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LIBRARY
MONTANA STATE UNIVERSITY
BOZEMAN

A CAMPUS ART GALLERY

Undergraduate Thesis

By

Merlyn Miller

Submitted to the School of Architecture as
partial fulfillment of the requirements for
the Degree of Bachelor of Architecture

at

Montana State University

Bozeman, Montana

1975

~~Arch. 1112540~~
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spendin my time tryin

tryin to make it rhyme

tryin to make it mind

THESIS

merlyn miller

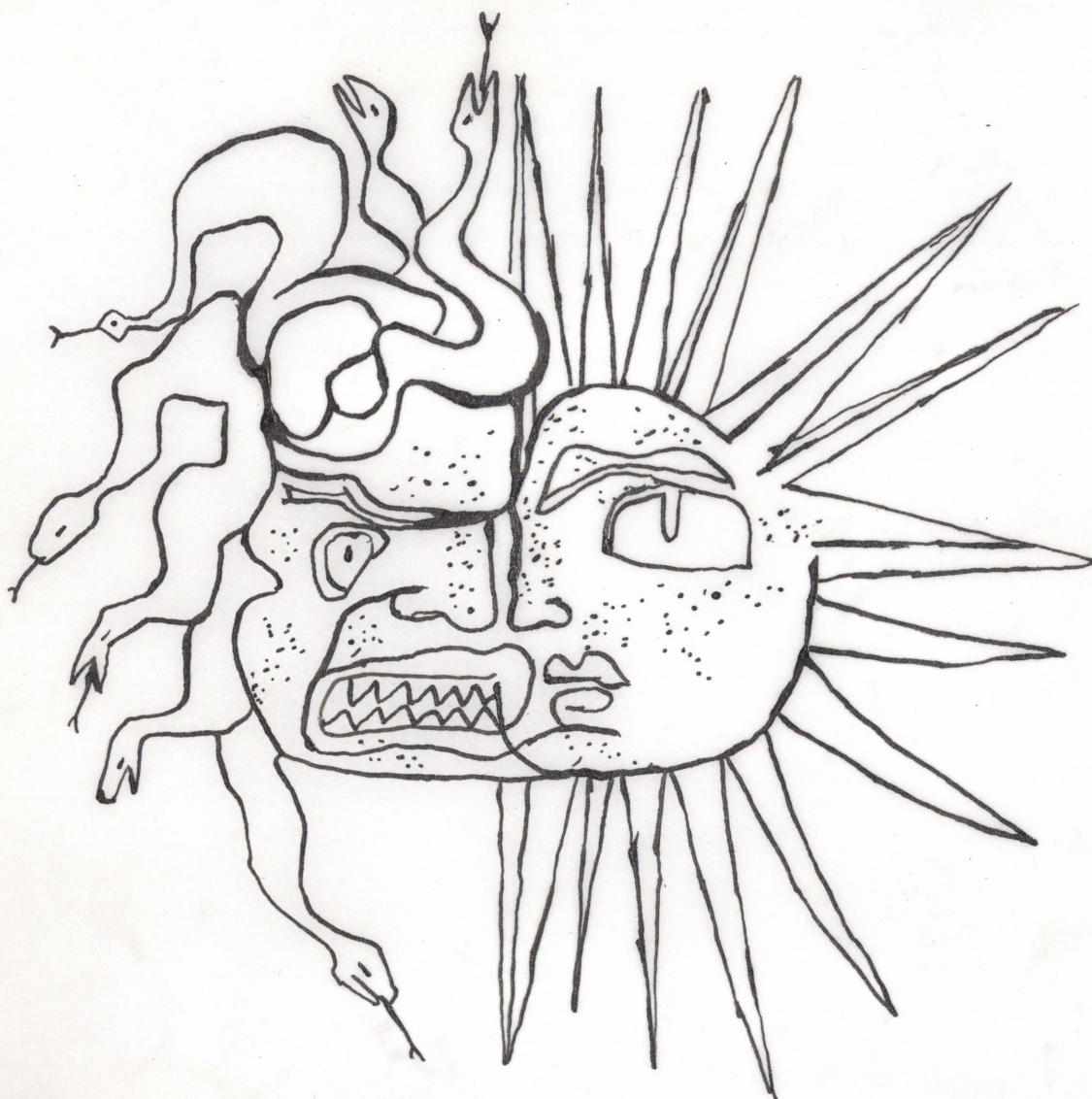
This project entails the design of an art gallery for Montana State University, or more generally, for the people of Bozeman. It also represents my contribution to the ongoing search for a clearer understanding of the creation of the built environment and a valid approach to the perception of architecture.

The thesis, the thing to be studied and applied is basically the physical and psychological relationship of the human to his architectural surroundings.

**human scale is the basis of
architectural design**

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architecture

Simplicity is an attribute to be commended in any endeavor and the drawing by le Corbusier is simple in terms of a visual pattern; yet it is loaded with meaning. It suggests the existence of opposing forces, duality of emotions, involved in the creative process and the bitter fact that our creations can never be perfect. The dualities involved in architecture are comparable to the lessons of life wherein the learning experience is often a painful experience.

The gift of life is bestowed upon us with a resounding lesson in pain as we are forced from the womb into the hands of a stranger often in a room lit to the footcandle capacity of the surface of the sun and then violently assaulted with a swat on the ass. Similarly, the extreme condition in architecture, whose first mission is to confine, breeds paroxysms of bestiality. But as life offers consolation and improvement with mother's breast, soft clothes, Johnson's Baby Powder, and love, architecture improves--communicates more than the confinement of space and the exclusion of the elements if it provides that something extra which connects with the common sensory experience of humanity, love, if you will, the laws of nature, structure, space, ornamentation and rhythm.

