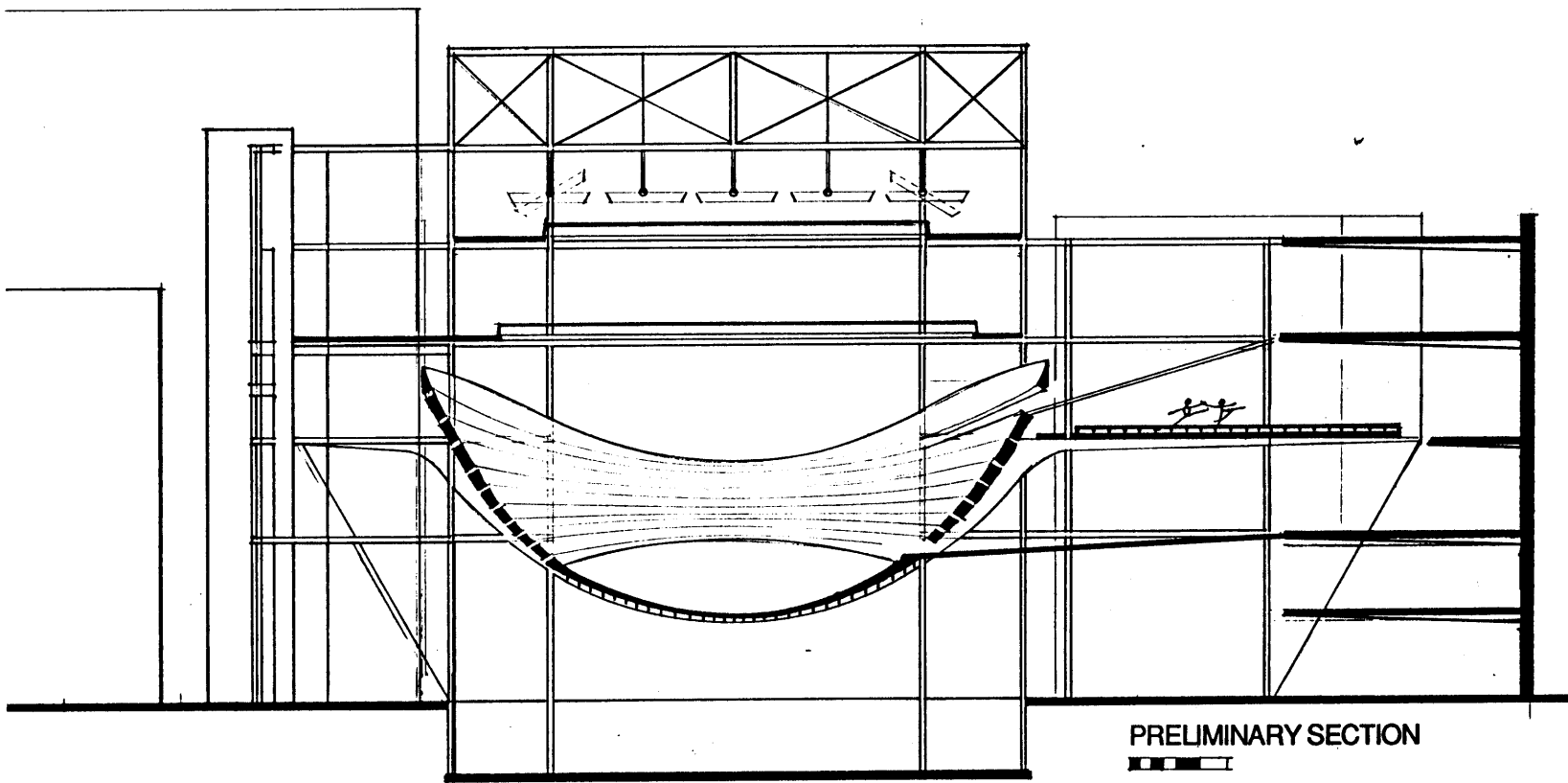


THEATRE LEVEL PLAN



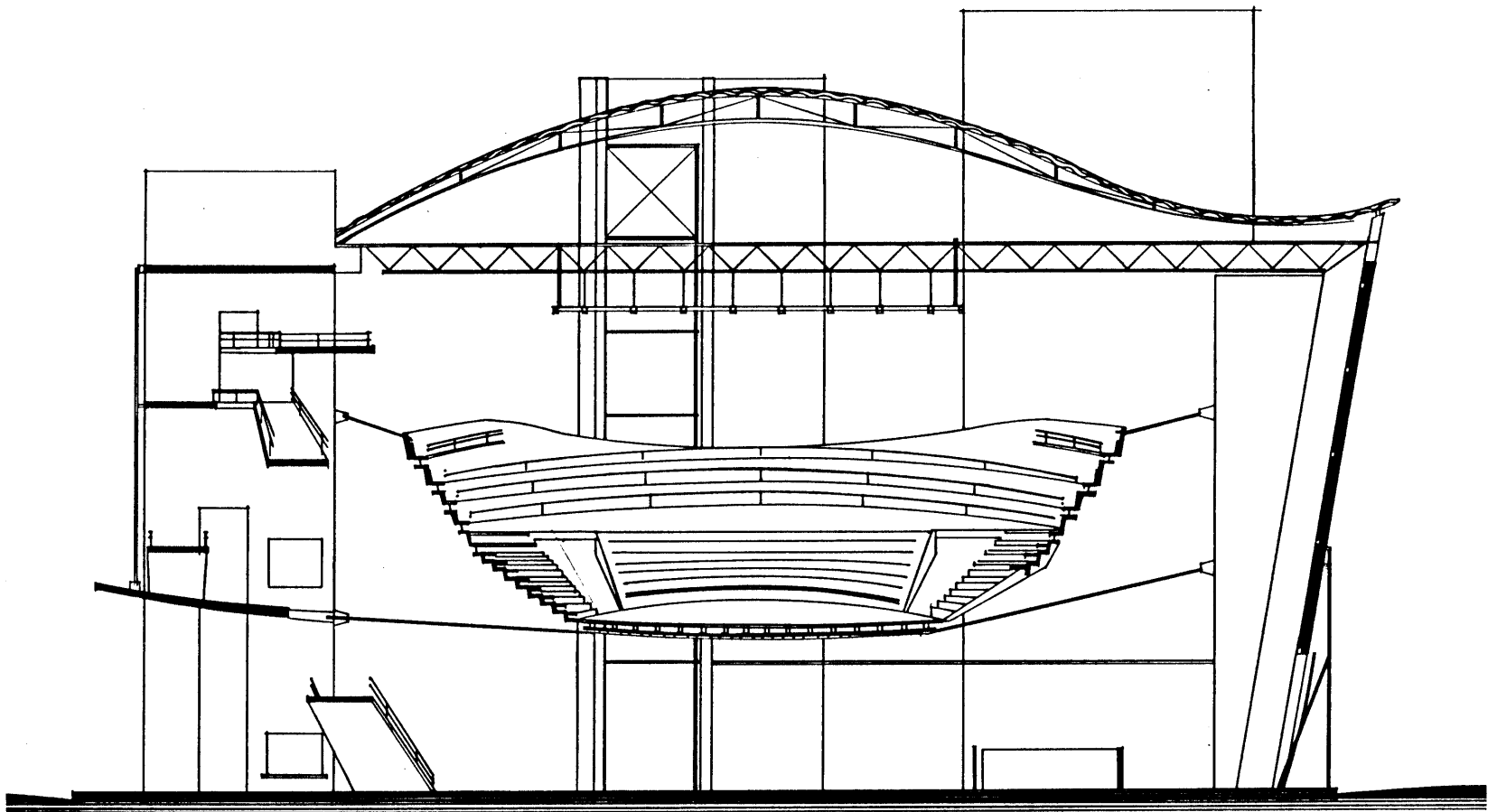
PRELIMINARY SECTION





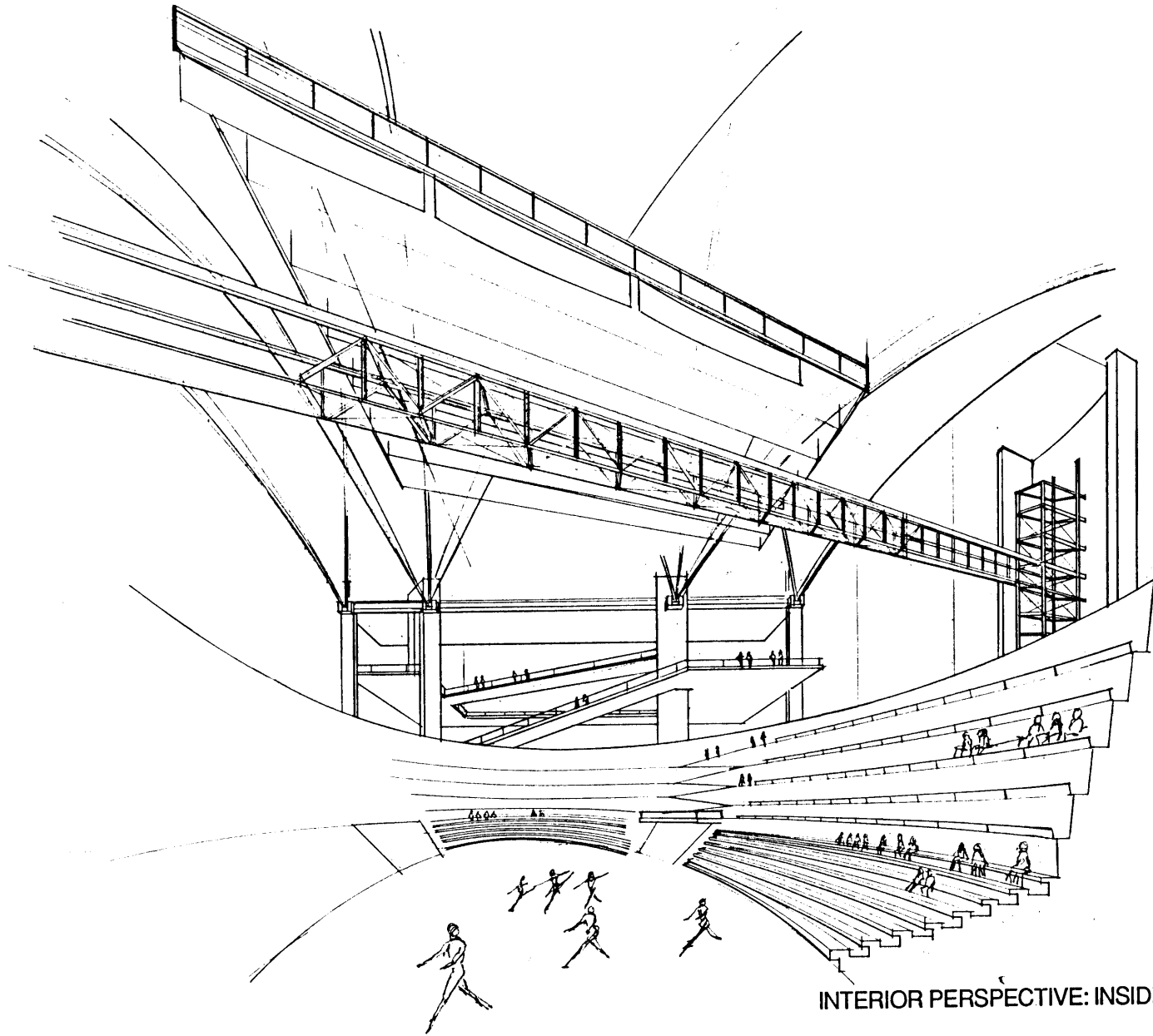
PRELIMINARY SECTION





SECTION



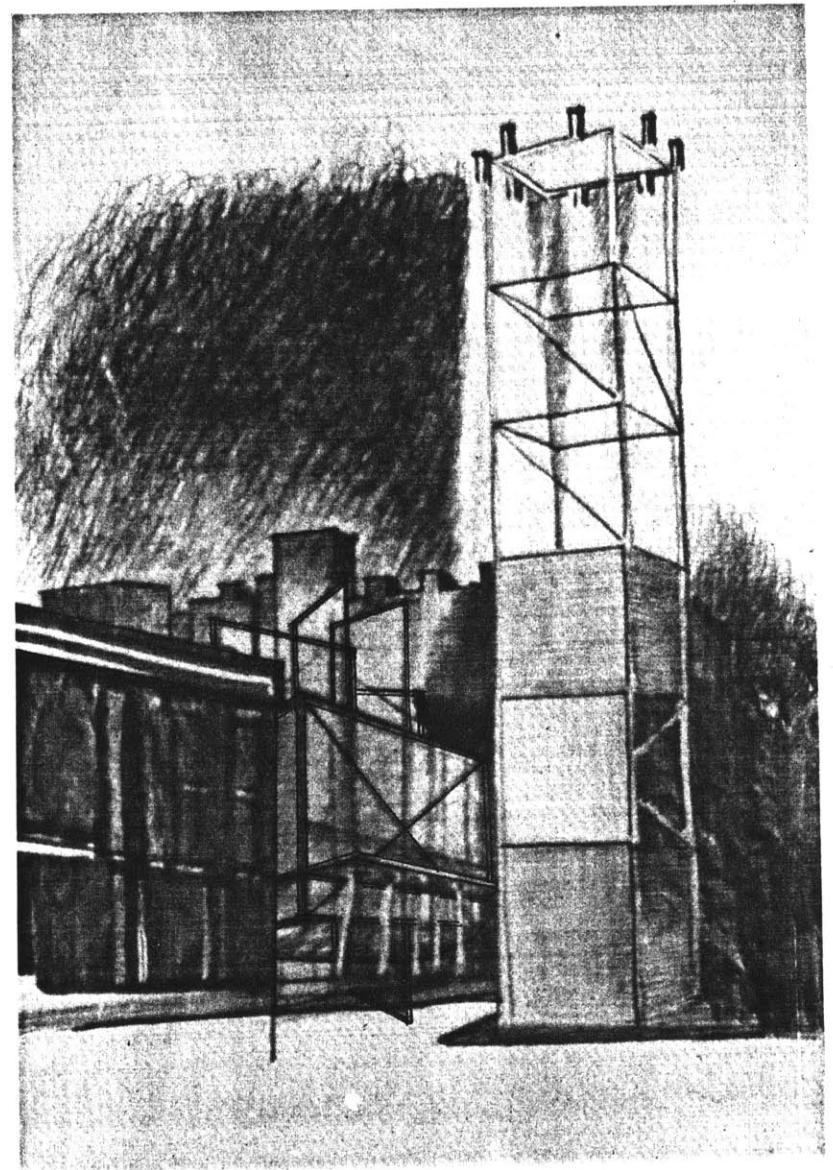


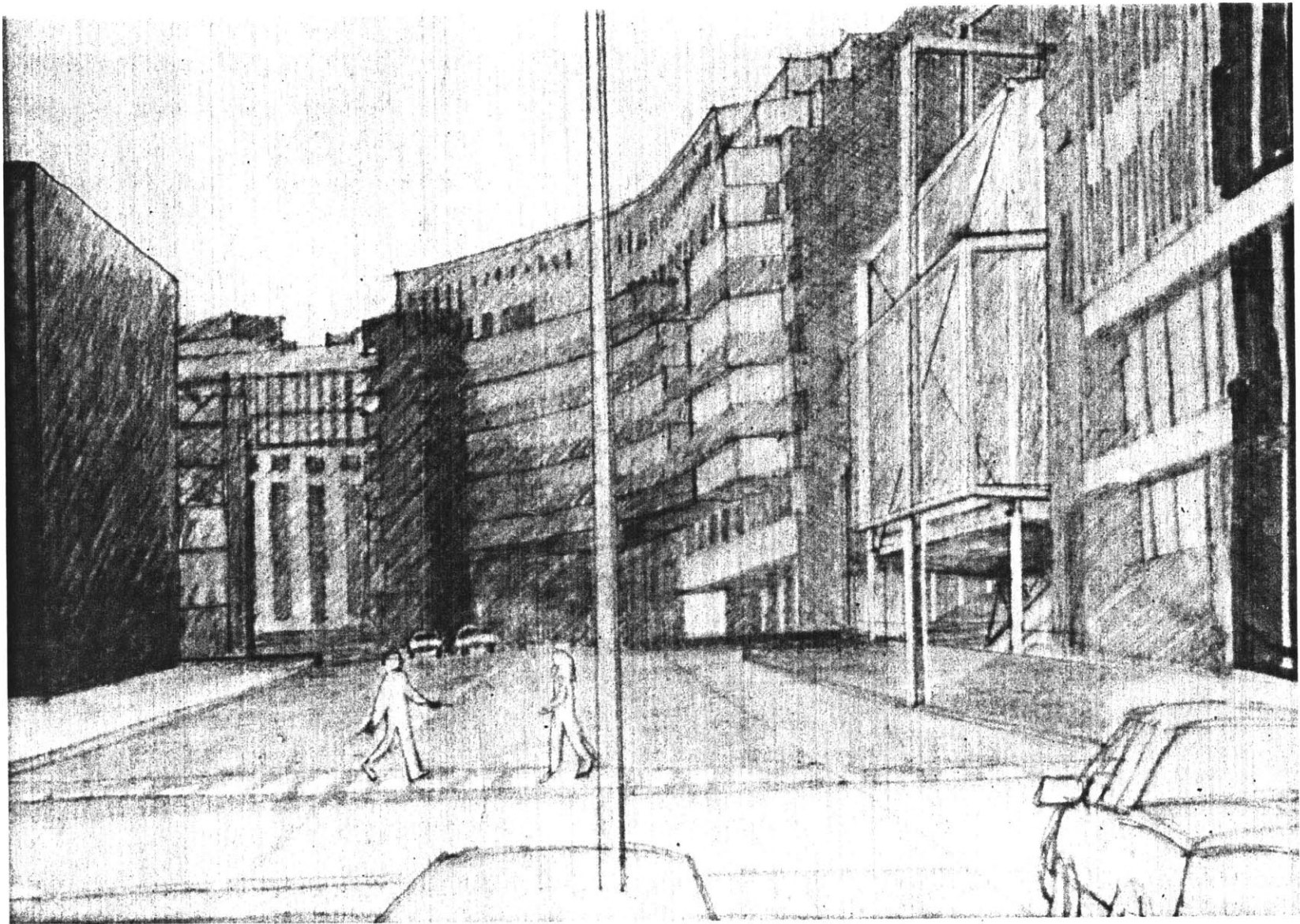
