SPACE: THE EXPERIENCE OF ARCHITECTURE

by

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How can sound, light and time shape space, and how can material mediate these qualities of space, intensifying experience and establishing a deeper connection between the individual and their environment?

There is a growing schism between people and their objects, and further, between people and the built environment. It is what Martin Heidegger refers to as the loss of nearness between people and their world. This project's position that both sensory experience and material expression establish the foundations on which people and objects relate. This proposition suggests that "nearness" between people and their world requires a fundamental understanding or appreciation of their own environmental or architectural experiences. Our senses assemble our experience and are a means of amplifying the potential transactions (connections) between body, imagination and environment. The environment or existing context was considered a catalyst to engage the interactions between the body and the imagination which can develop a greater affinity between the individual and his/her environment.

The project is concerned with space and is structured around these ideas: space and the individual; space and time; space and matter; space: the experience of architecture. The event is a music centre for the rehearsal, performance and observation of music.

The site offers a broad experiential spectrum to both the eye and the ear. It is on the Halifax waterfront, below Lower Water Street, immediately adjacent to the decommissioned Nova Scotia Power station. The east side of the site is defined by the edge of the harbour and the west by Lower Water Street. There exist two distinct sonic and visual environments: one urban, one industrial; one on the street, one on the water.

There are a number of distinct roles that each individual plays throughout the event, i.e., a person listening, rehearsing or performing. Examining each of these roles over time began to have some direct architectural implications. For example, point of entry, time of entry, procession to and from the event, role during the event, all have distinct "moments or episodes" for each of the participants.

Episodes represent points of perceptual intensity or focus throughout the event and most of the investigation surrounds this particular issue - creating episodes which are perceptually distinct or recognizable throughout the duration of the event to each of the participants. Frames and threshold became primary tools for deconstructing the ambient perceptual context through subtle environmental changes that affect the perceptions of space (volume, light, texture, etc.) and the event.

How can sound, light and time shape space, and how can material mediate these qualities of space, intensifying experience and establishing a deeper connection between the individual and their environment?

We have a mental need to experience the reality that we are rooted in the continuity of time, and in the man-made world it is the task of architecture to facilitate this experience.[1]

There is a growing schism between people and their objects, and further, between people and the built environment. It is what Martin Heidegger refers to as the loss of nearness between people and their world. The recent acceleration of technology has altered the way in which we live. The complexity of materials and their assemblies has slowly reduced their intelligibility, ultimately widening the gap between "people and their world." Much of architecture today follows its own rationale outside of human interests, where banality or speculative false reality is a substitute for real experience.[2] Architecture can begin with "real experience,"instead of economy, image or functional programming. The experiential aspects of space and architecture present opportunities to link the individual to the environment in which they live.

As buildings lose their association with the logic of the body and human experience they become detached and have a tendency to lie only within the visual modality. It is the isolation of the eye from its interaction with the other senses that fragments perception, and reinforces the sense of detachment. The sense of sight implies exteriority, whereas sound creates an experience of interiority. I regard an object, but sound approaches me; the eye reaches but the ear receives. Sight is a sense of the solitary observer, whereas hearing creates connection and solidarity; our look wanders lonesomely into the dark depths of the cathedral, but it is the sound of the organ that makes us immediately experience our affinity with the space.[3] Although these senses are abstract or intangible they have the potential to converge, shape space and hone spatial cognition, through which Bernard Tschumi calls "environmental triggers"[4] that evoke perceptions, and intensify spatial experience and awareness.

Juhani Pallasmaa suggests that the task of architecture is the reconciliation between ourselves and the world, and that this mediation takes place through the senses.[5] It is my position that both sensory experience and material expression establish the foundations on which people and objects relate. Perhaps "nearness" between people and their world requires a fundamental understanding or appreciation of their own environmental and architectural experiences. Our senses assemble our experience and are a means of amplifying the potential transactions (connections) between body, imagination and environment.

The eye and the ear resemble each other in scale and number, and their functions both result in the perception of tectonic matter. They are the sensory mechanisms through which we construct sense-ual experiences, memories, and a context within which we place ourselves. One could investigate their absolute psycho-semantic potential; they both possess the potential to carve and delineate space, but they remain abstract and disconnected from others until they act within a collective context. Space gives form and proportion: time supplies it with life and intensity.[6] Space is a product of both the object and the activities surrounding it. It is the distinct experience of space that engages the individual and constructively supports the event.

The event (place and time) can limit and establish a context for the play of the senses. It makes place and time distinct by framing them in a temporal instant. The project is a music centre that contains the events of rehearsal, performance and observation of music. Particular temporal instants are selected and framed within the event. As each instant is framed and then bleeds into the next, the event is described and limited. A more complete play of the senses is assembled and experienced, amplifying the potential transactions (connections) between the body, imagination and the environment.

Much of this investigation has been hinged on a method of framing or boundary - making space/matter/time distinct. Constructing limits, or drawing a line around each episode or moment to bring forward particular elements of context within the event is the general strategy. Each of the participants will experience the event differently, and by considering each stage of the procession, there begins to develop points of thematic intensity: approach, entry, corridors, collective spaces and primary event spaces.

A music centre presents a situation where not only the building but the participants become integral to the experience. Each of the participants occupies a particular role in the event, but all share a general processional experience of the event. The intent was to create an enveloping environment where architecture magnifies the expressive dimension of sound/music and vice versa.

The events tend to suggest a enclosed or isolating environment which could result in a self-referential intervention. At what level does the site matter or what influence can the site have on the event? The site offers a context within the continuum of the participant upon arrival and departure, distinct from the event. I have chosen a site that offers a broad experiential spectrum to both the eye and the ear. It is on the Halifax waterfront, below Lower Water Street, immediately adjacent to the decommissioned Nova Scotia Power station. The east side of the site is defined by the edge of the harbour and the west by Lower Water Street. There exist two distinct sonic and visual environments: one urban, one industrial; one on the street, one on the water. (See figure 1)

Site Plan (figure 1)

As one of the major outbound routes from the Halifax Containership Yard, Lower Water Street experiences heavy traffic. There has been considerable development along the harbour's edge. It has experienced a rapid shift from industrial to pedestrian use. New boardwalks, benches, lighting, and vendor's licences have been erected and secured to catalyse pedestrian use and growth. This site sits currently on the southern edge of this development, along the boardwalk which will eventually extend to Point Pleasant Park at the extreme southern tip of the Halifax Peninsula.

This project would extend the boardwalk to the north face of the power plant where it could connect up to an existing pier structure. Morris Street runs east/west and currently ends at Lower Water Street. It has been extended as a pedestrian link onto an open-air court which could be used for outdoor performances. The court has been defined by the south wall of the music centre and north side of the power plant and on the east, it is open to the water's edge.

"Field" is a term used to describe the source and extent of the perceptual material that is recognized by an individual at any given time. This material could include a combination of visual, aural, physical and mental stimuli. All of these sources are interpreted by the senses and assembled into a cohesive experience unique to the individual.

No two people will experience or perceive any given space the same. Consider the context by which people move through and experience space. There are a large number of facets that contribute to the resultant experience, making each and every encounter unique. The project lies within the experience of space and the affinity of the individual to his/her environment. Therefore, the building becomes an instrument or implement for sensory experience. The more it engages the senses, the more potential combinations/transactions between the body, imagination and the environment can be made, strengthening the connection between the individual and the building.

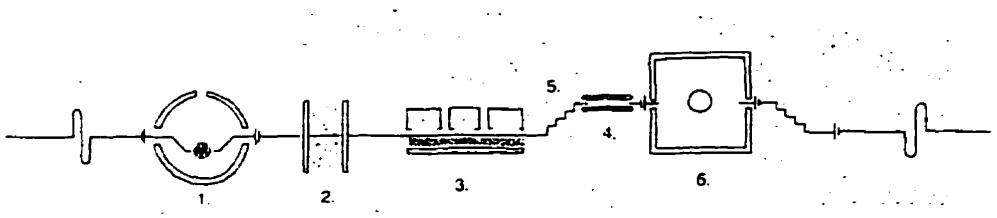
The project began with the analysis of the events and those involved, and the context that it may establish in terms of spatial experience. Unpacking these events described and revealed aspects of each field. Immediately there is a distinction between active and a passive events, i.e. a person present to perform/rehearse vs. a person present to observe.

Examining each of these roles over time begins to have some direct architectural implications: for example, point of entry, time of entry, procession to and from the event. These moments of thematic intensity have been called episodes. Each episode also represent points of perceptual intensity or focus. Most of the investigation surrounds this particular issue - making a series of episodes perceptually distinct, by bringing forward or suppressing elements of context for each of the participants.

