

A CIVIC CENTER DESIGN

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## INTRODUCTION

The problem facing Kansas City is the problem that sooner or later faces towns everywhere--middle-aged spread and a weakening heart; but where some towns have reached a crisis, Kansas City is at work in a bold solution to avoid it--a whole new set of arteries before the old ones harden, plus some vital surgery to keep its core alive.

Bolstering a central district that is losing business to the suburbs and fading around its edges into a typical collar of slums, Kansas City's answer is one that other cities will want to study closely. It is a giant web of expressways, knitting center and suburbs together and spidering out into the new national highway system. Girding the core will be a close-in "ring road", a huge coronary artery to pump customers into new peripheral parking, to by-pass the 40 per cent of through traffic now blocking downtown streets, and to frame the heart's dying outer cells for piece-by-piece renewal. Under this circumstance, an expanded Civic Center, which contains City Hall, Court House, Parental Home, Election Board Headquarters, Public Library, Board of Education Headquarters, Legal Office Center, Federal Office, State Office, Police Building, Kansas City Museum, Children's Museum, Planetarium, Aquarium, and two Office Buildings, is strongly desired.

The Civic Center area is a small but unusually important part of the larger central business district. Every effort must be made to project and improve the Civic Center in its relation

to the business district, so that such areas can better perform their function and can more successfully compete with the new outlying business districts.

It is now a widely accepted ideal that a broad scale approach must be made before design. Starting with a study of general background of CBD, transportation and parking problems, pedestrian safety, revitalization of retail business, and an organization of the downtown into an efficient and healthy heart of urban life, then the project of development of an expanded Civic Center will follow.

A Civic Center for Kansas City, Missouri, was proposed to be located in a nine-block area bounded roughly by Cherry, Eleventh, McGee, and Fourteenth Streets. Already located in this area are the City Hall, Court House, Police Building, Parental Home, New Public Library, and soon, the Federal and State Office and Legal Office Center. The new buildings selected for location in the Civic Center are Kansas City Museum, Planetarium, Aquarium, and Children's Museum.

The three-block area, which contains the existing buildings of Parental Home, Election Board Headquarters, and the under-construction buildings of Federal and State Offices, will not be included in this report. The design of a six-block area is no more the result of the designs of individual buildings or groups of buildings, than is the design of a single building the product of the accumulation of well-designed rooms. The planning of the larger area requires a single underlying design concept just as the design of a building requires a concept to hold together the

individual parts and to make them into a work of art.

To practice the art, the following order is used:

1. The Site and Surroundings
  - a. Physical size, limitation characteristics
  - b. Traffic to the site
  - c. Topography
  - d. Location of existing buildings
2. The Building Elements - Functional Interrelationships
  - a. Diagrammatic relationships
  - b. Physical or space requirements
3. The Architectural Organism - Planning
  - a. Specific considerations
  - b. Translation from diagrammatic to three-dimensional scheme of space form and function
4. The Plans - Synthesis

Further plan study and correction
5. Presentation

## BACKGROUND

To give a general background explanation, almost fifteen years ago a "loop" highway express system around the entire Central Business District, fed by seven major converging expressways from the outlying city, was planned by the City Plan Commission of Kansas City, Missouri. Now virtually three-fourths complete, the loop places Kansas City far ahead of most other cities in the country in making the Downtown easily accessible. (See Drawing No. 1).

From the CBD Survey of 1955, by the CPC, the survey indicated that the CBD has enough vacant and redevelopable ground area to expand within its boundaries. Kansas City has 21,720,000 square feet of floor space in the loop, which covers over 276 acres at the equivalent height of only 1.8 stories. Of the 425 acres within the expressway loop, there is 35 per cent in streets.

The city is located on the bluffs above the Missouri River at the mouth of the Kansas River. All major retail stores are in a reasonably stable belt of business, hotels, and recreational buildings. The planning of the loop freeway eliminated the worst of the surrounding blighted areas and luckily occurred on terrain which was easy to develop without excessive costs.

Another factor leading Kansas City to a redevelopment action is an active slum clearance program by the Land Clearance for Redevelopment Authority. A decade ago, enabling legislation was secured from Missouri and the City Council to establish this Authority and put the slum clearance machinery in motion. Nearly one-fourth of the 425-acre Central Business District is in some form of redevelopment at the present time:

On the north--the area between the 6th Street Freeway and 8th Street.

On the east--the area from Oak to the East Freeway on Campbell, generally known as the North and South Humboldt Redevelopment Areas, contains the greatest number of redevelopable building sites.

On the south--the area between 13th and the crosstown Freeway.

On the west--the area west of Central Street to the bluff, the largest area by blocks, part of which has been redeveloped, and part of which is limited to certain types of development because of the topography.

#### CBD Facts

(From CPC-CBD Survey, 1956, and "A Study of Parking Needs", Wilbur Smith and Assoc., 1956)

Size: 425 acres inside expressway loop

148 acres in streets or approximately 35% of total

#### Permanent Buildings and Improvements:

Total floor space - 21,720,000 sq ft	100%
Office and business floor space	29%
Parking and garages	14.2%

#### Persons Daily Entering CBD:

At peak accumulation:

1956	300,000	57,000
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#### Vehicles Daily Entering CBD:

At peak accumulation:

1956	Private - 125,647	17,290
	Transit - 4,005	132

#### Vehicles Parked

At peak accumulation:

13,400

#### Premises

1. The CBD will continue to grow in area and in density of structures, although at a slower rate, the larger the city becomes. It contains sufficient room for this growth

for 50 years.

2. The principal elements in its growth will be:
  - a. Large office buildings
  - b. Peripheral parking facilities which will replace lofts and obsolete small structures.
3. The principal offices of the major local governments and most State and Federal Offices located in Kansas City shall be within the CBD.
4. A grouping of public buildings will be a desirable necessity.
5. The CBD will need to have one governmental heart or focal point instead of possible dual center as now exists.
6. Mass transit will continue to serve an important function in CBD transportation together with improved auto traffic circulation.
7. The principal reasons for congestion of circulation within the CBD are:
  - a. Conflicting vehicular uses (lack of separation of auto and pedestrian, curbed busses and trucks, etc.)
  - b. Lack of by-passes for through traffic (will be corrected by planned freeway loop)
  - c. Efficient planning of structure (inadequate truck docking and off-street parking).

#### THE CIVIC CENTER

Of the possible tentatively planned areas that are available



for redevelopment and coincidental with a Civic Center, most desirable is the east side area near the present City Hall. (See Site 2, Drawing No. 1.) It is on the dividing line between high density commercial uses and the Humboldt redevelopment area. . This is a unique chance to control and help develop the area around the City Hall.

The alternate area for Civic Center redevelopment would be around the Municipal Auditorium Site 3, which has some advantages as a center but is so close to valuable private hotel and commercial land and structures that it would be expensive to build upon for the immediate future. This area, which is becoming a convention center of highly transient turnover, needs and uses night and day parking facilities. A place most conducive for an area of constant transient activity is not work in government offices, library, etc. Here, the closest possible land available for library and other civic projects is still further from the ideal center than from the other two sites.

Another area, Site 1, which has been suggested for a civic center, and which has possibilities, is the Northside Redevelopment Area over and near the Federal Building. This area is the most limited in development possibilities because of rough topography, distance from the ideal center, and vertical walking as well. It can and will be developed for parking and certain outlying businesses, but would be questionable for a Civic Area development because of its general location and relation to the largest part of the City Area, which is to the East and South. It is, so to speak, at the back door of the CBD. Eighty per

cent of all library users are from the east or south parts of town and in Jackson County.

Developing the Site 2 area as the Civic Center has future advantages for the entire CBD for if it is not developed in several projects to the bluff, the stability of the entire CBD will be destroyed by moving its center of value and intensity. The East Side Civic Area being developed would tend to help stabilize the entire CBD in all directions. The ultimate idea of planning here is to help stabilize and make for a more orderly growth. This can be accomplished by not over or under developing one area of the CBD against another, but in cooperation or conjunction with each other.

If this choice is accepted, the Civic Center will be located in the area bounded roughly by Locust, Eleventh, McGee, and Fourteenth Streets. There are some other important reasons for this choice.

1. Already located here are the City Hall, Court House, new Public Library, two Office Buildings, and soon the Legal Office Center.
2. Economics of proposed site.
3. Closeness to retail center--11th and Walnut.
4. No need of walking up hill from business center as at present location of 8th and Locust (equivalent to five stories).
5. Adequate parking and direct access to freeway.
6. With the high concentration of people in the downtown area, greater use of Civic Center facilities could be



made at downtown location during daytime.

7. A permanent population at the core of the city, which would make the Central Business District a healthy financial community sixteen hours a day and seven days a week, instead of a deserted village after dark and over week-ends. There is a growing group of people to be served here (childless couples, bachelors, single women, widows and widowers, the retired, etc.). Many people in these categories have no desire for houses with yards to keep, and yet they wish to be near where things are going on!
8. Convention and transient guests from out-of-town would be conveniently located near the Civic Center and could visit the facilities, whereas the chances of doing so would be less were the buildings located outside the Central Business District.
9. Ample parking spaces in the downtown area would be used to advantage in evenings and for the Civic Center from all points of the city.

#### THE SITE

The Civic Center is finally proposed to be located on the area bounded roughly by Locust, Fourteenth, McGee, and Eleventh Streets. (See Drawings Nos. 1, 3, 17.)

1. On the west--The area between McGee Avenue and Wyandotte Avenue is generally known as the commercial area.

2. On the north--One block from the Civic Center is the transportation center, which will handle cross-country and interurban traffic of all types--buses, fast public transit from surrounding areas, and helicopters linking downtown with the Mid-Continent Airport. Hotels and Y.M.C.A. are also located close by.
3. On the east--Adjacent to the Civic Center is the area proposed for the Federal and State Offices. Existing buildings in this area are Police Building, Parental Home, and Election Board Headquarters.
4. On the south--One block away is the Crosstown Freeway. The area adjacent to the Civic Center is proposed for light industrial district.

The final site dimensions would be 625 feet on the north and south sides, and 1370 feet on the east and west sides, including Oak Street running north-south, Thirteenth Street running west-east, and closed Twelfth Street.

5. Existing buildings--City Hall, Court House, Public Library, two offices, and soon a Legal Office Center. All are located on the north side of the Civic Center, occupying roughly one-half of the total area. The remaining area is proposed for Kansas City Museum, Children's Museum, Planetarium, and Aquarium.
6. Elevation--The north-east corner occupied by the City Hall is the highest point (+205). The slope drops downward to the southwest corner, which is the lowest point (+145).

7. From Sec. 65, 170 District CPR of the Zoning Ordinance, published by the Council of Kansas City, Missouri, 1956, the following regulations are stated for redevelopment area:

- a. Height--Other than apartment type use, any permitted in a district CPR shall not exceed six (6) stories in height, and shall not exceed seventy-five (75) feet in height
- b. Buildings or structures for any other than apartment type use, permitted in a district CPR shall have a minimum depth of ten (10) feet, plus sidewalk on front yard, eight (8) feet plus sidewalk on side yard, and fifteen (15) feet on rear yard.
- c. Each space, unless otherwise adequately provided for, shall consist of a ten (10) foot by twenty-five (25) foot loading space with fourteen (14) foot height clearance for small trucks, such as pick-up trucks, and a ten (10) foot by forty-five (45) foot loading space with fourteen (14) foot height clearance for large trucks, including tractor-trailers.

#### CIVIC CENTER PROGRAM

- 1. Already located here are City Hall, Court House, Public Library, two office buildings, and soon a Legal Office Center.
- 2. The new buildings selected for location in the Civic

Center are:

- a. Kansas City Museum--The great success of the Kansas City Museum proved the great need for such an institution. Consider how much more use it would receive in a Civic Center location.
- b. Planetarium-Aquarium--Always of great appeal, this building could be operated in conjunction with the Museum as the present Planetarium.
- c. Children's Museum--This facility could easily be used in conjunction with the Children's Library. Also providing space to exhibit the work of the city's children and traveling exhibits tailored for the young, the Children's Museum could become an invaluable center for education.

### TRAFFIC

In the 1957 survey, the consultants re-evaluated CBD traffic, as given in the "Expressways" report in the light of 1957 data. The results of the consultants' study are summarized in Tables 1, 2, and 3.

Table 1. Internal (urban area) trip summary, average weekday trips to and from and within the central business district.

	: : Auto	: : Taxi	: : Truck	: : Total trips	: : Per cent of grand total**
1957	100,954	13,935	15,970	130,859	9.9
1970	185,159		23,727	208,886	11.1
1980	212,483		25,429	237,912	10.8

\*\*Grand total of all trips to, from, or within internal area.

Table 2. External\* trip summary, average weekly trips to and from the central business district.

	: : Auto	: : Trucks	: : Total trips	: : Per cent of total**
1957	11,962	1,221	13,183	7.5
1970	16,375	1,748	18,123	9.2
1980	21,490	2,242	23,732	8.7

\*External - outside the cordon line which bounds the urban area.

\*\*Grand total of all trips to and from external area.

Table 3. Total trips, internal and external, to, from, and within CBD.

1957	:	1970	:	1980
144,042		227,009		261,644

Source: Smith, Wilbur and Associates, "Kansas City Metropolitan Area - Origin and Destination Survey".

The automobile, as it has become a major factor in transporting the public, has taken over a sizable volume of traffic from

public transit vehicles.

To improve traffic, the following suggestions are given:

1. Provide by-passes for traffic with destination beyond the CBD (current policy is a system of freeways now under construction).
2. Provide parking spaces for 16,000 cars within walking distance from the CBD center.

In the next few years 700 curb spaces in CBD will have to be eliminated to provide the normal increase in traffic. In addition, there is a parking demand of 2,000 cars more than projected in the North Side Project and the Auditorium Parking Plaza ("A Study of Parking Needs," by Wilbur Smith and Assoc., 1954). So, by 1964, 2,700 more off-street spaces will be needed within CBD on a very conservative estimate, making a total of 16,000 spaces.

Out of the 12 sites studied by the Traffic Survey (by Wilbur Smith and Assoc., 1954) for possible East Side parking garages, five sites were in the proposed Civic Plaza blocks, as well as four more that were adjacent. The most feasible at the time was in the block on Oak Street, north of the proposed Civic Plaza; so that based on this survey, the Civic Plaza area would logically be placed high on the list for development of East Side parking.

3. a. Provide direct access from the freeways to these parking spaces.

- b. Limit access from the expressways to downtown streets (this is the present policy).
4. Provide separation of all vehicular auto traffic from bus, truck, and pedestrian traffic. This can be done by such a device as an elevated pedestrian concourse of moving sidewalks as a major supplement for surface transit within the CBD and a more efficient connecting system between garages, bus terminals, offices and shopping areas; and by using the wider one-way streets as lanes for transit bus and auto only, and eliminating buses on the faster one-way streets. Where possible, certain streets would be closed to all traffic during rush hours.

The foregoing will substantially relieve downtown streets of unnecessary auto traffic mixed with pedestrian traffic and will provide more space for mass transit vehicles, which provide transportation for 33 per cent of all persons coming into CBD at the time of peak accumulation. ("A Study of Parking Needs," by Wilbur Smith and Assoc., 1954).

Other specific traffic data affecting the Civic Center are given in the following (see Drawing No. 1):

1. Most traffic in CBD generally goes north-south. If this is true, then any cross traffic (east-west movement) would slow down or impede the north-south movement.
2. Since Twelfth Street does not connect to the east freeway, but both Tenth and Eleventh do connect, and also Thirteenth and Fourteenth, then it seems that Twelfth is of less importance than it has been.



3. In the Traffic Survey (Gorden Count), Twelfth has less traffic in either direction than all other immediate streets surrounding it.
4. Traffic confusion and slowness on Twelfth is due in part to the mixing of transit with auto, trucks, deliveries, and pedestrian traffic.
5. In the Humboldt Redevelopment area, upon completion of the East Freeway, Charlotte Street will have less traffic on it. It could be made a two-way street. Because it is in the South Humboldt Redevelopment area, it could be made wider immediately in that area and later widened through the North Humboldt area, thus easing the necessity of having two one-way streets, or Holmes Street and Charlotte. Holmes Street can be taken out as a through street.
6. Holmes Street does not connect to the freeway on the North, so it can be eliminated to make larger more desirable blocks in the Humboldt area. These blocks can be of use to new development of a commercial or light industrial use.
7. Cherry and Locust Streets are connected to the freeway on the north and cross over the freeway on the south. It seems that these streets can be made one-way streets.
8. Likewise, in the South Humboldt Area, Thirteenth and Fourteenth Streets are east and west one-way streets that connect to the freeway on the east.
9. Both Tenth and Eleventh are connected to the freeway on



the east, and Tenth Street will be in the North Humboldt Redevelopment Area.

