

APPROACHING THE NEW:

A CENTER FOR THE RESEARCH AND PERFORMANCE OF
CONTEMPORARY MUSIC

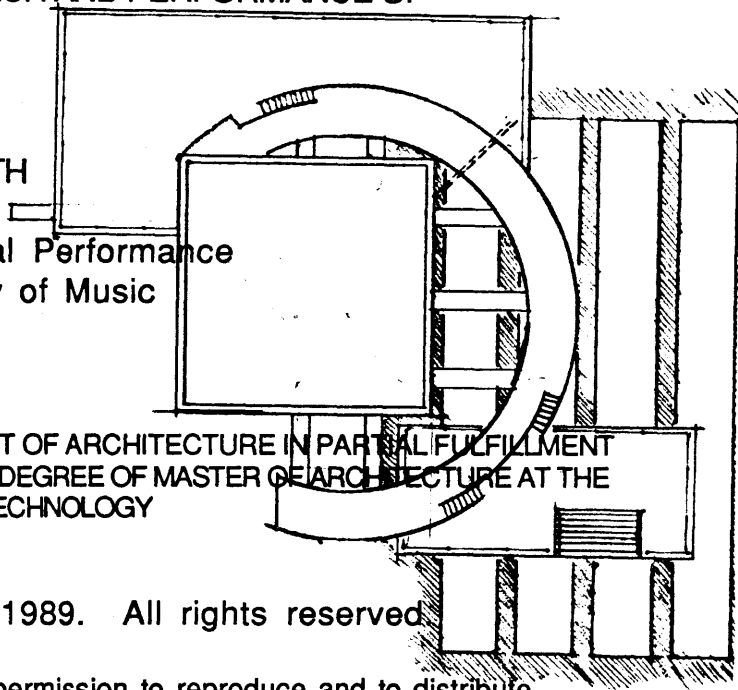
by CAMPBELL H. ELLSWORTH

Bachelor of Music in Vocal Performance
New England Conservatory of Music
Boston, Massachusetts
1985

SUBMITTED TO THE DEPARTMENT OF ARCHITECTURE IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARCHITECTURE AT THE
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Signature of the author

CAMPBELL H. ELLSWORTH
Department of Architecture
January 20, 1989

Certified by

BILL HUBBARD Jr.
Assistant Professor of Architecture
Thesis Supervisor

Accepted by

IMRE HALASZ
Professor of Architecture
Chairperson, Department Committee
for Graduate Studies

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ABSTRACT

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Abstract

This thesis examines the idea that the spatial experience of a place can make the activity of being in the presence of a new art form more understandable, more meaningful and more powerful. The premise is that contemporary art is significant for it reflects the goals and spirit of an era, and that it is important for us all to be conscious of and to participate in that spirit.

The vehicle for this thesis is the design of a center for the research and performance of contemporary music. It is a place where researchers can study, composers compose, musicians perform and audience observe. And here, each of these individuals will experience a new form of an old art.

The form and the experience of moving through the building is intended to bring these individuals, especially the audience, closer to the experience of the new.

Thesis Advisor: Bill Hubbard Jr.
Title: Assistant Professor of Architecture

ACKNOWLEDGEMENTS

this work is dedicated to Heng-Jin

my greatest joy
my deepest passion

My most sincere thanks go out to many:

To Bill Hubbard, for his guidance,
encouragement, humor and style.

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and teacher, for his insight and
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INTRODUCTION



Contemporary music, by definition, is new. It is new music. This newness may include new sounds, new forms, new methods of composition, new technologies, new rhythms, new harmonies, new melodies and new reflections of our world. Unlike previous periods, the greater part of the twentieth century has seen a seemingly irreconcilable distance between the works of contemporary composers and its immediacy and meaning for contemporary society. Contemporary music is certainly not easily defined. Though the following composers of the last half of our century, Babbitt, Berio, Boulez, Cage, Carter, Davidovsky, Harvey, Henze, Ligeti, Machover, Nono, Sessions, Stockhausen, Subotnik, Varese and Xenakis, have all added to the methods of composition, the generation of sound, and the way we hear. These composers have widened the vistas of what music is and what it can be. And yet contemporary music has often been called difficult, intellectual, unlistenable and unemotional.

Music is one of the fundamental elements of human civilization. And contemporary music, as the manifestation of a crucial evolutionary process, reflects the collective energies of a culture, and deserves being heard, studied and explored. Learning from the new, however, is hard work. The senses must be prepared. The spirit must be willing.

The building designed here is a center for the research and performance of contemporary music. It is a place where researchers, composers, performers and audience can take an active part in the evolution of this artform.

The programmatic requirements of such a center would consist of the following:

Laboratories, equipped with the latest technological advances in synthesizers, computers and sonic analyzers.

Main computer room

Workshop for the development of new technologies

Offices

Classrooms and meeting rooms.

Library, for storage and study of both written and recorded works.

Lounges

Performance hall, adaptable for a variety of uses and technologies.

Warm-up and rehearsal rooms

Storage

This thesis explores the idea that the architecture of a place can add positively to the preparation of the senses and spirit, so that the experience of the new can be more understandable, more meaningful and more powerful. In this design I have tried to identify a journey of specific emotional states that can prepare of the individual, and then I have tried to find physical form that will encourage that journey. These states might be summarized as follows:

Recognition - of what is ahead, the understanding that you are moving toward another world.

Separation - by choice, leaving behind the actual world, the world of the street and of chaos and of mixed and unordered technologies. It is through the process of separation that one can work toward...

Reorientation - to the world of the new, shifting the axis of the senses to see more, feel more, hear more.

Confrontation - not aggressively and closed, but freely and open, willing to take risk, because failure doesn't mean weakness.

The building must be a journey that reinforces and strengthens these states. The journey must break through the formerly sacred boundaries of composer, performer and audience. The sound production of acoustical music is understood, e.g. bow is drawn across a string and sound is produced. In contemporary music employing electronic and computer technologies to generate sound, the same internalized understanding is not yet present. In this design I have tried to offer the individual an association with the processes of this research and composition, primarily through visual contact, to plant the seeds of a new understanding. The journey must allow the individual to peer into the places that he would not customarily go. The building must strengthen the individual in his choice to participate in the experience of the new.

The design for this building is informed by my understanding of spatial relationships, and the attempt to focus those relationships and achieve a particular goal. I have thought of the different areas in the building as individual pieces and, through the drawings, have tried to explore an attitude as to how these pieces might be built.

The design for this building is inspired by many things. I have looked to the writings of contemporary composers, for their observations of their own compositions, for their insights into their personal compositional processes and to their speculation as to the future of contemporary music. Though not the specific thrust of this thesis, I have tried to incorporate the analogs of the compositional process into the formal decisions that I have made in this design. I have reexamined my experiences as a performing musician, as one trying to communicate through the medium of sound. And I have turned to the music itself, the music whose children might be born in this building.

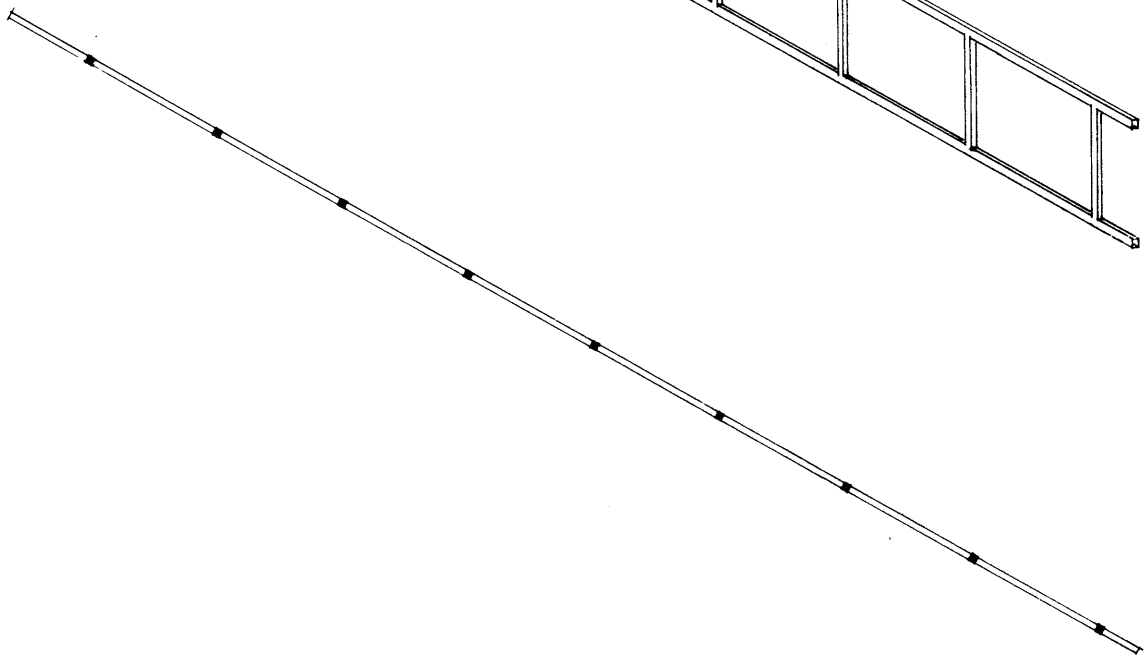
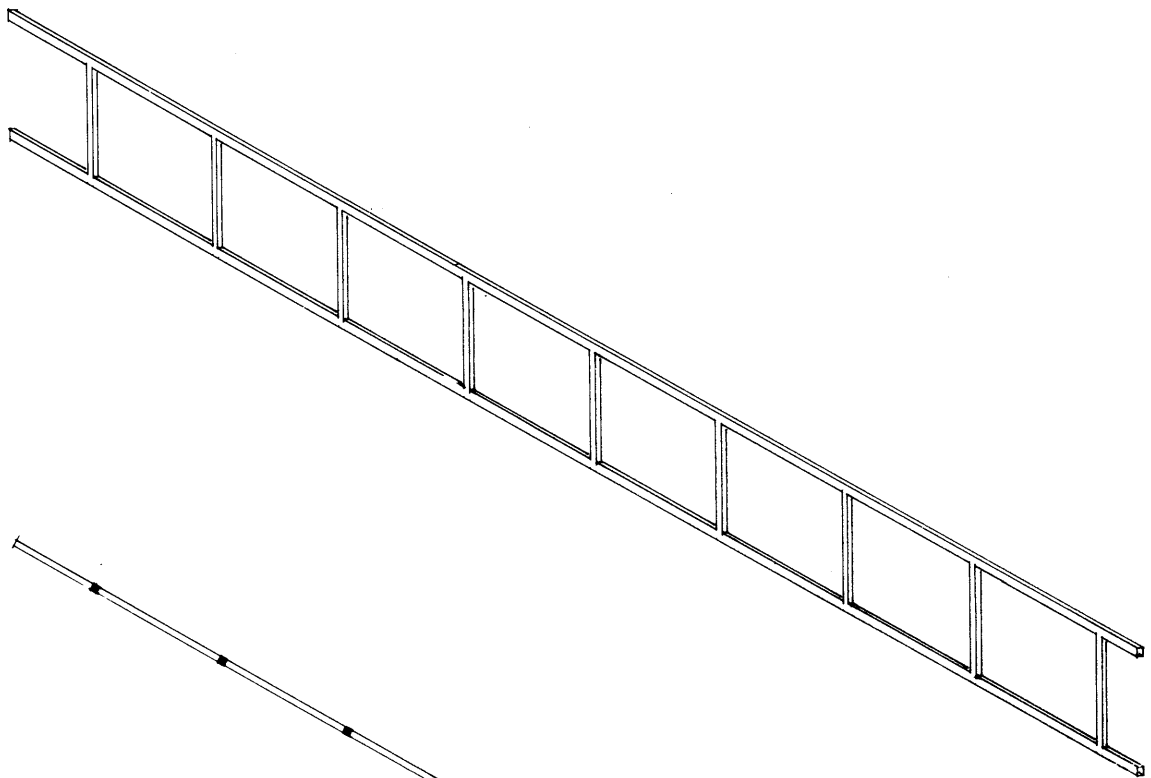
RESEARCH

At any point in time there exist simultaneously nearly all the preexisting technologies. The oldest and the least useful will, of course, be lost or forgotten, but the spectrum of available technologies is still vast. Contemporary musical composition might employ the most powerful computers in the real-time analysis and synthesis of the nuances of the human voice. And yet this new musical instrument might very well be combined in a composition with a woodblock, the modern equivalent of banging two sticks together.