We are seldom aware of how much we can hear or see at any given time. For instance, a person walking down the street, involved in their own activities, is unlikely to focus on particular aspects of the ambient noise that surrounds them - such as a bird singing. Now, if you were asked to listen for the sounds of birds singing, you would likely begin to bring forward distinct elements from the ambient sound field while suppressing others. It is the act of framing distinct elements both sonically and visually that begins to envelop the individual in many ways; it engages the eyes, the ears and the intellect.

A series of frames and thresholds were primary tools for deconstructing the ambient context through subtle environmental changes that affect the perceptions of space (volume, light, texture, etc.) and the event. By diagrammatically mapping or coding these experiences in series, they became departure points for translation into built form. The episodes are the primary units for mapping, with ambient sound and light included. Therefore, each episode became a filter or implement. Codes 1a, 2a and 3a (figures 2,4,6) describe the sonic experience of a person observing, performing and rehearsing, respectively. Similarly, Codes 1b, 2b and 3b (figures 3,5,7) describe the magnitude and distribution of indirect ambient light.

Code 1a: a person observing (figure 2)



ambient noise
threshold

1. a perceptual field (space) where ambient noise and visual image are framed to establish a distinct experience. A space where your own sounds and movements are amplified within a truncated context.

2. a field filled with ambient sounds of the event and an isolated view of the main space.

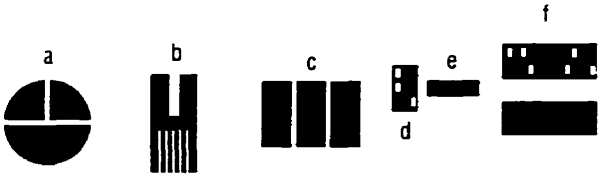
3 a field where distinct sound fuses to a distended ambient level. Physical movement through the field increases intelligibility of the contributing generators.

4. a field devoid of context (visual, physical, aural) where perceptions converge to a threshold.

5. a field where the event frames the moment, and the passive participant experiences the event as the active.

6. a field of constructive perceptual experiences where the passive individual establishes an affinity with the space and the event.

Code 1b: a person observing (figure 3)



light
shade

a. a perceptual field (space) where daylight and visual image are framed to establish a distinct experience while marking the beginning of the event.

b. a field filled with diffuse daylight which spills into a large volume, allowing an isolated view of the main space.

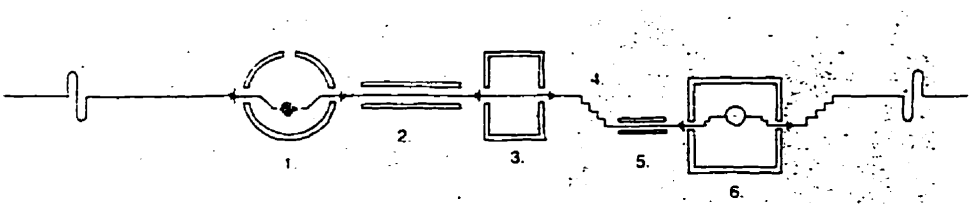
c. a field composed of isolated views of the main space and the exterior context from either side of the path.

d. a field composed of illuminated shafts of light leaking from rehearsal space as, seen by the passive participant from the performer's perspective.

e. a field devoid of context (visual, physical, aural) where perceptions converge to a threshold.

f. a field of constructive perceptual experiences where the passive individual establishes an affinity with the space and the event, and light leakage from rehearsal spaces acts as a back drop for the primary event.

Code 2a: a person performing (figure 4)



ambient noise
—|— threshold

1. a perceptual field (space) where ambient noise and visual image are framed to establish a distinct experience. A space where your own sounds and movements are amplified within an immediate truncated context.

2. a field devoid of context (visual, physical, aural) where perceptions converge to a threshold.

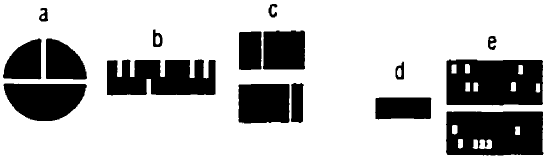
3. a field where sensory experience is generated within an isolated and immediate context.

4. a field where the event frames the moment, and the active participant experiences the event as the passive.

5. a field devoid of context (visual, physical, aural) where perceptions converge to a threshold.

6. a field of constructive perceptual experiences where the active individual establishes an affinity with the space and the event.

Code 2b: a person performing (figure 5)



light
shade

a. a perceptual field (space) where daylight and visual image are framed to establish a distinct experience while marking the beginning of the event.

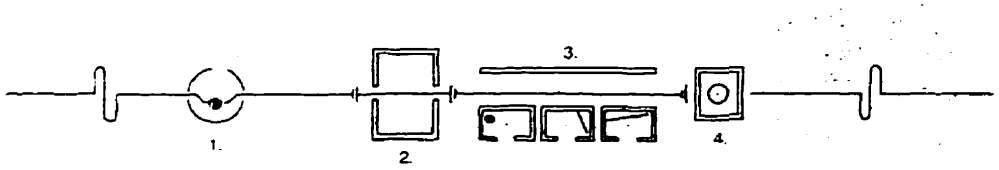
b. a field composed of isolated views of the main space and the exterior context from either side of the path.

c. a field filled with diffuse daylight which spills into a large volume.

d. a field devoid of context (visual, physical, aural) where perceptions converge to a threshold.

e. a field of constructive perceptual experiences where the active participant establishes an affinity with the space and the event, and light leakage from rehearsal spaces acts as a back drop for the primary event from either side.

Code 3a: a person rehearsing (figure 6)



ambient noise
threshold

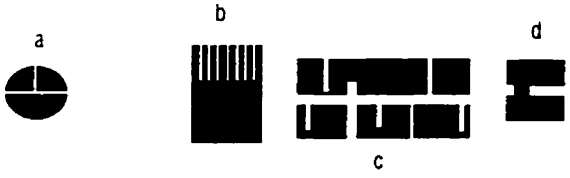
1. a perceptual field (space) where ambient noise and visual image are framed to establish a distinct experience. A space where your own sounds and movements are amplified within a truncated context.

2. a field where sensory experience is generated within an isolated and immediate context.

3. a field devoid of context (visual, physical, aural) where perceptions converge to a threshold.

4. an intimate field of constructive perceptual experiences where the active individual establishes an affinity with the space and the event relative only to themselves.

Code 3b: a person rehearsing (figure 7)



light
shade

a. a perceptual field (space) where daylight and visual image are framed to establish a distinct experience while marking the beginning of the event.

b. a field filled with diffuse daylight which spills into a large volume.

c. a field composed of isolated views of the main space and the exterior context from either side of the path.

d. an intimate space with light leakage only from its entry and from an isolated slot into the main space.

How can the conception of built form transcend static representation and the proclivity toward its linear tectonic creation?

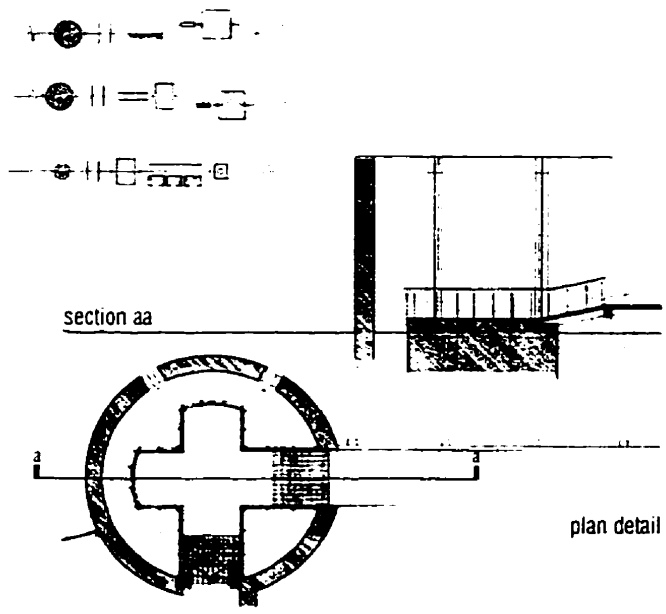
The bridge between object and experience must traverse the observer and the context in which they operate. The experience of time is always relative to the individual, that is to say, one is only conscious of what one perceives, and running parallel is an absolute continuum in which one's own consciousness is situated. The individual frames, carves and isolates their own reality.