INTERIOR PERSPECTIVE: INSIDE THEATRE

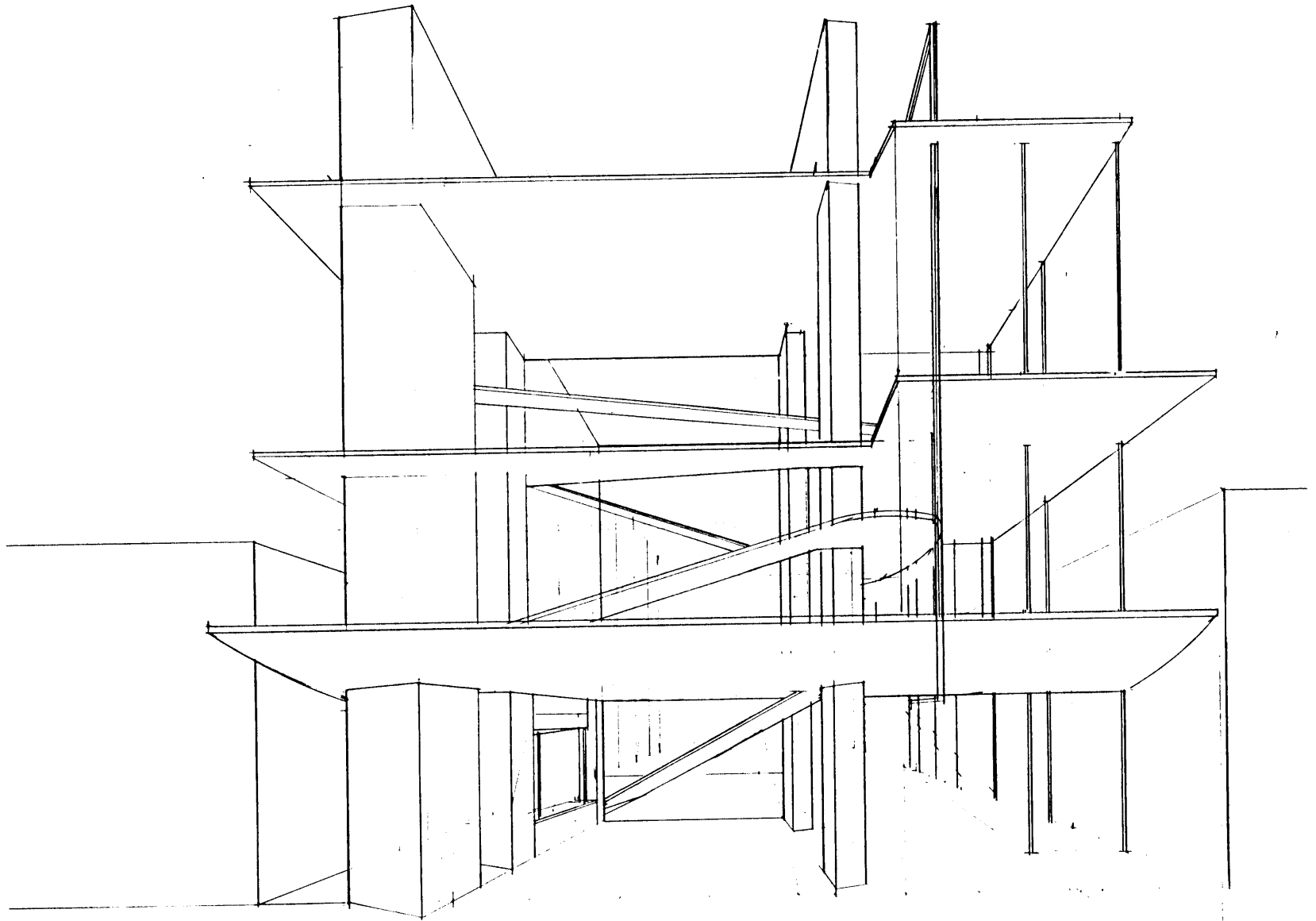
## The Non-Facade

The initial idea of the transparent cube has all but disappeared except in the transparency of the elevation. In collapsing the form of the traditional theatre, I wanted to let the spaces convey the ideas of theatre. The movement of the body through space is celebrated here. It would not be appropriate to define this idea through any signage or formal interpretations via a facade. Therefore, the decision was made to let the transparency of the building speak for its purpose.