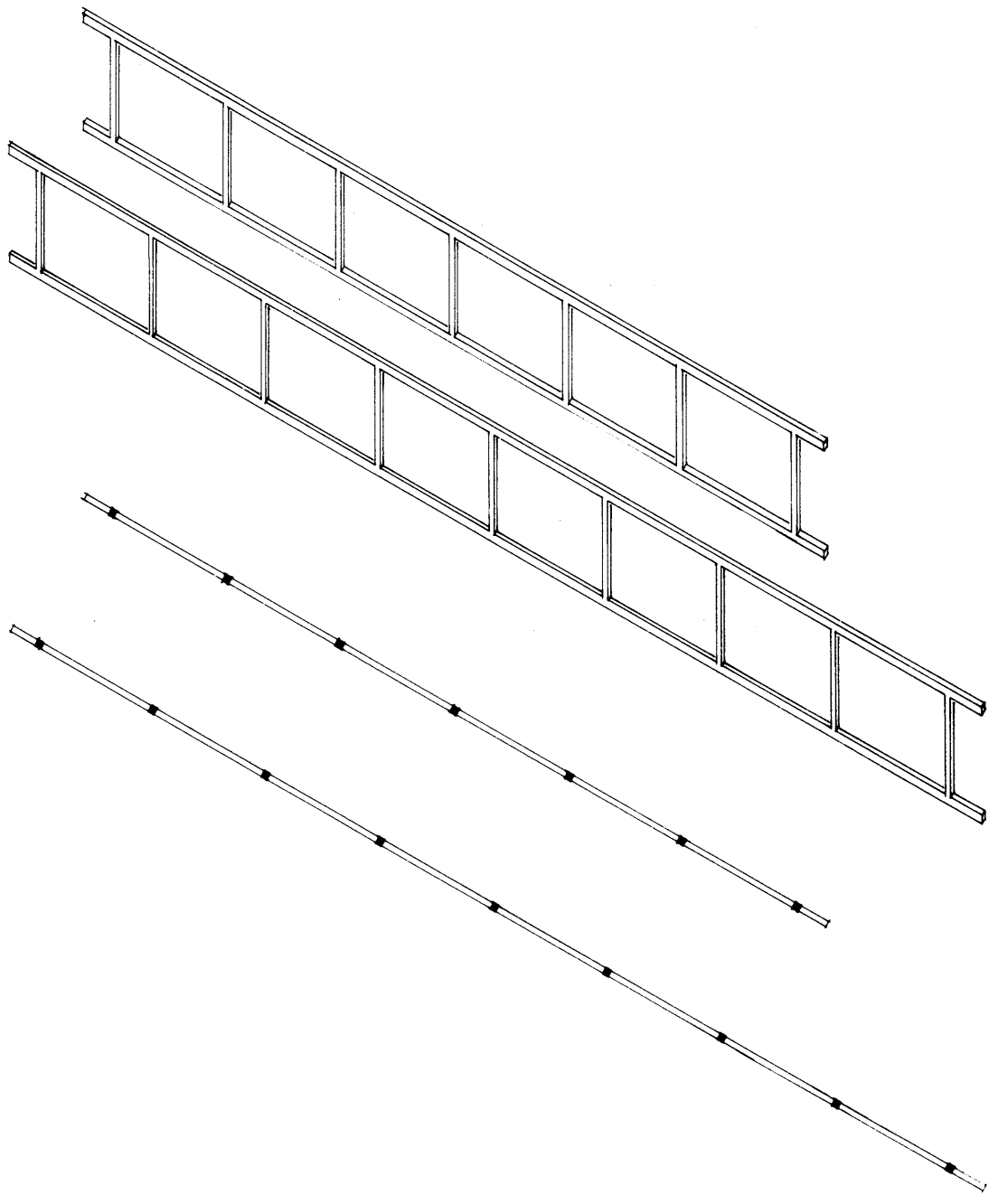
Reseachers and composers in this center will be working with the newest and most powerful technologies that are available. Applications of expert systems, artificial intelligence and sophisticated sonic analysis will open up new ways of hearing and composing. Today's technologies change quickly, and the work spaces must be adaptable to that change.

The place of research should encourage experimentation. It should enable risk-taking. It should offer connections and integrations. It should allow intense individual concentration. It should foster community. It should let its users feel more with their minds and souls, and say more with their work.

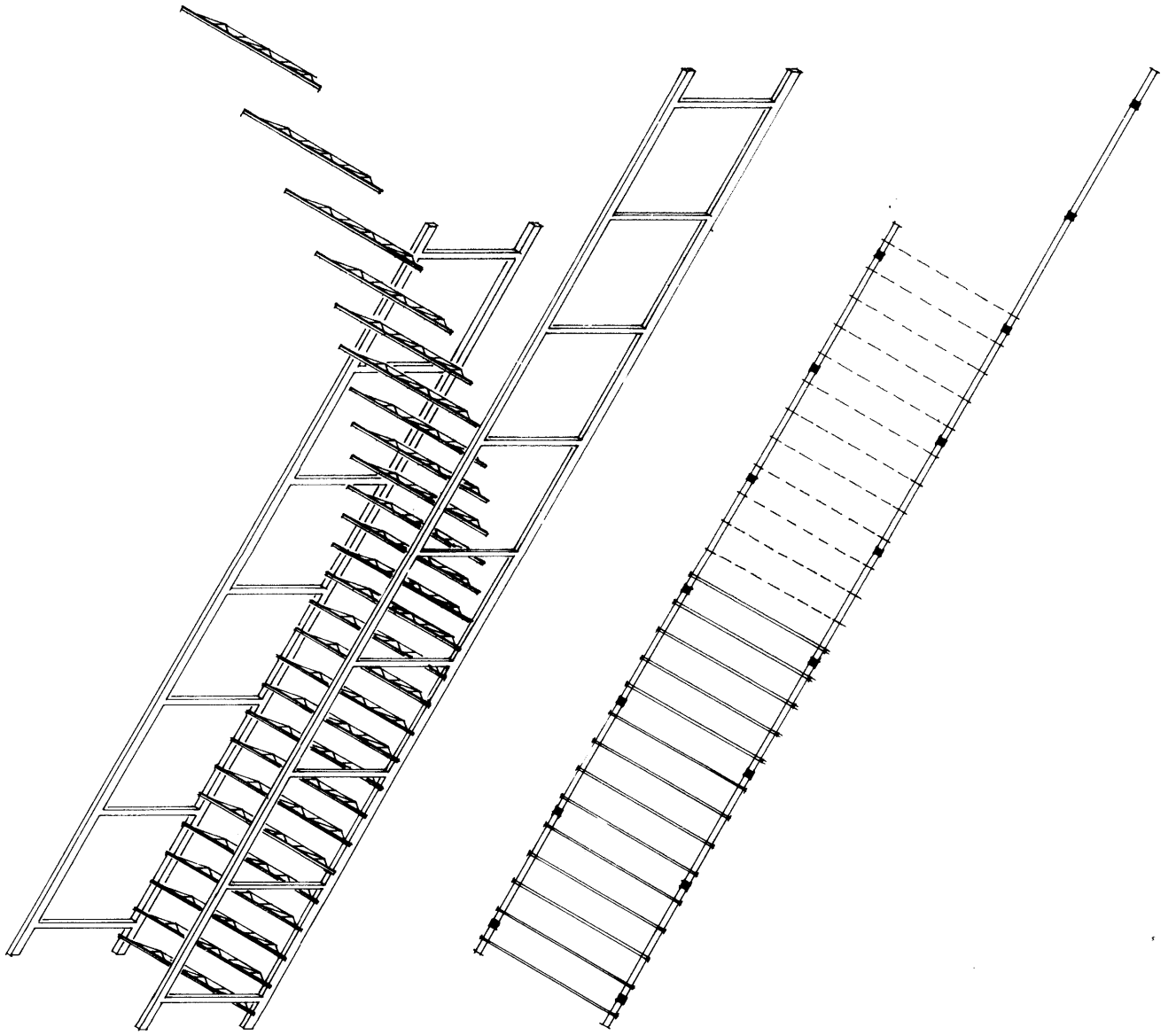
The process of research and composition calls for concentration, sonic isolation, the ability to separate out distraction. The place of research begins in the air.



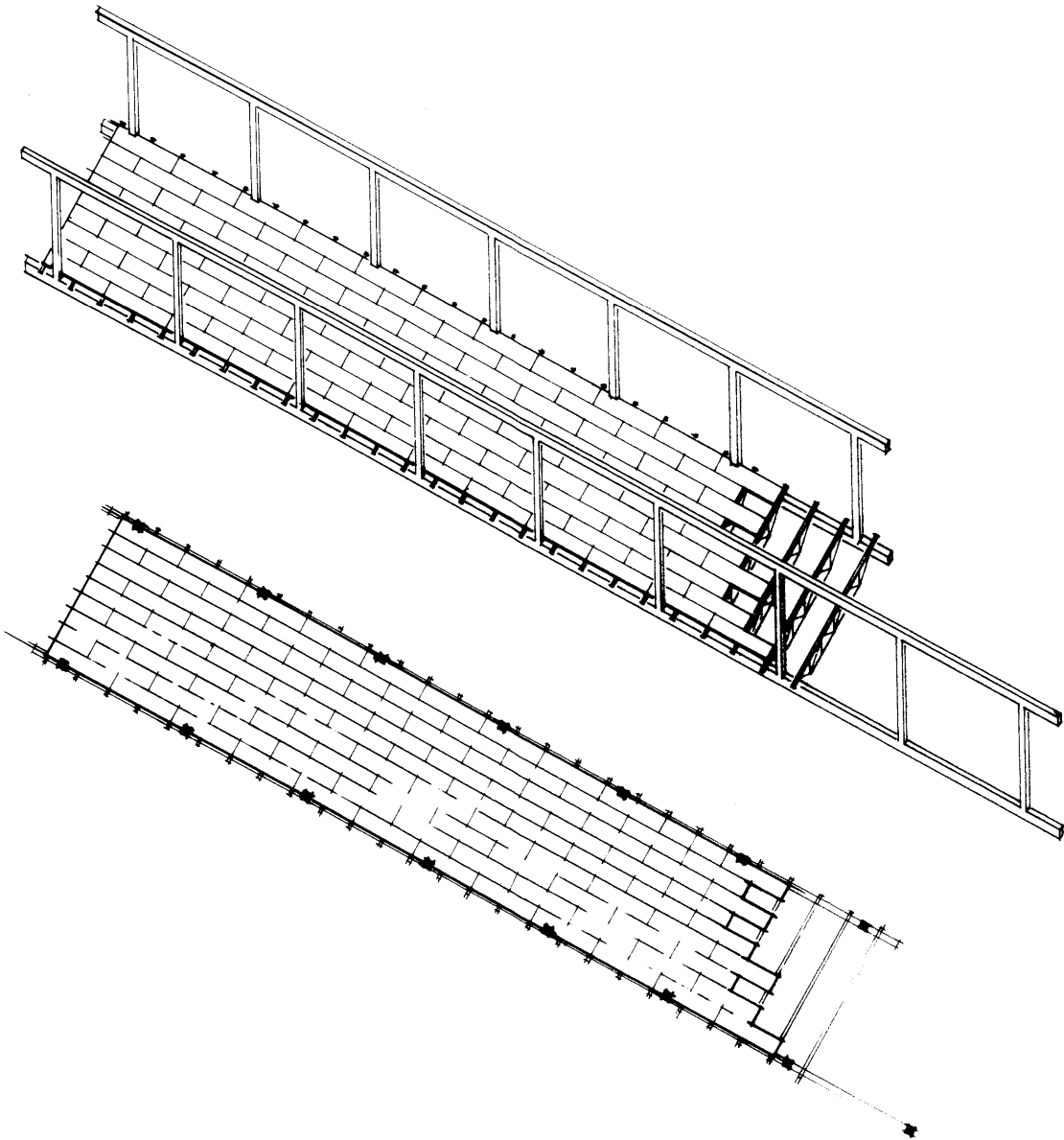
The framework for the labs and offices begins as two large Vierendeel trusses, perhaps of different lengths.