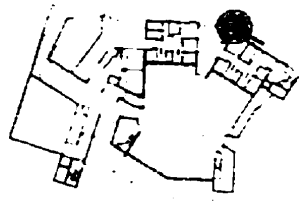
As a design strategy, this thesis attempts to make experiences distinct by revealing their relative existence to the absolute at multiple scales. This can occur by placing or framing the event (relative) within a context-site (absolute), and also by placing or framing episodes (relative) within the event (absolute). By allowing the individual to weave between an absolute and relative context the potential transactions/combinations between the body, imagination and the environment increase.

Architecture is more than the object, it is also its duration and its use. Conventional architectural representations exist as abstractions of the object. Similarily, built form could be considered an abstraction of architecture until it is experienced over time. It seems fundamental to the process that a building's conception reflect or account for this abstraction and find methods of representing the experience of a building over time.

Note: The following collection of images and drawings appeared in large format as a series of two-part overlays. The images and drawings in this document appear independent for logistic purposes.

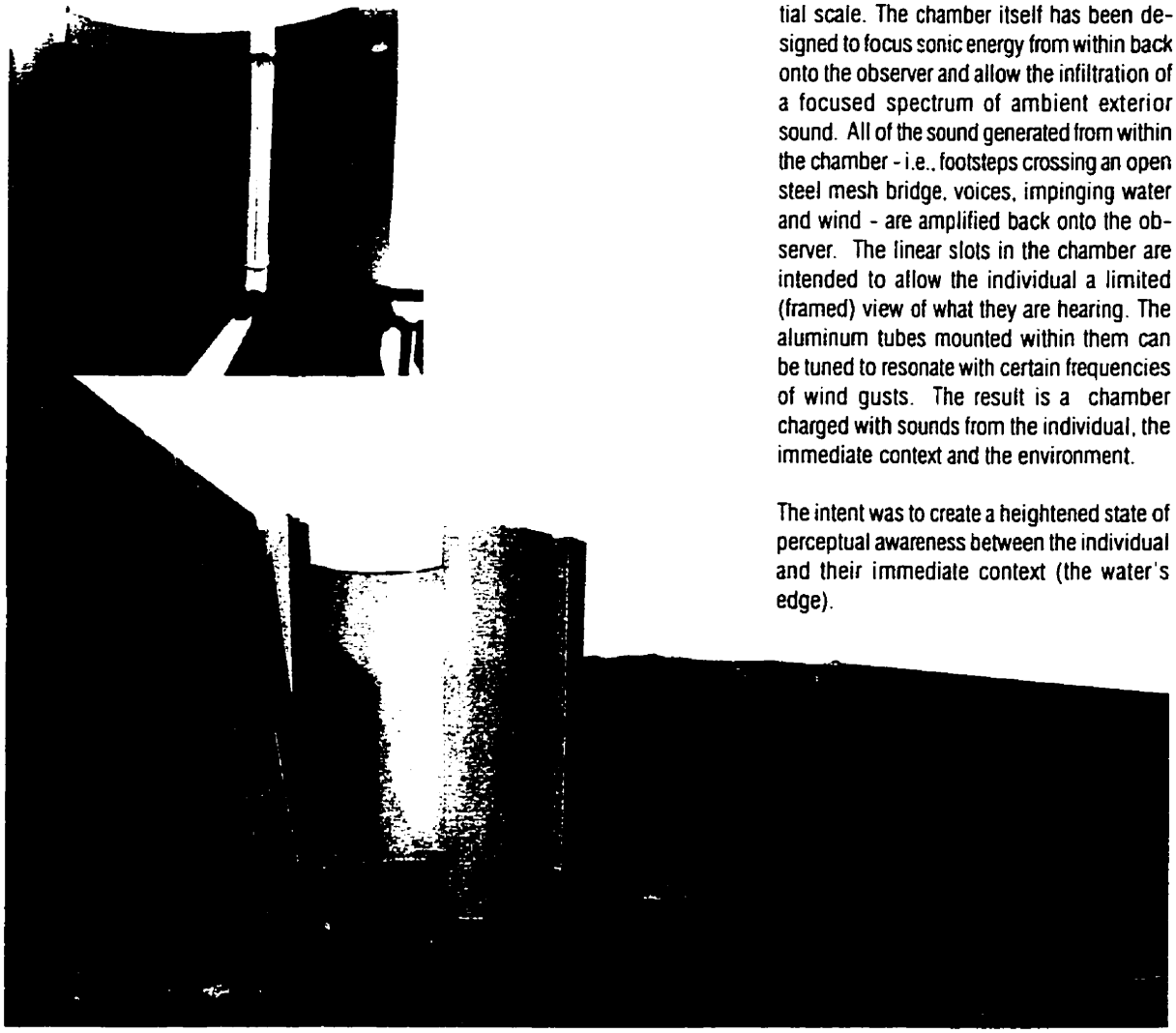
Episode 1:
Exterior Entry Chamber





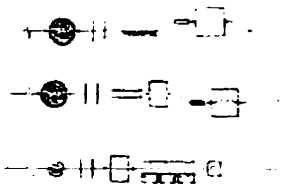
This chamber is the first episode and the entry into the building from the east side. A person first crosses a wooden pier that bridges a harbour inlet, moving from a vast space to a slightly more defined space that is bound on one side by a canted board formed concrete wall, and open water on the other. There is a shift in both sonic and spatial scale. The chamber itself has been designed to focus sonic energy from within back onto the observer and allow the infiltration of a focused spectrum of ambient exterior sound. All of the sound generated from within the chamber - i.e., footsteps crossing an open steel mesh bridge, voices, impinging water and wind - are amplified back onto the observer. The linear slots in the chamber are intended to allow the individual a limited (framed) view of what they are hearing. The aluminum tubes mounted within them can be tuned to resonate with certain frequencies of wind gusts. The result is a chamber charged with sounds from the individual, the immediate context and the environment.

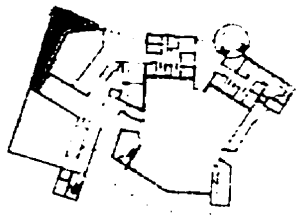
The intent was to create a heightened state of perceptual awareness between the individual and their immediate context (the water's edge).