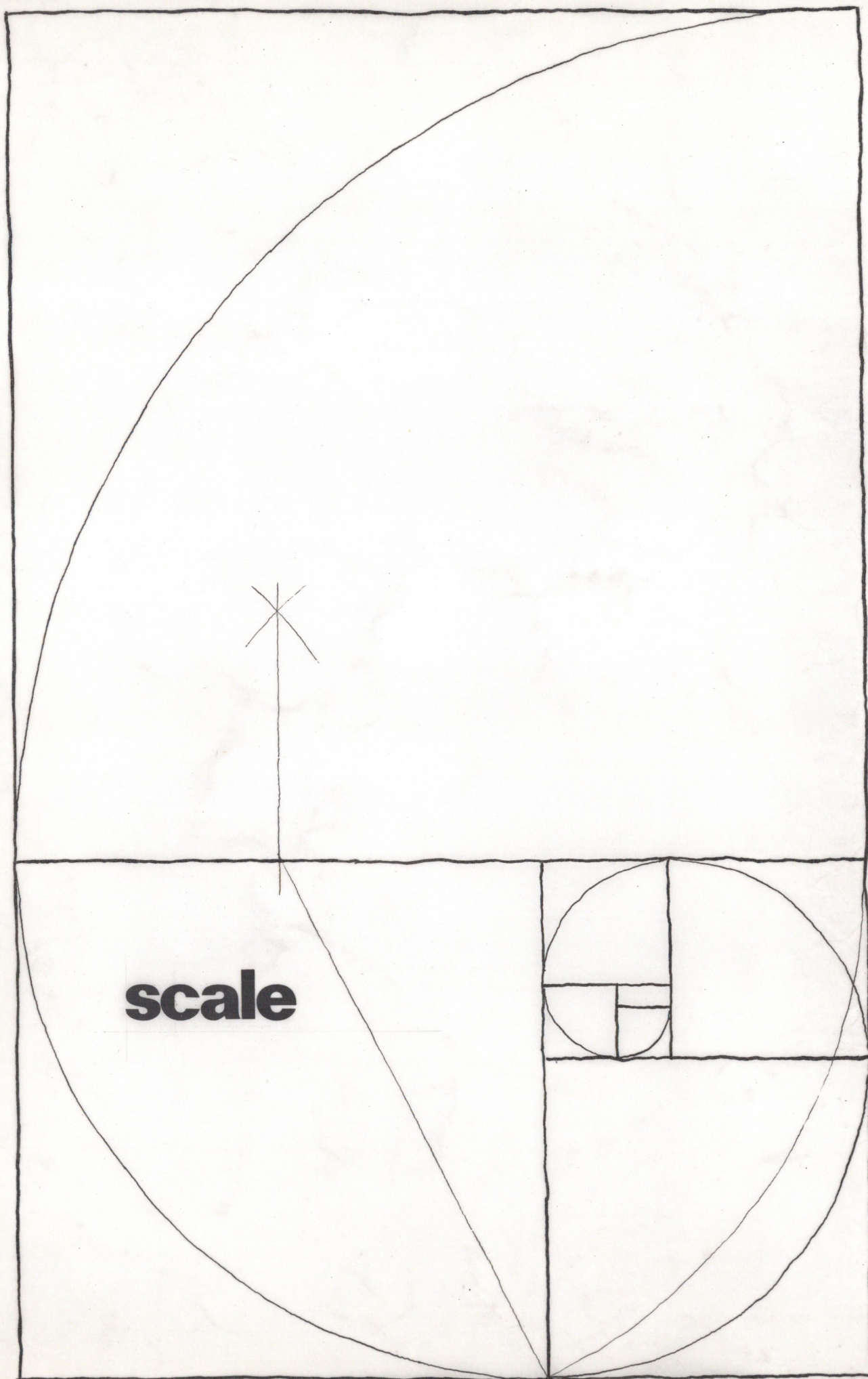
Ralph Gleason, a music critic, said that "Bob Dylan's love songs will survive above all else. Love is eternal, corny as that may sound. The polemics, for all the chains of flashing images and their ability to coalesce emotions and move the spirit, are, after all, often tied to the times in which they were written and these times are changing." The same is true in architecture,

the depth of meaning in a building is in direct proportion to the spirit in which it was created. Sinclair Gauldie said, "Architecture, like the theater, has its nine day wonders and its enduring masterpieces. The value placed on a building by the critics of its own time will inevitably depend on the accuracy with which it hits the mood of its period and if it has no more to commend it than this, the passage of a generation will see it written down to the level of a historical curiosity if not written off altogether."

The first years of life are spent in an unconscious but obsessive study of space structure and rhythm. The awareness of space begins with the coordination of eye and touch to gauge distances and heights while gravitational and overturning forces which determine structure must be overcome when learning to walk. An awareness of rhythm is necessary to distinguish patterns and make sense of the phantasmagorical qualities of the sensory impressions we receive from the cradle to the grave.

Architecture is like a vessel of baked clay: "...do not put it in a glass case alongside rare precious objects. It would look quite out of place. Its beauty is related to the liquid that it contains and to the thirst that it quenches. Its beauty is corporal: I see it, I touch it, I smell it, I hear it. If it is empty, it must be filled; if it is full, it must be emptied. Not an object to contemplate: an object to use to satisfy someone's thirst." Octavio Paz's instructions for the use of the clay vessel might just as well be applied

to architecture since buildings are obviously "objects for use." I think architecture should display a handcrafted quality which mediates between a building which is confused with function due to the use of industrial objects and its opposite, a building which is pure symbol. Architecture consists of architects, buildings and people; architecture should be a democratic, pragmatic event.



scale

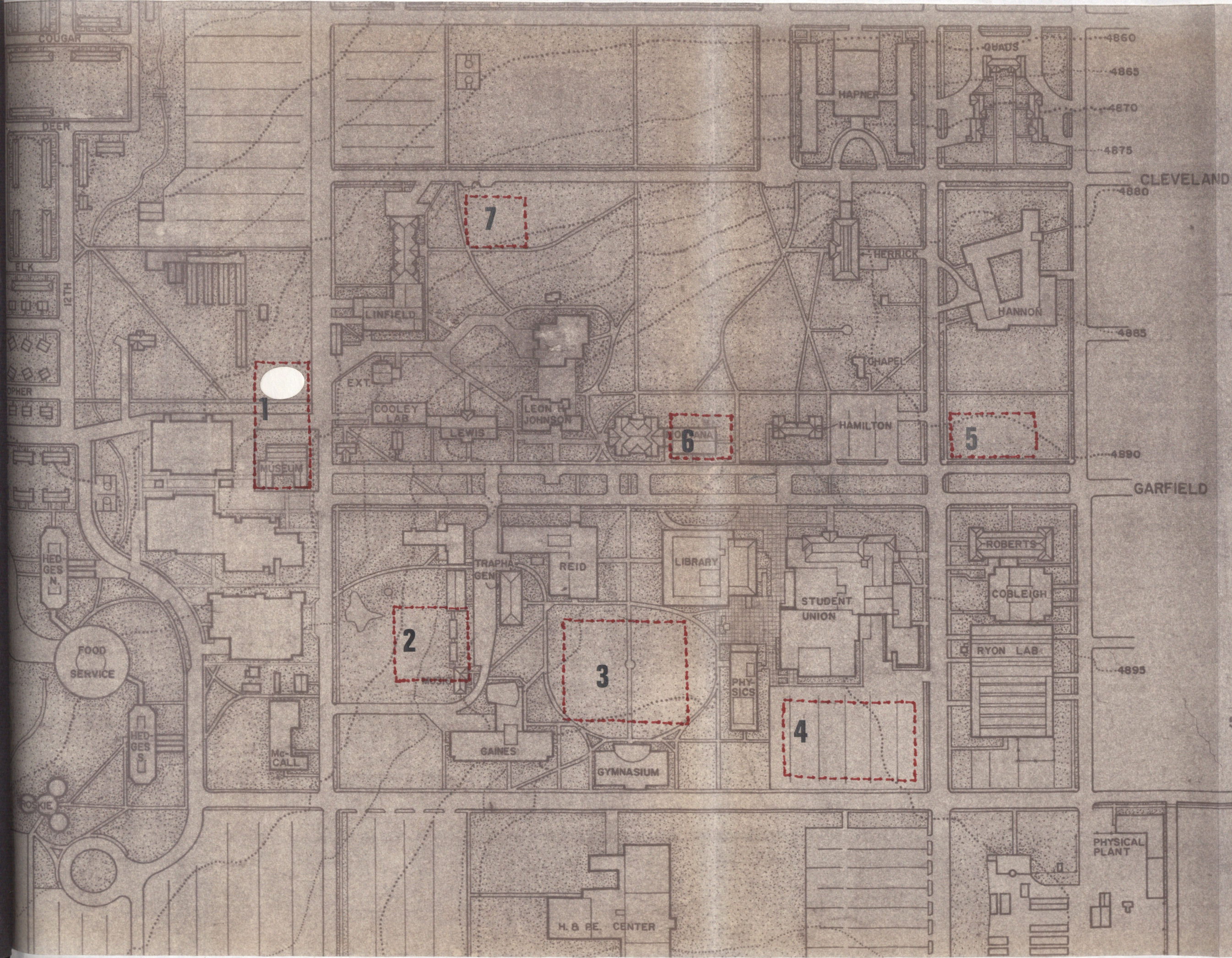
Scale is an architectural tool, an assessment of proportions relative to oneself, nothing more; nothing less. The human body provides the base dimensions and technology sets the upper limits. We as architects must determine proportion, the modulation of scale between the human and superhuman.