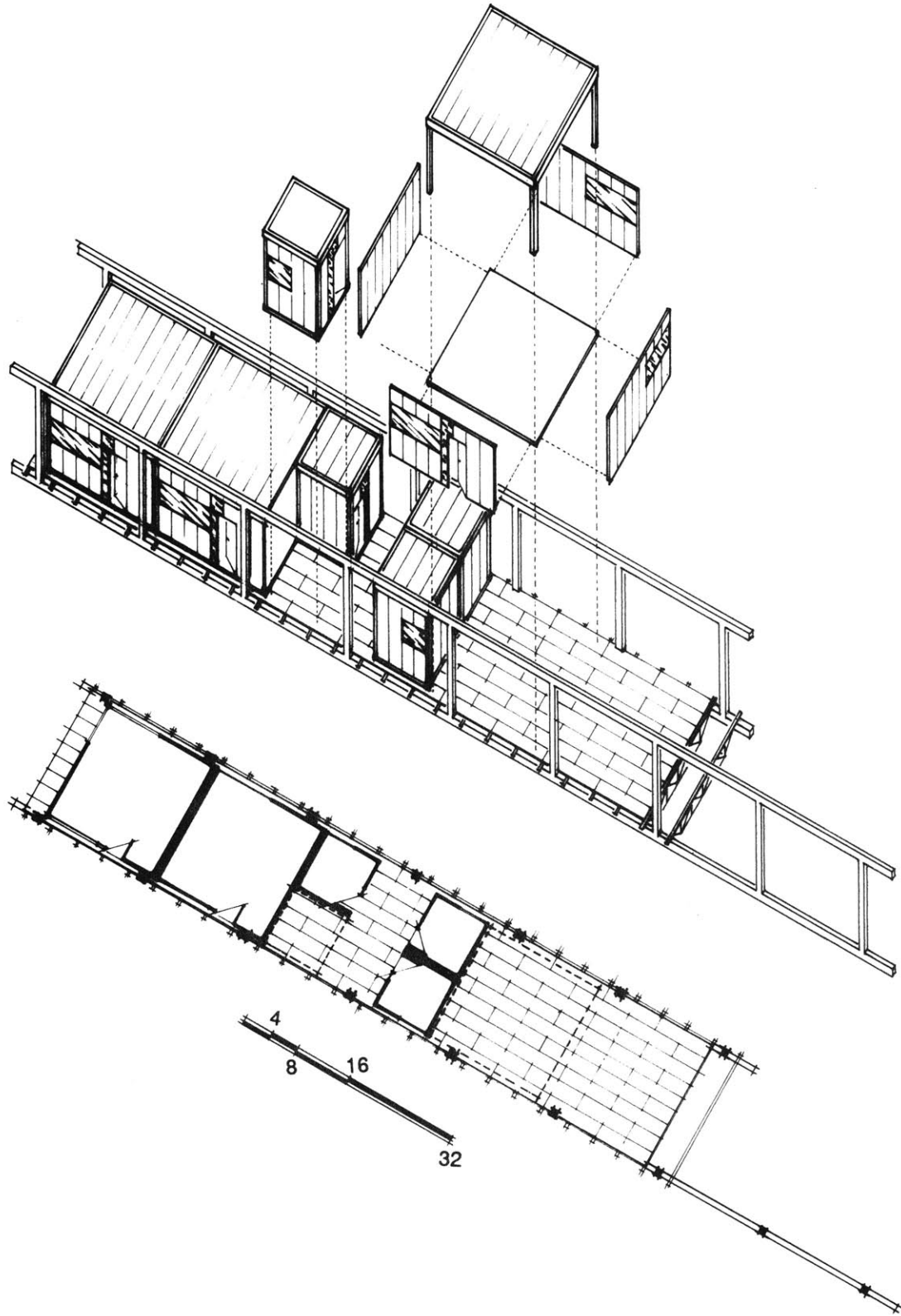
A set of lightweight floor joists are laid in between the trusses. These span the nineteen foot gap and begin to unify the structure.



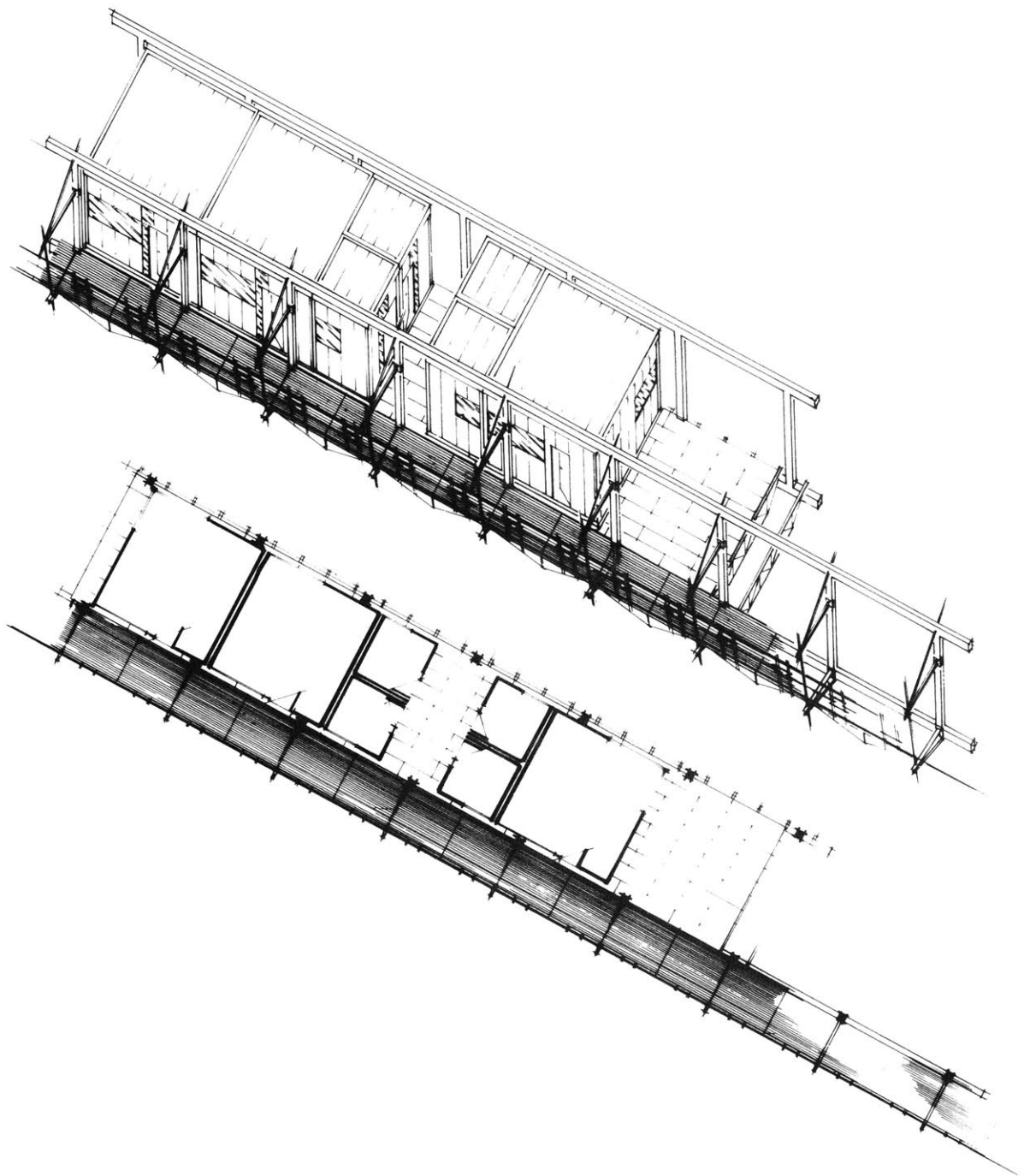
Floor planks (2 feet by 8 feet) provide a solid working surface. The interlocking pieces, attaching to both the joists and to themselves build the rigid stability of the floor.



Individual prefabricated sound-insulating rooms are arranged as needed on the new work surface. The larger (sixteen feet on a side) serve as laboratories, while the smaller (eight feet on a side) are used as offices or individual work areas. Each room is given light on at least two sides. Areas on the floor that are without rooms are used as lounges for the researchers.



An access walkway is suspended from the outside of one of the Vierendeel trusses. This provides entry into the labs, the spaces between the offices, and to the lounge. The walkway can also continue, freely in the air, to intersect with other areas that lies beyond.



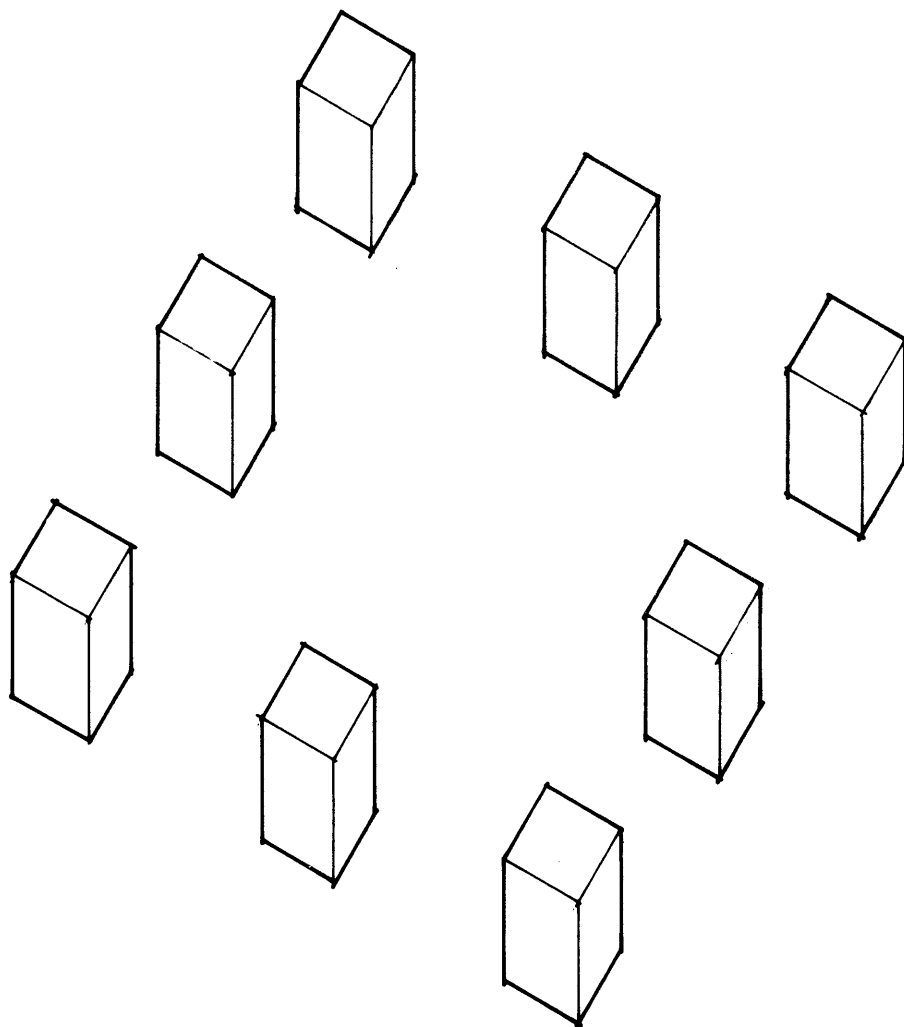
PERFORMANCE

I look at music as the transformation of the thoughts and emotions of an individual into the medium of sound, and then back into the thoughts and emotions of another individual. Regardless of the care taken in the preparation of the score, or in the hours of rehearsal, it is only through performance that music is most capable of moving the soul.

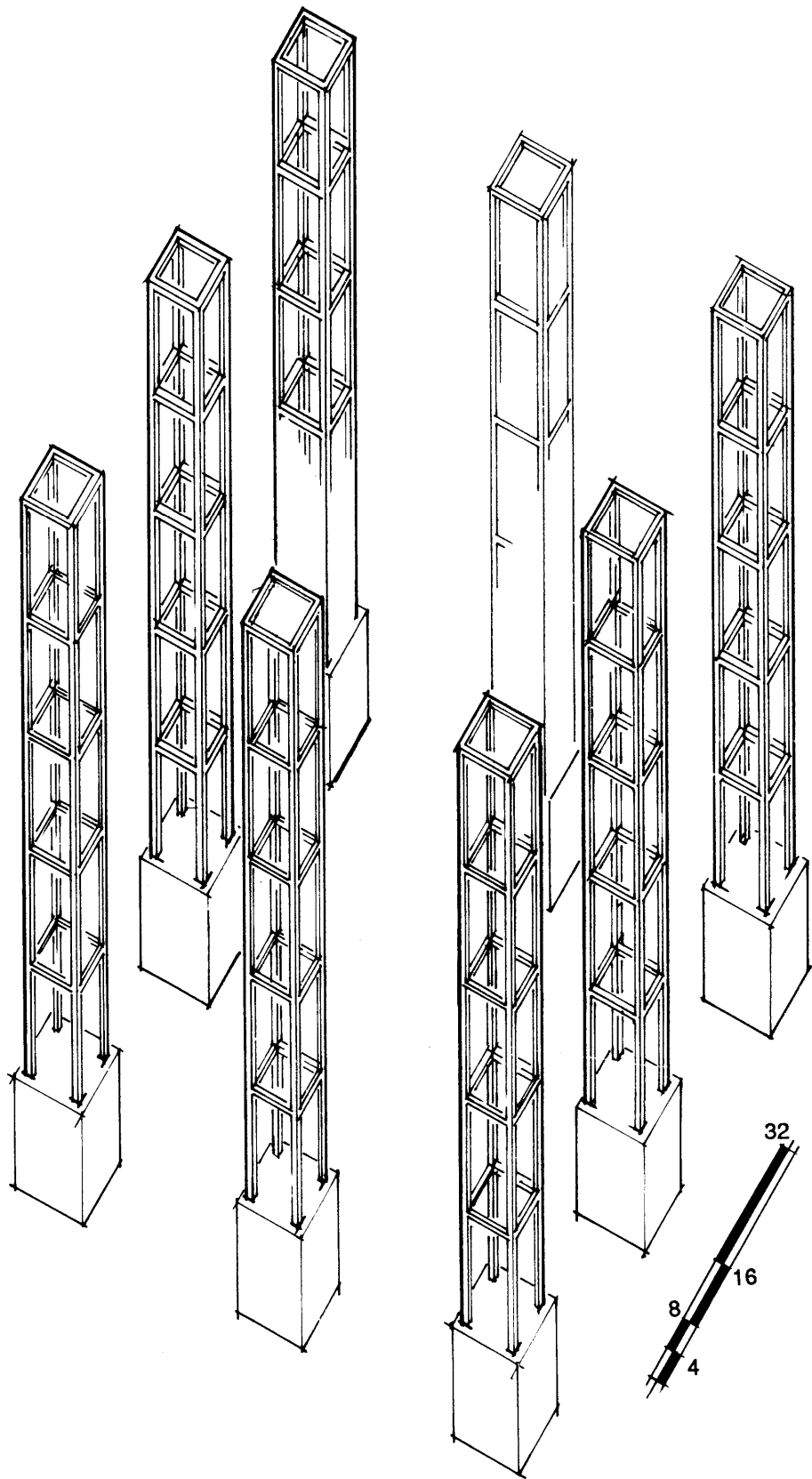
As the performance is the final unlocking of creative potential, so too the place of performance is the culmination and final understanding of the building as a spatial experience. In this building the performance space takes on the geometrical form of a cube. This is not a concert hall which is buried within a structure, but a clearly defined spatial event, emancipated from the largest elements of the building. Most of the cube's six surfaces are exposed. Because the cube is conceptually understandable from its exterior, the mind can then begin to pattern the interior of the space, preparing for the experience of the performance.