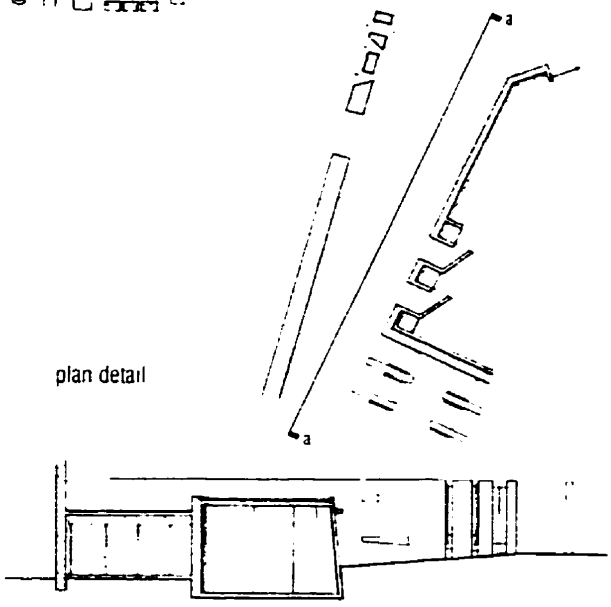


Episode 1:
Exterior Entry Chamber Context

Episode 2:
Exterior Entry Corridor





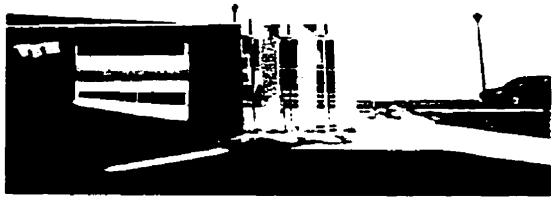


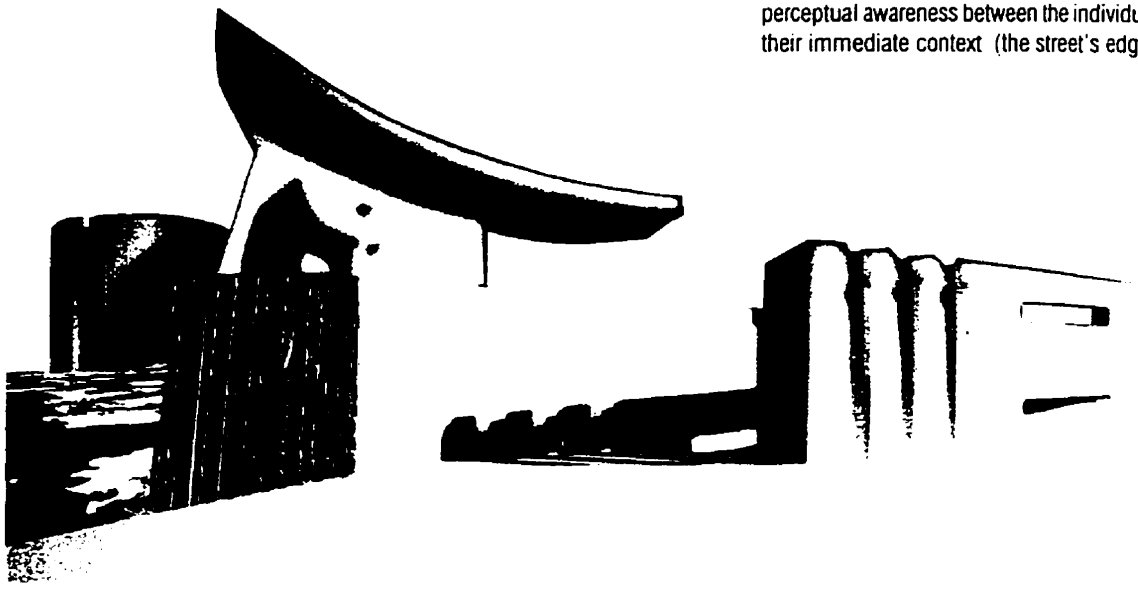
plan detail

section aa

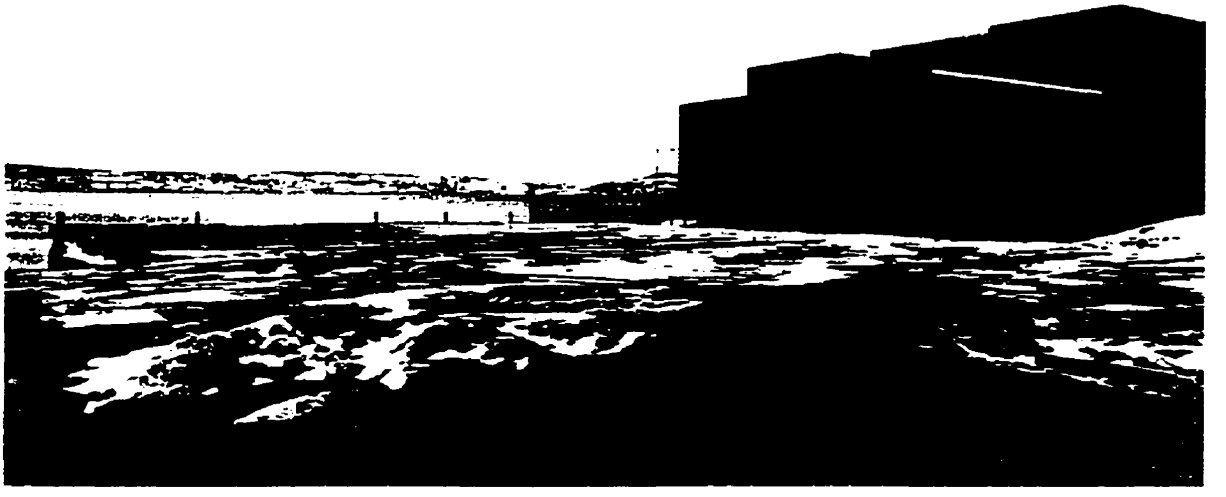
This wall is part of the first episode and defines the entry into the building from the west side. A person entering the building would travel between these walls, moving from a vast space to a slightly more defined space that is bound on one side by a canted board formed concrete wall, and a busy street on the other. There is a shift in both sonic and spatial scale. The sound generated from between the walls - i.e., footsteps, voices, blowing wind or an orchestral rehearsal - envelop the observer. The wall itself has also been designed to filter or limit the ambient sonic spectrum and image from the street that's perceivable by the observer. The linear slots in the wall are intended to allow the individual a limited (framed) view of what they are hearing. The aluminum tubes mounted within them can be tuned to resonate with certain frequencies of wind gusts or pedestrian impact. The result is a space charged with sounds from the individual, the immediate context and the environment.

The intent was to create a heightened state of perceptual awareness between the individual and their immediate context (the street's edge).