In a building such as an art gallery where people are moving slowly and often singly the architecture is made more humane by diversity, modulation, within the established framework. The purpose of the gallery is to display works of art, a function which leads some people to believe that, in order to realize a maximum of choice, the building will be no more than a warehouse in which certain criteria of illumination are met.

Michael Brawne compares a gallery to a concert performance which "...apart from the music, is also more than a matter of adjusted acoustics. It is the visual excitement of the orchestra, the crowd movement in the foyer, the awareness of joint participation within the auditorium, the sense of occasion which together make up the appreciation of the event. Similarly, museum display, apart from the quality of objects on view, is more than a case of correct backgrounds or balanced illumination. It is again the totality of the experience which becomes an event in its own right and within this totality, architecture, as space manipulation must of necessity assume a positive function. To aim at an environment of nothingness is to abrogate architectural responsibility."

If an art gallery is the confrontation between viewer and object then the architecture is the transition, it has the responsibility of keeping interest alive.

The ratio of $b/a=1.618$ otherwise known as the golden number was used as a tool in conjunction with the linear units of feet and inches to control the proportions and relationships of the various spaces. The interior was proportioned to the largest space required for a traveling exhibit by the American Federation of the Arts, which is an exhibit of colored sculpture that requires 3,000 square feet, 50 feet by 50 feet. This ratio was chosen because of the balance it represents between two unequal asymmetrical parts and the fact that the visual field for both eyes represents an oval shape exactly inscribed in a golden rectangle. The golden rectangle has some aesthetic problems which are more fully discussed by M. Borissavlievitch in The Golden Number.



site selection

1. Creative Arts Complex: intersection of both pedestrian and vehicular traffic, proximity to concentrated study of the creative arts.
2. Pond Area: too sensitive to support another building although the pond and trees make the site quiet and conducive to contemplation or relaxation.
3. Campus Green: natural collection point for people, barren in winter but really used for fair weather outdoor activities, site seems to be complete unto itself; another building would destroy the scale of the space whereas landscaping would strengthen the area.
4. Sub Parking: elimination of Sub parking space is too far in the future to make utilization of this space feasible.
5. Intersection of 7th and 11th: transition area from campus to town, Sub is the focus of the majority of pedestrian traffic on campus.
6. Montana Hall Annex: although a possible site, a building here would effectively block the classroom office building from the Garfield spine.
7. Linfield Hall: too far removed from the mainstream of campus activities to have the necessary impact.

Historically the term gallery is connected with collections of objects of art since paintings and statuary require special lighting such as can be provided by a corridorlike room with

much window space between and opposite the specimens. The gallery was an architectural invention of Northern Europe, especially France, where it had originally served as an entrance hall to the residences of distinguished personages and later came to be used for housing collections. The hall-like structure of the gallery became a feature of palaces only in the late sixteenth century, and subsequently became prevalent. Princely abodes ceased to serve as citadels and became ornate and often boastfully conspicuous residences. On some occasions, an art collection would be referred to as a gallery although housed in rooms differing in shape from a corridor.¹

For my purposes it seems fitting to consider this definition of gallery in site selection and to position the gallery on the campus so that it becomes an entrance feature. Consequently sites one and five were chosen as best fitting this description. Adding the criteria of fitting into the scale of the campus as a whole, it becomes important that the gallery have a direct relationship to the creative arts. The one explains the other, the gallery explains the goals and products of art, while the the various departments explain the production.

¹Wittlin, Museums: In Search of a Useable Future; 1970, The MIT Press, Cambridge, Massachusetts and London, England

Site

The building is located at the intersection of Garfield and eleventh. The site is bounded on the west and south by the Creative Arts Complex, on the southeast by the Nursing building and a stand of pine trees. The space opens to the east, Garfield spine, and to the north. The intent in this project was to contain this space, which slopes to the northwest, and to define entry to the campus since 11th Street is both a major axis on the campus and a major traffic arterial leading to the campus.

General Requirements of the Building

The building exists as an educational, interpretive vehicle in which works of art may be experienced effectively and as pleasantly as possible. It is a kind of landscape to which the works of art are related. The gallery should treat the art work carefully but not reverently; if an art gallery is the confrontation of object and observer, then the architecture is the transition, for the human eye and even the human spirit droops from uniformity of light and space.

In the absence of a permanent collection and only a very nebulous conception of the size and nature of the work to be displayed, the building must remain fairly flexible. It must allow for a large range in size of exhibits and provide for variations in lighting requirements. If all the space provided cannot be used, the unused portion should not yawn openly at visitors.

Spacial Requirements

I. Public Areas

- A. Gallery Space--8,000 sq. ft. This total area is subdivided proportionally to the largest (3,000 sq. ft.) area required by an American Federation of the Arts traveling exhibit. The vertical dimensions of the gallery spaces were proportioned to the optimum figure 12 feet. The layout of the gallery spaces creates circular movement patterns so that there will be a minimal amount of retraced steps. In lieu of specific provision for a lecture hall or auditorium gallery spaces must also be adaptable to these kinds of activities.
- B. Kitchen--200 sq. ft. To be used for daily refreshments and service for a maximum attendance of 200 people at openings and receptions.
- C. Public Toilet Facilities--Men-200 sq. ft.; Women-200 sq. ft.
- D. Sales Area and Desk--200 sq. ft. Located in a prominent position to maintain surveillance on the gallery spaces and control the entry.

II. Service Areas

- A. Storage--8,100 sq. ft. Large open space providing for loading and unloading trucks, assembling exhibits, storage and general maintenance.
- B. Mechanical Equipment Room--400 sq. ft.

C. Office--300 sq. ft. Administration and clerical work,
including a vault for "safe" storage.

D. Visual Projection Space--200 sq. ft. Located adjacent
to the gallery space.

I. Paintings and Sculpture

Twenty South American Artists	250	
Romantic Art	150	
Art of Two Cities	150	1,000
West Eastern & Far Eastern Art		2,000
Realism & Realism	200	
Caricature & Satire Artists	150	100
Colored Sculpture		3,000
50 Years of American Art	300	
The Spirit of New Berlin	250	1,400
Father and Child in Modern Art	150	600
Decade of New Talent	150	640

II. Design, Crafts & Archaeology

Modern Decorative Arts of Japan	150	300
Amusements Ie.	150	2000
Vases From Etruscan Cemetery		1000
A Craftsman's Approach		2000
Picasso: Ceramics & Graphics	30	300
Style & Secularity		700

III. Architecture

Murals in Architecture	100	
Fountains	200	

CIRCULATING EXHIBITIONS: AMERICAN FEDERATION OF ARTS

	<u>Running Feet</u>	<u>Square Feet</u>
I. Paintings and Sculpture		
Twenty South American Artists	250	
Romantic Art	350	
Art of Two Cities	350	1,000
Near Eastern & Far Eastern Art		2,500
Realism & Reality	200	
Ceramics by Twelve Artists	120	200
Colored Sculpture		3,000
50 Years of American Art	300	
The Spirit of New Berlin	250	1,400
Mother and Child in Modern Art	250	600
Decade of New Talent	230	640
II. Design, Crafts & Archaeology		
Modern Decorative Arts of Japan	150	300
Amusements Is. . .	150	2000
Vases From Etruscan Cemetery		1000
A Craftsman's Approach		2000
Picasso: Ceramics & Graphics	50	500
Style & Security		700
III. Architecture		
Murals in Architecture	100	
Fountains	200	

	<u>Running Feet</u>	<u>Square Feet</u>
III. Architecture (cont'd.)		
The Ideal Theater	200	
Churches & Temples	300	
Architecture of Industry	100	
Architecture of Wood	150	
New Buildings For the Arts	100	

Lighting

The quality and quantity of light in an art gallery is an important design problem in that in most instances natural north light is the best sort of light for the display of paintings. However, natural light is constantly changing and its ultraviolet rays are extremely damaging. The exclusion of natural light would solve the technical problems of preserving the paintings but it would also be one more step toward removing the works of art, which are the product of a very human endeavor, from the realities of a constantly changing world. As a compromise measure, the gallery spaces have been designed to allow a gradation of natural light, which progresses from a bright naturally lit space to one which does not have its own source of natural light, a space which can be closed off to accomodate the exhibit which could possibly create its own light.