### Parking

Since emergence of automobiles as major means of transportation, it has been recognized by city planners that adequate parking in the central business district of cities is a necessity.

A possible parking space table of the Civic Center is given in Table 4. (See Drawings No. 18 and 19.)

Table 4. Basic parking at stages of realization.

Stages of realization site	:	Present parking	:	Proposed parking	
				Private	Public
Library site		55			82
Court House		145			233
City Hall		177			210
13th to 14th		151		342	
Oak to McGee					
13th to 14th		216		331	
Oak to Locust					
Parking - Public					525
Private				672	
Gross total		744		1197	
Total net gain in parking				453	

### PROGRAM FOR INDIVIDUAL BUILDING

#### Kansas City Museum

The present Kansas City Museum has proven the great need of

a larger institution in the Civic Center to serve the Kansas City community. The project based its name on a vision of what Kansas City was and could offer in the field of regional history, natural history, and anthropology.

1. Entrance vestibule.
2. Public galleries, 35,000 square feet.
3. Study and special collection
  - a. Living storages.
  - b. Study rooms.
  - c. Small library.  
Librarian's office.  
Work place.
4. Auditorium (available after museum hours), 400 seats.
  - a. Lobby, coat room, toilets.
  - b. Stage for speech and demonstration.
  - c. Projection booth, film storage.
5. Service for public.
  - a. Information desk.
  - b. Coat room.
  - c. Sale of books, pamphlets, souvenirs.
  - d. Lounge, coffee shop.
  - e. Toilets.
6. Housekeeping service.
  - a. Employees' locker rooms, toilets.
  - b. Lunch room and lounge.
7. Mechanical room.
8. Service connected with exhibition objects.

- a. Receiving room.
  - b. Superintendent's office.
  - c. Work area and shop.
  - d. Photo and print rooms.
9. Administration.

- a. Director and secretary.
- b. Curator and secretary.
- c. Staff office.
- d. File and office storage.
- e. Conference room.
- f. Reception room.

(See Drawings No. 7, 8, 9, 21, 22, and 23.)

### Children's Museum

This facility will be used in conjunction with the Children's Library, which is placed at lower floor of the Public Library. Also providing space to exhibit the work of the city's children and traveling exhibits tailored for young, the Children's Museum could become an invaluable center for education.

#### Requirements:

- 1. Entrance vestibule.
- 2. Public galleries, 20,700 square feet.
  - a. Art.
  - b. Science
    - Geology, mineralogy, botany.
- 3. Storage, live storage.

4. Members' rooms (available after museum hours).
  - a. Studios.
  - b. Working rooms.
5. Library and study room.
  - a. Study room.
  - b. Librarian office and working room.
6. A small auditorium (available after museum hours),  
200 seats.
  - a. Lobby, coat room, toilets.
  - b. Stage for speech and demonstration.
  - c. Projection booth, film storage.
7. Service for public.
  - a. Information desk.
  - b. Coat room.
  - c. Sale of books and pamphlets, and souvenirs.
  - d. Lounge and snack bar.
  - e. Toilets.
8. Employees' room.
  - a. Employees' locker rooms and toilets.
  - b. Lunch room and lounge.
9. Mechanical room.
10. Service connected with exhibition objects.
  - a. Receiving room.
  - b. Superintendent's office.
  - c. Work area and shop.
  - d. Storage.

## 11. Administration.

- a. Director and secretary.
- b. Curator and secretary.
- c. Staff office.
- d. File and office storage.
- e. Reception room.
- f. Conference room

See Drawings No. 10, 11, 24, 25, and 26.

## Planetarium and Aquarium

Always of great appeal, this building could be operated in conjunction with the Museum, as the present planetarium is.

### Requirements:

#### 1. Lobby.

Information desk with provision for the control and admission of visitors.

#### 2. Exhibition place

##### Planetarium:

- a. Space for the display of models of satellites, rockets, maps, drawings, etc.
- b. Exhibition preparation room.
- c. Planetarium chamber, 240 seats.
- d. Classroom, 240 seats. (For explaining general knowledge of universe with nine planets nearest the sun model on ceiling.)

Aquarium:

- a. Space for display of examples, drawings, pictures, samples, etc.
- b. Preparation room.
- c. Aquarium.  
Native fish, tropical fish.
- d. Supply room.

3. Lounge.

- a. Lounge.
- b. Refreshment or snack bar.
- c. Toilet facilities.

4. Administration.

- a. Director and secretary.
- b. Astronomer's office.
- c. Scientists' office.
- d. Staff office.
- e. File and office storage.
- f. Conference room.
- g. Reception room.

5. Employees room.

- a. Employees' locker rooms and toilets.
- b. Lounge and lunch room.

6. Storage.

7. Shop and working area.

8. Mechanical room.

9. Service entrance.

See Drawings No. 12, 13, 14, 27, and 28.

## DETAIL OF THE PROGRAM

The museum is an institution for the preservation, study, and display of objects, either natural or made by man.

The twentieth century has found the museum structure released from one of its most restricting traditions at a time when greatly broadened horizons are inviting a fresh functional appraisal. The general adoption of modern style was evidence of a fundamental change in architectural purpose and method that became apparent somewhat earlier in other branches of building, but did not take hold of museum design until the thirties. The older kind of building was designed almost wholly for exhibits. The present type provides wider use and promotes appreciation of individuality, with its conveniently placed administrative offices; curatorial rooms and live storages; library, reading room, and stacks; a well appointed auditorium; rooms for classwork; facilities for lending to schools; place for receiving temporary shows and for unpacking, registering, packing, and shipping; superintendent's office; photographer's laboratory, print shop; and mechanical shops of different kinds. Some museums have proportionately more than others of such specialized provisions, but every museum is advanced or archaic according to whether or not it provides realistically for its workers and their work.

Museum fields, which are broadly art, science, and history, are cultivated as a rule in such different ways that no one museum, unless it be in effect a group of separate institutions, can well deal with all these fields together. Even for a great

city this is so, and for a small community it is many times more true. Anthropology is a border-line subject. It appears in both history museums and science museums, because its materials are objects of culture history on the one hand and are commonly dealt with by scientific methods on the other.

A Children's Museum is one of many other kinds of museums. It not only has an exhibition purpose, but also acts like a club or center for children to work together and study together.

Planetarium and aquarium are also museum type structures similar to a science museum, only specialized.

### Requirements of the Public<sup>1</sup>

For successful design of a museum type structure, many requirements are important.

1. Easy access to various parts of the building, including information desk and directory board.
2. Circulation that is simple to find, adequate in size, and well marked.
3. Galleries that are effective for display of exhibits.
4. Facilities for relaxation as a relief from the concentration of attention which the galleries should induce.
5. Ready contact with the curatorial and docent staff.
6. Differentiation of general display from material for background study, with easy access to the latter and

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<sup>1</sup>Forms and Functions of 20th Century Architecture, Columbia University Press, 1952, P. 724, Vol. 3.



every convenience for such study.

7. Lighting and temperature conditions that will make the museum physically restful as well as mentally stimulating.
8. Adequate arrangements for the comfort and satisfaction of visitors--ranging from coat and parcel rooms and toilets in all museums, to lounges, library, etc., in the larger institutions.

#### Requirements of the Administration<sup>1</sup>

1. Comfortable space for work, with the curator as close as possible to his material and to other curators if there are several.
2. Accessibility of the staff to interested visitor, but reasonable protection from casual intrusion.
3. Adequate provision for receiving, unpacking, recording, storing, and shipping of material--a matter of first importance in all museums where an active program is envisaged.
4. Facilities for the preparing, repairing, and labeling of exhibits.
5. Planning for the easiest and most direct transportation of exhibits into, within, and out of the building; no

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<sup>1</sup>Forms and Functions of 20th Century Architecture, Columbia University Press, 1952, P. 724, Vol. 3.

floor inaccessible from grade or from direct elevator service.

6. Facilities for physical care of the building (such as cleaning, relamping, painting, etc.), and for the protection of the collections from fire, theft, and mis-handling.
7. Mechanical service, including air cleaning, humidity control, and the like, for the preservation of the collection.

### Exhibition Space

The psychological effect of good circulation is also a part of the impression every visitor takes away with him. In museums it has much to do with how the public views a collection, and thus with what they derive from it. Museum fatigue is a real problem, the more so as buildings spread out and galleries become more dependent solely on artificial light. One drawback when galleries are arranged to parallel a corridor is that, since it is psychologically easier to proceed straight ahead than to turn at right angles into a room, many visitors will pass by even major galleries. Nevertheless, corridors that do not supplant the galleries but facilitate access to any desired area as directly as possible are to be commended. Studies made at Yale some years ago showed that persons entering a gallery turn to the right over 70 per cent of the time and follow exhibits around to the right, frequently by-passing those on the left walls almost

entirely. So the designer's task is to use the following solution:

1. High ceiling display area for oversize objects.
2. Regular high gallery.
3. Live storage or preparation room.

1. One-way galleries are planned along a square open area, which is used for skylight purpose. Therefore one side only will be available, leaving the other side open.
2. All objects will be displayed on one side, the right side being preferred.
3. No corridor will be necessary in this case.
4. The first turn after entering the gallery will be a planned right turn.
5. Once visitors enter the gallery, they will naturally follow the carefully planned circulation to the end, and pay attention to one side only.
6. The webbed equilateral triangles (three directional T beams) on the top ceiling are installed with diffusion glass clocks, so that the entire exhibition area will be lighted by skylight, and at the same time artificial light can be employed when necessary.

## Lighting<sup>1</sup>

Both kinds of light, natural and artificial, have advantages and disadvantages. For instance, daylight has the advantage of a color range to which our eyes are naturally adjusted, and under which most works of art have been produced. However, some objects tend to deteriorate when exposed for long periods to light of certain characteristics. Various dyes, for example, fade under sunlight; for this reason, textiles are preferably exhibited under artificial light. Similarly, certain glass articles cannot be shown for any protracted period in direct sunlight, though other glassware is most effective with daylight coming through it. Finally, some pigments change color if kept permanently away from the daylight.

An advantage of the artificially lighted gallery is that it can give better effect and be more easily controlled than is possible by daylight, and it can always reveal each item in its best aspect, which is only a fleeting occurrence under natural light. However, artificial light, even if perfected to the highest degree, would never have the strength of sunlight, and is more fatiguing to the eyes. It does not stimulate the retina by a constant change of the intensity and color of the light rays, as does daylight. Every sensitive person will rejoice to see sunlight again when he comes out of an artificially lighted museum into the daylight. Doubtless most art museum people would agree

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<sup>1</sup>Laurence Vail Coleman, Museum Building, American Association of Museums, 1950.

with the latter view, whereas most science museum people would agree with the former. Both sides are partly wrong. Each side could come a great deal nearer to suiting the public if each would freely accept the two kinds of lighting used together. This should be possible with mixed light by day to satisfy the principal needs of both seeing and feeling, and with good artificial light by night to do pretty well then. The designer's task is to get the value of both natural and artificial light without too many of the disadvantages of either.

It is generally agreed that the exhibits themselves should have more emphasis, and consequently higher intensities, than their surroundings. It is also obvious that exhibits of strongly contrasting tones will require less than monotones, and that light-colored objects need less foot-candles than those of deeper hues.

Here another attention needs to be stated--light control in aquariums. To cut down reflections in the glass tank walls, the public area should be as dark as possible. To light the objects from back stage is desirable. Similarly, if any objects are displayed in a glass case.

Another fact is that reflections on the surface of water will distort the view from a looking-downward situation. Therefore a good designer should keep the public eye level under the water surface or use another solution to avoid reflection from the water surface. Also, a "light lock" should be provided connecting the entrance hall itself to the very dark exhibit hall of the aquarium proper. Because people will be coming in from the

bright sunlight, transition vestibules should be provided to let the eye adjust gradually to low lighting intensities.

### Storage Area

Until the recent past, storage in museums was apt to be confined to what was known as dead storages. Everything possible was put on public exhibition and only the impossible was relegated to the storage area, generally in the basement or attic, where the public did not penetrate. The designer's task is that no storage should be dead storage; all material should be available for active use. So-called storage is customarily needed for three classes of material: (1) study material, (2) loan material, (3) material in transit.

### Library

Since this is the center of research for curators as well as for visiting scholars, it should be readily accessible to both.

Lecture Hall. Most museums, even of relatively small size, will need a hall, separate from the gallery space, where lectures and general meetings can be accommodated. It should have easy public access and should be available after the regular museum hours, without need of opening the entire building. The designer's task is to plan a separate entrance for after-hour usage.

Service Area. As museum collections are more and more used for creative purposes, the importance of service facilities grows.



The receiving and shipping entrance, which used to be a mere formality in many museum plans, is frequently today an extremely busy place. In the making of photographic records, packing and unpacking rooms will be needed for this process. Access between storages and galleries and the preparation and conservation facilities should be easy and direct.

### GROUP PLANNING

The aim of building design today is to design for a specific purpose and to achieve aesthetic effect through the logical and imaginative relationship of necessary parts. So in group planning, the first purpose of the plan must be to achieve a group which performs its work efficiently and develops its aesthetic effect from the required relationship of its units.

Functional consideration will affect group planning chiefly in two ways: First, in the relation of buildings to each other and to the lot; and second, in the design of the means of communication between them.

The first of these, functional relationship of buildings, should be comparatively easy to determine by using functional diagram analyses--balloon and influence diagram. (See Drawings No. 2, 4, 5, 6.) These apply to group planning even more compellingly than they do to the planning of individual buildings. The correct functional relationship of buildings in a group will often have more than merely practical value. For greatest success, the arrangement must be functionally logical in order to be

aesthetically logical.

The second way in which function affects group planning results from the importance of communication and traffic, both within the group and between the group and the outside world. This means that a careful study of traffic is an essential part of the process of group planning. Such a study generally consists of two major parts: First, the study of pedestrian flow lines by using flow diagram analysis (see Drawings No. 2, 6); and second, the study of automobile and truck circulation (see Drawing No. 1).

The true lines of functional connection are seldom stated in a program because they are almost always implicit. So the functional diagrams may be the best way to explain and illustrate.

Another important factor mentioned before, which leads group planning to a successful effect, is aesthetic achievement.

In "Towards a New Architecture," Le Corbusier says:

The human eye, in its investigations, is always on the move and the beholder is always turning left and right, and shifting about. He is interested in everything and is attracted towards the center of gravity of the whole site. At once the problem spreads to the surroundings. The houses nearby, the distant or neighboring mountains, the horizon low or high, make formidable masses which exercise the force of their cubic volume.<sup>1</sup>

Thus everything in the immediate vicinity of an architectural work becomes a factor in the aesthetic effect of that work. In group planning alone, the architect must control this complete circuit of a building's surroundings. In group planning alone, he must make the building count for its utmost value,

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<sup>1</sup>Translated by Frederick Etchells. New York: Payson and  
 Blake. c. 192.



because all of its surroundings are part of the larger composition he has produced.

This is as true of aesthetic content as it is of sociological purposes, and it is therefore most important to lay considerable emphasis on the problems of composition which arise in the design of groups of buildings. It is the building groups as part of a group, and the design of building group as a whole.

Composition in group design means balance, harmony, continuity, and climaxes. All of these are under the designer's control, and it is through his careful exercise of this control and the play of his creative imagination, through which he is able to visualize the advantages and disadvantages of various possible schemes, that the successful group will eventually arrive.

### Balance<sup>1</sup>

When one walks through any group of buildings, he receives a complex sequence of visual stimuli. He looks from side to side, he looks ahead. He is bombarded from all directions by a series of views which have varying degrees of interest. If he is free to wander, what line of passage will he naturally follow? Thus it can be seen that balance is one of the most important factors in the design of the group, and the designer should therefore make sure that the progress from the normal entrance of the group to the center or climax is along an axis which has a balance of

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<sup>1</sup>Forms and Functions of 20th Century Architecture, Columbia University Press, 1952, P. 46, Vol. 2.

interest on either side.

There are two kinds of visual balances. One is formal balance--symmetrical balance; the other is informal balance--unsymmetrical balance.

The requirement of balance in architecture is not limited to exterior design. Balance is equally necessary in the interior, and interior balance naturally is largely dependent on the plan.

