

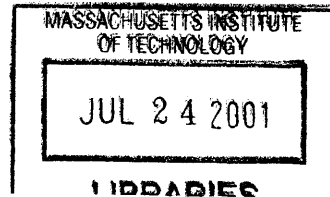
Tempus fugit: music and the ephemeral in architecture

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bachelor of arts in physics, 1995
Yale University

Submitted to the department of architecture in partial fulfillment of the requirements for the degree of master of architecture at the Massachusetts Institute of Technology.

February, 2001

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ROTCH

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ABSTRACT

I am interested in the relationship between solidity and transparency, between permanence and ephemerality, in the context of the modern city. This thesis is an exploration of transience and of social and phenomenal exchange, using music, and, more generally, sound, as a vehicle. The project is an alternative music school and performance center located in Harlem, in New York.

The functions of the institution include a community music school for neighborhood youth, a cabaret, a conservatory for adult students of music, a radio station with recording studio, and a library/museum. There are a total of up to five performance venues, depending on the configuration of the facilities.

The project aspires to changeability not merely to accommodate different performance scenarios but also to create a volume of space that is porous and alive, a landscape that is accessible to all urban bodies.

Thesis supervisor: Ann Pendleton-Jullian
Associate professor of architecture

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introduction 5

project background 16

process 26

models 50

drawings 82

bibliography 115

acknowledgments 117

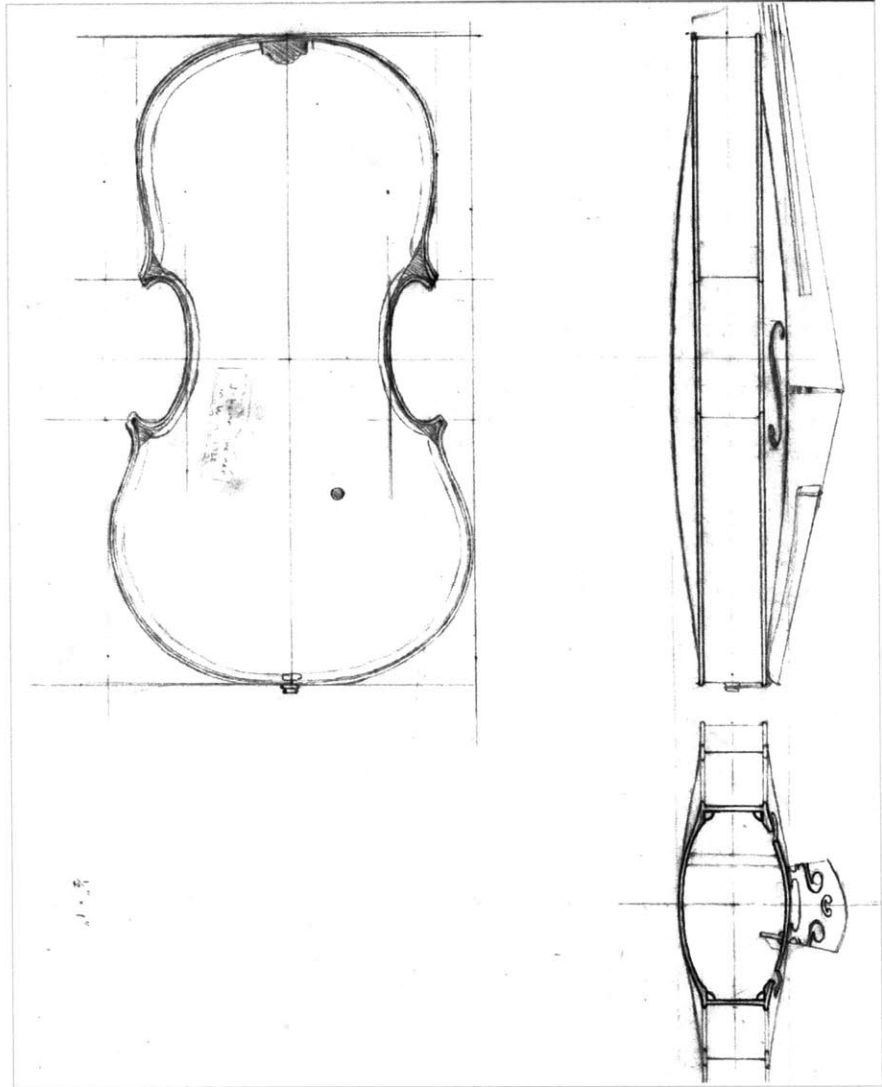
introduction

This thesis explores the experience of ephemeral phenomena in the urban environment. It attempts to create a changing building, one that exists and changes according to a cycle of time that is not immediately apparent or logical. It seeks to highlight the extraordinary against the everyday, and isolate the individual user in an intimate dialogue with the greater world.

At the heart of this inquiry is an impossible task—to construct the passing moment, to contain the movement of light and sound. How does one create ephemerality and then inhabit it? How can a building at once register “cosmic”(for lack of a better word) movement and contain human movement?

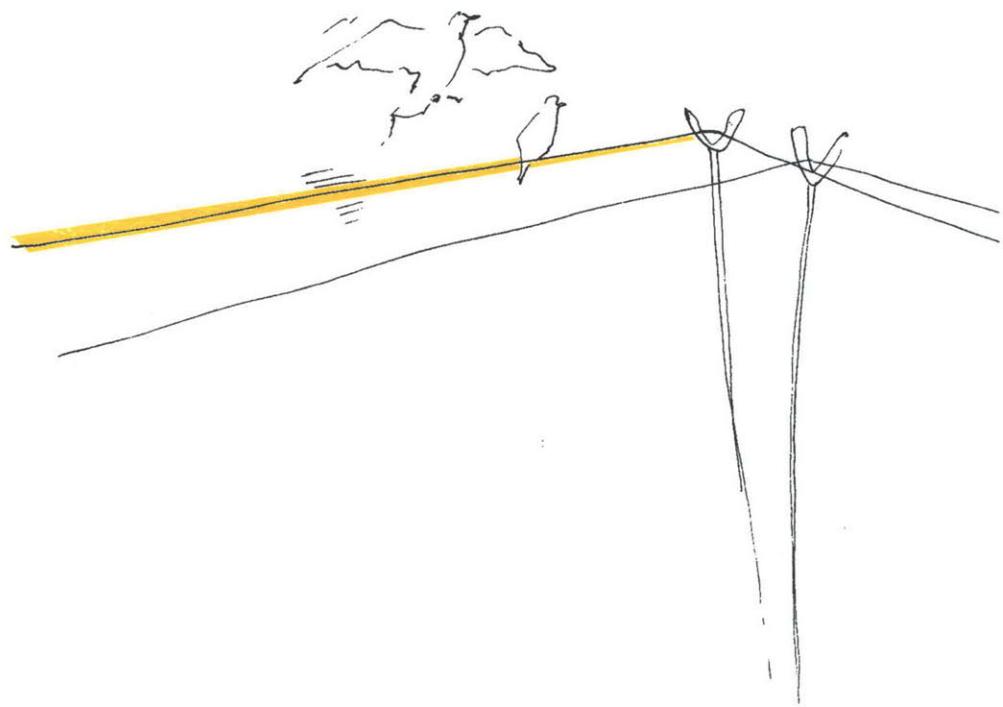
The program is a school for music. I chose music as a vehicle for a number of reasons: firstly, as a lifelong performer and active listener of music, it is a medium that is very internal and fundamental to me. There are strong intuitive correlations between music and space. And music is a traffic in the ephemeral which provokes associations and responses which are long-lasting.

The project is configured to involve the active world of the street into the music school, with the intent of creating a complex, changing aural and physical landscape. The project operates on the distinctions between intention and incident, surface and depth, opacity and leakage, and invites interplay between its divergent parts. The traditional relationships of performance and practice with the public are questioned and rearranged, and the role of the school of music is reconsidered, expanded and multiplied. These interfaces are the fields upon which the fluid exchanges between generation and resonance, instantaneous and delayed, projection and implosion, are played out.



architecture and music Associations between architecture and music have existed since ancient Greece. These associations have usually focused on the idea of translation, for instance that the specific proportional relationships that comprise the musical scale can be employed in architecture to generate dimensions and rhythms of formal elements. Architects have also applied ideas of counterpoint and layering, essential elements of the musical structure, to architectural form, and even designed buildings intended to be literal transcriptions into architecture of specific pieces of music.

My fascination with music/architecture starts with the more basic phenomenon of sound. There is a mystery to the generation of sound—the reduction of an action to a vibration, and then the reconstitution of this vibration, through amplification, into sound. I experience the literal tension of this mystery in the architecture of my instrument, the viola. In the instrument the mystery has been distilled, packaged and tuned, condensed into an ornate Baroque box, but the principle begs expansion.

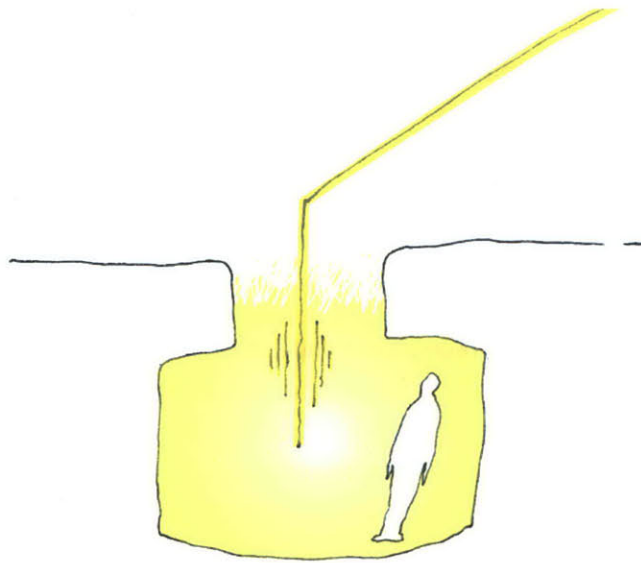


building as instrument There is a warehouse in Austin, Texas, that contains a series of long (85 feet) strings under tension. One can walk amongst them and, by touching or hitting them in different ways, play the instrument.

city as instrument When the train is still half a mile away the rails at the station start to twinge, emitting a sound not unlike the laser blasts from a starship in a space movie. The sound appears to come from nowhere.

Cars crossing a drawbridge cause it to howl. It sounds like whales.

A pigeon lands on a wire, then leaves again.



Imagine a string stretched across the city, registering these events. Their signatures are reconstructed in the heart of a building, a resonating chamber. The sounds invite the listener's response.

The project represents an extension into the world, an opening to an exterior which is processed, understood and responded to in an intimate way. It suggests a nesting and an interrelationship of two worlds that is complex and irreducible. It suggests the transformation of the mundane into the sublime, profane into the sacred. The changeability of the building shell is in some ways the broadcasting of this transformation back to the world at large. These relationships suggest the potential of the building to become an alchemical node in the community, linking across physical, temporal, and spatial divides.

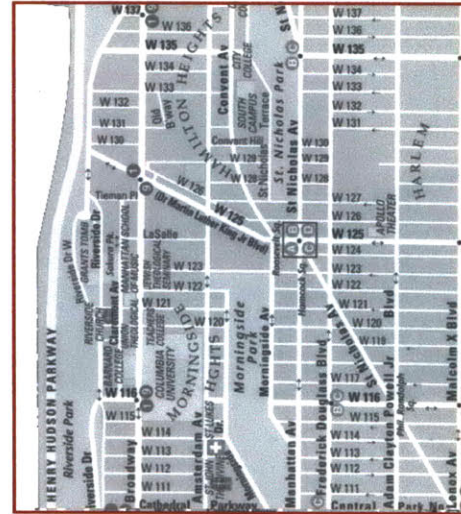
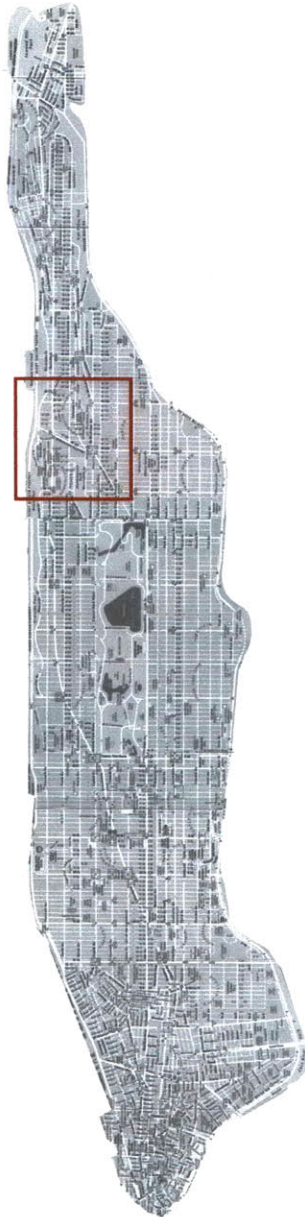


morningside ave.

dr. martin luther
king, jr. blvd
(125th st)

124th st





site The site is in New York, at 125th Street and Morningside Ave. The area has many abandoned buildings and open lots. My site consists of the V-shaped lot formed by Morningside Ave, Hancock Street and Dr. Martin Luther King, Jr. Drive (125th Street), along with the empty lot which faces this lot across 124th Street.

site photographs



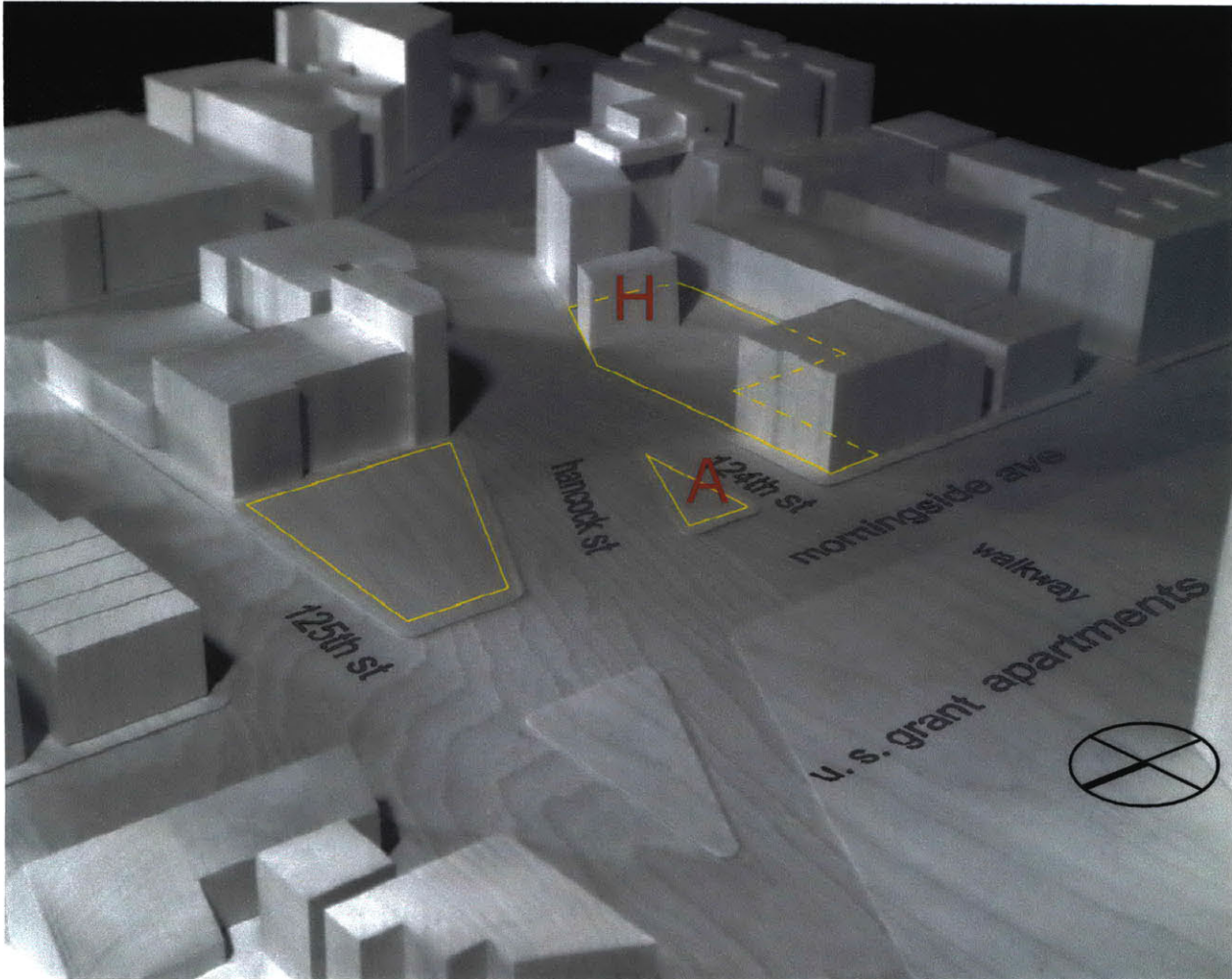
east facade of morningside ave.



standing at the corner of morningside ave and hancock street panning north to east.



left: looking east down 124th st. middle: hook and ladder building seen from across hancock street.
right: looking west down 124th street from st. nicholas street. Grant apartments are in the background.



H--hook and ladder building

A--Amoco station (to be replaced)

The building at the corner of 124th and morningside (with Kool G Rap mural) is abandoned and would be demolished.



project background

seeds

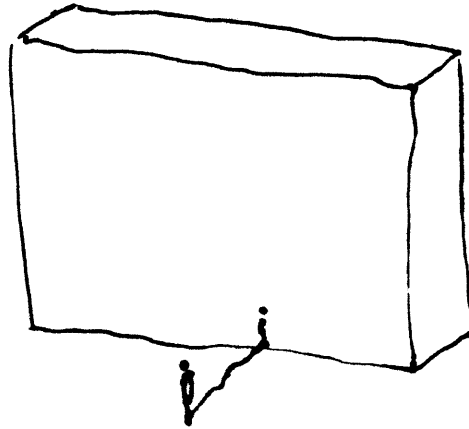
The urban environment is one of unequivocal opacity--one is either in or out. Enclosure, and immersion, in the manufactured environment is complete. The questioning soul is lost in the certainty of construction.

I dream of a wall. I approach, and it shrugs and bends, differentially, as I route my path around it. I can almost feel the wall as I pass, like a fold of fabric on the coat of a passer-by. We move apart, like galaxies, in a dance of interacting mass.

The fantasy of registration, of a non-mechanistic response to the body, is an antithesis of the city described above. This movement is fantastical, surprising and wholly impossible: it responds to no need, anticipates no change in use, indeed presumes no "user." It is plastic and animate, not "kinetic" or "intelligent." Its sole purpose is to delight those who encounter it, to arouse in them a seed of doubt in the solidity of things.

The building that moves seemingly without reason is the poor cousin of the shapeshifting wall. While it cannot claim to enjoy the synergy achieved by the wall and its dreamer, it nonetheless presents the same sense of impossibility. It challenges the occupant's notion of control, his or her implicit alliance with the creator. In obscuring the logic of its movement, it appears mysterious. It betrays no causality, and thus no relationship to the occupant, but opens a window for the occupant out of the immediately apparent.

a language for the revelation of ephemeral phenomena



strategy: dematerialization of mass The building is a solid, unchanging ground against which external changes are measured. It is rooted in the landscape.



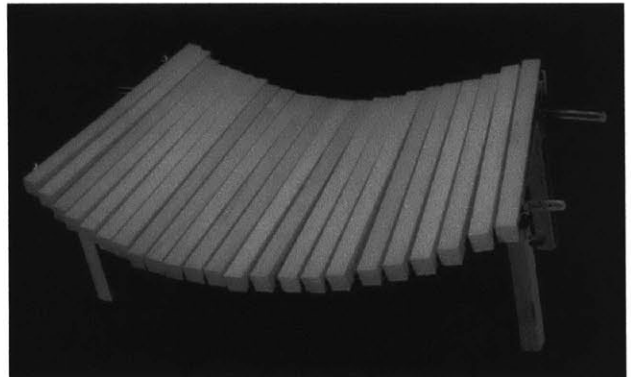
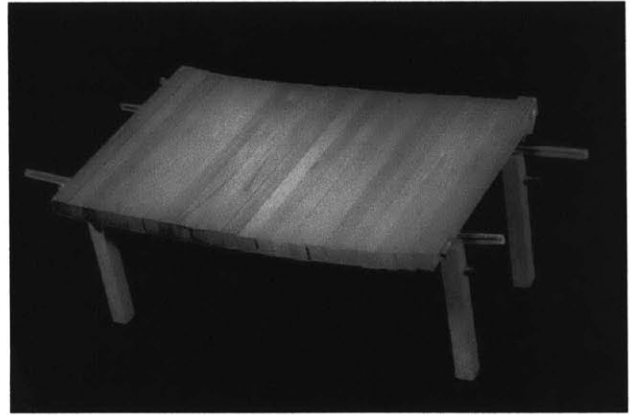
strategy: lightness The building is tectonically light and may be sensitive to environmental conditions. It registers change by changing itself.

solidity It may seem contradictory to speak of ephemerality and solidity in the same breath. But solidity may be necessary to the disclosure of transience. Some of the earth's most enduring monuments were dedicated to such tasks--the astronomical observatories of prehistory are apparently eternal places, but they are unchanging grounds *against which* minute changes may be detected.

landscape Solidity is rooted in the earth. In its role in the revelation of the ephemeral, the earth exists behind the changing building, appearing to the occupant only after the change. Landscape is the urban surrogate for earth, and may only be recognized as such after the experience of change. In this scenario, landscape operates as a binder, a surface traversed by the body between the extremes of mutability and permanence.