Natural light will be supplemented with incandescent lamps which best reproduce the qualities of the sun. These fixtures, installed in a six foot ceiling grid, directed at the walls and displays should provide adequate lighting in the gallery, eliminating the need for general space illumination.

Display Installation

The constant rotation of exhibits requires durable and flexible wall surfaces. Wood frame walls will be sheathed with 3/4 inch plywood and Moses cloth so that repeated nailing will not destroy the visual field against which the paintings are

viewed. Masonry walls will be fitted with hanging tracks on the surface of the wall.

Space Conditioning

The ideal climate for the preservation of paintings and other perishable works of art is a temperature of 68° and a relative humidity of 55% and a clean atmosphere. The only problem involved here is that 68° becomes too cold for sedentary activities when outdoor temperatures fall drastically. Therefore the office and desk areas require supplementary heating.

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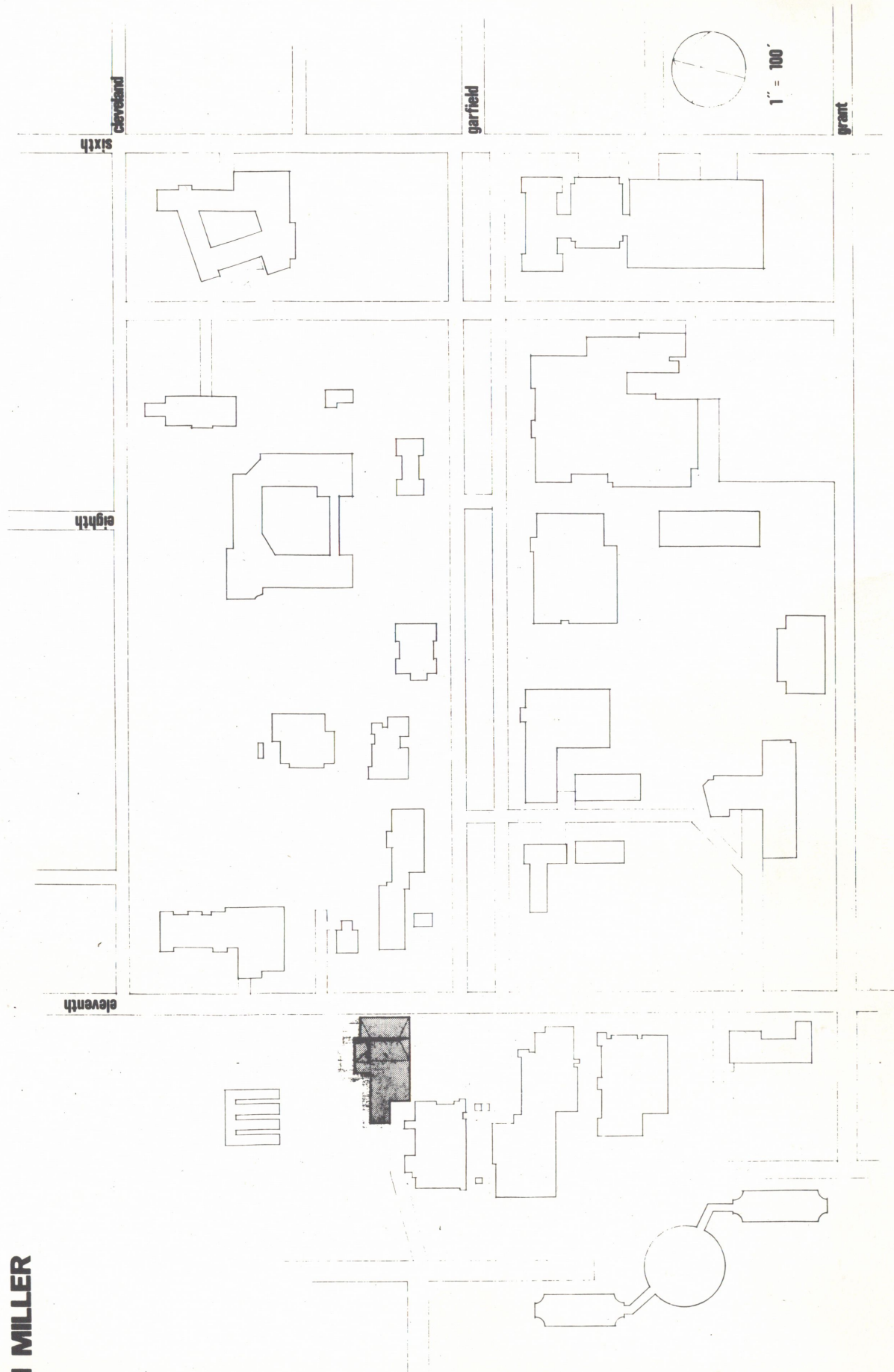
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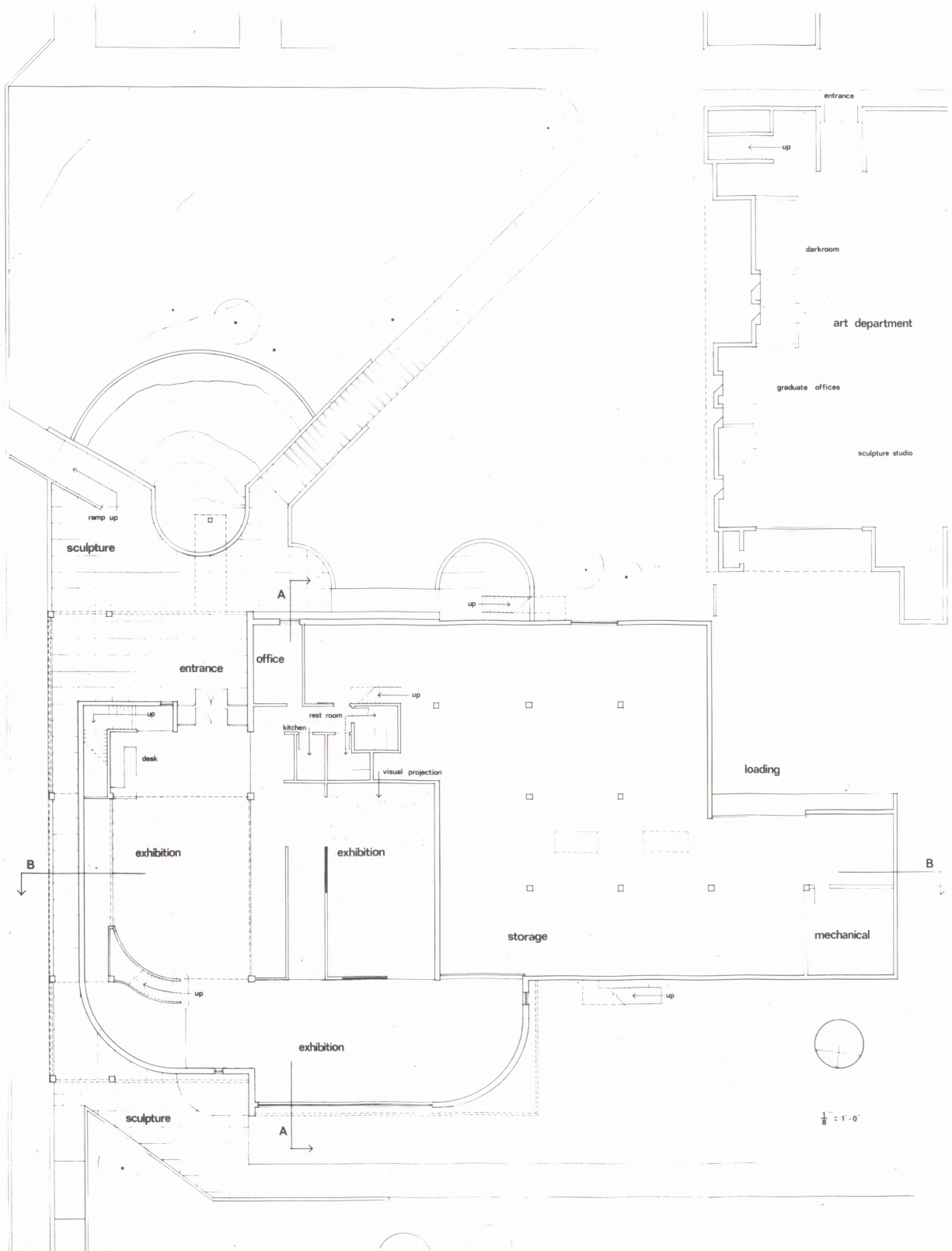
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Art Department.