Also here where we say architectural balance, it is not only limited to two-dimensional form but also includes three-dimensional balance.

### Harmony

Harmony does not mean identity. It does not require every building in a group to resemble every other one. It in no sense implies monotony in design, nor does harmony necessarily signify harmony of style. If one is planning a new building in an old college or a new building in an old historical town, harmony does not demand that he design in the Gothic or Classic Revival manner which characterize the old town. What it does imply, in such a case as this, is the realization, first, that the qualities of the building already existing are inevitably parts of the final effect which the new building will make in the group, and, second, that the sensitive architect must so absorb their quality of color, material, shape, or what not, that they become part of the background of his mind while he is designing the new building or buildings, and thus help, rather than hinder, the effect.

There are many possible bases for harmony besides harmony of style. There is harmony of scale, of materials, and of basic intellectual and imaginative approach. Just as harmony of color harmonizes in one canvas, so the sensitive architect can harmonize buildings just as modern as he pleases with an ancient town or a confused twentieth-century city.

Harmony, then, is the first requirement for effectiveness in group planning. It is a twofold quality and implies both the harmony of building with building and the harmony between all the buildings and the site they occupy. Yet harmony by itself is not enough, as many real estate developments of similar houses indicate. Without other qualities, harmony alone may produce a stultifying monotony.

### Climax<sup>1</sup>

The problem of climax is complicated by the fact that groups fall naturally into two basic types: The first type consists of those groups--usually rather tightly knit, like town squares--in which the climax is of great importance and is highly stressed. The second type consists of groups in which all the buildings have almost equal importance, and the composition is likely to be loose and open.

The first type of group climax may be easily attained in one of various ways. (A) The simplest is by mere size and bulk.

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<sup>1</sup>Forms and Functions of 20th Century Architecture, Columbia University Press, 1952, P. 553, Vol. 2.

Thus in a group consisting of a number of similar buildings having more or less the same shape and the same treatment, if there occurs a building manifestly larger than the others, a feeling of climax will inevitably arise. (B) The second method is by height. High elements always possess a strong attention-compelling quality.

(C) There is also a climax through position. The first climax position is naturally that at the end of any long vista or axis. (D) Another climax position is attained by recessing the climax element behind the general plane of the composition, and this is the secret of the success of many types of successful group planning in almost all cultures. The reason for this is twofold: First, the vanishing points of all the buildings along the sides of that court focus necessarily on a point behind them and somewhere near the center; and second, a view into such a court suggests progression through it, and such a progression inevitably creates an expectation of some climax at the end.

After so much discussion about composition, now we look back to the Civic Center project. Let the existing buildings--City Hall, Court House, Public Library, Legal Office Center, and two office buildings locating on the northern half side of the Civic Center--be called group A; and let the selected new buildings--Kansas City Museum, Children's Museum, Planetarium, and Aquarium locating at the southern half side of the Civic Center--be called group B. (See Drawings No. 15 and No. 16, Study of Composition.)

The group A and group B are similar to the group 1 and group 2 just mentioned in climax section. (Group 1 is rather tightly knit, like town square, and group 2 is likely to be loose and

open.)

The City Hall in group A fits the type A and type B climaxes, and the Kansas City Museum fits the type D climax. Therefore the City Hall and Kansas City Museum are the accent point in each group A and group B. While the two accent buildings do not look the same, they have, however, some sort of relation and harmony of feeling. Along the north-south direction, on both left and right axes, they all have the type C climax.

In group A, most of the buildings are high raised with concrete walls and glass windows for skin, which gives certain heavy feeling. For artistic balance and also for functional requirement, large concrete masses are used for facades in group B.

It will be seen that group planning is an imaginative exercise of the greatest complexity. There are numerous factors to control, both practical and aesthetic. There are the topographic peculiarities of the site to transform into aids to effective group planning, instead of accepting them as barriers or limitations. There is the establishment of a correct and logical and functional order throughout the composition, in addition to the necessity of tying it all together by safe, simple, and efficient means of communication. There is the study of harmony in the group as a whole and of continuity between its varied parts. There is the problem of achieving the correct and dynamic balance and of the creation of adequate climaxes. Yet, however complex, these problems must be solved. All of them are under the designer's control, and it is through his careful exercise of this control and the play of his creative imagination that they are



solved. This is the reason why the author chose this project for study.

## CONCLUSION

Civic Center design is primarily an exercise in space relations. The space arrangement of the physical structures must satisfy not only the functions of shelter, but must create an environment of containment.

The desire for physical definition needs to be satisfied in all structures and physical compositions. The designer of a group of buildings must recognize the aesthetic needs of the individual and provide, through planning, designing, and construction, the arrangement that will best provide and fulfill this aesthetic need. Space, as an entity, is one element of architectural design. Space is a primary element in group design. Through the use of this element the Civic Center can provide the part of the necessary qualities inherent in all architectural design. Scale, balance, harmony, climax, function, space, and the other basic design elements must be acknowledged in the physical plant.

The Civic Center was designed as an elevated plaza platform above a vast multi-level parking garage. This permits important Oak Street to run below the platform level, and an uninterrupted plaza floor to connect most of the buildings within the Civic Center. This open area could also be used for various outdoor functions, such as the Annual Art Fair, which is currently held under rather crowded conditions on the Country Club Plaza.

Two important connections link the Civic Center westward. Twelfth Street becomes an important pedestrian link with the Central Retail Core (only McGee and Grand cross, and elevated sidewalks are provided here). Between the Civic Center and the Municipal Auditorium, an elevated pedestrian accessway is provided midway between Thirteenth and Fourteenth Streets.

Locust Avenue runs between the Federal and State Office and the Civic Center. To connect them, two pedestrianways are provided; one is on Civic Plaza and the other is on Culture Plaza.

The area adjacent to the southern side of Civic Center is proposed for a light industrial zone, and raised pedestrian way will also be provided.

A three-story high museum contains a total of 35,000 square feet exhibition area on the second and third floors, surrounded by live storages. Lobby, administration office, lounge, and a 400-seat auditorium are planned on the first floor with well-equipped public facilities and separate entrance for auditorium use after regular hours. Service and mechanic rooms are planned on lower parking floor.

A three-story high Children's Museum is located next to the Children's Library with separated doors for visitors and members. A total of 20,700 square foot exhibition area surrounded by live storages is planned on the second and third floors with lobby and necessary public facilities. The lower floor contains administration, members' rooms, a 200-seat auditorium, working shop, and employees' rooms. The whole lower floor is available after regular museum hours without opening the entire building.



Planetarium and Aquarium are combined in a well functioned building located on the southwest corner. The Planetarium contains a 240-seat chamber, a 240-seat classroom, exhibition area, and necessary preparation and storage rooms occupying roughly little more than half the building. The Aquarium contains three big fish ponds, a 100-foot long recessed fish tank wall, exhibition area, and necessary supply and storage rooms. They both share a well-equipped lobby area. Administration, lounge, and snack bar are planned on the second floor for relaxation. Servicing and mechanical rooms are planned on the lower floor.

The designer attempted to illustrate the more effective use of space and to give more dynamic feeling in the interior of the Kansas City Museum and Planetarium-Aquarium. The informal balance--unsymmetrical balance arrangement is used. To give more freedom on arranging exhibition area, the whole exhibition floor is designed as an uninterrupted space. In other words, no columns are placed.

The Civic Center is thus made an integral and useful part of the entire Central Business District and of the entire city.

### Structure

From an architectural point, the column is used to carry direct axial loads. If there is any other solution in which no columns will need to be placed in a large area, the result will give the following advancements: (1) More freedom for exhibitional arrangements, and (2) no interference between spaces.

Therefore the designer combined the diagonally intersecting latticework of reinforced concrete ribs for walls and two directional fold plates for floors and ceiling to avoid column's interference. (See Drawing No. 10 and 29.) This kind of structure will give the following advantages:

1. More freedom of design.
2. Large span.
3. No suspension ceiling required, unless from any architectural requirement.
4. Maximum shear and moment will be divided into many small parts and carried by each member.
5. Reducing field work by using precasting and prestressing in shop.

### ACKNOWLEDGMENT

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## BIBLIOGRAPHY

## Reference Books

- Blake, Peter.  
Marcel Beuer. Dodd, Mead and Co., 1956.
- Carben, Norman F., Jr.  
Form and space of Japanese architecture. Tokyo: Shokoku, 1955.
- Coleman, Laurence Vail.  
Museum building. American Assn. of Museums. 1950.
- Giedion, Sigfried.  
Space, time, and architecture. Cambridge: Harvard University Press. 1952.
- 
- Walter Gropius' work and teamwork. New York: Reinhold Publishing Corp., 1954.
- 
- The work of Affonso Eduasdo Reidy. New York: Reinhold Publishing Corp., 1960.
- Hamlin, Talbot.  
Forms and functions of 20th century architecture. New York: Columbia University Press, 1952. 4 vol.
- Johnson, Philip C.  
Mies van der Rohe. New York: The Museum of Modern Art, 1953.
- Knudsen, Vern O. and Cyril M. Harries.  
Acoustical designing in architecture. New York: John Wiley and Sons, Inc., 1950.
- Stamo, Papadaki.  
Neimeyer, Oscar, Works in progress. New York: Reinhold Publishing Corp., 1956.

## Periodicals and Journals

- American Institute of Architects Journal. Dec., 1958.
- Architectural Forum. Dec., 1956.
- Architectural Record. Oct., 1935.
- Architectural Record. June, 1950.
- Architectural Forum. Feb., 1956.
- Architectural Forum. Nov., 1955.
- Arts and Architecture, March, 1960.
- Arts and Architecture, May, 1960.
- L'architecture d'aujourd'hui. May, 1960.
- L'architecture d'aujourd'hui. July, 1960.
- L'architecture d'aujourd'hui. Sept., 1960.
- L'architecture d'aujourd'hui. Jan., 1961.
- Progressive Architecture. Feb., 1948.
- Progressive Architecture. Jan., 1957.
- Progressive Architecture. Jan., 1958.
- Progressive Architecture. Jan., 1959.
- Progressive Architecture. Jan., 1960.
- Progressive Architecture. Oct., 1960.
- Progressive Architecture. Jan., 1961.
- Progressive Architecture. April, 1961.
- The New York Times Magazine. Oct. 18, 1959.
- Work, Feb., March, Sept., 1959.

### Bulletins

Fifteen years of the central business district. City Plan Commission of Kansas City, Mo. 1960.

Kansas City--1980. Kansas City Chapter of the American Institute of Architects.

Zoning Ordinance, Kansas City, Missouri. The Council of Kansas City. 1956.

### Unpublished Material

A preliminary report for civic center. Architect David B. Runnells.

**APPENDIX**



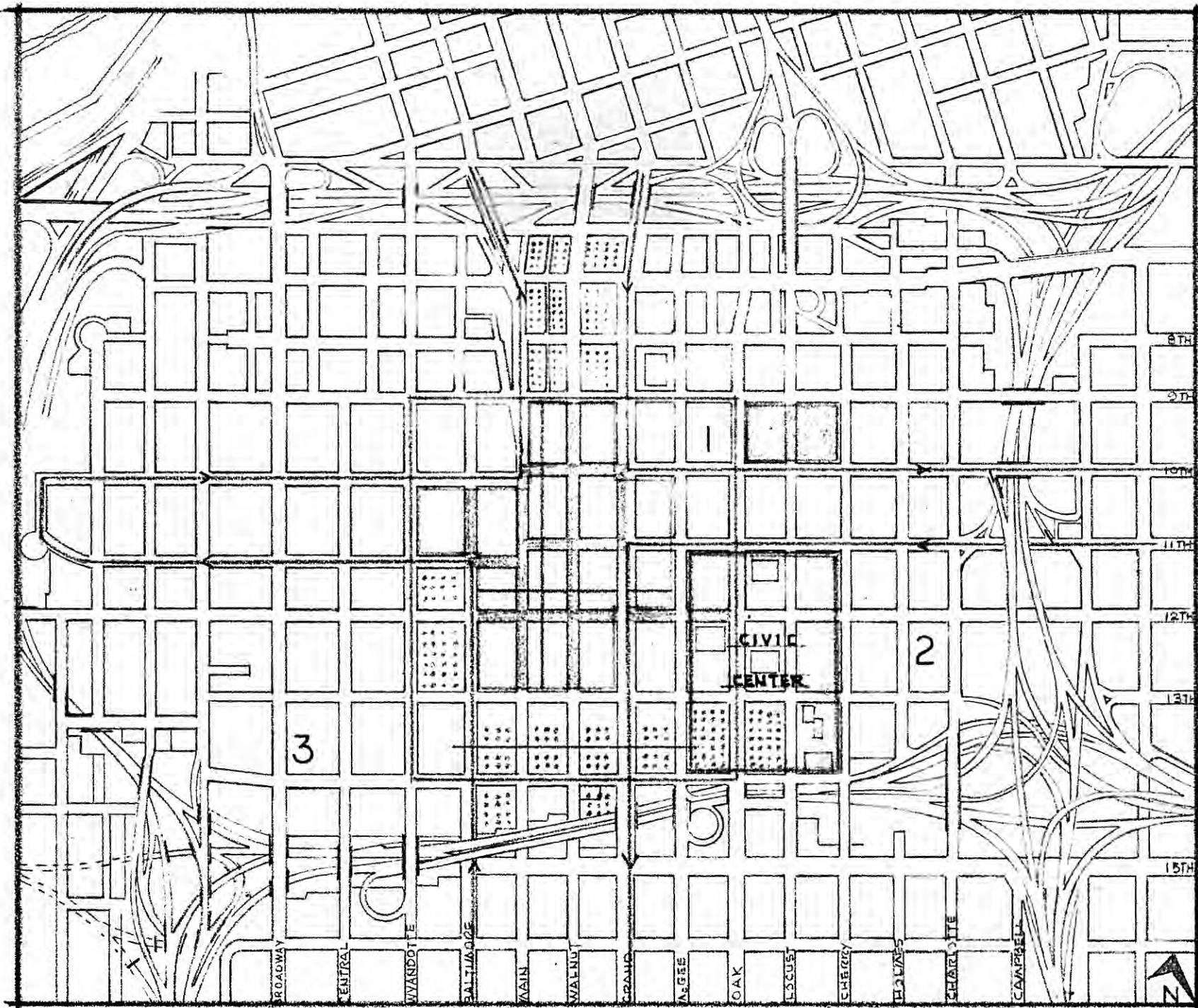
K. S. U.