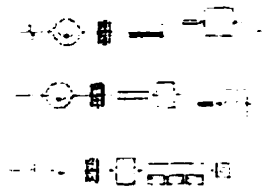


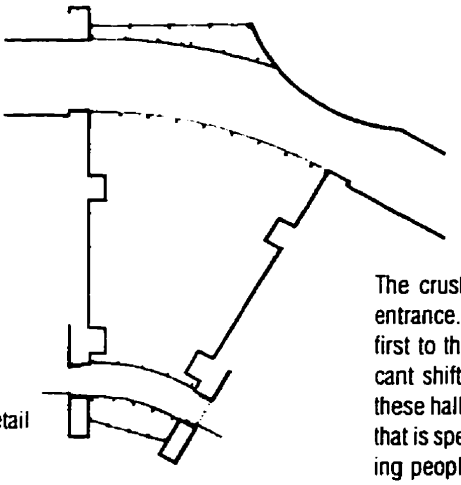


Episode 2:
Exterior Entry Corridor Context

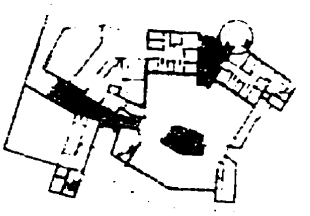


Episode 3:
Main Crush Hall



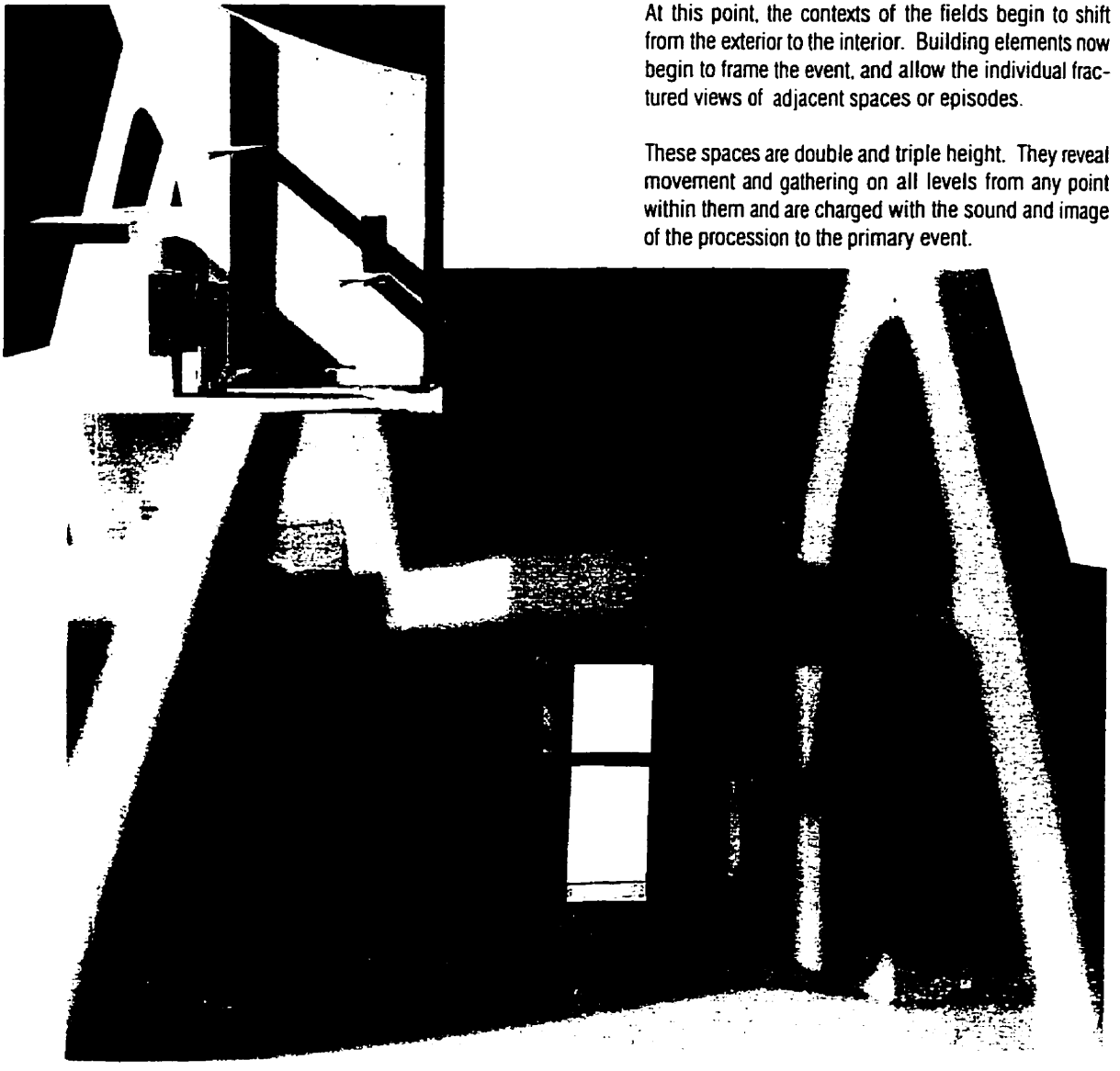


plan detail



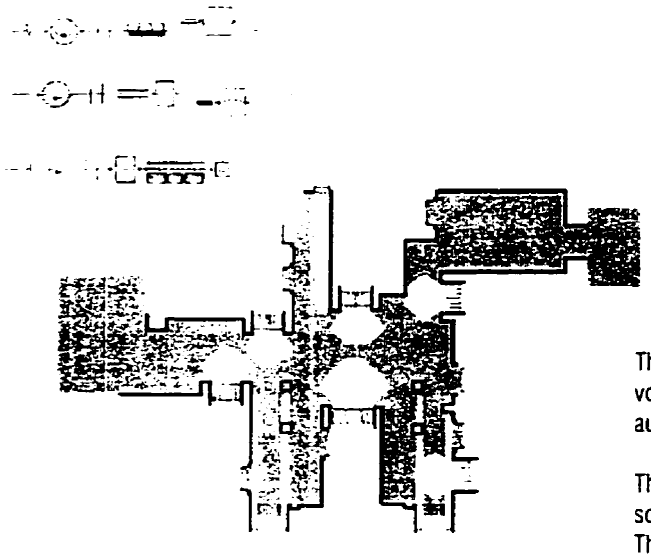
The crush halls are the second episodes from either entrance. As a person crosses the threshold from the first to the second episode, they experience a significant shift in scale and context. The larger volumes of these halls permit a broader spectrum of ambient noise that is specific to the event, i.e., a crowd of people, moving people, sound leakage from the rehearsal corridor. At this point, the contexts of the fields begin to shift from the exterior to the interior. Building elements now begin to frame the event, and allow the individual fractured views of adjacent spaces or episodes.

These spaces are double and triple height. They reveal movement and gathering on all levels from any point within them and are charged with the sound and image of the procession to the primary event.

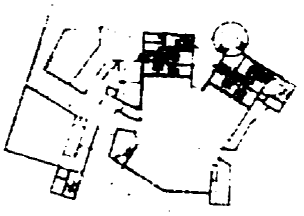


Episode 3:
Main Crush Hall Context

Episode 4:
Rehearsal Corridor



plan detail: field generators

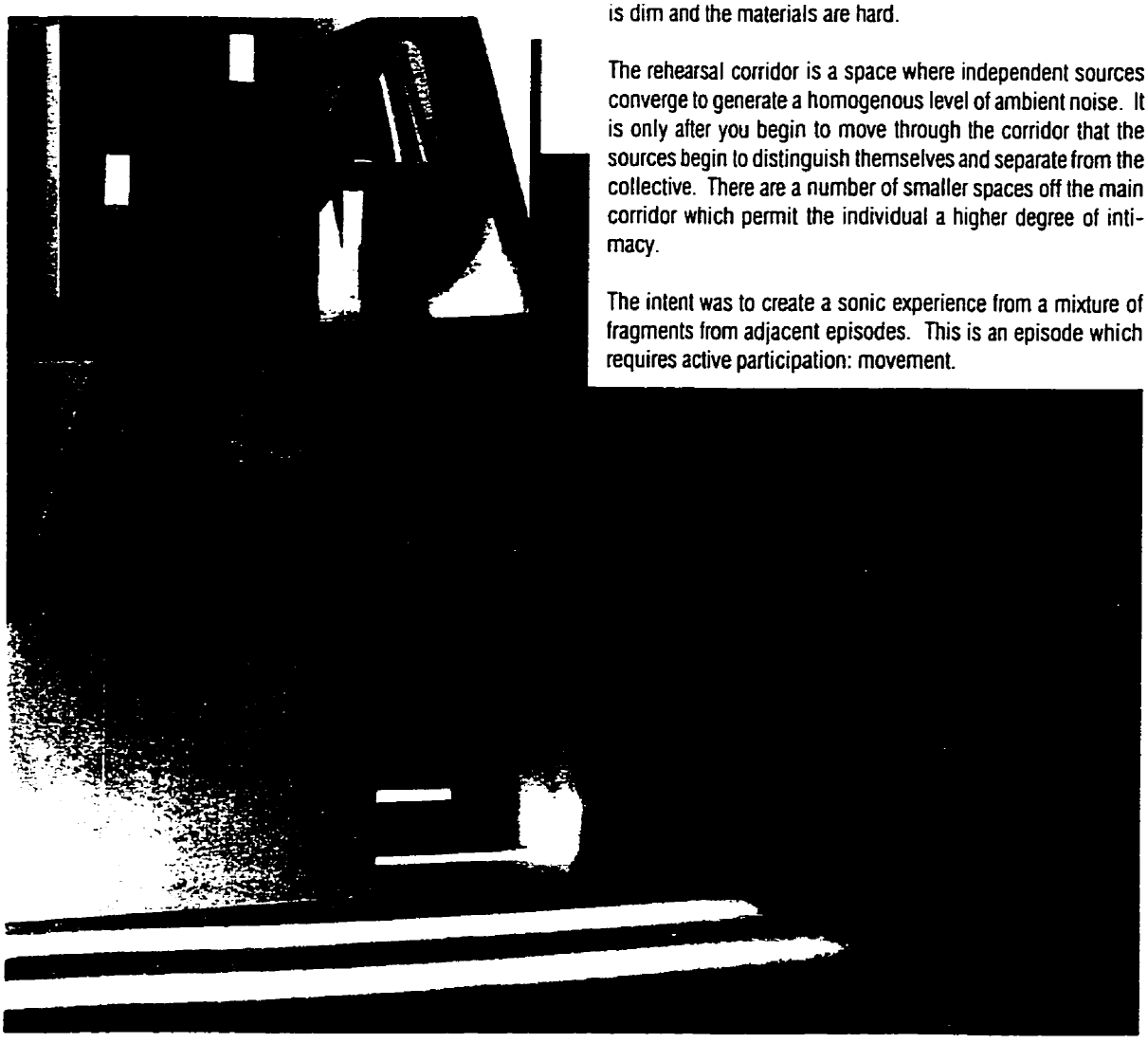


The rehearsal corridor is situated next to the crush halls. Their volumes are small, juxtaposed with the larger crush halls and auditorium. The experience is tight and intense.

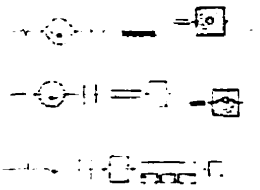
The resultant field is generated by the confluence of rehearsal sound and framed view into the auditorium and to the exterior. The primary experience is sonic and by suppressing the visual spectrum the ear can eclipse the eye. The absence of light can accelerate the presence of sound. Therefore the corridor is dim and the materials are hard.

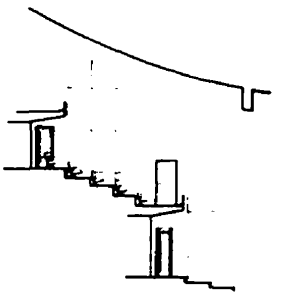
The rehearsal corridor is a space where independent sources converge to generate a homogenous level of ambient noise. It is only after you begin to move through the corridor that the sources begin to distinguish themselves and separate from the collective. There are a number of smaller spaces off the main corridor which permit the individual a higher degree of intimacy.

The intent was to create a sonic experience from a mixture of fragments from adjacent episodes. This is an episode which requires active participation: movement.