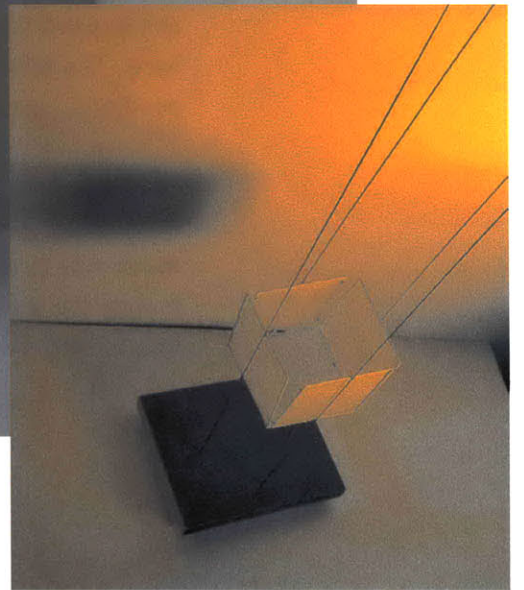
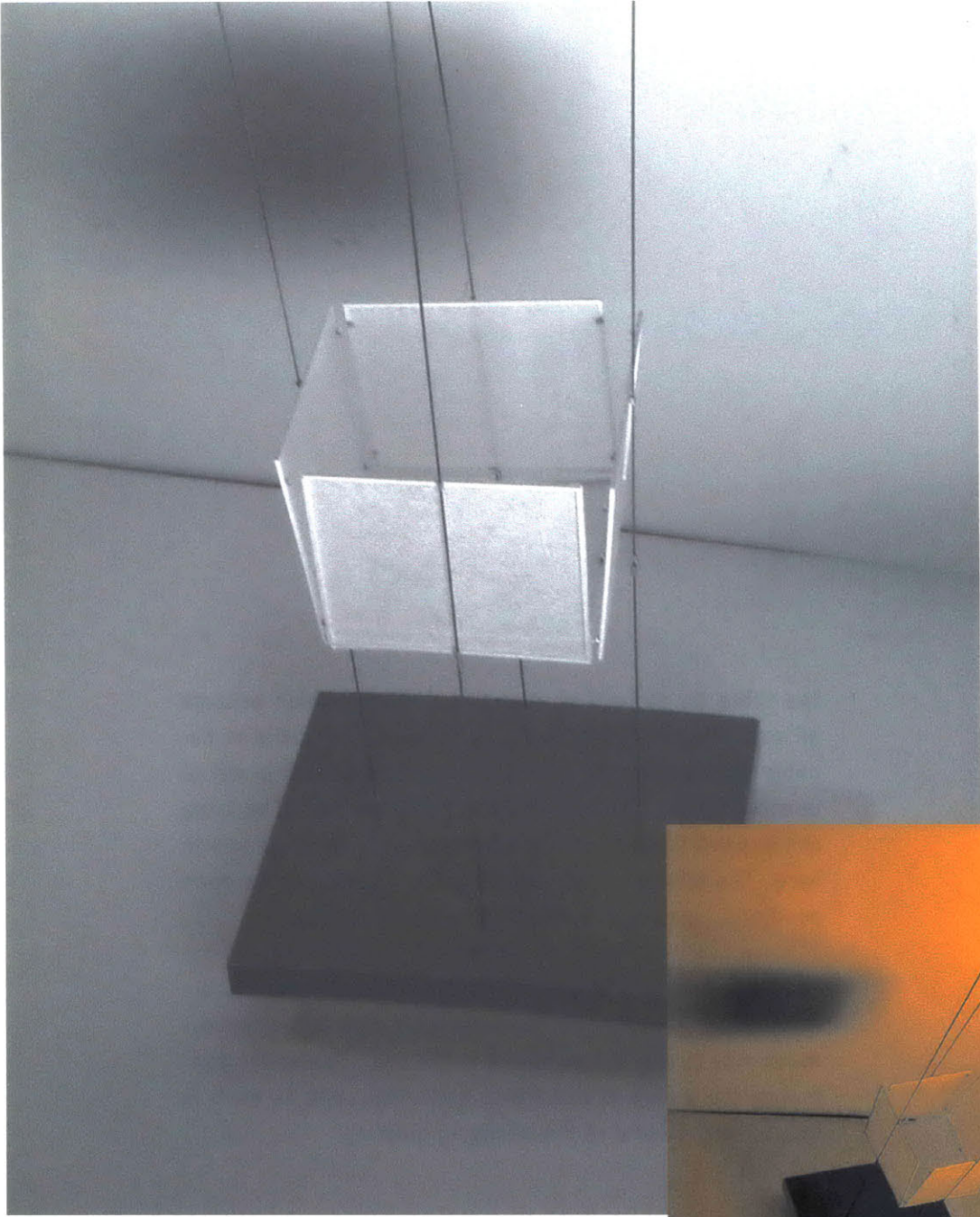


exercises



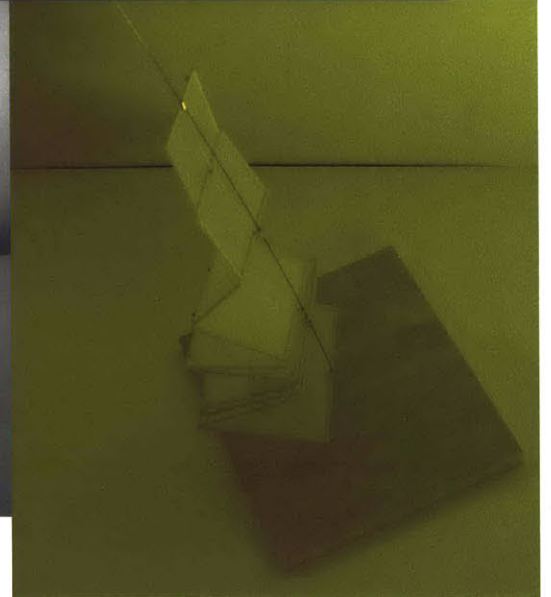
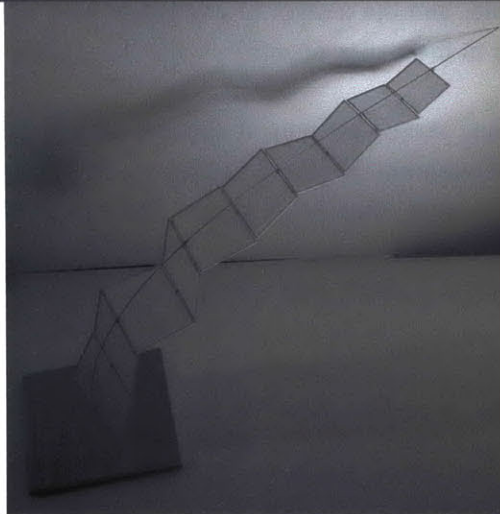
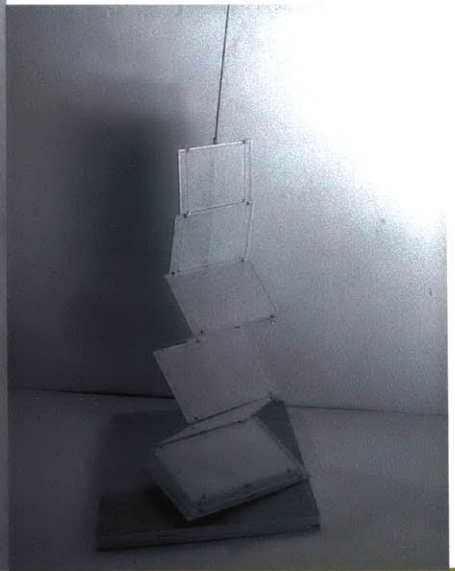
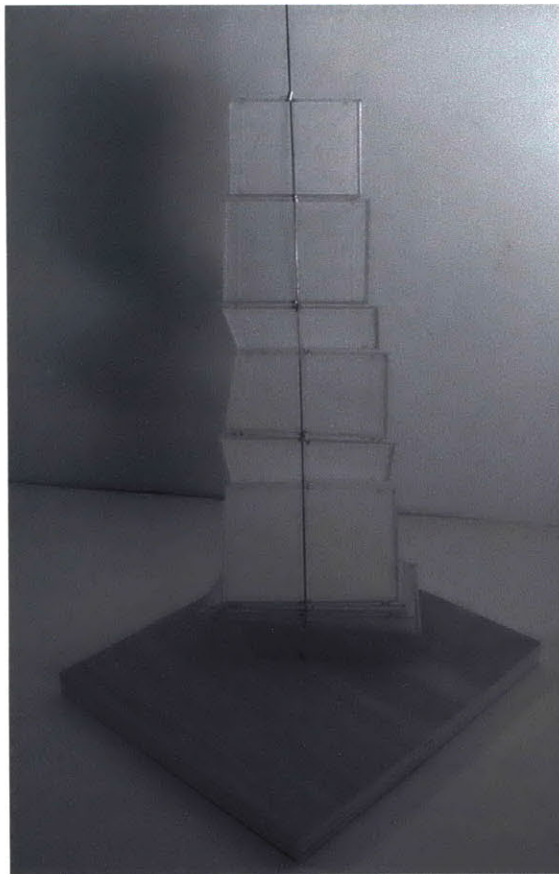
the table an attempt at changing furniture which became an approximation of a changing building. The table is capable of changing its configuration by means of a set of telescoping leg braces and its expandable top. The table can expand linearly, or can pivot and accordion, as shown here. The table's surface adopts a slight camber in the open positions, making it a challenging surface for dining.

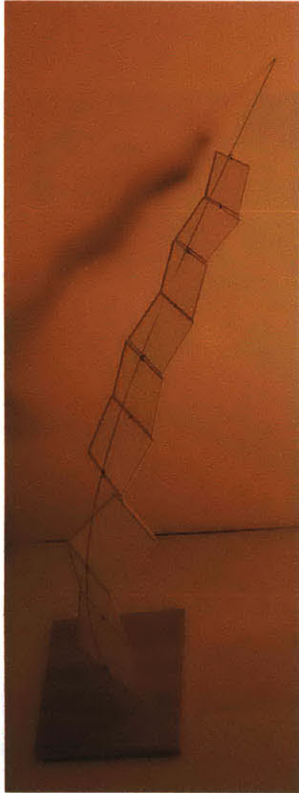
The table opens in response to certain phenomena--the arrival in the driveway of the neighbor's car, for instance--which may or may not be known to the user. The action confounds the notion of ownership and utility, and as such is related to the ideal of the changing building.



enclosure The panels are strung to each other with loose elastic. The box is supported on four wires, each with a windcatcher at the top. Any motion of the wires leads to motion of the whole, and the motion of any single wire will eventually spread to the entire object.

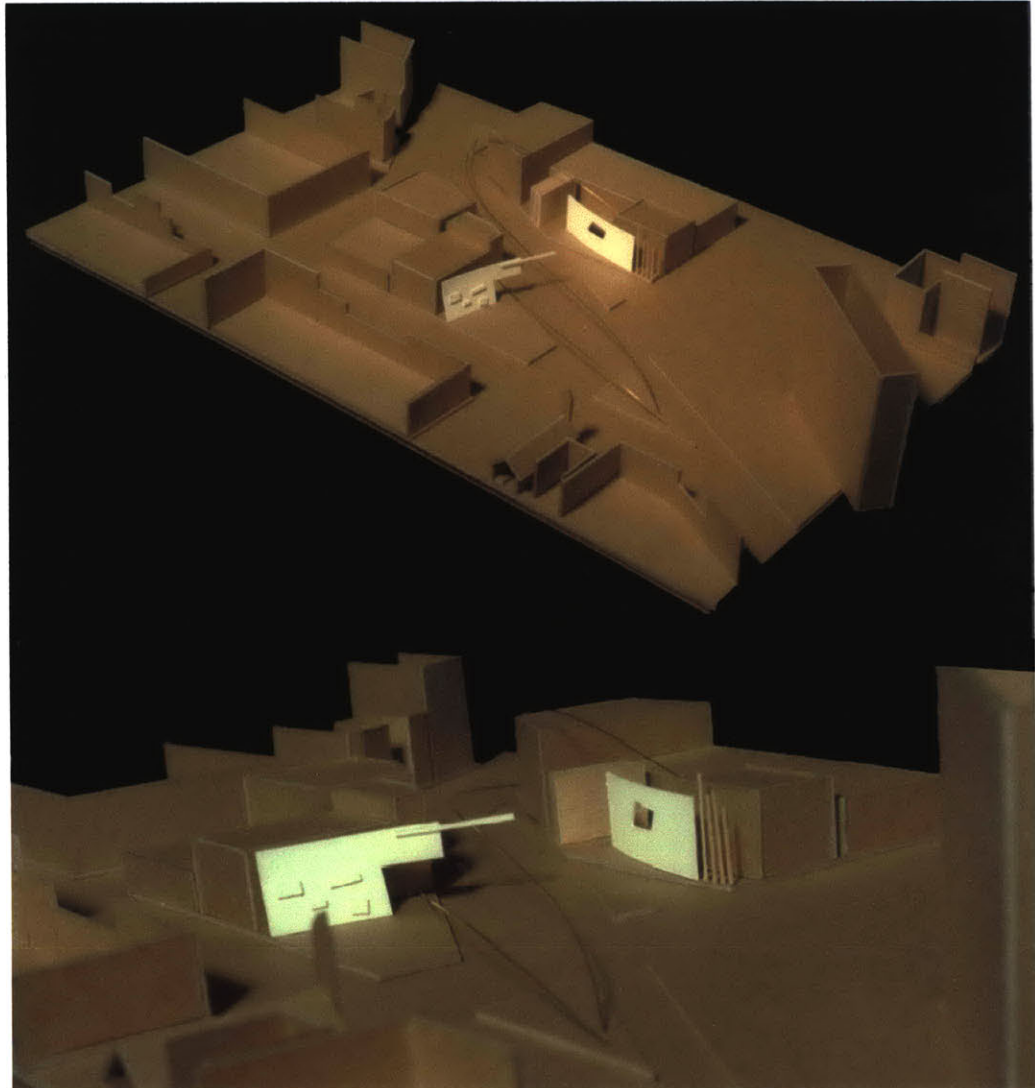
While at rest the box stands straight. It appears as a static enclosure. As movement begins fissures open in the "seams" of the enclosure, then close again. The motion of the box is harmonic--the four wires move separately, then converge into a single pattern, then diverge again.





flexible folding frames An exercise in building the most sensitive, flexible, and least stable object I could.

Frames are strung together with elastic.

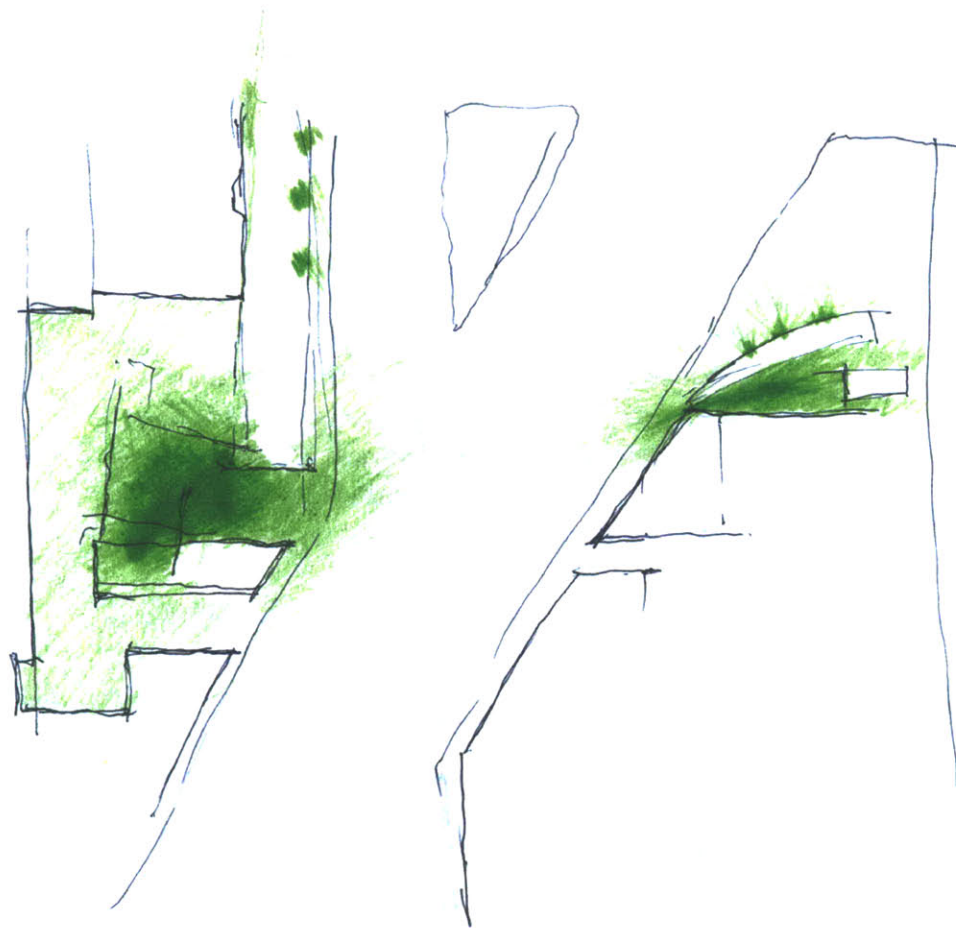


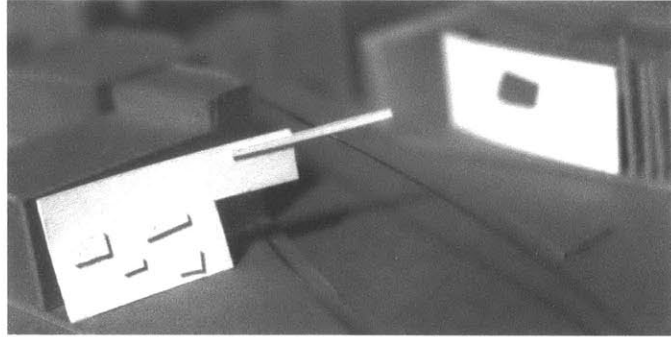
sketch model at 1/64th" = 1'

This was my initial pass at form-making. I was interested at the start in the idea of placing music practice rooms in an exposed location, and perhaps shielding the public performance venues from the street. This is the programmatic reverse of many such institutions, since the performance aspect of the music education is the aspect in which the institution normally interfaces with the general public. However, performances are highly controlled, planned events, whereas an individual student's practice schedule might be highly erratic and variable. The curved wall on the left, therefore, I imagined, might contain a group of practice rooms that betrayed signs of the activity of their occupants at least visually, if not aurally. The overlap of the building's overall program with the visual rhythm created by these rooms was the beginning of the theme of transparency and exchange to which the project aspired.

The curved wall on the right I imagined as an implied continuation of the street edge; in effect, a screen wall. The wall and its trees pick up the axis of the walkway through the park grounds of the U. S. Grant apartments across the street. This wall curves in towards the interior of the block, drawing people in from that street edge to performance venues in the interior.

The screen wall already suggests the bi-directionality of the project--it shields the location of public performance and serves as an intermediate surface for projection back to the street.





The beginnings of differentiation between the two main surfaces is also suggested. The wall of practice rooms begins to assume a role of busy, multivalent activity and constant exchange; the screen wall becomes a more solid, quiet surface, still permitting leakage, but in a much more controlled fashion.