**PROPOSED  
CIVIC CENTER  
FOR  
KANSAS CITY  
MISSOURI**

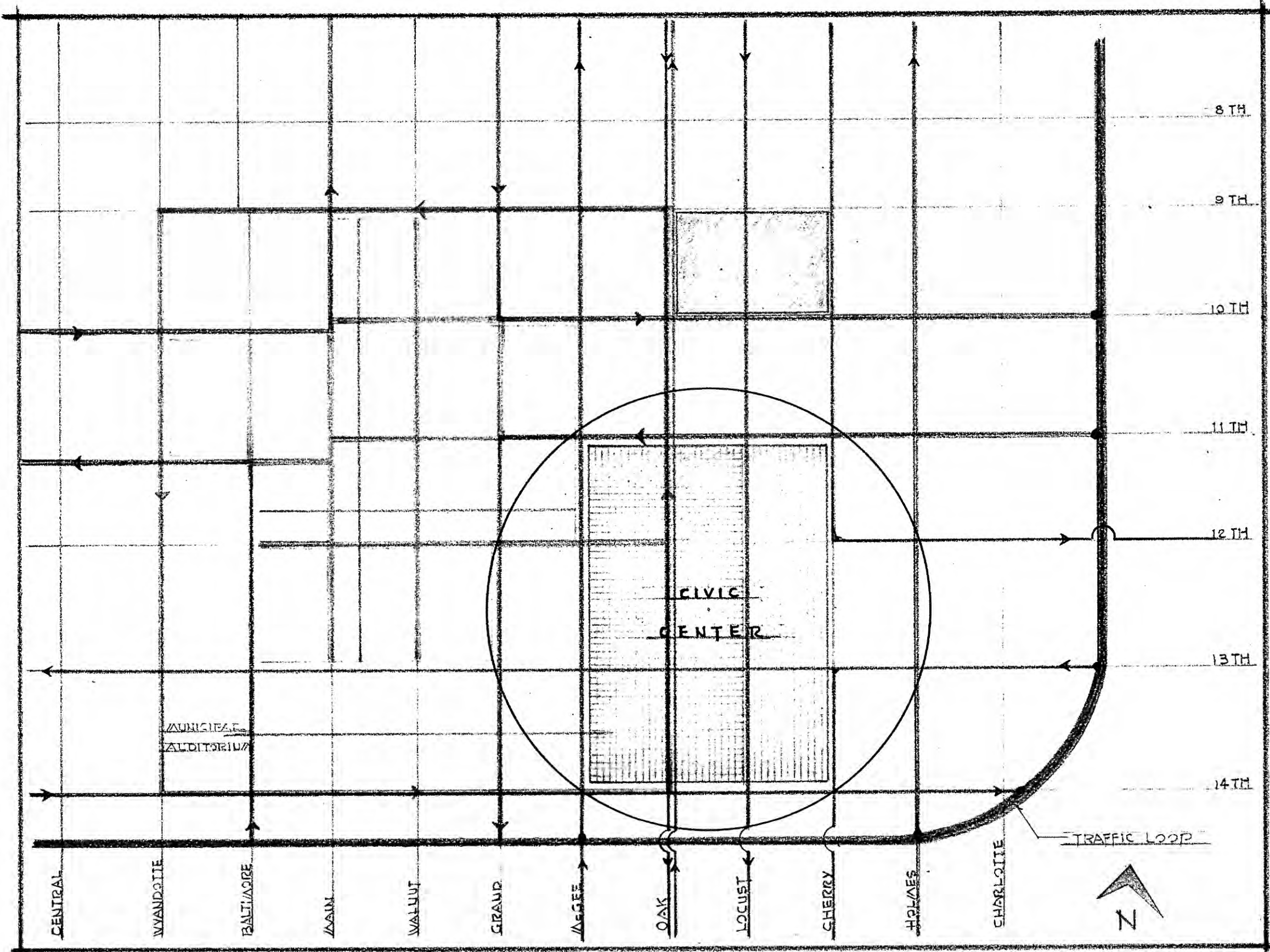


# TRAFFIC PLAN FOR CBD

EAST — WEST				SOUTH — NORTH			
NAME OF STREET	DIRECTION	CONNECTED WITH LOOP		NAME OF STREET	DIRECTION	CONNECTED WITH LOOP	
		EAST	WEST			SOUTH	NORTH
10TH	W-E ONE WAY	✓		McGEE	S-N ONE WAY	✓	X
11TH	E-W ONE WAY	✓		OAK	TWO WAY	X	✓
12TH	BLOCKED CHERRY LOCUST	X		LOCUST	N-S ONE WAY	X	✓
13TH	E-W ONE WAY	✓		CHERRY	BLOCKED 12-13TH		X
14TH	W-E ONE WAY	✓		HOLMES	S-N ONE WAY	✓	X



CLOSED ROAD FOR PEDESTRIAN USE ONLY	—
SECONDARY FEEDERS	—
INNER LOOP ACCESS RD.	—
ROADS THROUGH CIVIC CENTER	—
TRAFFIC LOOP	—
ELEVATED MOVING SIDEWALK	—

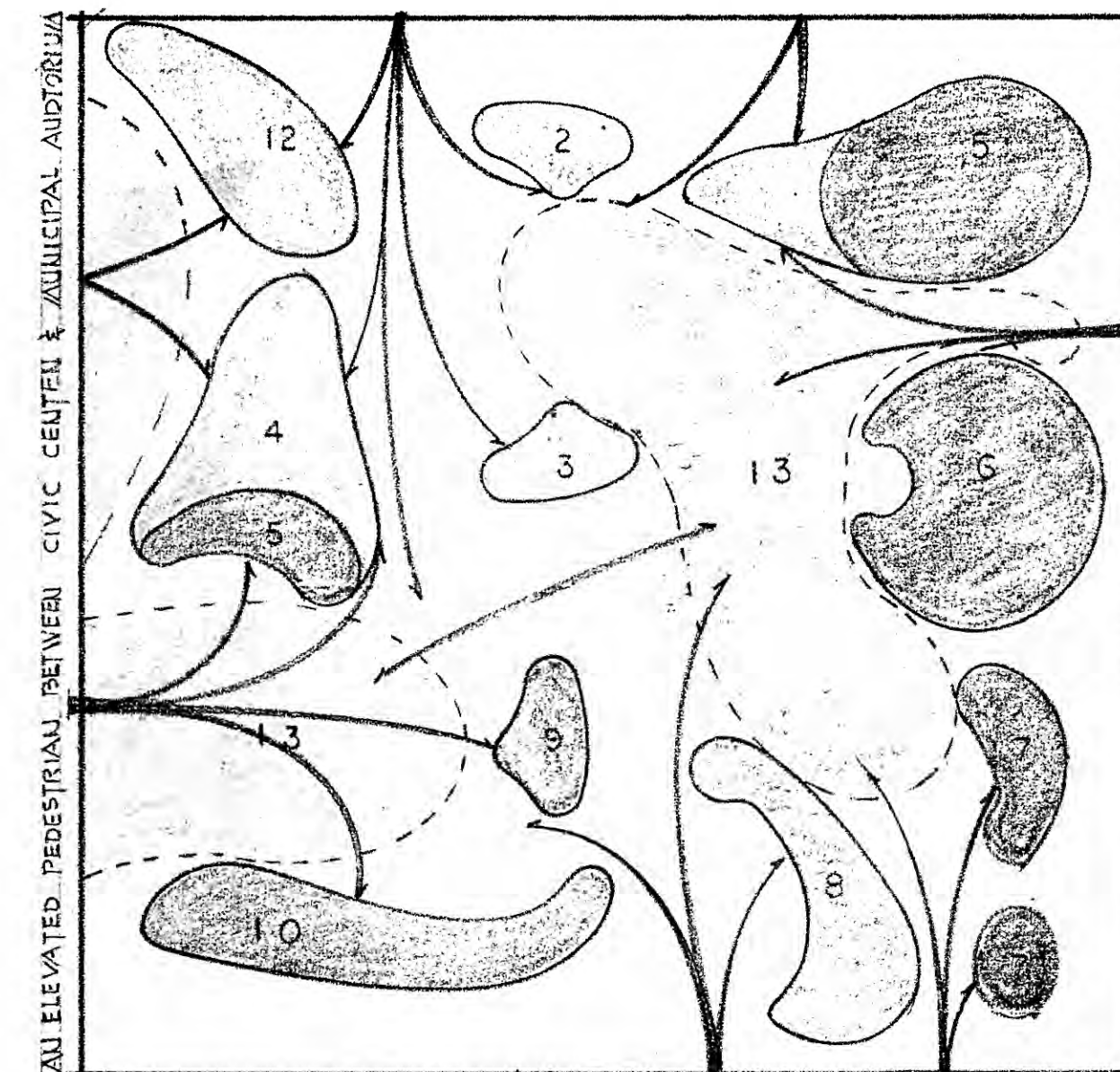


1. THE TRANSPORTATION CENTER LOCATED IN THE NORTHEAST PORTION OF THE CENTRAL BUSINESS DISTRICT WILL HANDLE CROSS-COUNTRY AND INTERURBAN TRAFFIC OF ALL TYPES: BUSES, FAST PUBLIC TRANSIT FROM SURROUNDING AREAS. THE CENTER WILL THEN BE CONNECTED TO THE CENTRAL RETAIL CORE BY MEANS OF SPEEDY SIDEWALK TRAINS.
2. CARS ENTERING THE CENTRAL BUSINESS DISTRICT WILL BE PARKED IN THE AREAS IMMEDIATELY ADJACENT TO THE CENTRAL RETAIL CORE, INDICATED BY (.....) DOTS.
3. STREETS WITHIN THE CENTRAL BUSINESS DISTRICT ARE CLASSIFIED AS FOLLOWS: INNER LOOP ACCESS ROAD, SECONDARY FEEDER AND SERVICE STREETS (USED BY BUSES), SERVICE ALLEYS, AND GENERAL PURPOSE STREETS. THE INNER LOOP IS INDICATED IN (——) LINE, AND THE SECONDARY FEEDERS IN (——). THEY ARE ALL ONE-WAY STREET.
4. THE CENTRAL RETAIL CORE IS SHOWN IN (——) AND THE STREETS TO BE CLOSED OFF FOR PEDESTRIAN USE ONLY ARE SHOWN IN (——). THE (——) LINES CROSSING THE CENTRAL RETAIL CORE INDICATE APPROXIMATE LOCATIONS OF ELEVATED MOVING SIDEWALKS.
5. BY THIS SYSTEM PARKING WOULD BE NOT MORE THAN TWO BLOCKS FROM ANY POINT IN THE CENTRAL CORE, CARS WILL BE PREVENTED FROM ENTERING THE HIGH DENSITY PEDESTRIAN AREAS.

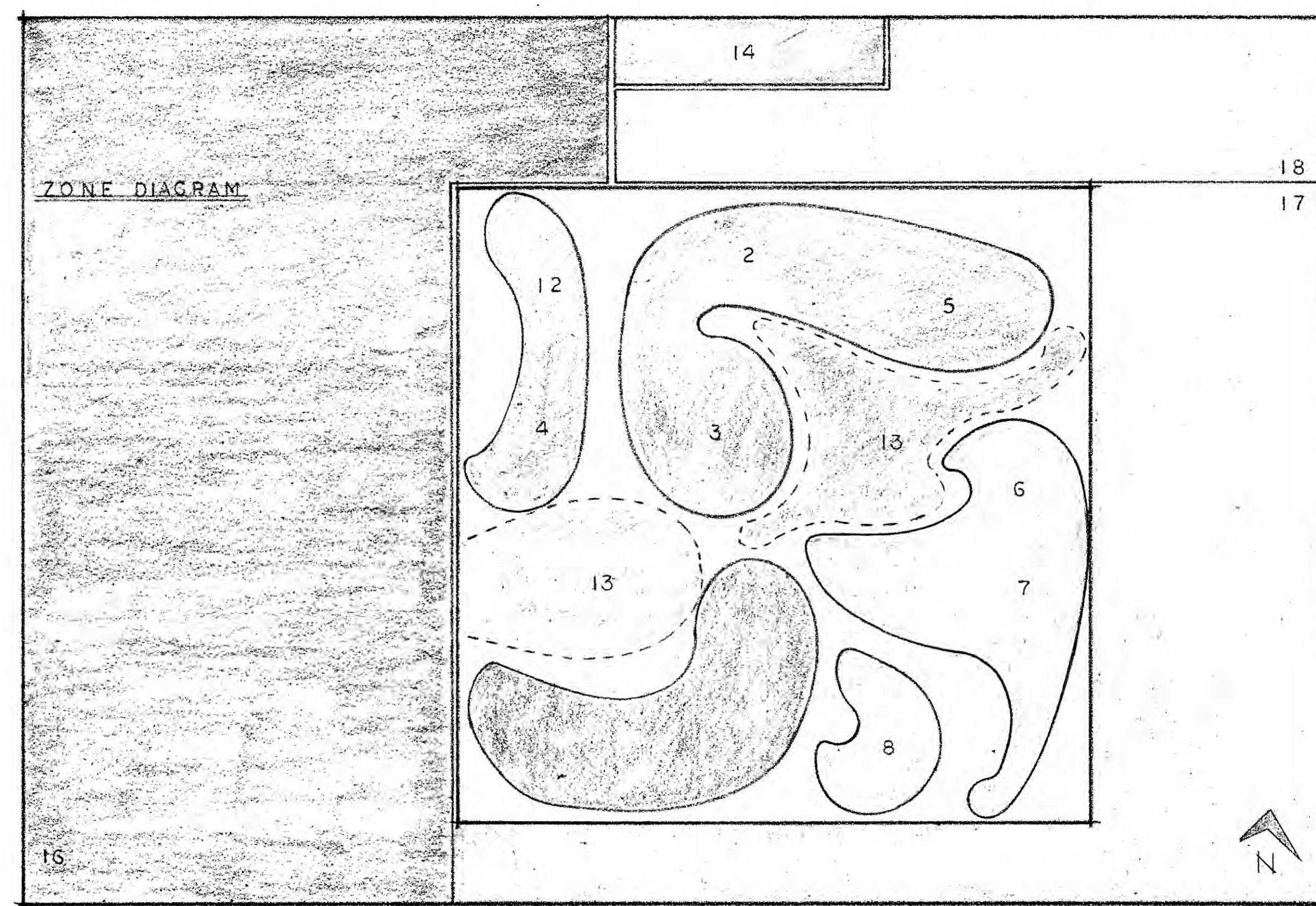
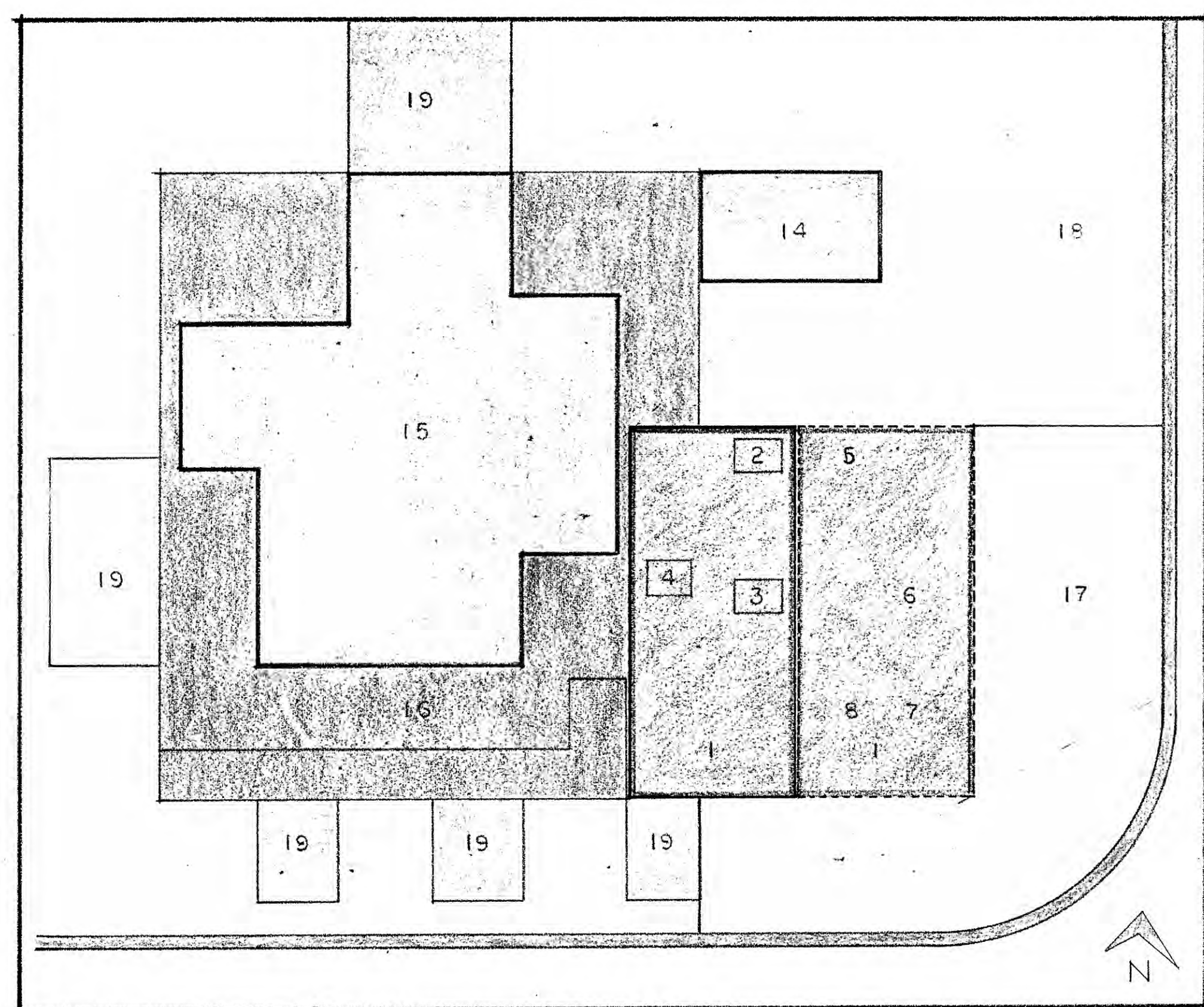


## ZONE & FLOW DIAGRAM OF THE CIVIC CENTER & THE SURROUNDINGS

1. VISITORS FROM EASTERN AND SOUTHERN SIDES OF CIVIC CENTER WILL RIDE IN WITH CARS BY USING OF CROSSTOWN FREEWAY TRAFFIC LOOP.
  2. ADJACENT TO THE CIVIC CENTER ON THE WESTERN SIDE IS CENTRAL RETAIL CORE, INDICATED BY (C.R.C.) AREA. THE C.R.C., IN THE WALKING DISTANCE TO CIVIC CENTER, WILL BRING THE MOST VISITORS TO THE CIVIL CENTER SPECIAL TO THE PUBLIC EDUCATION AREA.
  3. THE TRANSPORTATION CENTER LOCATES ONE BLOCK SOUTH TO THE CIVIC CENTER WILL HANDLE CROSS-COUNTRY AND INTERURBAN TRAFFIC OF ALL TYPES: BUSES, FAST PUBLIC TRANSIT FROM SURROUNDING AREAS AND HELICOPTERS, LINKING DOWNTOWN WITH THE MID-CONTINENT AIRPORT.
- I. CIVIC CENTER 2. CITY HALL 3. COURT HOUSE 4. LIBRARY 5. POLICE DEPT. 6. FEDERAL OFFICE 7. STATE OFFICE 8. PARENTAL HOME 9. K.C. MUSEUM 10. PLANETARIUM-AQUARIUM  
 II. CHILDREN'S MUSEUM 12. OFFICE BUILDING 13. PLAZA 14. TRANSPORTATION CENTER 15. C.R.C. 16. COMMERCIAL AREA 17. LIGHT INDUSTRIAL 18. SEMI-PUBLIC AREA 19. PARKING.