Episode 5: Auditorium





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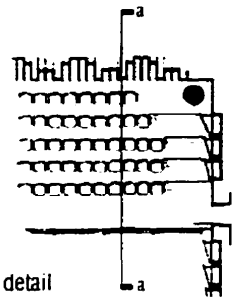
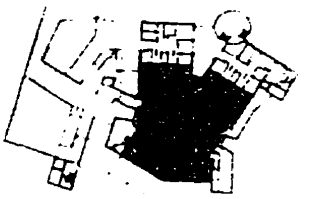
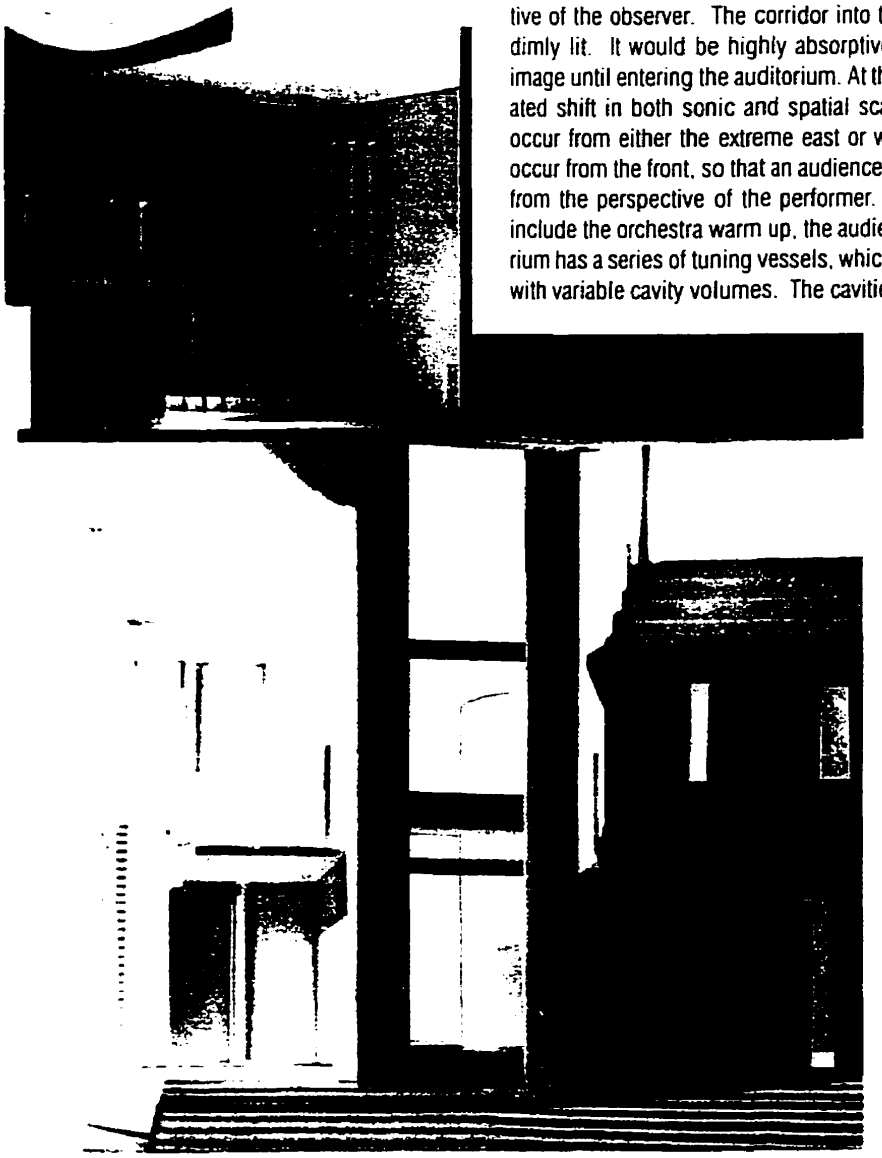


plan detail





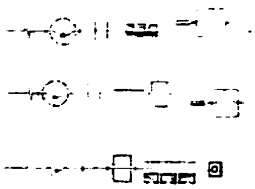
This auditorium is the last major episode during the event from the perspective of the observer. The corridor into the auditorium is long, slender and dimly lit. It would be highly absorptive and offer little ambient sound or image until entering the auditorium. At this point there would be an exaggerated shift in both sonic and spatial scale. All entries into the auditorium occur from either the extreme east or west sides. The entries also always occur from the front, so that an audience member is forced to view the event from the perspective of the performer. Upon entry, ambient sound would include the orchestra warm up, the audience and running water. The auditorium has a series of tuning vessels, which consist of large copper containers with variable cavity volumes. The cavities would be filled to a specific level with water. This level is a product of performance type and audience number; it directly alters the reverberation time of the space. These vessels would occur at all corners where sonic energy is at a maximum. Therefore, as the audience and performers enter the vessels would be slowly filling. After the performance and the auditorium slowly empties, and so would the tuning vessels.

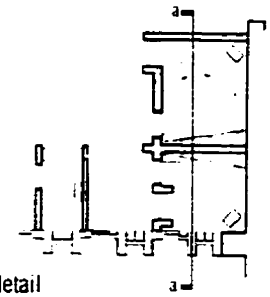
This major space gives framed views of the preceding episodes: entry, crush hall, rehearsal corridor and rehearsal spaces, all within their immediate physical contexts.

The intent was to create an experience using preceding episodes as a backdrop to the primary event in an attempt to create envelopment that extends beyond pure sensory awareness but also includes the individual and their role within the event.

Episode 5:
Auditorium Context

Episode 6:
Rehearsal Rooms





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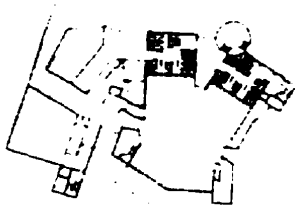

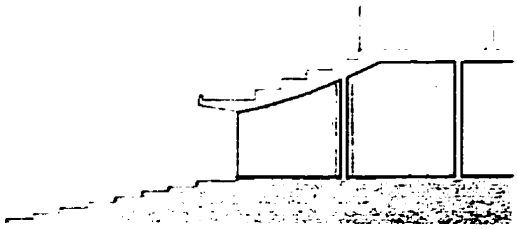

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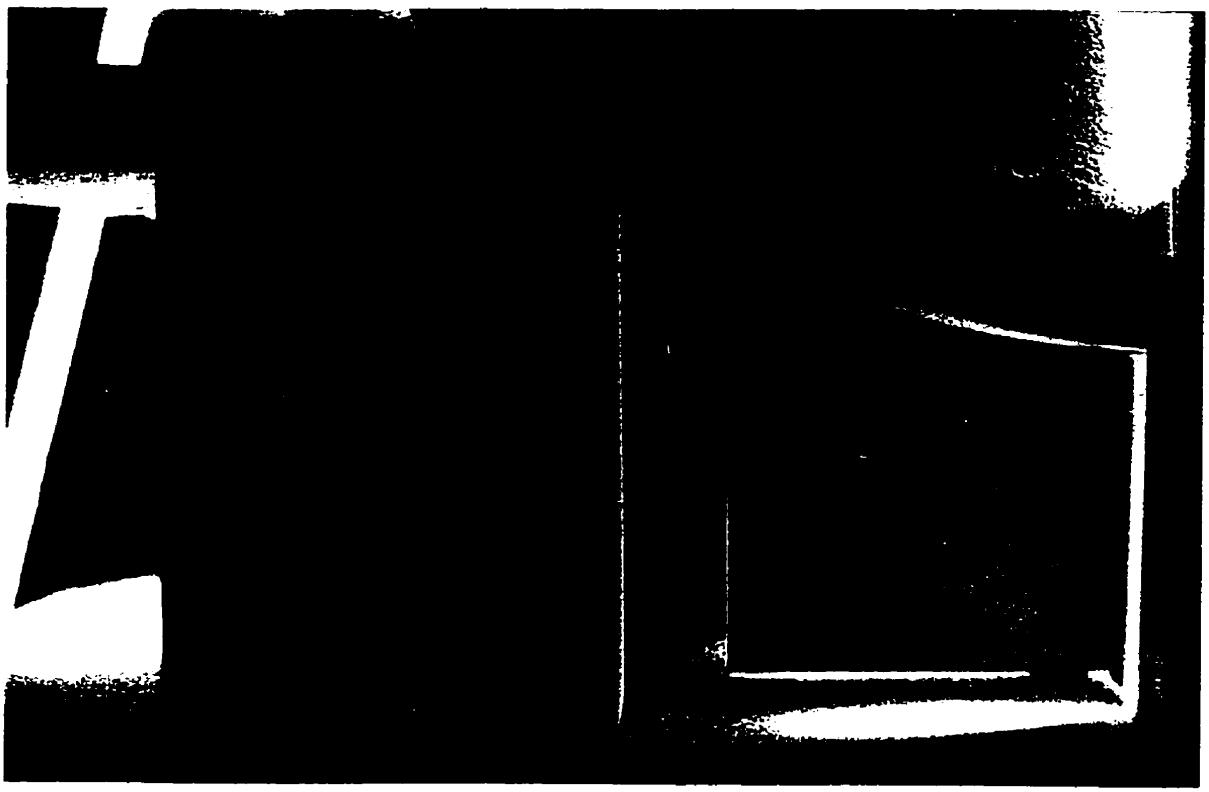


The rehearsal spaces are situated behind the north end of the auditorium. They vary in size and configuration: the smallest sit one and the largest up to five. These spaces take advantage of the diffusive convex structure from the raked seating of the auditorium.