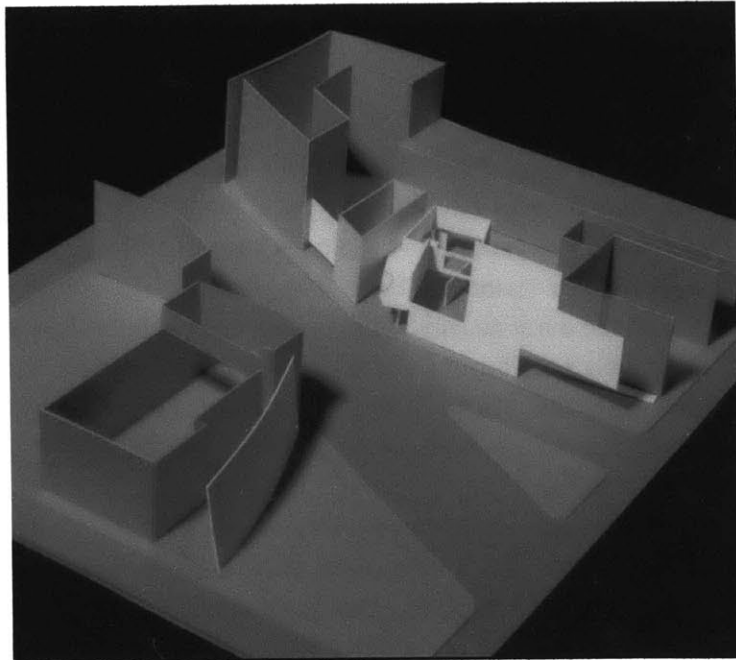
The wires in the model represent the idea that the building somehow extends beyond its physical limits. This is true in the sensory capacity; the building is seen and its occupants heard from a distance. There may also be a visual indication of the aural activity within the building, able to be seen from a distance beyond the range of emanating sound. Programmatically, the building has the potential to serve diverse populations from a wide geographical area.

The model also introduces the idea of the city block as resonating cavity, a box from which sound escapes to the city at large. Conversely, the box could also serve to amplify and then re-emit signals admitted from without. The surfaces along the public edge then assume the role of an acoustical skin, capable of modulating transmissions from inside and out.



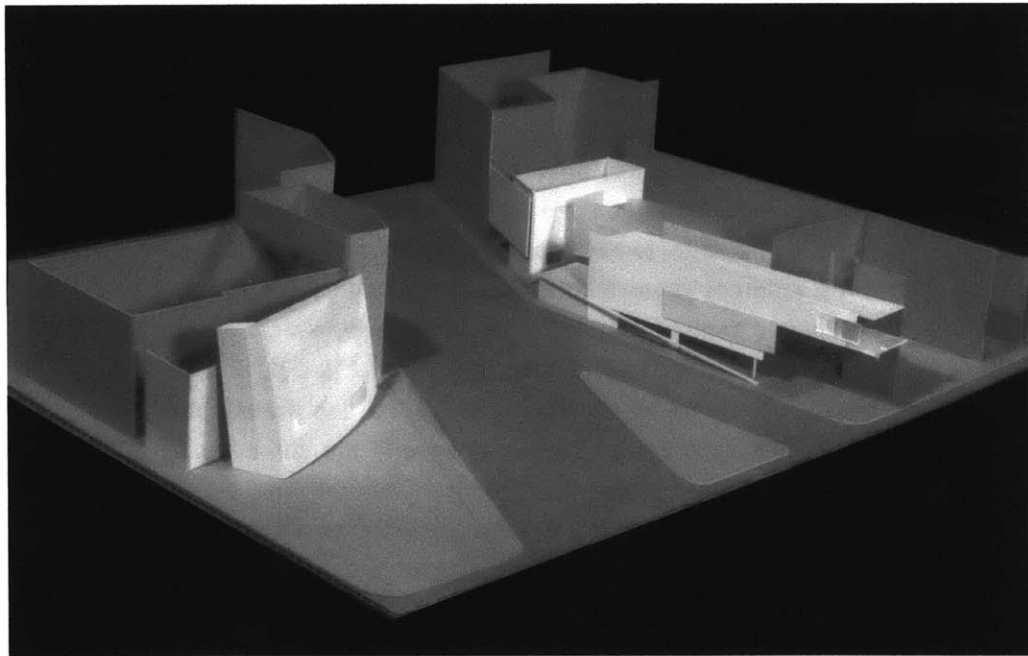
hook and ladder building

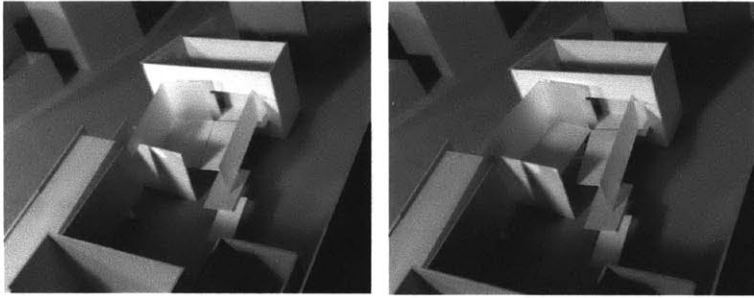
sketch model: 1/32" = 1' - 0"



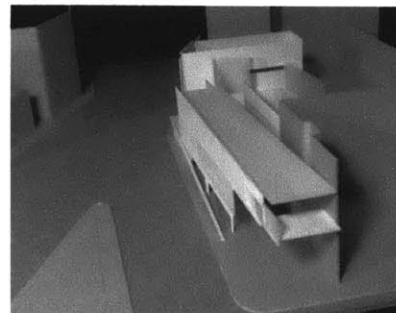
Several elements of the final project first appear in this 1/32" = 1' - 0" scale model. The screen wall cuts away to reveal a small performance hall behind. It is situated next to an abandoned hook and ladder company building, which has the potential to become another venue for performance. The different geometries of the two buildings suggest that each is a venue for a distinct style of performance. A ramp pulls pedestrians from the walkway through the U. S. Grant garden up to an elevated patio in front of the performance hall. The patio establishes a dialog with the curved building across the street. The performance hall has a large opening on its street side, suggesting the possibility of an expanded or inverted performance involving those on the patio or the street, and by extension, the occupants of the building across the street.

sketch model: 1/16" = 1' - 0"

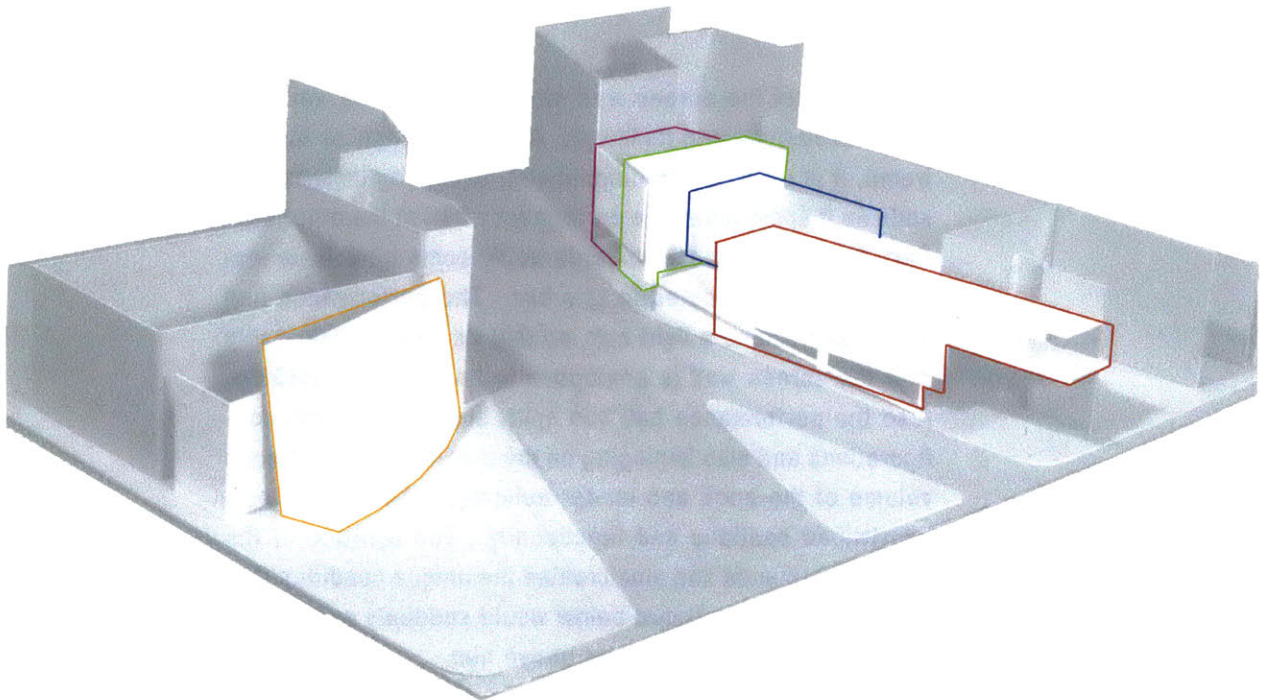




In this model the screen wall has begun to show variation in permeability along its length. At the Morningside Ave extreme, it is layered and diaphanous, becoming increasingly solid as it approaches the performance hall at the other end. Faculty studios, where students would come for private lessons, would be located in this bar. The performance hall itself has become a light box, so that its visual relationship with the screen wall is analogous to its aural relationship. Also the performance hall has split, allowing multiple configurations and also impinging on the previously autonomous volume of the hook and ladder building. The two are now intertwined spatially and functionally. The splitting of the main performance hall also creates the unique condition that a person in the courtyard below would suddenly experience a cracking open of the space above him.



program development





cabaret (in hook and ladder building)



main performance hall



faculty studios and student practice rooms



kitchen and green room for cabaret; visiting artists' apartments above



music library and practice rooms

program transformation



The program contains elements that extend the definition of a "school of music" as they extend its operation and reach. The institution will likely draw various groups within Manhattan as an audience, in addition to serving local (Harlem) people as a community school of music, much like its venerable neighbor, Harlem School of the Arts. The performance hall could be a venue for the performances of both the community school and the conservatory, both representing the more traditional side of the institution. The cabaret could host jazz or hip-hop events, and would extend the hours of operation of the school to the late night hours. Local children could study, seriously or casually, at the school, coming for lessons and classes in the after-school hours and on weekends, sometimes with their parents. High-school and college-age musicians would come from all over New York, and even the country, to study with the institution's permanent and visiting faculty. Accommodations exist for artist residency, and a visiting artist program would offer students the opportunity to study with a great variety of teachers.



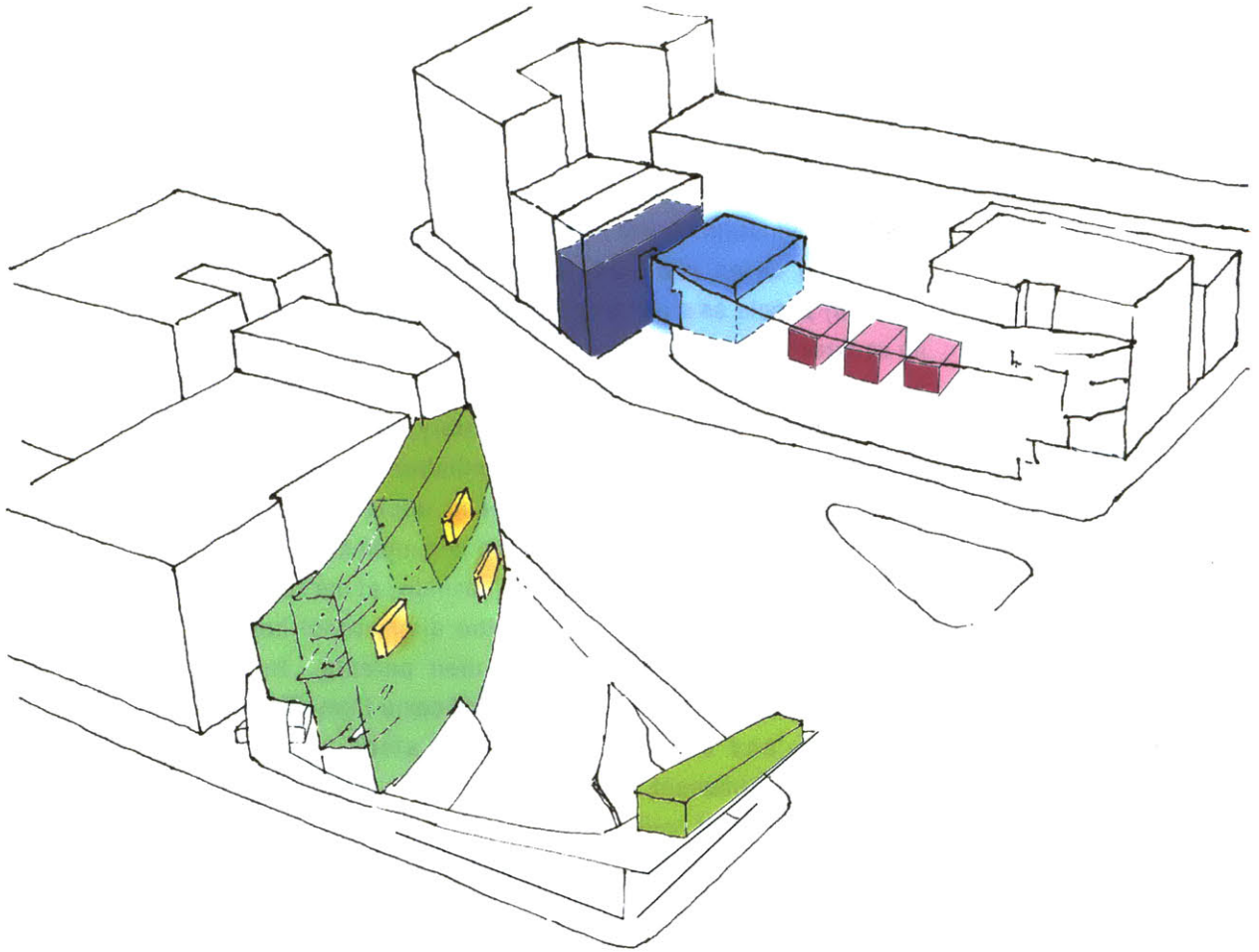
cabaret



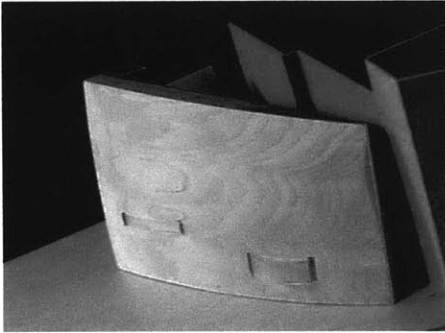
main performance hall



faculty studios and student practice rooms

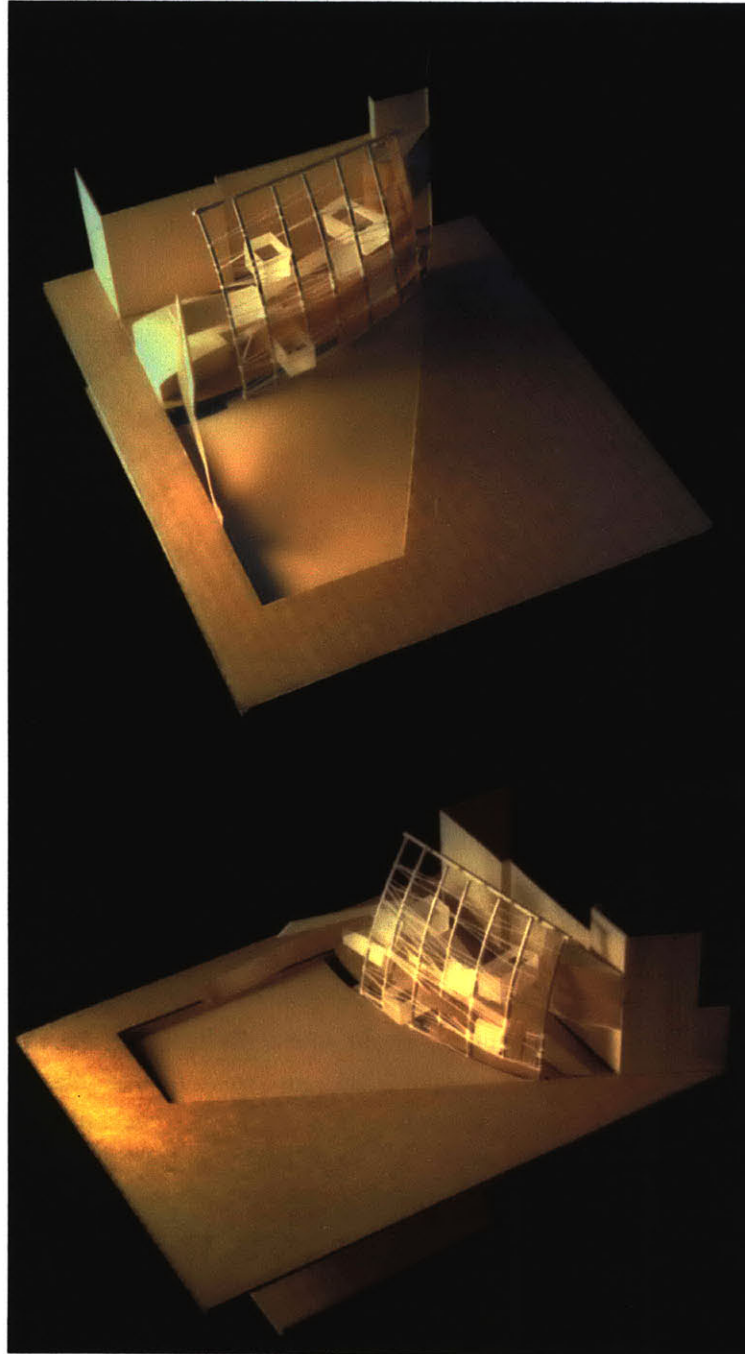


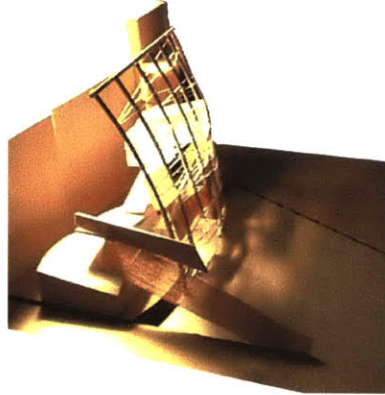
- library/museum (day/evening)
- broadcast (24 hours)
- sound booth (day/evening)
- teaching (day)
- performance (late night)
- performance (day/evening)



Music libraries typically contain sound recordings and areas or rooms for listening to them. The rooms that break through the surface of the library wall could, instead of being simple practice rooms, become sound booths for listening to recordings and recording one's own practice. The library could meld with museum display elements, becoming a multimedia center for the study of music history in Harlem. Traditional practice rooms could be consolidated on the south side of the street where the teaching activity occurs, freeing the library to take up this expanded role. A basic recording studio and a radio station are located next to the library. Thus the "music school" becomes a vehicle for the exchange, dissemination, and broadcasting of musical cultures which operates across many scales of time and distance.

library studies



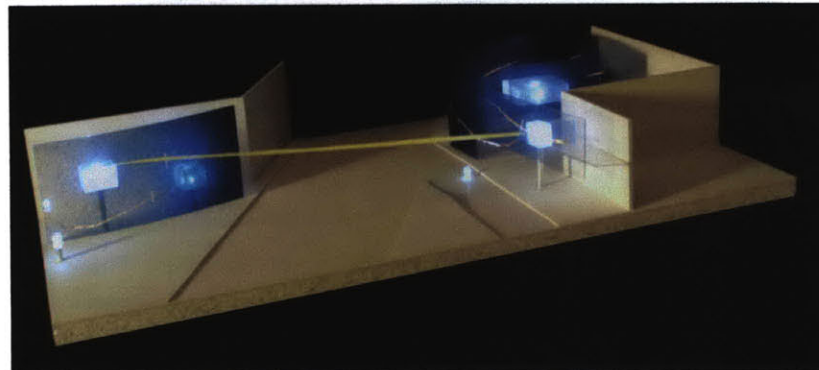
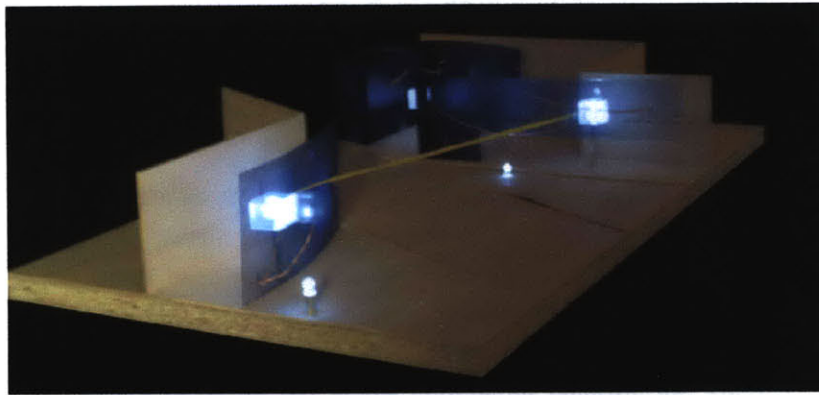


In this study model I explored ideas about the texture of the facade, placement of practice rooms and circulation within the building and in the plaza surrounding it.