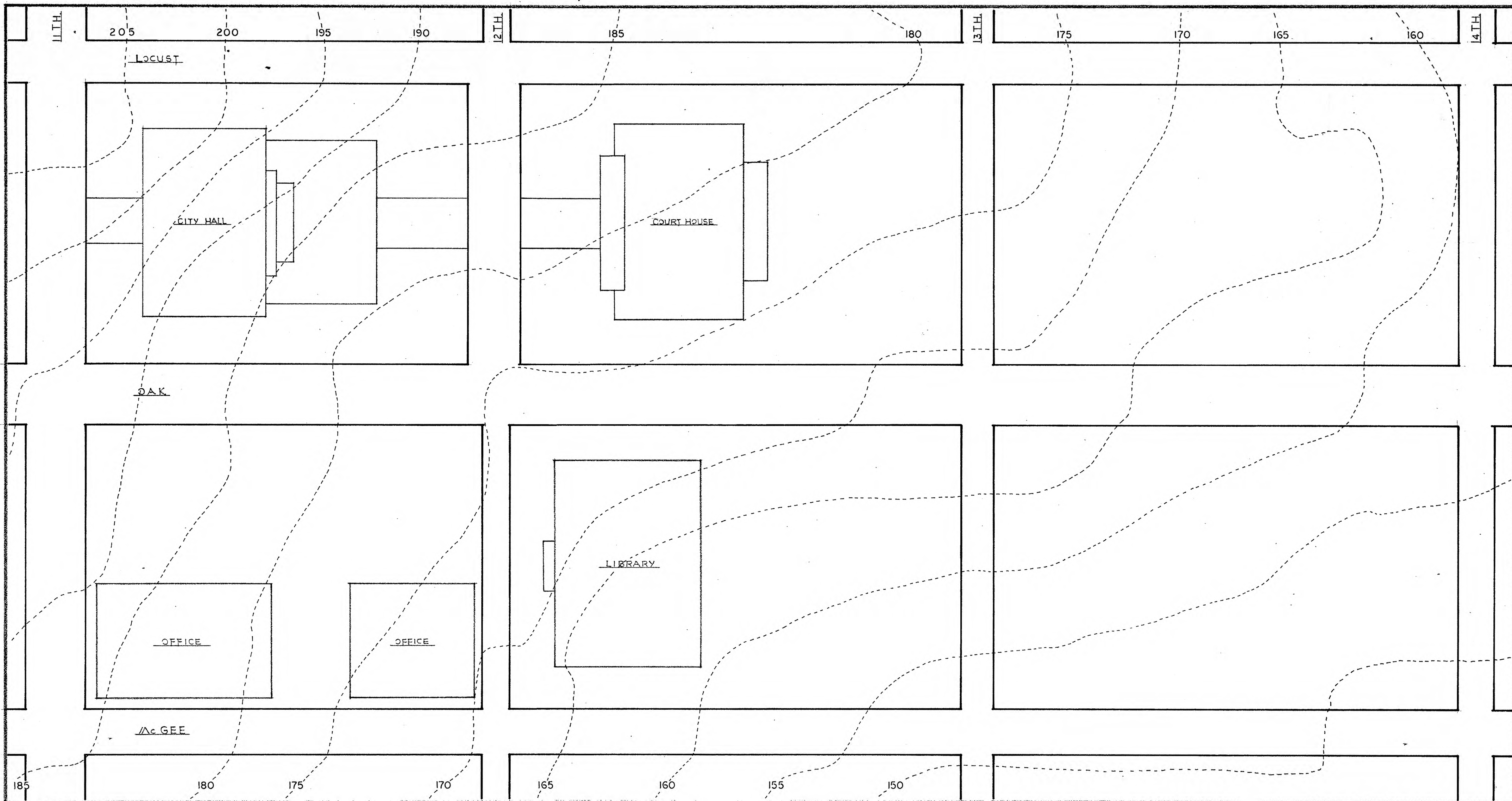
FLOW DIAGRAM



CIVIC CENTER FOR K.C.MO.

2



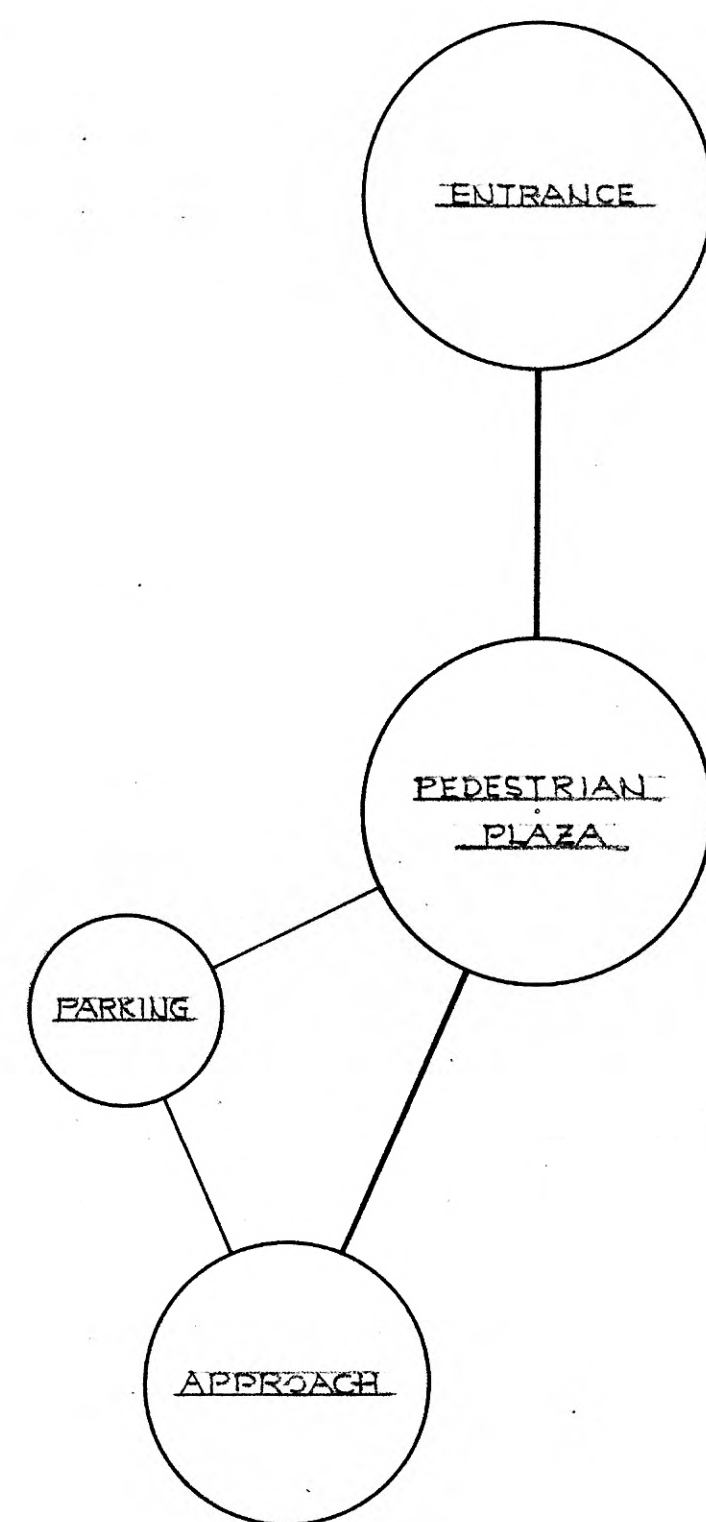


EXISTING SITE PLAN

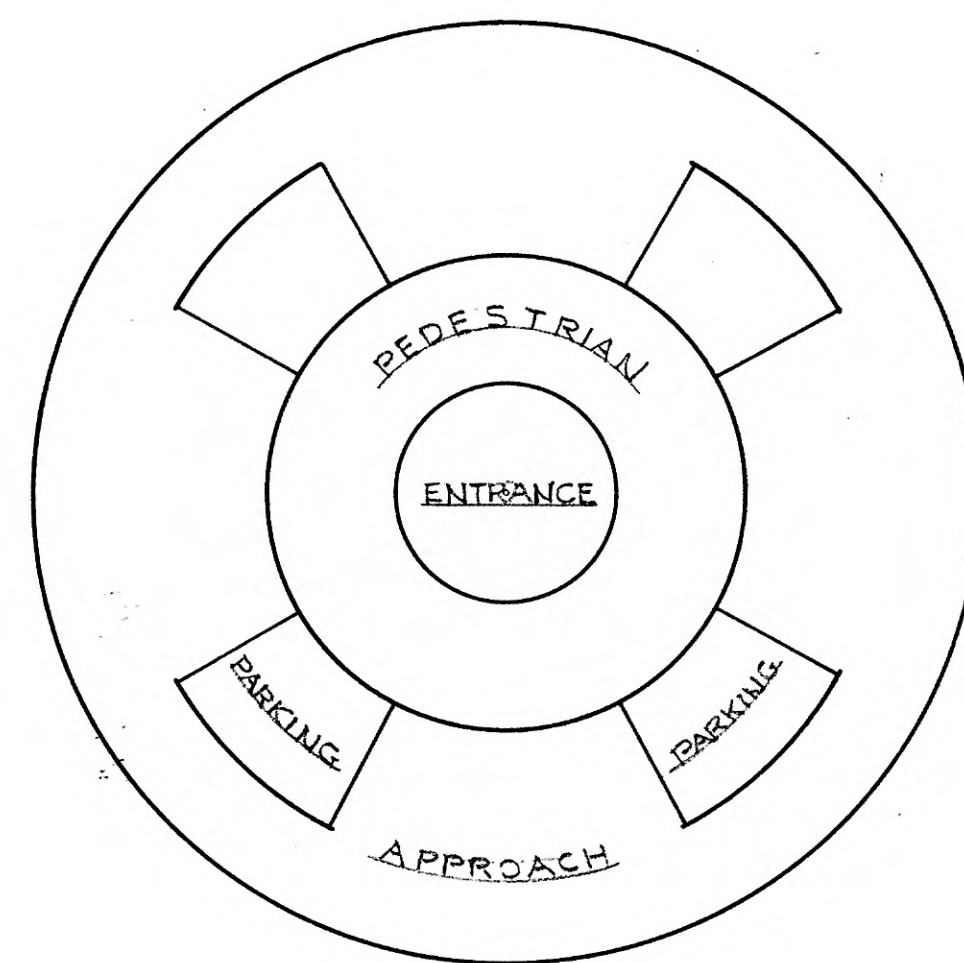
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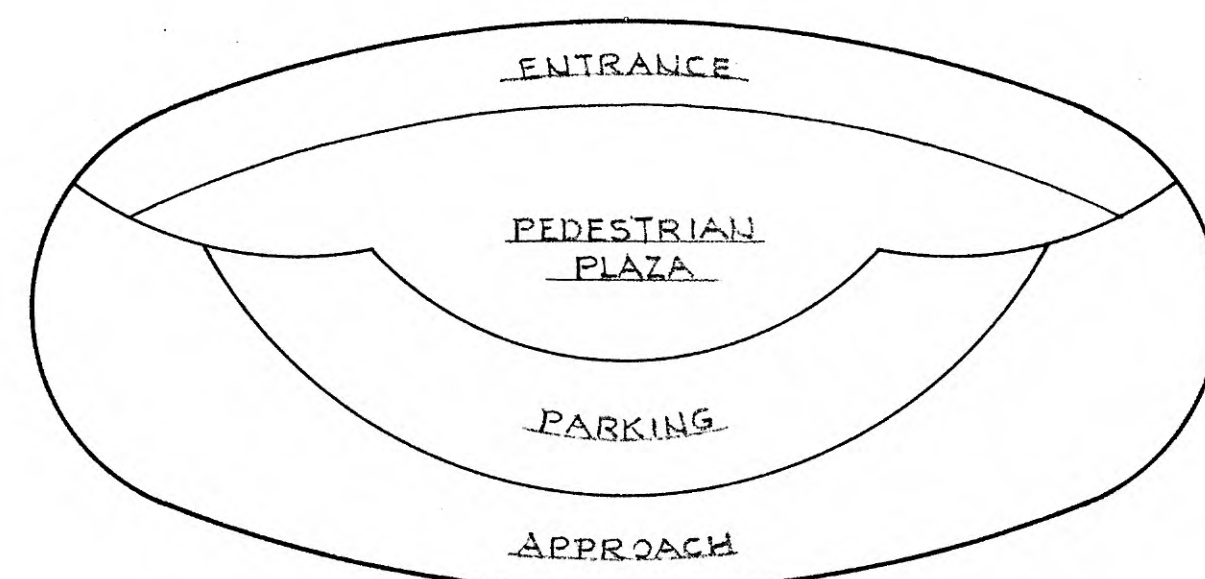
# FUNCTION DIAGRAM