Each room would not only vary in scale and form, but also in material. Surface texture, surface density and surface form all contribute to the response of the space. Providing a variety of rooms allows the individual(s) a selection of distinct spaces or responses.

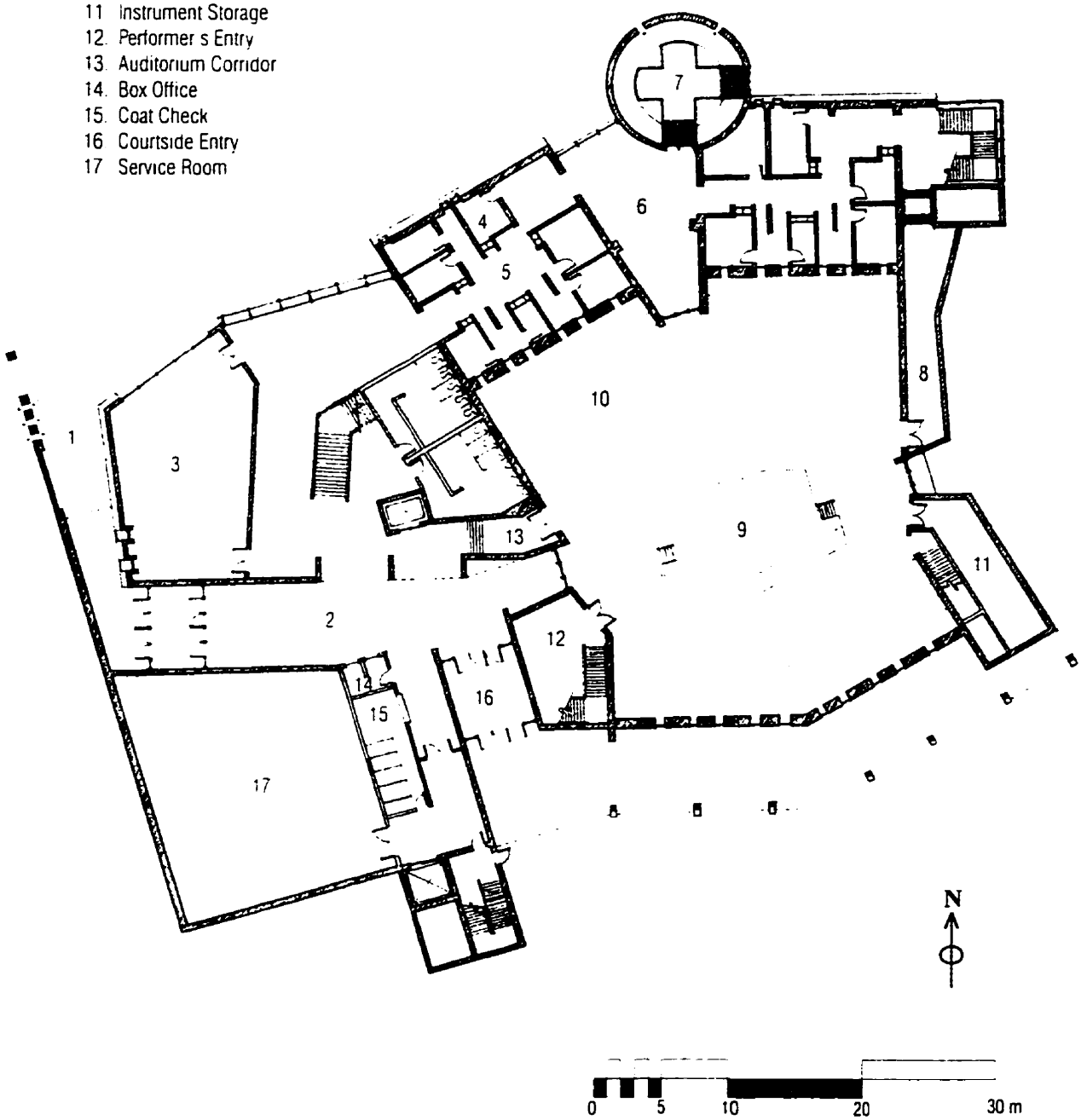
The act of rehearsal requires concentration and focus. These spaces are intimate and isolating, intending to allow the individual to be enveloped in the event. The primary experience is sonic and therefore the eye is suppressed by dim lighting and a constrained material palette. The response of each room may be altered by large copper tuning vessels. The vessel cavity volume is varied with water, and would slowly fill, altering the reverberation time. They would generate a low ambient sound level prior to the rehearsal session.

The intent was to create an experience where the physical extents of space fade as the individual becomes enveloped in the event.

Level 1: Orchestra Floor Plan

(figure 8)

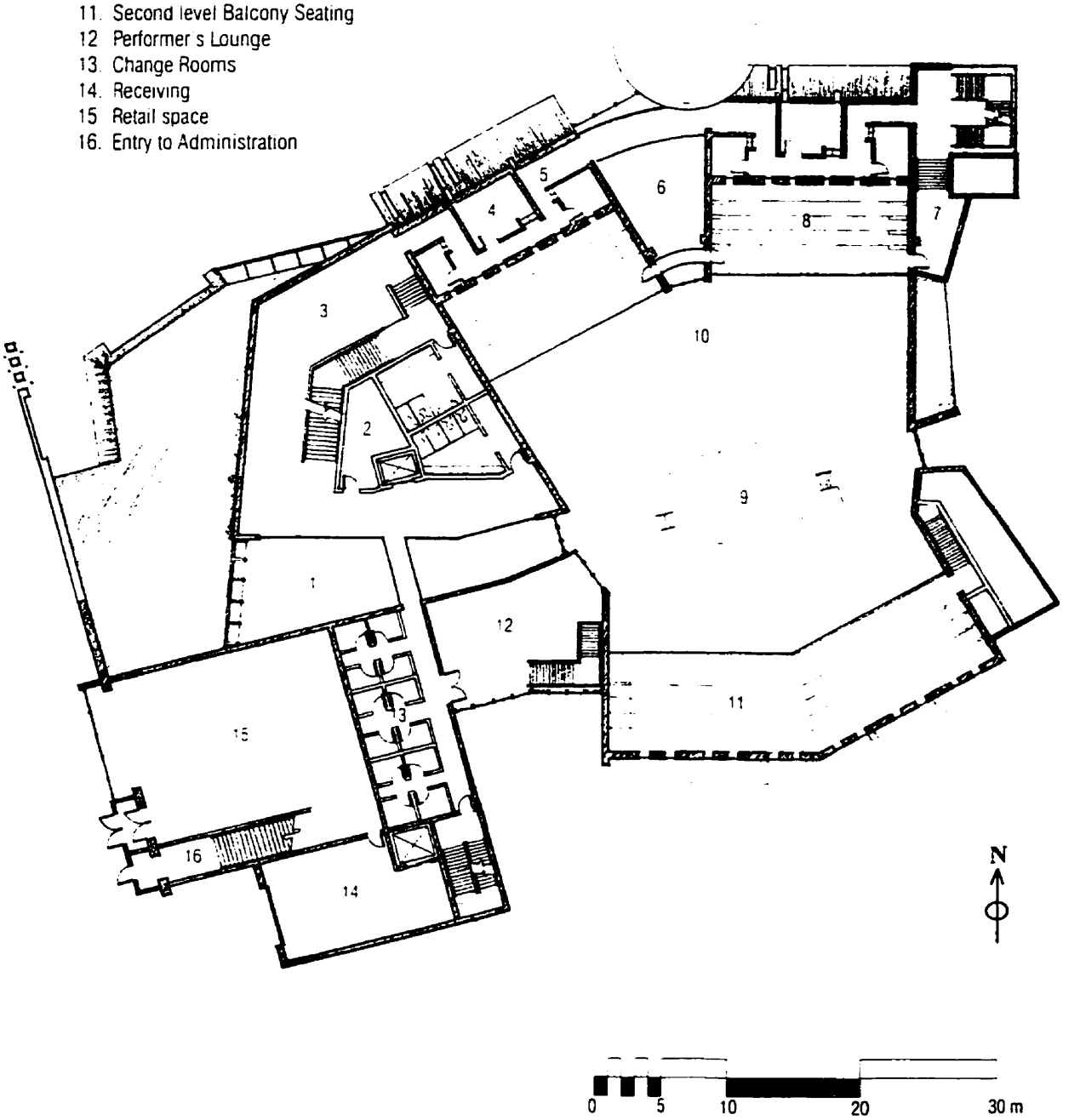
1 Streetside Entry
2. Crush Hall
3. Ensemble Room
4 Rehearsal Room
5 Rehearsal Corridor
6. Crush Hall
7 Harbourside Entry
8. Auditorium Corridor
9. Orchestra Platform
10. Ground level Seating
11 Instrument Storage
12. Performer s Entry
13. Auditorium Corridor
14. Box Office
15. Coat Check
16 Courtside Entry
17 Service Room