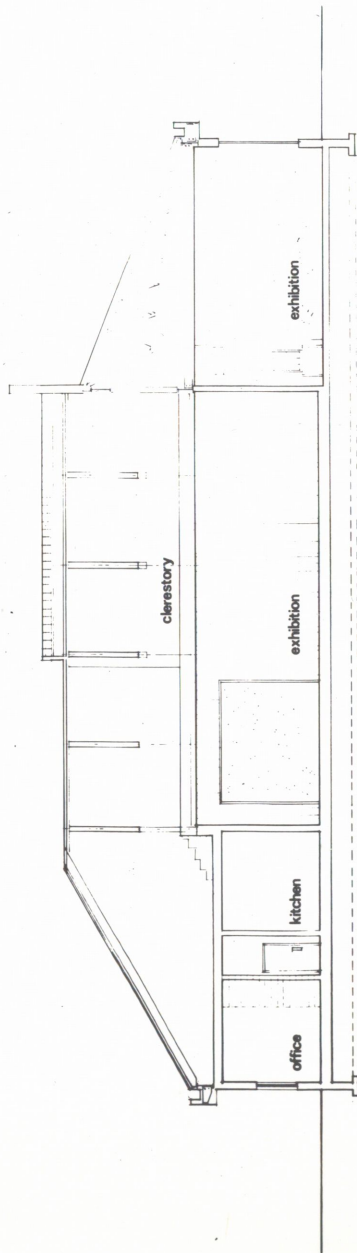
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**THESIS
MERLYN MILLER**

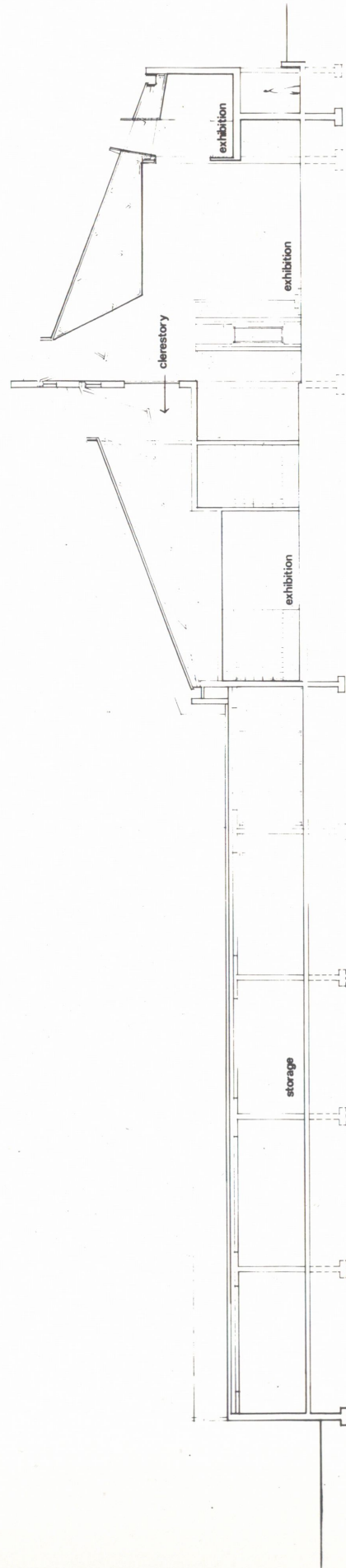


eleventh
street





section A - A



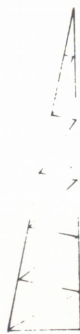
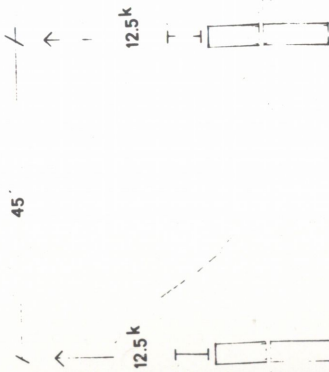
section B - B

$\frac{1}{8}'' = 1' - 0''$

lateral loads: seismic zone III
wind 15 psf

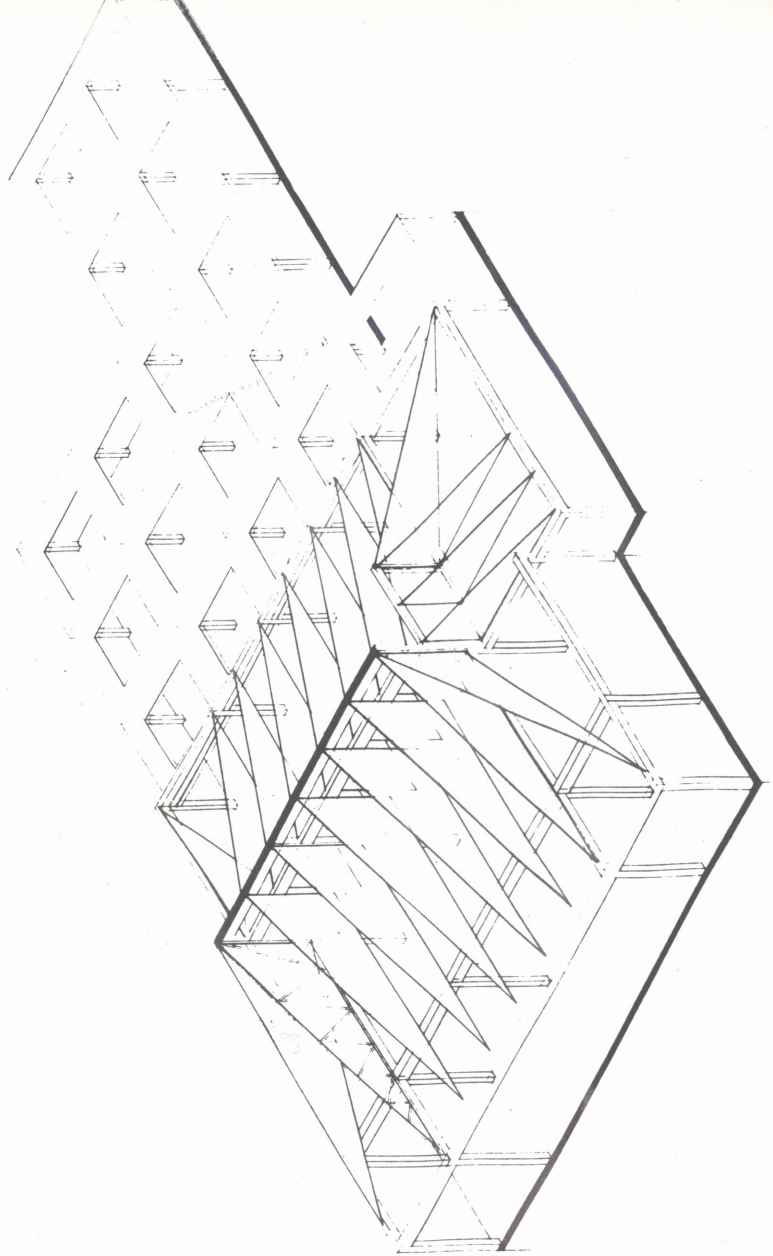
vertical loads:

live loads: snow 30 psf
dead loads: clay tile roofing
wood decking 3"
steel truss 12' o.c.