FUNCTION

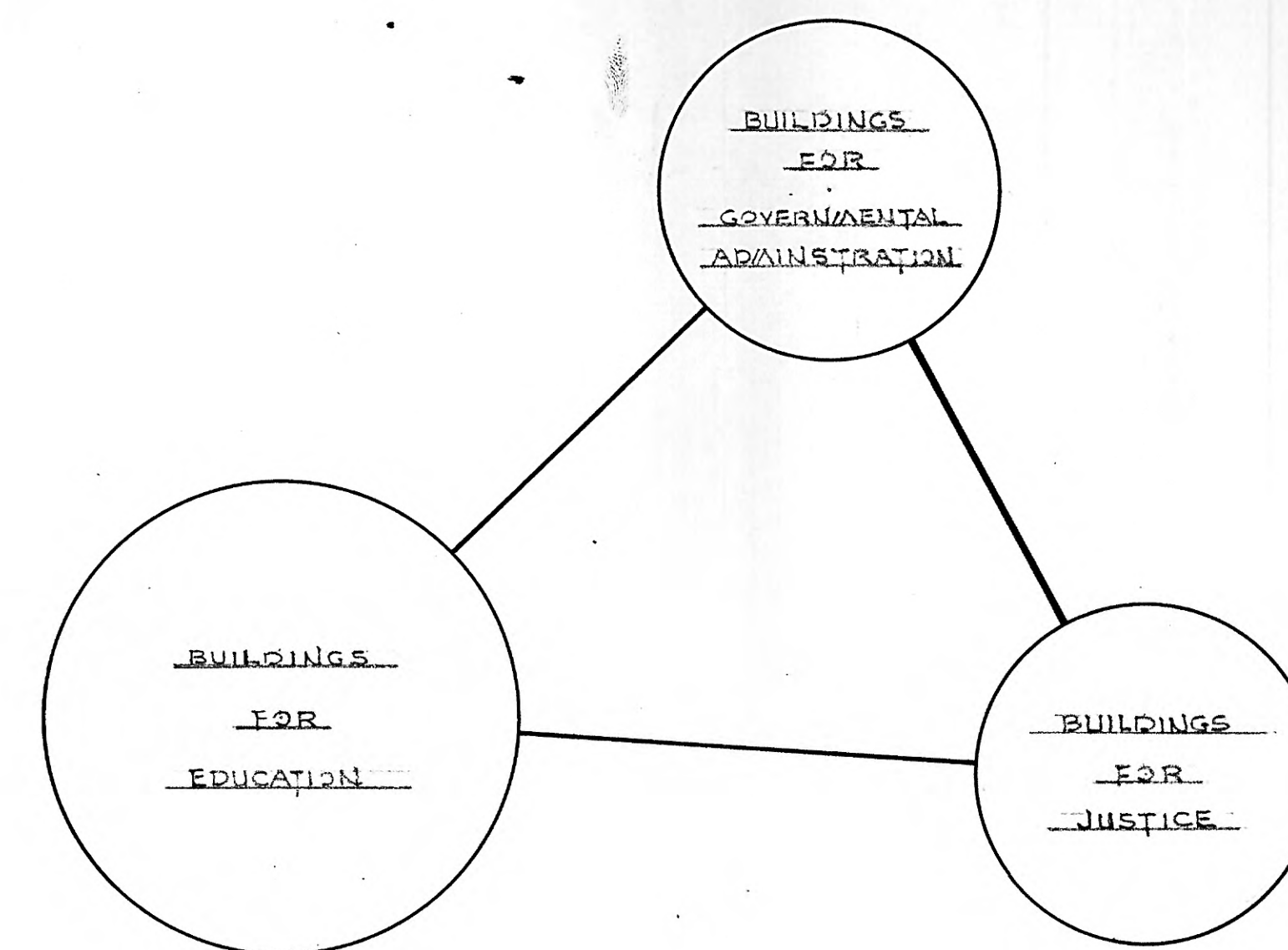


PLAN

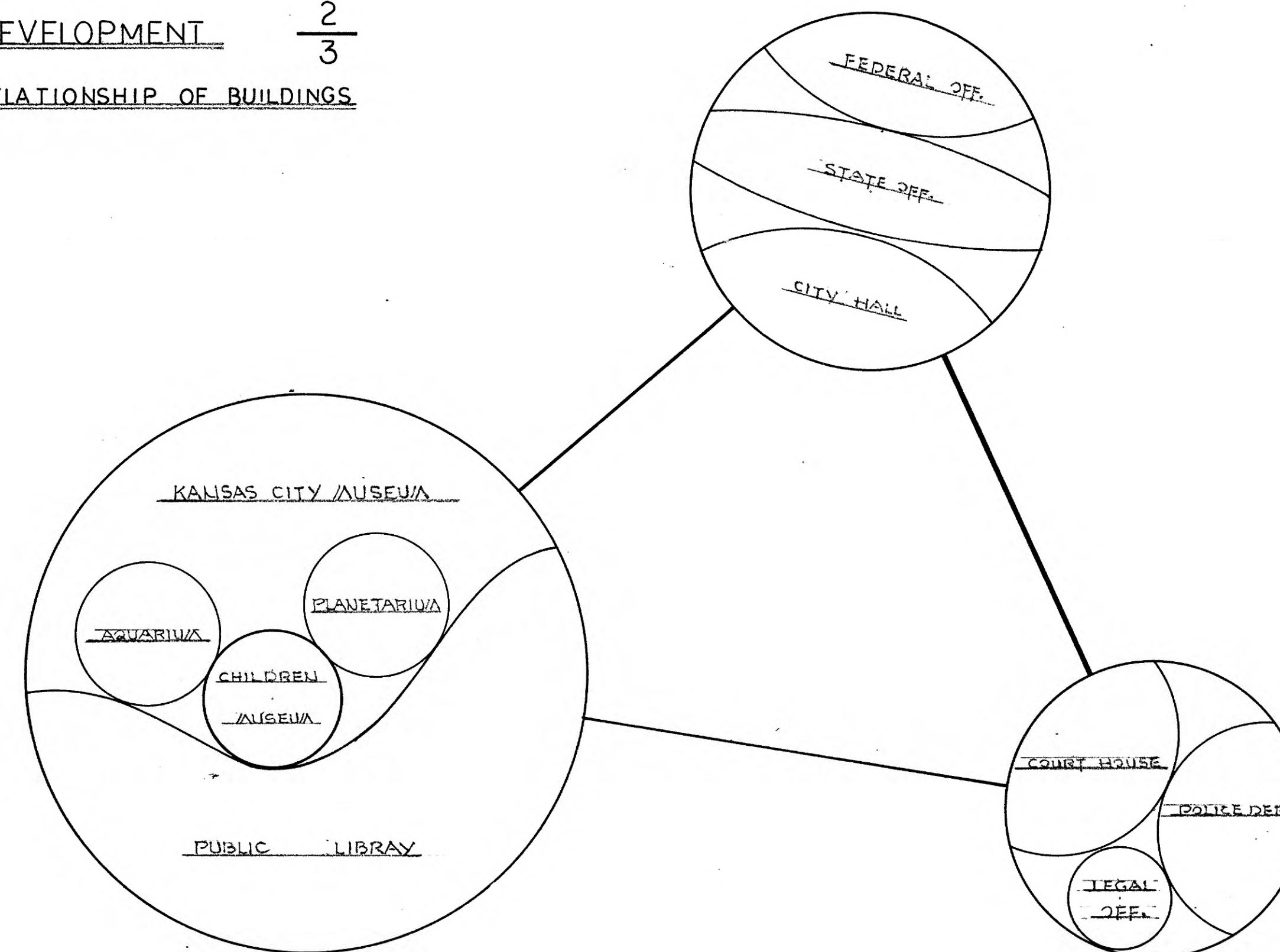


SECTION

DEVELOPMENT 1



DEVELOPMENT 2  
RELATIONSHIP OF BUILDINGS

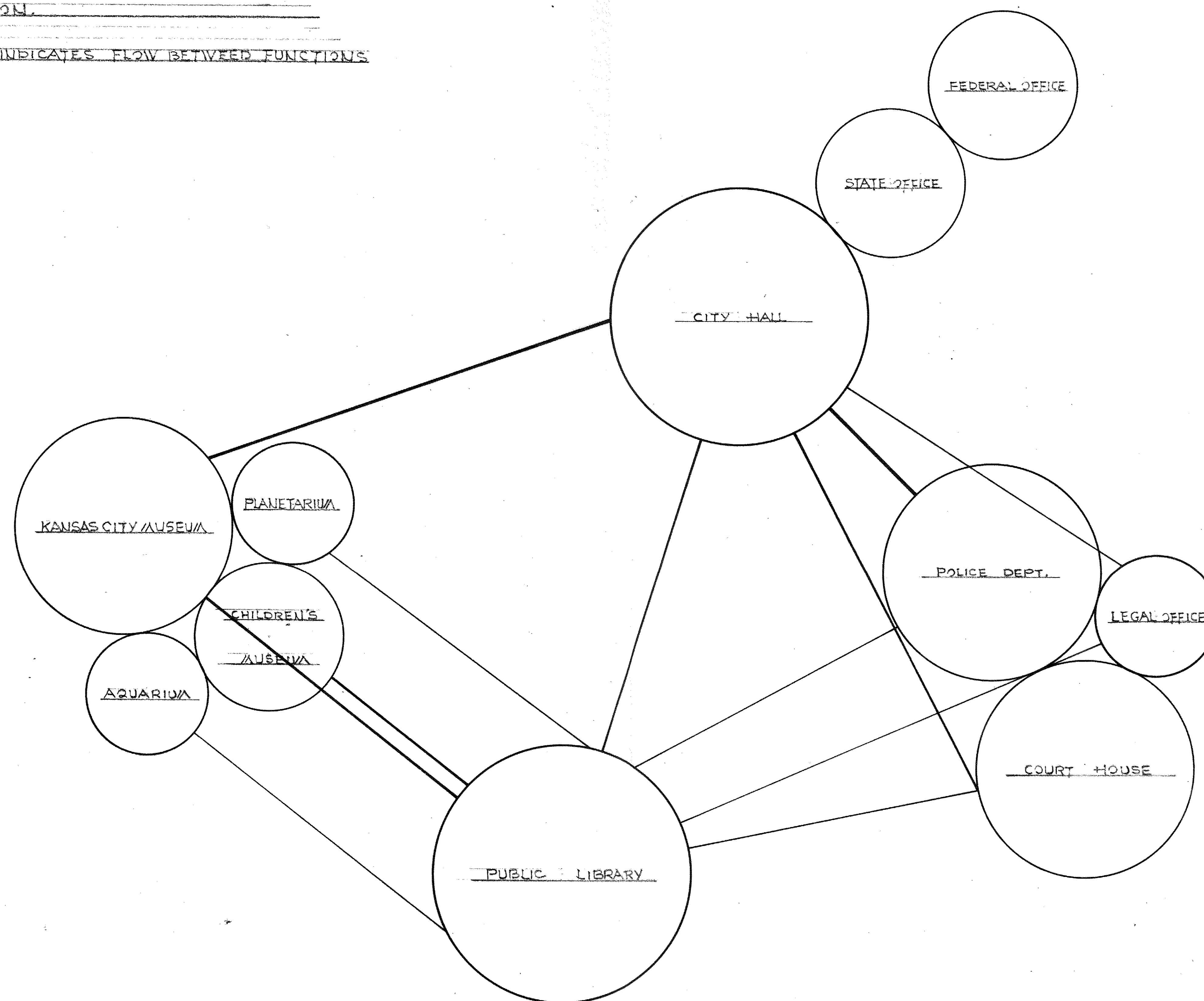


1. DISTANCE BETWEEN BALLOONS: RELATION OF FUNCTIONS TO EACH OTHER. 2. SIZE INDICATES IMPORTANCE OF FUNCTION. 3. THICKNESS OF LINE BETWEEN FUNCTION INDICATES FLOW BETWEEN FUNCTIONS.

CIVIC CENTER FOR K.C.MO.



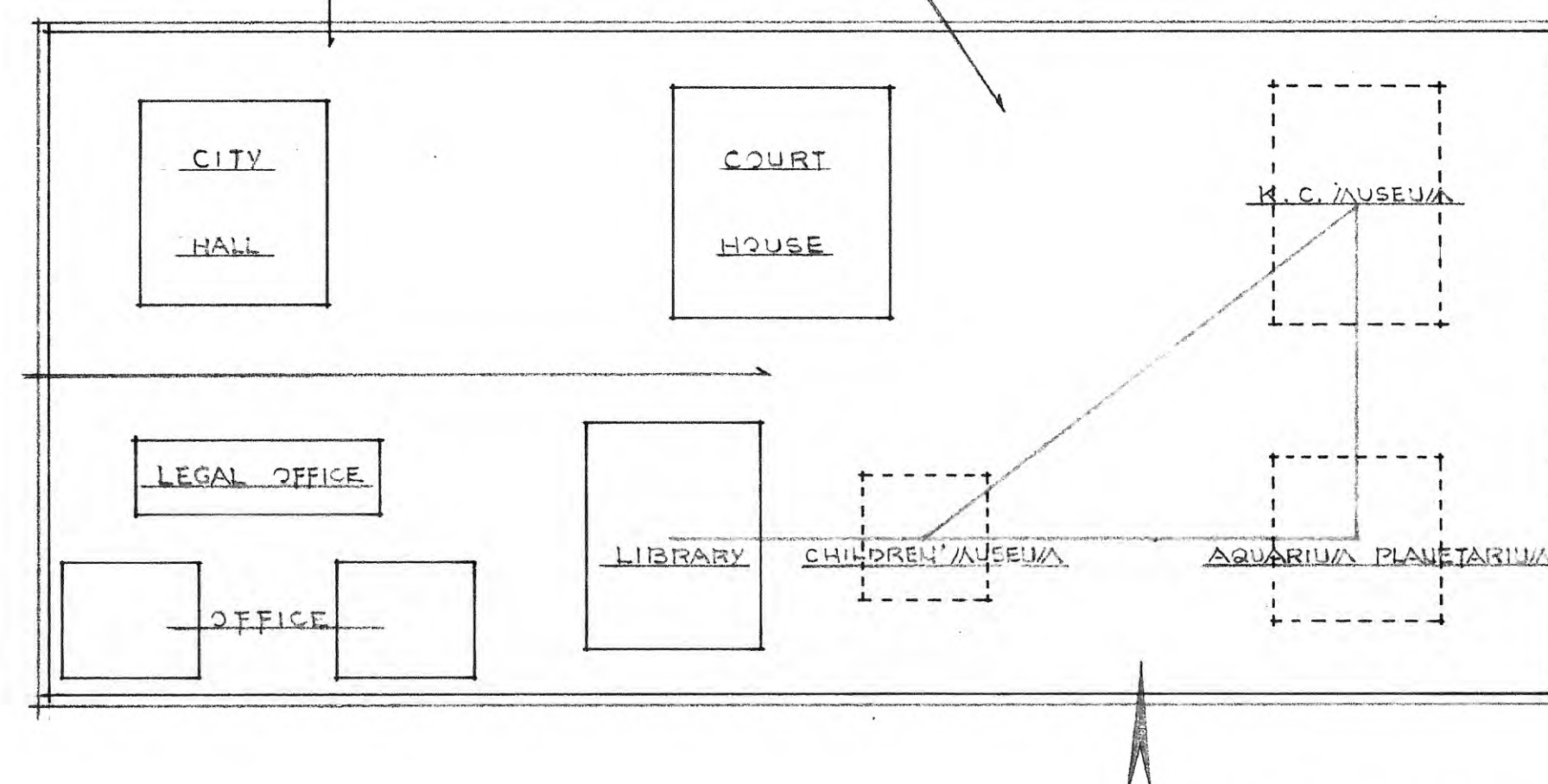
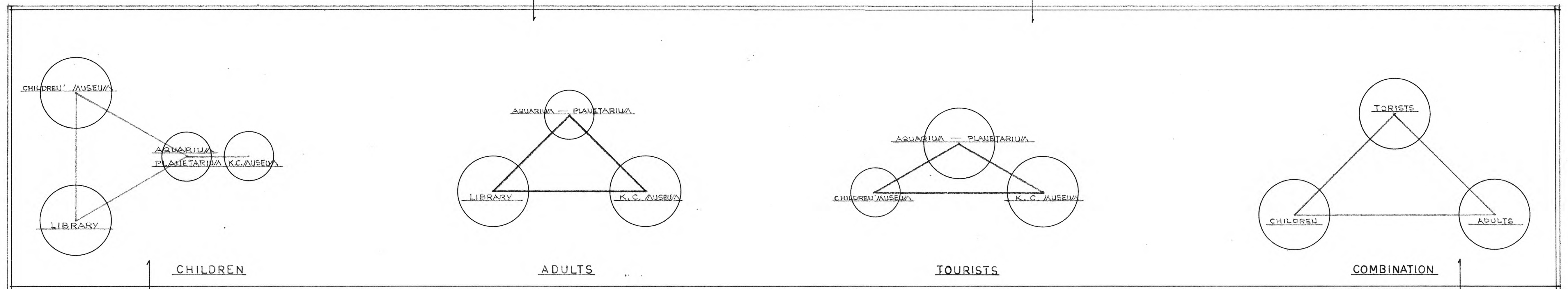
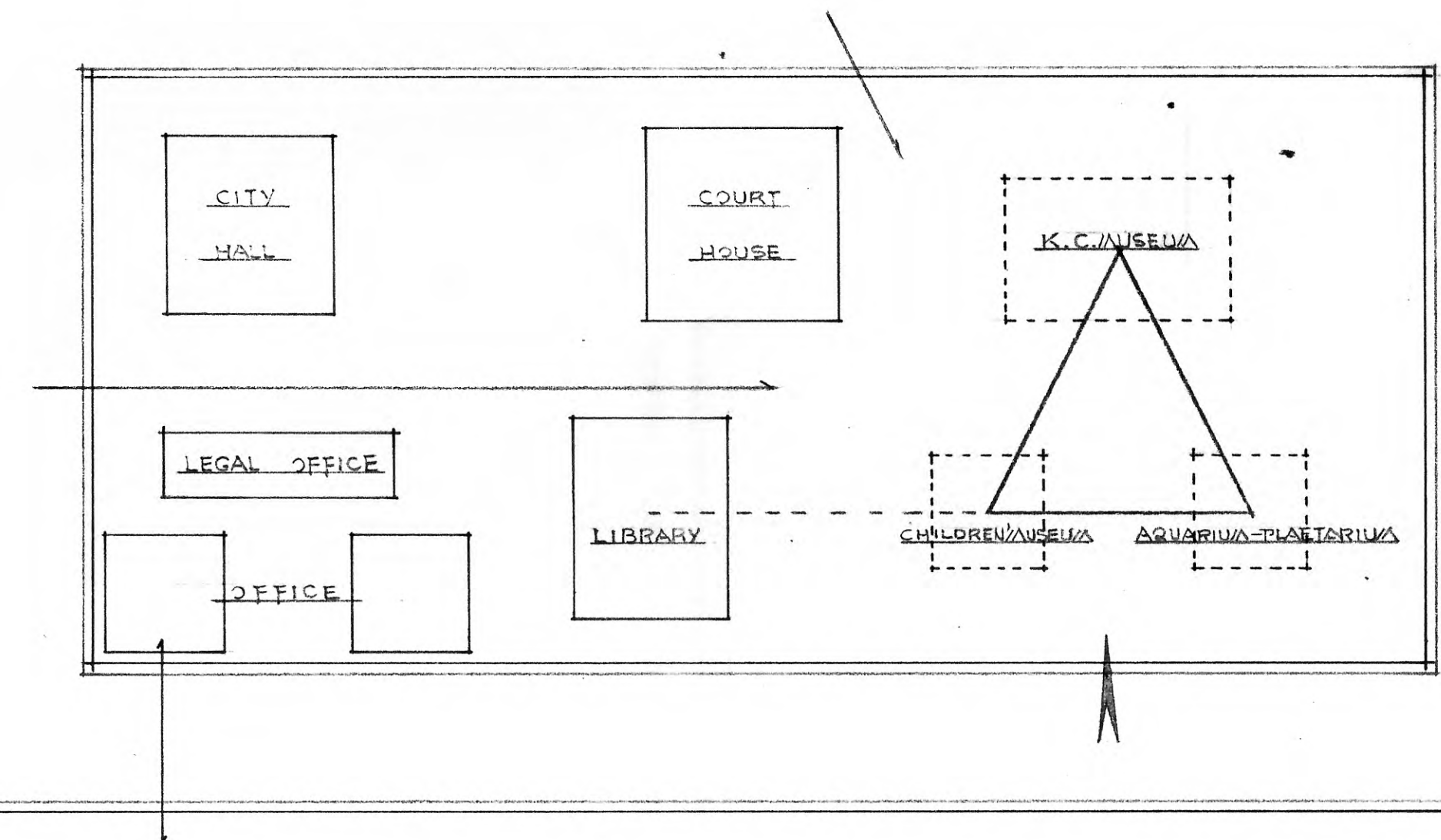
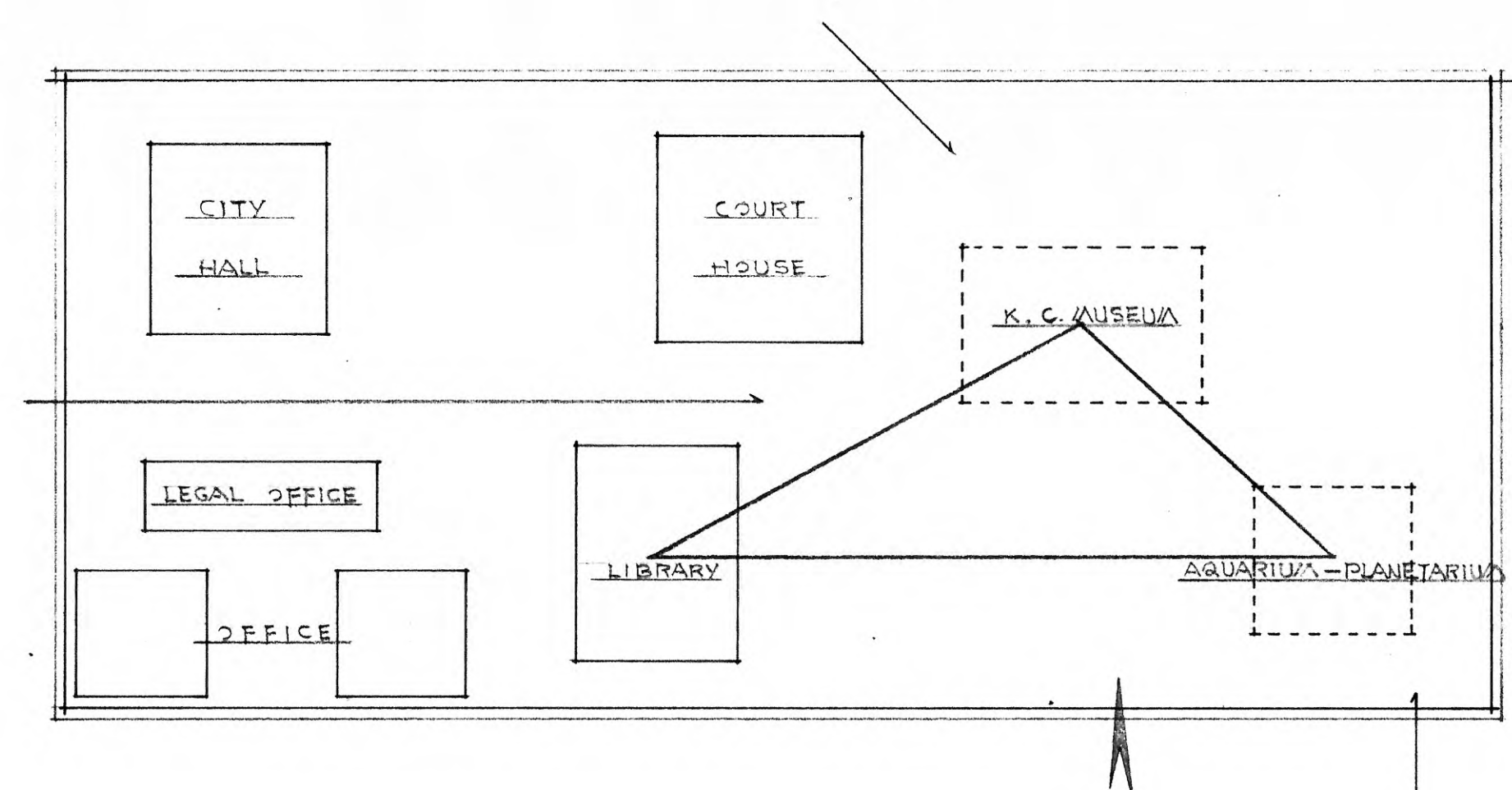
1. DISTANCE BETWEEN BALLOONS: RELATION OF FUNCTIONS TO EACH OTHER.
2. SIZE INDICATES IMPORTANCE OF FUNCTION.
3. THICKNESS OF LINE BETWEEN FUNCTION INDICATES FLOW BETWEEN FUNCTIONS.