Everything is not performance. But performance can be many things. I have attempted to provide a physical environment with many possibilities, one that can add to, not limit, the creativity of those using the space. What is built should not, by itself, intensify the distinctions between performer and audience. The separation or the integration of these individuals can then become a choice and not a given. As technology is a tool for redefining the way we create and hear, this performance space will be a tool for redefining the way we observe and participate.

The cube demands a sturdy base. Eight concrete feet, 9 feet on a side and 14 feet high, will support the cube, allowing movement beneath the performing area and access up into the cube from below.

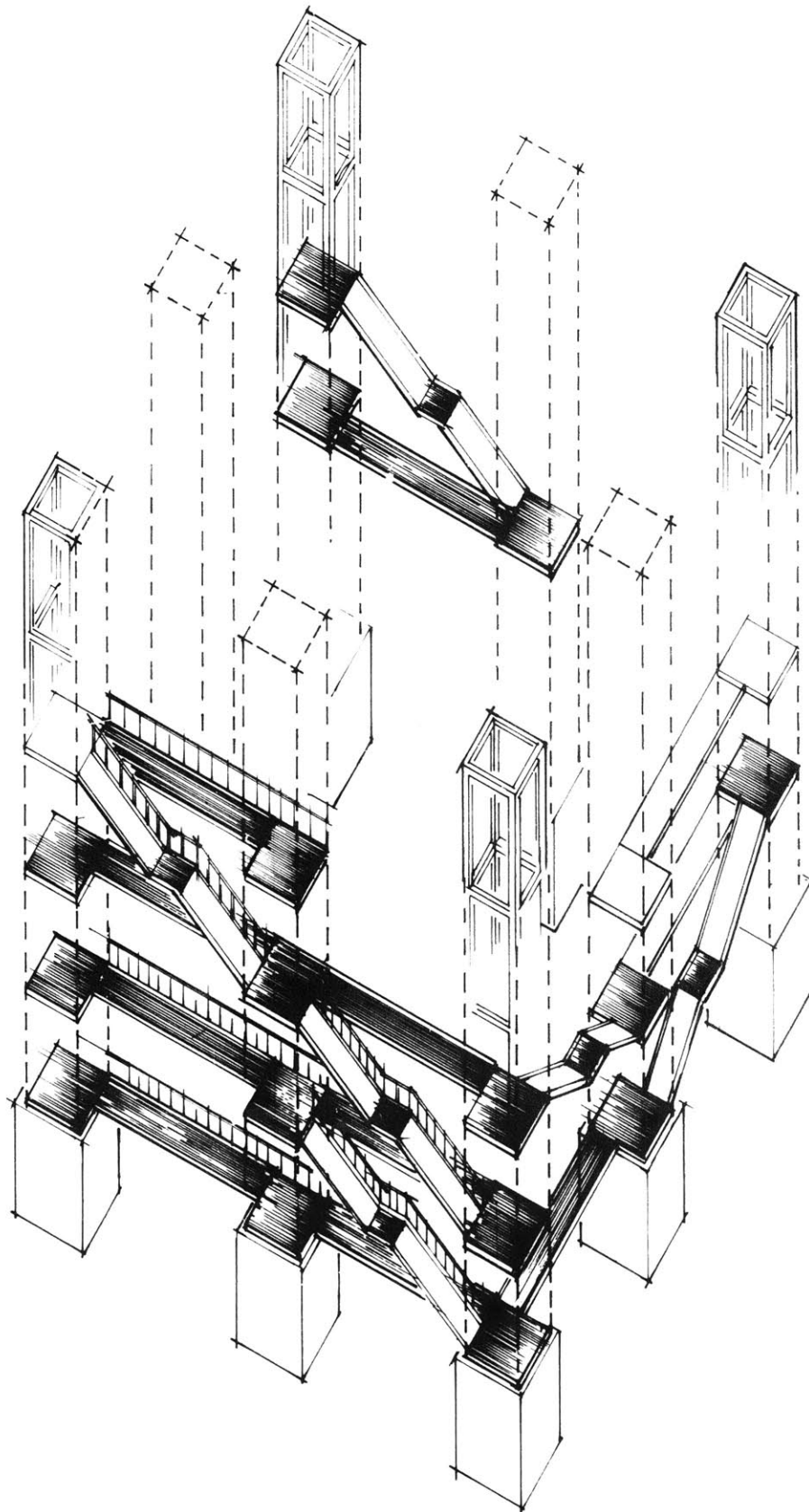


Eight glistening steel towers rise from the concrete, each 70 feet tall. The towers begin the framework that will allow both audience and performers to rise up into the space.

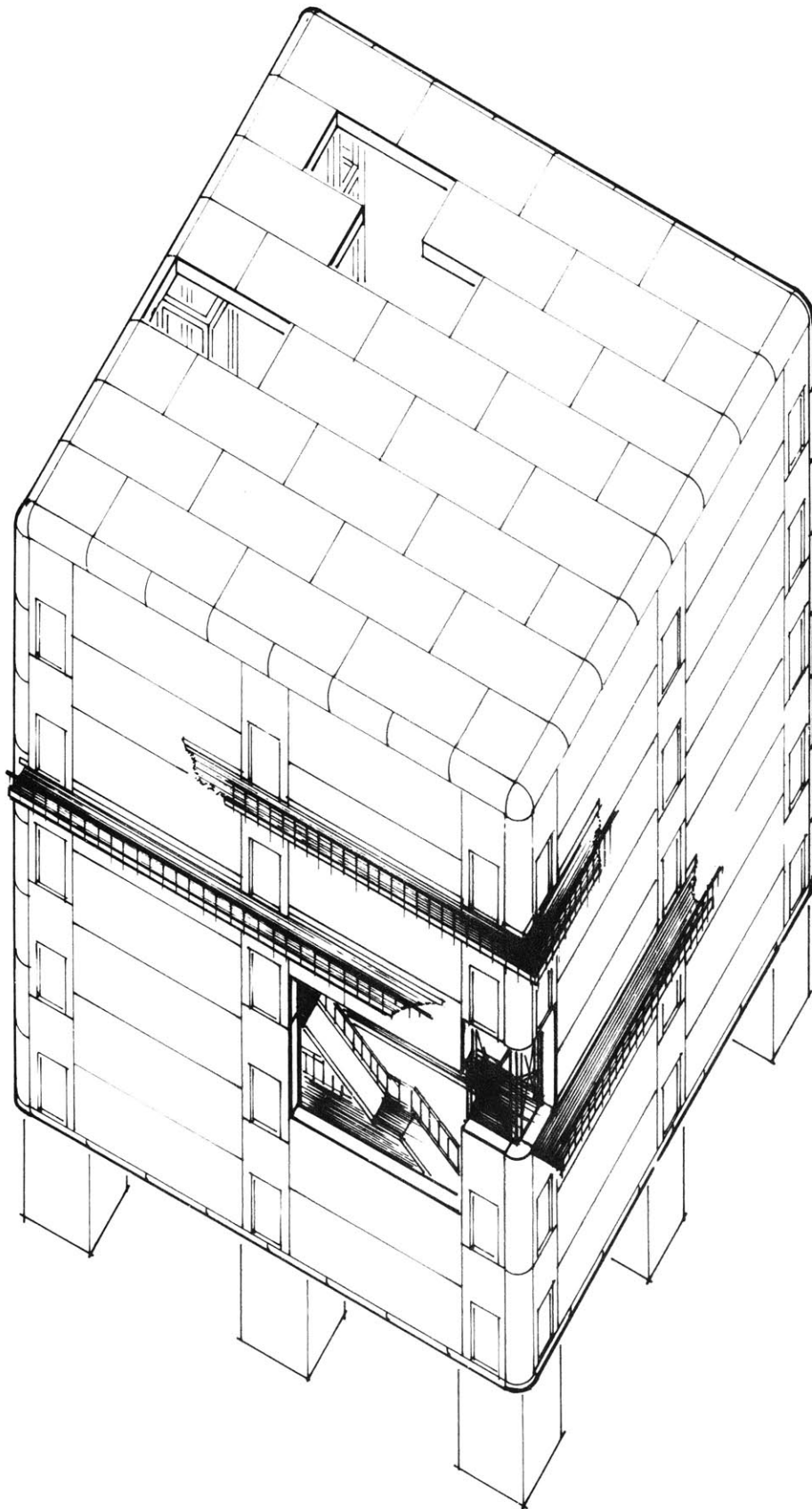


A movable system of platforms, stairs and walkways is deployed as the particular performance requires.

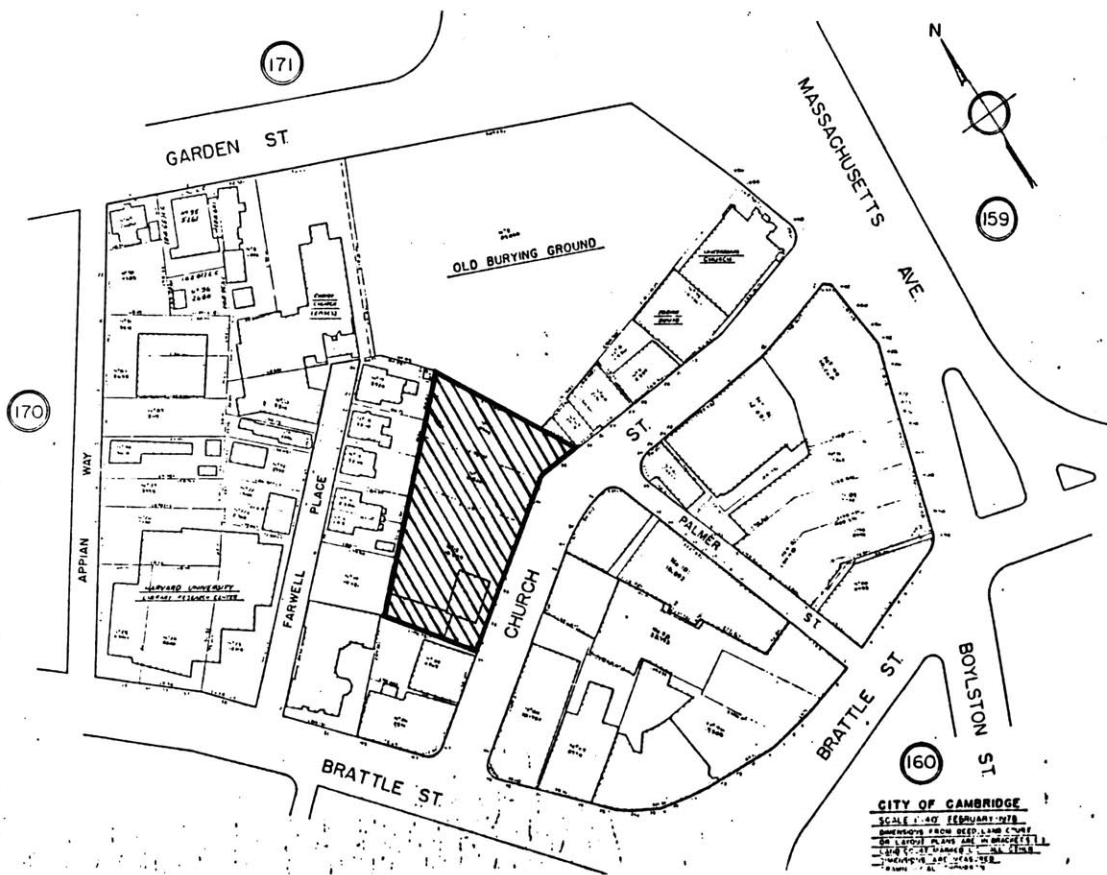
All horizontal surfaces are wide enough for seating and access. The system provides connection between the towers, and can be used to cantilever into the volume of the cube.



Two foot thick sound insulating panels are attached to the outside of the frame. These form a weatherproof surface, for some areas of the skin will be inside the building, and some out. A system of outer walkways provides circulation around and up and down the outside of the cube, for both performers and audience.