Aluminum tubes are webbed with elastic cord, which can slide around to accommodate the plexi cubes nested in it. The cubes represent the practice rooms embedded in the building. The elastic cord and copper strips represent both facade opacity and changeability. The woven cord also represents the intricate circulation within the building, which will be explored in greater detail later.

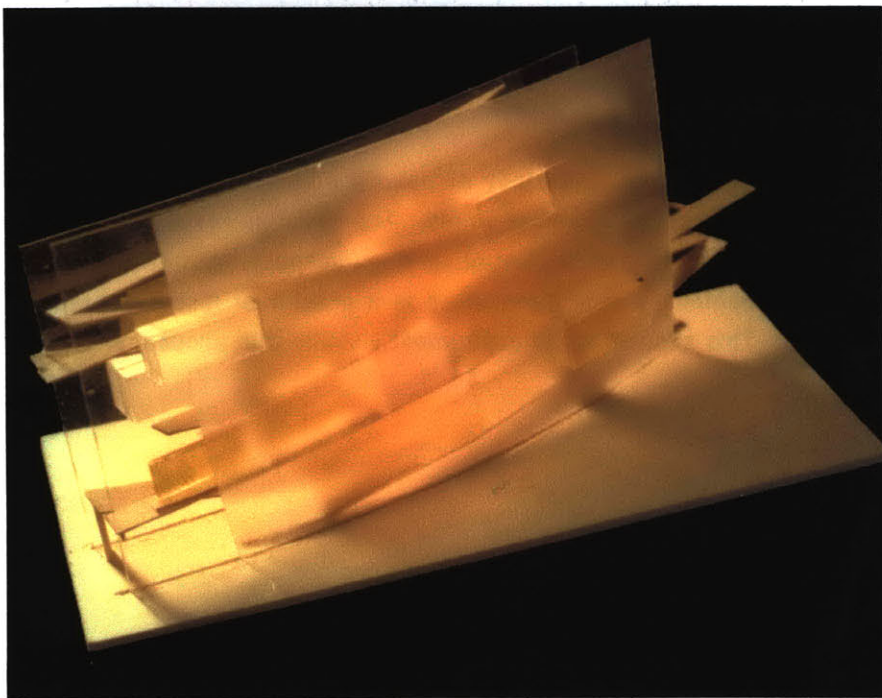
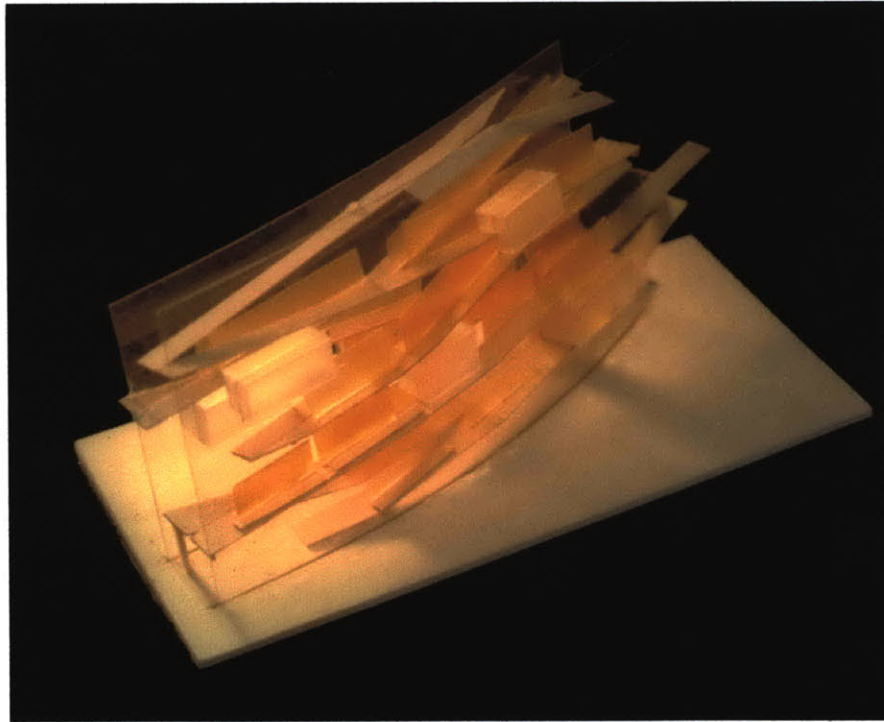
The exterior plaza begins to rise into three dimensions. Slipping behind the library wall building are the entrance ramps for the library reading room and circulation. The upper ramp wraps around the end of the library building to become a stage for outdoor performances on the plaza. The plaza grade slopes down toward that stage to allow for seating. This configuration aligns the stage tangent to the curve of the library building, allowing the practice rooms to become privileged viewers of the spectacle, and, further, inviting them to become active in the performance. The stage also faces the long facade of the studio building across the street, again suggesting the possibility of involvement in the performance. At this point the project goes beyond program and building to suggest a body, moving and communicating with itself. The entire facade, and especially the practice rooms of the library, want to become active objects, at times porous and at times opaque, and the street and interstitial places are no longer neutral territories, but charged fields.

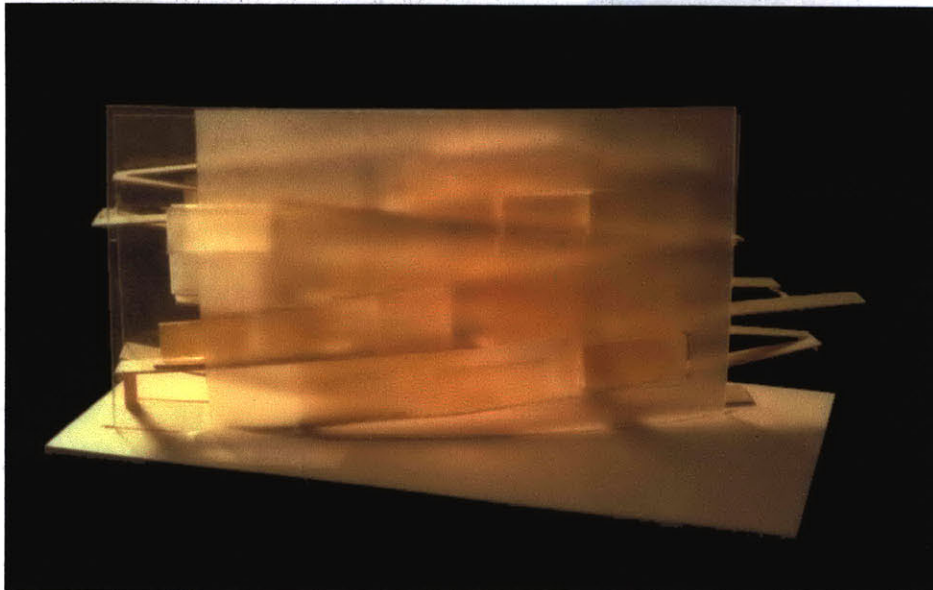
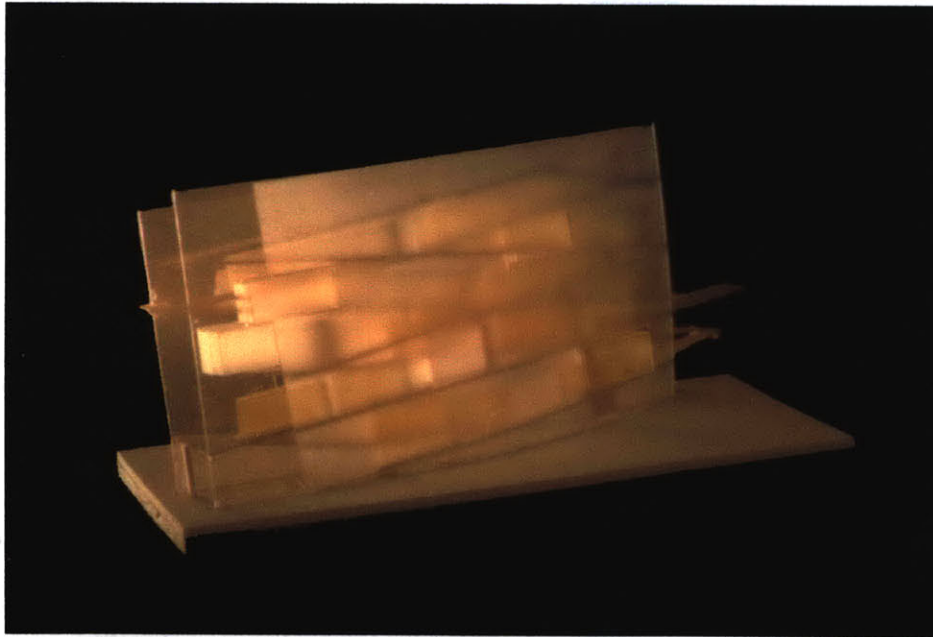
blue studies



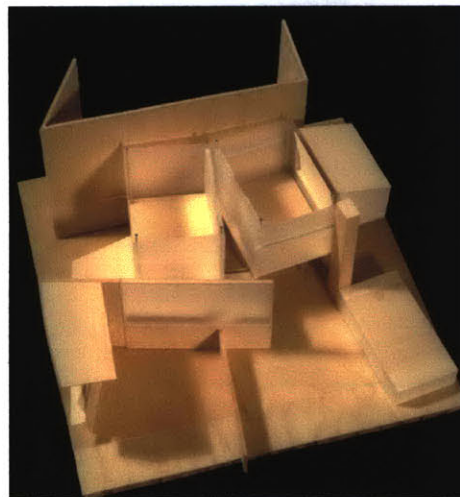
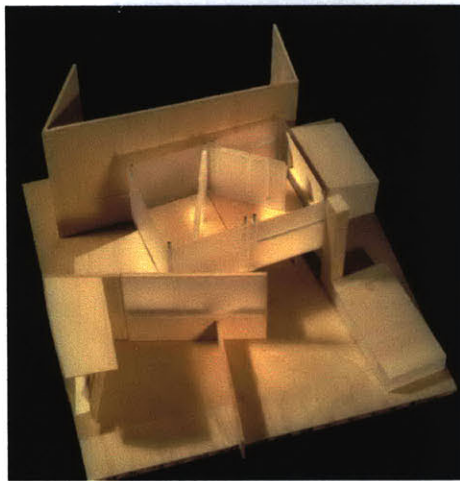
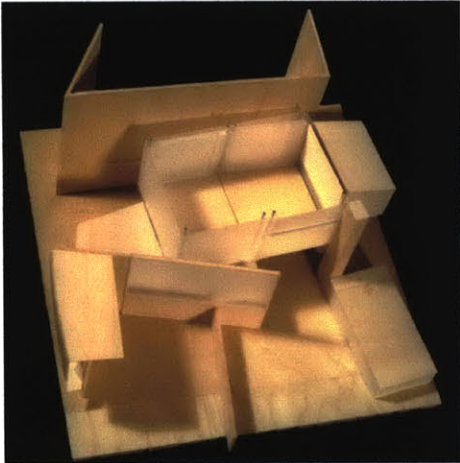
This model is a study of opacity and connection. Lights represent sources of sound. The surfaces of buildings are rendered in blue paint of varying thickness, so that the light behind them is transmitted to a greater or lesser degree. This allowed me to experiment visually with acoustical control.

circulation and elevation studies

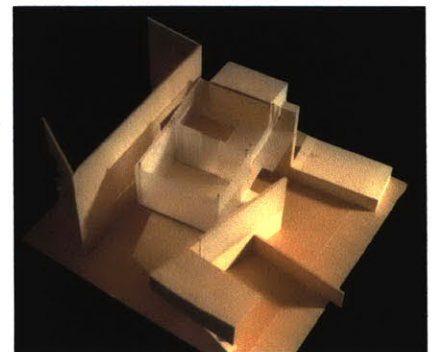




This model examines circulation and the resulting elevation of the library/museum building. Inset boxes represent practice rooms, and orange walls are book stacks. The intricacy of the circulation results in a complex, layered reading of the facade.



the changing building



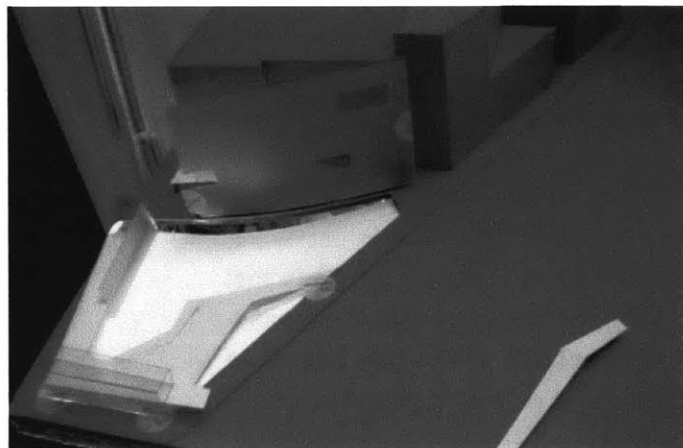
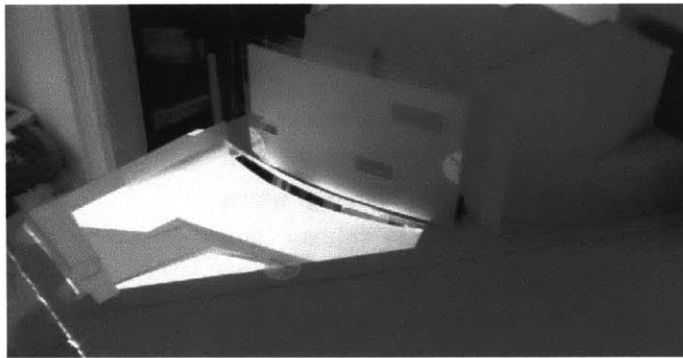


This is a model of the main performance hall with parts of the surrounding buildings, examining how its configuration might change. It abuts the hook and ladder building, which is the cabaret. The cabaret is a two-storey volume, and when the main hall splits into 2 smaller halls, one might open into the cabaret space and become a balcony. The other half of the hall rotates toward the street and comes to rest facing a screen wall, which might serve as a seasonal movie screen. The split hall opens onto the raised patio that looks over the street, inviting the performance to extend. Or the patio might become the new stage and the audience would watch from the street and from within the hall.

The split halls can also open onto the interior courtyard, providing a balcony for outdoor performances held in that more intimate space. And the space created by the expanding partitions as they move to close off the space could be employed even when the whole volume is closed to create an exhibition space.



landscape studies



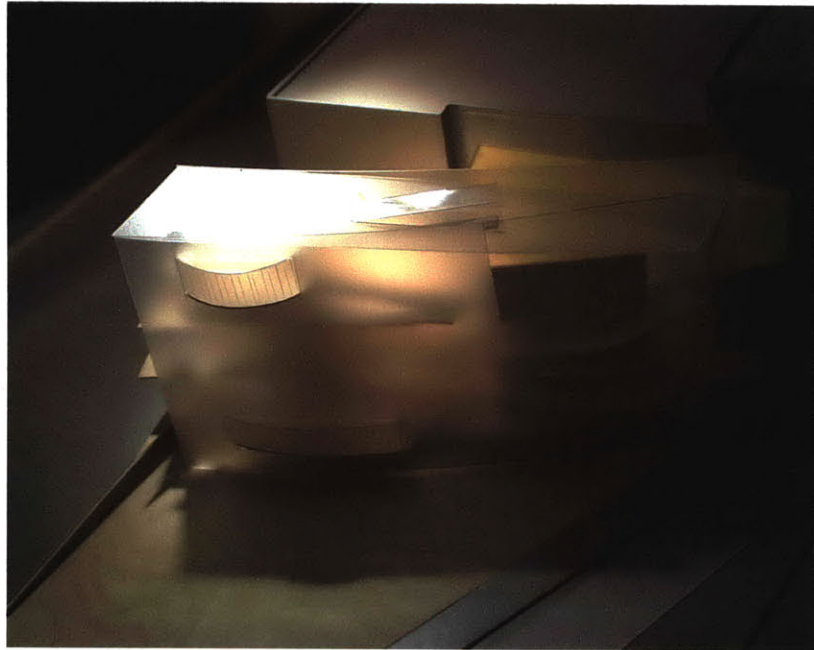
Up until this point in the process I have focused mainly on the surfaces that dominate the main public space. Although those surfaces are active and operable, surface alone cannot activate space.

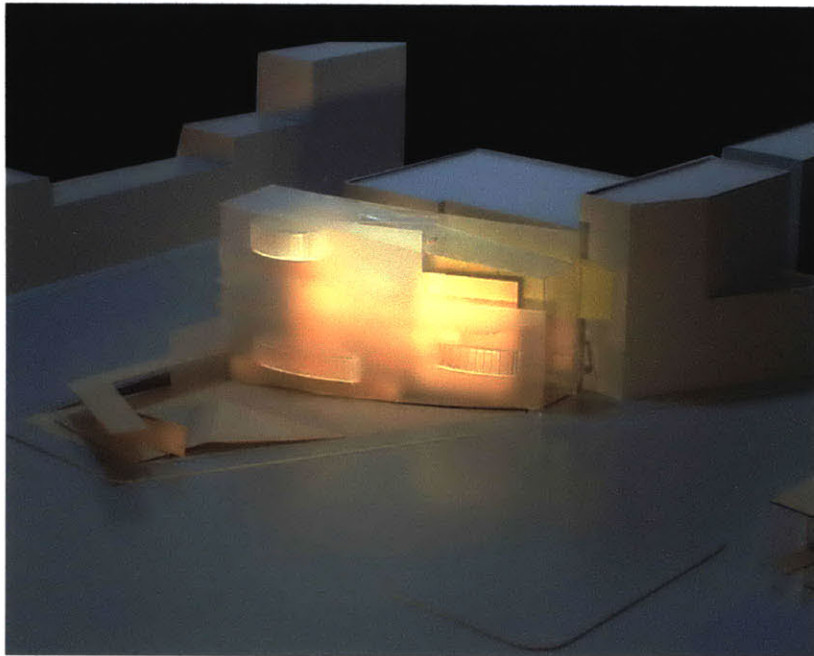
These sketches attempt to provide closure for the public area without closing it in. The gestures provide continuity and help to unite the entire complex. Landscape attempts to provide solid cohesion to an environment otherwise distinguished by sound and light; it engages the kinesthetic and sensual body and through it the ephemeral is registered.