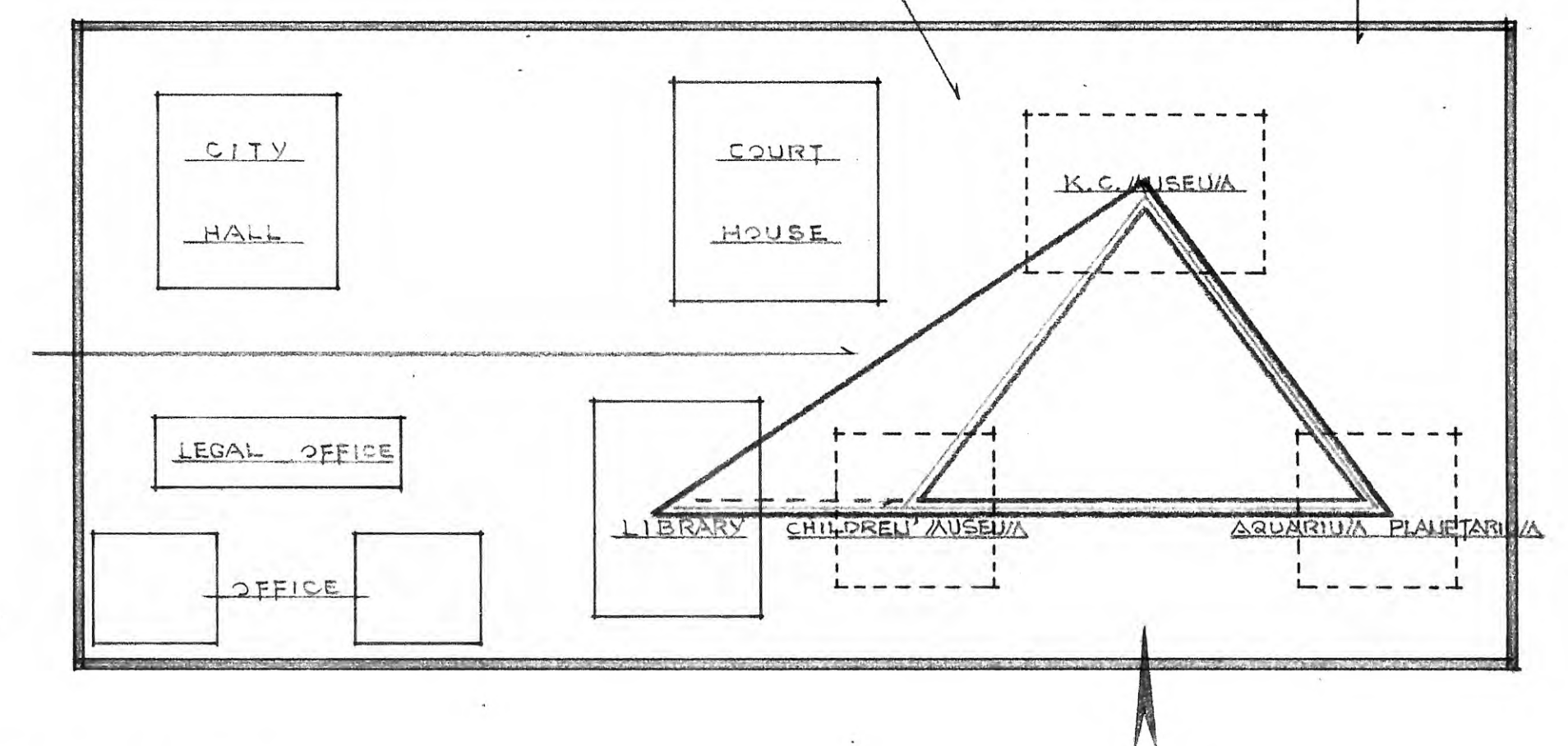
DEVELOPMENT 4 BALLOON DIAGRAM

CIVIC CENTER FOR K.C.MO.





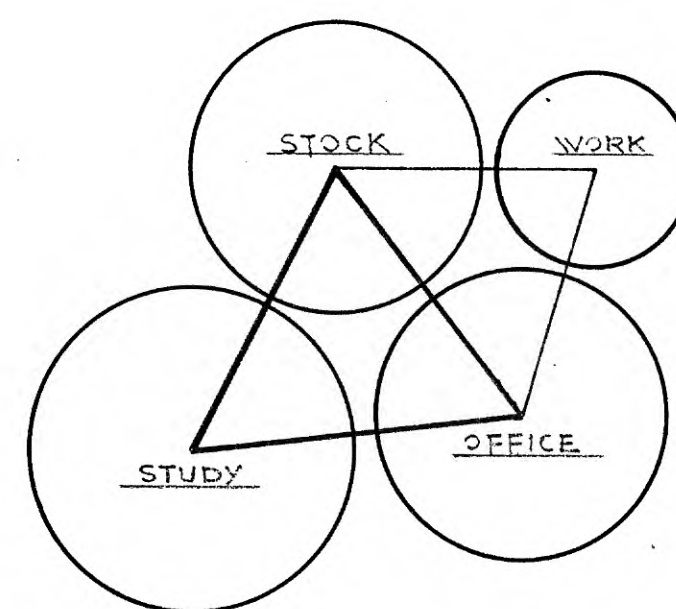
1. SQUARES SHOWN IN SOLID LINES INDICATE THE EXISTING BUILDINGS.
2. SQUARES SHOWN IN DOTTED LINES INDICATE THE PROPOSED BUILDINGS.
3. BUILDINGS WHEN PLANNED WILL HAVE NO SIZE RELATIONSHIP WITH THESE SQUARES.



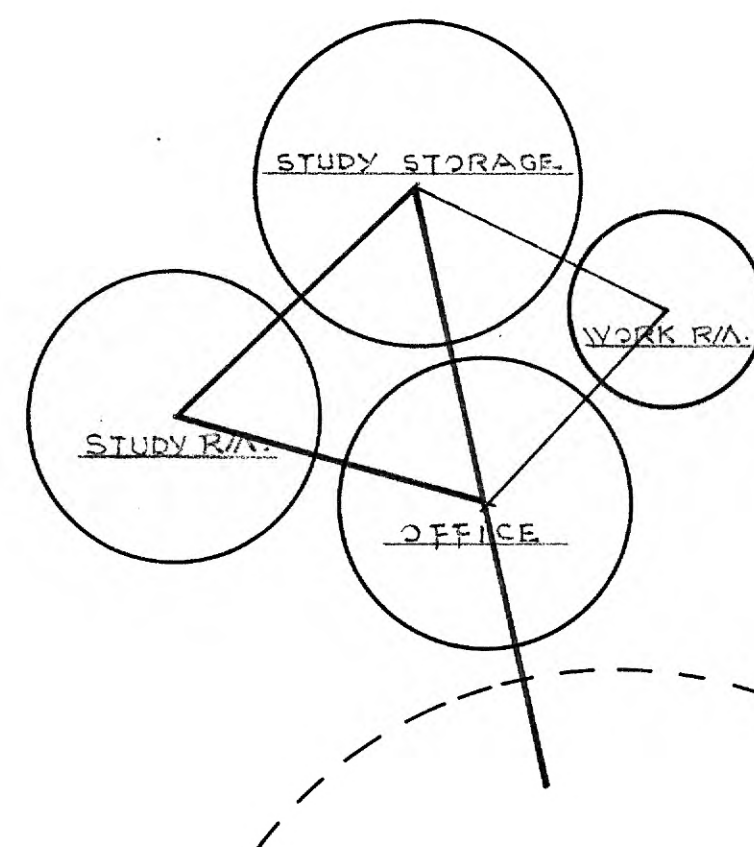
SITE PLAN: STUDY OF CHILDREN'S, ADULT'S, TOURIST'S, FLOW LINES

