

**LUBBOCK MUSEUM OF ART**  
Lubbock, Texas

BY

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A THESIS

IN

ARCHITECTURE

Submitted to the Architecture Faculty  
of the College of Architecture  
of Texas Tech University in  
Partial Fulfillment for  
the Degree of

~~B~~achelor of Architecture

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May, 1996

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LUBBOCK MUSEUM OF ART Lubbock, Texas

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PART I. PREFACE

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To my parents for their financial and moral support throughout my architectural education.

To my all of friends for their friendship and wonderful years together.

To all of my instructors who guided me in the right direction and unselfishly gave me valuable advice.

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## INTRODUCTION

Architects and architecture play a significant role in the growth of our society. One role of the architect is to seek ways in which the design of a building can communicate via different aspects to transfer concealed ideas of the art, science, and technology of the surrounding culture. The ultimate goal is to educate the users and, hopefully, to enhance the growth of the culture. Architecture represents culture, ideas, skills, and time. One role of architecture is to act as a machine for decoding the concealed ideas mentioned above. Furthermore, according to Étienne Louis Boullée, architecture is composed of two autonomous parts, "the art itself" and science<sup>1</sup>. Science is known as a set of ideas and theories while art is a set of qualitative perception used to express personal and cultural understanding of the society. Also, architecture must be functional and technical in its construction, yet poetic and sublime in its expression. Through articulating spatial relationships, details, lighting, form, and image, one should be able to achieve a degree of harmony and unity within the given urban environment.

In this project for a museum for Lubbock, an attempt will be made to synthesize an architectural work that express these ideas. Architecture is one discipline that is both art and science, borrowing from both realms in order to effect a work of synergy that serves and enriches in its expression. Geometry is a time honored vehicle for establishing the bond of art and science, and will provide a focus within the design context of this project.

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<sup>1</sup>Alberto Pérez-Goméz, Architecture and the Crisis of Modern Science. (Cambridge: The MIT Press, 1983) 134.

## ABSTRACT

### Thesis Statement

Geometry has been part of architectural design from the very beginning of building. Geometrical form used in architectural design acts as a medium which expresses and communicates human feelings and emotions through aesthetics(art) and technologies (science).

Base on the theories of Étienne Louis Boullée, and Nicolas-Louis Durand: *I intend to depict the bridge (linkage) between art and science through the articulation of geometrical forms.*

### Facility Type

The facility type is an art museum that incorporates the use of geometrical forms and new technology to express the “art” in museum design. The museum will contain three major areas: administration area, curatorial area, and public area.

### Scope

The proposed design is a mid-size museum of about 55,000 to 75,000 square feet, which includes an area for permanent local (United States) exhibits, and an area dedicated to temporary international exhibits.

### Context

The proposed site is located on a semi-arid plateau in the northwest part of Texas called the South Plain region in downtown

Lubbock -a city of industry, technology, oil, agriculture, warehousing, medicine, and education. The size of the site is approximately 410,000 sq.ft. The site is flat, and is bounded by 5th street on the south, Avenue O on the west, 4th street on the north and Avenue K on the east.

PART II.    ARCHITECTURAL ISSUES

## **MISSION STATEMENT**

The mission for the design of the Lubbock Museum of Art is to create an architectural monument that uses geometrical forms and new technologies to represent relationships between art and science, and to reflect the functions it serves. Furthermore, the proposed museum will act as an addition to the "*intellectual circle*" of Lubbock, along with the Lubbock Memorial Civic Center and the Mahon Library.

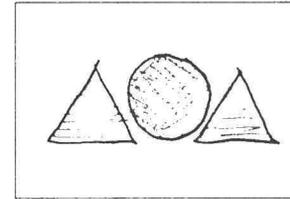
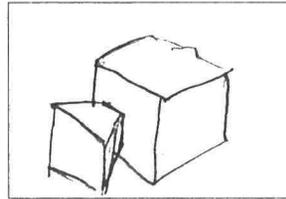
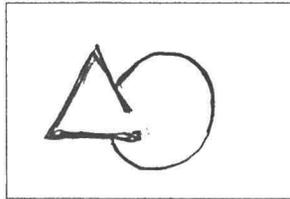
## **ISSUES**

- I. GEOMETRY
- ii. IMAGE
- iii. INTERACTION

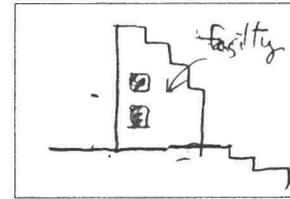
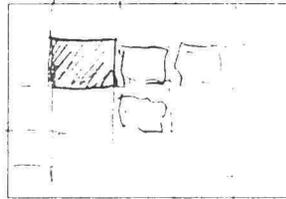
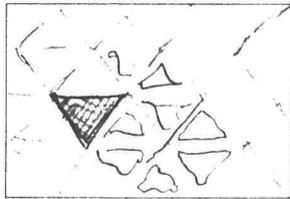
**GEOMETRY**

**Goal:** The facility should use simple geometrical forms as a design tool for the art museum.

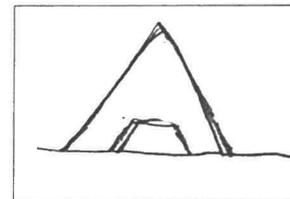
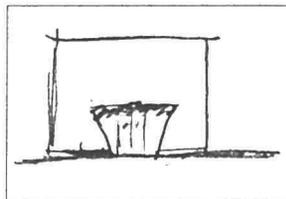
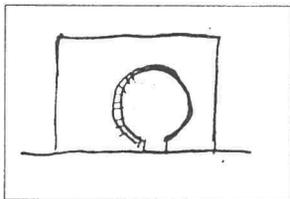
**PR #1:** The facility should compose form simultaneously in both two and three dimensions by using primary shapes of geometrical forms.



**PR #2:** The landscaping design should be visually unified with the art museum's built form.



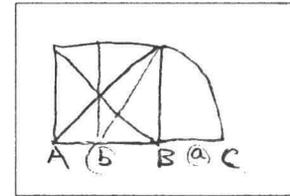
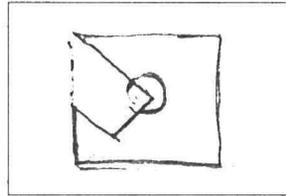
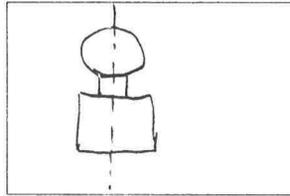
**PR #3:** The openings of the facility should enforce the unique idea of geometry.



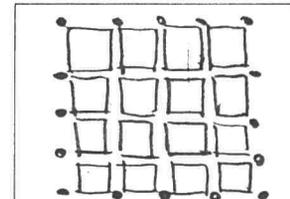
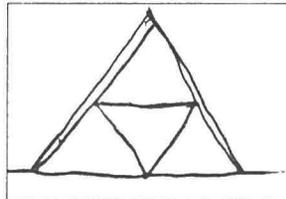
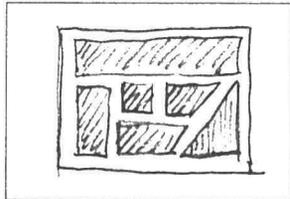
**GEOMETRY**

**Goal:** The facility should develop a unique form, reflecting and enhancing the idea of use of geometrical forms.

**PR #1:** The new construction should integrate different ideas into varied geometric form languages.



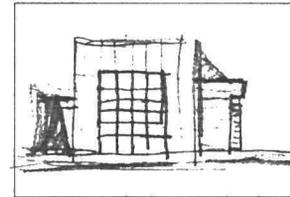
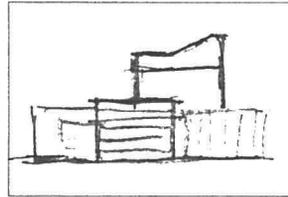
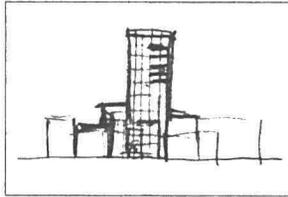
**PR #2:** The elements in the building should work together to express their geometric ideas with clarity.



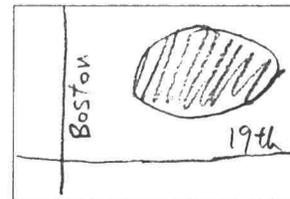
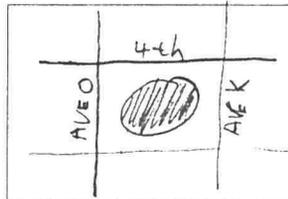
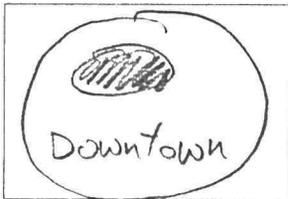
**IMAGE**

**Goal:** The facility should establish a high quality landmark image for downtown Lubbock as a positive impact for future revitalization.

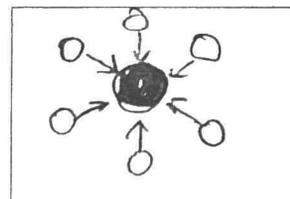
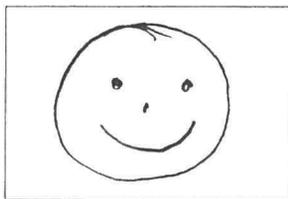
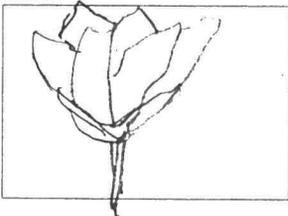
**PR #1:** The facility should be visually stimulating from other parts of the downtown area.



**PR #2:** The facility should be located in an area that people identify as Lubbock's cultural district.



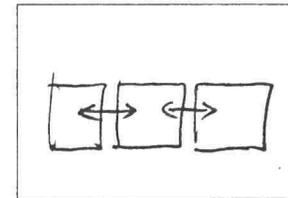
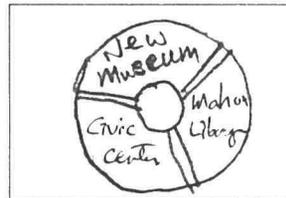
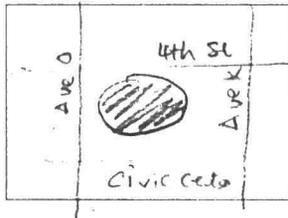
**PR #3:** The facility should relate itself to its setting in terms of a regional sense of character.



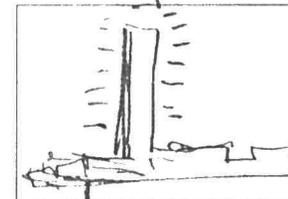
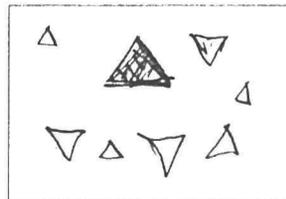
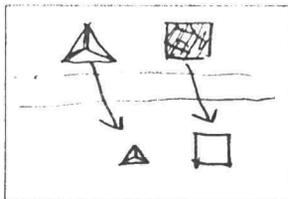
IMAGE

**Goal:** The facility should contribute toward the revitalization of downtown Lubbock as a focal point for art, academic entertainment, and cultural affairs.

**PR #1:** The facility should be located near to the Lubbock Memorial Civic Center and the Mahon Library.



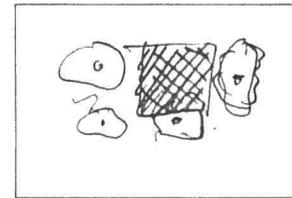
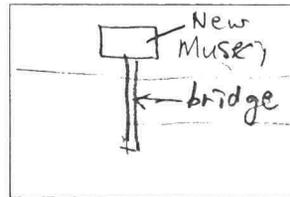
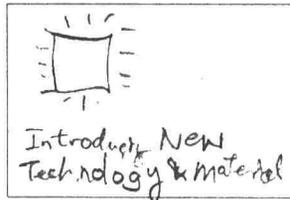
**PR #2:** The facility should serve architecturally as a worthy precedent for future projects in the district.



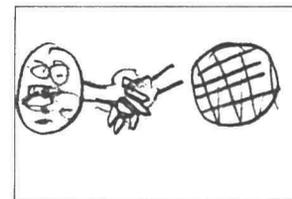
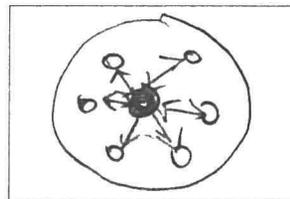
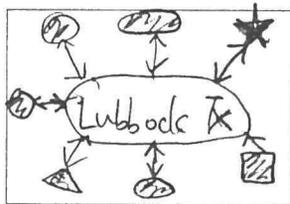
**INTERACTION**

**Goal:** The facility should encourage a high incidence of social interaction among artists and the community, and provide a favorable showcase for the art.

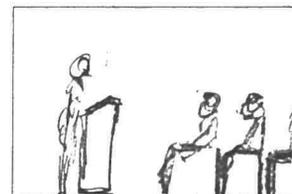
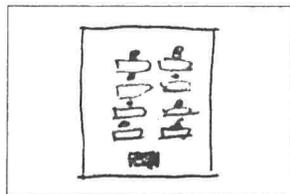
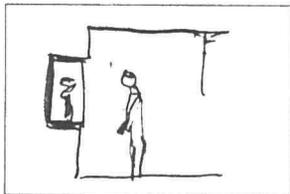
**PR #1:** The facility should offer friendly connections to its site locale.



**PR #2:** The facility should offer friendly connections to its regional locale.



**PR #3:** The facility should act as a learning center serving to provide public engagement and education in art.



## ARCHITECTURAL THEORIES

### GEOMETRY (Greek geō, "earth"; metrein, "to measure")

According to the Webster's II New Riverside University Dictionary, Geometry is the mathematics dealing with the properties measurement, and relationships of points, lines, angles, surfaces, and solids, or it is describing a physical arrangement resembling geometric lines or forms.

Geometry has played an important role in the development of architectural designs for many years. The role of geometry not only enhances the aesthetic quality of the design, but it has a definite meaning behind it. It provides us with knowledge of the actual structure of the space we live in, and the spatial relations among the objects we meet in everyday life.

In Egypt 4,600 years ago, the angle of inclination of the Great Pyramid was determined through a geometric construction that involved the fashionable problem of "squaring the circle".<sup>2</sup>

Several basic geometric forms used in architecture are the square, the rectangle, the triangle, and the circle, and from these basic shapes the basic three-dimensional shapes are developed. These include which is the cube, the cuboid, the tetrahedron and the sphere. One example found is the Vesica piscis. It is a simple geometrical figure where on the diameter of a circle with an equilateral triangle as the radius, circular arcs are drawn from the apex through the other corners of the triangle to produce the form of a fish. The Vesica Piscis is an emotional symbol and was a geometrician's tool used throughout the Gothic

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<sup>2</sup>Garry Stevens. The Reasoning Architect - Mathematics and Science in Design, McGraw-Hill Publishing Company, New York, 1990, .xvii.

period.<sup>3</sup>

Many architects have incorporated geometrical forms to help enhance the visual quality of a building. The use of geometrical shapes in the design help organize the proportion of a building, thus making it easier to comprehend. The most advantageous geometrical form is the triangle. In the past, many architects have chosen to use this form in their design. Examples include the pyramids of Egypt, and the organization of the facades of the buildings in the Middle Ages. According to Viollet-le-Duc, the eye acts independently of reasoning, and it recognizes a relation of similarity, not proportion, when looking at a building. Therefore, in order to satisfy the eye, the architects chose to use geometry to organize the facade and the building plan. In doing so, the architects usually chose to use the geometrical form of the triangle. The triangle is advantageous, because it directs the eye instinctively to this general system, as it furnishes points of articulation. One example is I. M. Pei's Louvre Pyramid. The pyramid is made of glass and steel, with Pei's unique arrangement of triangular forms composing the exterior facades of the pyramid.

Geometry was, by far the most thoroughly developed and highly perfected science that existed in antiquity. For a period of about two thousand years, no other science existed which had an equal degree of development and perfection. Plato established a school of philosophy, an academy in which to study the world as well as the universe. He considered geometry "the key to philosophical knowledge and truth - it held the key to (the) understanding of reality."<sup>4</sup>

In more recent years, technology become a powerful

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<sup>3</sup>Krome Barratt, *Logic and Design: The Syntax of Art, Science and Mathematics*. (New Jersey: Eastview Editions, Inc., 1980) 223.

<sup>4</sup>C. Wesley Salmon. *Space, Time & Motion*, Dickenson Publishing Co. Inc., Encino, California, and Belmont, California, 1975, 2

conceptual adjunct to geometry in architecture. Mies van der Rohe stated that technology is not only a useful means, but something in itself, something having meaning and power of form. His buildings, such as Farnsworth house contain a very simple usage of materials. The modern elements *are* the material: glass walls and exposed steel structure. Geometry is the building composition used, including: sliding horizontal and vertical planes, and rigid forms. In the architecture of Mies van der Rohe, geometry is used to link what is sublime and artistic to what is functional and scientific.

These theories and examples are all part of historical precedent. In a future oriented perspective, such historical understanding is vital to relevant modern thought in the architectural realm.

## MUSEUM

Museum is a Latin word, derived from the Greek mouseion, originally meaning a temple dedicated to the nine Muses. The first mouseion, founded about 290 BC in Alexandria, Egypt, by Ptolemy I Soter, was a state-supported community of scholars. The museum and most of its library were destroyed about AD 270 during civil disturbances. A museum can be a profit or nonprofit institution housing collections of objects of artistic, historic, or scientific interest, conserved and displayed for the edification and enjoyment of the public. Not until the Renaissance was the term applied to a collection of objects of beauty and worth, where the objects are safeguarded and preserved. A museum can be categorized by its intended purpose such as for the display of: arts, archaeology, anthropology, natural history and sciences, and histories of nations, regions, and cities, and for human products and activities.

According to Encyclopedia of Architecture, a good museum should include the functions described earlier: reception, information of visitors, an entry and orientation area, adjoining large halls or galleries, offices for administration and specialties, rooms for preparation, study, and storage of objects, and spaces for mechanical and maintenance functions. In the northeastern U.S., the late 19th century was a period of rapid proliferation of museums and saw the emergence of art museums, in particular, as important and distinct institutions. The Boston Museum of Fine Arts and the Metropolitan Museum of Art in New York City were both founded in 1870. The Pennsylvania Museum (now the Philadelphia Museum of Art) was founded in 1877, and the Brooklyn Museum in 1893. By the latter part of the 20th century, however, population shifts and the development of new centers of wealth and culture were reflected in the number of important art museums established in the South and the West.

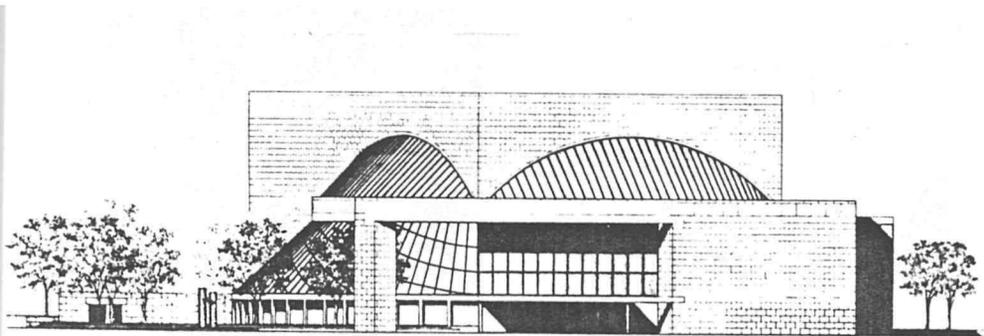
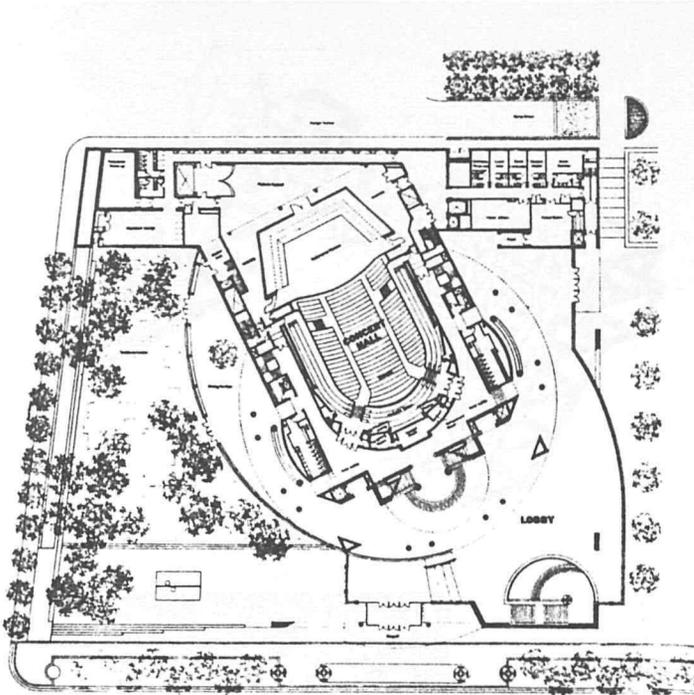
Museums have undergone a lot of change since they were first introduced. First, the concept of designing a museum<sup>13</sup>

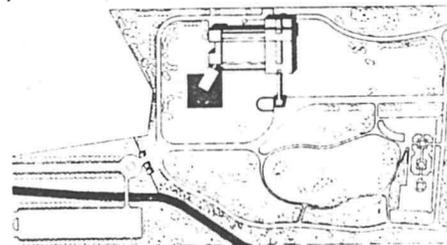
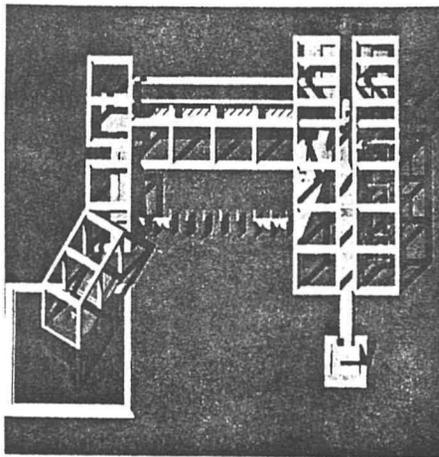
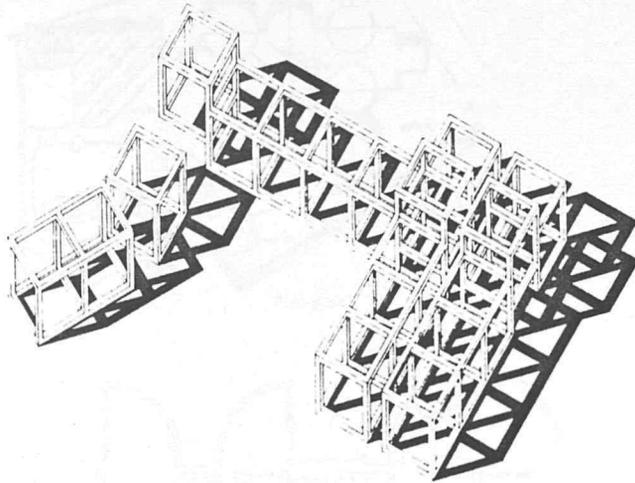
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has been influenced by high-tech industrial materials such as specially treated glass, aluminum and steel components, marble tiles, and stylish bricks. Through the years, the many functions have been added to the museum, and this has led to a dramatic change in the design of new museums. Some of the new functions which have been added through the years are garden halls, restaurants, cafeterias, souvenir stores, auditoriums, theaters, and many more. The addition of these new functions greatly changes the requirements involved in designing and building a museum, and there are different building codes that have been developed to accommodate such change, to make the building a safer place to be. In another words, in the past few years, the museum has become a much more important place within the community. It is not only a place where artworks are displayed, it is a place of gathering, communicating (discussion), collecting (preservation of artworks from the past), education, relaxation, and display.

**CASE STUDY****Project Title:** The Morton H. Meyerson Symphony Center**Site:** Downtown Dallas, Texas, U.S.A.**Building Type:** Symphony Center**Principal Client:** Dallas Symphony Association Committee**Architect:** I. M. Pei**Year:** 1981-89**Building Materials:** Concrete, glass, brick, limestone, travertine, steel.

**Project Analysis:** The symphony center is composed of several geometrical shapes, including circles, rectangle, and triangles, and the idea behind the building is to create an attraction for people, and a sense of celebration. The symphony center incorporates high tech features such as the adjustable acoustic ceiling made of steel and works to provide flexibility in the symphony hall. Furthermore, there is serious consideration given to acoustic issues, as there is a double roof to prevent airplane noise from above, and sound locks (antechambers) between the hall and the public space. Concrete doors in the attic control sound infiltration. For the exterior glass walls, the steel members were made diagonal to create a high tech image. The architect was responsible for the acquisition of sculptures for the exterior courtyard to augment the experience of the symphony, including Chillida's *De Musica* - a pair of fifteen-foot-tall, sixty-eight-ton Corten steel columns with branchlike protrusions. These serve as a ceremonial gateway for visitors to the hall.





## CASE STUDY

**Project Title:** Gunma Prefectural Museum of Fine Arts

**Site:** Takasaki, Gunma, Japan.

**Building Type:** Fine Art Museum

**Principal Client:** Gunma Prefecture

**Architect:** Arata Isozaki & Associates

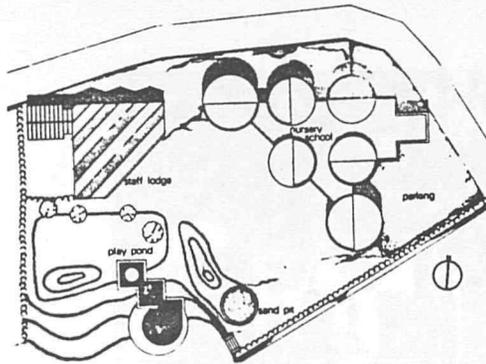
**Year:** 1971-74

**Structural System:** Skeletal parti of forty foot cube.

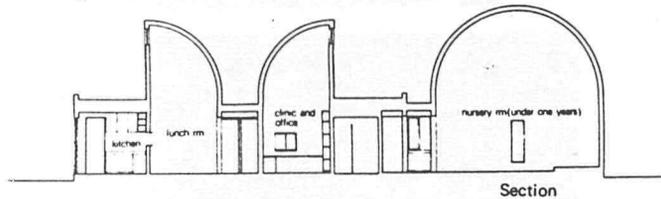
**Building Materials:** Aluminum, glass, concrete.

**Project Analysis:** For this project, Isozaki has used the geometrical form of the cube, which he described as the equilateral volumetric unit. The concept behind using the cube to organize the building to express the art gallery as a void. Two basic architectural systems used here are the basic structure, which is the forty-foot cube forming the building, and the supplemental structures, which include the exhibition spaces, stairways, administrative offices, lighting, etc....

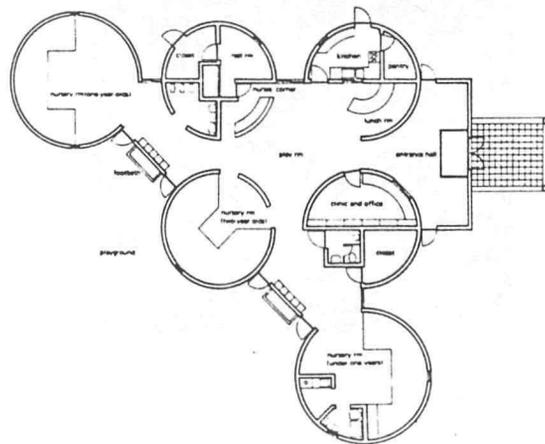
The idea of using a four-foot aluminum or glass panel on the side of the building is to help create a gleaming gridded facade. Unfortunately the north side was left exposed in concrete because of financial constraints.



Plot plan



Section



Plan

## CASE STUDY

**Project Title:** Furakoko Nursery School

**Site:** Kii Nagashima, Mie Prefecture, Japan.

**Building Type:** Nursery School and Staff Lodge

**Architect:** Shin Toki, Architect & Associates

**Year:** Completion date: March 1980.

**Structural System:** reinforced concrete, wood frame, and folded plates.

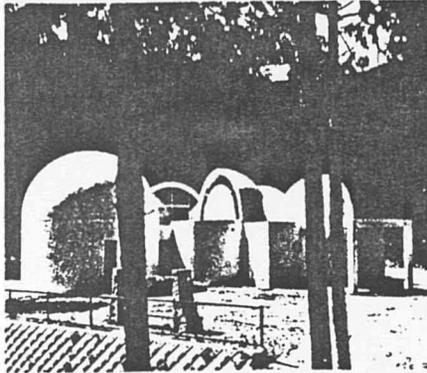
**Building Materials:** Concrete, wood, glass and steel.

**Project Analysis:** The design of the nursery school uses a simple geometrical form: the circle. There is a group of five buildings each imitating an old fashioned cradle. The circular plan has two main functions: one is to ensure a smooth movement indoors, (ideal for a building with small children), and the other is that the combination of these plans and the semi circle of the "cradle", create a gentle container for the children. The play space between these six functional area acts as a binding element.

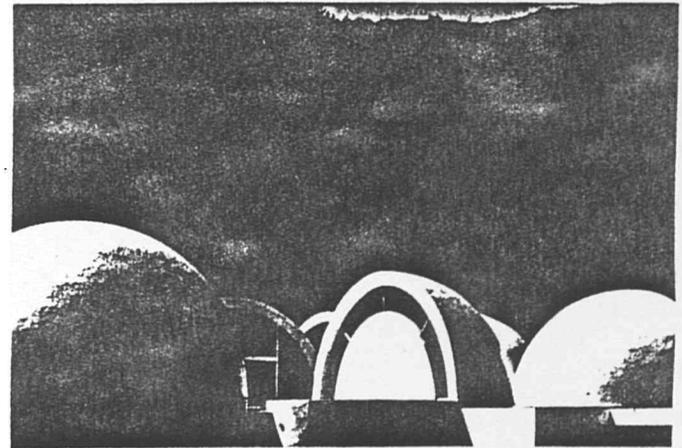
To bring in light, there is a vertical surface with windows on the side of the half dome roof, and the orientation of these windows (east, south, west, and north) ensures constantly changing lighting conditions for the interior. As visitors pass through the building, the domes seem to overlap each other, come together, and then separate.

The Staff Lodge design consists of a folded plate

to achieve maximum span of over fifteen meters. Finally, there are different play swings within the complex (the name *Furakoko* means "play swing in the traditional Japanese language), other types of play equipment, including sand piles, and a pond with a fountain.



(top left) View of the nursery school from the southeast. (bottom left) Distant view.



## PART III. FACILITY PROGRAM ISSUES

## **MISSION STATEMENT**

The mission of the Lubbock Museum of Art is to create an architectural monument for the area that encourages public activities and social interaction.

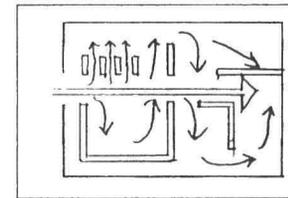
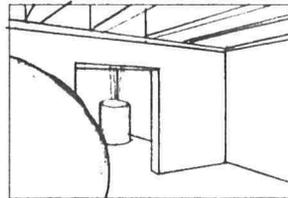
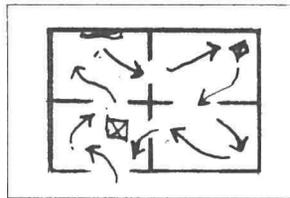
## **ISSUES**

- I. CIRCULATION
- ii. INTERACTION
- iii. LIGHTING
- iv. SAFETY
- v. SECURITY

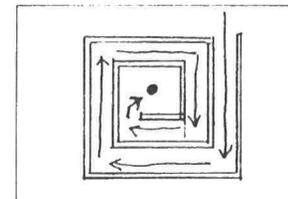
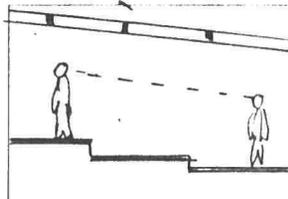
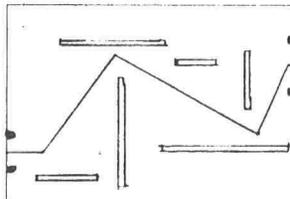
**CIRCULATION**

**Goal:** The facility should offer a simple and visually exciting circulation system for all users at the Lubbock museum of art.