Level 2: Balcony Floor Plan

(figure 9)

1. Two storey Crush Hall
2. Service
3. Second level Crush
4. Rehearsal Room
5. Rehearsal Corridor
6. Two storey Crush Hall
7. Auditorium Corridor
8. Second level Balcony Seating
9. Orchestra Platform
10. Ground level Seating (below)
11. Second level Balcony Seating
12. Performer s Lounge
13. Change Rooms
14. Receiving
15. Retail space
16. Entry to Administration



The question:

> *How can sound, light and time shape space, and how can material mediate these qualities of space, intensifying experience and establishing a deeper connection between the individual and their environment?*

By confronting this question with a conventional building program, a rigorous, involved evaluation and design strategy developed. Although some of the criticism of the work suggested a less conventional program, I believe that the music centre, being grounded and well established, provided the substance for study. That's not say that I do not believe there to be merit in alternative design strategies. However, when dealing with the representation of spatial experience it seems important to be able to draw upon collective experiences and imagination.

As the premise of the thesis surrounded the experiential nature of space, most of the studies occurred in model form. In an attempt to prevent myself and others from evaluating the models as objects, they were presented in image form. Photography provided a means of shifting scale, and permitted an opportunity to experience the building and not the models.

Most of the final presentation surrounded these images. I chose not to represent all of the building in conventional architectural representations, and this was met with some opposition. The intent was to document the building as it would be experienced and not as it would be built. Most of the presentation followed the design organization as episodic. This prevented others from viewing the building as a whole. However, in retrospect, I do believe that the addition of some conventional representations would benefit the discussion surrounding the work, and for myself, would also aid in the development or refinement of the design.

Further work would include the overall representations that better document the building. There is also a difficulty in communicating sonic and temporal experience. I think that further studies would include more active or actual experiences, opposed to described. This begins to suggest built form, or at least constructions that permit the viewer an active role. Any work that actively engages those viewing the project would definitely strengthen the response to the question.

NOTES

[1] Juhani Pallasmaa. *Polemics: The Eyes of the Skin* (London: Academy Editions, 1996), 22.

[1] David Seamon and Robert Mugerauer, *Dwelling, Place and Environment* (New York: Columbia University Press, 1986), 154.

[2] Pallasmaa. *Polemics*. 35.

[3] Bernard Tschumi. *Architecture and Disjunction* (Cambridge: MIT Press, 1996), 42.

[4] Pallasmaa. *Polemics*. 51

[5] Elizabeth Martin, ed., *Architecture as a Translation of Music*. Pamphlet Architecture 16 (New York: Princeton Architectural Press, 1996), 9.

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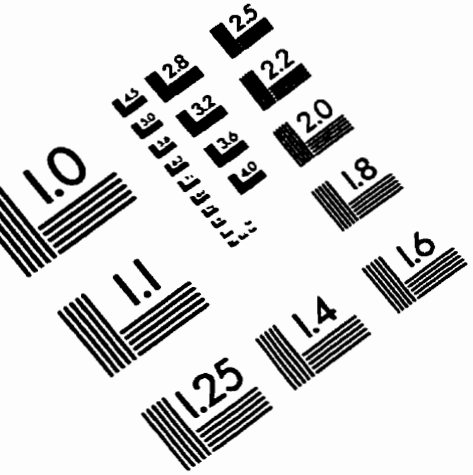
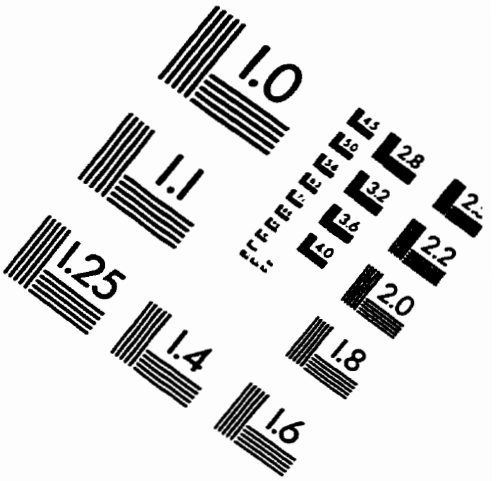
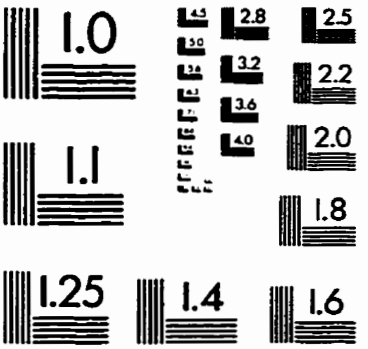
Individuals

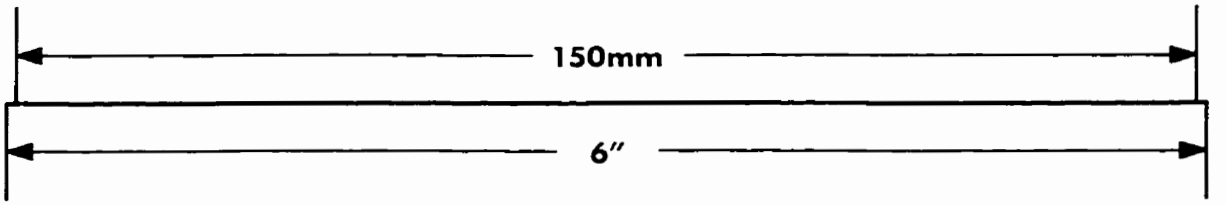
Pilchner, Martin W. Pilchner Schoustal, Acoustic Designers: Toronto, Ontario.

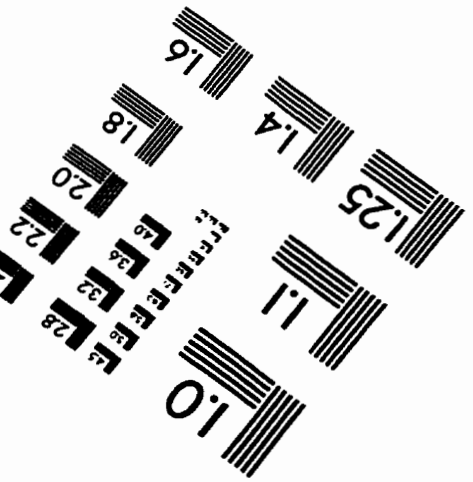
IMAGE EVALUATION
TEST TARGET (QA-3)

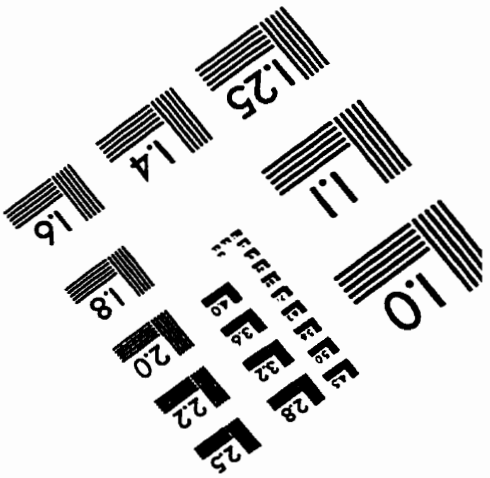












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