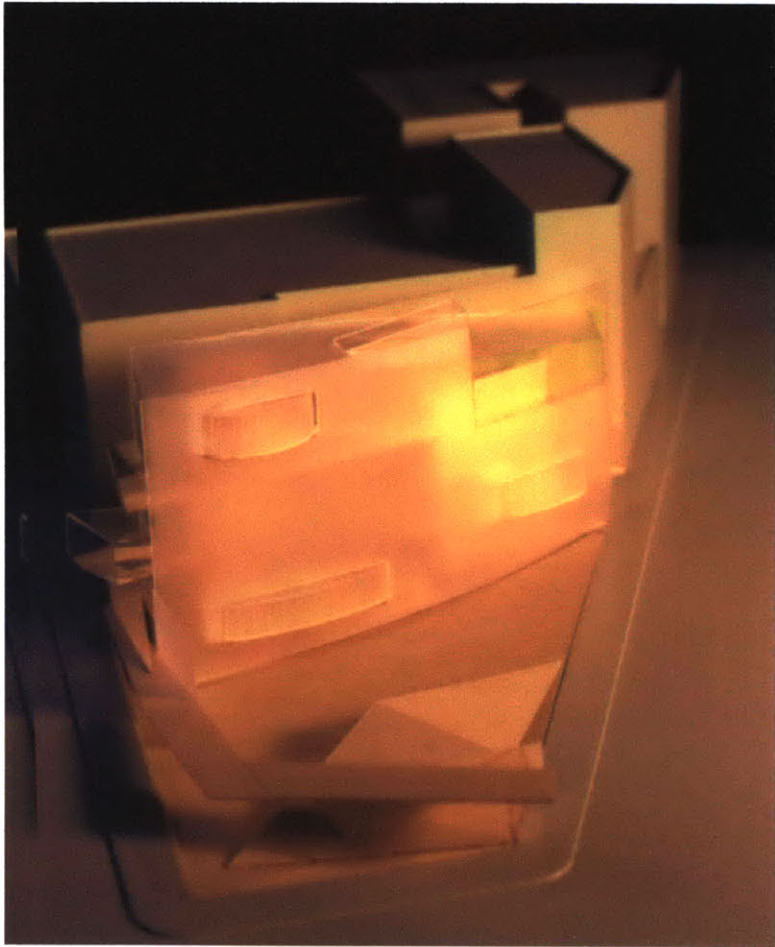
The entrance to the museum is the ramp at left down to the lower level of the library wall building. A ramp emerges from behind the library wall and climbs up to a platform at the Morningside Drive extreme of the plot. A booth for ticket and CD sales is located under this platform, and the raised layer of the plaza also serves as another level of seating for outdoor concerts.

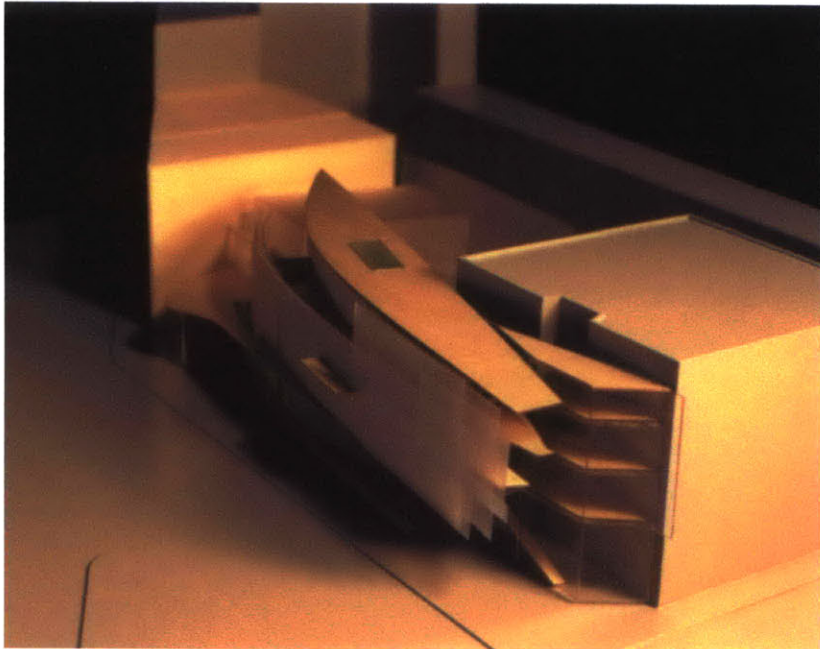
Under certain circumstances, Hancock Street could be closed and the entire complex could become a block party. Paving demarcates the public zone, facilitates street crossing, and allows the landscape to extend beyond the curb. The numerous openings, balconies and potential sites for impromptu performance create a web of riotous possibility.