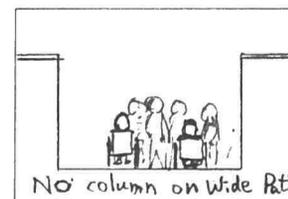
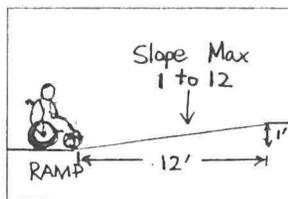
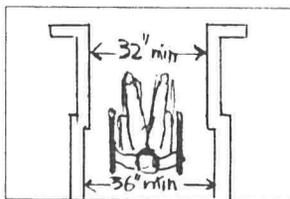
**PR #1:** The facility should promote optimal information flow between different rooms and areas.



**PR #2:** Circulation system should provide a distinctive sense of direction for first time visitors.



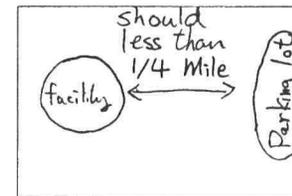
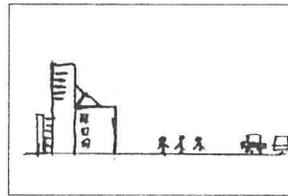
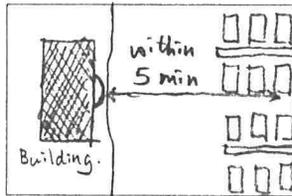
**PR# 3:** All circulation paths should be handicapped accessible.



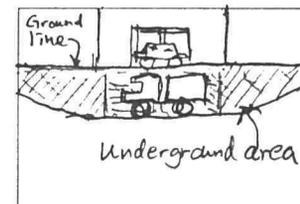
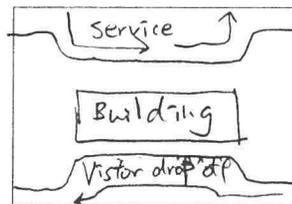
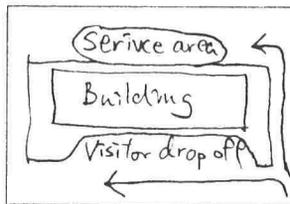
**CIRCULATION**

**Goal:** The facility should provide a short, safe, and pleasant walk from the museum to the designated parking area for the visitors, as well as for the employees at the museum.

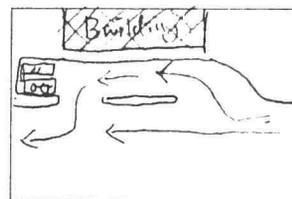
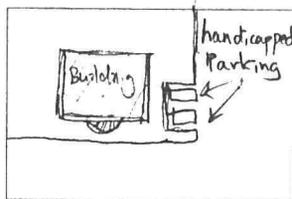
**PR #1:** Parking should be located within 5 minutes walking distance.



**PR #2:** Service area and visitor drop off area must be conceptually separated to prevent problems in vehicular and pedestrian circulation.



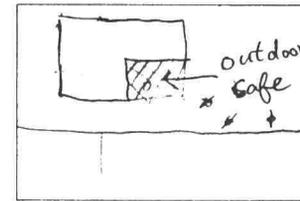
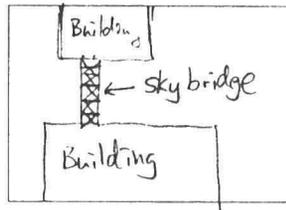
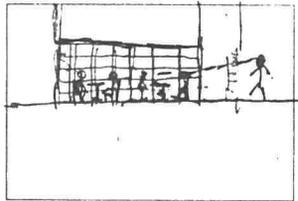
**PR #3:** The handicapped parking should be near the museum entrance.



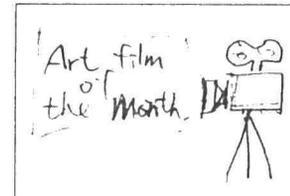
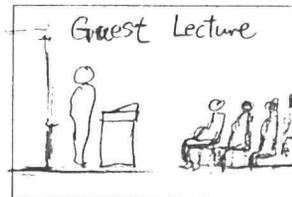
**INTERACTION**

**Goal:** The facility should promote a pleasant environment for social interaction and learning exchange for the public.

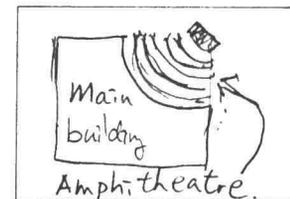
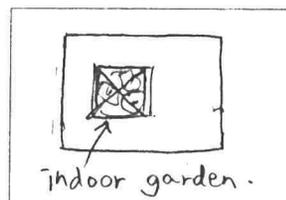
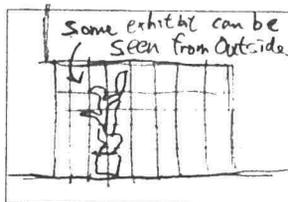
**PR #1:** The cafe should attract lunch time visitors to the museum with visible and convenient connections to its surroundings.



**PR #2:** Art activities and educational programs should facilitate interaction opportunities between the users.



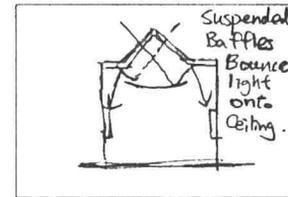
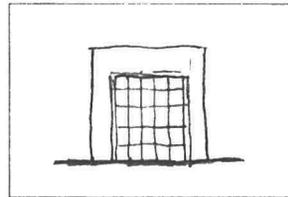
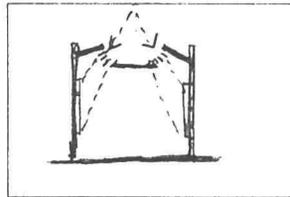
**PR #3:** The facility should provide a venue in which the exhibits and activities can make themselves known to the community.



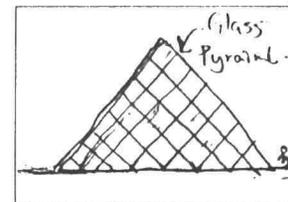
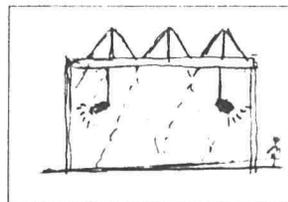
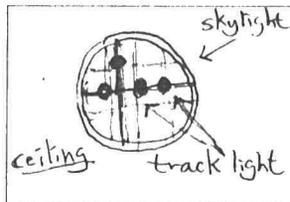
**LIGHTING**

**Goal:** The facility should provide an efficient and ample lighting pattern for the museum users.

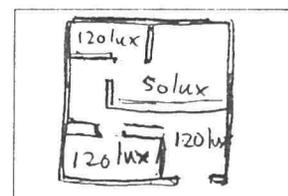
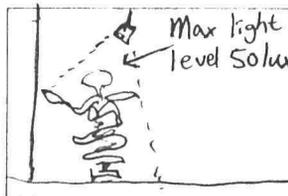
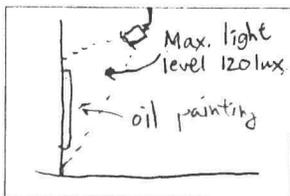
**PR #1:** Day lighting should be used to achieve some illumination due to the high cost of artificial lighting, and the natural quality of daylight.



**PR #2:** The exhibition galleries will be illuminated by a combination of skylight and artificial lighting.



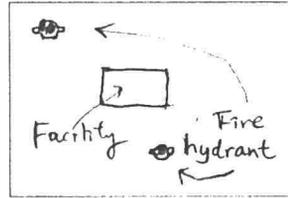
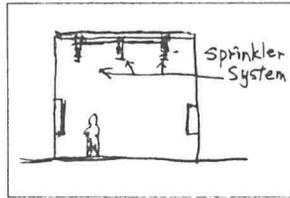
**PR #3:** The galleries and exhibition areas will provide a maximum light level of 120 lux for the oil paintings and 50 lux for others.



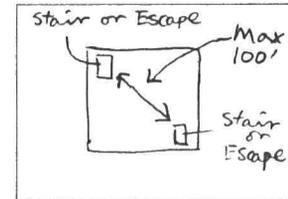
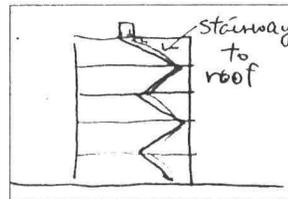
**SAFETY**

**Goal:** The facility should protect human life and property.

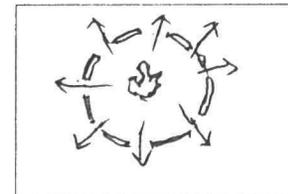
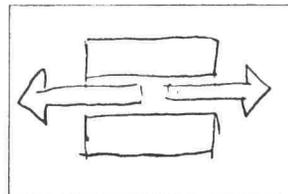
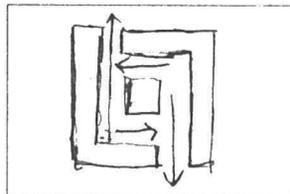
**PR #1:** The facility shall provide an extremely efficient fire protection system.



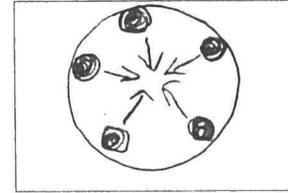
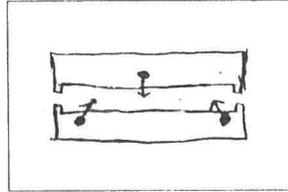
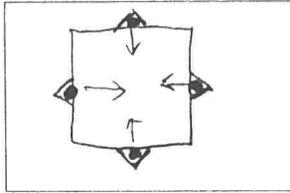
**PR #2:** The emergency escape routes shall meet the requirement of the Uniform Building Code.



**PR #3:** The facility shall provide adequate accessible exit routes.



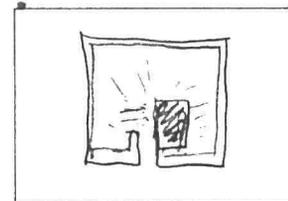
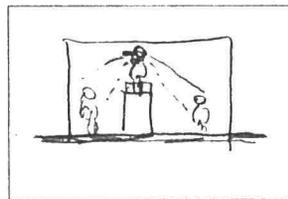
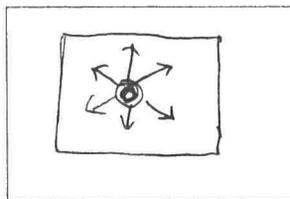
**PR #4:** An adequate number of fire extinguishers shall be provided and shall be accessible at strategic locations within the facility.



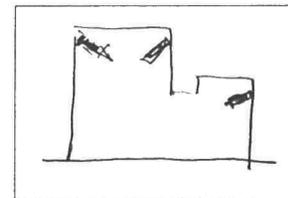
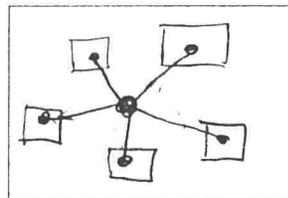
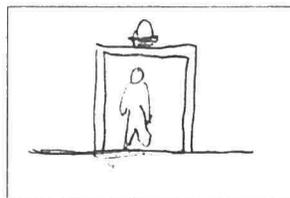
**Security**

**Goal:** The facility shall provide the users with an extremely safe environment at all times of day and night to deter theft or vandalism of the exhibit objects, and to offer a high degree of physical and psychological protection.

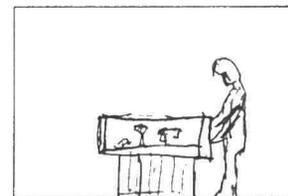
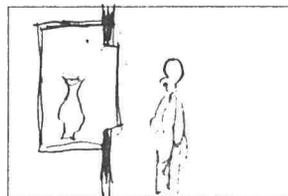
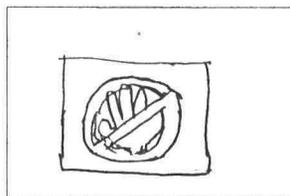
**PR #1:** Security guard stations shall be provided as needed for the protection of persons and exhibits.



**PR #2:** Electronic security devices and alarm systems shall be provided for the protection of persons and property.



**PR #3:** Clear signage, and protective casing shall be provided for the protection of permanent and long term exhibit objects.



## ACTIVITY ANALYSIS

### ADMINISTRATION ACTIVITY

#### Primary Activities:

- a) Bookkeeping- maintaining financial stability of the museum, distributing all employee's salaries, purchasing art works for collection or display, shipping and handling, and materials handling involved with the museum's operation, such as building and collection maintenance.  
Participant- accounting staff and assistants.
- b) Managing- manages all museum administrative related activities for a smooth operation.  
Participant- museum administrators.
- c) Meeting- meeting rooms for discussing matters pertaining to museum's operation such as future opportunities for expansion, exhibition, funding issues, and problem solving.  
Participant- employees in the administrative area.
- d) Planning/ coordinating- planning and coordinating present and future issues including fund raising, exhibitions, and other problems pertaining to the museum.  
Participant- employees in the administrative area.
- e) Researching- researching and discovering art works around local areas and outside Lubbock for future exhibitions, and discovering individual

artists or groups of artists with the intention of displaying their art works.

Participant- employees in the administrative area.

f) Security- protect artwork from theft or vandalism, and maintain order in the museum.

Participant- chief of security guards, and security guards.

## **ACTIVITY ANALYSIS**

### **Secondary Activities:**

- a) Casual meeting- casual meeting and talking between employees, while taking a short breaks between work time for releasing tension.  
Participant- employees in the administrative area.
- b) Cleaning- cleaning of office area to maintain a clean and organized environment.  
Participant- employees in the administrative area and janitors.
- c) Filing records- keeping all records and credentials in a proper order, and updating all working files.  
Participant- supporting staff in the administrative area.
- d) Informal discussion- discussing issues concerning job and related problems among employees.  
Participants- employees in the administrative area.
- e) Secretarial- typing and filing all necessary papers, working papers, and correspondence.  
Participant- secretaries and supporting staff of the administrative area.
- f) Storing- storing all office supplies and archival files.  
Participant- supporting staff in the administrative area and delivery workers.

## **ACTIVITY ANALYSIS**

### **CURATORIAL ACTIVITY**

#### **Primary Activity:**

- a) Collecting/ identifying/ preserving- collecting all received art work, and then identifying them according to their category, preserving them to ensure safety and maintenance.  
Participant- curators, photographers, and conservators.
- b) Designing- designing the layout of partitions for the exhibition space and the placement of art objects, graphic presentation, and the framing of paintings for the exhibition area.  
Participant- exhibit designers and assistant staffs.
- c) Maintaining- maintaining the condition of the current exhibition, and replacing, repairing, and maintaining art works to improve the exhibition atmosphere.  
Participant- technicians, conservators, and supporting staffs.
- d) Managing- managing, and monitoring the curatorial operations.  
Participant- a chief curator and an assistant chief curator.
- e) Meeting- meeting and discussing problems and improvement of current and future exhibitions or curatorial operations.  
Participant- employees in the curatorial area.

- f) Researching- researching for possible art works that can be displayed in exhibition, and suggesting art work for future purchase or borrowing.  
Participant- chief curator
  
- g) Workshops- Preparing all necessary equipment and materials for an exhibition, constructing partition walls, and preparing exhibition space for an exhibition.  
Participant- technicians.

## **ACTIVITY ANALYSIS**

### **Secondary Activities:**

- a) Janitorial cleaning- maintaining and monitoring the cleanliness of the museum.  
Participant- janitors.
- b) Loading/ unloading- loading and unloading all received materials and art work.  
Participant- staffs of the shipping and handling department.
- c) Registering- registering all outgoing and incoming materials and art work before shipping and receiving.  
Participant- a registrar and supporting staffs.
- d) Shipping/ receiving- shipping and receiving of any materials for exhibition or museum operation related materials.  
Participant- staff of the shipping and handling department.
- e) Storing- storing all materials, equipment and art work in the storage room for safety and maintenance.  
Participant- staffs and storage workers.

## **ACTIVITY ANALYSIS**

### **PUBLIC ACTIVITY**

#### **Primary Activity:**

- a) Lecturing- giving lecture to particular groups, students, or invited guests.  
Participant- visitors, a guest speaker, or a teacher.
- b) Listening- listening to a lecture or instructions given by guest speaker or a tour guide.  
Participant- visitors.
- c) Reception/ inquiring- visitors acquiring informing, direction and special services such as handicapped access and assistance.  
Participant- receptionists and visitors.
- d) Shopping- purchasing, window shopping, inquiring at the gift shop area, carrying, and walking.  
Participant- visitors and workers in the gift shops.
- e) Viewing- viewing the sculpture courtyard and art works that are being exhibited.  
Participant- visitors.
- f) Waiting- waiting for orientation, for groups, departure of groups and individuals.  
Participant- visitors.
- g) Walking- orientation, walking through the exhibition, around the museum, entering, and leaving the museum.  
Participant- employees and visitors.

## **ACTIVITY ANALYSIS**

### **Secondary Activities**

- a) Eating/ drinking- eating and drinking at designated area (cafe and eating area), or employees having lunch or breaks in the employee lounge.  
Participant- visitors and employees.
- b) Parking- Looking for parking space, parking cars, and looking for entry to the museum.  
Participant- staff, and visitors.
- c) Sitting- socializing, viewing, contemplating, relaxing, or resting.  
Participant- visitors.
- d) Talking- conversation, explaining, speaking, criticizing the display art works.  
Participant- visitors or staff.
- e) Waiting- waiting for information, waiting for company, or waiting to purchase or pay for gifts in the gift shops.  
Participant- visitors.

**SPATIAL ANALYSIS**

All square footages are approximate, and are subject to change.

**Administration Area:**

Accountant: accountant and assistant staff administrate the museum's expenditures and budget.

Space analysis:

Seating- 1+1=2

Net Square Footage-2@100 sq. ft. for a total of 200 sq. ft.

Participants-accountant and assistant staff

Number of Participants-2

Degree of privacy-private

Frequency of use-mostly during the daily business hours.

Quality of space-private with access by appointment, and well organized and decorated for meeting with other staff members.

Director, Arts-and-Humanities Council: administers programs to promote visual and performing arts and humanities.

Space analysis:

Seating-1

Net Square Footage-150 sq. ft.

Participants-director for the Arts-and-Humanities  
Council

Number of Participants-1

Degree of Privacy-private

Frequency of use-mostly during the day

Quality of space-well organized with area for  
display and small discussion area.

Director, Assistant: assist the museum director in administrating  
the museum's affairs.

Space analysis:

Seating-1

Net Square Footage-150 sq. ft.

Participants-director, assistant

Number of Participants-1

Degree of Privacy-private

Frequency of use-mostly during the day

Quality of space-private with access by appointment, and  
well organized and decorated for meeting with  
other organizers.

Director, Development: plans, organizes, directs, and coordinates  
ongoing and special project funding programs for the 36

museum.

Space analysis:

Seating-1

Net Square Footage-200 sq. ft.

Participants-development director

Number of Participants-1

Degree of Privacy-private

Frequency of use-mostly during the day

Quality of space-open to the development  
department with a good filing area.

Director, Education: plans, develops and administers educational  
programs for the museum's exhibits.

Space analysis:

Seating-1

Net Square Footage-150 sq. ft.

Participants-education director

Number of Participants-1

Degree of Privacy-private

Frequency of use-mostly during the day

Quality of space-private with a good filing system for brochures, a well lit interior.

Director, Museum: administrate the museum's affairs.

Space analysis:

Seating-1

Net Square Footage-150 sq. ft.

Participants-museum's director

Number of Participants-1

Degree of Privacy-private

Frequency of use-mostly during the day

Quality of space-private with access by appointment, and well organized and decorated for meeting with other organizers.

Director, Public Relations: a public relations director and an assistant staff dealing with special public activities, and handling the publicity and advertising.

Space analysis:

Seating- 2

Net Square Footage-2@ 100 sq.ft. for a total of 200 sq.ft.

Participants- director of public relations and assistant staff

Number of Participants- 2

Degree of Privacy- semi private

Frequency of use-mostly during the day

Quality of space- access by appointment, and well organized and decorated for meeting with other organizers.

Educational Resource Coordinator: Direct operation of educational resource center of museum.

Space analysis:

Seating-1

Net Square Footage-150 sq. ft.

Participants-coordinator for educational resource

Number of Participants-1

Degree of Privacy-semi private

Frequency of use-mostly during the day

Quality of space-well lit and organized with easy access to the lecture halls and classrooms.

Security Chief, Museum: supervise the guards of the museum.

Space analysis:

Seating-1

Net Square Footage-150 sq. ft.

Participants-chief of security

Number of Participants-1

Degree of Privacy-private

Frequency of use-continual, day and night

Quality of space-private, separated from the public space of the museum, within the security office, having full view of the security office and its staff.

Conference room: most of the official and reception meetings are being held in these rooms.

Space analysis:

Seating-15 to 20

Net Square Footage-500 sq. ft.

Participants-staff

Number of Participants-1

Degree of Privacy-private

Frequency of use-continual, day and night

Quality of space-it should have a view to the outside

and be accessible to all staff offices.

Reception and Staff Lobby: Lobby entrance leading to the office of the museum's staff, also acting as a waiting area for the guests/ visitors

Space analysis:

Seating-1+5=6

Net Square Footage-300 sq. ft.

Participants- receptionist, guests/ visitors

Number of Participants-1+5=6

Degree of Privacy-semi private

Frequency of use-mostly during the day

Quality of space-it should be accessible to all staff offices.

Staff Lounge & Kitchenette: Area where the museum's staff can take a break or eat.

Space analysis:

Seating-15 to 20

Net Square Footage-500-1000 sq. ft.

Participants-museum staff

Number of Participants-15-20

Degree of Privacy-private

Frequency of use- mostly during the day

Quality of space-it should have a view to the outside  
and be accessible to all staff offices.

Staff Restrooms:

Net Square Footage-2@150 sq.ft. = 300 sq.ft.

Participants-personnel staff

Number of Participants-all personnel staff in  
administration area

Degree of Privacy-private

Frequency of use-continual, day and night

Quality of space-the restroom should be acoustically  
insulated and proper treatment of the drainage  
system is very critical.

Storage/ Copy Room:

Net Square Footage-300 sq ft

Participants-staff

Number of Participants- all the staff in administration area

Degree of Privacy-private

Frequency of use-continual, day and night

Quality of space-it should have access to main service area for efficient management.

## SPATIAL ANALYSIS

### Curatorial Area:

Curator: provides professional care for the artwork, plans and conducts research, participates in planning and implementation of special projects, and oversees the workers of the museum.

### Space analysis:

Seating-2 in each room

Net Square Footage-3 rooms at 150-200 sq. ft.  
each, with a total of 450-600 sq. ft.

Participants-Curators

Number of Participants-6

Degree of Privacy-Private

Frequency of use-During the day

Quality of space-it should be comfortable and  
well organized.

Exhibit Artist: produce artwork for exhibit settings.

### Space analysis:

Seating-3-4

Net Square Footage-2 rooms at 300 sq. ft. each, and a  
total of 600 sq. ft.

Participants-artists

Number of Participants-about 1-2 in each room, and a total of 3-4

Degree of Privacy-private

Frequency of use-mostly during the day

Quality of space-good ventilation, good lighting quality, large working space, and area for temporary storage.

Exhibit Builder: constructs and installs exhibit structures.

Space analysis:

Seating-5-10

Net Square Footage-2 rooms of 500 sq. ft. each and a total of 1000 sq. ft.

Participants-skillful exhibit builders

Number of Participants-5-10

Degree of Privacy-private

Frequency of use-mostly during the day

Quality of space-large work area, temporary storage, good lighting and ventilation.

Exhibit Designer: oversee the planing, design, construction, and installation of exhibits and displays.

Space analysis:

Seating-2-3

Net Square Footage-2-3 offices at 150 sq. ft. each, and a total of 300-450 sq. ft.

Participants-designers

Number of Participants-2-3

Degree of Privacy-private

Frequency of use-mostly during the day

Quality of space-well-lit with a designated drafting area, and temporary drawing storage.

Fine Arts Packer: deals with the packaging and preparation of artwork for transportation.

Space analysis:

Seating-4-6

Net Square Footage-2000 sq. ft.

Participants-fine arts packer

Number of Participants-4-6

Degree of Privacy-private

Frequency of use-day and night

Quality of space-open with a lot of storage area, climate

control, well designed lighting and security for limited access, close to the loading dock area and the outside of the museum.

Maintenance Worker: Maintenance is important to maintain and monitor the cleanliness of the museum.

Space analysis:

Net Square Footing-300 sq. ft.

Participants-Janitors

Number of Participants-2-3

Degree of Privacy-private

Frequency of use-mostly during and after the operation hours.

Quality of space-storage space for cleaning equipment centralized within the building as possible. The location is isolated from the public circulation.

Manager, Business: provides retail shopping to aid in bringing in additional income to the museum.

Space analysis:

Seating-1

Net Square Footage-150 sq. ft.

Participants-business manager

Number of Participants-1

Degree of Privacy-Semi Private

Frequency of use-During the day

Quality of space-it should be comfortable and well organized.

Manager, Assistant: provides assistance to the business manager of the museum.

Space analysis:

Seating-1

Net Square Footage-150 sq. ft.

Participants-assistant business manager

Number of Participants-1

Degree of Privacy-Semi Private

Frequency of use-During the day

Quality of space-it should be comfortable and well organize.

Membership Secretary: compiles and maintains membership lists, records receipts of dues and contributions, and gives information to members of the museum's supportive organization.

Space analysis:

Seating-1-2

Net Square Footage-150-300 sq. ft.

Participants-secretaries dealing with the museum's memberships

Number of Participants-1-2

Degree of Privacy-semi private

Frequency of use-mostly during the day

Quality of space-open with adequate lighting.  
Comfortable with individual work area for each secretary.

Registrar, Museum: maintains records of acquisition, condition, and location of the artworks in the museum, and oversees the movement, packing, and shipping of artworks.

Space analysis:

Seating-1

Net Square Footage-300 sq. ft.

Participants-registrar of the museum

Number of Participants-1

Degree of Privacy-private

Frequency of use-mostly during the day

Quality of space-adequate lighting, well organized storage area, adequate ventilation, and area for a computer database server system.

Research Associate: plans, organizes and conducts research in scientific, cultural, historical or artistic field.

Space analysis:

Seating-1

Net Square Footage-150 sq. ft.

Participants-research associate

Number of Participants-1

Degree of Privacy-private

Frequency of use-mostly during the day

Quality of space-office space should have easy access to a conference room.

Restorer, Paper, and Prints: cleans, preserves, restores, and repairs paper artworks, such as books, documents, maps, prints, painting sand etc...

Space analysis:

Seating-4-6 per room

Net Square Footage-2 @500-600 sq. ft., total of 1000-1200 sq. ft.

Participants-skillful art restorer

Number of Participants-4-6 per room

Degree of Privacy-private

Frequency of use-mostly during the day

Quality of space-maximum lighting and ventilation, temporary storage space, work space for each restorer, and having limited access for security purposes.

Scheduler: make reservations and accept payments for group activities, such as tours, classes, field trips, etc...

Space analysis:

Seating-1

Net Square Footage-150 sq. ft.

Participants-scheduler

Number of Participants-1

Degree of Privacy-private

Frequency of use-mostly during the day

Quality of space-adequate lighting, comfortable environment, well organized filing area.

Teacher: teach classes, present lectures, conduct workshops, and participate in museum related activities.

Space analysis:

**Seating-2-4**

**Net Square Footage-2-4 offices at 150-200 sq. ft., a total of 300-800 sq. ft.**

**Participants-teachers, and visiting lecturers**

**Number of Participants-2-4**

**Degree of Privacy-semi private**

**Frequency of use-scheduled times, mostly during the night.**

**Quality of space-adequate lighting, with a well organized plan.**

**Janitorial Room:**

**Net Square Footage-200 sq. ft.**

**Participants-Janitor**

**Number of Participants-2-3**

**Degree of Privacy-private**

**Frequency of use-during and after the normal operating hours.**

**Quality of space-private, separated from the public space of the museum, within the security office, having a full view of the security office and its staff.**

**Loading Bay: this area is where the vehicles handling the**

incoming and outgoing objects load and unload.

Net Square Footage-800 sq. ft.

Participants-incoming deliverer

Number of Participants-museum staff and deliverer

Degree of Privacy-private

Frequency of use-continual, day and night

Quality of space-a loading dock must be separated from the publicentrance from public and provide for better transition of handling of objects. Vehicular circulation is critical to ensure easy access in and out.

Mechanical Room:

Net Square Footage-5% of the building's net square footage

Participants- technician

Number of Participants-2

Degree of Privacy-private

Frequency of use-continual, day and night

Quality of space-this space should be acoustically insulated and separated from the public space by other required areas of the museum. This room will accommodate all the museum's heating , cooling, ventilation, and hot and cold water

supply.

Photography lab:

Space analysis:

Net Square Footing-300 sq.ft.

Participants-Photographer

Number of Participants-2

Degree of Privacy-private

Frequency of use-mostly during and after the operation hours.

Quality of space-darkroom facilities, need for absence of windows or any type of natural light, artificial variable light from overhead.

Shipping & Receiving: this area is where the museum registrar will load and unload, the incoming art work in preparation for storage or exhibition.

Net Square Footage-600 sq. ft.

Participants-registrar, and workers

Number of Participants-1-5

Degree of Privacy-private

Frequency of use-continual, day and night

Quality of space-close to the loading dock, and separated from the public entrance to provide for transition handling of objects. Vehicular circulation is critical to ensure easy access in and out.

Staff Restrooms:

Net Square Footage-2@150 sq.ft. = 300 sq.ft.

Participants-personnel staff

Number of Participants-all personnel staff in curatorial area

Degree of Privacy-private

Frequency of use-continual, day and night

Quality of space-the restroom should be acoustically insulated and proper treatment of the drainage system is very critical.

Storage: this area is where the museum will store any objects other than art works.

Net Square Footage-3000 sq. ft.

Participants- museum assistant

Number of Participants-1

Degree of Privacy-private

Frequency of use-continual, day and night

Quality of space-large area with tall ceiling height.  
Ventilation is crucial, circulation must be well designed for easy access, and special security measures are needed to prevent vandalism.

Storage, Art: this area is where the museum store any art works.

Net Square Footage-3000 sq. ft.

Participants- museum assistant

Number of Participants-1

Degree of Privacy-private

Frequency of use-continual, day and night

Quality of space-large area with tall ceiling height.  
Ventilation is crucial, circulation must be well designed for easy access, and special security measures are needed to prevent vandalism.

Workshop: this area is where the museum will conduct building exhibition space/ reconstruction, restoration, and maintenance for exhibitions.

Net Square Footage-1@800 sq. ft. 1@500 sq. ft., a total of 1300 sq. ft.

Participants- technician, workers, and restorers

Number of Participants-5-8

Degree of Privacy-private

Frequency of use-continual, day and night

Quality of space-large area with tall ceiling height.  
Ventilation is crucial, circulation must be well  
designed for easy access, and access to  
galleries.

## SPATIAL ANALYSIS

### Public Area:

Guard, Museum: the security officers play an important role in the survival of the museum. They help maintain a smooth operation of the complex by providing support for the operations of the complex. They are also responsible for regulating the traffic going into and out of the complex, and they have to protect the artwork within the museum from being stolen, or vandalized.

### Space analysis:

Seating-3-4

Net Square Footage-250 sq. ft.