THE SITE / THE BUILDING



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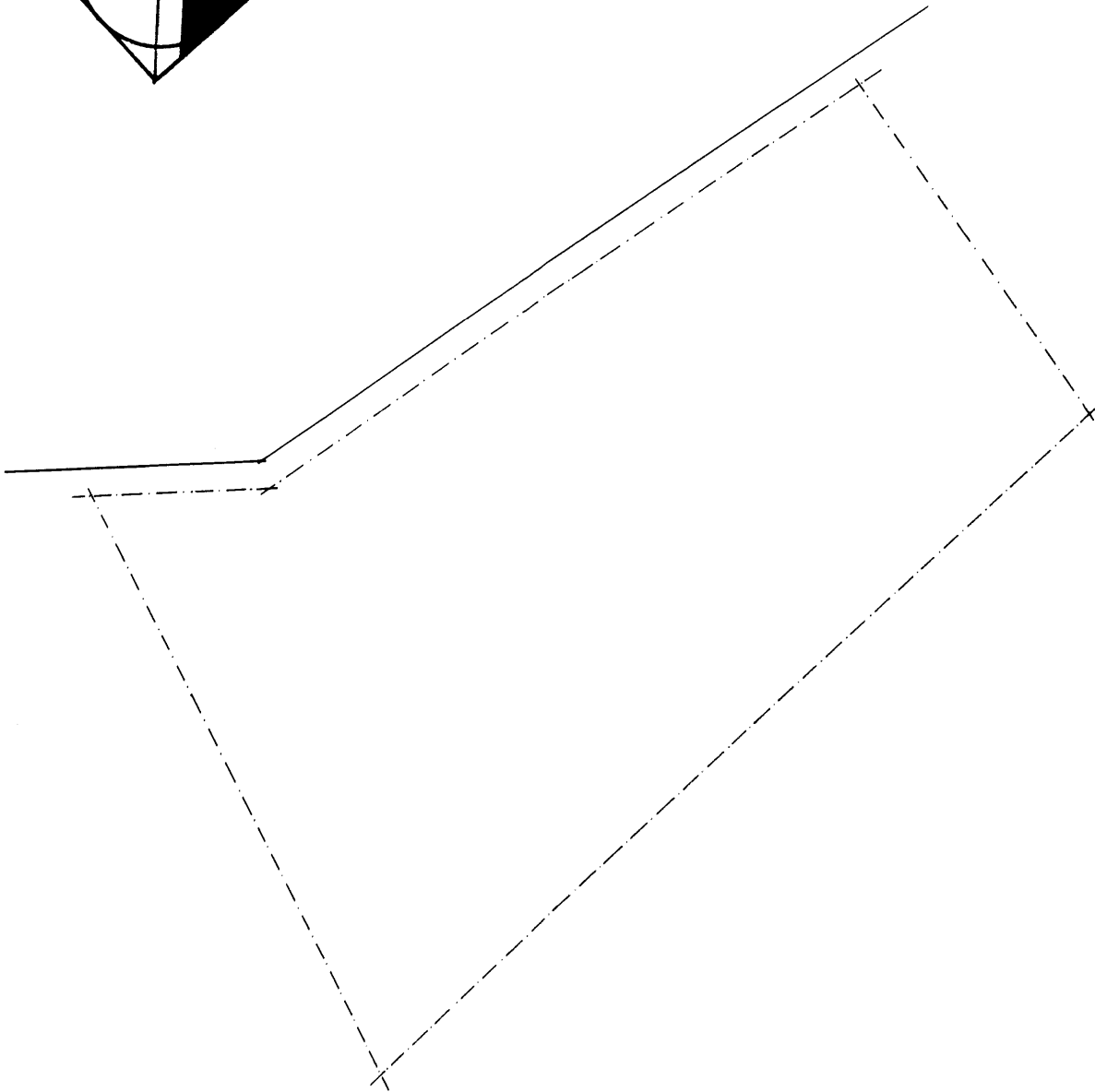
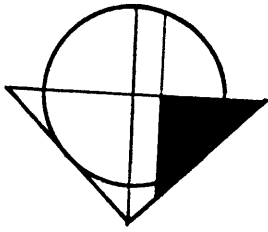
Church Street is the forgotten step-child of Harvard Square. From Massachusetts Avenue, the first 150 feet offers an impenetrable canyon, with the church and parish house on one side, and the brutal wall of the Harvard Square Cinema on the other. The rest of Church Street contains a hodge-podge of retail establishments, from colonial to modern, from one to five stories. In general the sidewalks are either poorly cared for or are too narrow to walk two abreast without hitting a bent signpost or an awkwardly placed parking meter. Because of this poor planning, Church Street misses out on the opportunity of completing the circuit that is offered by the voracious activity of Massachusetts Avenue and Brattle Street.

The site for the Center for Contemporary Music is owned by Harvard University (of course) and is currently used as a parking lot. Its greatest attributes are its extended frontage on Church Street, and its spectacular view of the Old Burying Ground. The back of the site shares a common garden wall with four small homes, now out of scale with the burgeoning development around the Harvard Square area. There are two small existing buildings on the site which, for the purpose of this design, are removed.

The choice of this site stems from my desire to bring this new artform into direct physical contact with as many people as possible, yet not be so centralized within the Square. With Church Street still being secondary in the hierarchy of streets, this site is still a place which one must make an effort to get to.

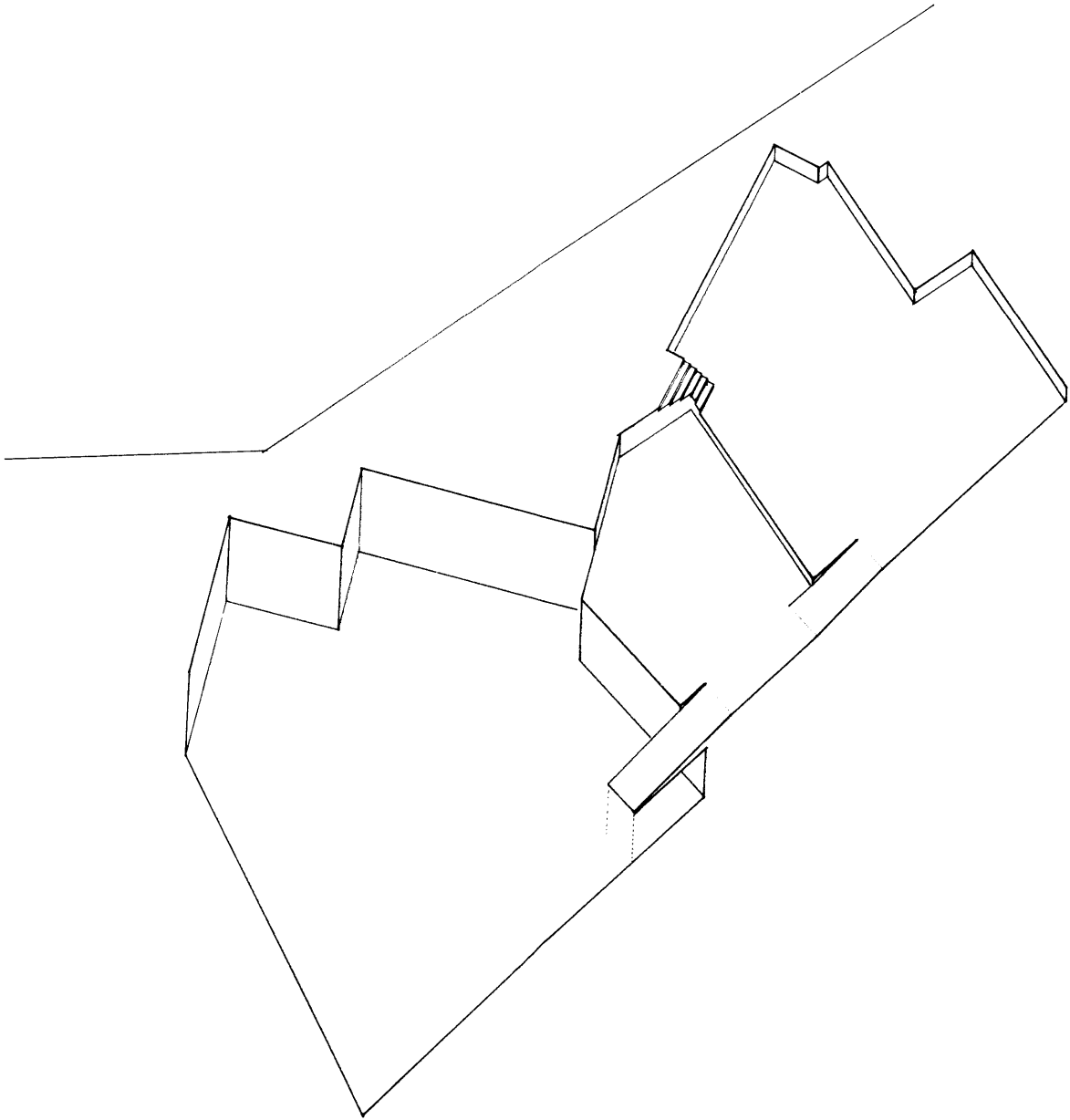
Consideration of Church Street suggests that the visual continuity of the street edge be maintained. I have also chosen to give a piece of the site back to the street in the form of a public plaza. This offers a place to rest, and is a formal response to the bend in Church Street and to the intersection of Palmer and Church streets.

The site contains nearly 32,000 square feet, with over 240 linear feet of frontage on Church Street.

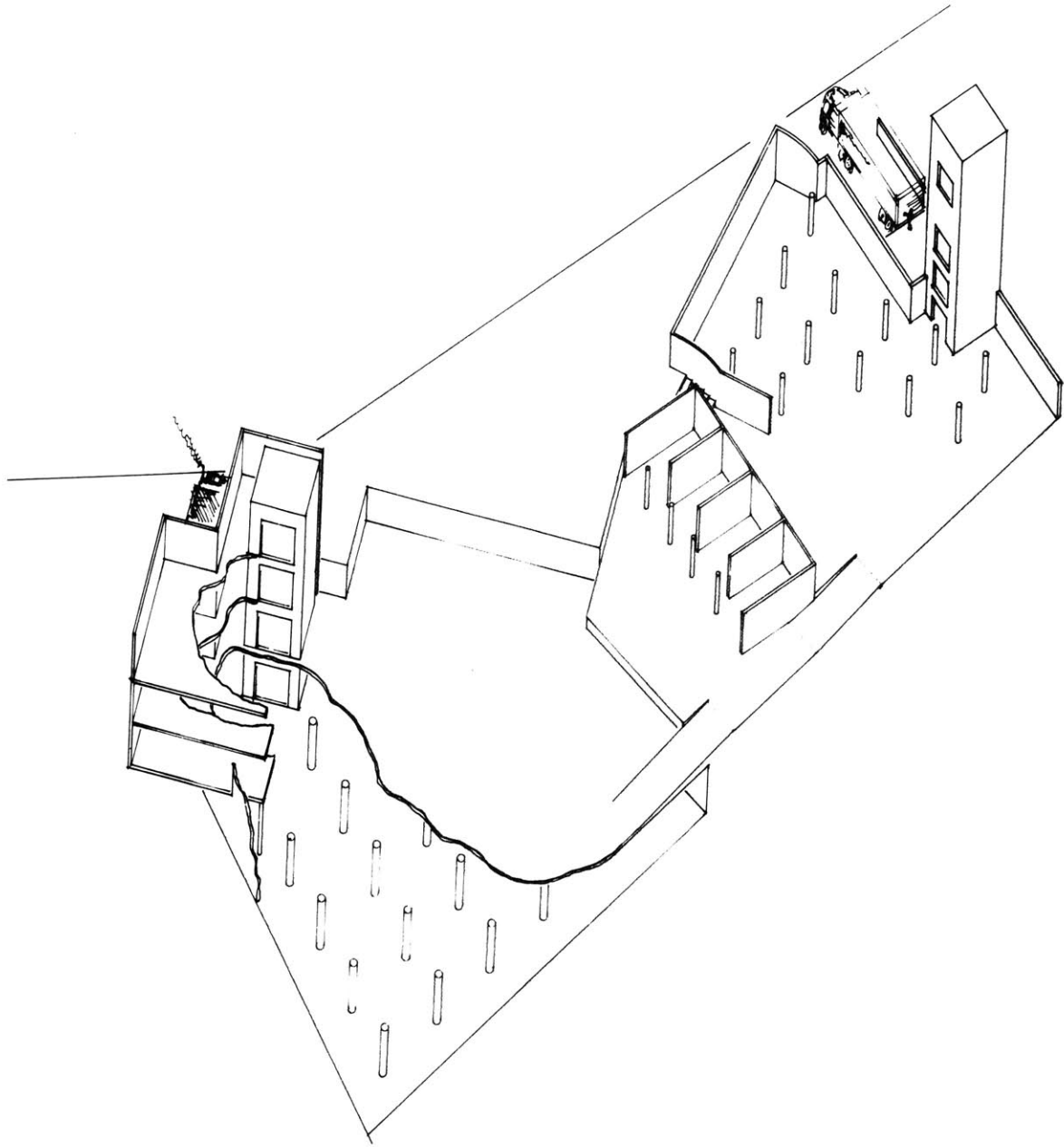


The site is excavated at -4 feet, -6 feet and -23 feet (this deep area will hold an intermediate floor at -9 feet). The site therefore flows downhill from a shallow end to a deep end. The stairs carved into the site will provide a private entrance for the researchers and composers.