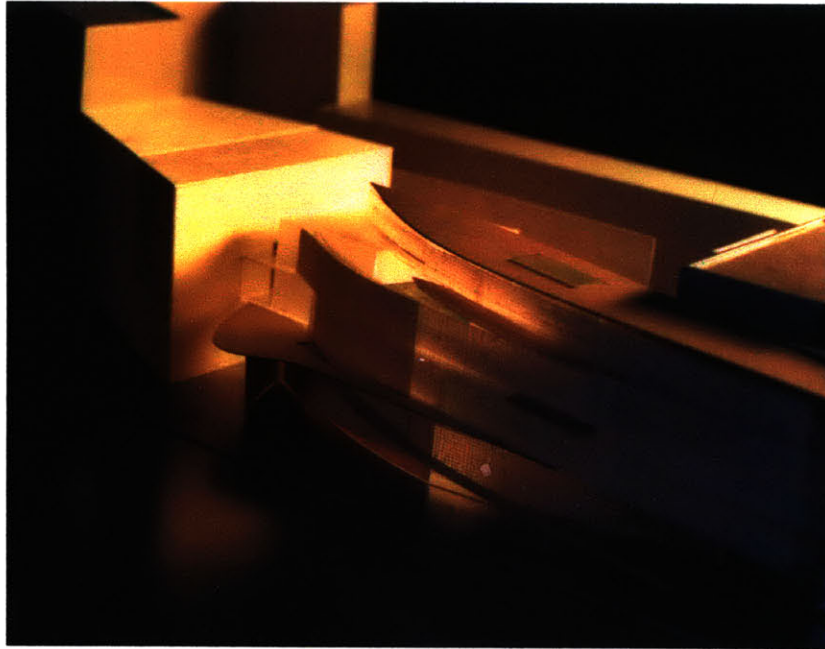
final models

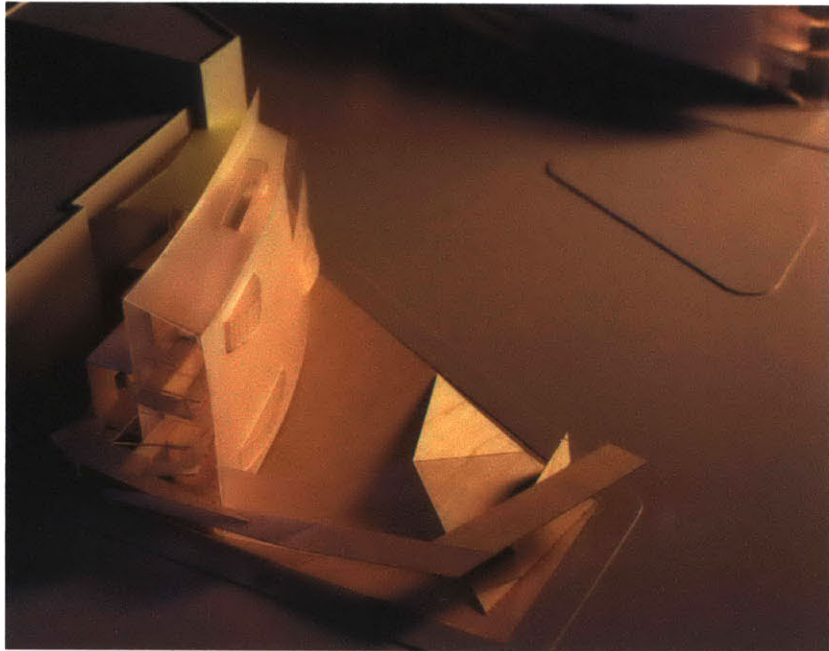


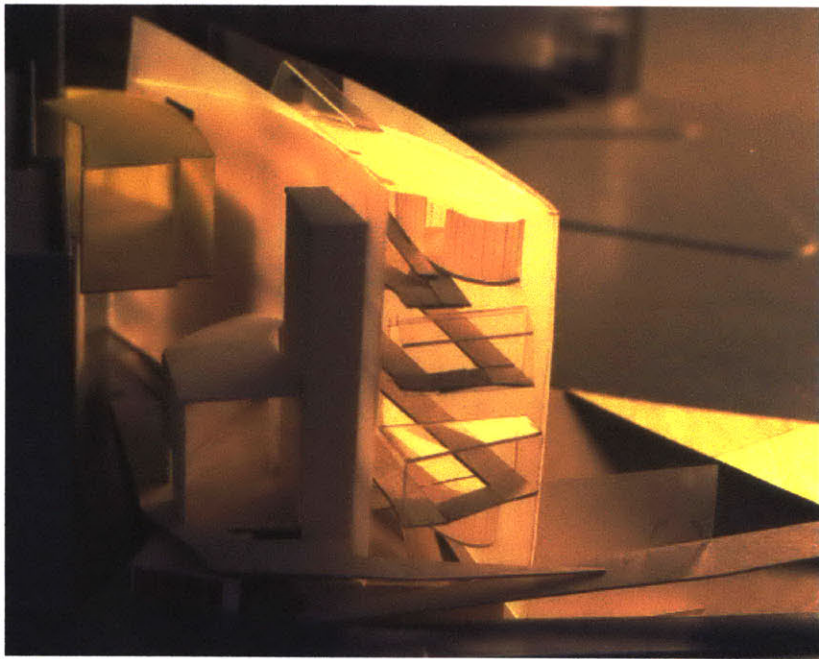


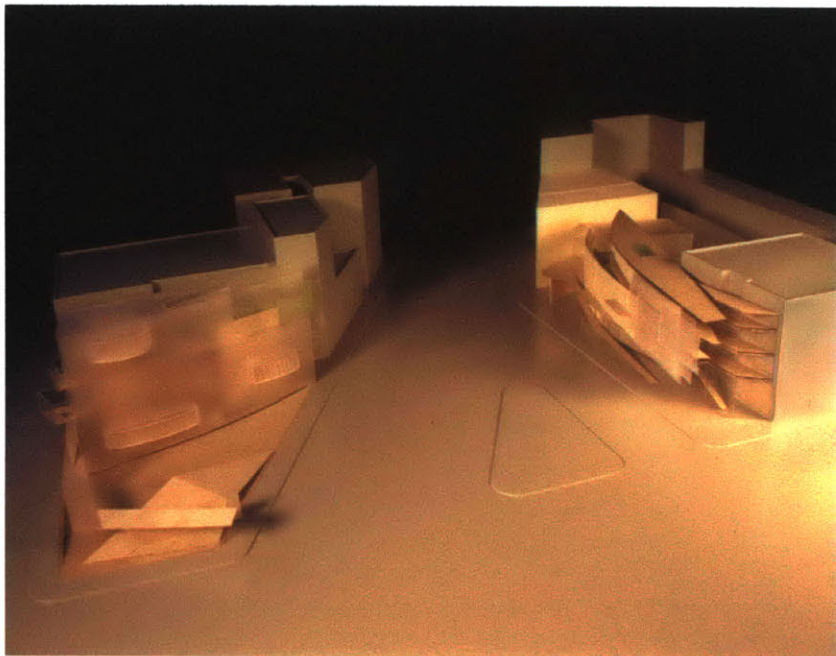


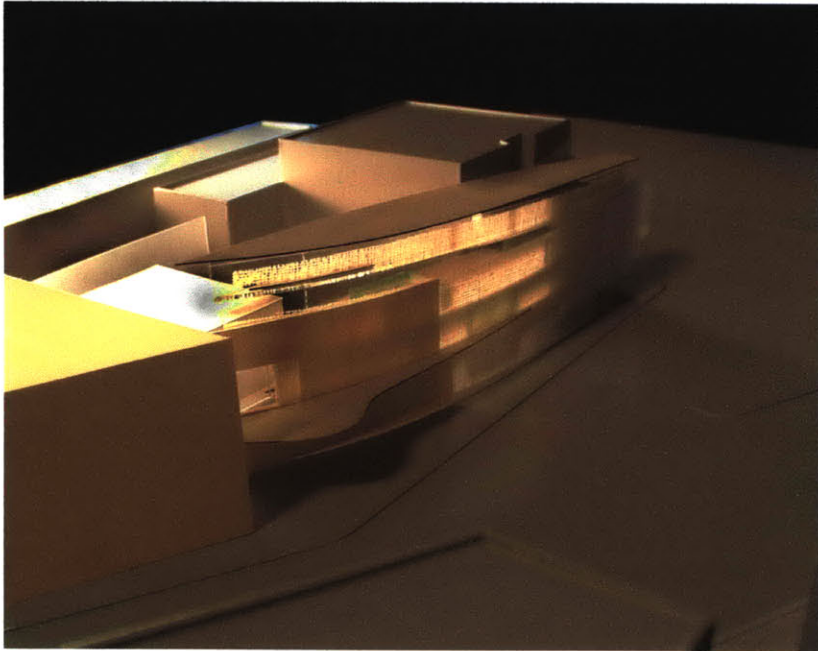


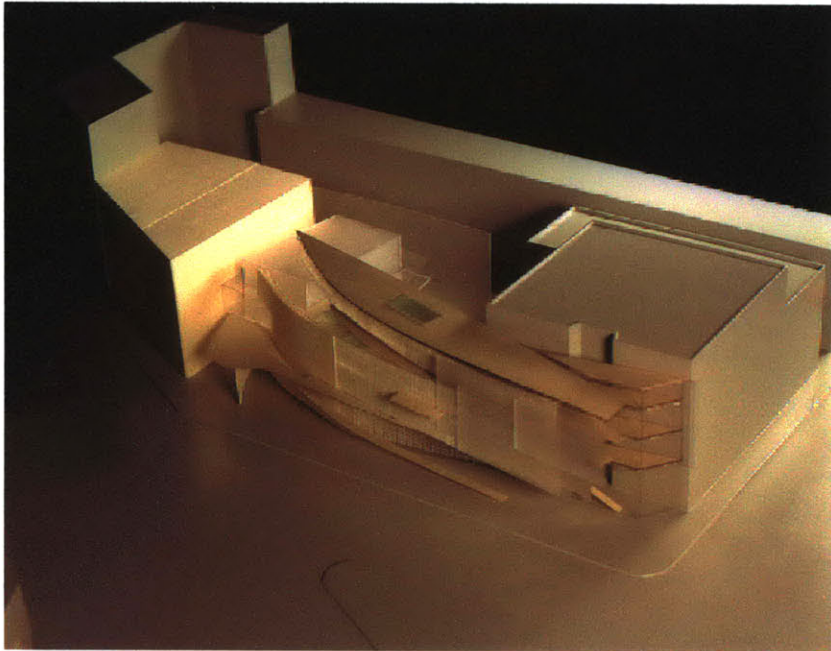


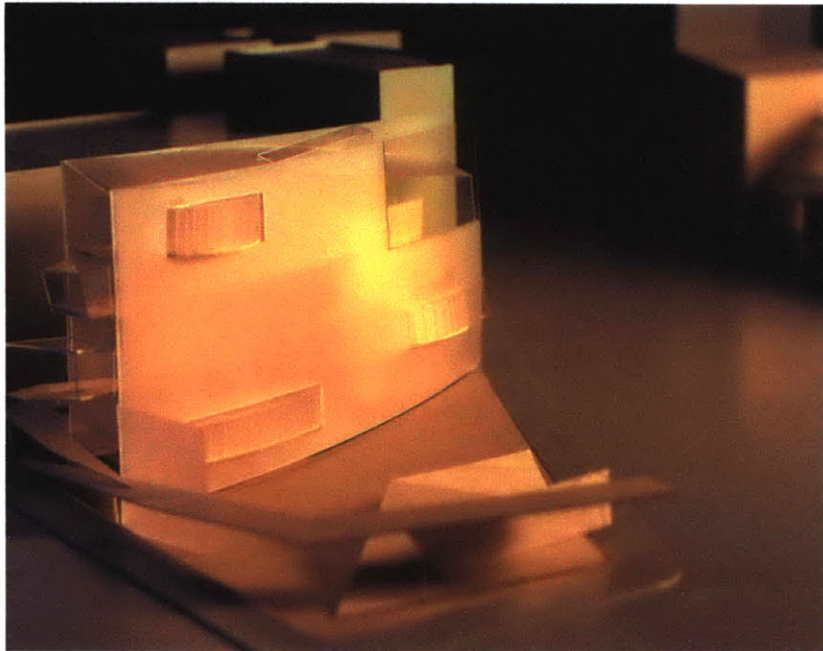


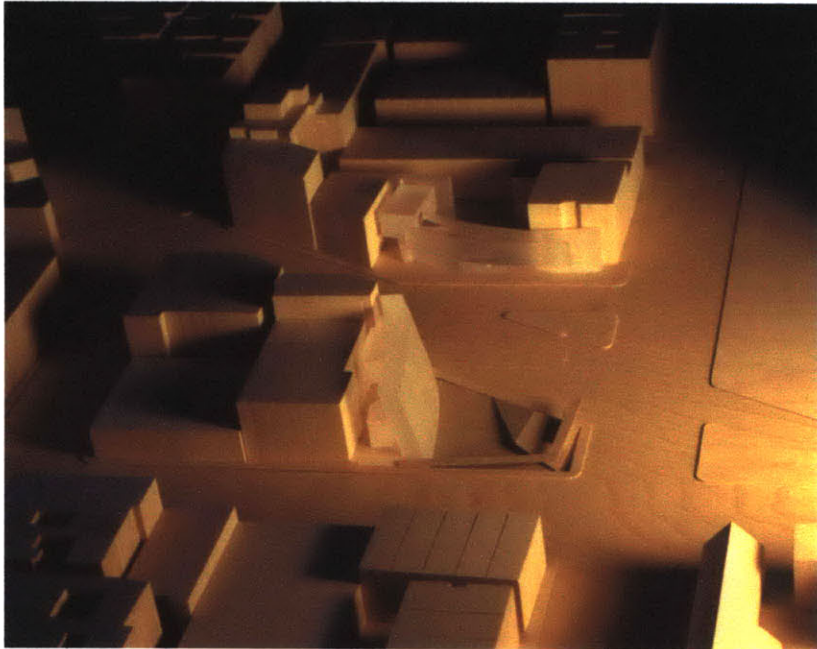


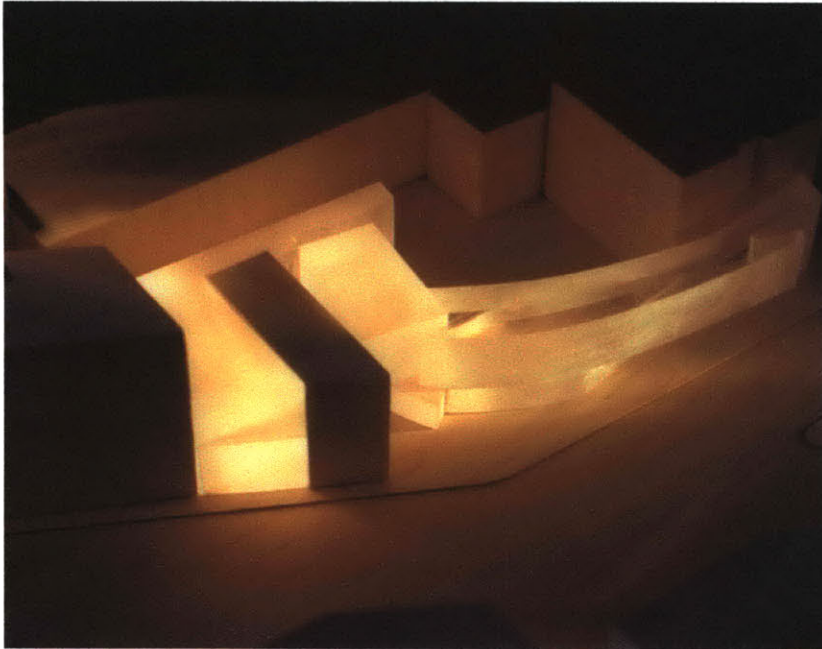


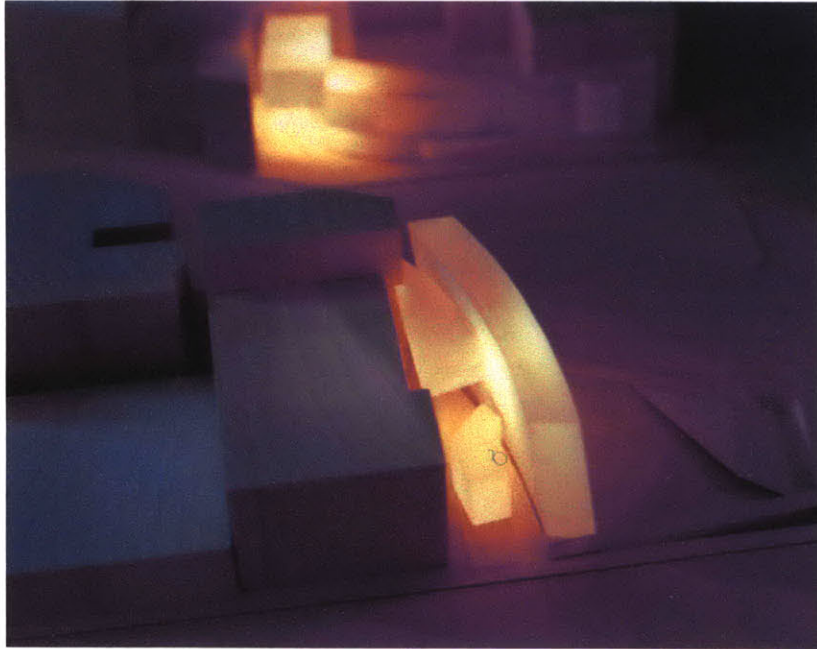












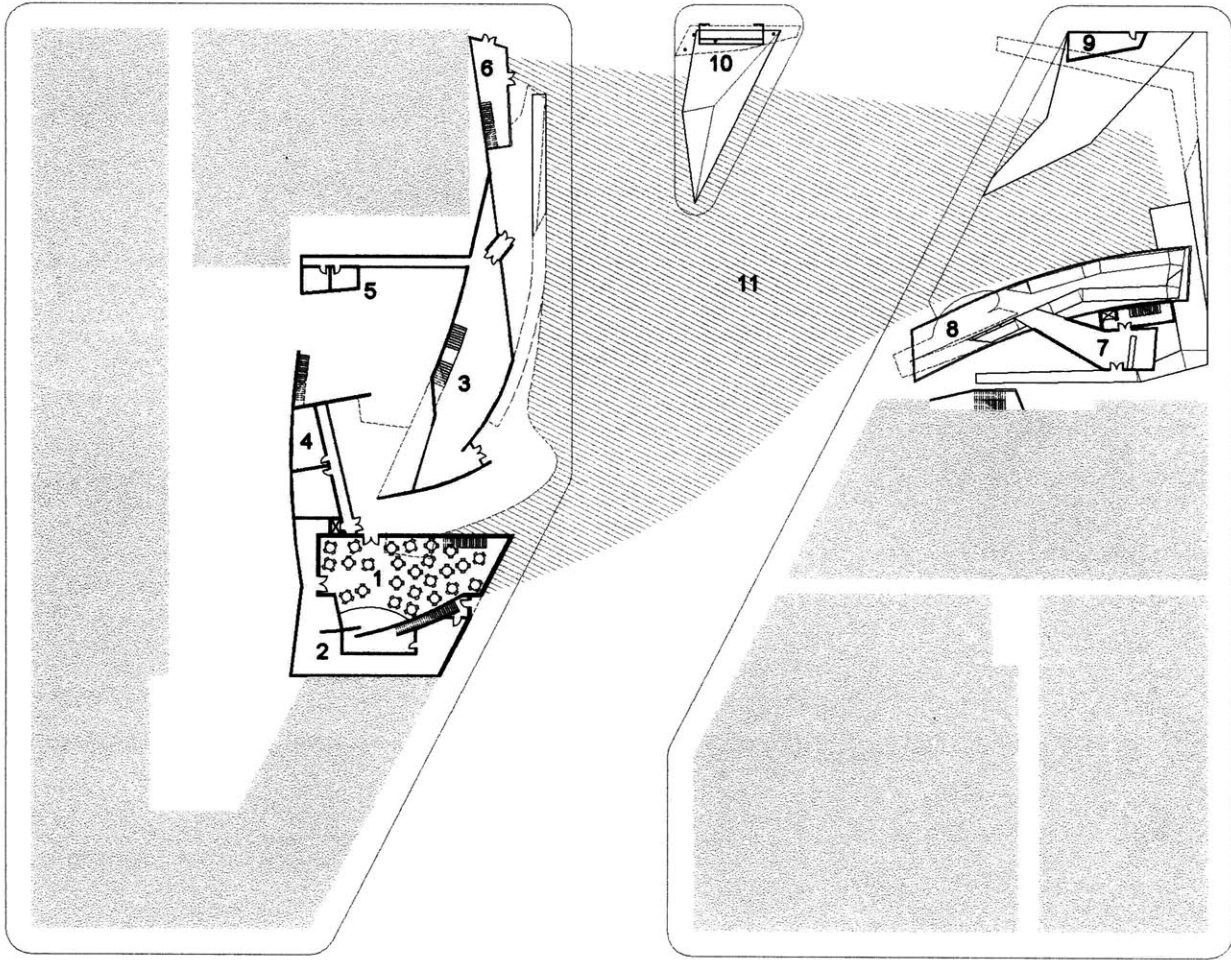




drawings

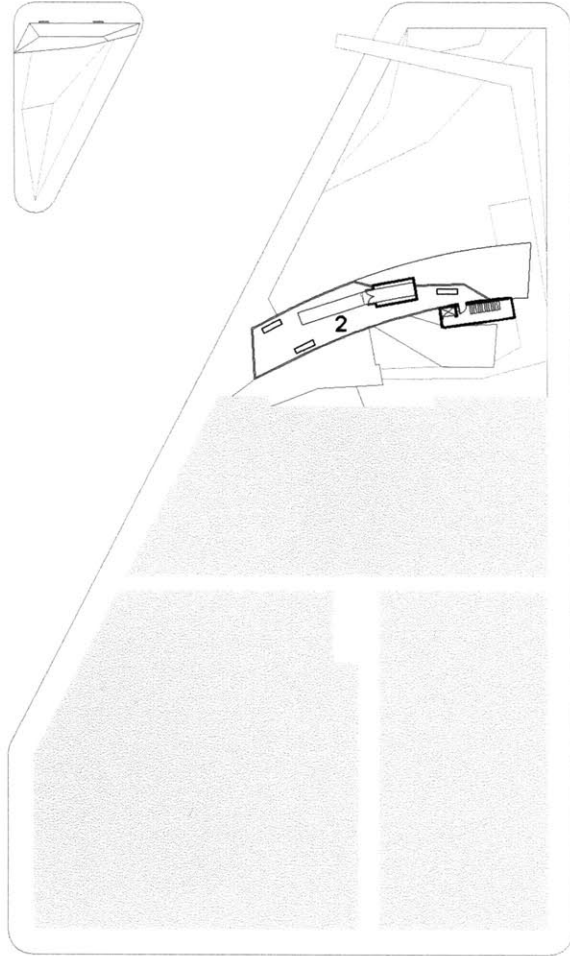
site plan. ground level.

cabaret. dining room and stage.	1
cabaret. kitchen and green room for performers.	2
lobby for performance hall on 2nd level.	3
restrooms for cabaret patrons.	4
restrooms for concert hall lobby.	5
entrance and stairway to music school on 2nd level.	6
library. entrance, circulation, reading room.	7
library/museum. ramps with bookshelves and museum displays.	8
cd shop.	9
bus shelter.	10
paving.	11



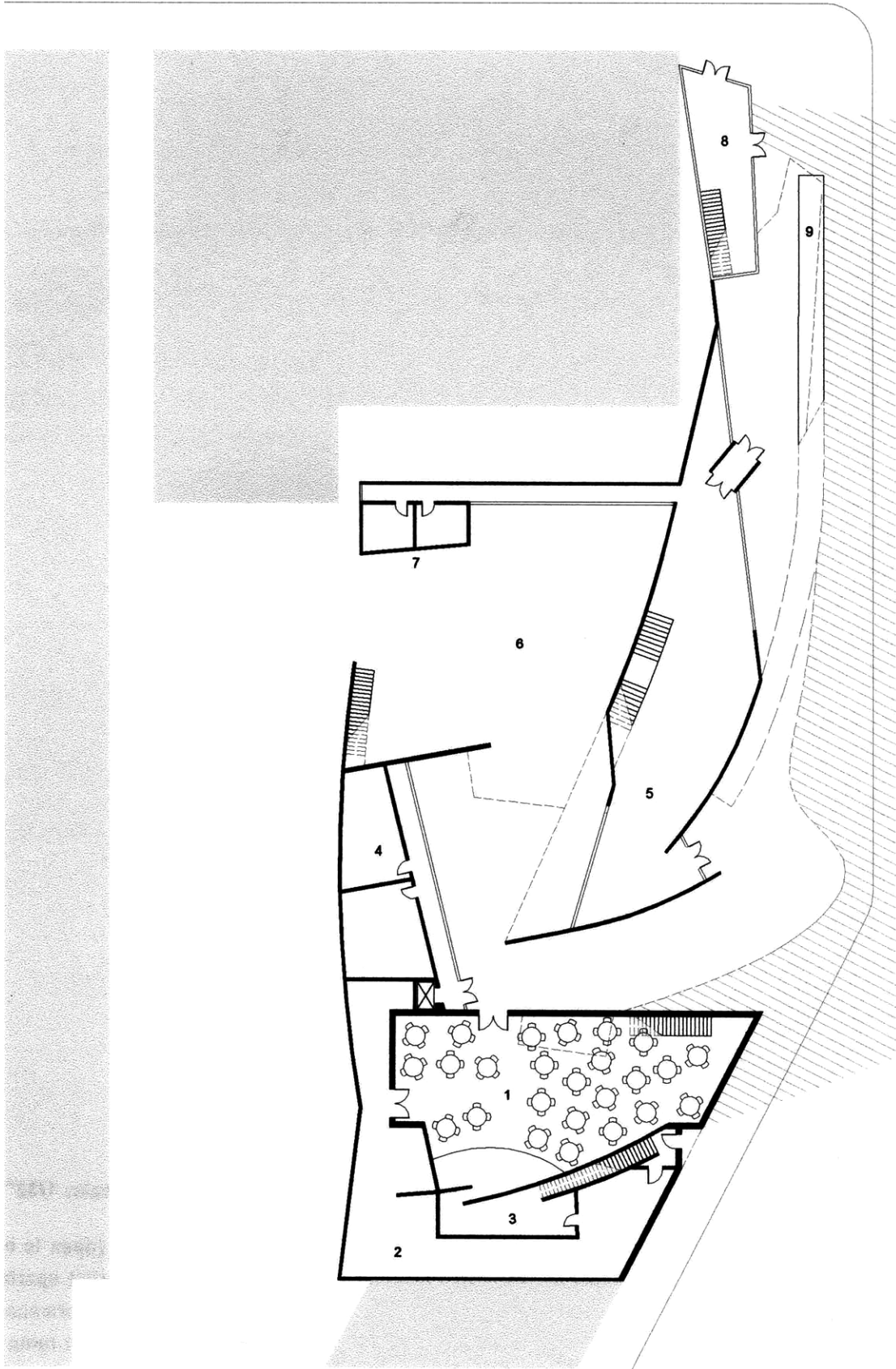
roof plan.

- roof terrace of school building with skylights for practice rooms below. 1
- roof terrace of library/museum building showing ramp down. 2



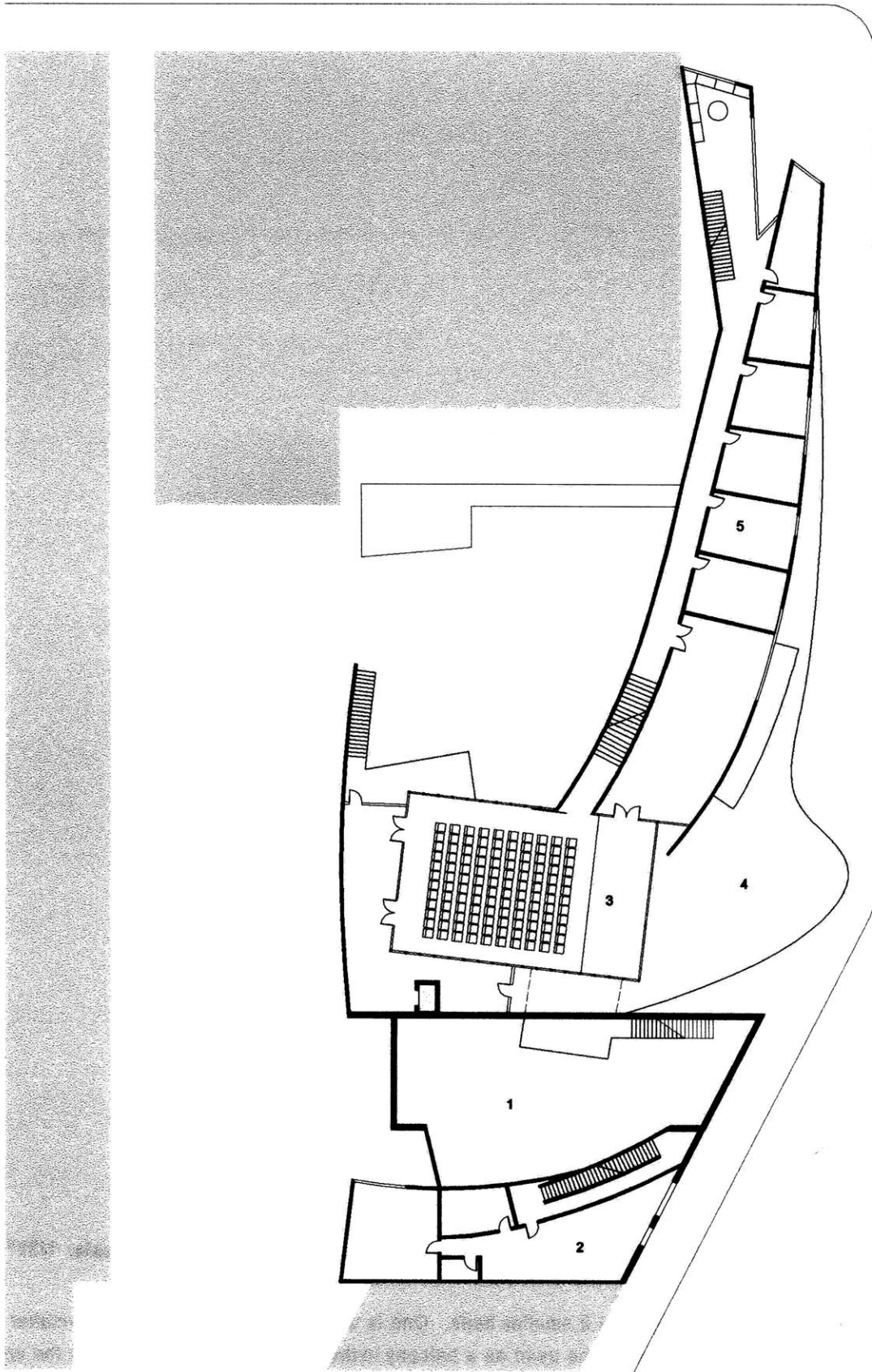
school building. ground floor plan. scale: 1/32" - 1' - 0"

cabaret dining room	1
cabaret kitchen	2
green room for performers	3
restrooms	4
lobby for performance hall above	5
courtyard	6
restrooms	7
entrance and stairs to music school	8
ramp to elevated outdoor patio overlooking street	9



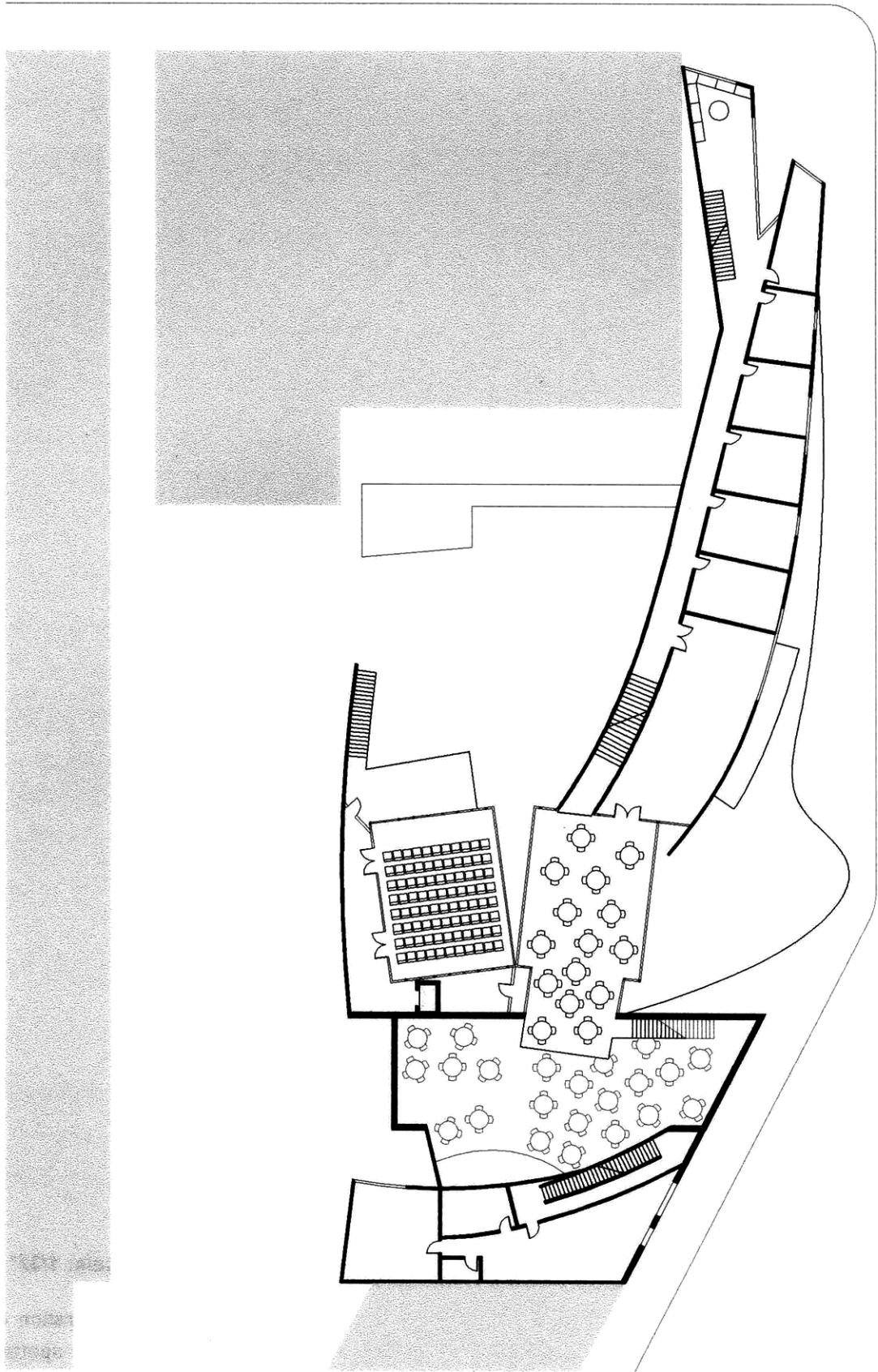
school building. second floor plan. scale: 1/32" - 1' - 0"

- cabaret dining room (open to below) 1
- visiting artist apartments 2
- performance hall 3
- outdoor elevated patio with ramp down 4
- classrooms and faculty studios 5



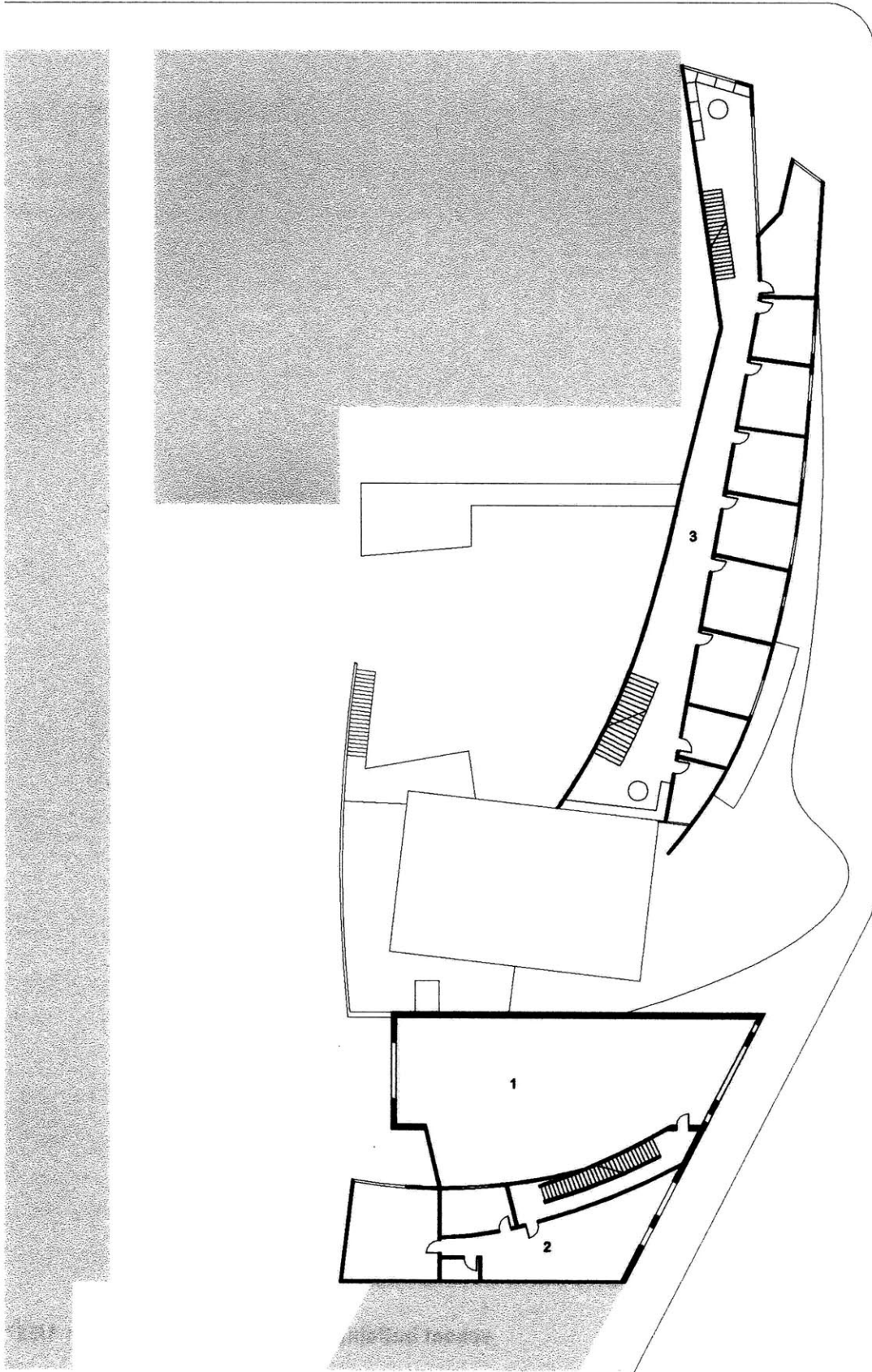
school building. second floor plan. alternate configuration. scale: 1/32" - 1' - 0"

Performance hall is divided into 2 smaller halls. One is used for lectures, movies or smaller concerts and masterclasses. The other can be used as a balcony to the cabaret. The hall also has the capacity to open out into the interior courtyard to serve as a balcony for events there.