Participants-Guards

Number of Participants-3-4

Degree of Privacy-private

Frequency of use-continual

Quality of space-It should be secure and have easy access to every part of the museum. This room should be closed to exhibition galleries and the main lobby. The room will be provide with electronic surveillance equipment for monitoring the safety of the museum and art work.

Guide, Establishment: following a specific route, these people will guide a groups of visitors through the establishment.

Space analysis:

Seating-2-4

Net Square Footage-400 sq. ft.

Participants-Guides

Number of Participants-2-4

Degree of Privacy-public

Frequency of use-during the day

Quality of space-open and visible to the public.

Librarian Assistant: compiles records, sorts, shelves, issues, and receives books, photographs, periodicals, and other materials for the museum's library.

Space analysis:

Seating-1-2

Net Square Footage-200-300 sq. ft.

Participants-library assistant

Number of Participants-1-2

Degree of Privacy-semi private

Frequency of use-mostly during the day

Quality of space-semi private, separated from the library,  
with limited access (authorized personnel only) 59

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Librarian, Special Library: manages the museum's library, which contains specialized materials.

Space analysis:

Seating-15-16

Net Square Footage-800-1000 sq. ft.

Participants-librarian and visitors

Number of Participants-1-2 librarians, and a maximum of 14 visitors with seats.

Degree of Privacy-Public

Frequency of use-continual

Quality of space-open, with a large amount of lighting and easy and clear circulation.

Museum Attendant: provides information about the current exhibits, regulations, and facilities for the visitors.

Space analysis:

Seating-1

Net Square Footage-150-200 sq. ft.

Participants-museum attendant

Number of Participants-1

Degree of Privacy-public

Frequency of use-during the day

Quality of space-open and visible to the public.

Manager, Retail Store: manage museum related store selling a specific line of merchandise.

Space analysis:

Seating-1-2

Net Square Footage-500-800 sq. ft.

Participants-shop owner, sales, and visitors

Number of Participants-1 shop owner, 1-2 sales, and visitors

Degree of Privacy-public

Frequency of use-during the day time

Quality of space-open with adequate lighting, and clear circulation.

Cafe: a cafe serving small meals or snacks for the visitors, providing an area where they can sit and relax.

Space analysis:

Net Square Footage-1500-2000 sq. ft.

Participants-visitors, waiters, and cook

Number of Participants- 30-40

Degree of Privacy-Public

Frequency of use- mainly during the day

Quality of space- it should be comfortable, well organized and open with maximum natural lights, and shading for tables.

Entry & Reception: the entry plays an important role in any building. It should provide a sense of welcome or invitation to the users. It should also act as a transition area for the different functions of the building, such as the gathering area for a group tour. It will also serve as a visitor information area. The reception should be able to provide the necessary direction to visitors, or arrange a curator to guide a tour of the complex's artworks.

Space analysis:

Seating-Benches around the lobby

Net Square Footage-1500-2000 sq. ft.

Participants-visitors, receptionist, tour guide

Number of Participants- 2+visitors

Degree of Privacy-Public

Frequency of use-continuous

Quality of space-it should be comfortable, well organized, conveying a feeling of welcome into the establishment, with maximum natural, good ventilation, and well organized circulation.

Exhibition Space (International): a series of display areas dedicated to the display of international artworks. There should be a reasonable amount of space in which the visitors can relax and appreciate the artworks. The nature of the exhibition space should also be a designed experience which enhances the quality of the visit.

Space analysis:

Seating-Benches around the exhibition

Net Square Footage- 2@ 6000 sq. ft., total 12000

Participants-visitors

Number of Participants- all visitors

Degree of Privacy-Public

Frequency of use-During the day

Quality of space- it should be comfortable, well organized, open partition, maximum natural lightings, good ventilation, and well organized circulation.

Exhibition Space (Local): a series of display areas dedicated to the display of local artworks. There should be a reasonable amount of space in which the visitors could relax and appreciate the artworks. The nature of the exhibition space should also be a designed experience which enhances the quality of the visit.

Space analysis:

Seating-Benches around the exhibition

Net Square Footage-2@ 6000 sq. ft., total 12000

Participants-visitors

Number of Participants- all visitors

Degree of Privacy-Public

Frequency of use-During the day

Quality of space- it should be comfortable, well organized, open partition, maximum natural lightings, good ventilation, and well organize circulation.

Exhibition Area (Outdoor): this area will be used to enhance the appearance of the museum. The area also can be used to support and supplement the activities of the temporary exhibition space. All works displayed in this area should be able to sustain outside temperature over a period of time.

Space analysis:

Net Square Footage-1000-2000 sq. ft.

Participants-artist, personnel staff and visitors

Degree of Privacy-Public

Frequency of use-continual

Quality of space- it should be kept open and clean, with partial shading.

Gallery: the gallery space should have similar characteristics to the exhibition space but in a relatively smaller scale. Due to the fact that the artworks in the galleries will vary from time to time, the galleries should be composed of a series of flexible spaces.

Space analysis:

Seating-Benches around the exhibition

Net Square Footage-1@ 3000 sq. ft., and 1@  
1500 sq. ft.

Participants-visitors

Number of Participants- visitors

Degree of Privacy-Public

Frequency of use-During the day

Quality of space- it should be comfortable, well organized, open partition, maximum natural lightings, good ventilation, and well organize circulation.

Lecture hall: due to the vast amount of display materials from different cultures in the far east, there should be a series of spaces devoted to the background of the displayed artwork. There should be both day and evening sessions but the evening one should be the primary session. The spaces for education should be able to accommodate scales from small scale discussion to large scale lectures, and there should also be spaces devoted to individual contemplation on the artwork. The wall for these areas should be flexible to handle to a variety of artwork, and a viewing area for critiques.

Space analysis:

Seating-30-40

Net Square Footage-2000-3000 sq. ft.

Participants-teachers, and visiting lecturers

Number of Participants- 30-40

Degree of Privacy-semi private

Frequency of use-scheduled times, mostly during the night

Quality of space-adequate lighting, with a well organized plan

Ticket Booth: the place that visitors will purchase tickets for admission into the auditorium and gallery spaces. Also, It will have a bulletin board area to post up coming events as well as information about current activities.

Space analysis:

Net Square Footing-100-150 sq.ft.

Participants-ticket seller and visitors

Number of Participants-1+visitors

Degree of Privacy-Public

Frequency of use-mostly during the operation hours.

Quality of space- easily visible from the entrance or lobby

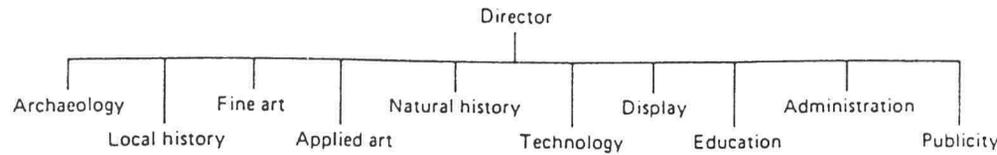




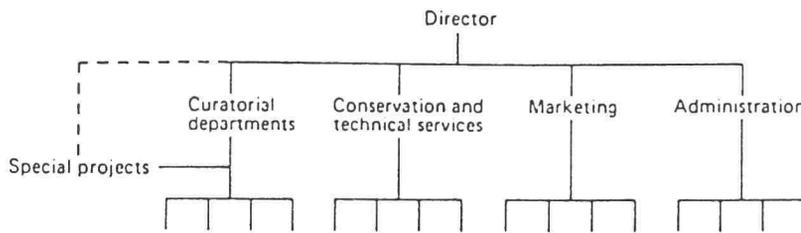


SPATIAL RELATIONSHIP DIAGRAMS

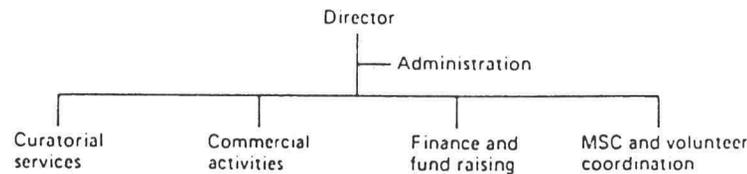
DIRECTOR AND MUSEUM FLOW DIAGRAM



(a)

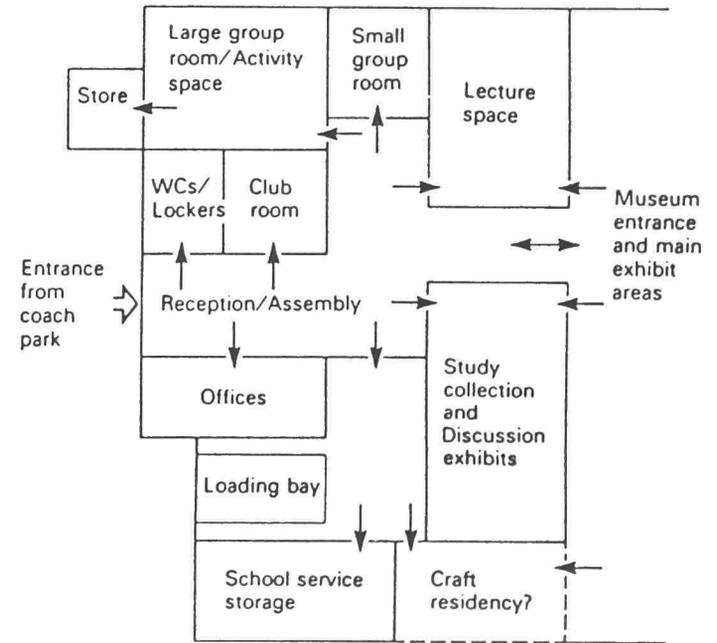


(b)



(c)

Three typical staffing structures: (a) department-based; (b) function-based; (c) independent trust type. Each basic structure has found favour in a wide range of circumstances.

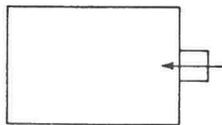


Large museum - several specialized spaces

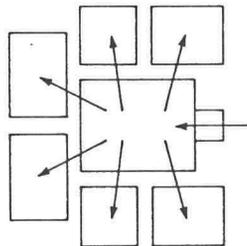
SPATIAL RELATIONSHIP DIAGRAMS

EXHIBITION LAYOUTS

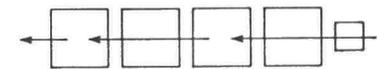
OPEN



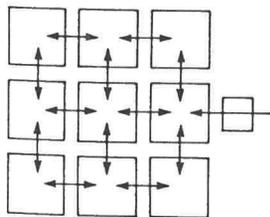
CORE & SATELLITES



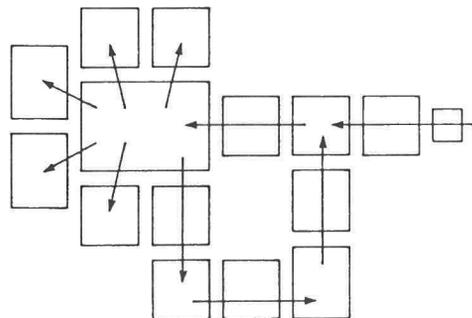
PROCESSION



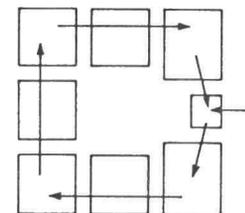
LOOP



COMPLEX

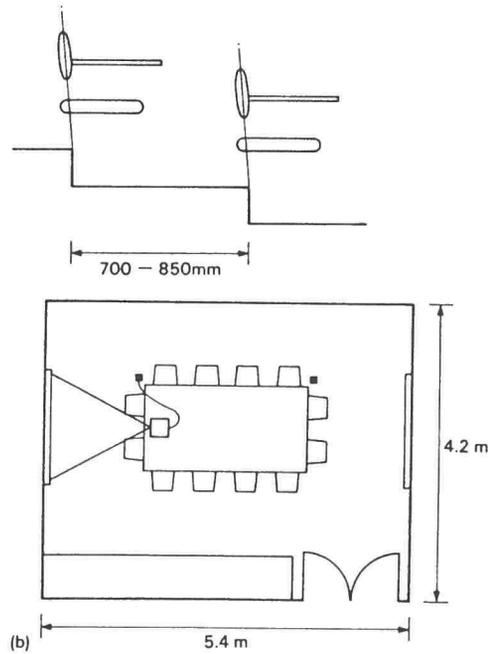
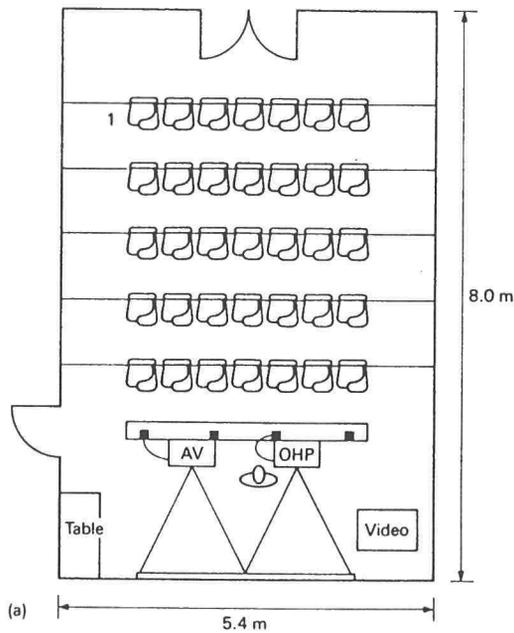


LABYRINTH

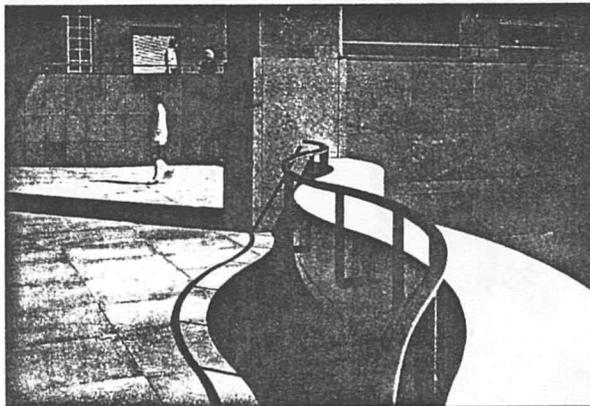
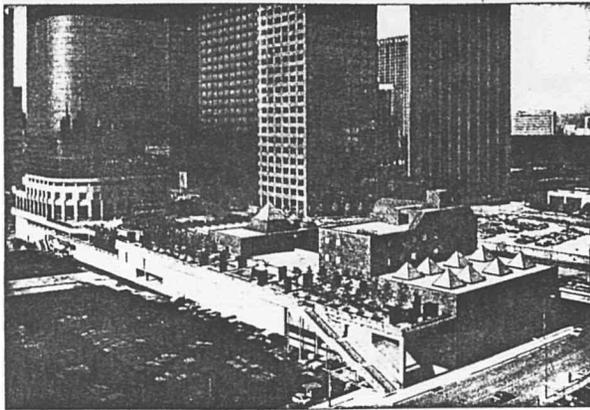


SPATIAL RELATIONSHIP DIAGRAMS

POSSIBLE CONFERENCE ROOM LAYOUTS



Typical layouts and dimensions for conference and seminar rooms. (a) Small conference room/lecture theatre: audio-visual, video and overhead projector equipment on trolleys; minimum three rows of seats may be raked; and (1) movable/collapsible seats to accommodate wheelchairs. (b) Seminar room: loose tables and chairs, fixed bench with storage cupboards and kneeholes, wall-mounted writing boards (white to double as projection screen), notice board and pin-board display areas (additional space for desk and storage may be required if the room is to be used as an office)



## **CASE STUDY**

**Project Title:** The Museum of Contemporary Art (MOCA)

**Site:** Center of the California Plaza, in the Bunker Hill section of downtown Los Angeles, California, U.S.A.

**Building Type:** Contemporary Art Museum

**Principal Client:** Director and Chairman of Trustees of Museum of Contemporary Art

**Architect:** Arata Isozaki & Associates

**Year:** 1981-86

**Structural System:** Cast-in-place concrete system, with post-tensioned beams, flat slabs, waffle joist slabs, barrel vaults, structural steel beams, and truss roofs with slabs on steel decking.

**Building Materials:** Concrete, wood flooring, drywall, acoustical tile, sandstone, aluminum, granite, copper, crystallized glass, and glass block.

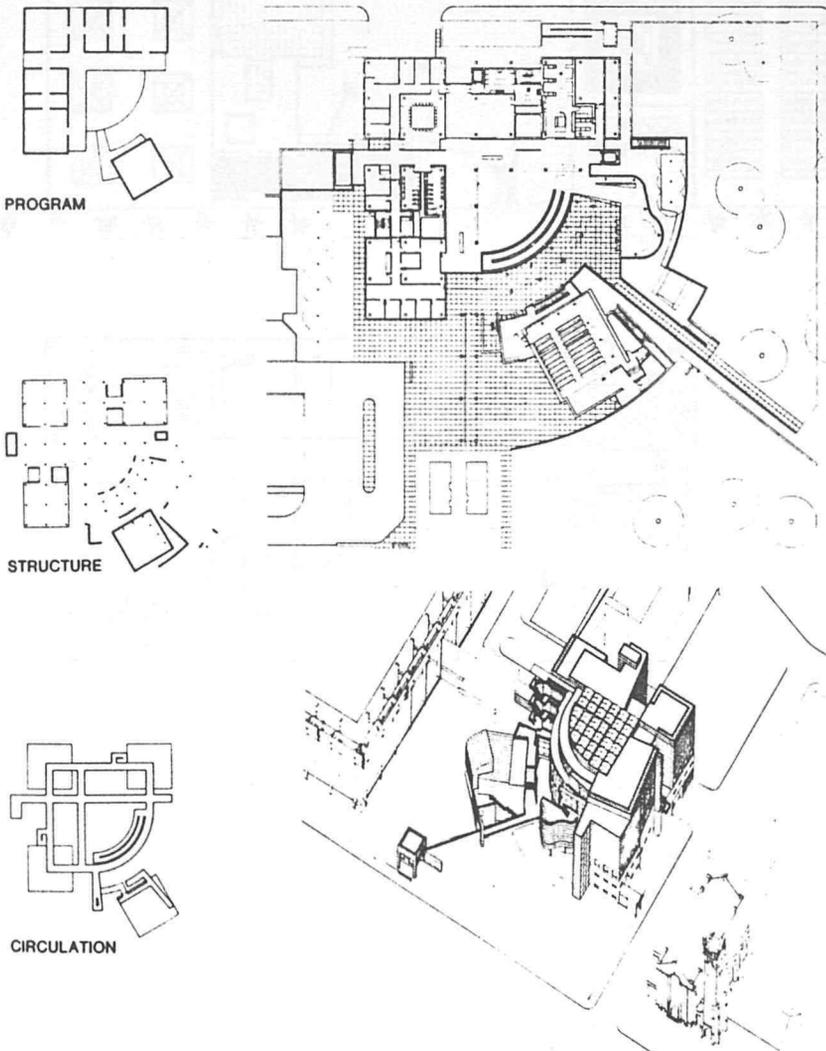
**Mechanical System:** Chilled and hot water from California Plaza central plant, incorporating multizone units for the galleries, and a sprinkler fire protection system.

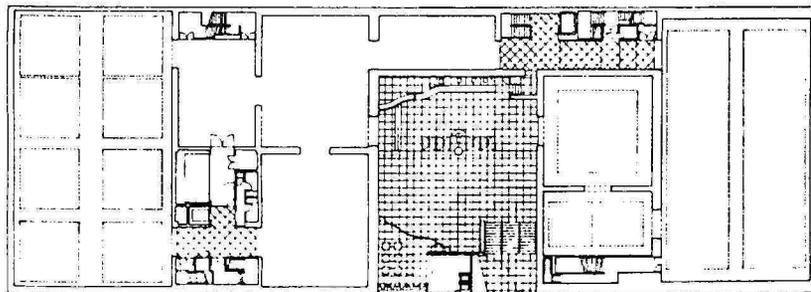
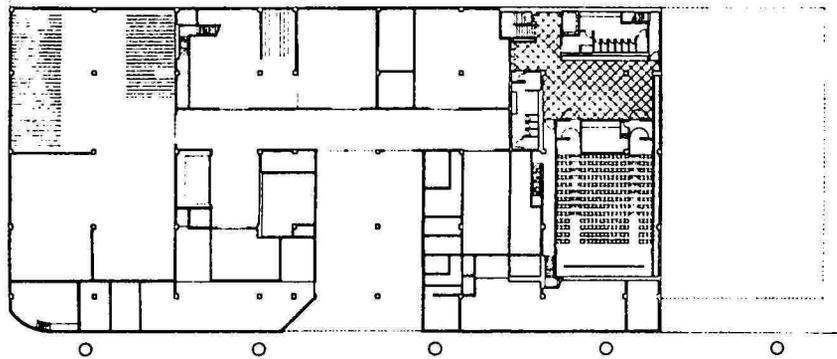
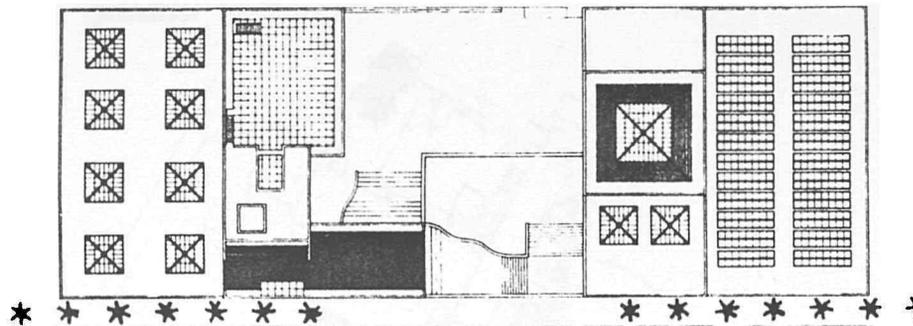
**Project Analysis:** The building is divided into three main activity area which include the service area at the lower ground level, galleries, and semi-offices at the ground and lower ground level, and administrative and library at the upper level. The main geometrical composition of the building is determined by the golden section in planning shapes and spaces, also, Isozaki used the concept of Ying and Yang, positive and negative. To further enhance the 74

**CASE STUDY****Project Title:** The High Museum of Art**Site:** Atlanta, Georgia, U.S.A.**Building Type:** Art Museum for contemporary and decorative art**Architect:** Richard Meier & Partners**Year:** 1983**Building Materials:** Porcelain panels, glass panel, block glass, concrete, and steel.

**Project Analysis:** The architectural ideas grew organically from the museum's needs. The concept itself and its aim are to serve the user. The design of the circulation, lighting and spatial qualities are to encourage the user to enjoy the architecture as well as the displayed art works. The four story atrium was designed to be a place to house the ramps used for circulation, as well as an entry hall, social room, and light well at the building's core.

The museum encloses about 130,000 sq. ft., with a 52,000 sq. ft. permanent exhibition hall. Its construction cost about 15 million. The basic floor plan consists of a circular atrium, a piano shaped foyer, and square, and rectangular shapes. The galleries on the lower floors are lit by recessed or track incandescent lighting, and the upper levels are lit by controlled natural light. There is a 200 seat auditorium, a museum shop, a cafe, administrative work space, educational work shops, classrooms, storage, supporting facilities and a loading area is housed inside the basement.





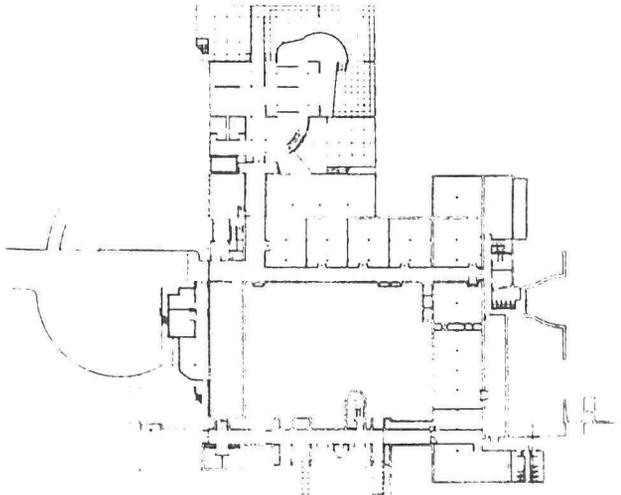
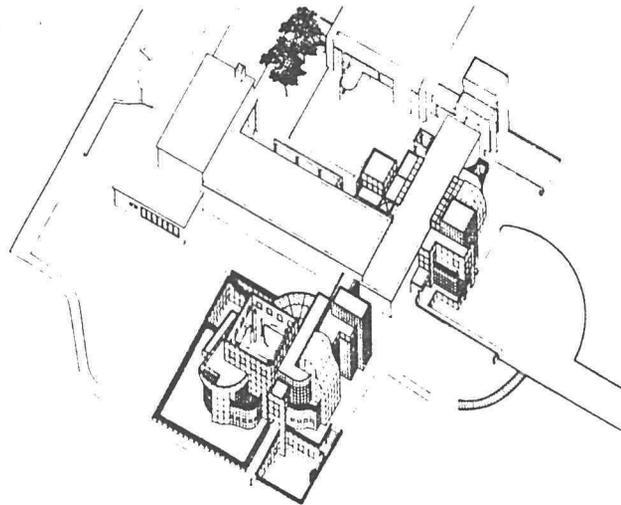
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geometrical composition, Isozaki has used simple pyramidal skylights geometrical solids to represent the different functions, the interior incorporates pyramidal skylights, a cylinder represents the library, and the cube represents the office block.

For the exterior, Isozaki has incorporated a strong Southern Californian accent by using materials such as red Indian sandstone, red granite, brown brick and simple embellishment at the facade. In composing the horizontal striations, Isozaki has used bands of polished sandstone alternating with bands of larger, rusticated pieces. Finally, Isozaki has located his entrance at the north, with the copper-sheathed vaulted library bridging over the pedestrian walkway, creating a symbolic gateway to the museum.

For the interior, the natural lights coming from the pyramid shaped skylights has to first pass through multi-layers of translucent glass, then through a fiber glass ceiling scrim. Finally, it is finally balanced with the interior artificial lights, to create a different atmosphere for the diversity of the artworks. The interior spatial layout is based on a pair of counter-clockwise spirals with minimal corridor space, so each gallery leads directly to the next one.

BELOW FROM ABOVE: Axonometric of site;  
ground floor plan



## CASE STUDY

**Project Title:** Des Moines Art Center Addition

**Site:** Des Moines, Iowa, U.S.A.

**Building Type:** Extension to Existing Art Center

**Architect:** Richard Meier

**Year:** 1982-84

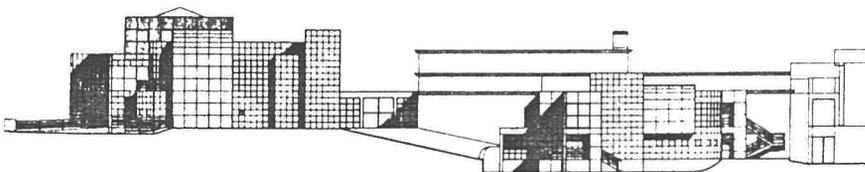
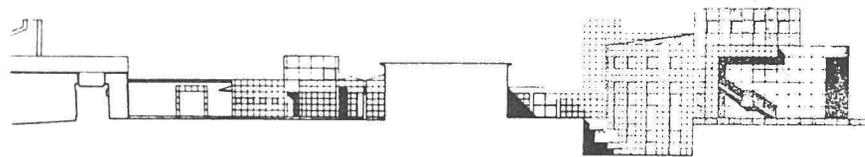
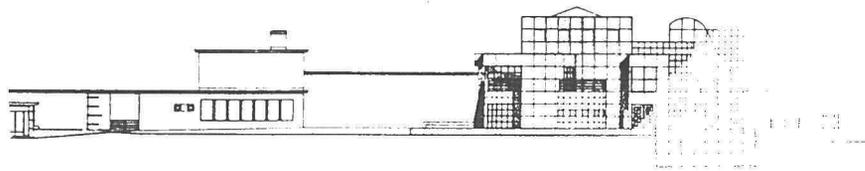
**Building Materials:** Granite, metal panels, pink-beige stone, and porcelain-enameled steel coverings.

**Project Analysis:** The project is a second addition to the Des Moines Art Center designed by Eliel Saarinen in 1948. The first addition was designed by I.M. Pei in 1965, when he added a two story block facing a public park to the south, and closed the original U-Shaped plan, to create an internal sculptural courtyard.

For the second addition, Meier has added three elements to the existing art center. The first addition of this group is a new courtyard pavilion along the east-west entry axis, which houses the restaurant/meeting room, and it opens up the previously underutilized court. The second addition of this project is the main new addition along the north-south axis. It houses most of the additional gallery space, and it is larger and separate from the original Saarinen building. Also, the new addition is vertically condensed in a way that offers an unobstructed view of the existing museum. The largest gallery space is below grade, and has light slots to bring in natural light. The last addition is a small building attached to the west wing of the building, which acts as additional gallery space. The overall layout for this



second group of additions done by Meier is based on a nine-square grid, in which the central square is pushed up to provide a four-column internal atrium, lit by clerestory windows and perimeter skylights.



## PART IV. CONTEXTUAL ISSUES

**Mission Statement**

The mission for the design of the Lubbock Museum of Art is to design an architectural monument which is integral with the contextual environment. Also, it should encourage different opportunities in exploration of the art that serves as a bridge between people of all cultures, while promoting Lubbock for tourism.

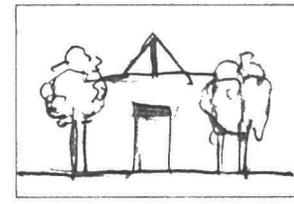
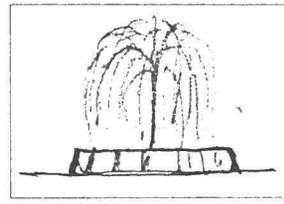
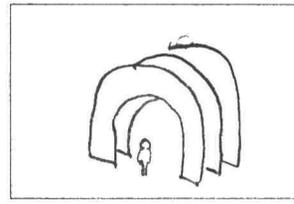
**ISSUES**

- I. COMFORT
- ii. IMAGE
- iii. INTERACTION

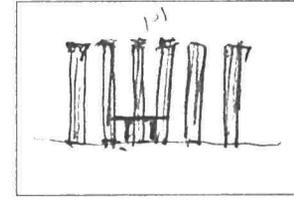
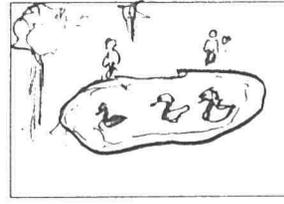
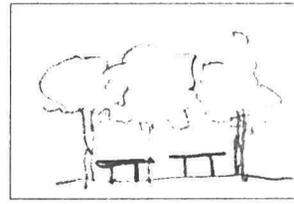
**COMFORT**

**Goal:** The facility should provide the users with a high degree of physical and psychological comfort.

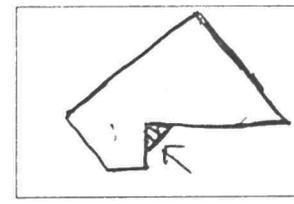
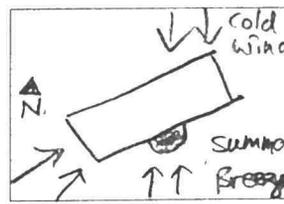
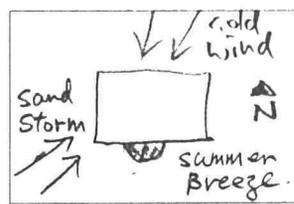
**PR #1:** The facility should promote a sense of warm welcome upon the arrival of the users.