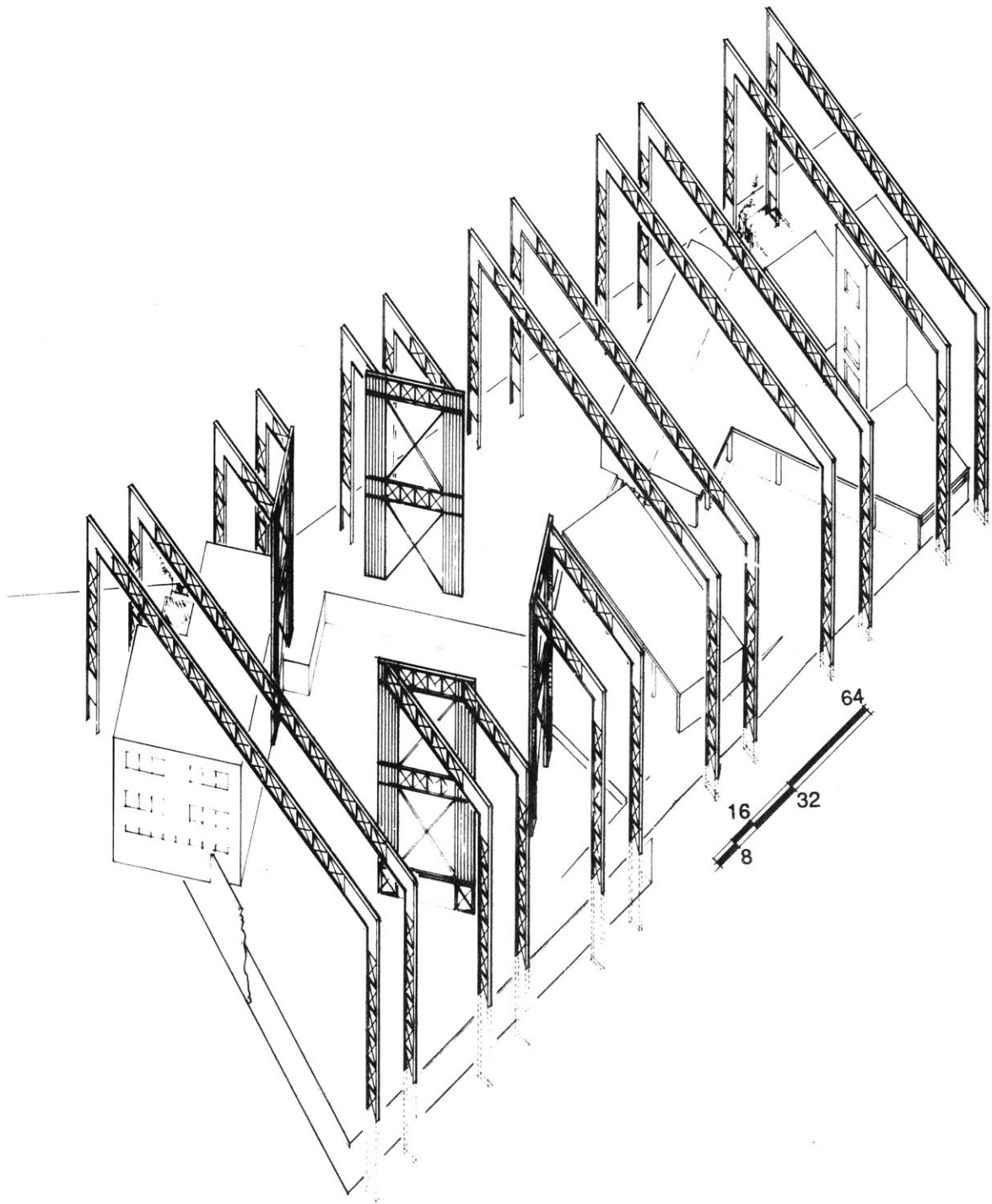
The large uncut triangular shaped piece of the site on Church Street is left at grade, and will be an exterior public plaza, available to the street, yet within the influence of the building.



The shallow end at the top houses a library and the lower level of the research area. The four rooms built at the next level down contain labs that require the greater sonic insulation of the earth, such as the anechoic chamber. The deepest part of the site will be used for the storage of large and heavy equipment, for both the performance and research facilities. The cut-away floor at -9 feet is the surface upon which the legs of the cube sit. It also provides the working area for the construction of sets, repair of equipment and temporary storage. The small building on the left has a loading dock, freight elevator and various rehearsal and warm-up rooms for the performers.



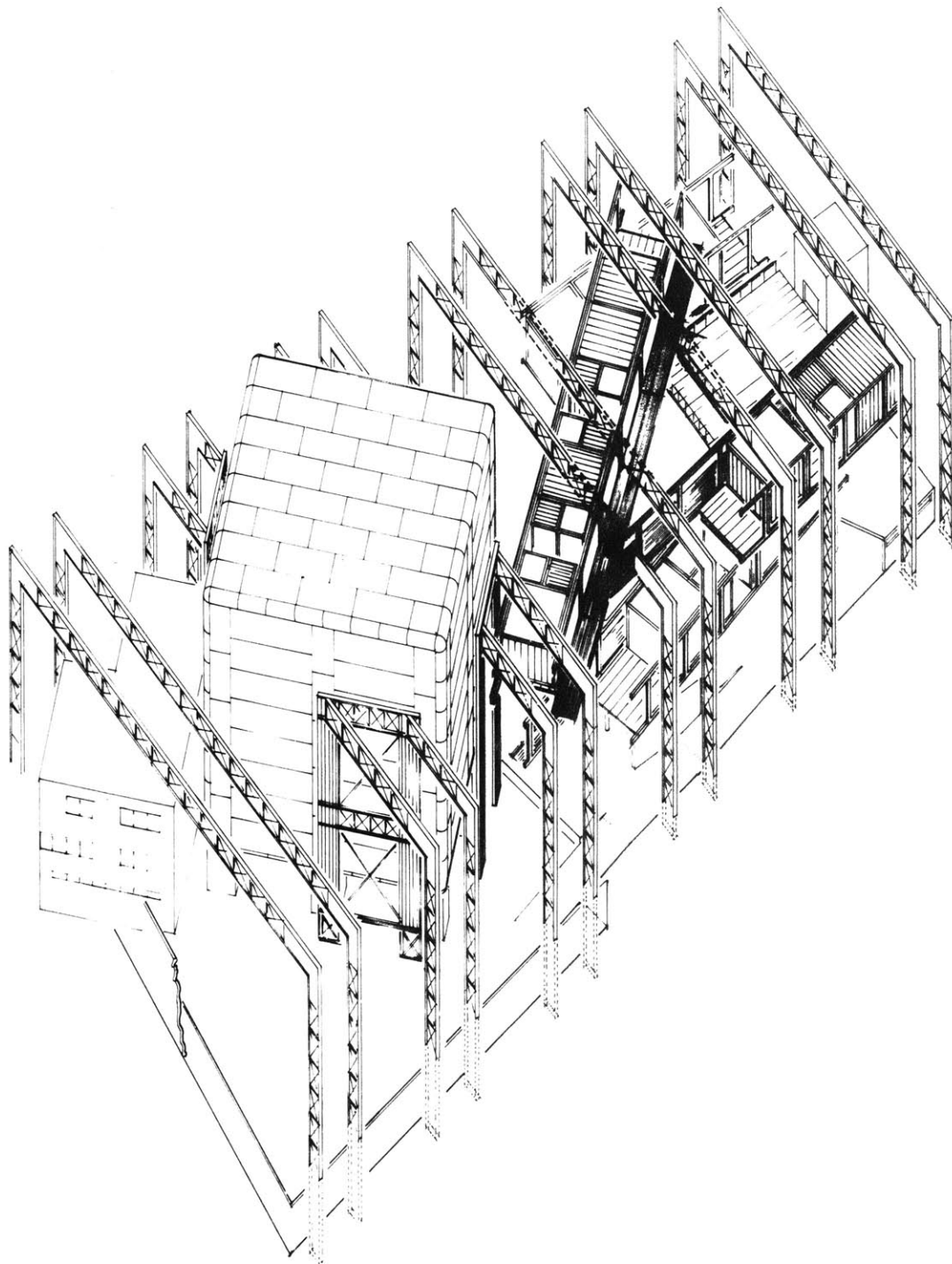
Over the entire site is the major structure, consisting of pairs of steel trusses which cross the width of the site. The rhythm and regularity of the structure is interrupted only by an area slightly larger than that of the cube. Where the structure is interrupted, the forces are brought to the ground by large steel screens. The closure system, steel frames with glass and opaque panels, is suspended beneath the structure. Thus the structure is the outermost element of the building. On Church Street the vertical truss members reinforce the street edge, while the suspended closure system can peel away from the street edge, allowing for the creation of the plaza.



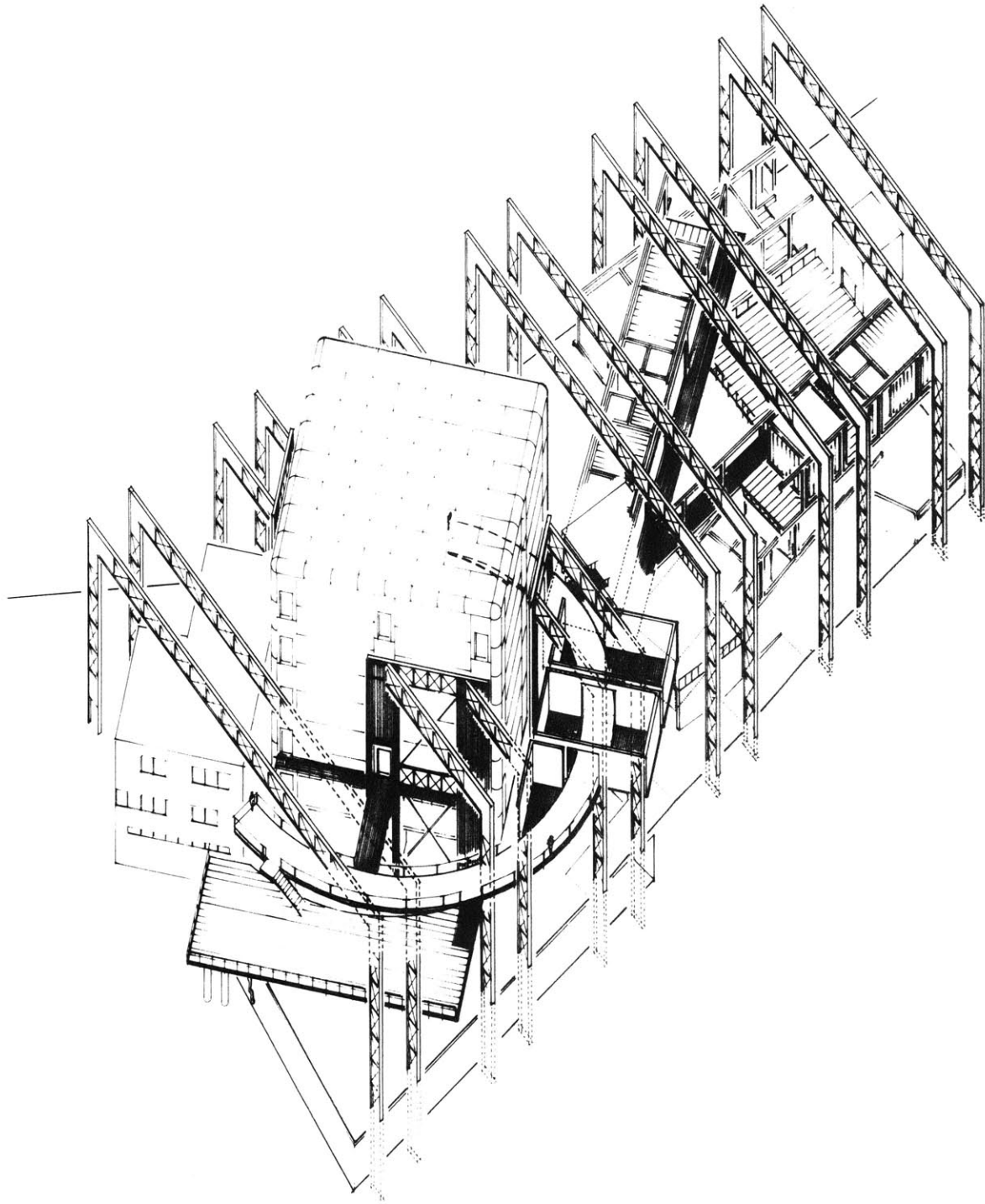
Here the cube and the four office elements are in place. The cube is planted firmly in the ground. The steel screens, parallel to the cube's surfaces, stay eight feet away. The four office and lab pieces are freely arranged, hanging from the structure.

The longest piece extends into the zone of the cube, allowing easy connection to the performing space.

Thus the last lab becomes a sound and control room for the cube.



Finally, a ramp, spiraling gently upward, takes you out of the world of the street and into this new world of sound. The ramp begins at grade outside in the plaza. After penetrating the closure you can deal quickly with information, schedules and tickets. You are passing under a rack of laboratories suspended high above your head. Looking left you can see more racks floating freely beneath the structure. The ramp nearly touches the cube. As the ramp rises, grade has fallen away to -6 feet. You are 12 feet in the air. You enter into three partially defined galleries, each parallel to the face of the cube, in which there might be an exhibition or simply empty space. The tops of the galleries are open and you can see the next corner of the cube approaching. As you rise up out of the galleries the ground has fallen away further. You are nearly 25 feet in the air. Continuing, you are invited off the ramp to a large suspended floor, which extends through the glass to an exterior balcony overlooking the cemetery. There are many doors into the cube, but only one bridge will lead you in.