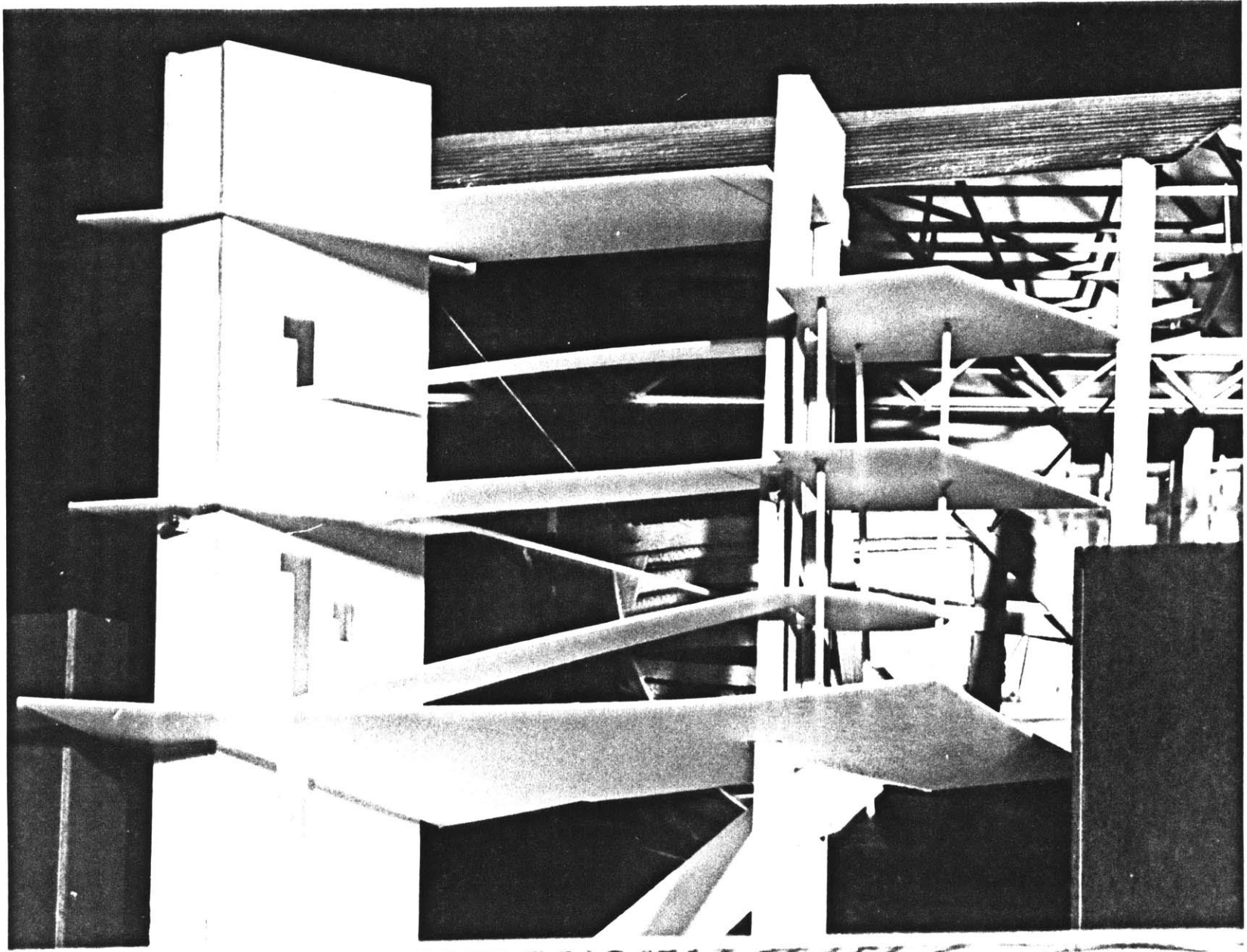
The entrance to the theatre is a series of ramps that carry the user up and into the building. At the street level, the theatre is totally transparent. The glass walls are like display windows of the adjacent retail shops. There is no advertising outside the theatre, the view of the performance in the making tells the story. The second level ramp reaches out over the side walk to become the canopy that sweeps the users in. Its bowed curve echoes the world beyond. At the upper levels, the ramps are pushed to the edge of the street. The movement of people in the building becomes the metaphorical stage that is presented to the city.