**PR #2:** The facility should provide an outdoor space that will enhance a sense of tranquility at the museum.



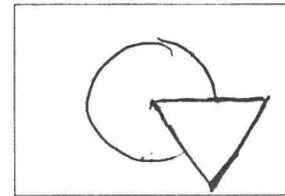
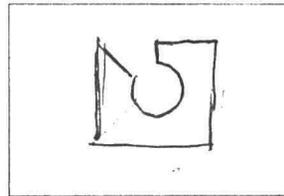
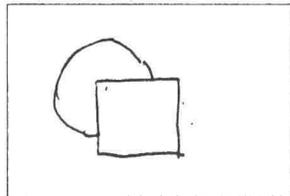
**PR #3:** The main entrance location should consider prevailing weather conditions for comfortable accessibility.



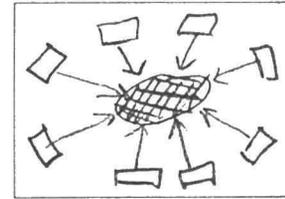
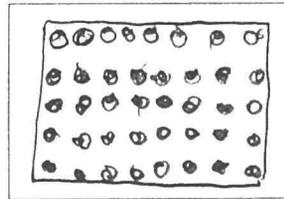
**IMAGE**

**Goal:** The facility should contribute to Lubbock's quality of life, and help establish the city as a major art center within the region.

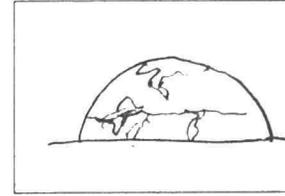
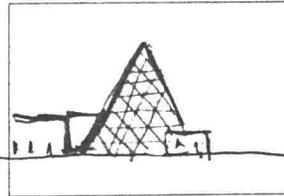
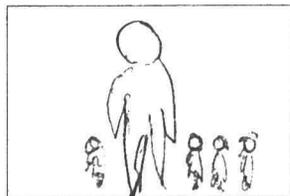
**PR #1:** The form of the building should stimulate the user physically and psychologically.



**PR #2:** The facility should accommodate a large number of art pieces, including some important art works.



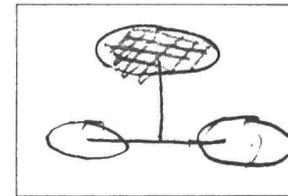
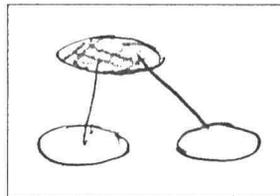
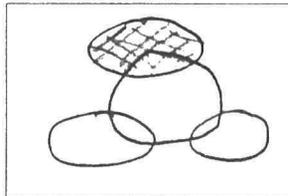
**PR #3:** The facility should use a monumental scale in its design to signify civic leadership and civic enrichment.



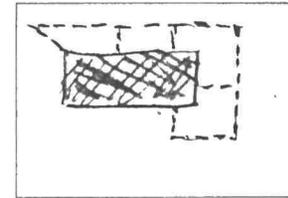
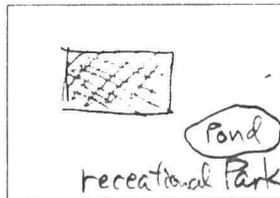
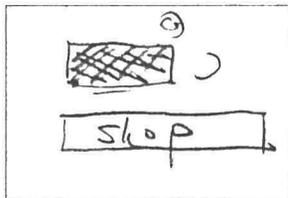
**INTERACTION**

**Goal:** Usual activities of the facility should integrate with those surrounding the facility rather than isolate them.

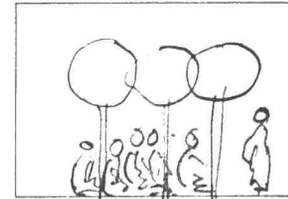
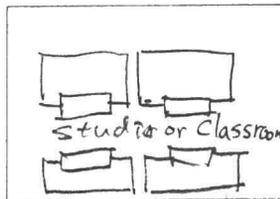
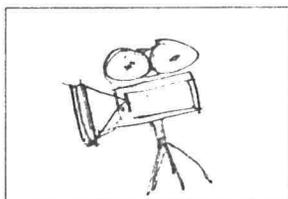
**PR #1:** The facility should creating a linkage between itself, the Lubbock Memorial Civic Center, and the Mahon Library.



**PR #2:** The facility should enhance opportunities for city development as a community effort.



**PR #3:** The facility should accommodate visual and cultural arts programs for the community.



## **CONTEXTUAL ISSUES**

### **SITE ANALYSIS**

The site is bounded by Avenue K on the east, 5th street on the south, Avenue O on the west, 4th street on the north. The elevation of the site is fairly flat, and around the site is the Memorial Civic Center, Lubbock Department of Public Safety, Elder's Grain Factory, Mahon Library, and some small local businesses. The proposed land use of the site is controlled by the Memorial Civic Center Zone Care-ordinance 6462. Located in the downtown area, close to the Mahon Library, and the Memorial Civic Center, the proposed design is to help create a "intellectual circle" with an art museum.

## CONTEXTUAL ISSUES

### NATURAL CONTEXT

#### Location

Lubbock, Texas is located in a plateau area called the South Plains Region, part of the Llano Estacado, in the pan handle of Texas, 3241 feet above sea level. The South Plains is isolated from the rest of the high plains by the Canadian River on the north and the Pecos River on the west and south west. The east is bounded by an erosional escarpment known as the Caprock. The present town site was first settled in 1891 as a compromise between rival town builders. Named after Colonel Thomas S. Lubbock, a Confederate Officer and brother of Texas' Civil War Governor. Lubbock was originally headquarters for trail drivers, stock farmers and ranchers. A city of industry, technology, oil, agriculture, warehousing, medicine, and education, Lubbock boasts a stable economy, as the heart of the largest cotton producing area of Texas. Furthermore, Lubbock is situated at the junction of several major expressways. They are State highway 114 and U.S. 82 and 62, running east to west; while U.S. 84 and 87 and Interstate 27 runs from north to south. With this expressway system, people living in Lubbock are given quick and direct service to surrounding cities such as Amarillo, Abilene, Midland Odessa, and Albuquerque. Also, there are four major airlines serving Lubbock, which are American Eagle, Delta Connection-Atlantic Southeast Airline, Southwest Airlines, and United Express.

#### Climate

Affected by the desert weather from the west, and the humid weather from the east and southeast, the climate of Lubbock is considered semi-arid, having about 275 days of sunshine each year. Warm days and cool nights predominate, 84

with the warmest months being June, July, and August, which have an average maximum temperature of approximately 96 to 100 degree Fahrenheit. The coldest months are December and January, with a minimum temperature of approximately 10 to 20 degree Fahrenheit. In late winter and spring, winds in excess of 25 mph infrequently occur for period 12 hours or more. Also, clear skies and dry air characterize the Lubbock area, with low levels of relative humidity, averaging about 40 to 50% during the summer months and 10 to 20% during the winter months.

## CONTEXTUAL ISSUES

### CULTURAL CONTEXT

#### Population

According to 1990 Census Data, the density of population ranges from 3000 to 5000 persons per square mile, and has increased dramatically for the past 30 years. In 1960, the average population was more than 150,000, but in a recent survey, there were more than 222,000 people in Lubbock county, and it is predicted that the annual population growth rate is about 1.2 %. Also, 48% of the population is between 20 and 44 years of age, and the general population is made up of African Americans (8.6%); American Indian (0.3%); Anglo Americans (67.2%); Asian Americans (1.4%), and Hispanics (22.5%). Furthermore, the study showed that among the population, there are about 11,803 households, 62% of which are "traditional families", while 7% are single parent families. Forty nine percent of the households are owner-occupied.

#### Tourism

Tourism plays an important role in Lubbock's economy. Each year about 1,500,000 come from various cities and visit the Mackenzie Park, and the opening of the Texas Tech Museum has brought an additional 250,000 visitors from out of town each year. Furthermore, Lubbock has become the Convention Center of the South Plains, and in fiscal year 1980, Lubbock hosted 159 conventions, meetings, seminars and/or symposiums, with approximately 350 people attending each meeting. Also, Texas Tech University has brought many tourists into town with the Southwest Conference Football and Basketball games held on campus. Although there are many tourist attractions already, a new museum, such as an Art Museum would bring more tourists

into town. It would also help the local residents understand more about other cultures and their art.

## **CONTEXTUAL ISSUES**

### **PSYCHOLOGICAL CONTEXT**

**Geometrical form** has been used in buildings both in the past and the present. It has a certain quality which gives the observer a sense of beauty and organization. Since geometrical forms are easy to perceive, and design based on geometrical forms usually has a clear and organized path. This helps prevent unnecessary confusion for the users. Furthermore, geometry is commonly known as the bridge between art and science, as described above. **Therefore, my proposed design for the Lubbock Museum of Art will be based on a combination of geometrical forms.**

**Scale** is an important issue in any design. Some designers choose to use a human scale to relate the building to the user, while others use a monumental scale to emphasize the importance of the building. **Therefore, for my proposed design, I will have elements in human scale, emphasizing the relationship between the users and the building, but for the general outlook, I will use monumental scale to emphasize the building as a landmark of Lubbock.**

**Socialization**, recreation, and relaxation, are known to be the best ways one can release stress and tension in one's daily life. In order for a community or a culture to grow, there must be mental and emotional balance within the people in the community. Socialization, recreation, and relaxation can lead to emotional satisfaction, and affects one's personality, attitudes and behaviors. **Therefore, my proposed design would include areas for the above activities, for the visitors, staff, and employees.**

**Education** plays an important role in the development of any culture. In most towns, cities and countries, there are some

education institutions, such as schools, colleges, libraries, or museums for enhancing one's personal growth. **Therefore, my proposed design will include areas dedicated to help one's intellectual growth, such as lecture halls, a collection library, classrooms, and workshops, in addition to the exhibition galleries, and art galleries.**

## **CONTEXTUAL ISSUES**

### **BUILT CONTEXT**

The proposed museum is north of the Lubbock Memorial Civic Center. In this part of Lubbock I hope to create an "intellectual circle", which will consist of the Civic Center, the Mahon Library, and the proposed Lubbock Museum of Art. The proposed land use of the site is controlled by the Memorial Civic Center Zone Care-ordinance 6462.

The plan of Lubbock is based on a square grid system, consisting approximately of 300 ft by 300 ft squares, and is particularly visible in the downtown area. Lubbock also contains many paths, districts, edges, landmarks, and nodes, which contributed to the city's image.

#### **Elements which contribute to Lubbock's city image:**

Landmarks, elements, and buildings which are outstanding visible features.

Texas Tech University Campus;  
University Medical Center;  
Methodist Hospital;  
Lubbock Memorial Civic Center;  
Mahon Library;  
Various Churches.

Nodes- provide focal points of special interest.

Lubbock Memorial Civic Center;  
Mahon Library;  
Godbold Cultural Center;  
Canyon Lakes;  
Lubbock Lake Site;

Texas Tech Museum;  
Ranching Heritage Center;  
Lubbock Municipal Coliseum.

Paths- linkage between focal points.

Indiana Avenue;  
University Avenue;  
Avenue H;  
Broadway Corridor;  
Clovis Highway;  
Brownfield Highway;  
Avenue Q;  
4th Street.

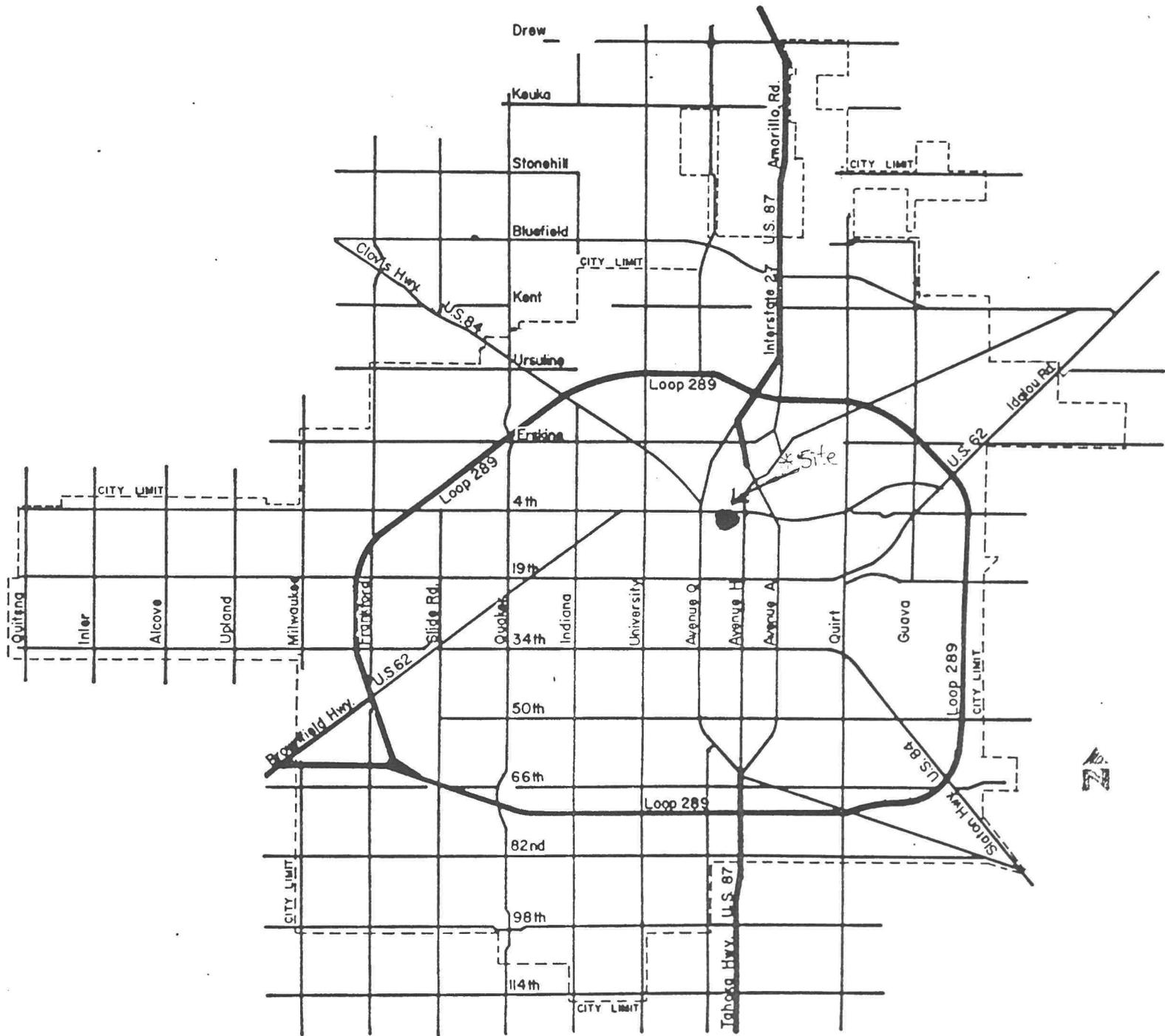
Districts- marked off areas within the city.

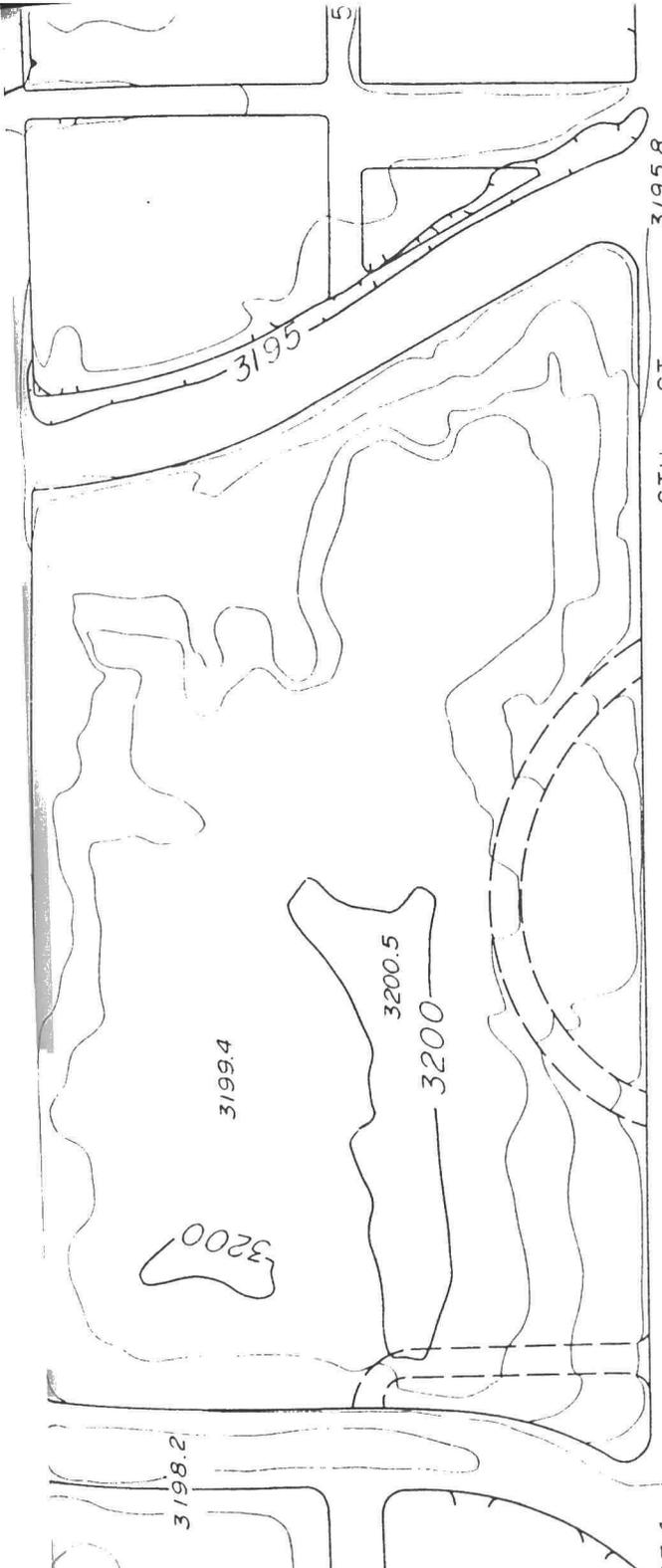
Central Business District (CBD);  
Texas Tech University Campus;  
Medical Center;  
Canyon Lakes;  
Loop 289;  
Depot District;  
Mercado District (in development).

Edges- define the district's boundaries.

Canyon Lake;  
Loop 289;  
Santa Fe Railroad Tracks.

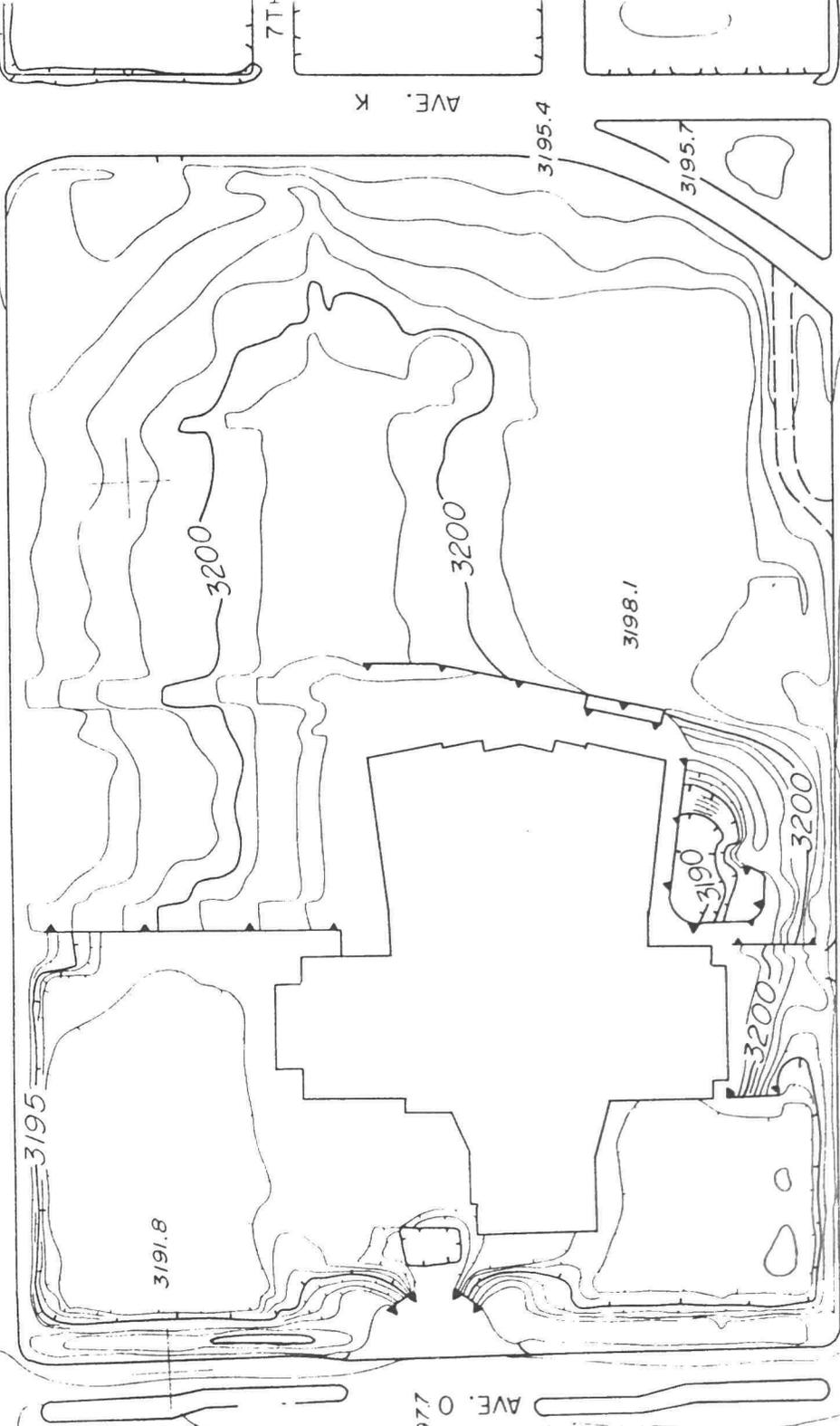
With the above in mind, the proposed design of the museum should integrate and become part of these elements.





6TH ST. 3195.8

3197.4



AVE. O

AVE. K

3195

3191.8

3200

3200

3198.1

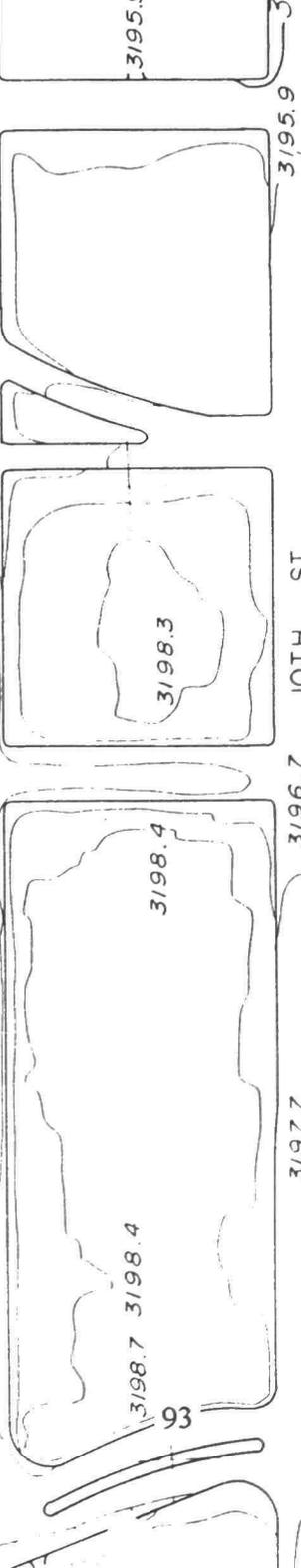
3195.7

3195.4

3200

3200

9TH ST.



3198.7 3198.4

3198.4

3198.3

3195.5

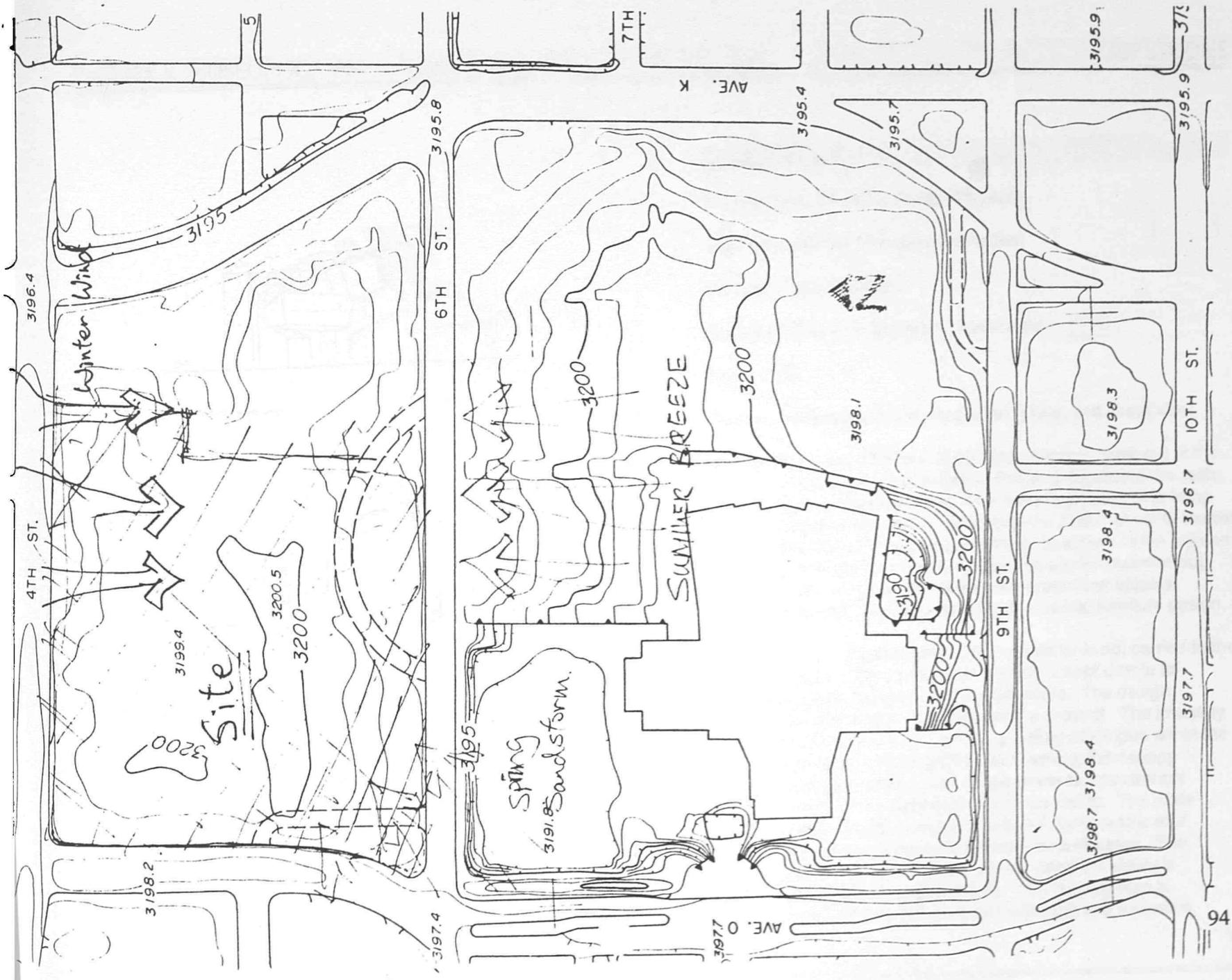
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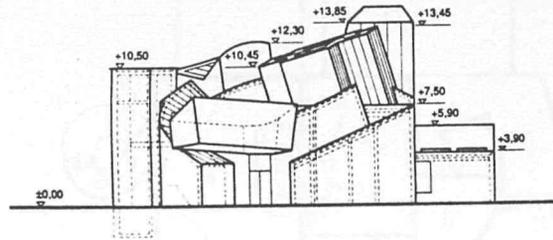
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10TH ST.

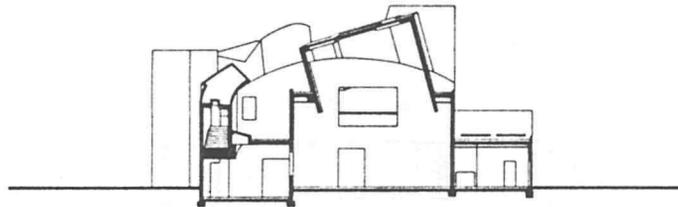
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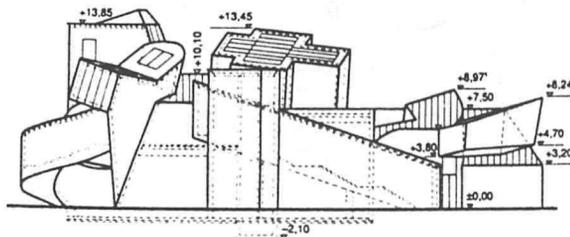




Elevation from the north-east.



Cross-section E-F



Elevation from the north-west.

## CASE STUDY

**Project Title:** The Vitra Design Museum

**Site:** Rhine Valley, Vitra Gesellschaften.

**Building Type:** Museum

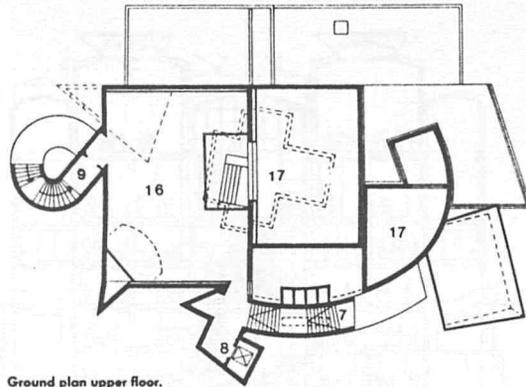
**Architect:** Frank O. Gehry and Associates

**Year:** 1989

**Building Materials:** Concrete, plaster, glass, and sheet steel.

**Project Analysis:** The idea of the Vitra Museum grew out of the furniture producer's wish to find and document the roots and history of his craft. The owner's passion is to bring insight to his craft by examining the past in order to inspire the future. The museum intends to appeal to the layman and to alert his awareness of a designed environment. The exhibitions concentrate on presenting objects displaying the development of industrial furniture design.

The complexity of the exterior is not carried to the interior. The gallery space inside is kept simple to facilitate the viewing of the art works. The design represents the start and end of a product. The interplay of shape and form creates a feeling of intrigue within the museum. The projecting and rectangular canopy contrasting the curved shape of the ramps strongly indicates the main entrance to the inside. The white plastered walls contrasts with the titanium zinc roof makes the building stand out from a distance. The sculptural quality of the exterior bring the viewer's attention to its lavish details. The building also is designed to effect contrasts with light and materials.



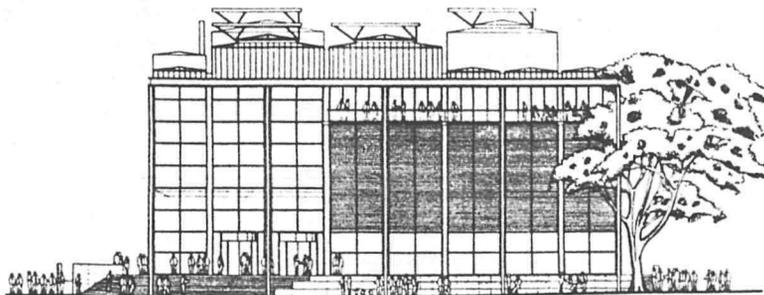
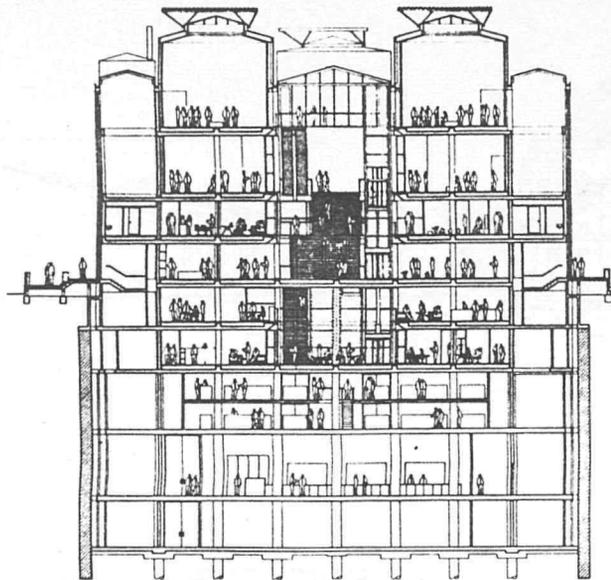
Ground plan upper floor.