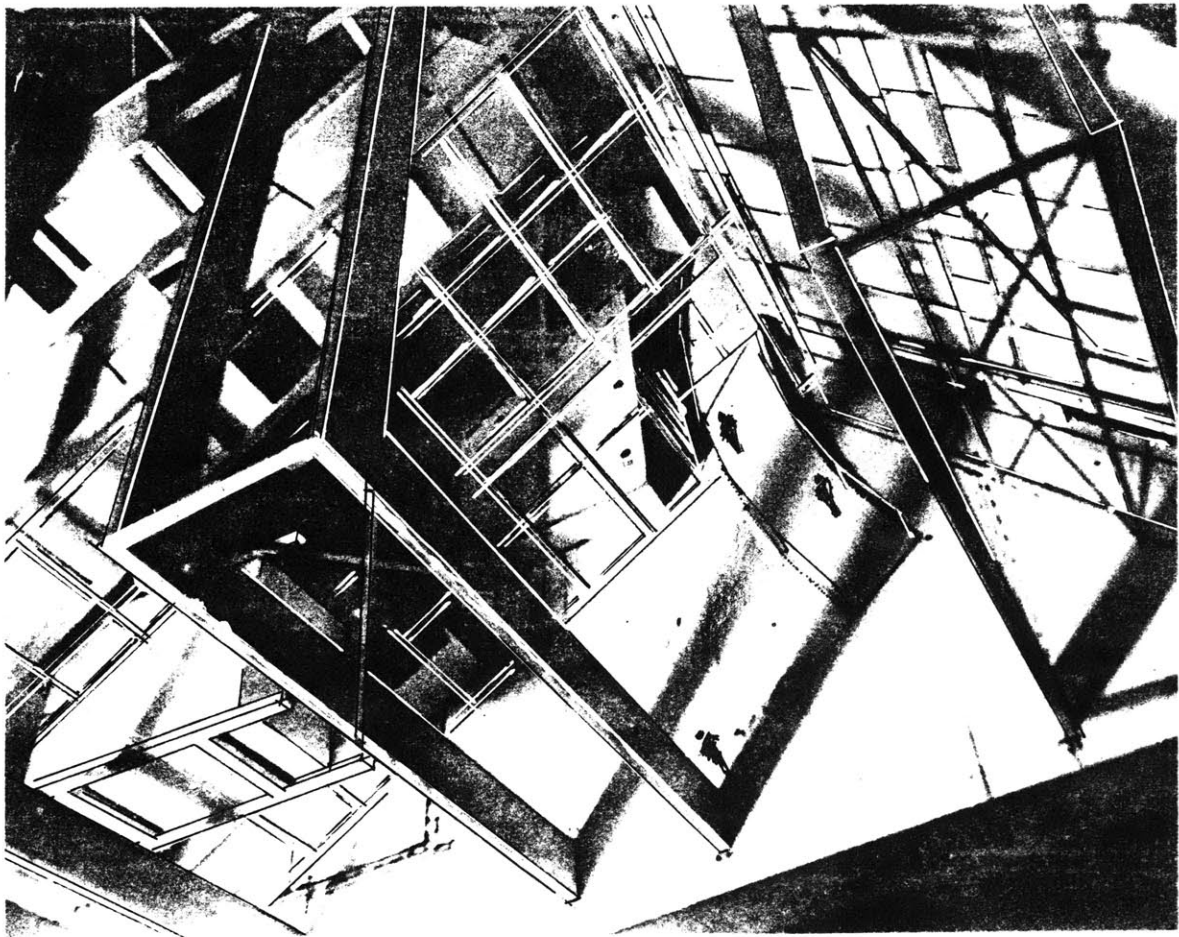


THE EXPERIENCE

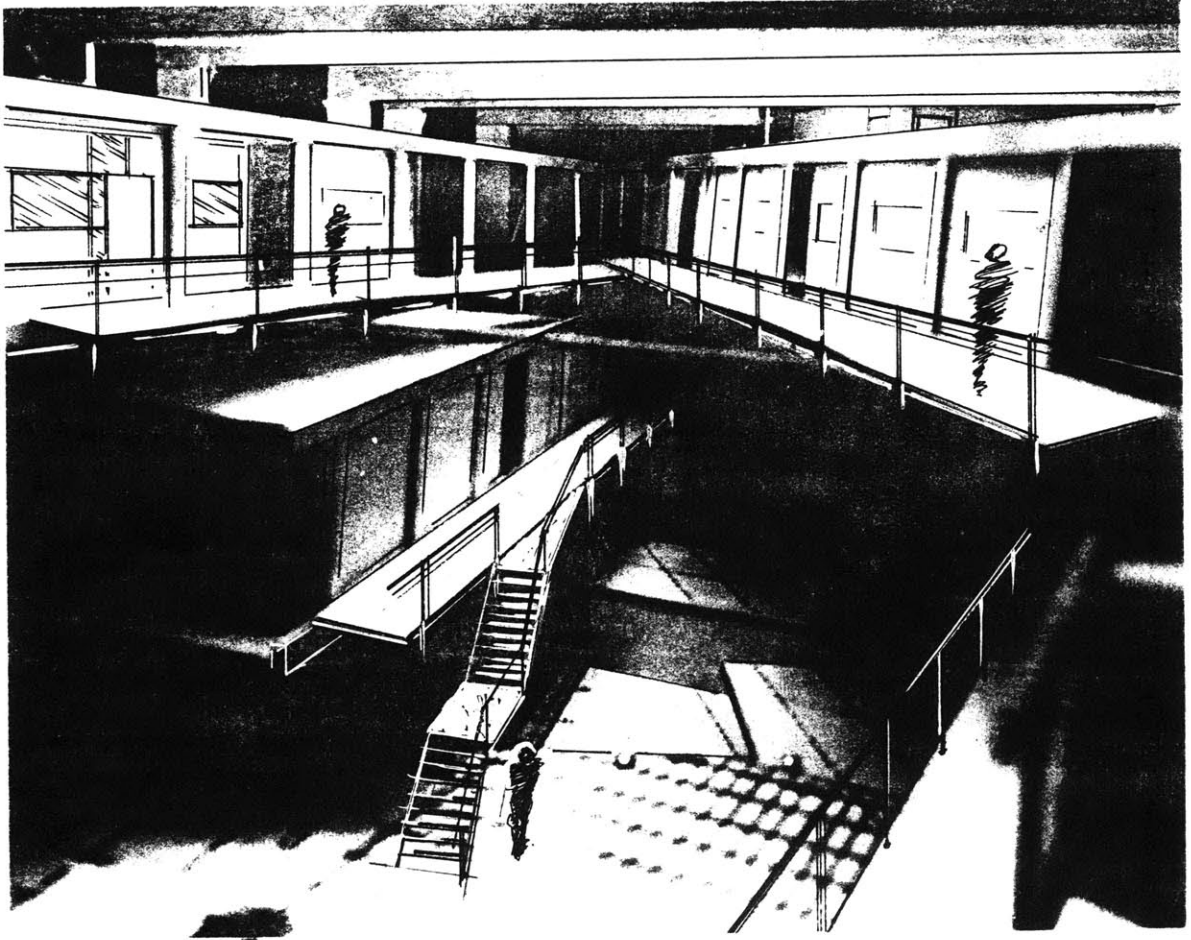
*You are approaching the
Center for Contemporary Music
from Church Street.*



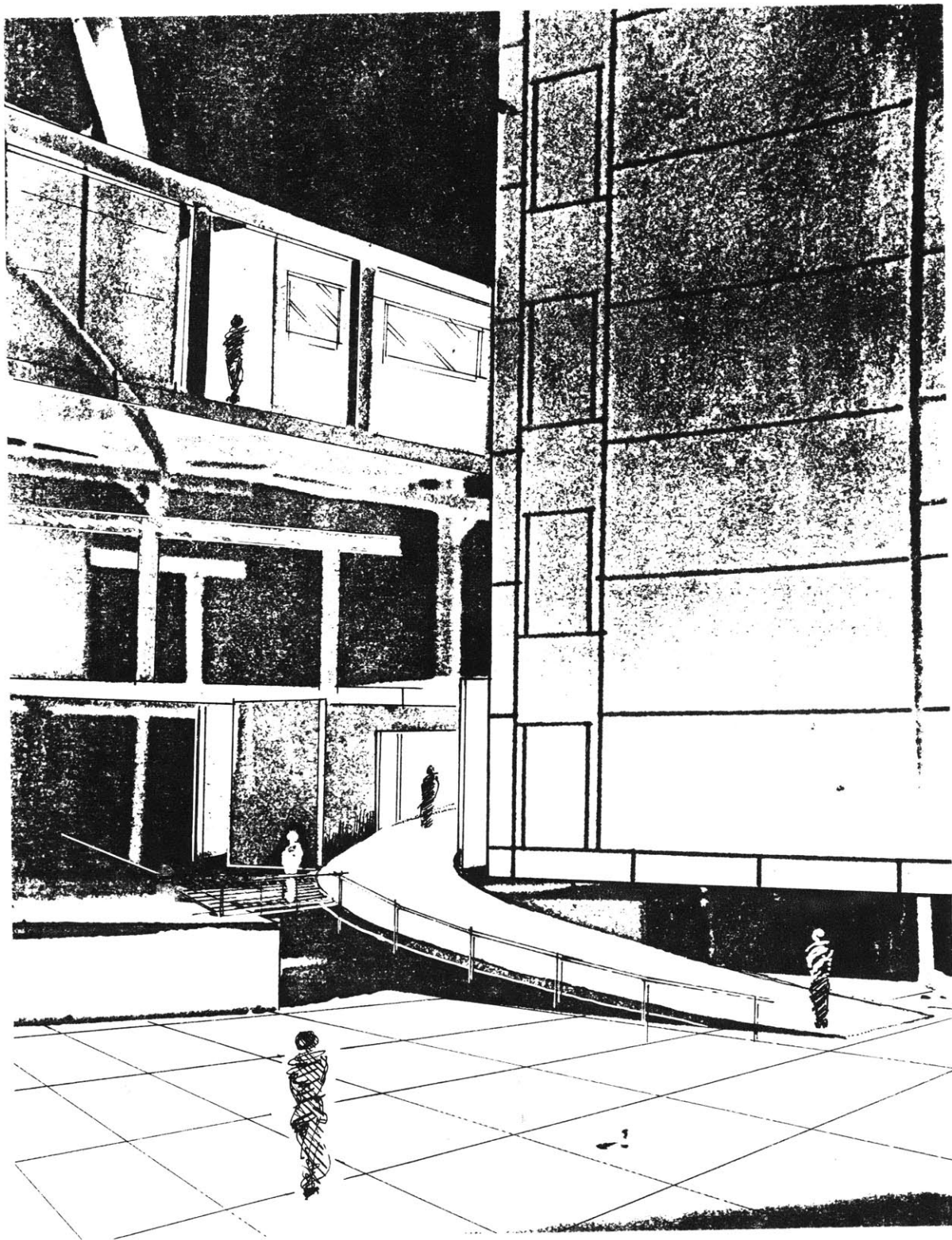
*The closure system pulls away,
leaving the structure at the street edge.
The plaza is open.
The ramp invites you to begin your journey.*



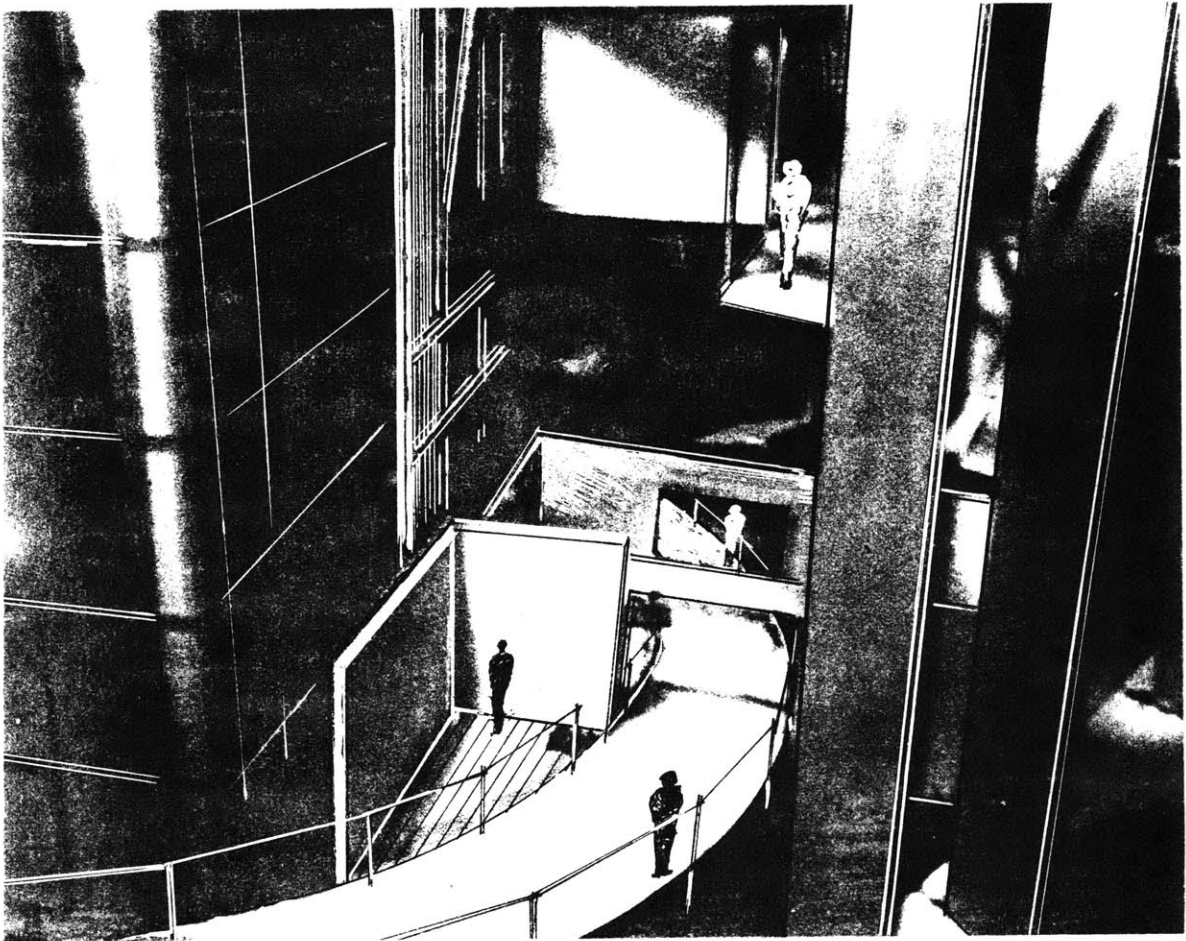
*Inside the research area,
composers and technicians are
working on the future.*