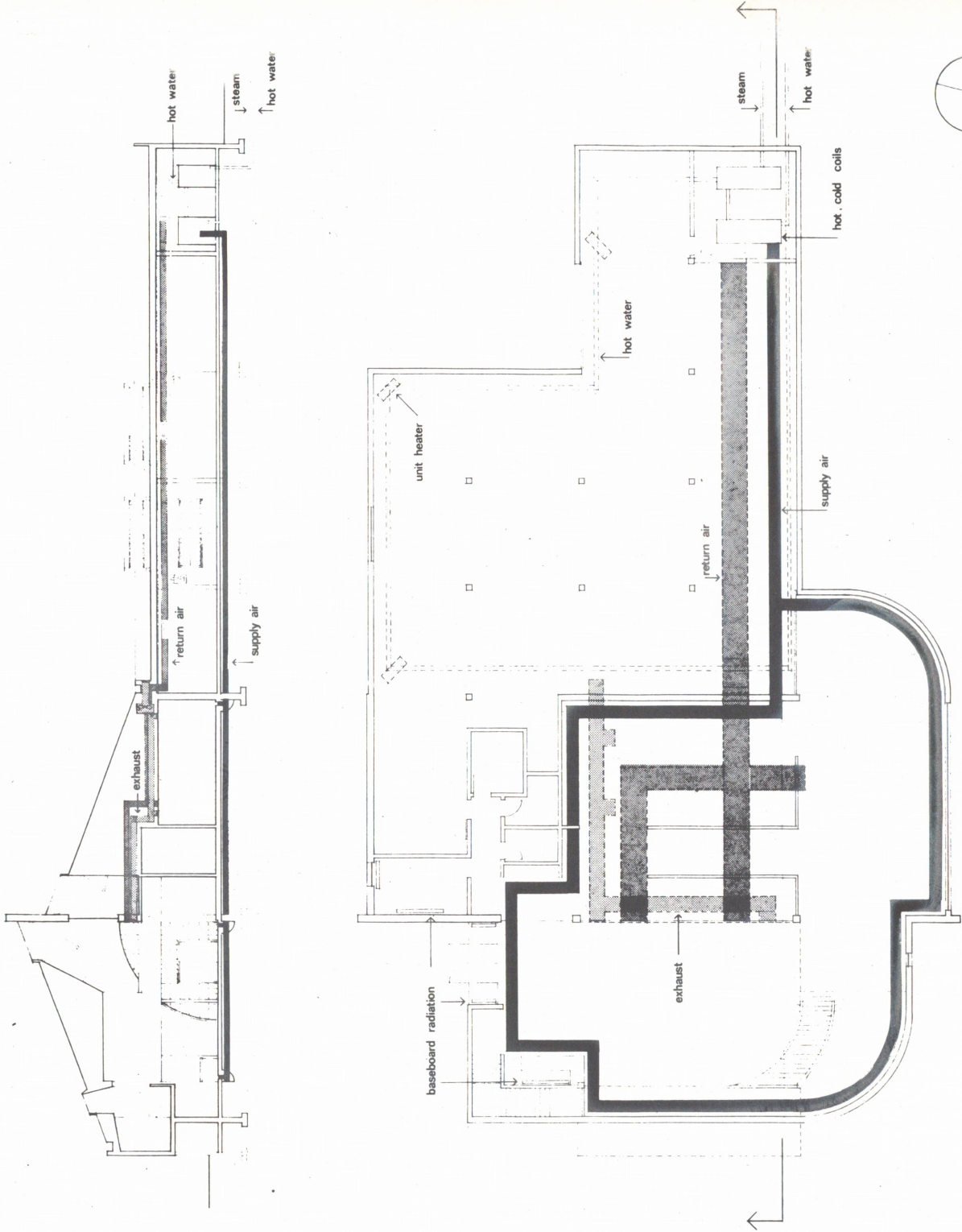


steel beam
concrete column
concrete block infill
slab on grade

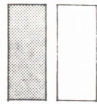
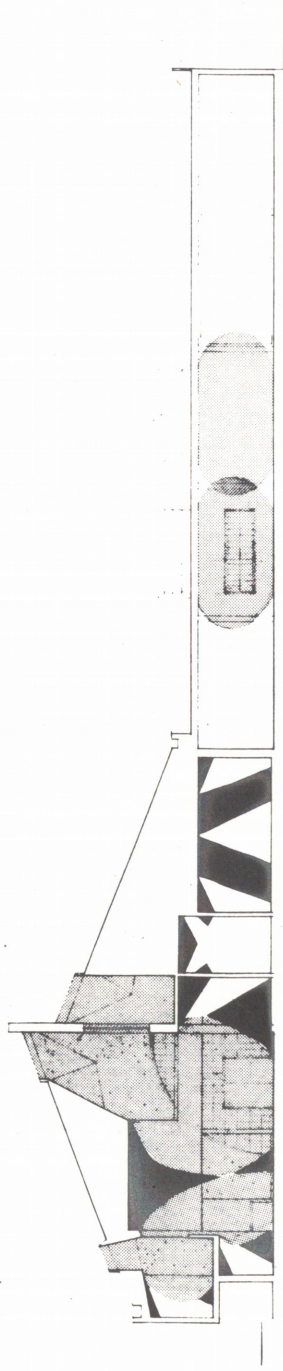
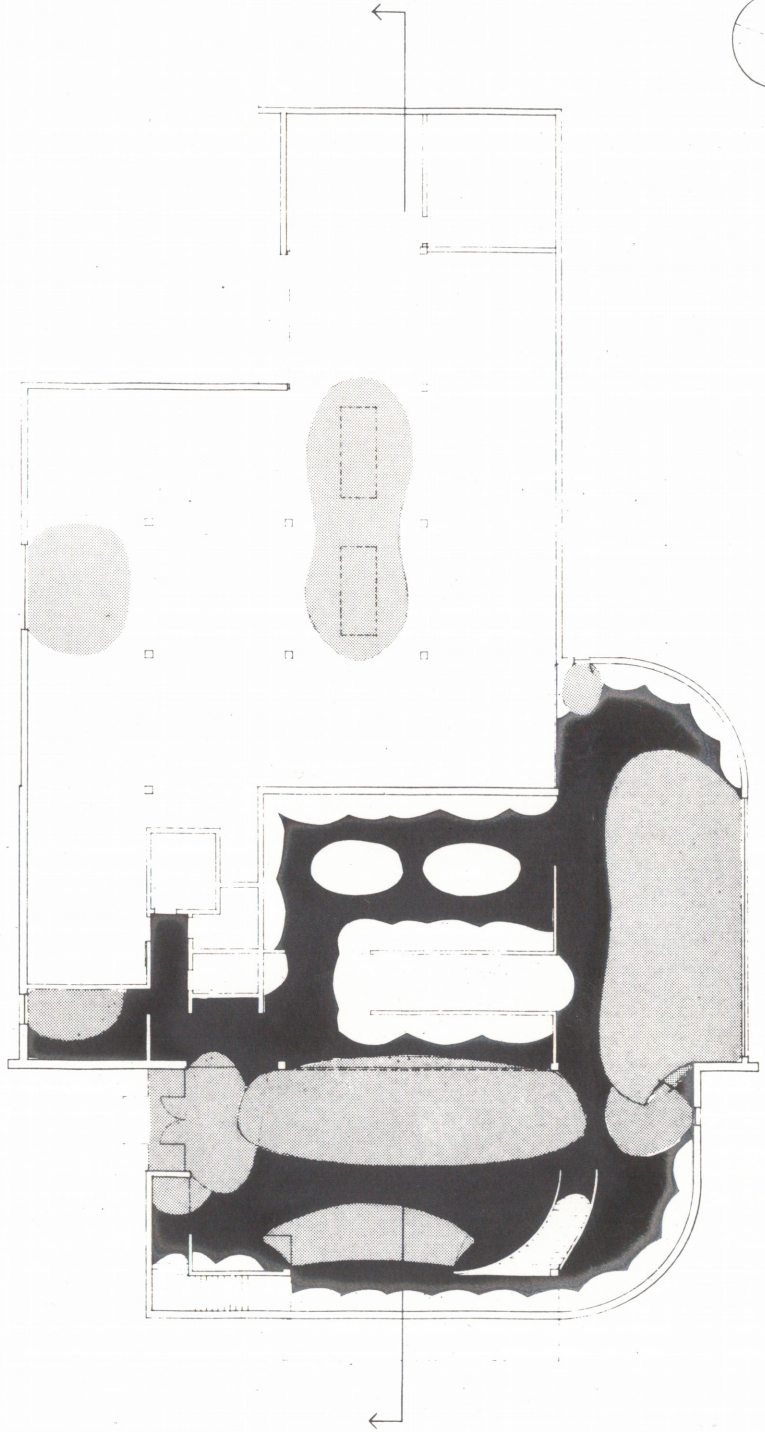
bearing capacity of soil:
14,000 psf