Ground floor plan. Scale 1:400.

Key: 1 entrance; 2 foyer; 3 two-story central exhibition space; 4 large exhibition space; 5 exhibition/conference room; 6 cafeteria; 7 access to upper story; 8 elevator; 9 spiral staircase to upper story; 10 storeroom; 11 hydraulic ramp; 12 office; 13 kitchen; 14 service facilities; 15 bathroom; 16 upper story exhibition space; 17 airspace.

The exhibition areas are located at the ground and on the second floor. A large exhibition space, an exhibition and conference room, and a central exhibition space are housed at the ground floor, and one exhibition space at the upper floor. A cafeteria is located at the main lobby and is connected to the major exhibition area at the ground floor. Storeroom, office, kitchen, and service facilities are grouped together at one side of the museum but these spaces have access to the exhibition area either directly or indirectly. Visitors will first approach the main entrance and be directed to the main central exhibition. On the left side, visitors may visit the cafeteria, and directly across the hall they can easily access the other exhibition hall. Elevator and spiral stairs are located close to the cafeteria to offer easy access to the upper level.



## CASE STUDY

**Project Title:** Carré d'Art

**Site:** Across from the Augustan Temple Maison Carrée, in Nîmes, France.

**Building Type:** Art Museum

**Principal Client:** Director and Chairman of Trustees of Museum of Contemporary Art

**Architect:** Norman Foster

**Year:** 1984

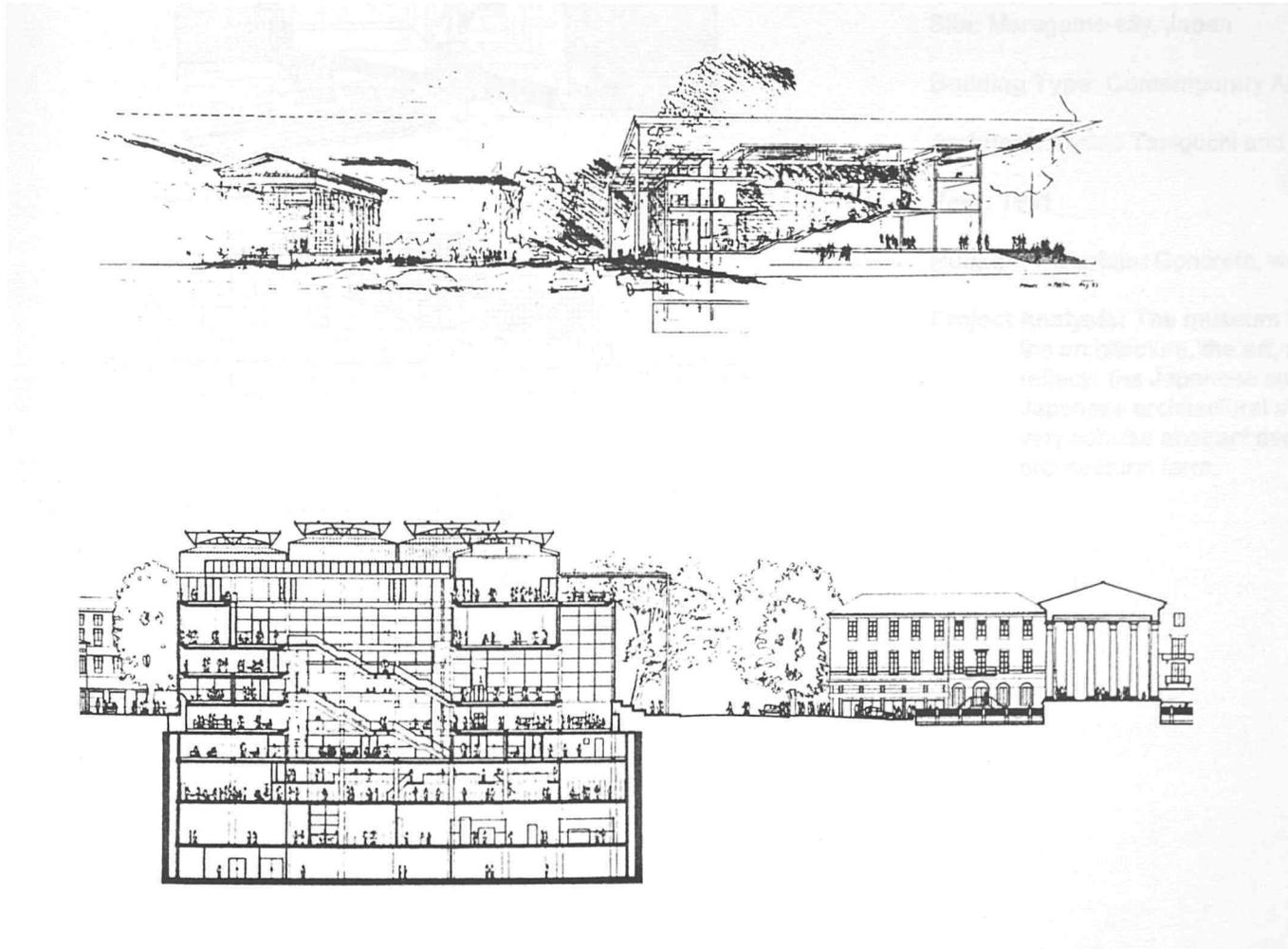
**Structural System:** *In-situ* concrete frame system.

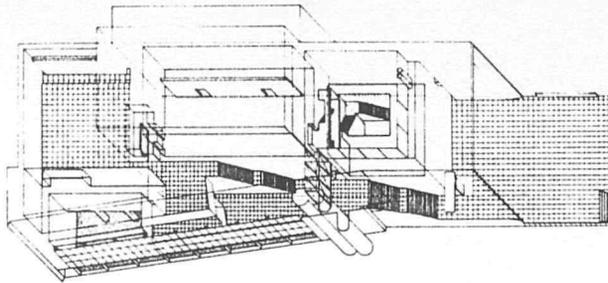
**Building Materials:** Concrete, stainless steel, stone, translucent and opaque glass.

**Project Analysis:** In order to correspond to the height of the surrounding buildings in designing this nine story structure, Foster has built half of the nine stories underground. To maximize the use of natural light in the galleries, Foster has laid the gallery spaces on the top. On the floor immediately above and below the ground level is the library. It is accessible from the streets, and the underground levels house the cinema, auditorium, conference facilities, and storage areas. Furthermore, Foster has incorporated a five story internal courtyard to help bring natural light into the building at the lower levels. Within this courtyard are a glass staircase, and a hydraulic elevator, which has form.

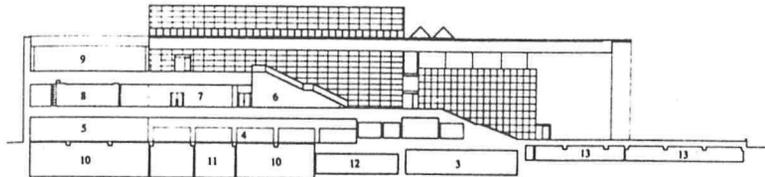
In general, Foster has chosen to design a building with respect to the surroundings, but he has 97

chosen to utilize the latest technological advances available to him to achieve that goal.

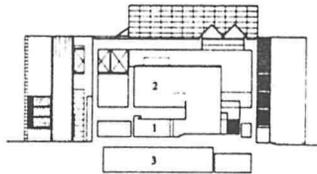




Axonometric drawing



Section 1:1000



Section 1:1000

- 1 エントランスホール Entrance hall
- 2 常設展示室 Exhibition hall for the permanent collection
- 3 収蔵庫 Repository
- 4 児童コーナー Children's corner
- 5 校図書館コーナー Book corner
- 6 ギャラリー Gallery
- 7 ホール Hall
- 8 美術図書室 Art library
- 9 屋上広場 Roof-top plaza
- 10 機械室 Machine room
- 11 電気室 Electricity room
- 12 倉庫 Warehouse
- 13 駐輪場 Bicycle parking lot

## CASE STUDY

**Project Title:** Marugame Genichiro-Inokuma Museum of Contemporary Art

**Site:** Marugame-city, Japan

**Building Type:** Contemporary Art Museum

**Architect:** Yoshio Taniguchi and Associates

**Year:** 1991

**Building Materials:** Concrete, wood flooring, steel and glass.

**Project Analysis:** The museum focuses on the harmony among the architecture, the art, and the urban city. The entrance reflects the Japanese culture as it imitates the ancient Japanese architectural style. This highlights the exhibit, a very concise abstract design predominates the overall architectural form.

PART V. SPACE SUMMARY

**SPATIAL SUMMARY**

All dimension are in square foot

**Administration:**

<b>Contents</b>	<b>Floor Area</b>	<b>x</b>	<b>No.Of Units</b>	<b>N. S. F.</b>
Accountant	100	x	2	200
Director, Arts & Humanities Council	150	x	1	150
Director, Assistant	150	x	1	150
Director, Development	200	x	1	200
Director, Education	150	x	1	150
Director, Museum	150	x	1	150
Director, Public Relation	100	x	2	200
Educational Resource Coordinator	150	x	1	150
Security Chief, Museum	150	x	1	150
Conference Room	500	x	1	500
Reception and Staff Lobby	300	x	1	300
Staff Lounge & Kitchenette	500	x	1	500
Staff Restroom	150	x	2	300
Stroage/ Copy Room	150	x	2	300
<b>Sub- Total</b>				<b>3,400</b>

**Curatorial:**

Curator	150	x	3	450
Exhibit Artist	300	x	2	600
Exhibit Builder	500	x	2	500
Exhibit Designer	150	x	2	300
Fine Arts Packer	2,000	x	1	2,000
Maintenance Worker	300	x	1	300
Manager, Business	150	x	1	150
Manager, Assistance	150	x	1	150
Membership Secretary	150	x	1	150
Registrar, Museum	300	x	1	300

Research Associate	150	x	1	150
Restorer, Paper, and Prints	500	x	1	500
Scheduler	150	x	1	150
Teacher	150	x	1	150
Janitorial Room	200	x	1	200
Loading Bay	800	x	1	800
Photography Lab	300	x	1	300
Shipping & Receiving	600	x	1	600
Staff Restrooms	150	x	2	300
Storage	3,000	x	1	3,000
Storage, Art	3,000	x	1	3,000
Workshop 1	800	x	1	800
Workshop 2	500	x	1	500

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Sub- Total 15,350

**Public Area:**

Guard, Museum	250	x	1	250
Guide, Establishment	400	x	1	400
Librarian, Assistant	200	x	1	200
Librarian, Special Library	800	x	1	800
Museum Attendant	150	x	1	150
Manager, Retail Store	500	x	1	500
Cafe	1,500	x	1	1,500
Entry & Reception	1,500	x	1	1,500
Exhibition Space (International)	6,000	x	1	6,000
Exhibition Space (Local)	6,000	x	1	6,000
Exhibition Space (Outdoor)	1,000	x	1	1,000
Gallery 1	3,000	x	1	3,000
Gallery 2	1,500	x	1	1,500
Lecture Hall	2,000	x	1	2,000
Ticket Booth	100	x	1	100

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Sub- Total 24,900

**Net Square Footage:**

(Administration Area+Curatorial Area+Public Area) x 1.3  
(3,400+15,350+24,900) x 1.3 =56,745

**Usable Square Footage:**

Net Square Footage x 1.2  
56,745 x 1.2 =68,094

**Mechanical:**

5% of net square footage x 0.05  
56,745 x 0.05 =2,837.25

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**Gross Square Footage:**

Useable Square Footage+ Mechanical  
68,094+2,837.25 =70,931.25 sq.ft.

## **MUSEUM JOBS**

**Accountant-accountant and assistant staff administrate the museum's expenditures and budget.**

**Curator-provides professional care for the artwork, plans and conducts research, participates in planning and implementation of special projects, and oversees the workers of the museum.**

**Director, Arts-and-Humanities Council-administers programs to promote visual and performing arts and humanities.**

**Director, Assistant-assist the museum director in administrating the museum's affairs.**

**Director, Development-plans, organizes, directs, and coordinates ongoing and special project funding programs for the museum.**

**Director, Education-plans, develops and administers educational programs for the museum's exhibits.**

**Director, Museum-administrate the museum's affairs.**

**Director, Public Relations-a public relation director and an assistant staff dealing with special public activities, and handling the publicity and advertisement.**

**Educational Resource Coordinator-Direct operation of educational resource center of museum.**

**Exhibit Artist-produce artwork for exhibit settings.**

**Exhibit Builder-constructs and installs exhibit structures.**

**Exhibit Designer**-oversee the plans, designs, construction, and installation of exhibits and displays.

**Fine Arts Packer**-deals with the packaging prepare artwork for transportation.

**Guard, Museum**-responsible for maintaining the security of the museum, and prevent artworks from being stolen, or vandalize.

**Guide, Establishment**-following a specific route, guide a group of visitors through the establishment.

**Library Assistant**-compiles records, sorts, shelves, issues, and receives books, photographs, periodicals, and other materials for the museum's library.

**Librarian, Special Library**-manage the museum's library, which contain specialize materials.

**Manager, Business**-provides retail shopping to aid in bringing in additional income to the museum.

**Manager, Assistant**-provides assistant to the business manager of the museum.

**Manager, Retail Store**-manage museum related store selling a specific line of merchandise.

**Membership Secretary**-compiles and maintains membership lists, records receipt of dues and contributions, and give information to members of the museum's supportive organization.

**Museum Attendant**-provides information about the current exhibits, regulations, and facilities for the visitors.

**Registrar, Museum-**maintain record of accession, condition, and location of the artworks in the museum, and oversees the movement, packing, and shipping of artworks.

**Research Associate-**plans, organizes and conducts research in scientific, cultural, historical or artistic field.

**Restorer, Paper, and Prints-**cleans, preserves, restores, and repairs paper artworks, such as books, documents, maps, prints, and etc...

**Scheduler-**make reservation and accept payments for group activities, such as tours, classes, field trips, and etc...

**Security Chief, Museum-**supervise the guards of the museum.

**Teacher-**teach classes, presents lectures, conduct workshops, and participate museum related activities.

**Transportation Equipment Maintenance Worker-**assist in reconstruction, renovation, refurbishment, or maintenance of transportation equipment displayed by the museum.

PART VI. ANNOTATED BIBLIOGRAPHY

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## ANNOTATED BIBLIOGRAPHY

Bates, G.W., ed. Museum Jobs From A-Z: What They Are, How to Prepare, and Where to Find Them. Florida: Batax Museum Publishing, 1994.

The book gave detail description about museum related jobs, as to what they are and what qualification one needs, and where to find them.

Darragh, Joan, and Snyder, James S., Museum Design: Planning and Building for Art. New York: Oxford University Press, 1993.

The book talked about the planning of a museum, what is involve in planning, designing, and renovation of a museum.

Demontclos, Jean-Marie Pérouse, Etiénne-Louis Boullée (1728-1799): Theoretician of Revolutionary Architecture. New York: George Braziller, Inc., 1974.

The book talked about the architect Etiénne-Louis Boullée, of how his architecture has changed, also the author refer to several other architects, some of them were students of Etiénne-Louis Boullée.

Ching, Francis D.K., Architecture: Form, Space, & Order. New York: Van Nostrand Reinhold Company, 1979.

This is a study about the presentation of the elements of form and space in architecture primarily dealing with the visual aspect of the physical reality.

Giedion, S., Walter Gropius: Work and Teamwork. New York: Reinhold Publishing Corporation: 1954.

This is a collection of architect Walter Gropius' work, and some background of this famous architect.

Hoke, John Ray, Jr., FAIA, Architectural Graphic Standards, 9th ed., (New Jersey: John Wiley & Sons, Inc., 1994.) 8-18, 24-28, 51-67, 815-818.

This book provide accurate drawing, tables, data, and other standard codes information about the architectural design. 106

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Matthew, Geoff, Museums and Art Galleries. London: Butterworth Architecture, 1991.

A simple design and development book for designing a museum.

Moore, Kevin, ed. Museum Management. London and New York: Routledge, 1994.

Description of different goals and management behind the operations of a museum.

Muthesius, Angelika, ed. Richard Meier. Germany: Benedikt Taschen Verlag GmbH, 1995.

A collection of Richard Meier's work, and the one used as a case study is the Des Moines Art Center Addition done between 1982-84 (case study).

Pérez-Goméz, Alberto Architecture and the Crisis of Modern Science. London: the MIT Press, 1984.

The book talked about the number, proportion, and geometry in architecture.

Shozo Baba, "Modern Mannerism and the Facade-Shin Toki," Japan Architect, September, 1980, 10-15, 21.

Introduction of Japanese architect Shin Toki and his work, namely the Furakoko Nursery School (case study). Toki is famous for working in geometrical forms in his designs.

Sklar, Lawrence, Space, Time, and Spacetime. Los Angeles: University of California Press, 1974.

The book talked about different theory on geometry.

Steele, James, ed. Museum Builders. London: Academy Group Ltd., 1994.

A collection of museums all over the world by world famous architects. The case study describe a museum in this book by Norman Foster, the Carré d'Art.

Stevens, Garry, The Reasoning Architect: Mathematics and Science in Design. New York: McGraw-Hill Publishing Company, 1990.

The book talked about how the use of mathematics affect the design, and it examine examples of such applications.

Stewart, David B., and Hajime Yatsuka, Arata Isozaki: Architecture 1960-1990. New York: Rizzli, 1991.

A collection of Arata Isozaki, a famous Japanese architect who incorporates the use of geometrical forms in his building design. Two building used are the Museum of Contemporary art in Los Angeles 1981-86 (case study), and the Gunma Prefectural Museum of Fine Arts 1971-74 (case study).

Toh, Tadahiro, Cultural Facilities: New Concepts in Architecture & Design. Japan: Meisei Publications, 1993.

A collection on the different cultural facilities design. The building used is the Marugame Genichiro-Inokuma Museum of Comtemporary Art in Japan, design by Yoshio Taniguchi (case study).

Wilkes, A. Joseph, Encyclopedia of Architecture, John Wiley and Sons Co., New York, 1989.

Williams, Jack, The Weather Almanac 1995, Vintage Books, New York, 1994.

A book documenting the climatic data.

Wiseman, Carter, I. M. Pei: in American Architecture. New York: Harry N. Abrams, Inc., 1990.

A book documenting the work of I. M. Pei, from when he first started practicing to the work done by his firm. The building used is the Meyerson Symphony Hall in Dallas (case study).

Yoshio Yoshida, "Fumihiko Maki, " Japan Architect, April, 1994, 76-95.

Article documenting Japanese architect Fumihiko Maki's Center for the Arts Yerba Buena Gardens, in San Francisco, in association with Robinson Mills + Williams (case study).

Yoshio Yoshida, "Where Are We At?, " Japan Architect, March, 1992, 70-73.

Article documenting Japanese architect, such as the winner for the first stage design of the Nara Convention Hall design by Ryuji Nakamura of the Takenaka Corporation (case study).

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## THESIS SUMMARY

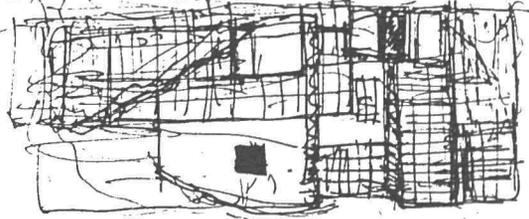
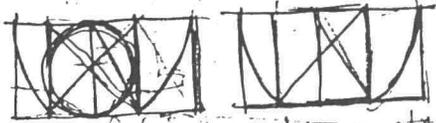
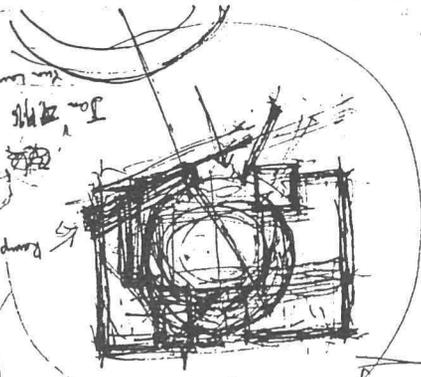
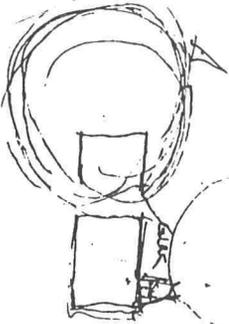
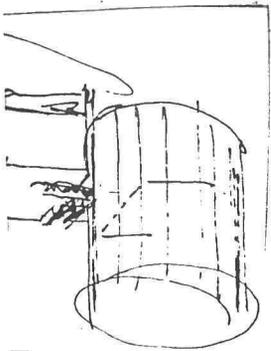
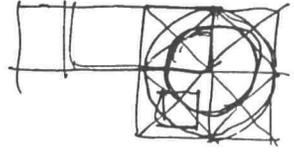
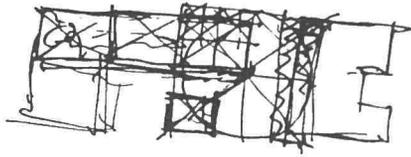
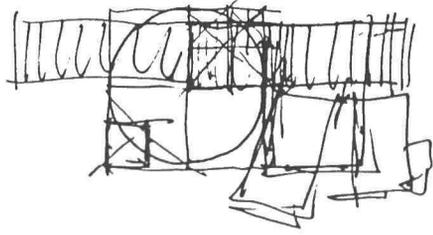
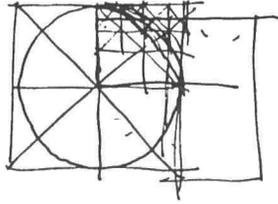
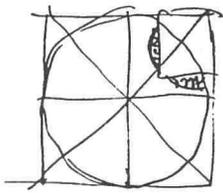
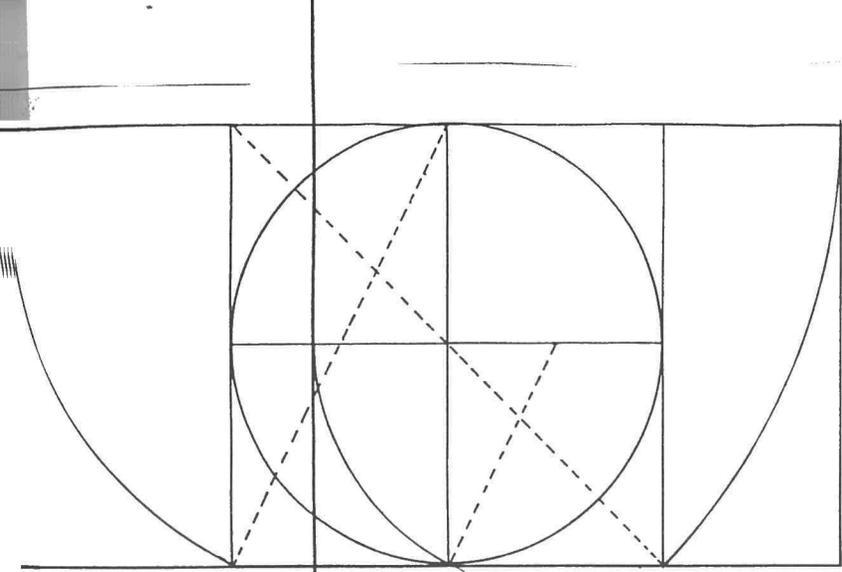
For the past semester, I have been struggling with this thesis project. The more research I do, the more I realize that there is much behind my concept I needed to know and much about the problem behind the building type to be resolve. Through enlightenment from Prof. Giaccardo, especially the book he refer me to read " the Power of Limits" by Doczi, and Dr. Handa, on the concept of geometry, I have learned a lot and they have greatly help me through my design. Therefore, I have proceeded along with the project very cautiously in order to really understand and achieve the goals, as stated in the "Goals of Thesis Studio".

The concept of the project is geometry. My definition of geometry used is that it expresses and communicates the connection between aesthetics and technology, and how it brings the two together. The theory I chose to express this definition is the Golden Section. It allows me to create a suitable proportion for an environment in which art can be presented to the public to enlighten them of the world of art they live in. Through intensive research and the interview, I came to the conclusion that an art museum unlike an art center is not a quaint little building, but rather it is a large, and massive place dedicated to the celebration of what art was and is.

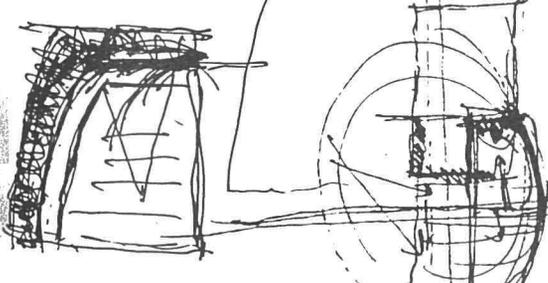
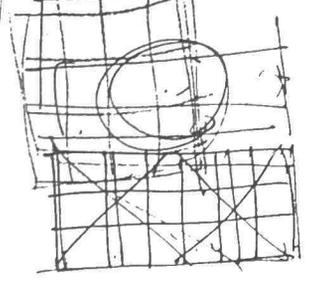
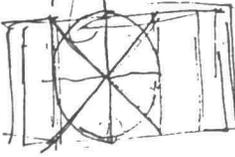
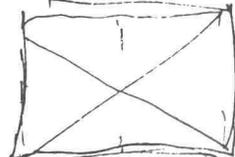
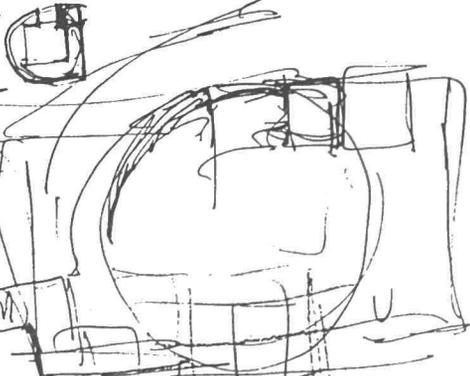
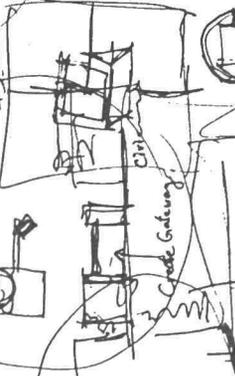
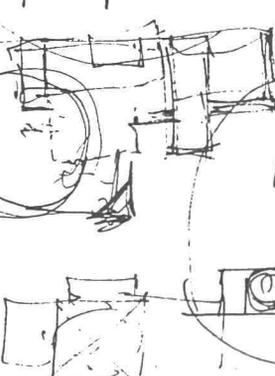
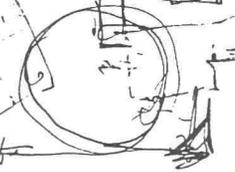
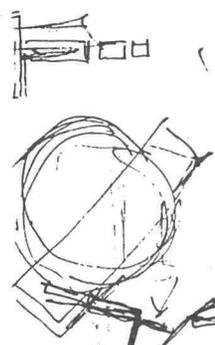
The whole design process started with the site analysis. During the process, I found that there exist a strong axis from the west entrance of the Memorial Civic Center through my site, and end at the grain elevator at north of the proposed site. Also, I found another axis which is perpendicular with the first axis from the west. It comes from where Texas Tech University Museum is located.

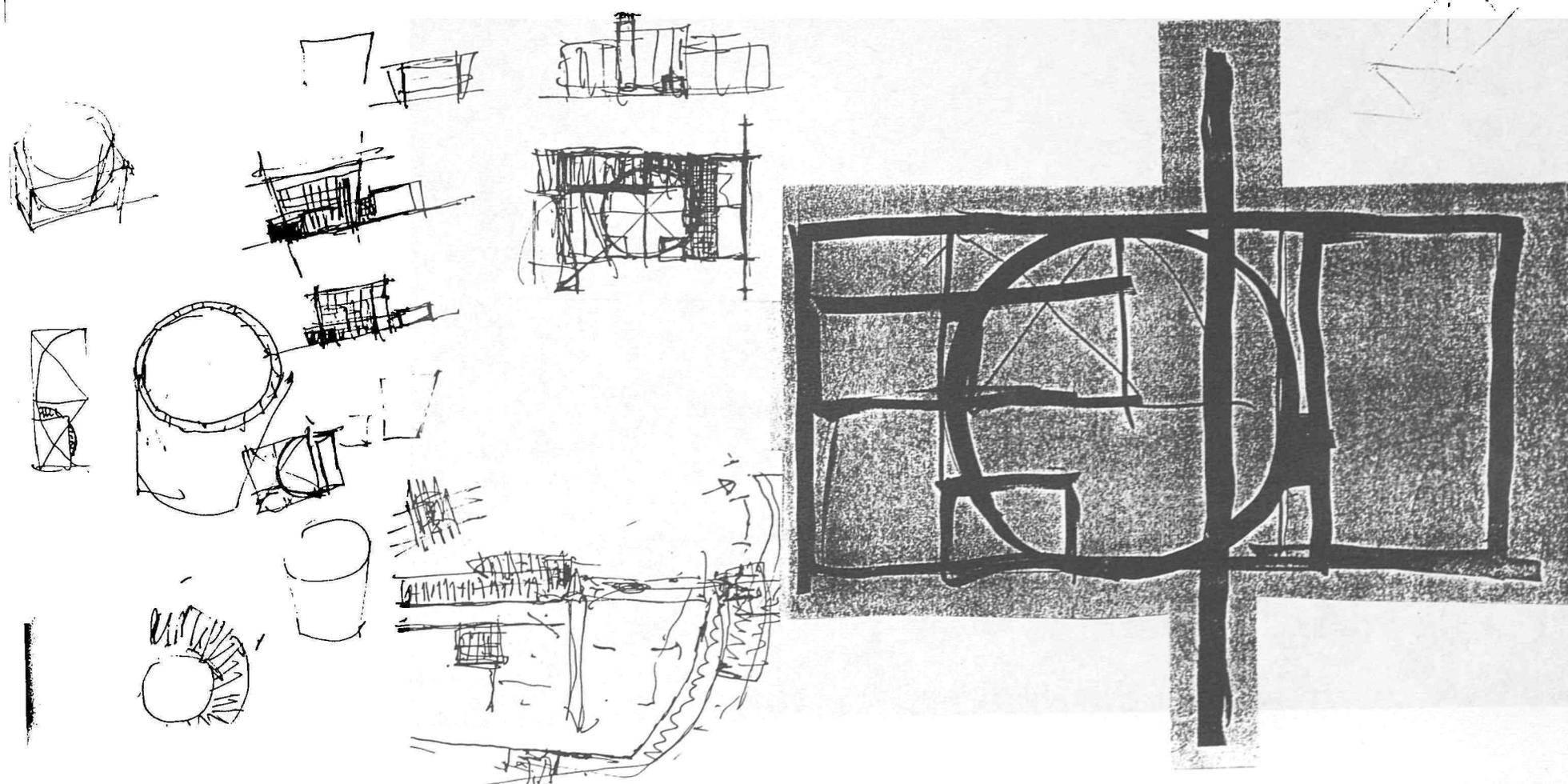
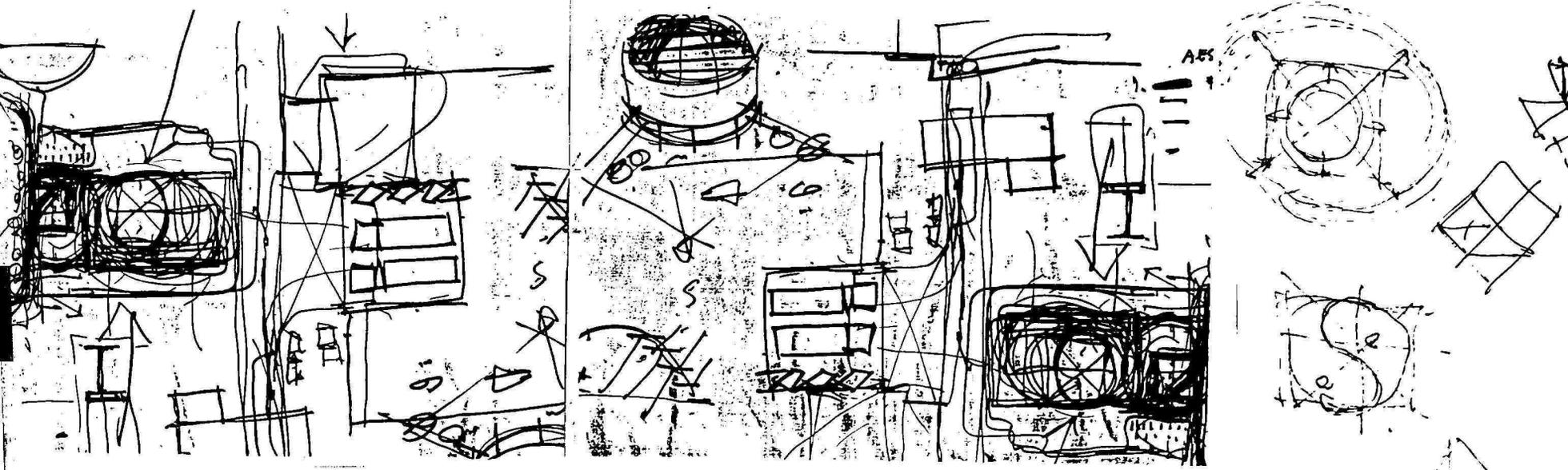
As the design processes went, I intended to treats the gallery, curatorial and administration into three different zones, which then were developed into two buildings. This arrangement provide a functional flexibility, and yet they all come together to form a harmonious whole. The design consists primarily of five elements, and the plan of the building form and floor plan were derived from the Golden Section. The most dominant of these elements is the 180' in diameter and 90' in height cylinder which is the art gallery. There is a 52" in height and 180' long wall that punctured through the cylinder to address the axis and through the glass mullion visitors could enjoy a visual connection between the Memorial Civic Center and the grain elevator as they are approaching the entrance. Also, there is a 50' long and 17' in height square which is the lecture hall interlocking to the southwest corner of the cylinder, and the fire stair on the southwest corner of the lecture hall. On the east side of the cylinder, there is a 180' by 110" rectangular box, which on the lower level is the curatorial area, and on the second floor, a 70' by 110' rectangular box, houses the administration offices. The structure of the cylinder (gallery) is cast-in-place concrete with concrete waffle slab, and access flooring for the art gallery. For the curator and administration area, precasted double tee, beam and column are used.