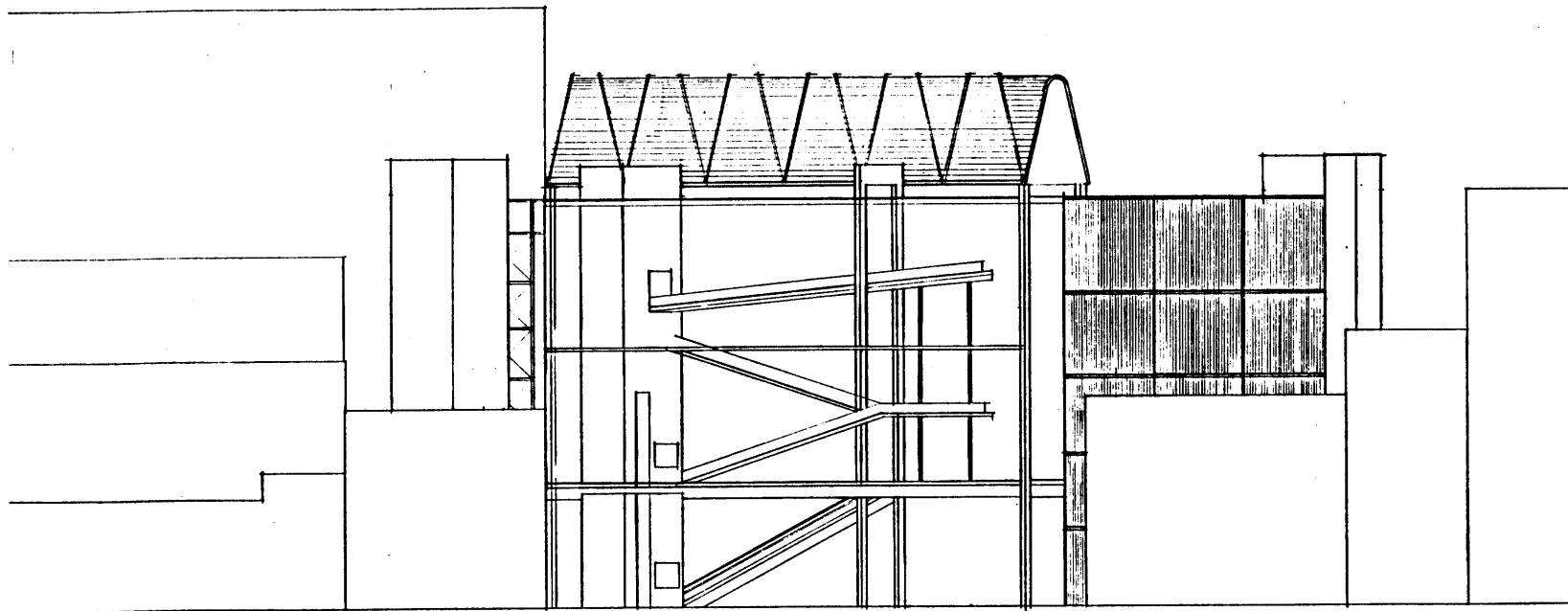




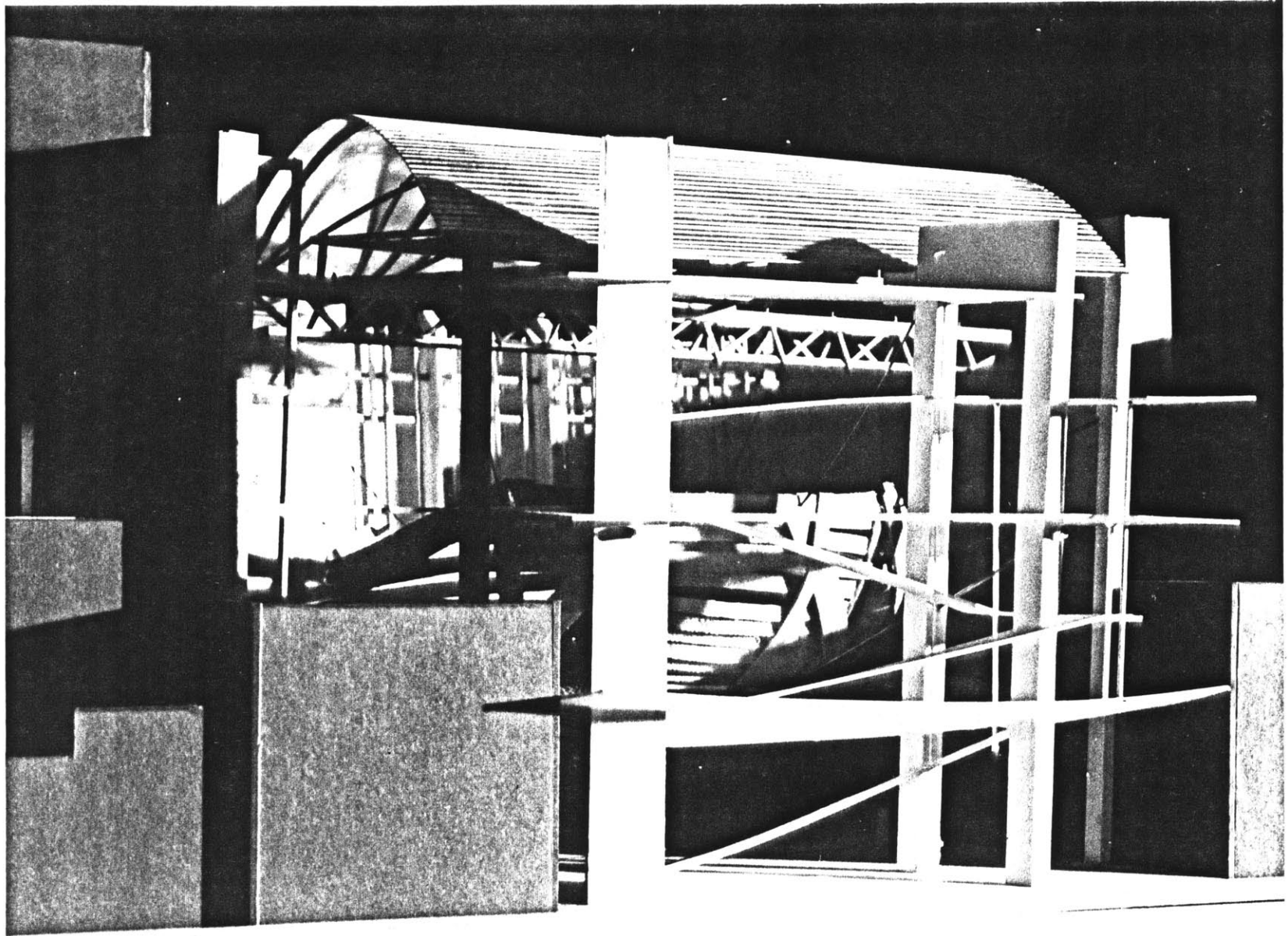
FRONT ENTRANCE PERSPECTIVE

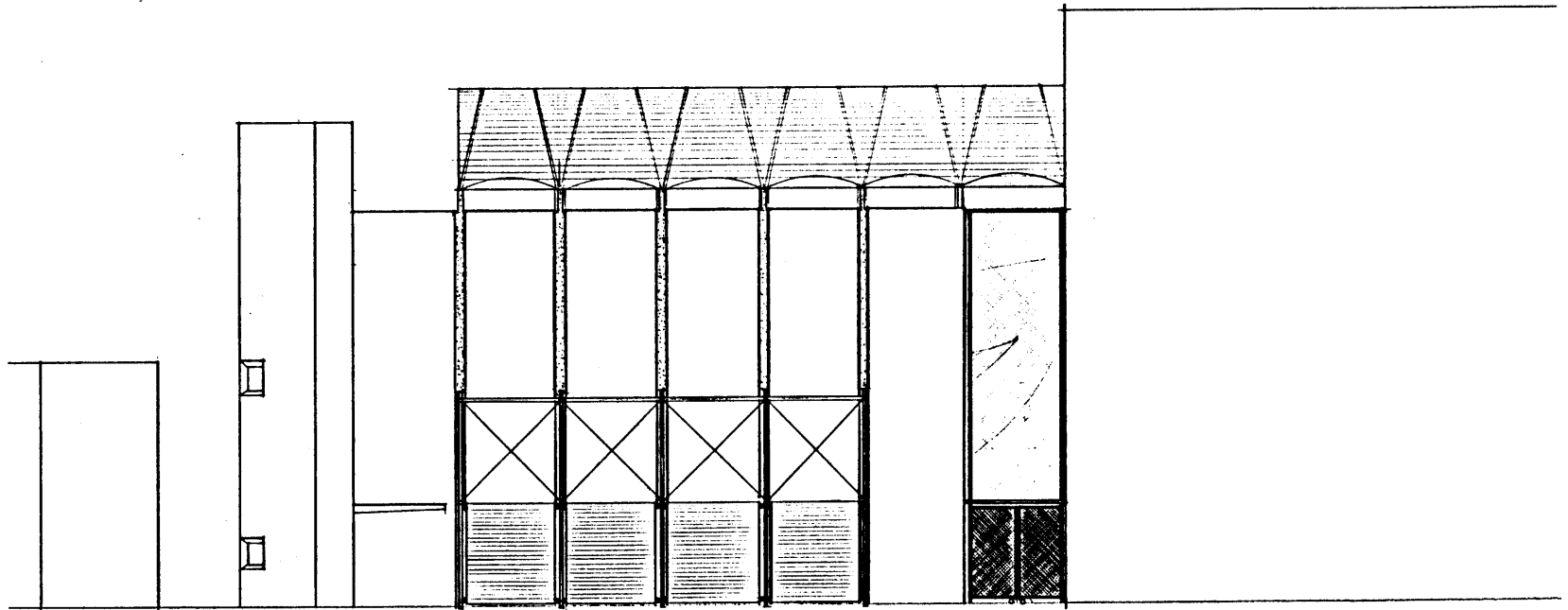




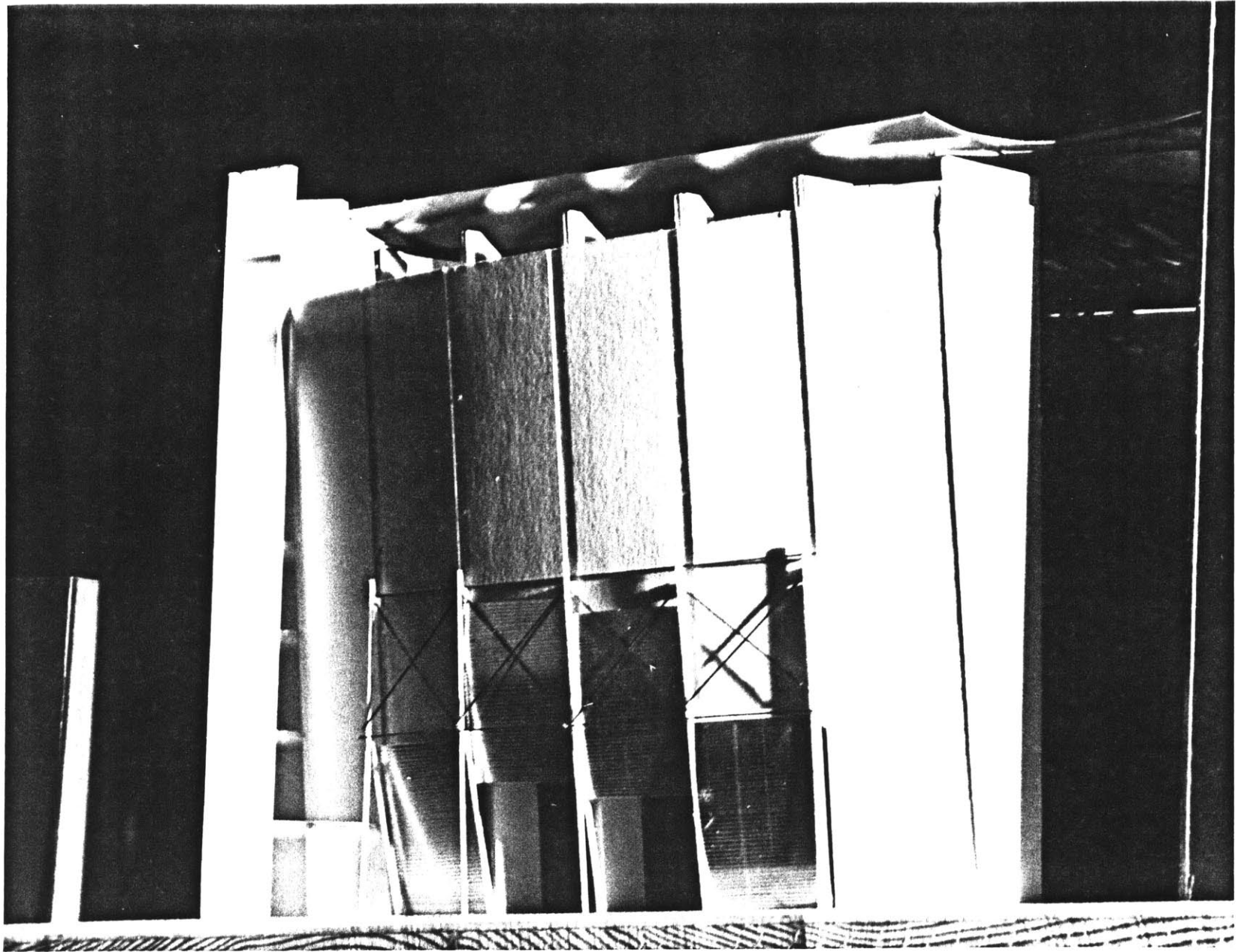


FRONT ELEVATION



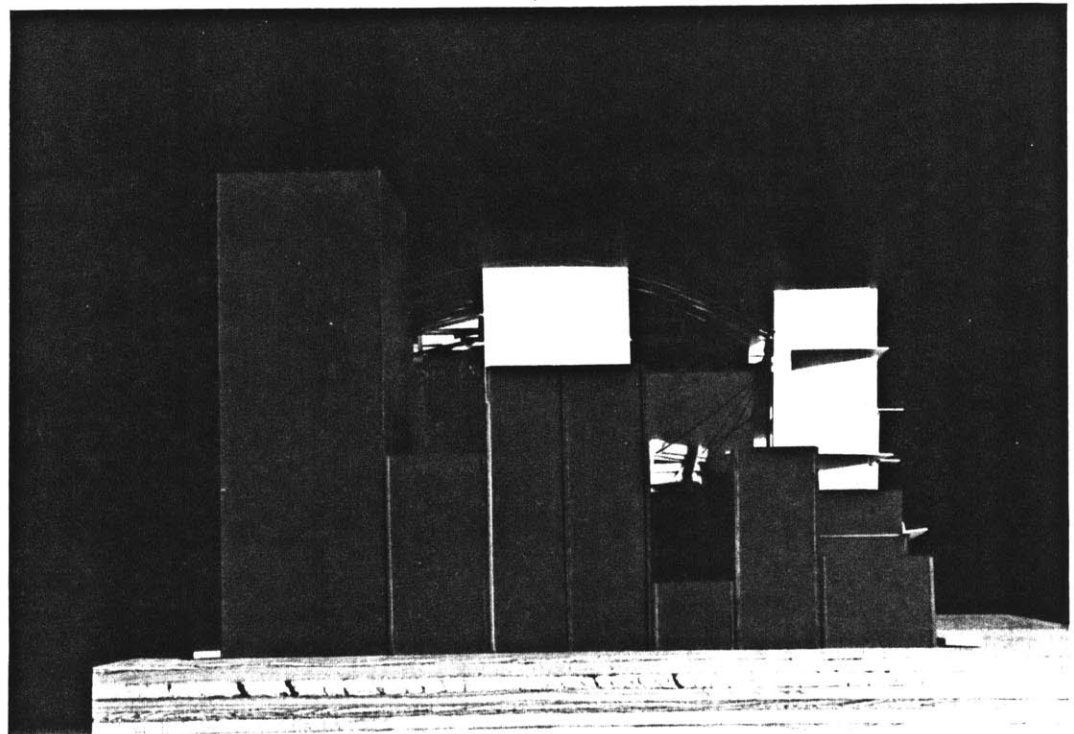


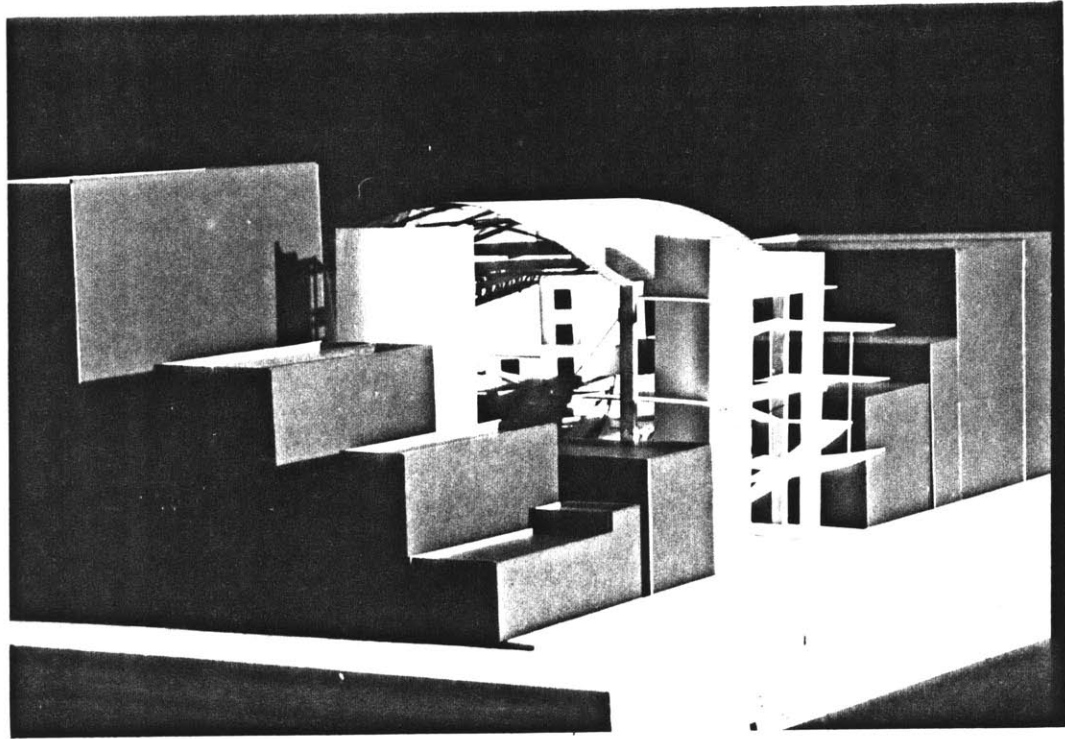
BACK ELEVATION



## The Context

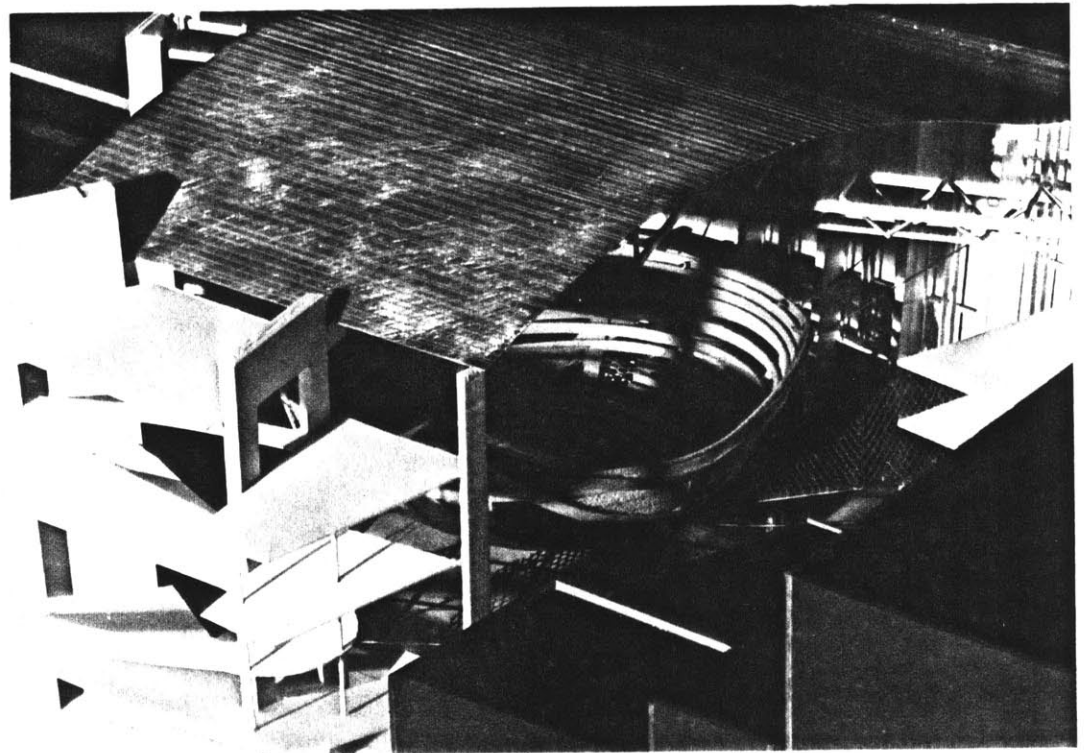
Consideration to integrate and accommodate the context was made by the openness of the spatial organization and the visual openness of the enclosure. From the onset, the