space conditioning

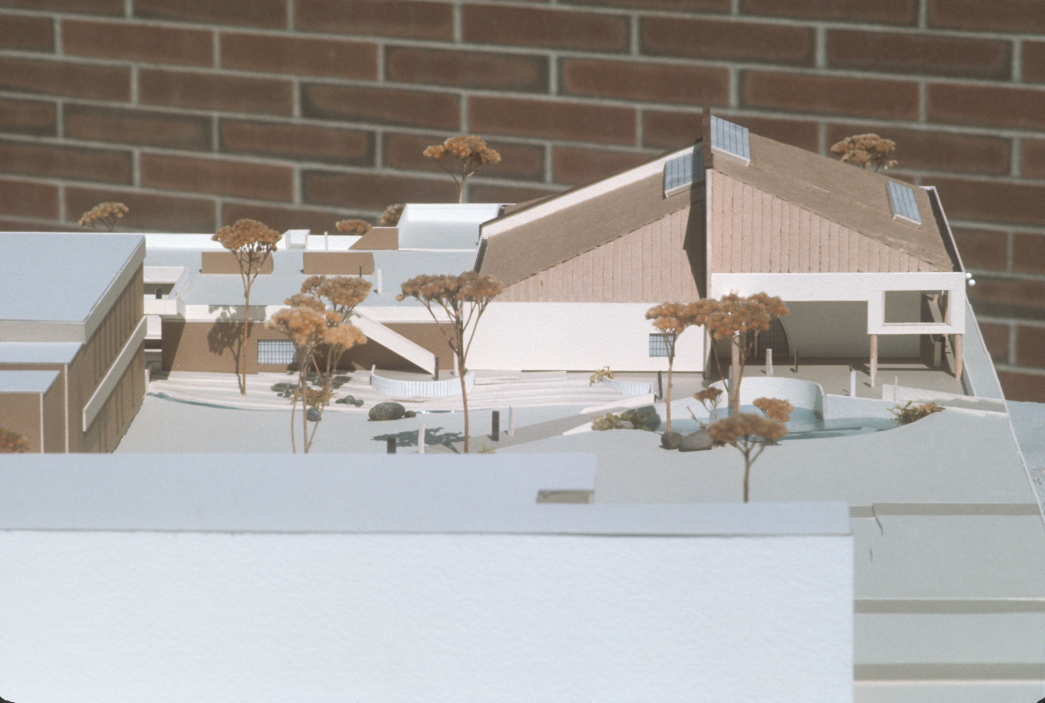


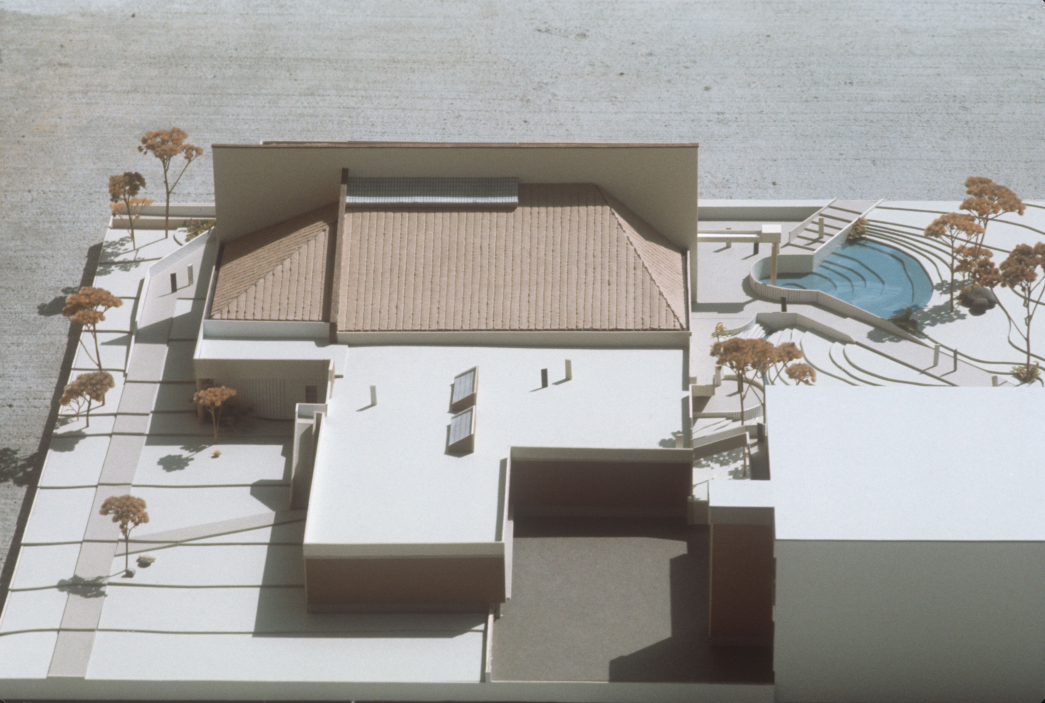
lighting:
natural
artificial



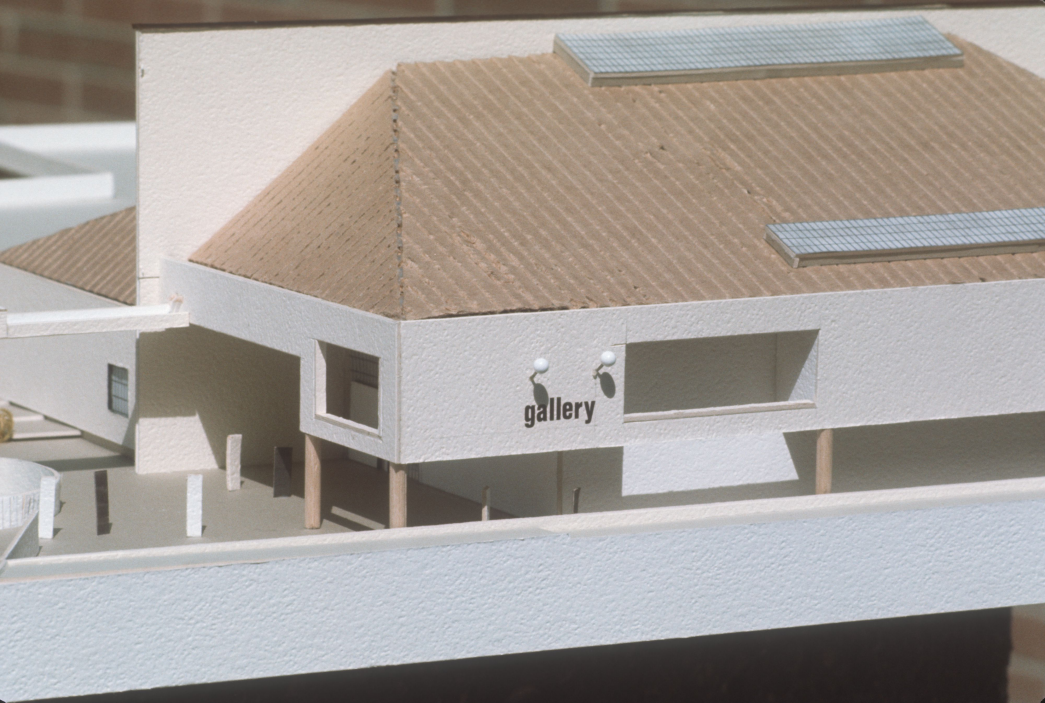