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Circle is the most dominant element

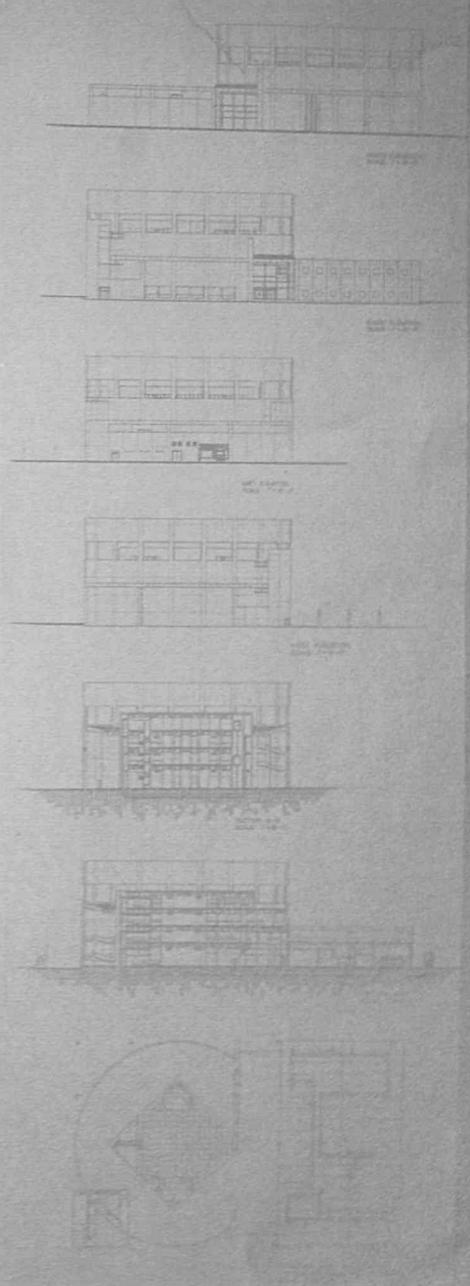
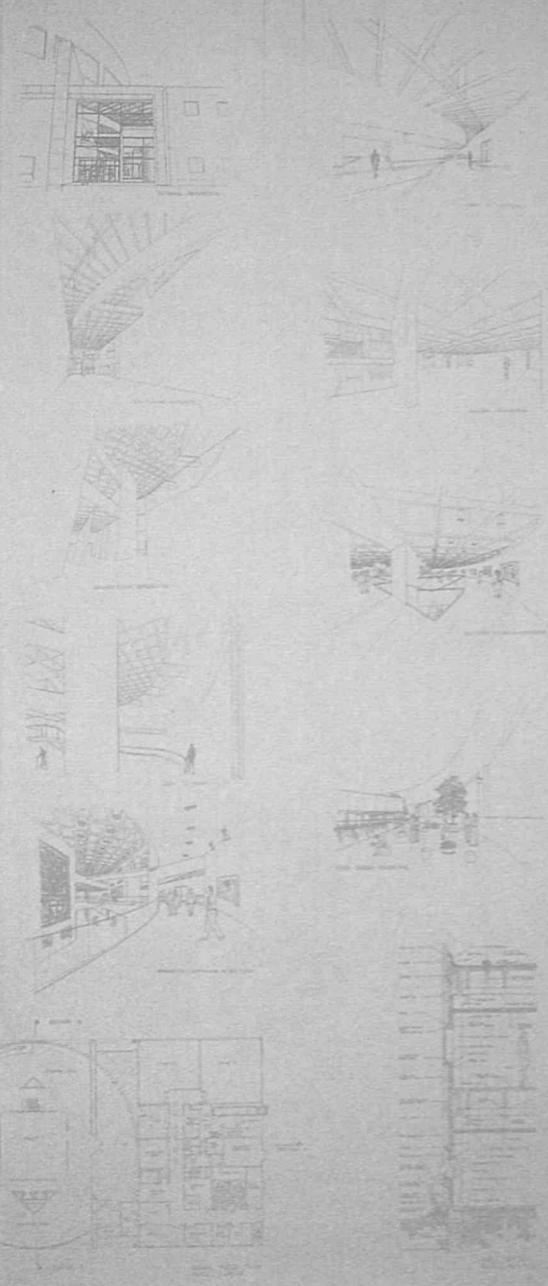
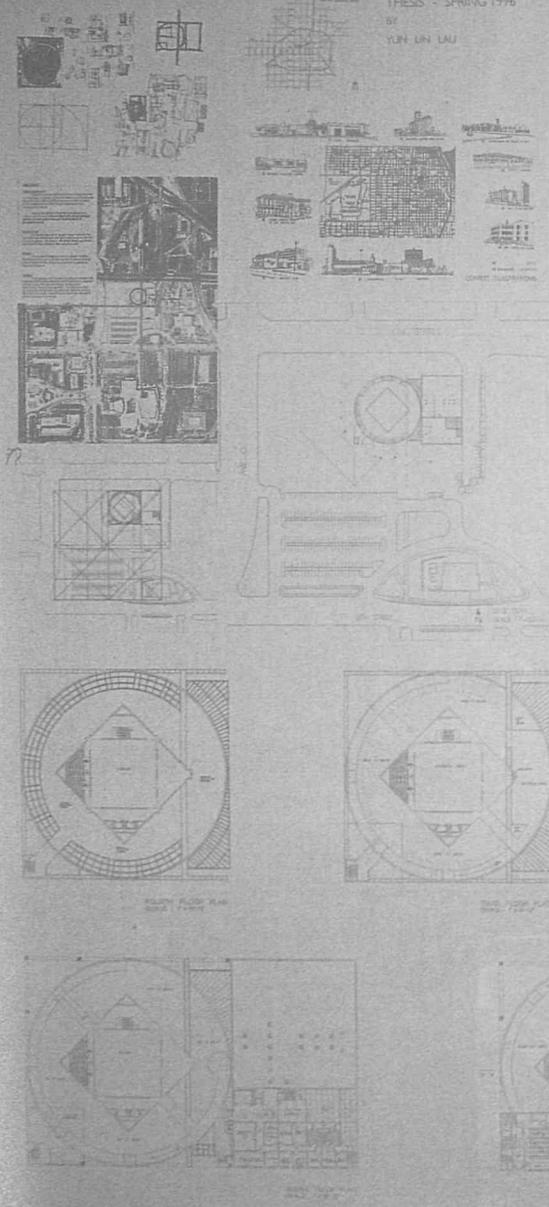




# LUBBOCK MUSEUM OF ART

THESIS - SPRING 1996

BY  
YUN LIN LAU



## ABSTRACT

### Thesis Statement

Geometry has been part of architectural design from the very beginning of building. Geometrical form used in architectural design acts as a medium which expresses and communicates human feelings and emotions through aesthetics (art) and technologies (science).

Base on the theories of Etienne Louis Bouleée, and Nicolas-Louis Durand, *I intend to depict the bridge (linkage) between art and science through the articulation of geometrical forms.*

### Facility Type

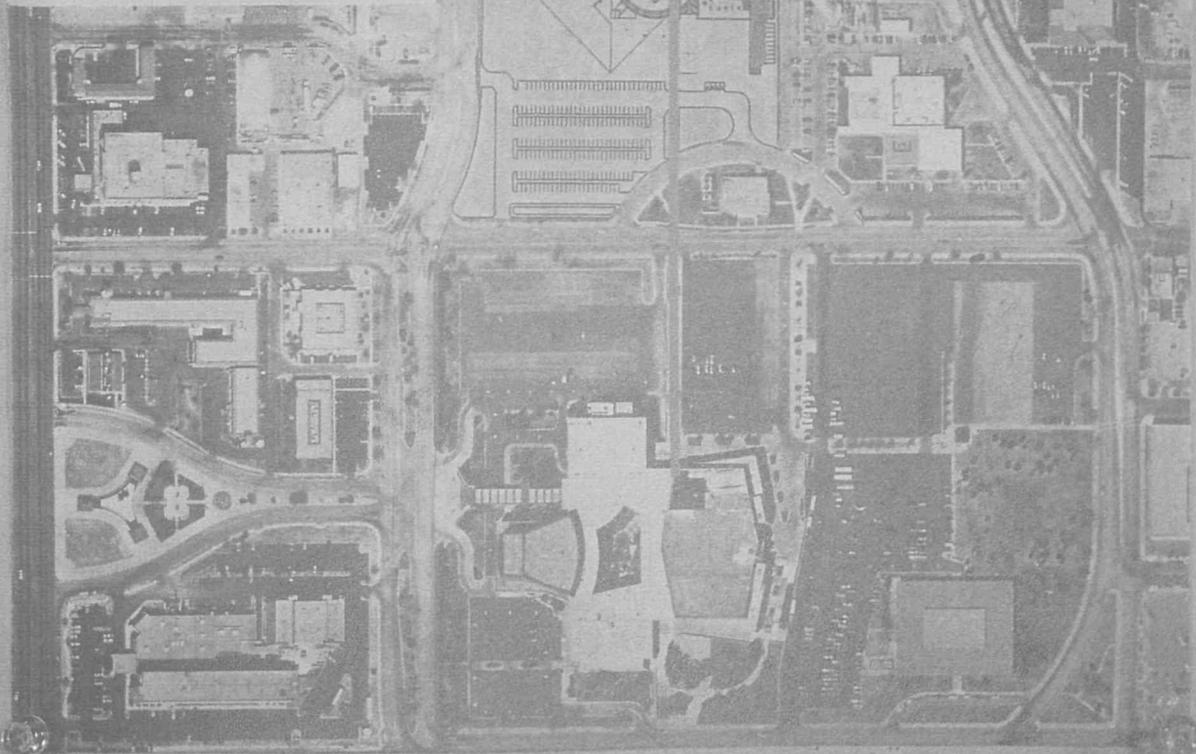
The facility type is an art museum that incorporates the use of geometrical forms and new technology to express the "art" in museum design. The museum will contain three major areas: administration area, curatorial area, and public area.

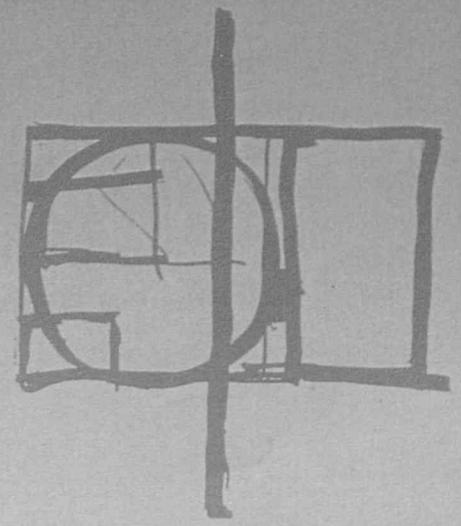
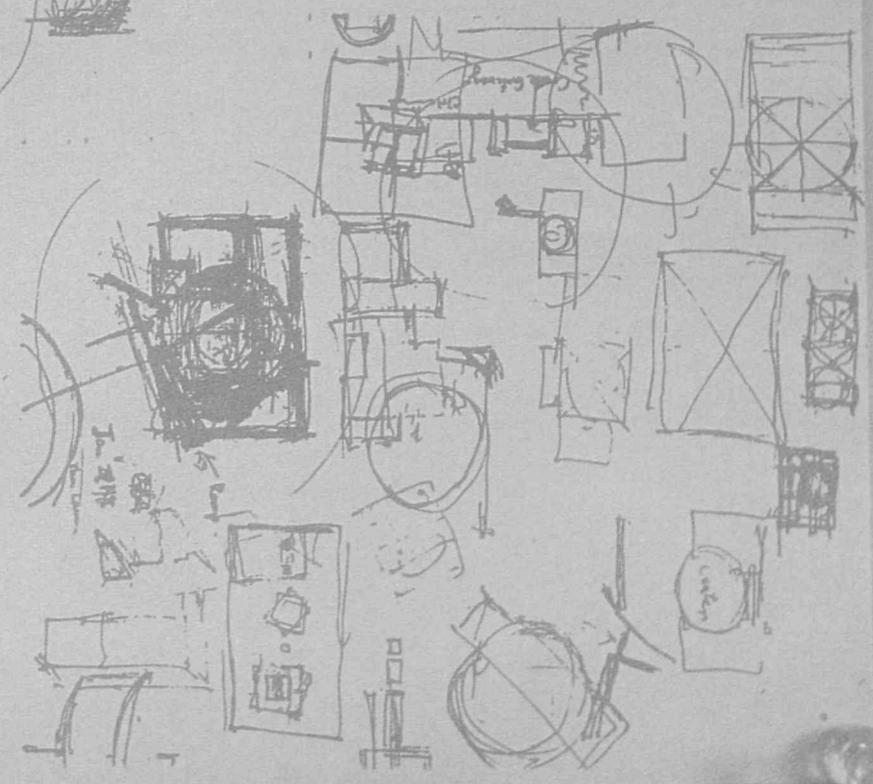
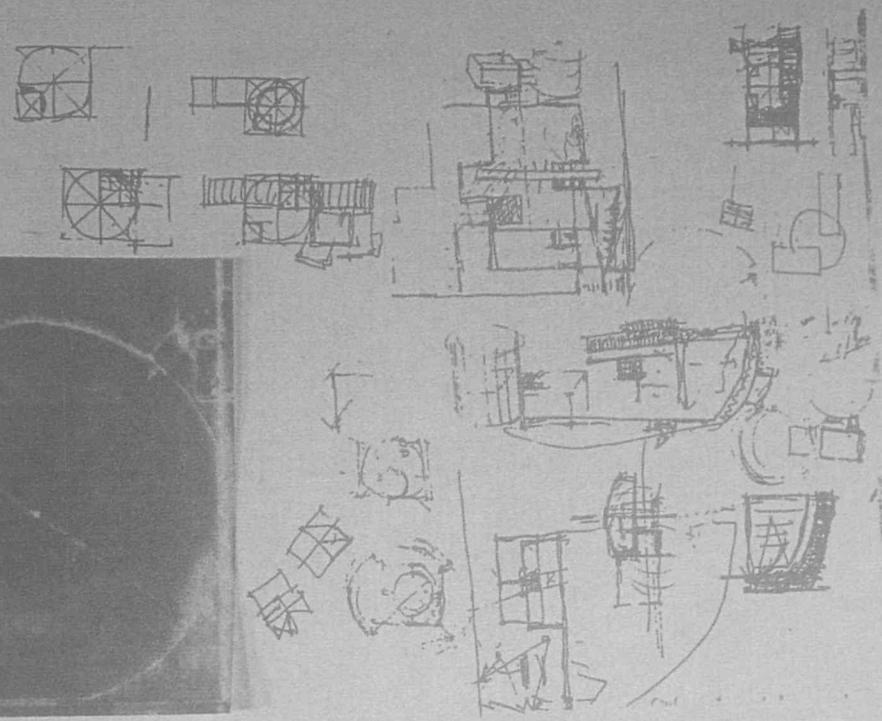
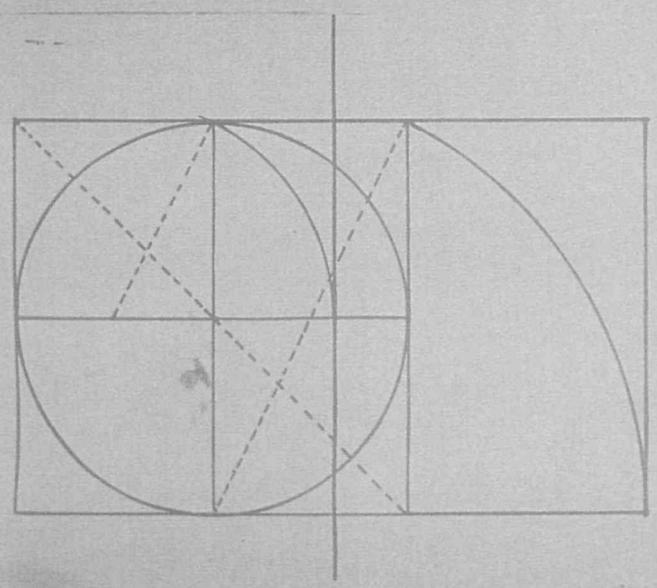
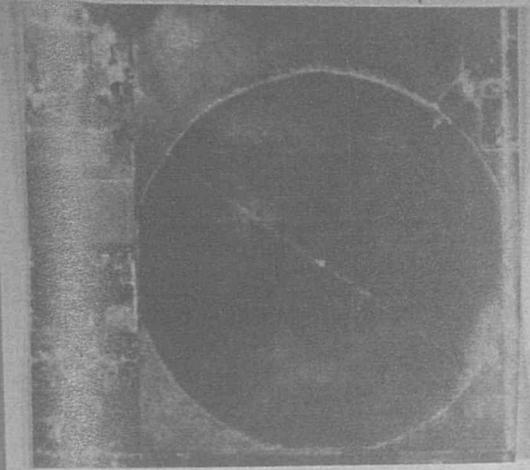
### Scope

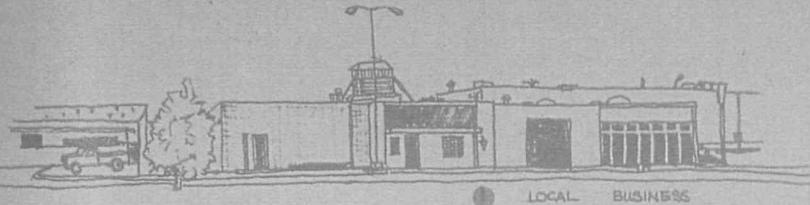
The proposed design is a mid-size museum of about 78,000 square feet, which includes an area for permanent local (United States) exhibits, and an area dedicated to temporary international exhibits.

### Context

The proposed site is located on a semi- and plateau in the northwest part of Texas called the South Plain region in downtown Lubbock - a city of industry, technology, oil, agriculture, warehousing, medicine, and education. The size of this site is approximately 410,000 sq. ft. The site is flat, and is bounded by 5th street on the south, Avenue O on the west, 4th street on the north and Avenue K on the east.







LOCAL BUSINESS



ELEVATOR - SLOSS GRAN FACTORY



DEPARTMENT OF PUBLIC SAFETY



RAINBOW CHILDCARE CENTER



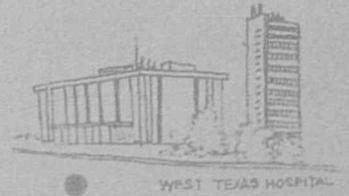
FOUR POINTS HOTEL & LA QUINTA INN



HOLIDAY INN



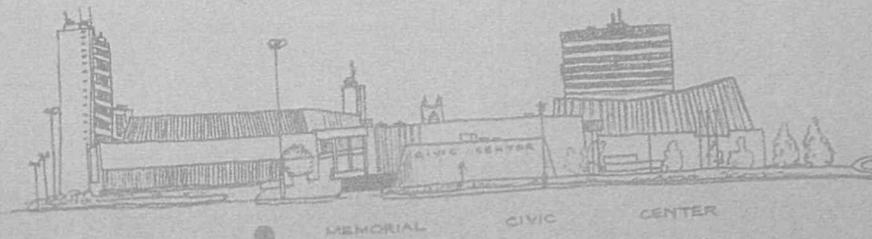
MAHON LIBRARY



WEST TEXAS HOSPITAL



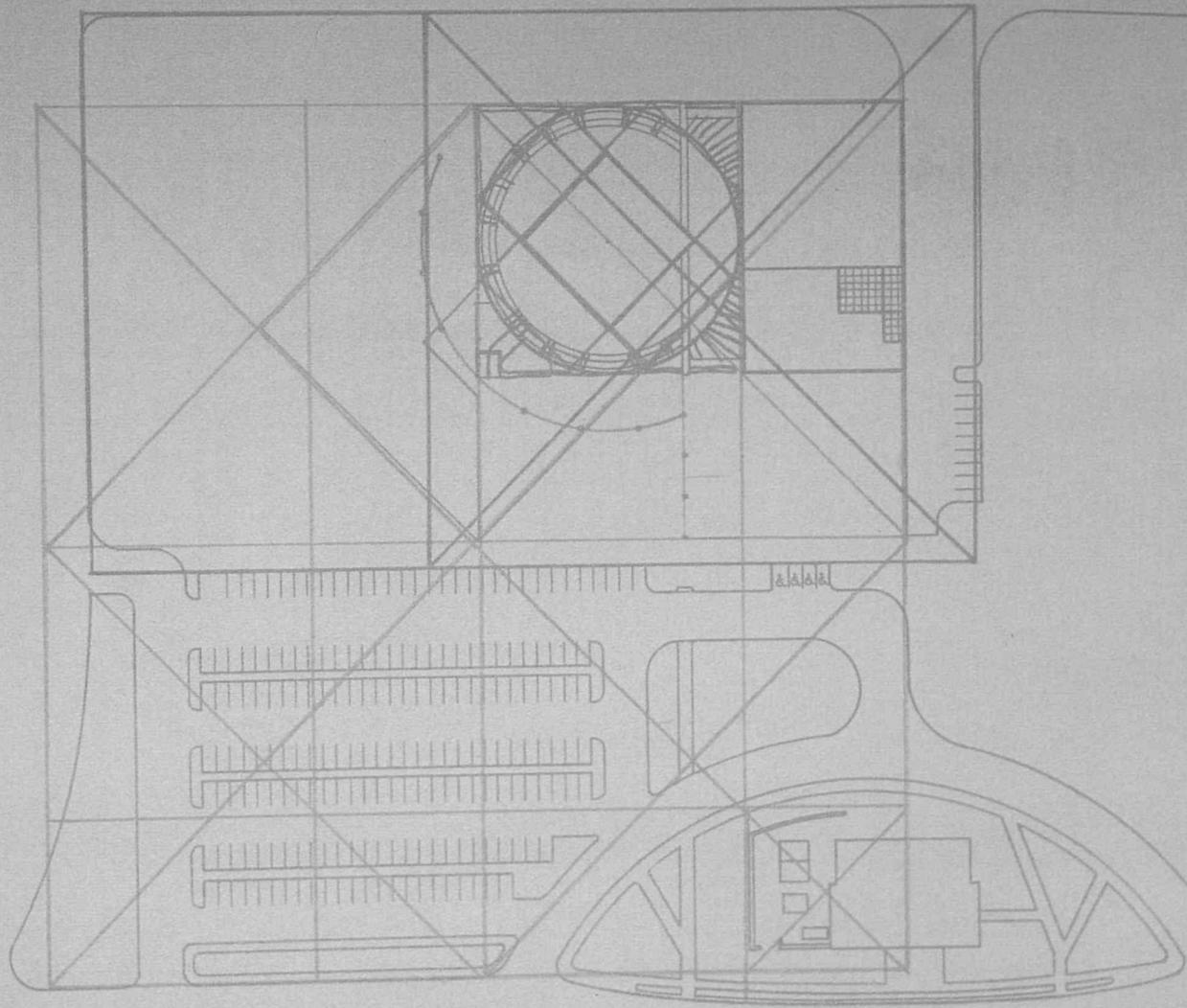
IBM OFFICE BUILDING



MEMORIAL CIVIC CENTER

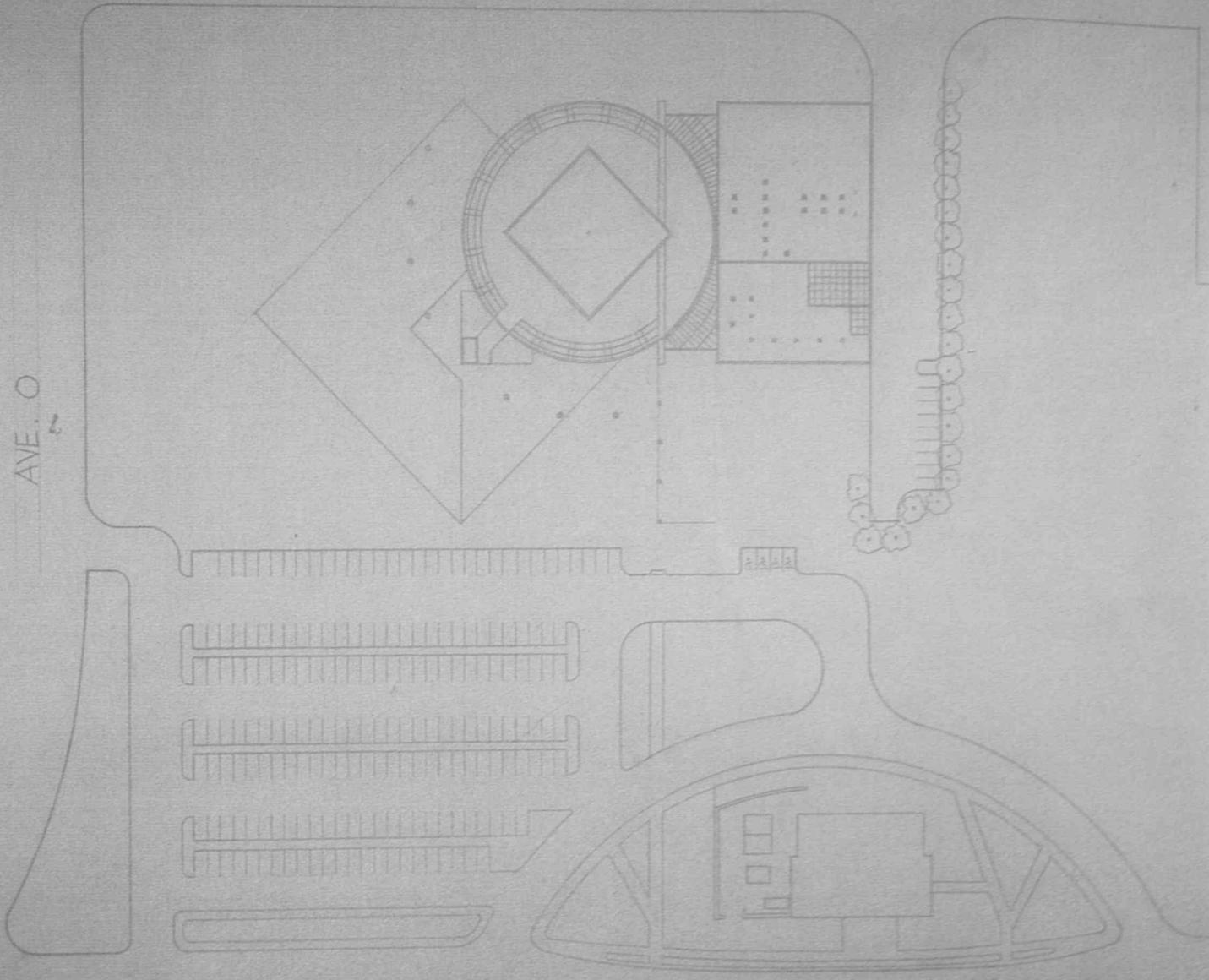
- SITE
- BUILDINGS LOCATION

CONTEXT ILLUSTRATIONS



4TH STREET

AVE. O



5TH STREET

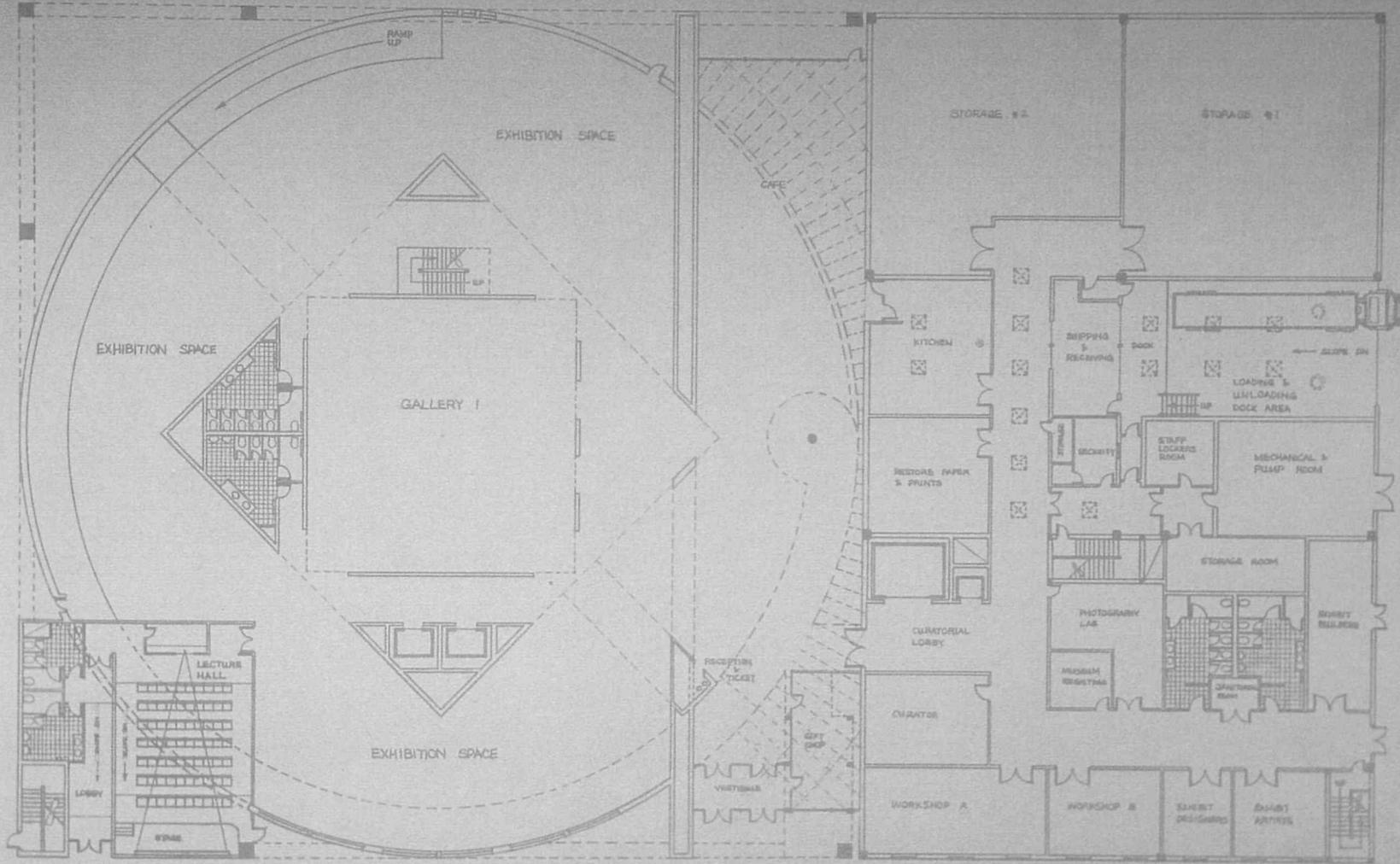


SITE PLAN  
SCALE: 1"=50'-0"