context of the city was important. The city is a measure of movement. It provides a scale to movement. It has its own choreography which informs and contrasts the dance within the theatre. The ability to see the performance and the city together will allow the audience and performer the means to compare the scale, texture, and space of the dance, the architecture, and the city. The challenge is to provide the adequate amount of enclosure as to avoid distraction from the city context but enough visual freedom to see beyond the stage and the performance.



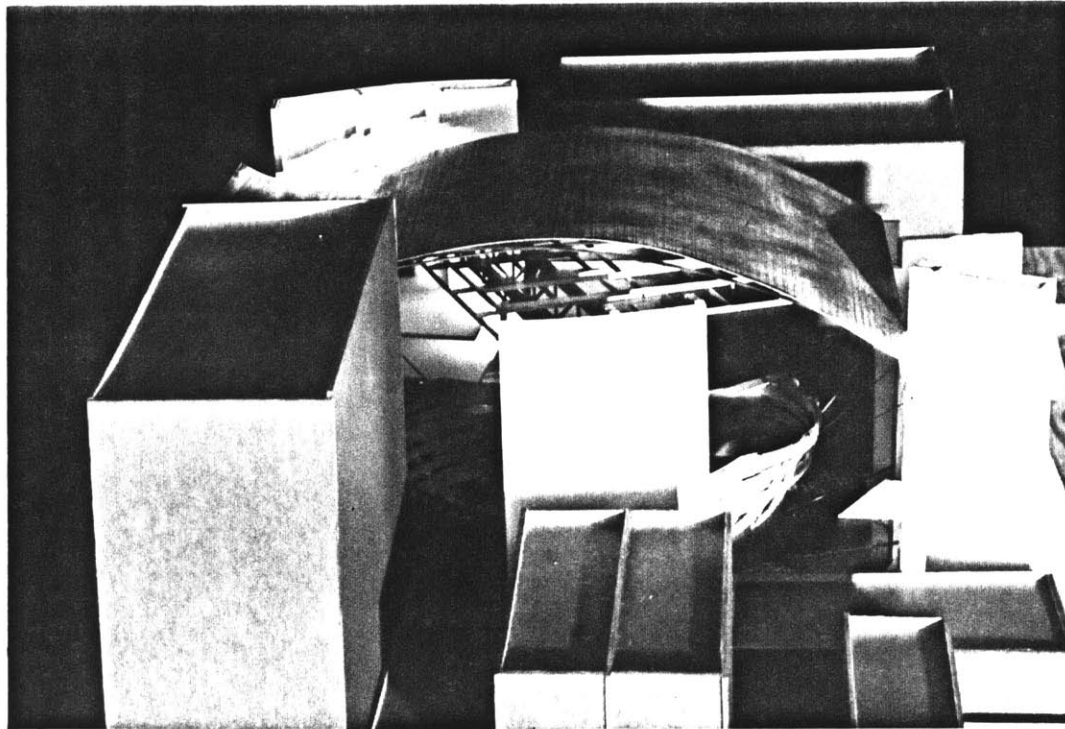


## The Roof

The roof complements the vessel in creating the other world. It is designed to provide enclosure but give the illusion of openness. The overhead plane is actually defined through many layers. The first layer perceived by the user is the zone marked by the crane. Beyond this, a space-frame appears to float over the vessel from which lighting, acoustical panels and sound equipments are hung. The final layer is the metal roof, barely present as it hovers lightly over the structure.