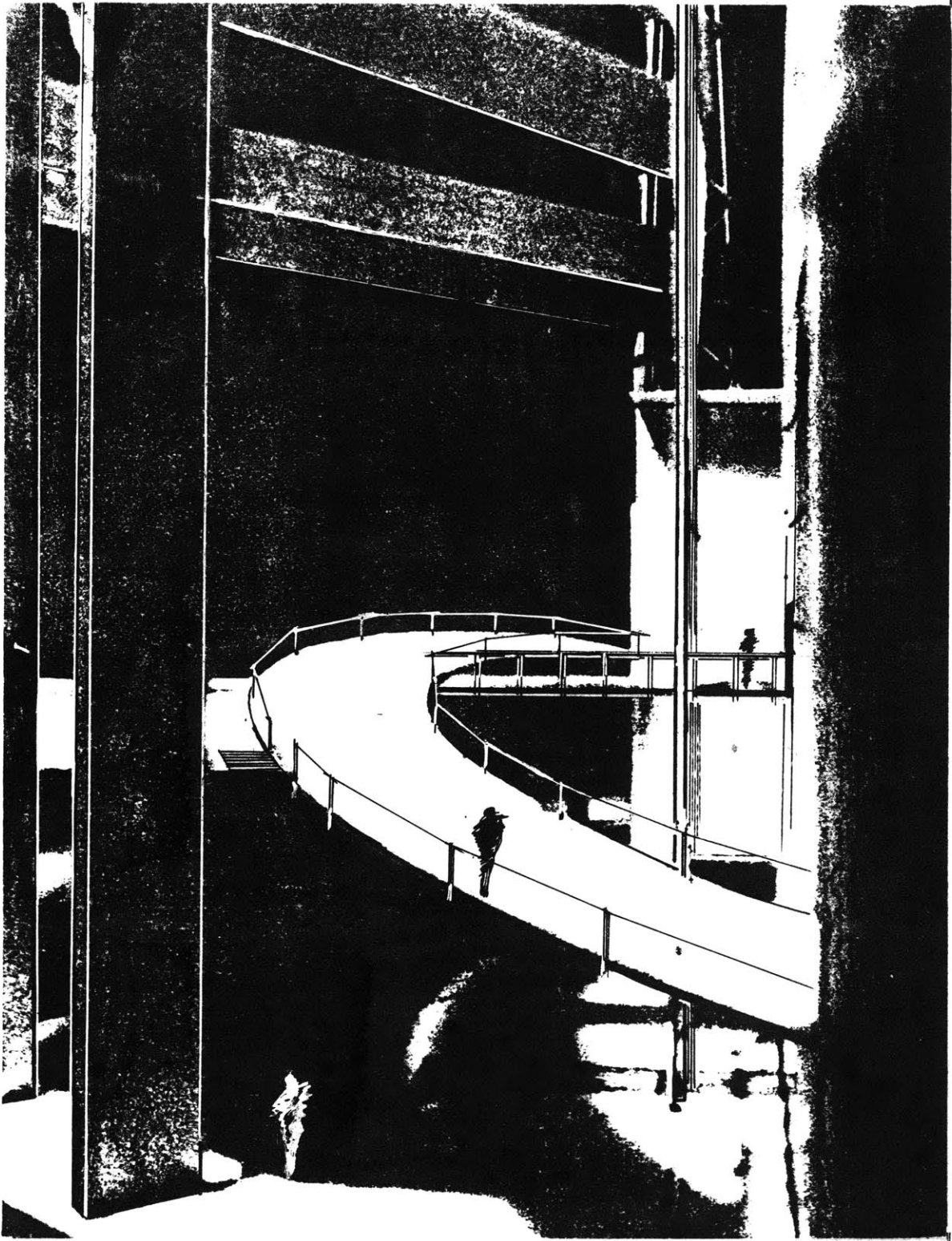
*The ramp begins to spiral up.
Across a small bridge
to the left
are tickets and information.
You continue up, passing under
suspended laboratories.
The galleries begin to open up
before you.*



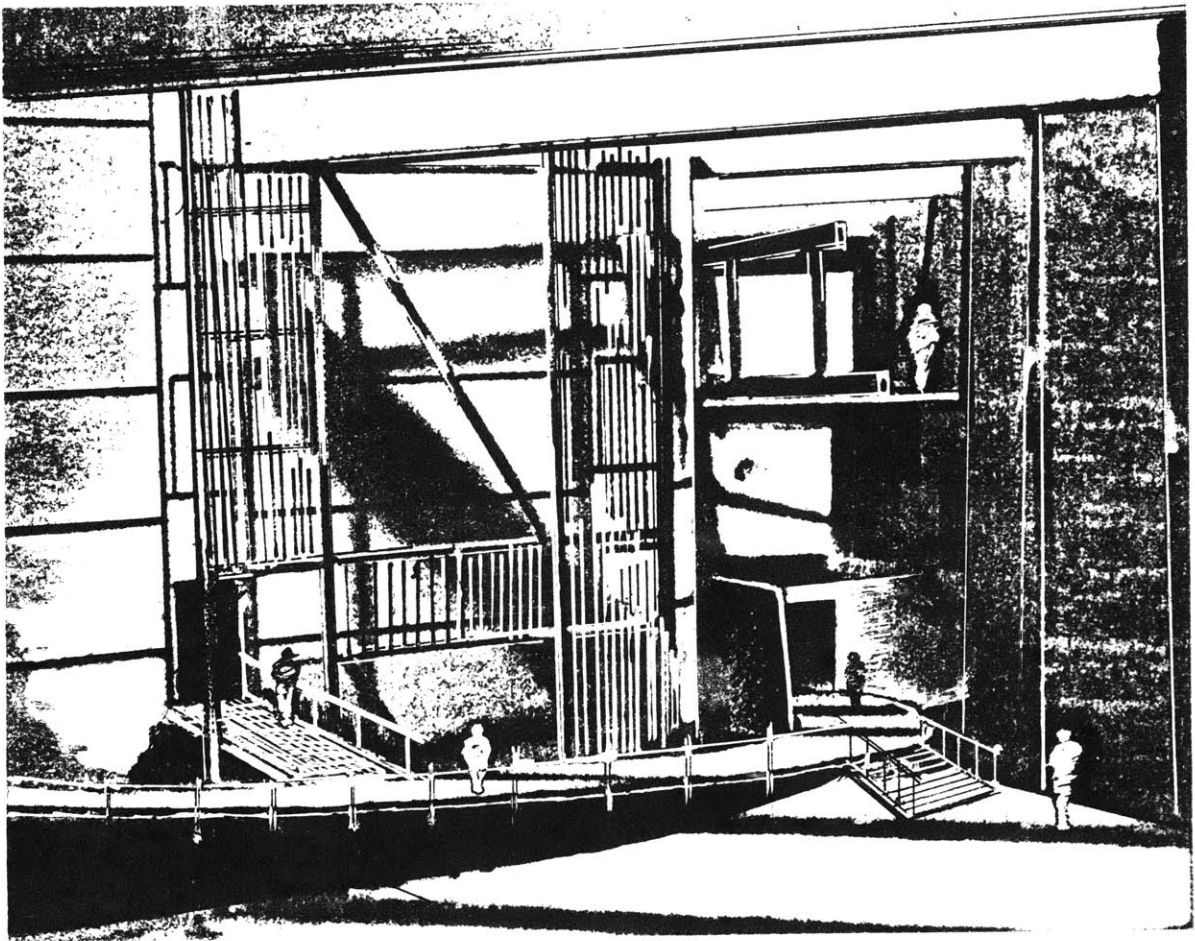
*You are passing up through
the galleries.
You have taken a moment in them.
The next corner of the cube
is approaching.*

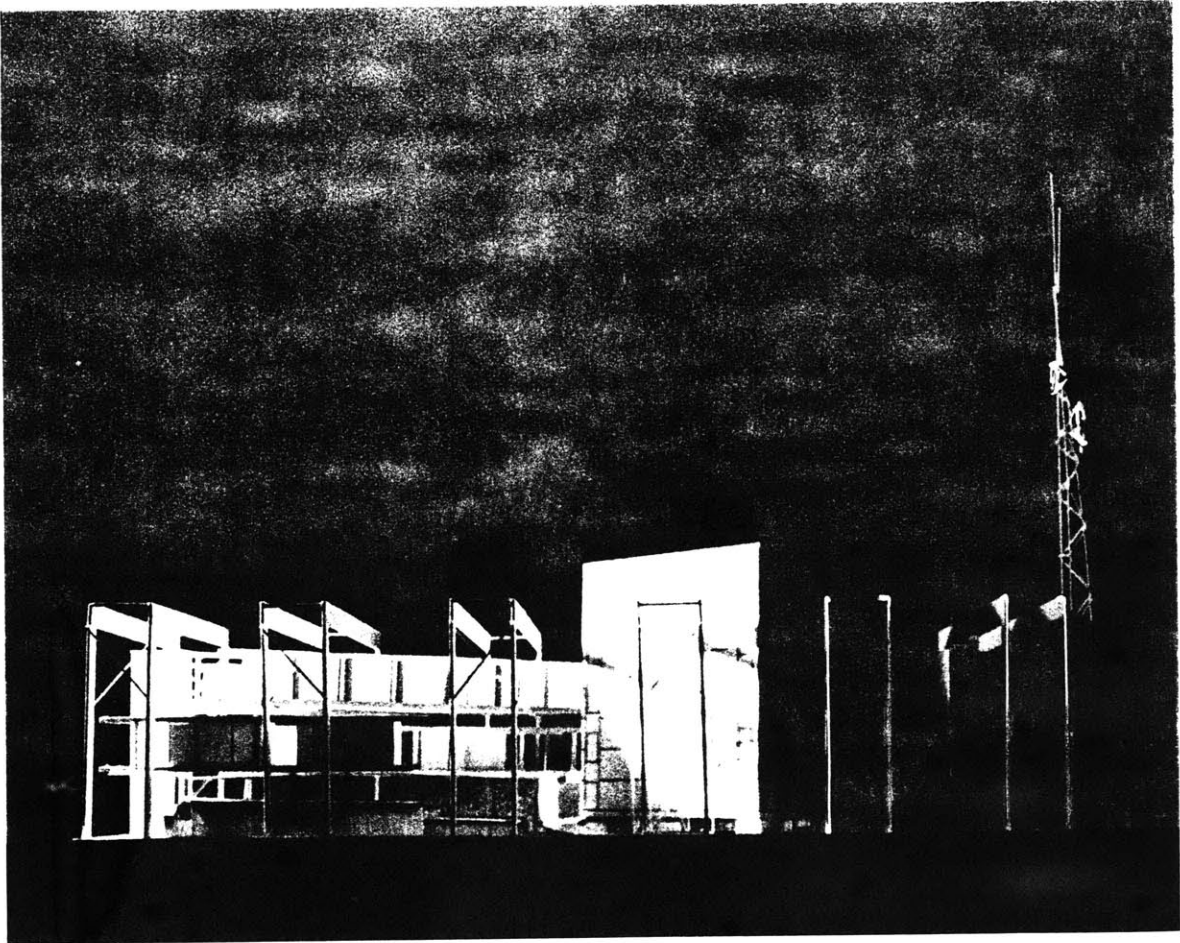


*You have entered into the
greatest space in the building.
You are floating upward.
A platform breaks open to the left.
You look beyond it
and feel yourself in the trees
over the cemetery.
To your right, the face
of the cube begins in the
darkness,
twenty-five feet
below,
and soars up through the roof
and trusses.
A single bridge connects
you to the new.*



*You have travelled more than half way
around the cube.
You now have the opportunity to enter it.
The new awaits you.*





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