SECTION B

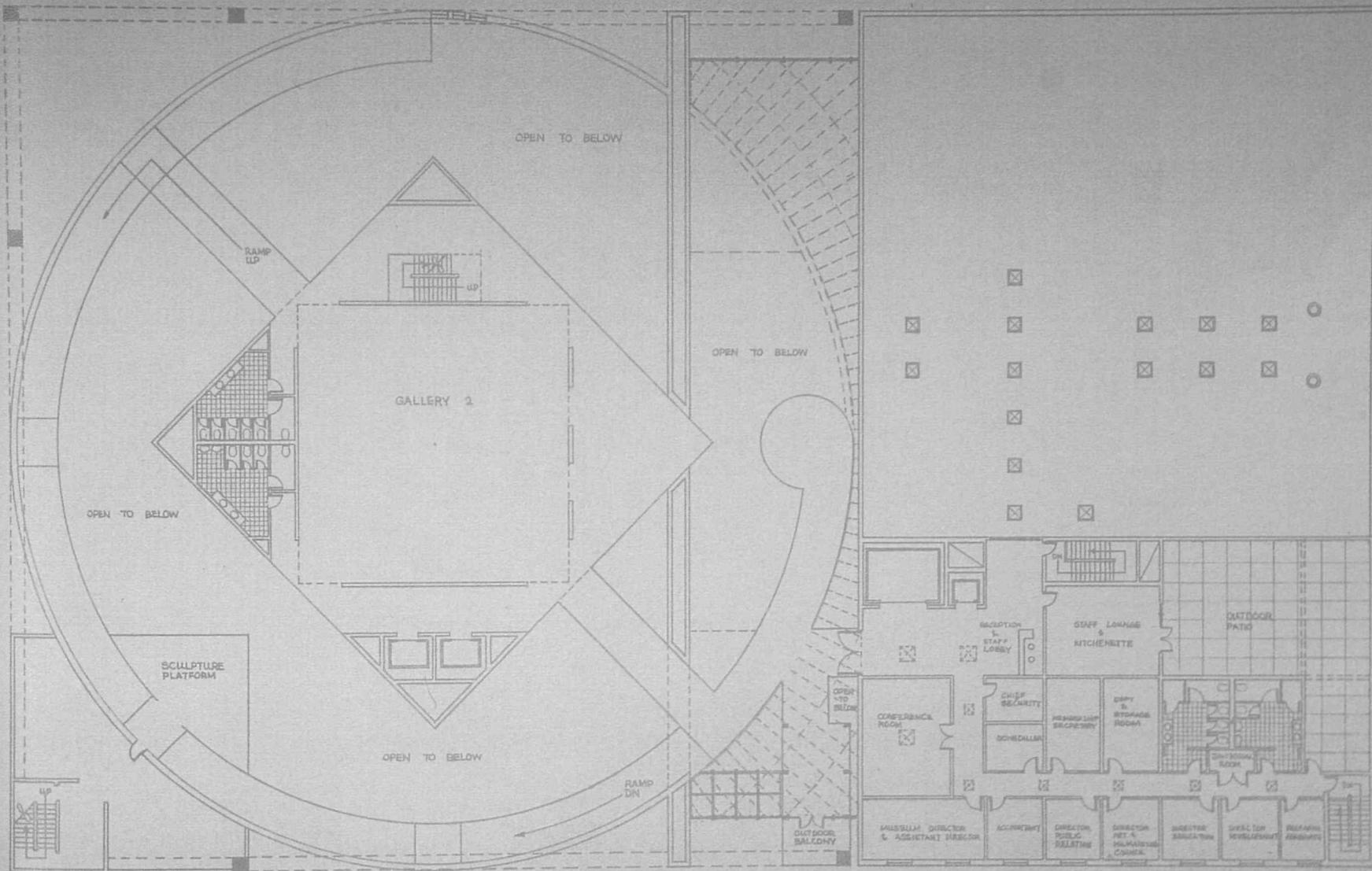
SECTION A

SECTION

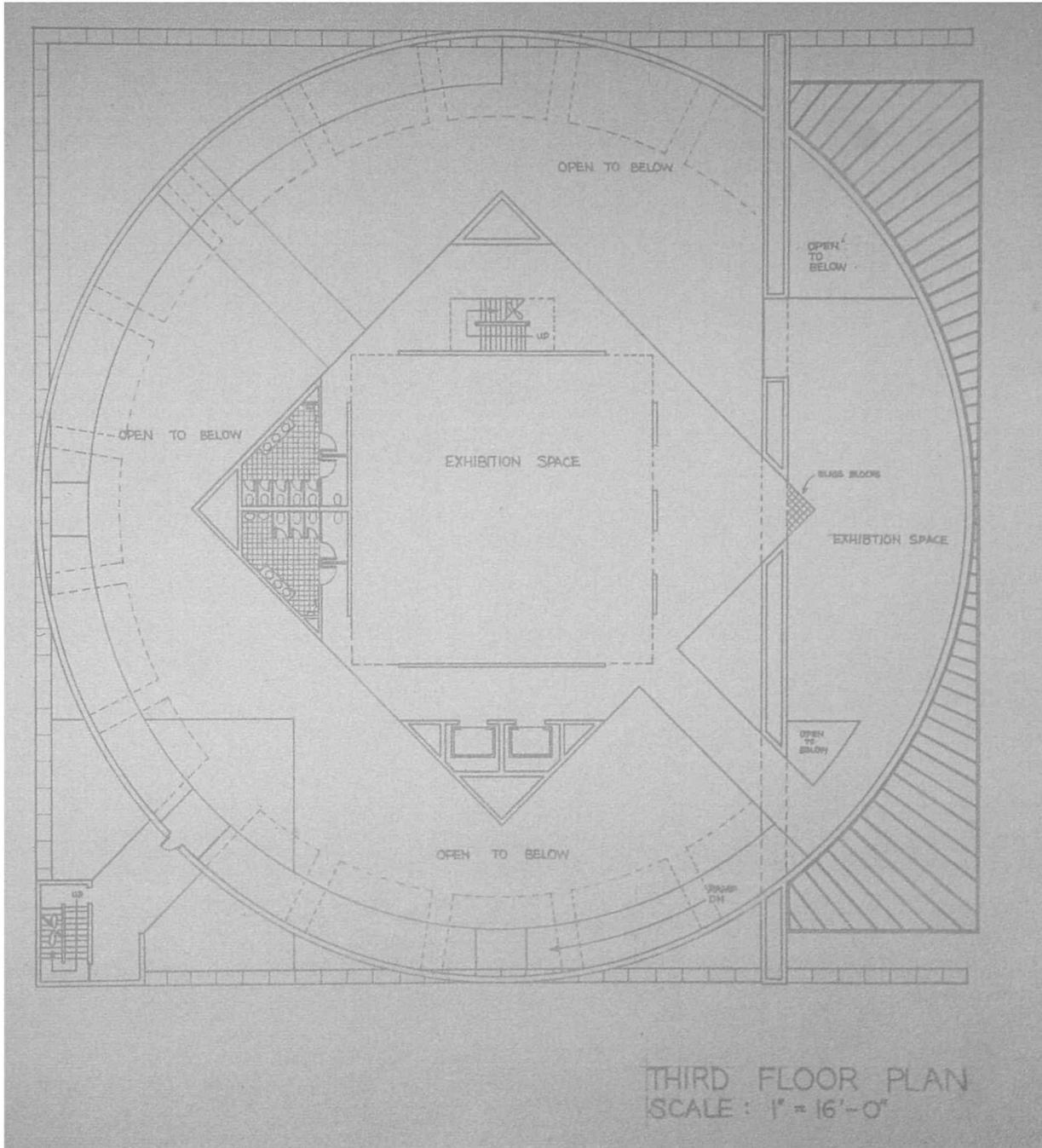


SECTION B

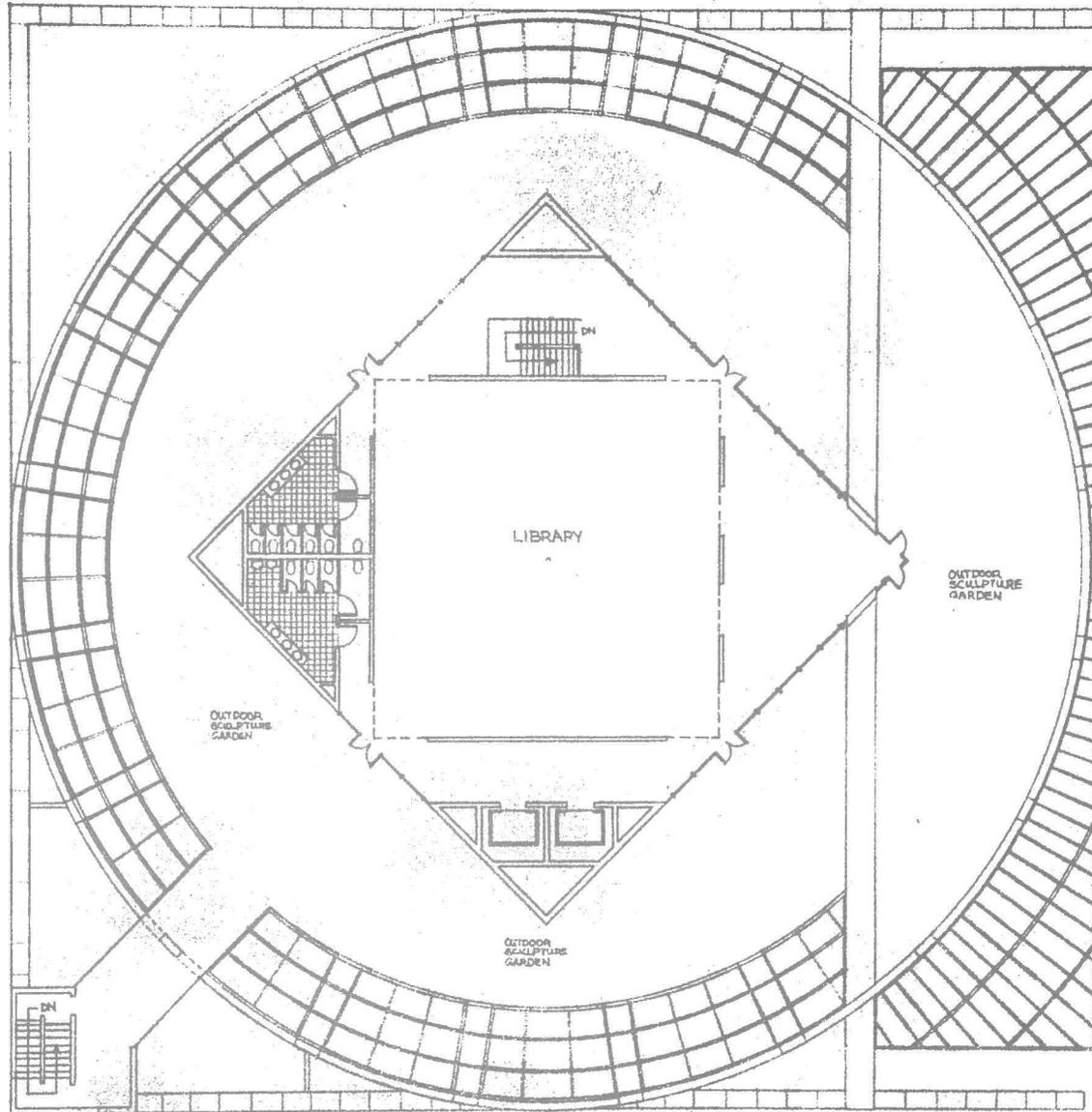
GROUND FLOOR PLAN  
SCALE: 1" = 16'-0"



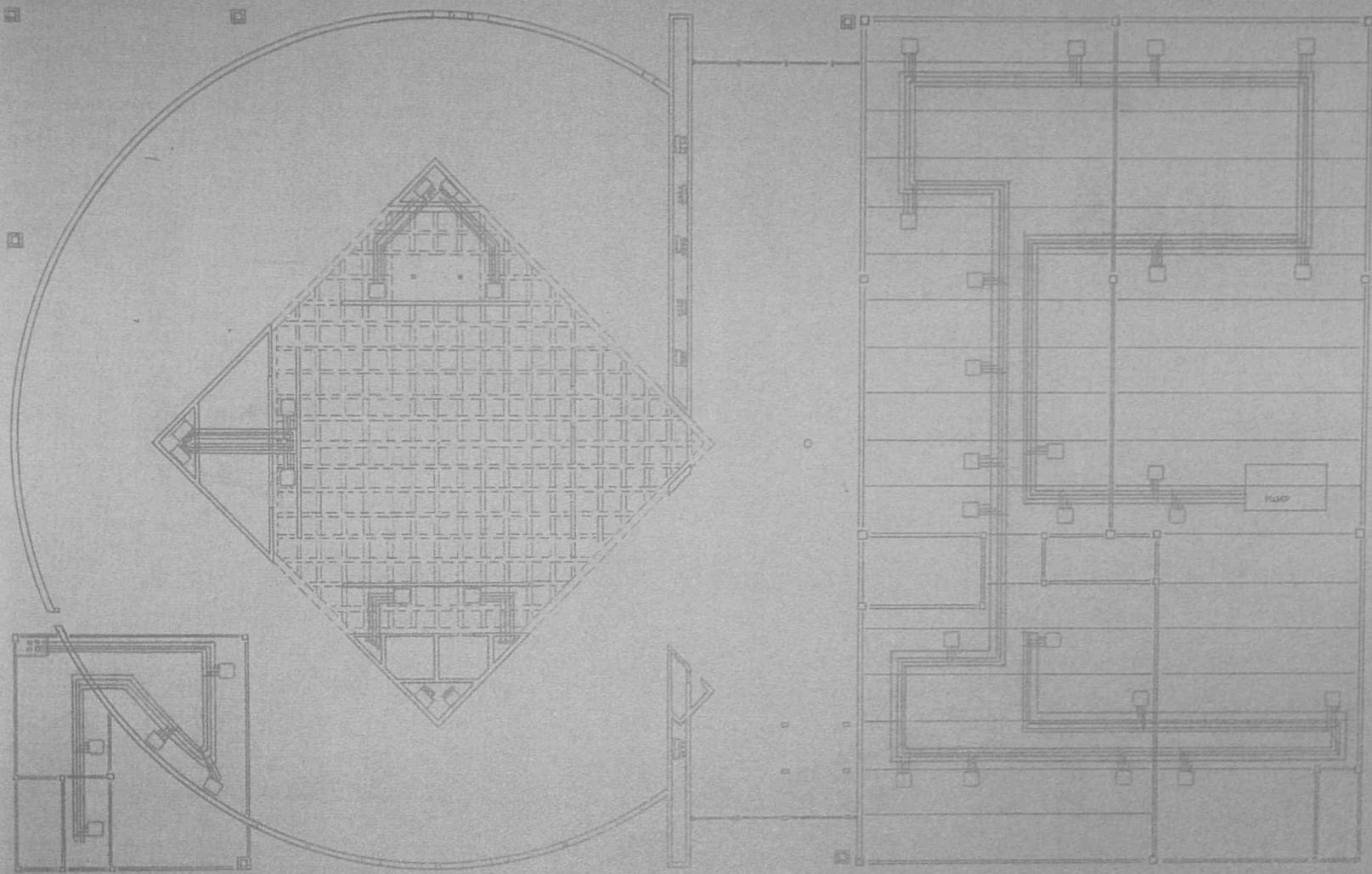
SECOND FLOOR PLAN  
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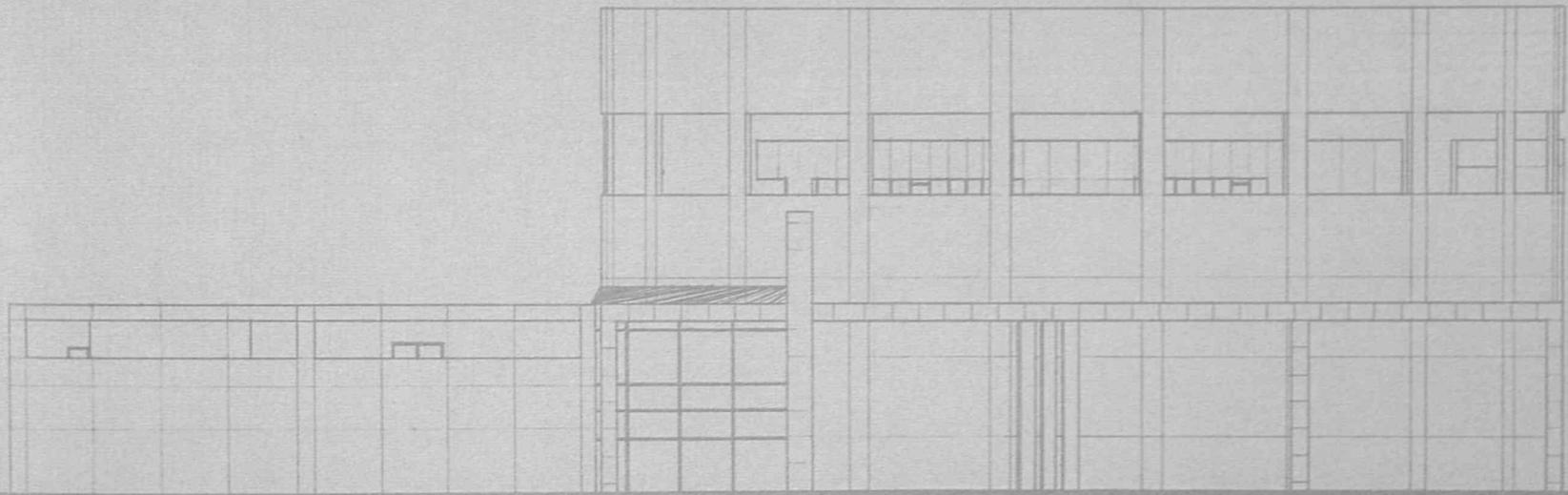
THIRD FLOOR PLAN  
SCALE : 1" = 16'-0"



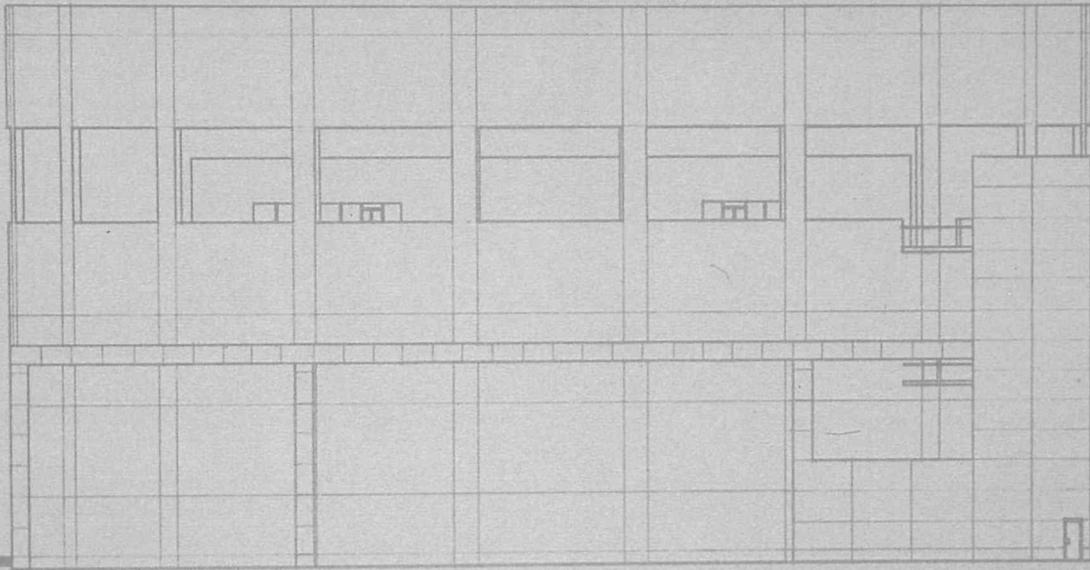
FOURTH FLOOR PLAN  
SCALE : 1" = 16'-0"



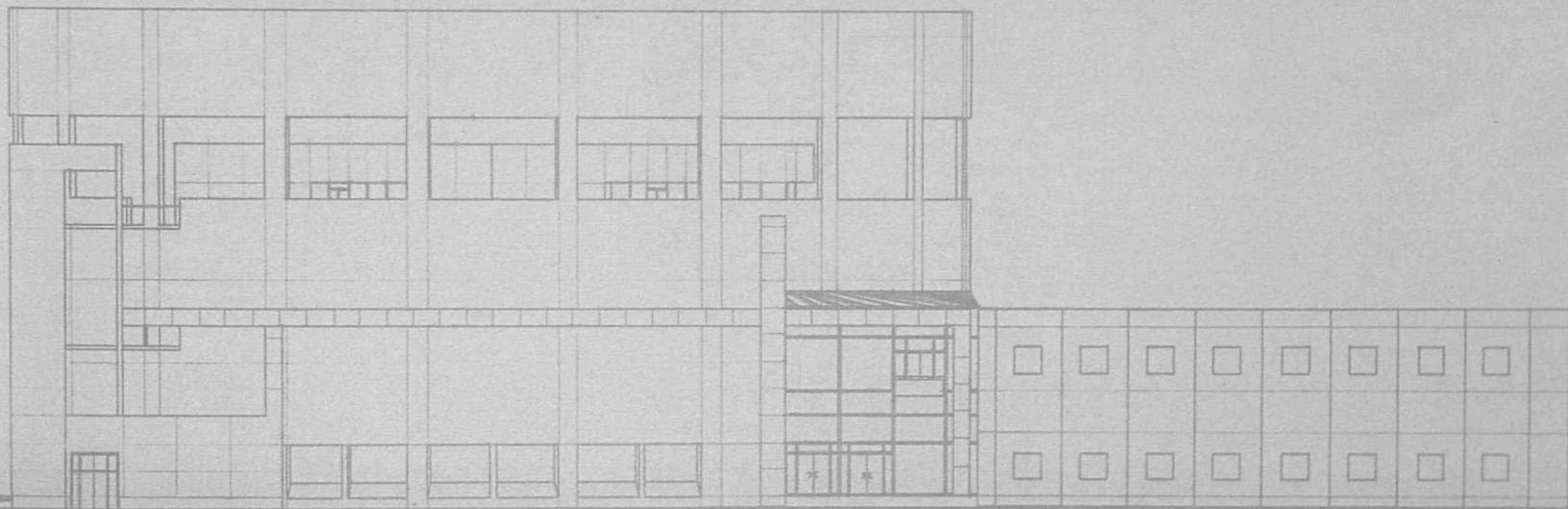
STRUCTURAL PLAN &  
FAN-COIL TERMINALS HVAC SYSTEM  
SCALE: 1" = 6'-0"



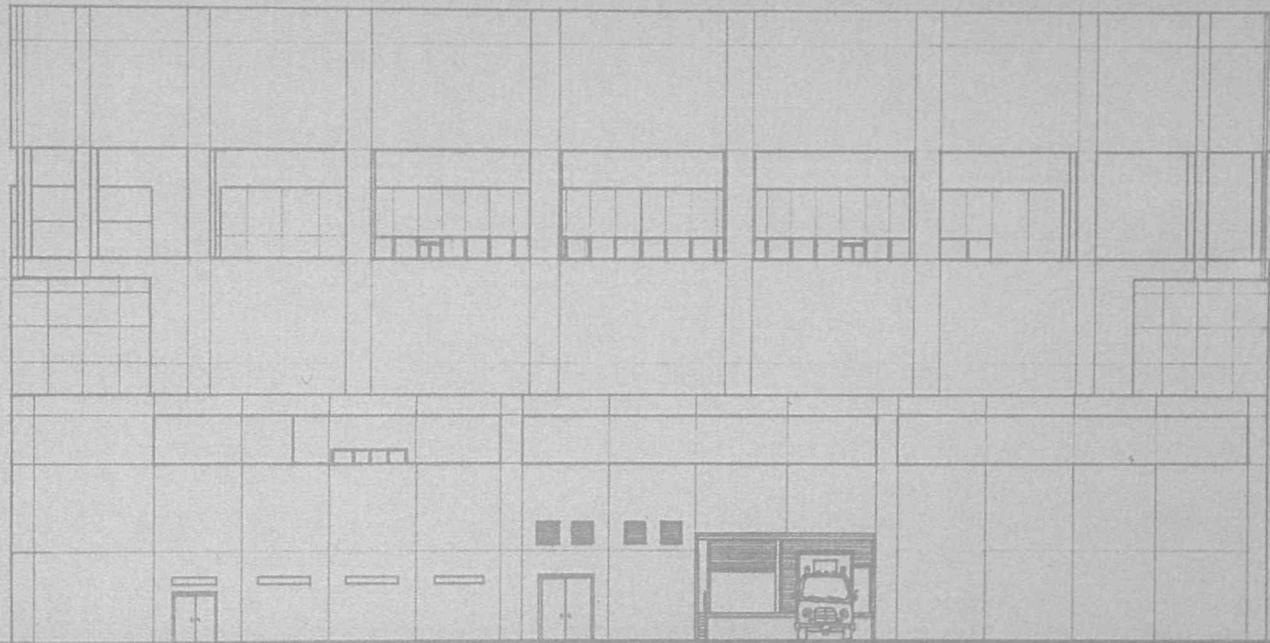
NORTH ELEVATION  
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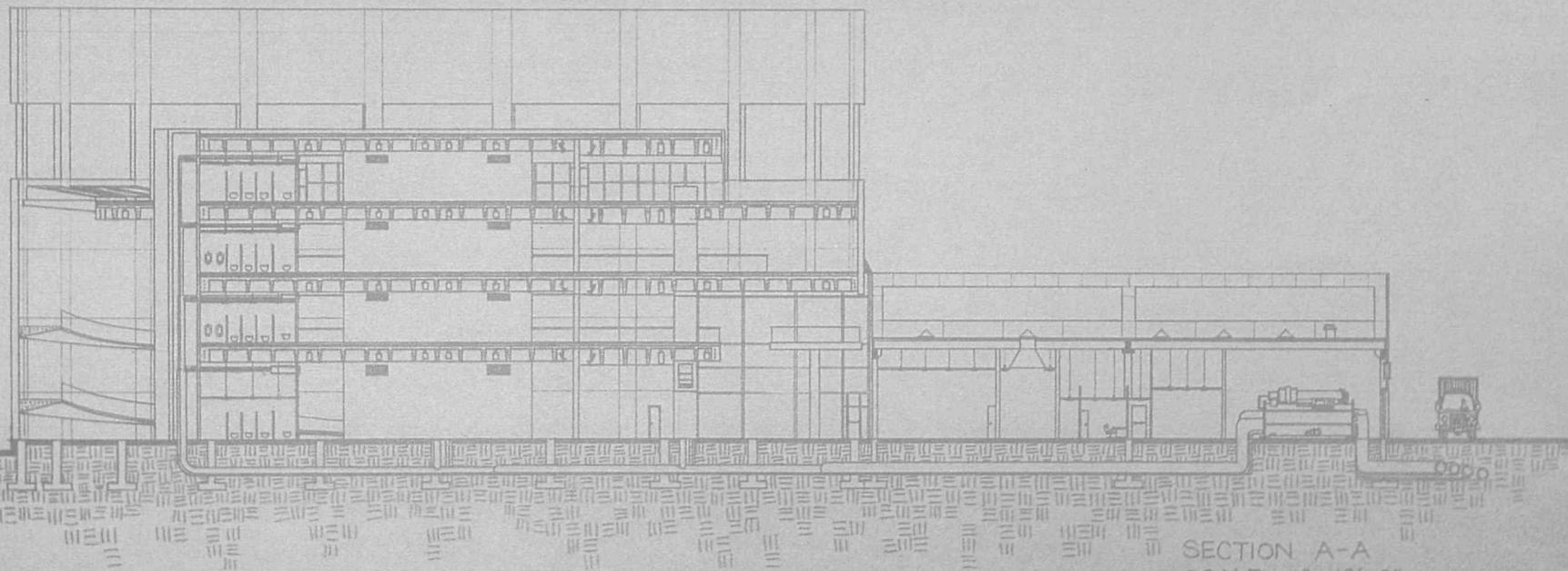
WEST ELEVATION  
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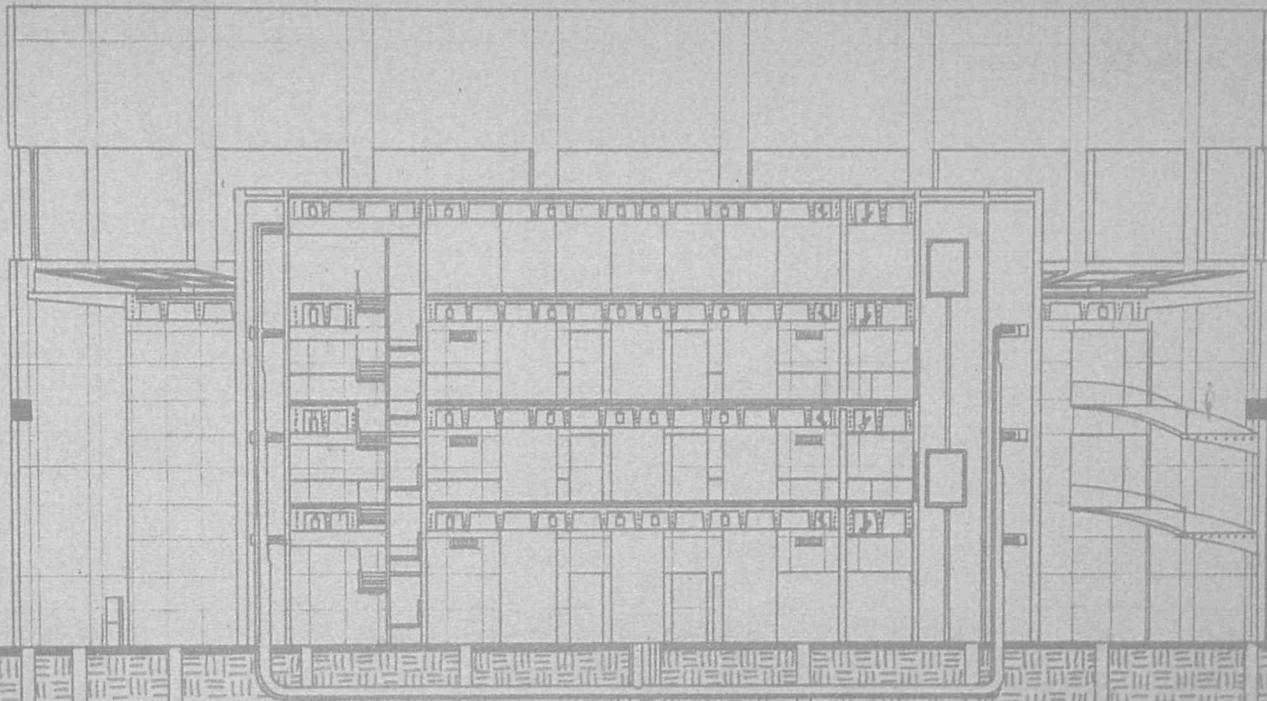
SOUTH ELEVATION  
SCALE : 1" = 16'-0"