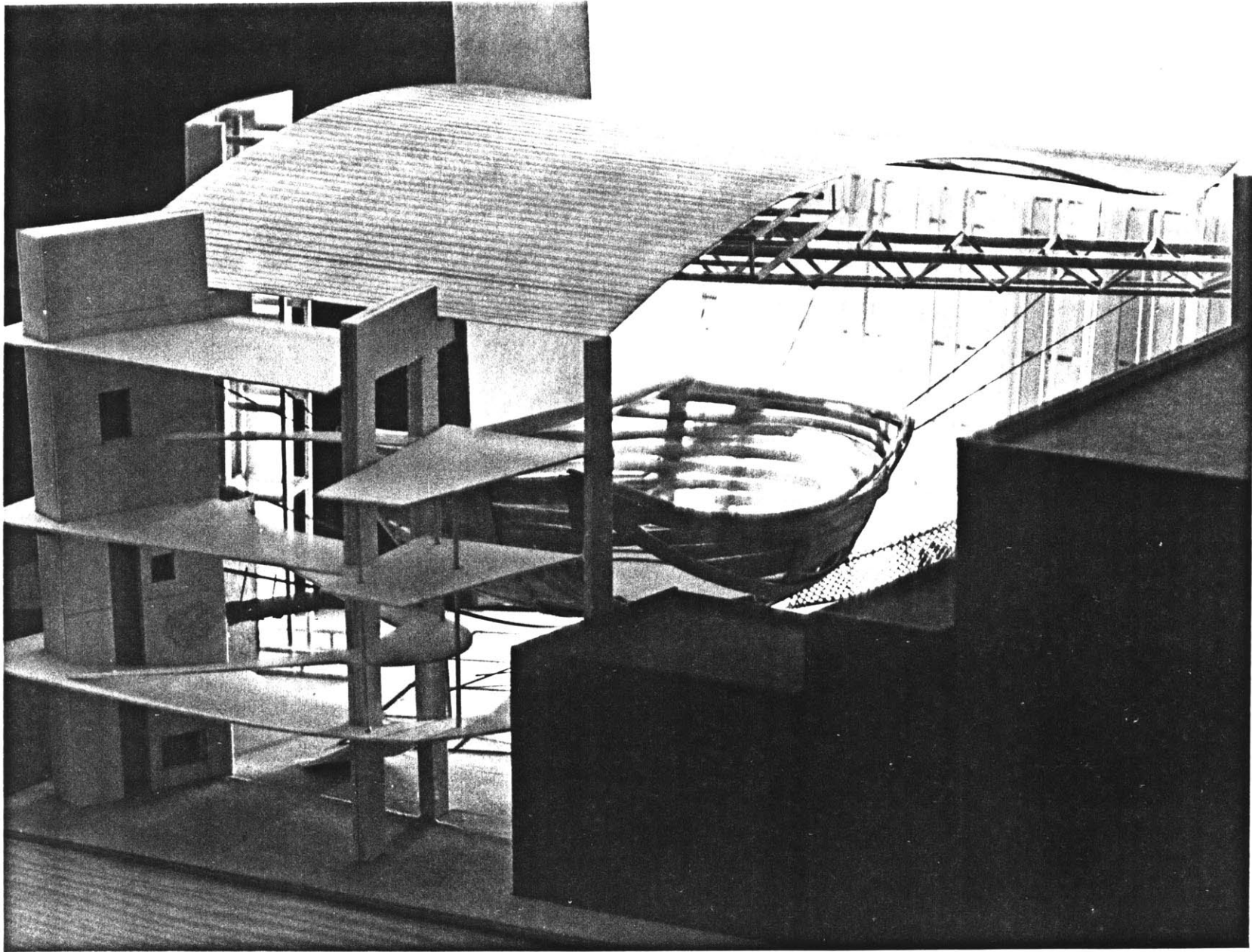


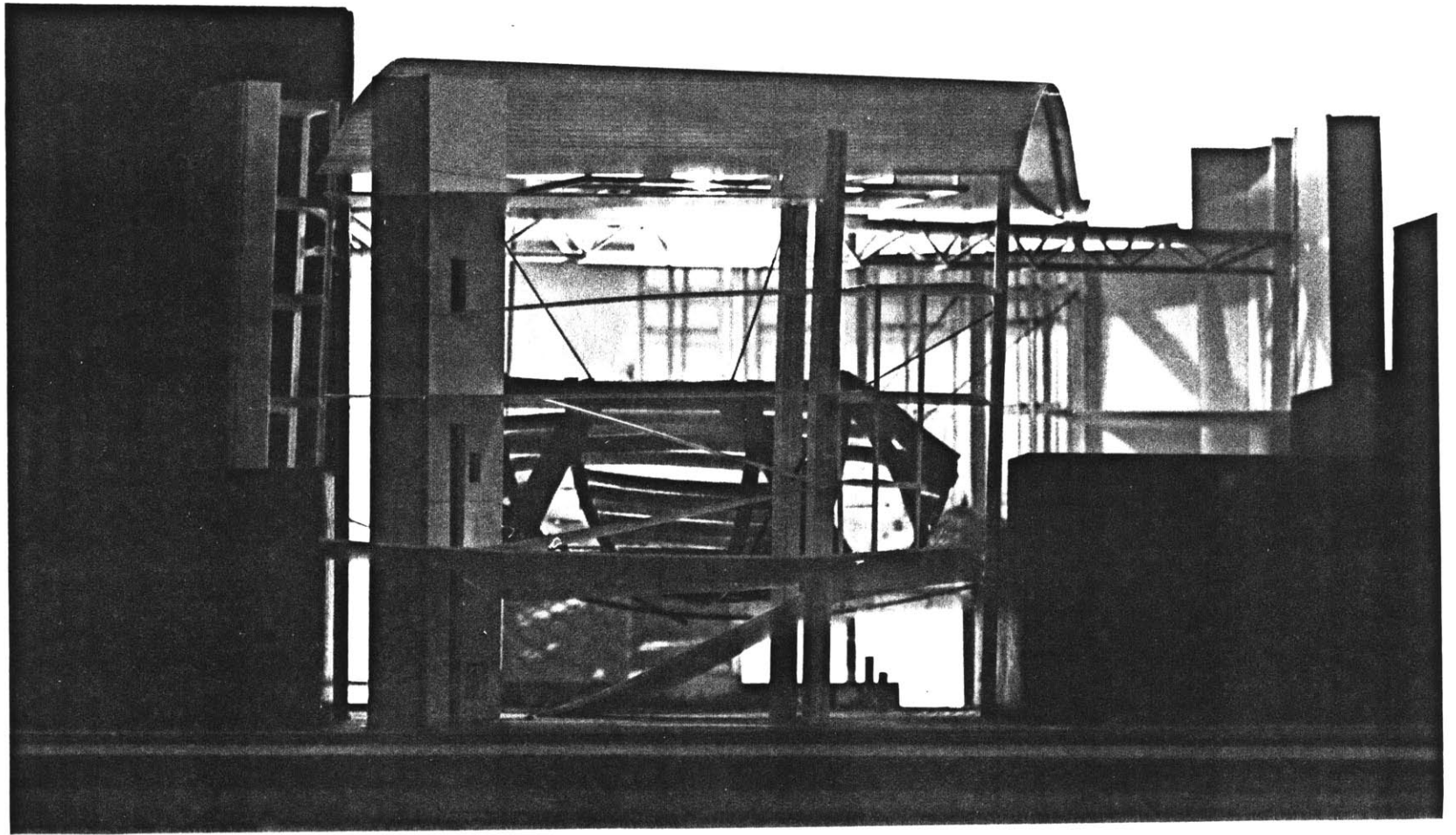


## **The Light**

Light is a crucial factor in any theatre. Lighting defines space and creates moods. The wooden lattice vessel is penetrable by light, its many layers glow as the theatre is lit from below. The effect is one of the vessel as void. The periphery of the theatre becomes objectified and pronounced.

Lit from above, the dance floor becomes stage. The energy and light focuses directly on the center of the theatre. From far away, the city can see the glow of the vessel as it embraces the light and glows in celebration. People have gathered to experience the movement of human bodies in space and time.





## FOOTNOTES

<sup>1</sup> Judith Lynne Hanna, To Dance Is Human: A Theory of Nonverbal Communication, (Chicago: University of Chicago Press, 1987), p. 19.

<sup>2</sup> *Ibid.*, p. 21.

<sup>3</sup> *Ibid.*, p. 22.

<sup>4</sup> *Ibid.*, p. 23.

<sup>5</sup> *Ibid.*, p. 23.

<sup>6</sup> *Ibid.*, p. 5.

<sup>7</sup> Leslie Armstrong, AIA and Roger Morgan, Space For Dance, (Publishing Center for Cultural Resources, 1984), p.9.

<sup>8</sup> Amos Ih Tiao Chang, The Tao of Architecture, (Princeton, New Jersey: Princeton University Press, 1956), p. 5.

<sup>9</sup> Christos G. Athanasopoulos, Contemporary Theatre: Evolution and Design, (New York: John Wiley and Sons Inc., 1983), p. 4.

<sup>10</sup> *Ibid.*, p. xl.

<sup>11</sup> Marvin Carlson, Places of Performance:

The Semiotics of Theatre Architecture, (Ithaca: Cornell University Press, 1989), pp. 128-129.

<sup>12</sup> *Ibid.*, p. 129.

<sup>13</sup> *Ibid.*, p. 129.

<sup>14</sup> Armstrong and Morgan, Space For Dance, p. 9.

<sup>15</sup> *Ibid.*, p.15.

<sup>16</sup> Richard Saul Werman, What Will Be Has Always Been, (New York: Access Press Ltd. and Rizzoli, 1986), p. 21.

<sup>17</sup> Kenneth Frampton, "Reflections on the Opposition of Architecture and Building," A Continuing Experiment, James Gowan, Editor. (London: Architectural Press, 1975), p. 107.

<sup>18</sup> Richard Saul Werman, What Will Be Has Always Been, p. 21.

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Norberg-Schultz, Christian. Meaning in Western Architecture. New York: Rizzoli, 1980.  
"Sports Hall in Levallois-Perret, France" Architektur+Wettbewerbe. Stuttgart: Heinrich Fink (March, 1990; No. 141).

Werman, Richard, Saul. What Will Be Has Always Been. New York: Access Press Ltd and Rizzoli, 1986.



## ACKNOWLEDGEMENT

My education in architecture has been the most challenging and rewarding task I have undertaken. This is just the start.

Thanks so much to all who have encouraged, supported, and inspired me.

I would like to thank especially my thesis committee, Edward Levine, Francesco Passanti, and Richard Tremaglio for being the energetic, wise and inspirational role models. I hope to one day do for someone what you have done for me. Thanks for teaching me confidence and self criticism.

To my family: Mom, Dad, Jean, and Clay. I could have never done it without your encouragement and love.

To Wael, may our friendship last forever.

To The Bad Boys of Architecture, Michael and John, we've only just begun!

John, Bonne, Patrick, Arjun, Jack, and Rich: Thanks for all the help.