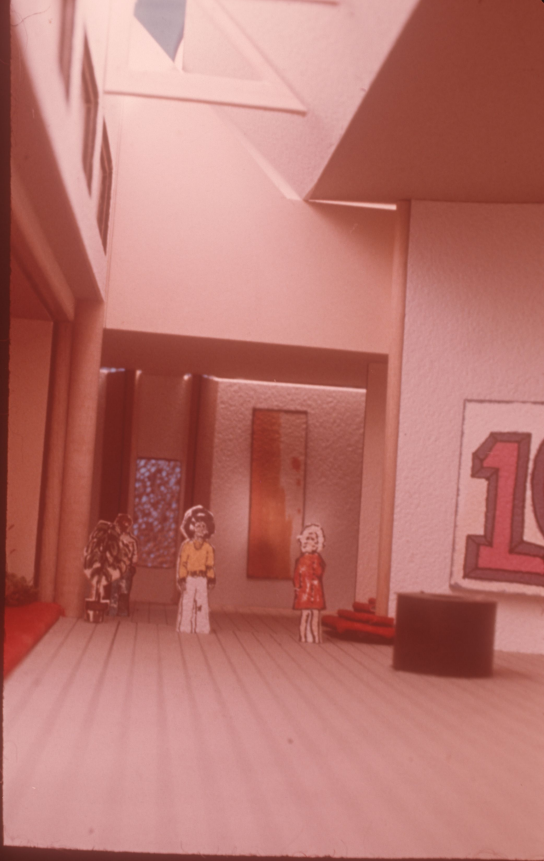
gallery

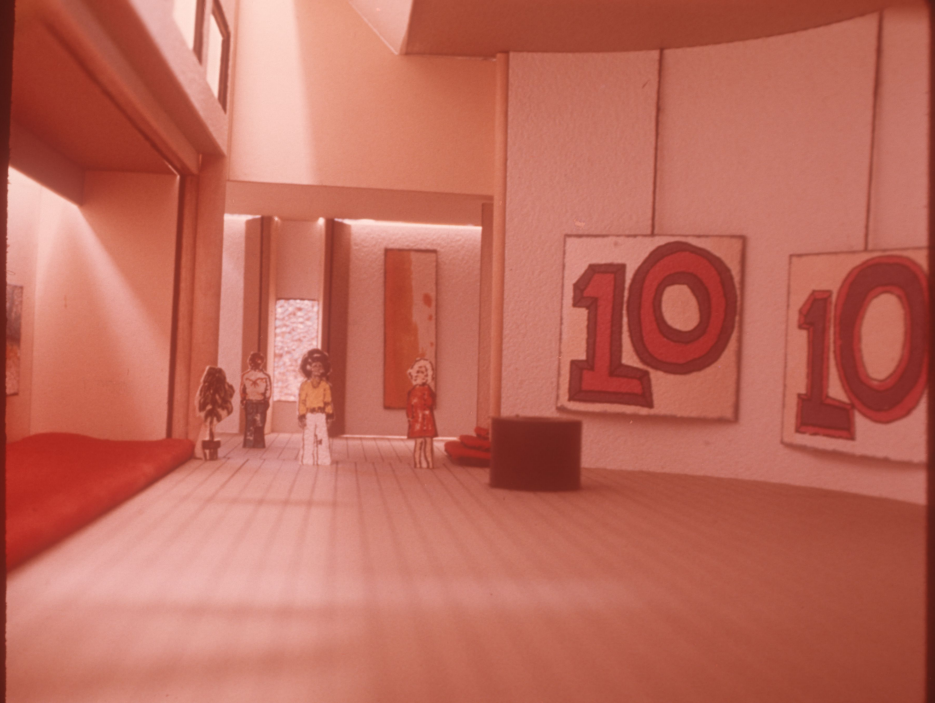


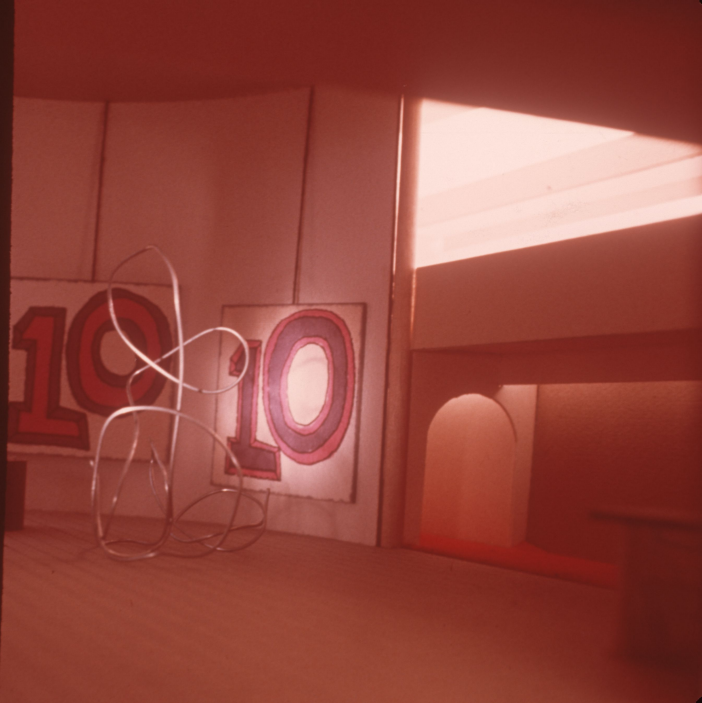
























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