EAST ELEVATION  
SCALE : 1" = 16'-0"

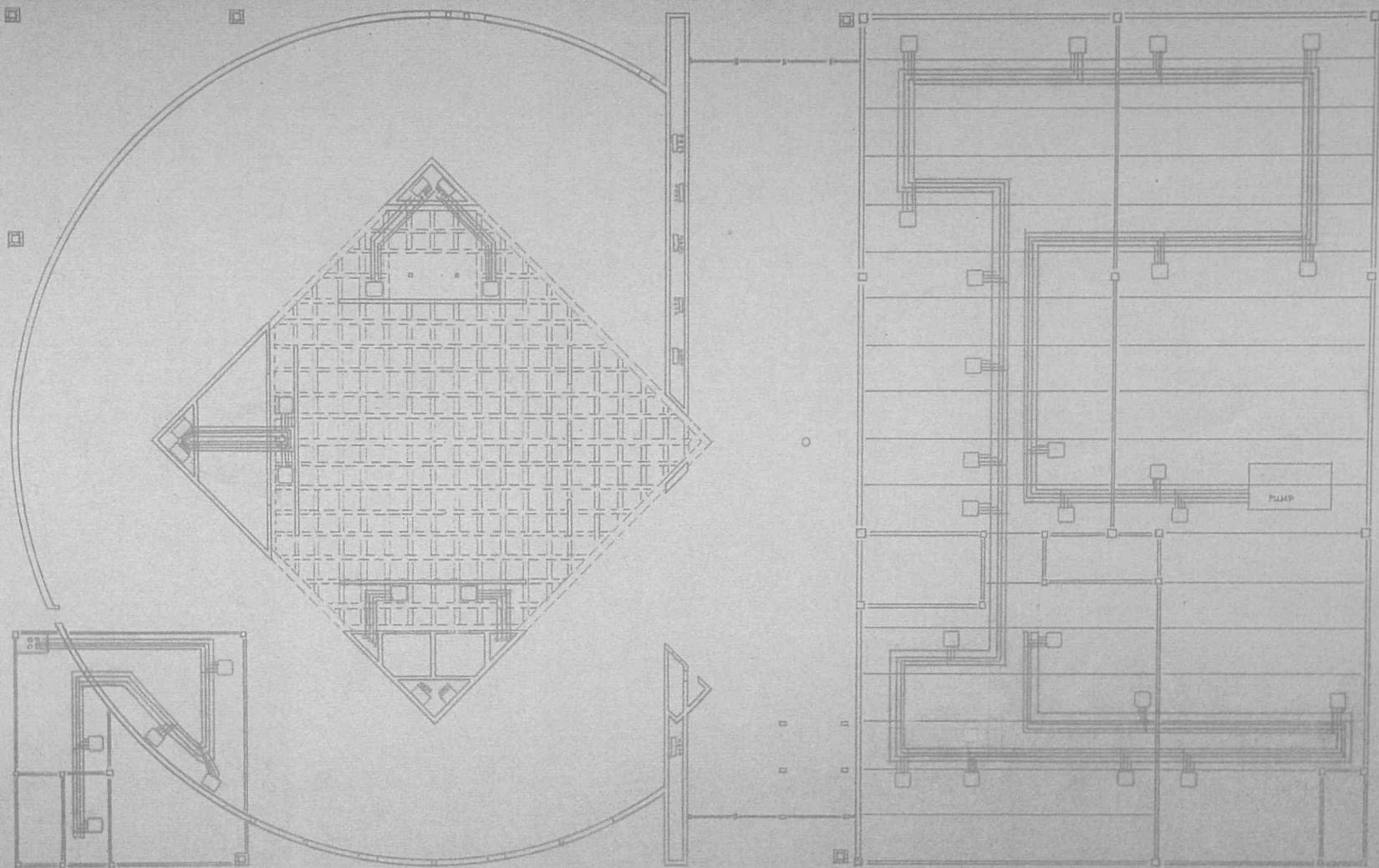


SECTION A-A  
SCALE: 1" = 16'-0"



SECTION B-B  
SCALE: 1" = 16'-0"

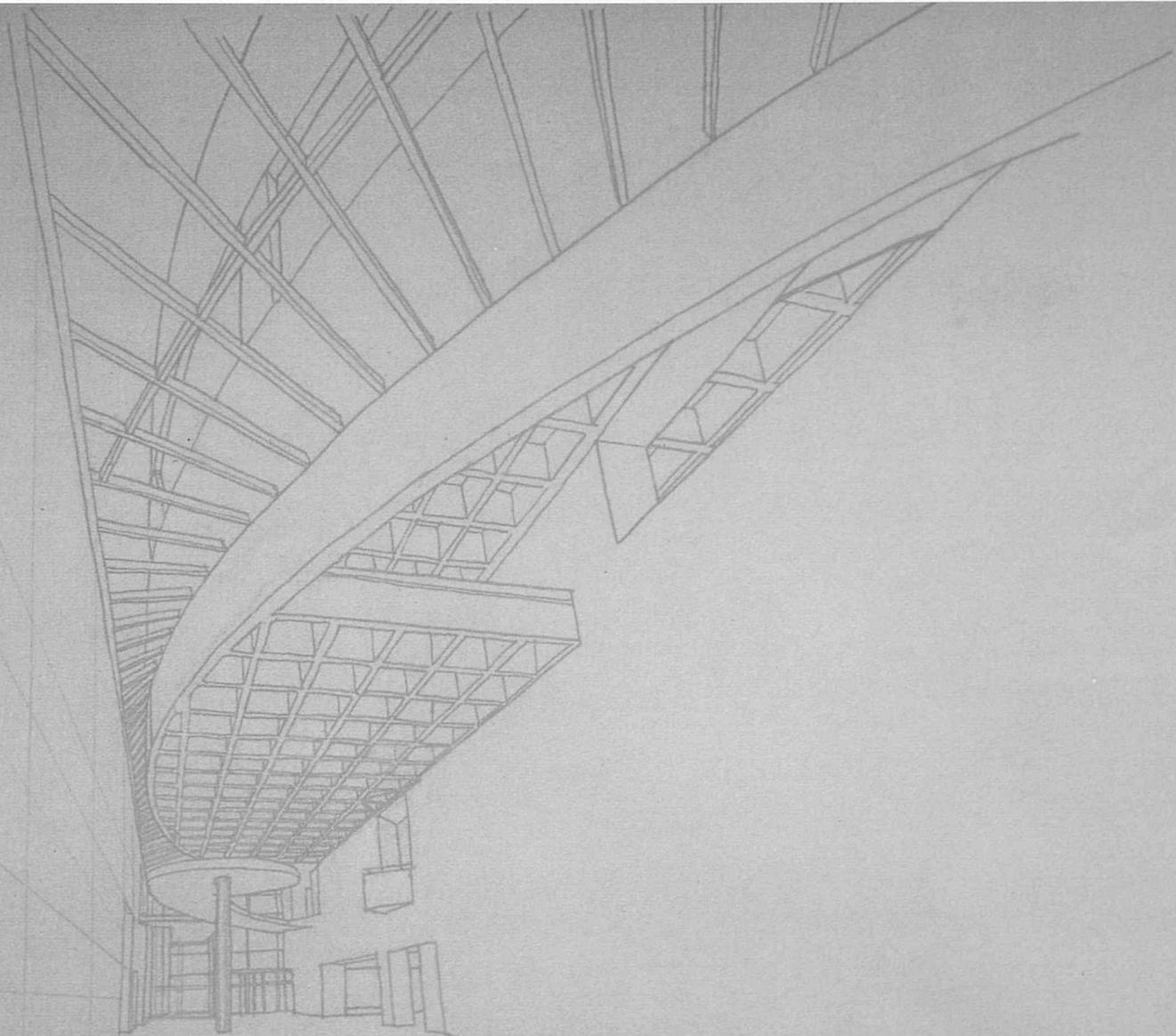




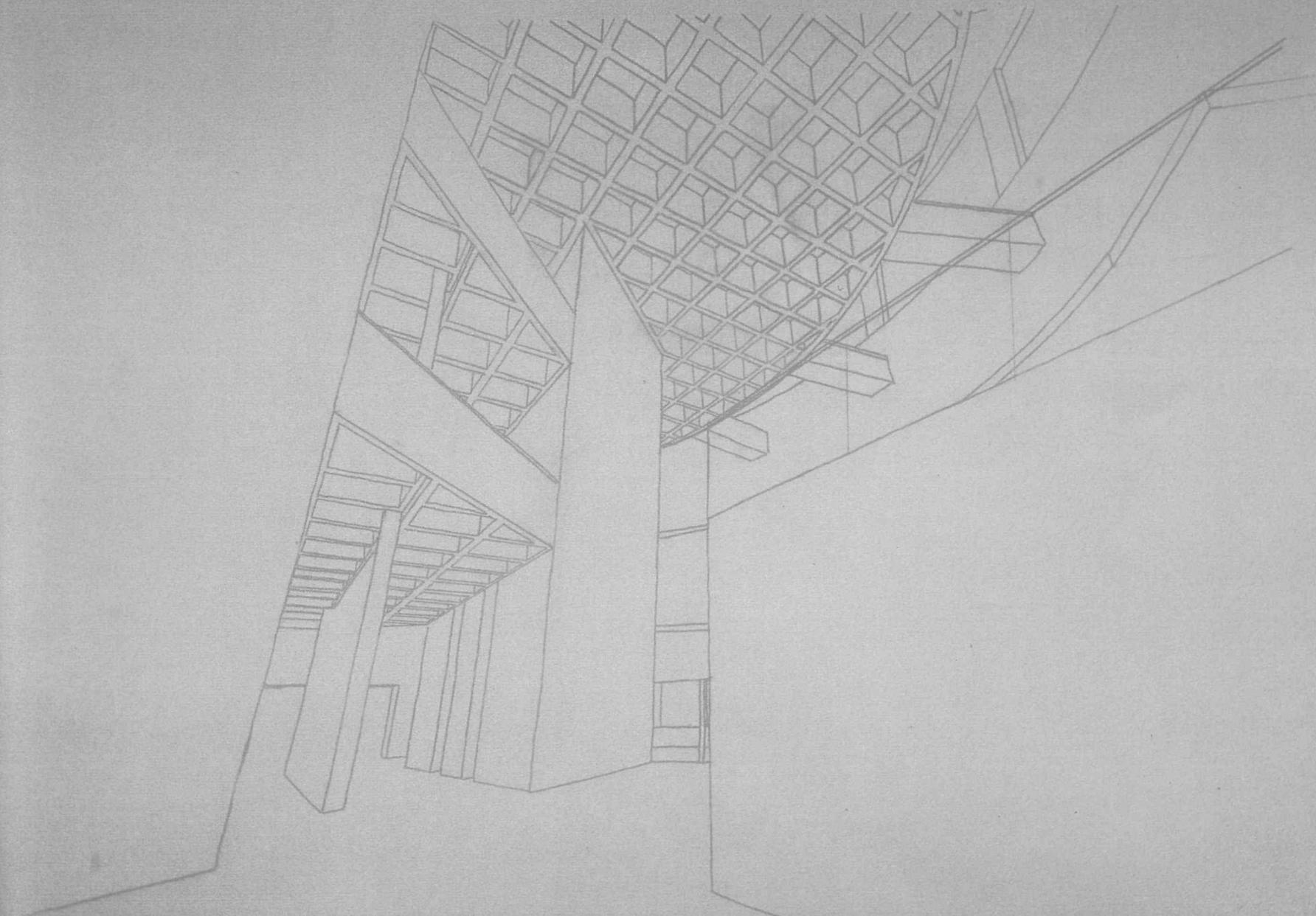
STRUCTURAL PLAN &  
FAN-COIL TERMINALS HVAC SYSTEM  
SCALE: 1" = 16'-0"



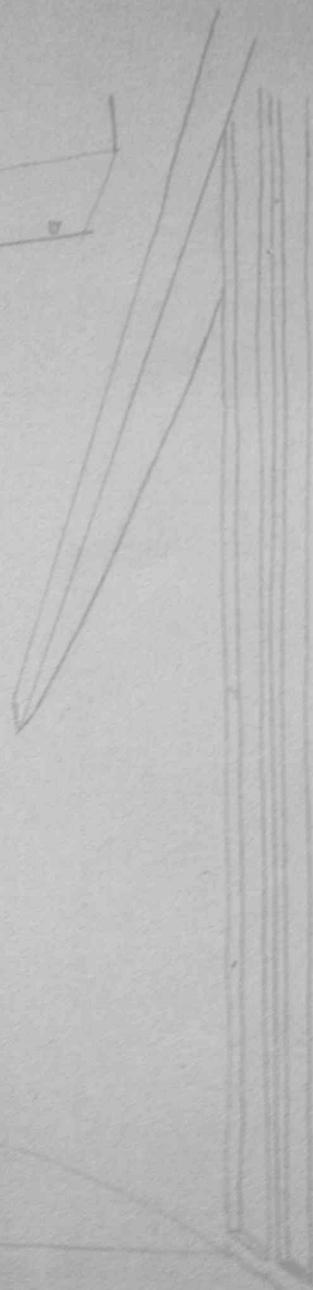
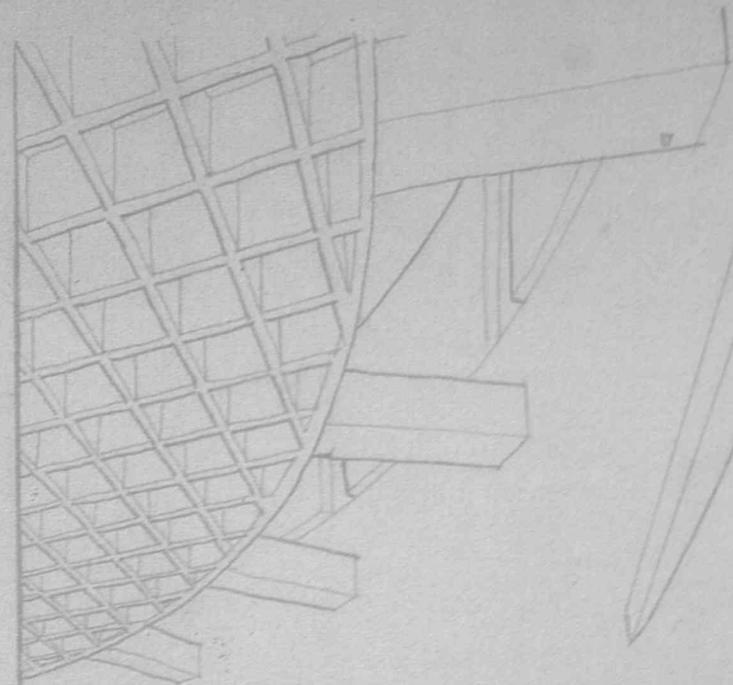
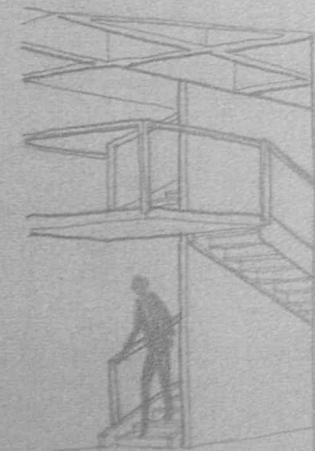
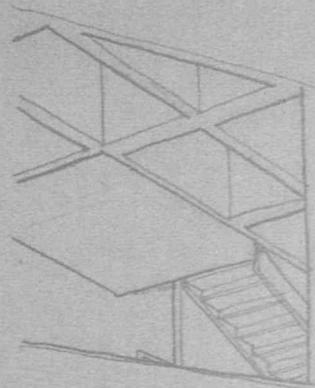
ENTRANCE PERSPECTIVE



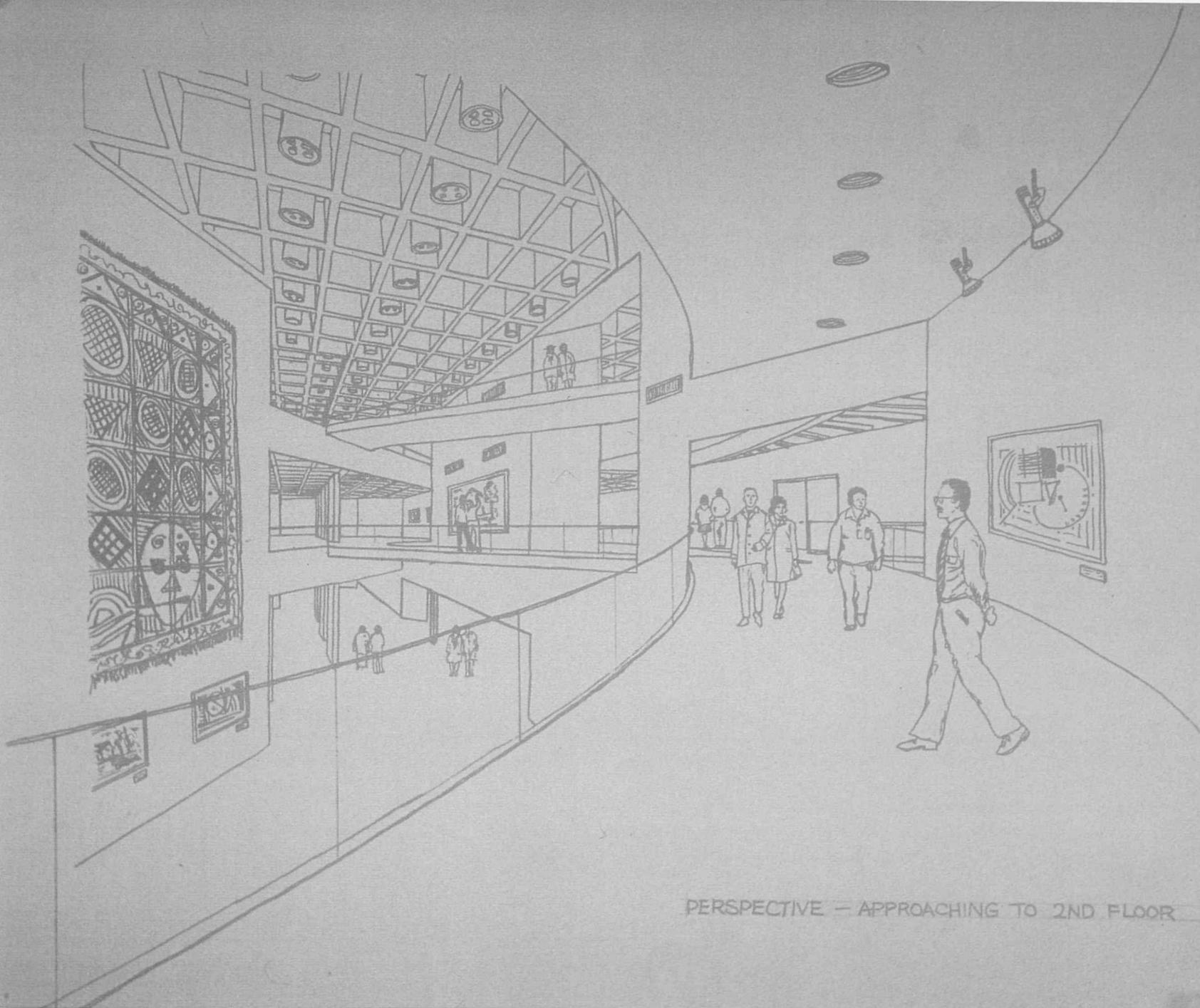
VIEW TOWARD ENTRANCE



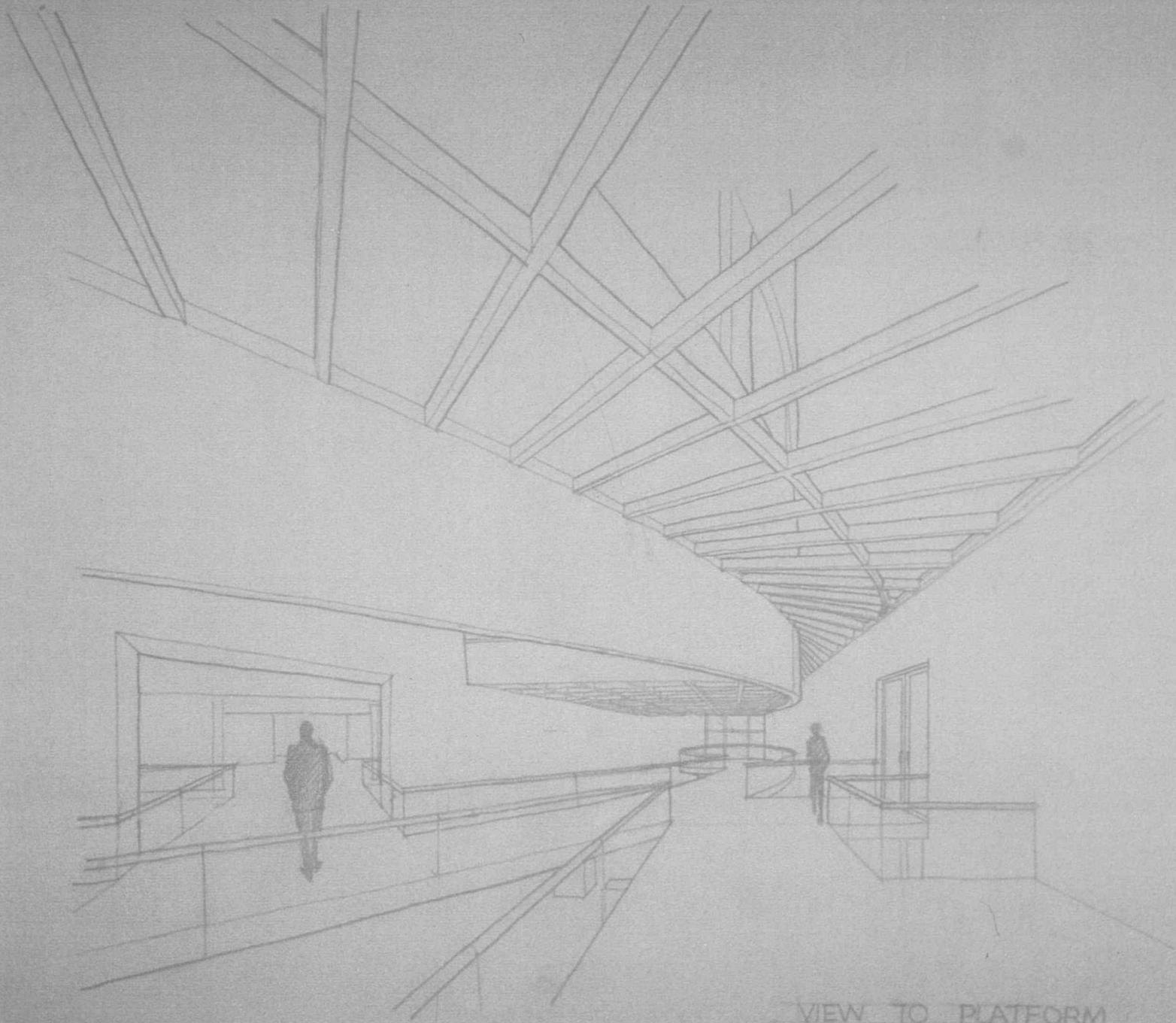
GROUND FLOOR PERSPECTIVE



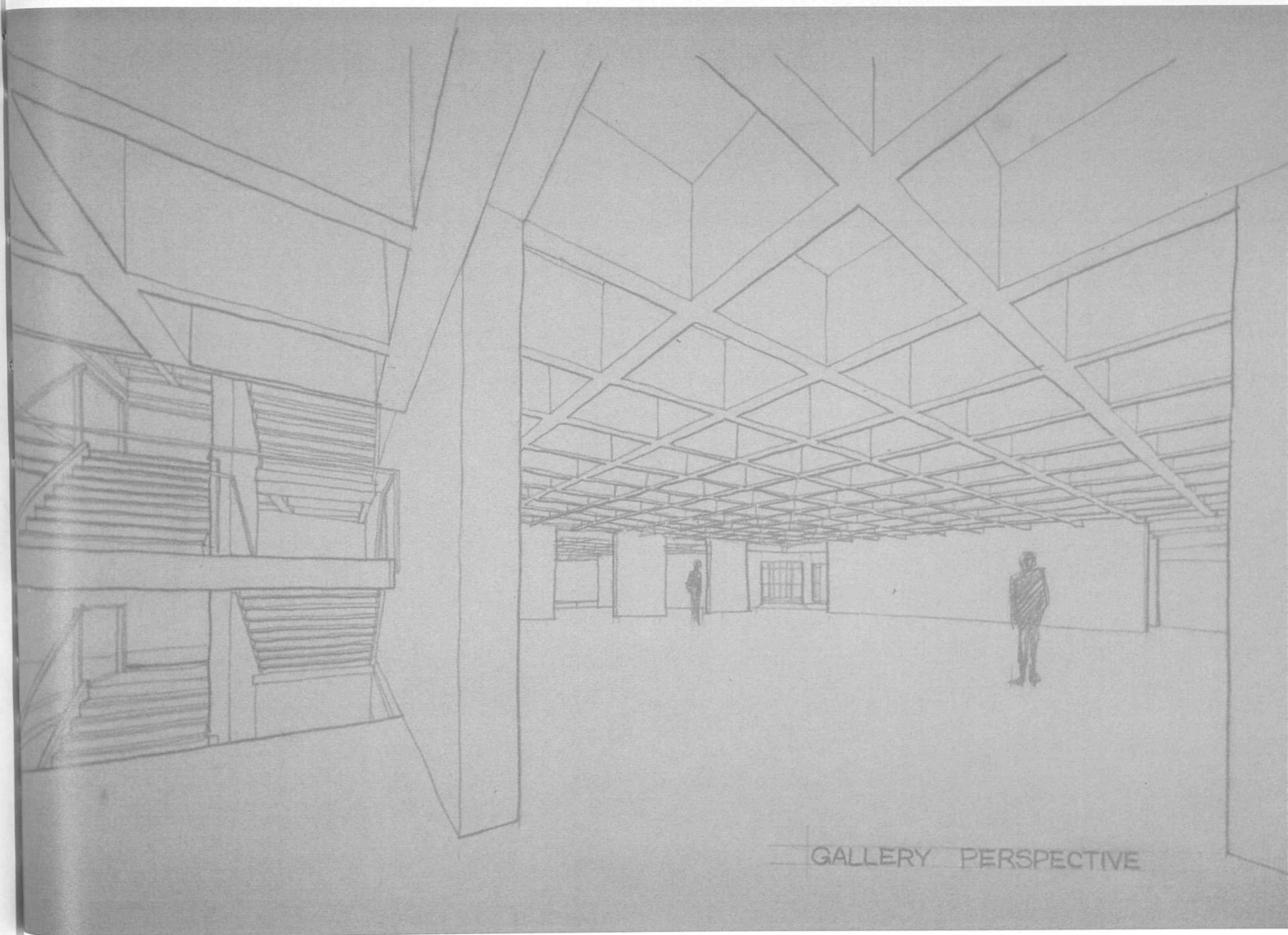
VIEW TO RAMP



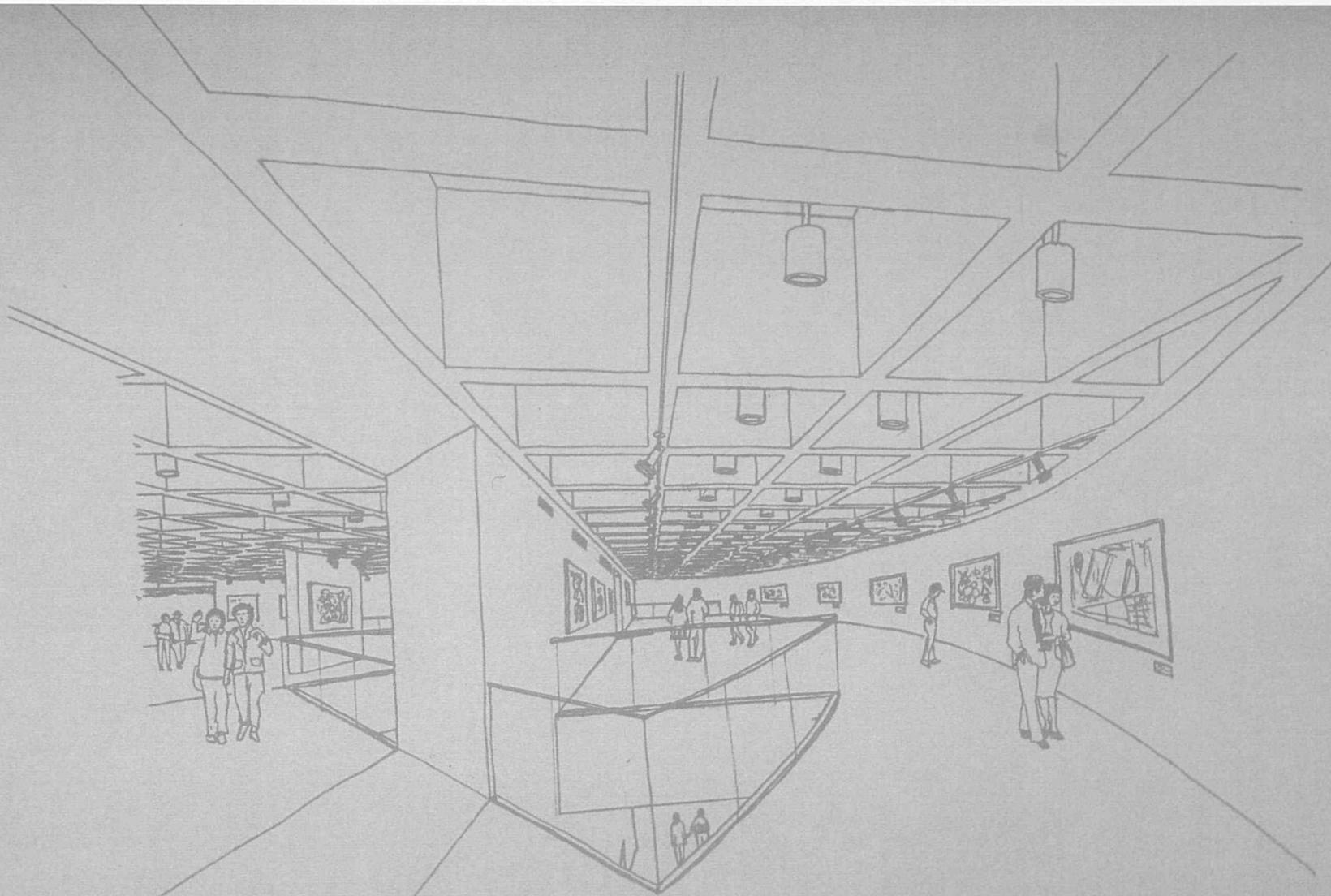
PERSPECTIVE - APPROACHING TO 2ND FLOOR



VIEW TO PLATFORM



GALLERY PERSPECTIVE



3RD FLOOR INTERIOR PERSPECTIVE



ROOF GARDEN PERSPETIVE