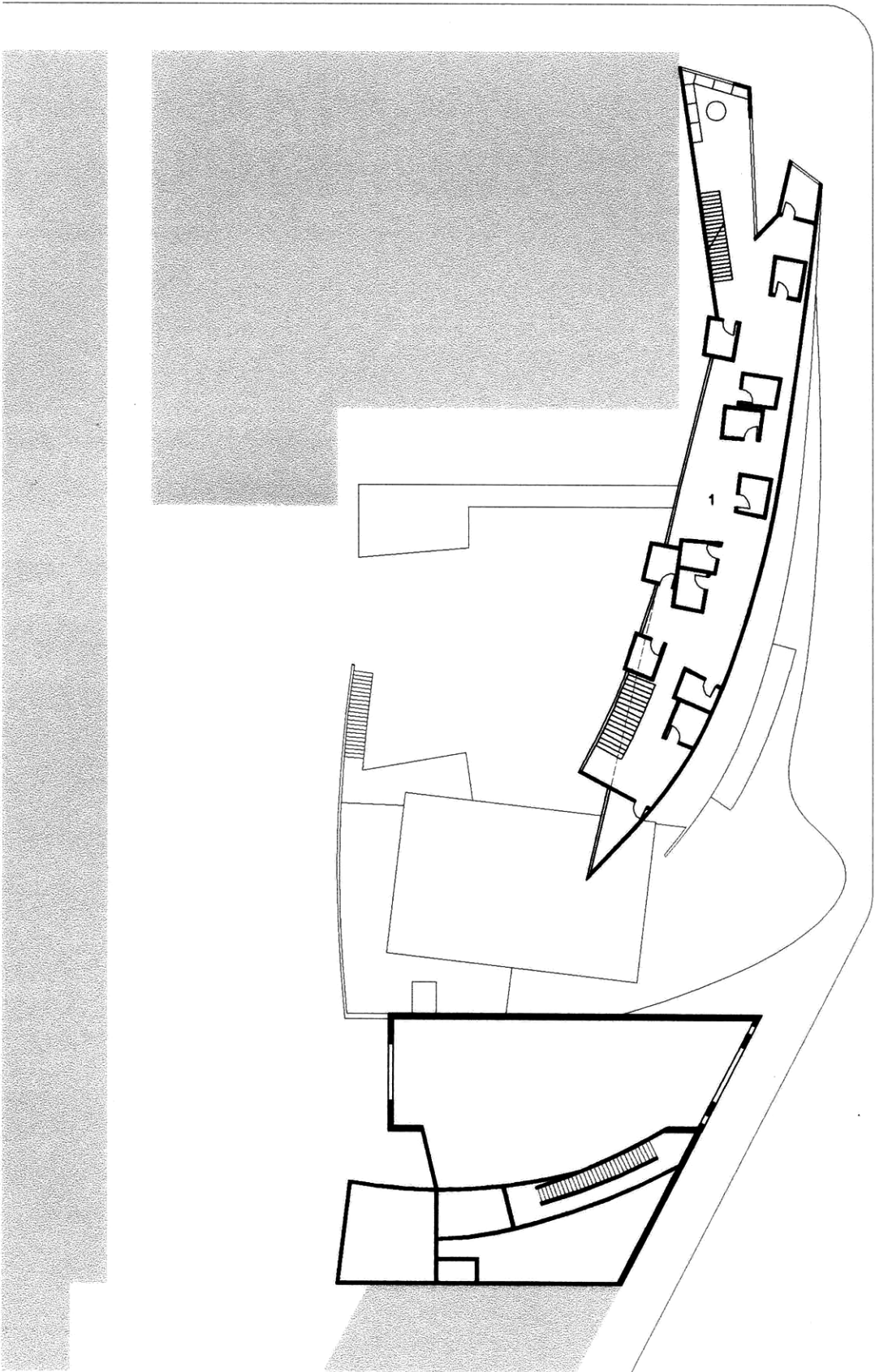
school building. third floor plan. scale: 1/32" - 1' - 0"

administration office 1
visiting artist apartments 2
classrooms and faculty studios 3

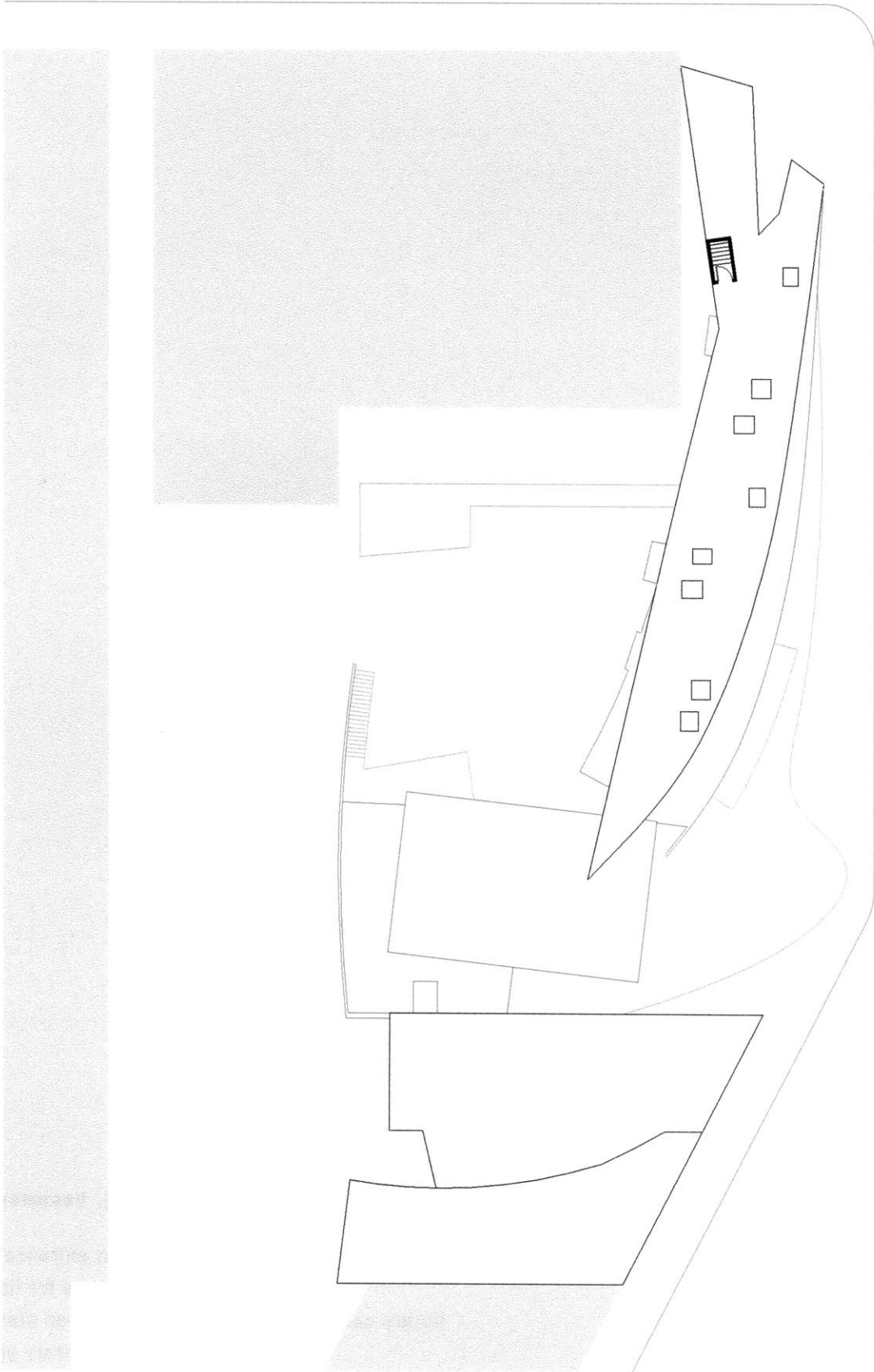


school building. fourth floor plan. scale: 1/32" - 1' - 0"

practice rooms 1

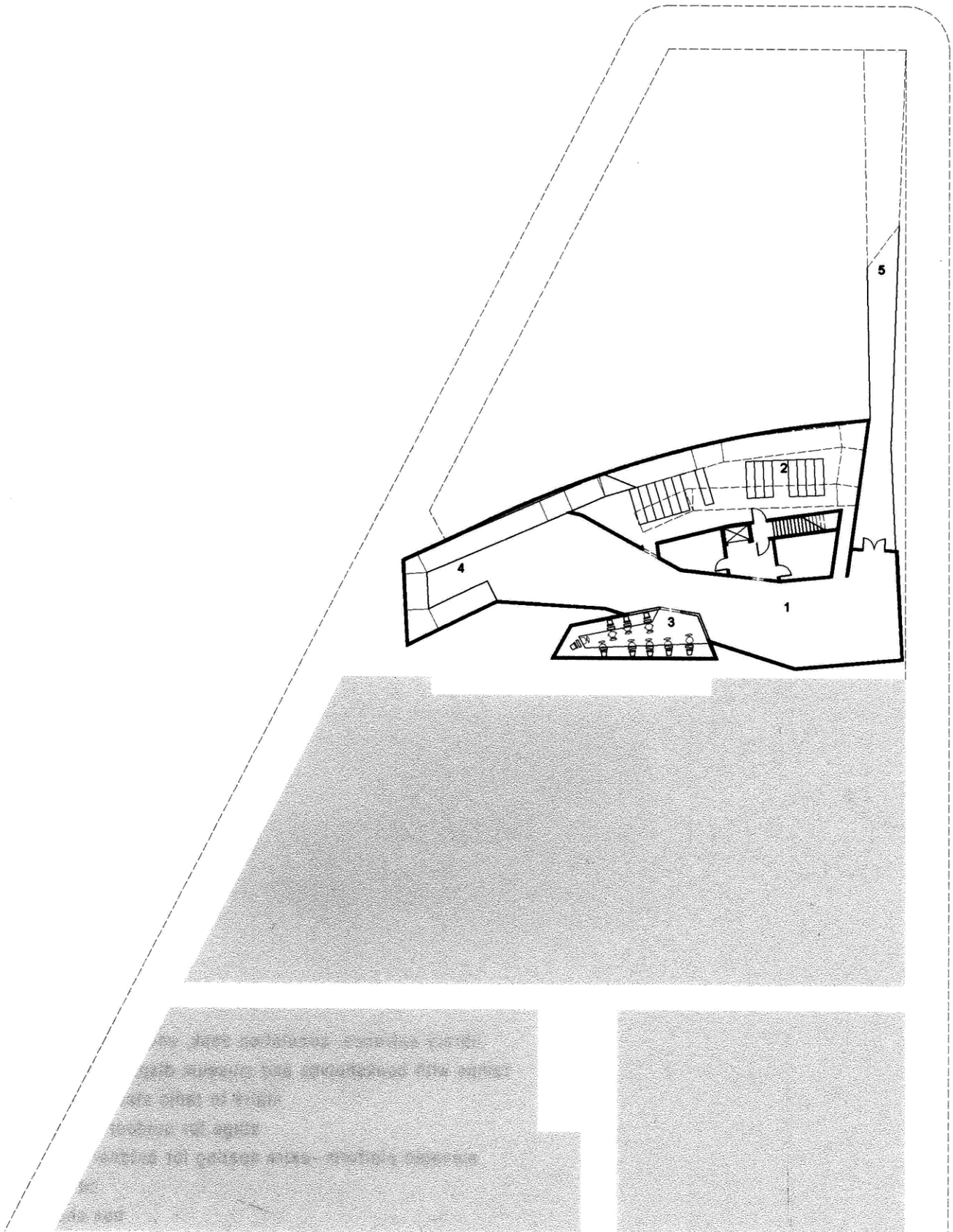


school building. roof plan. scale: 1/32" = 1' - 0"



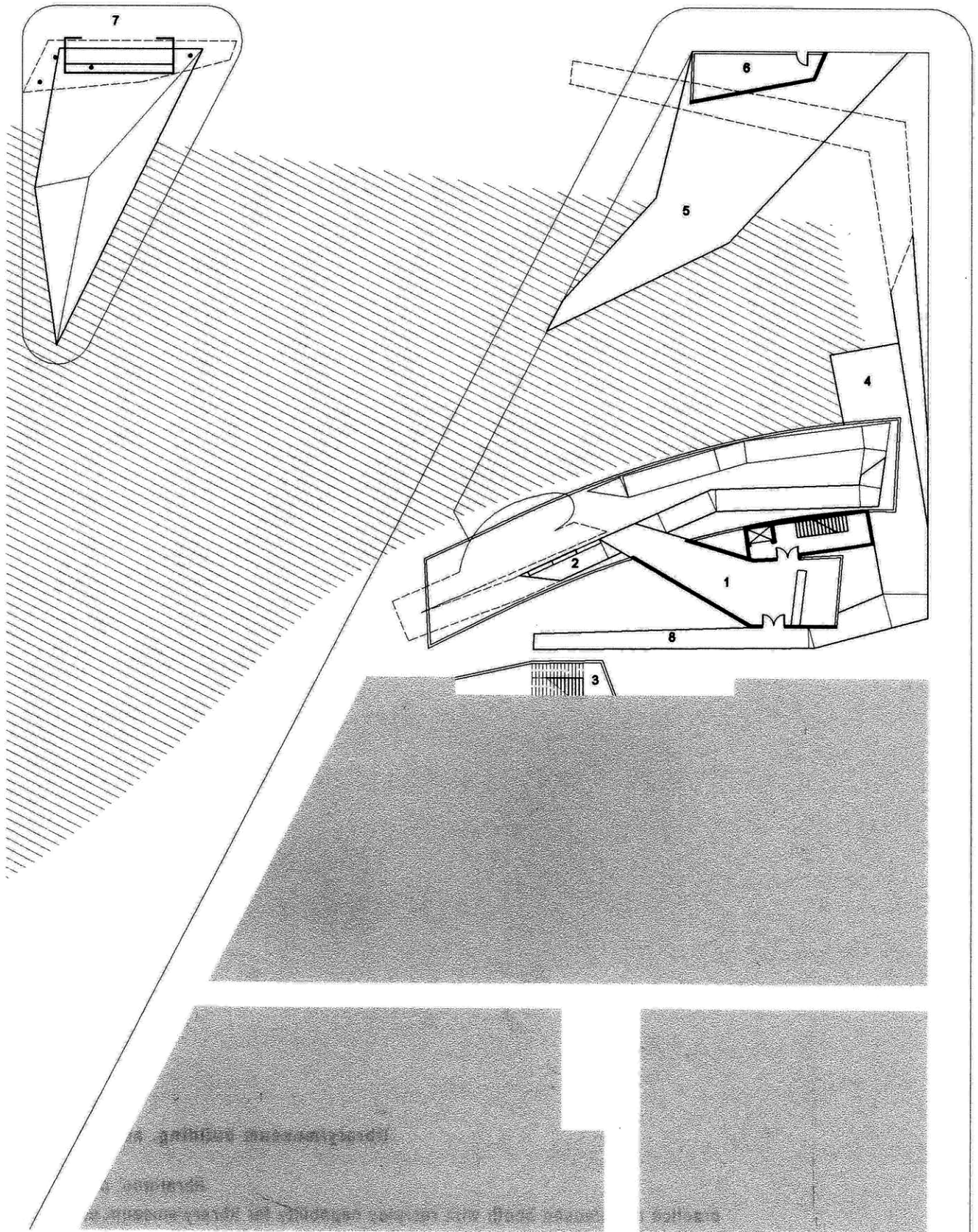
library/museum building. basement level.

- museum entrance hall. 1
- rolling stack storage for library. 2
- library catalogs and museum information stations. 3
- ramp up to main library space. 4
- ramp down to museum entrance. 5



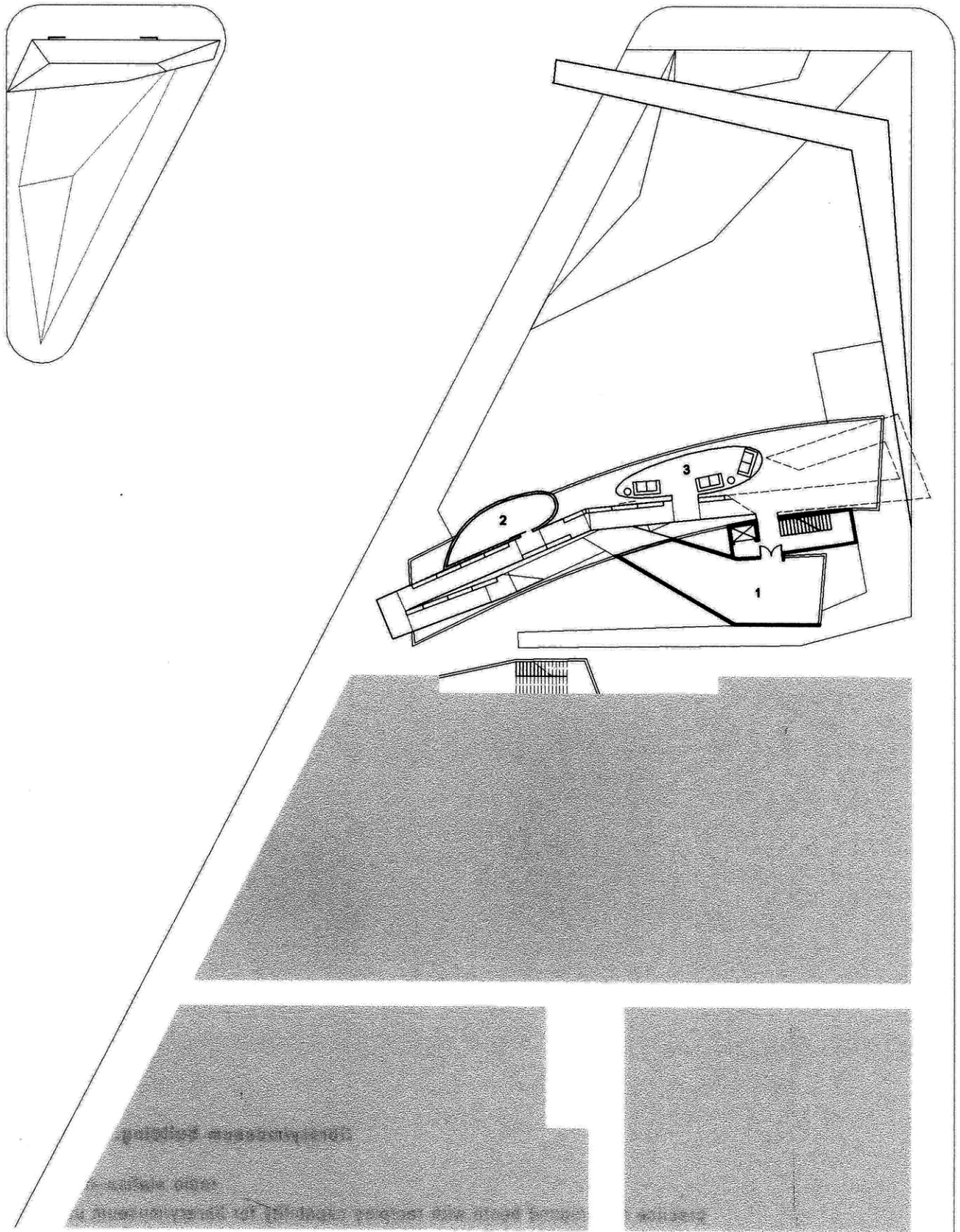
library/museum building. ground level.

library entrance, circulation desk, and reading room.	1
ramps with bookshelves and museum display elements.	2
stairs to radio station, above.	3
stage for outdoor concerts.	4
elevated platform--extra seating for outdoor events.	5
cd store.	6
bus shelter.	7
ramp up to library entrance.	8



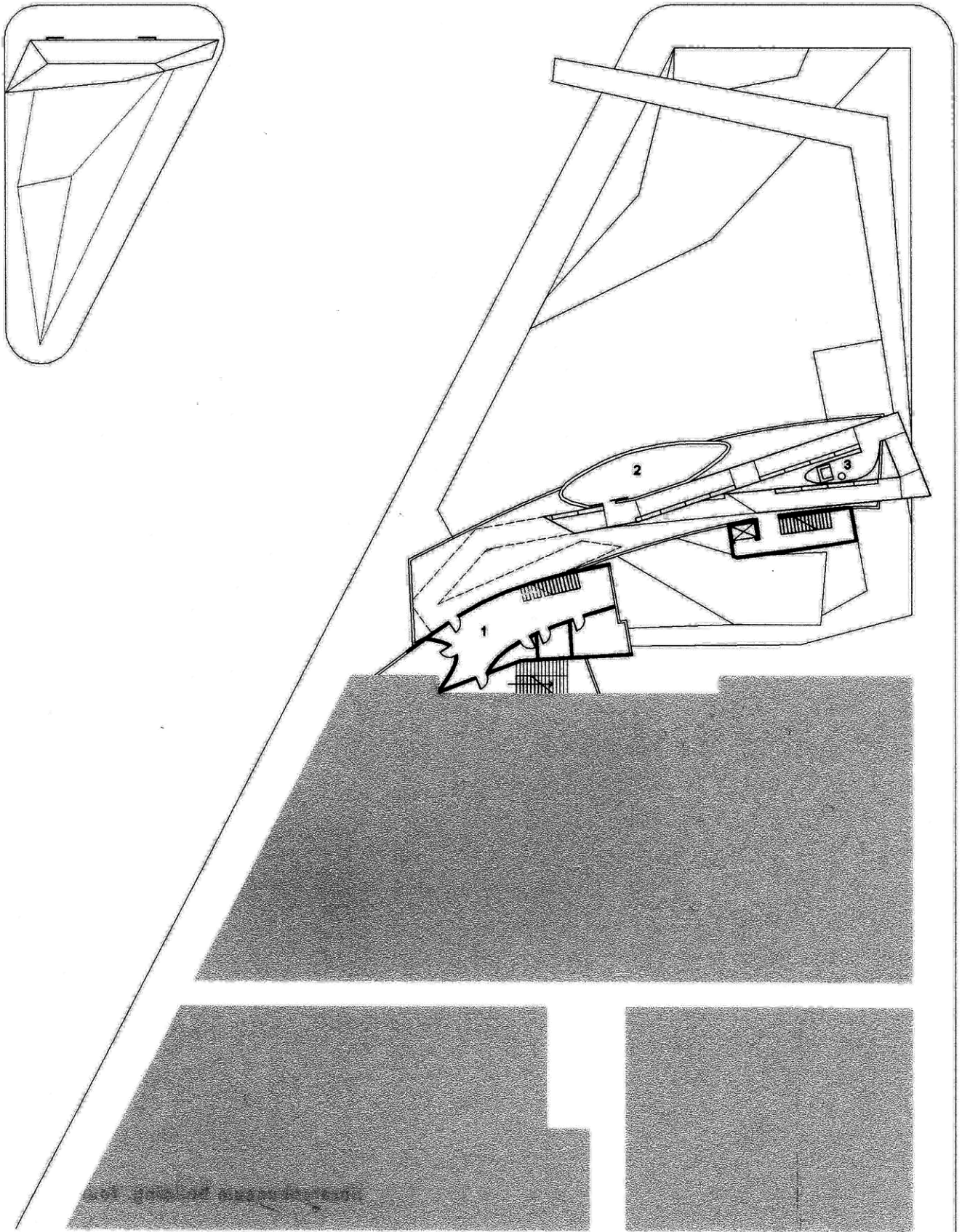
library/museum building. second level.

- librarians' offices. 1
- practice room/sound booth with rec/play capability for library/museum users. 2
- reading area. 3



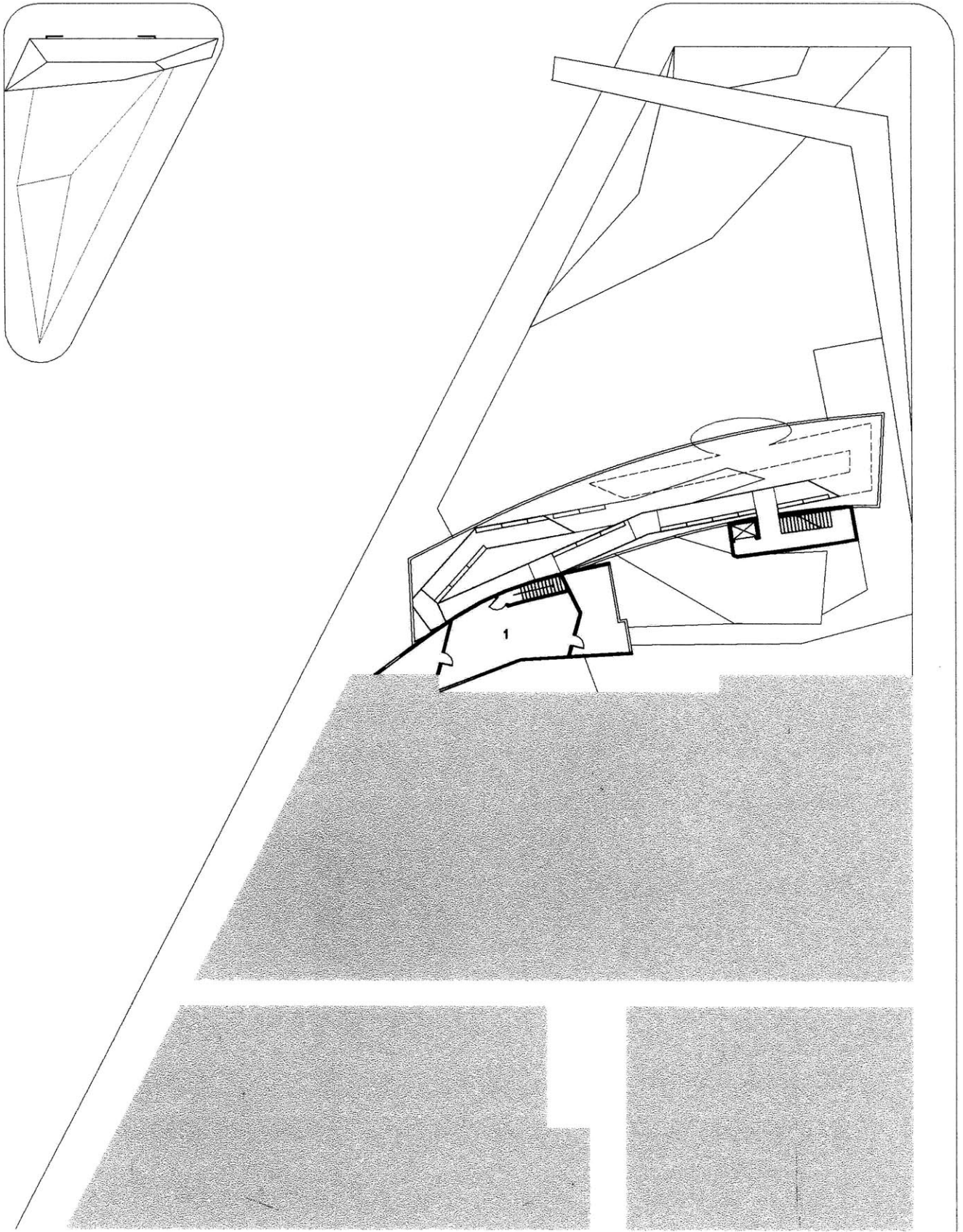
library/museum building. third level.

- radio station--offices. 1
- practice room/sound booth with rec/play capability for library/museum users. 2
- reading area. 3

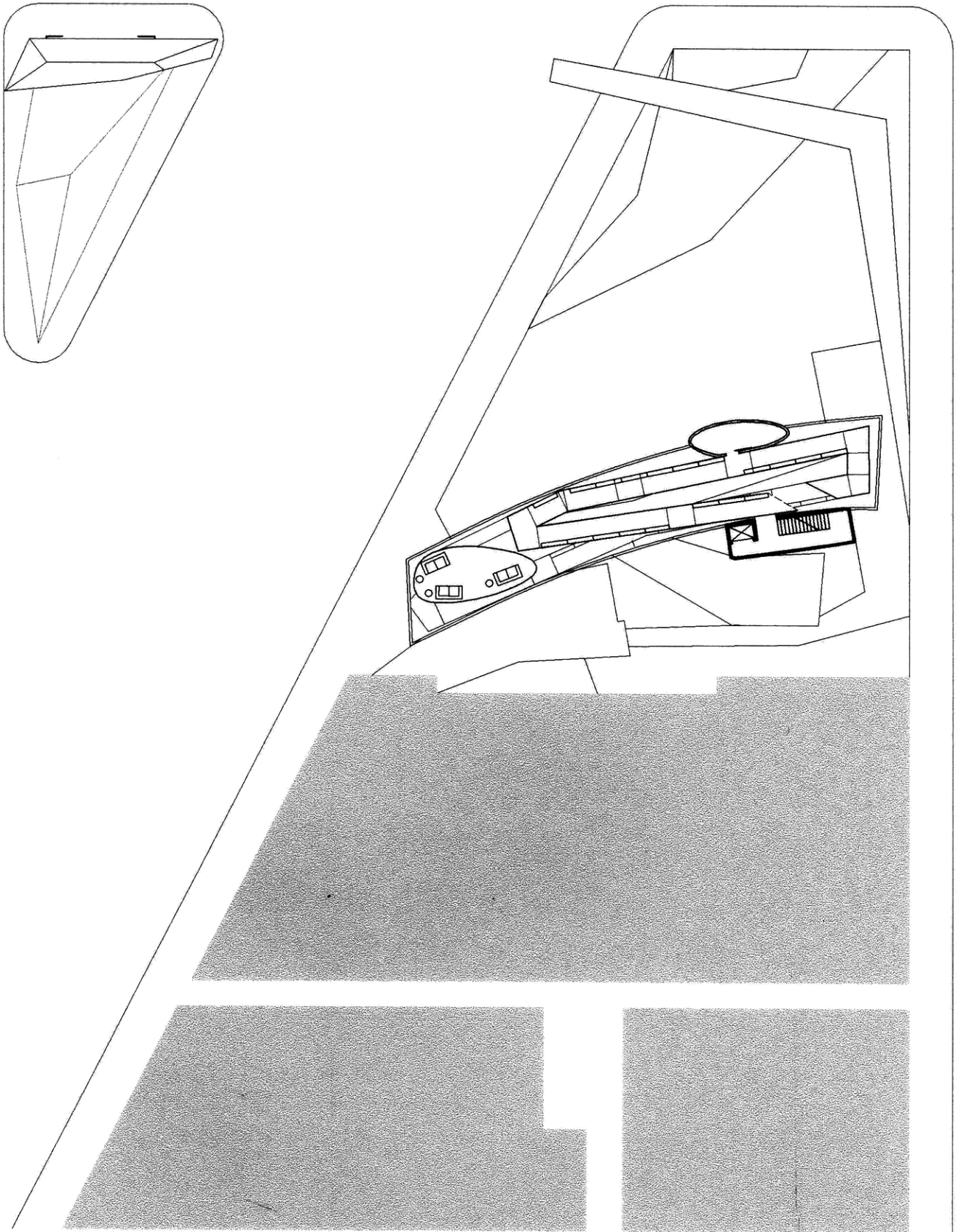


library/museum building. fourth level.

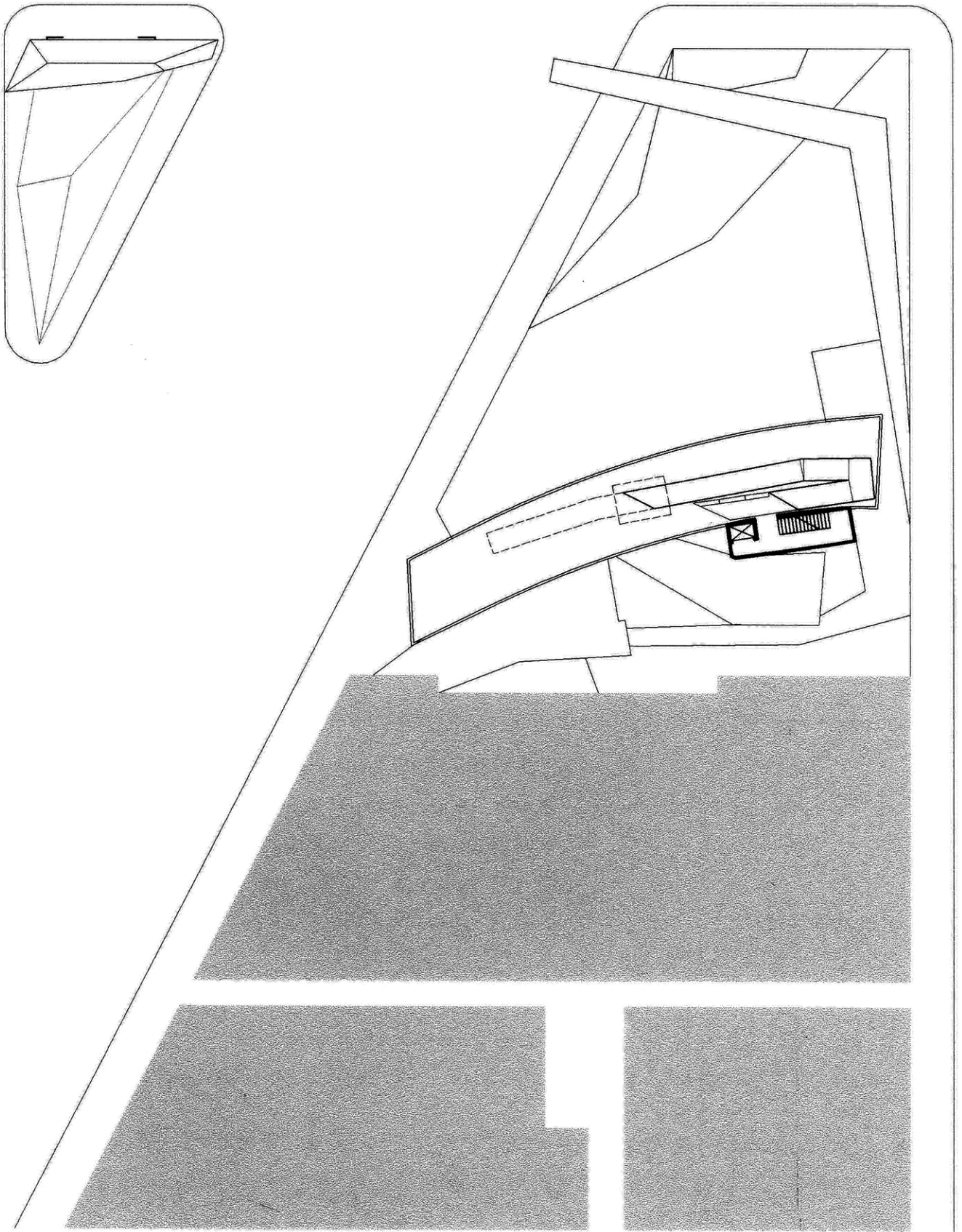
radio station--broadcast/recording studio. 1



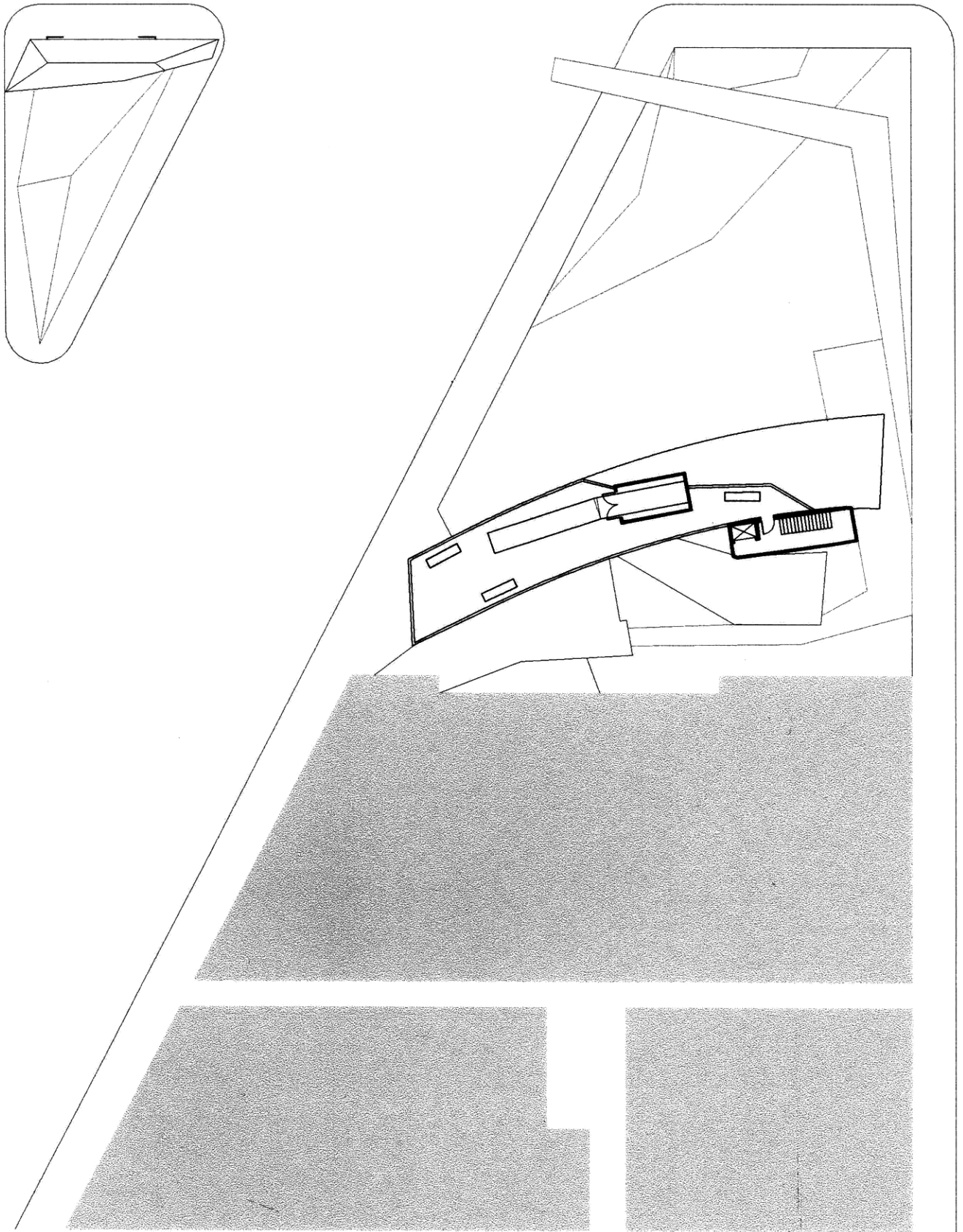
library/museum building. fifth level.



library/museum building. sixth level.



library/museum building. roof level.



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