CIVIC CENTER FOR K.C.MO. 6

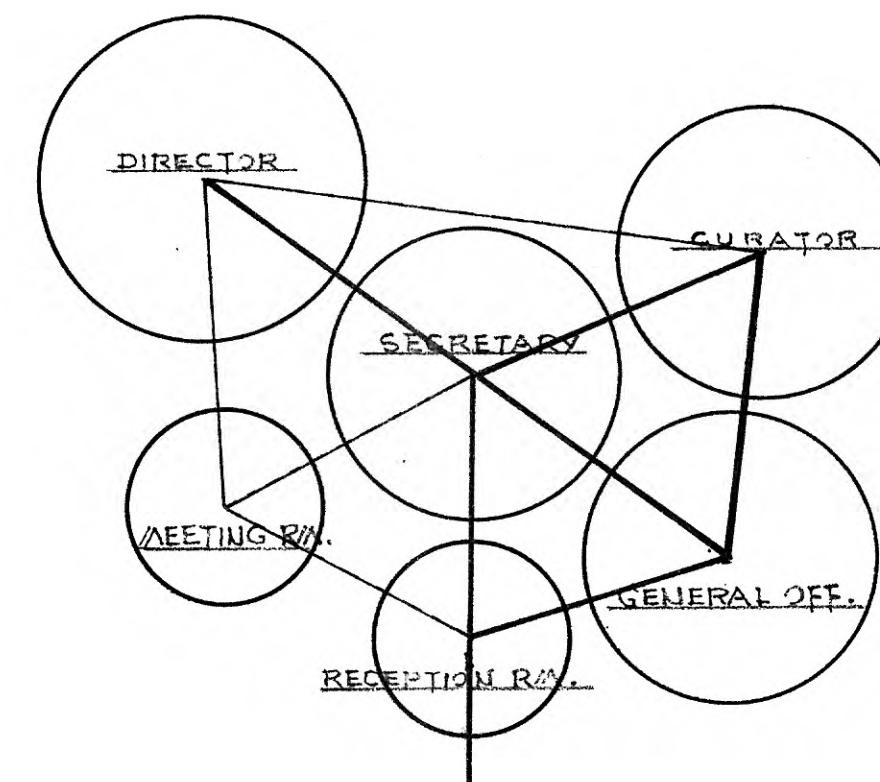




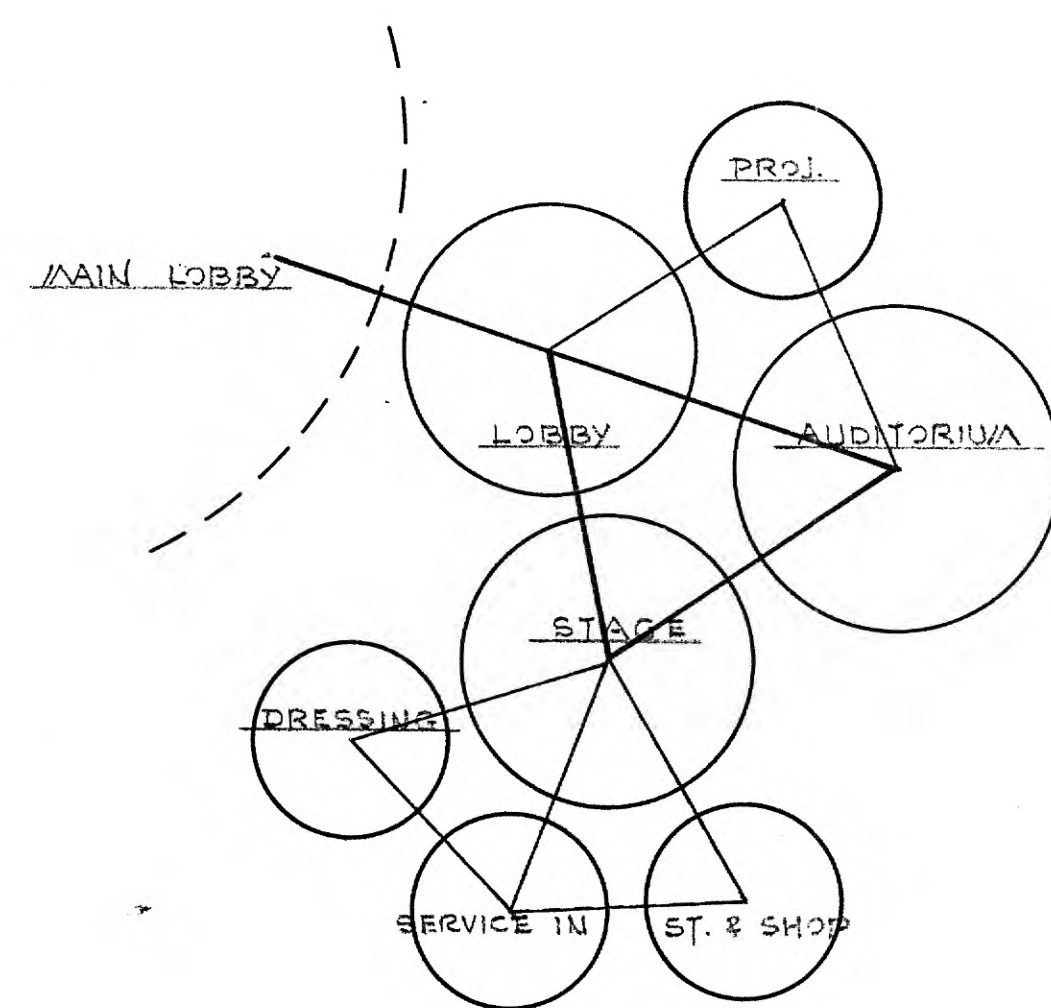
LIBRARY



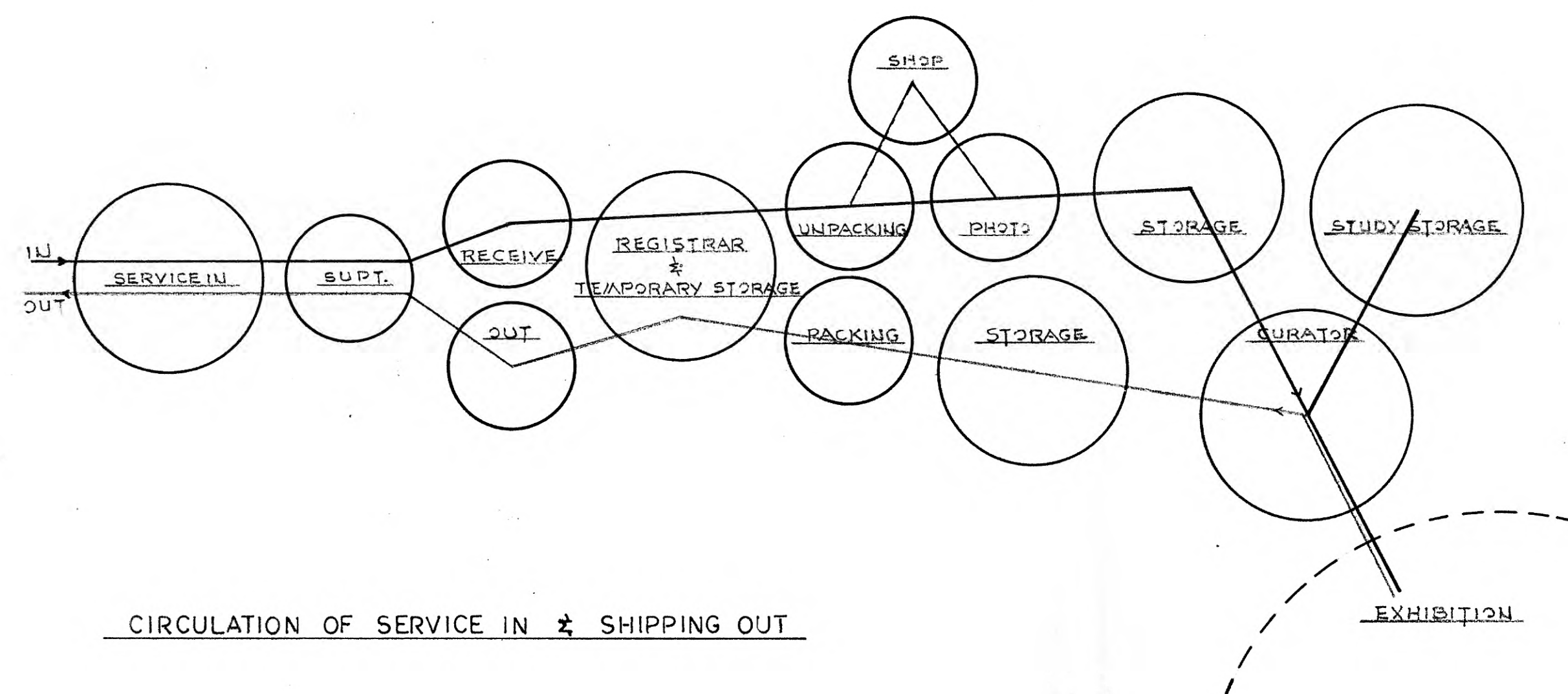
CURATORIAL SUITE



ADMINISTRATION



LECTURE HALL



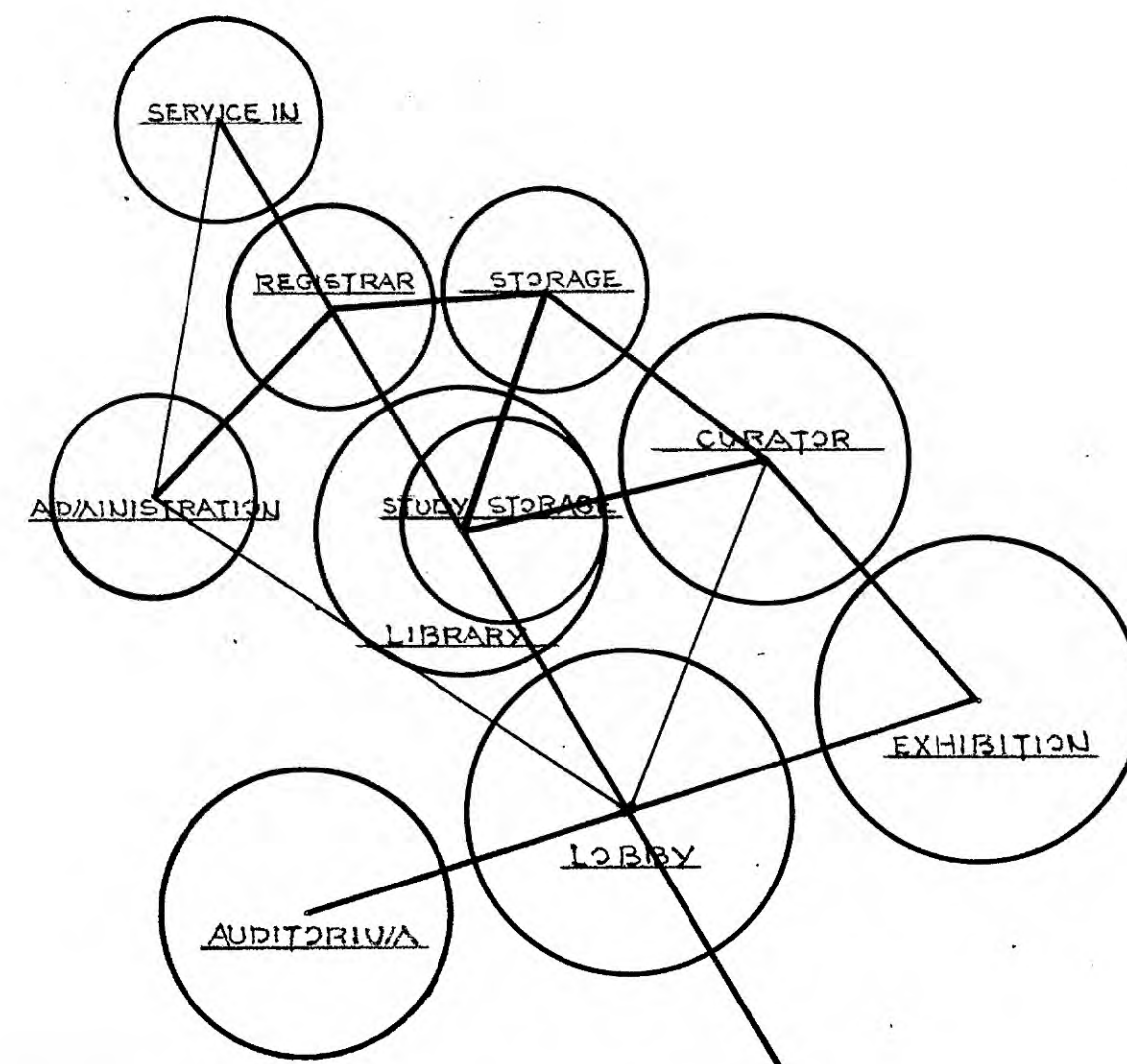
CIRCULATION OF SERVICE IN \* SHIPPING OUT

BALLOON DIAGRAM: DETAIL OF MUSEUM

1. DISTANCE BETWEEN BALLOONS: RELATION OF FUNCTIONS TO EACH OTHER. 2. SIZE INDICATES IMPORTANCE OF FUNCTION. 3. THICKNESS OF LINE BETWEEN FUNCTION INDICATES FLOW BETWEEN FUNCTIONS.

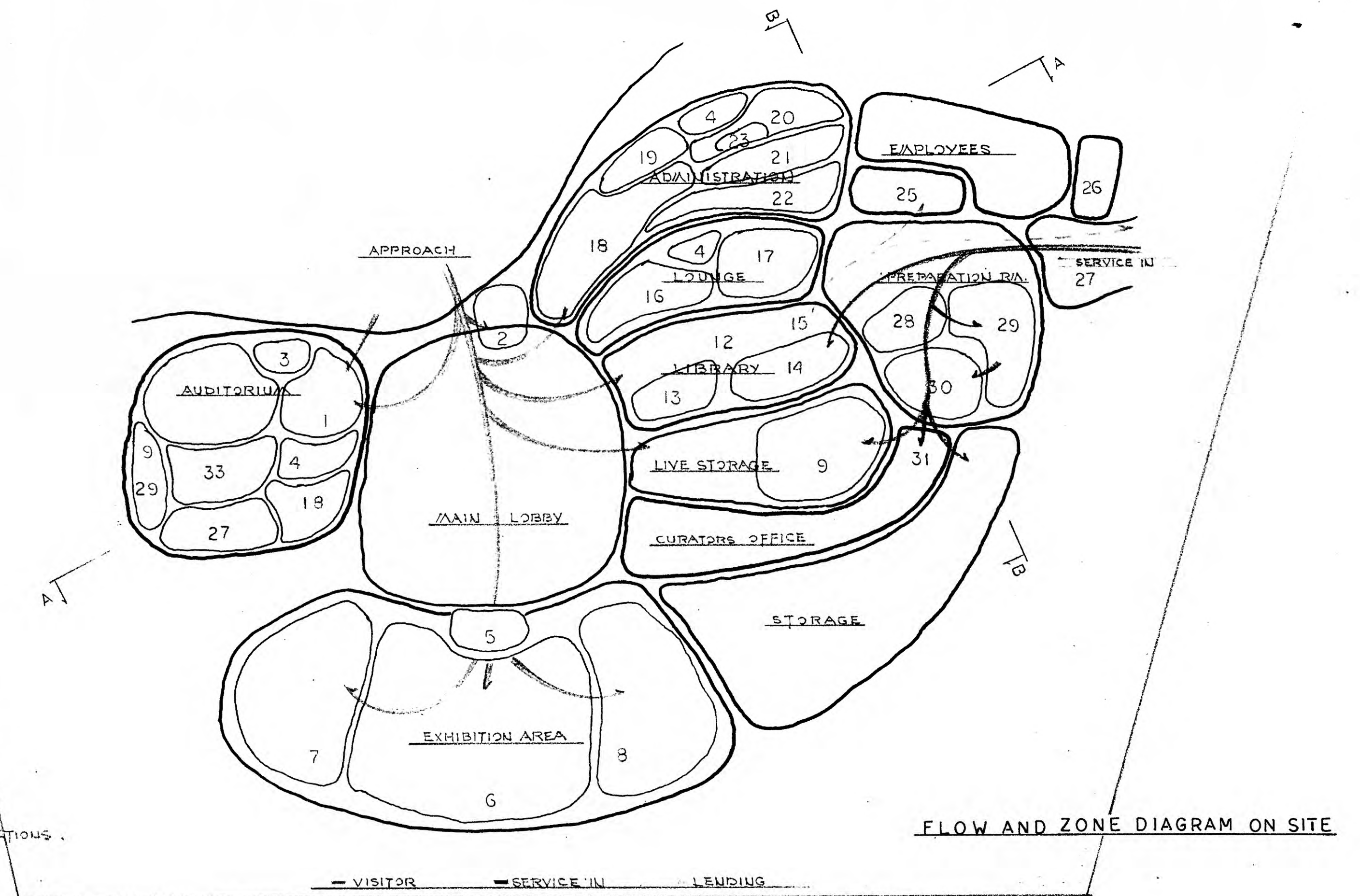
CIVIC CENTER FOR K.C.MO.





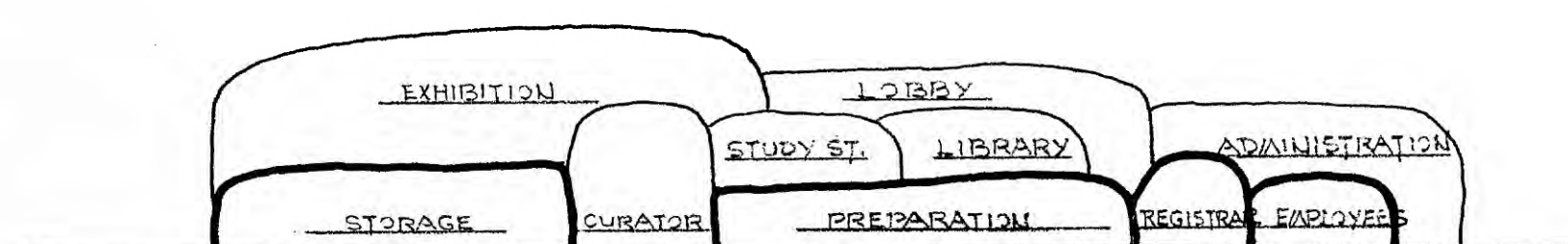
BALLOON DIAGRAM

1. DISTANCE BETWEEN BALLOONS: RELATION OF FUNCTION TO EACH OTHER.
2. SIZE INDICATES IMPORTANCE OF FUNCTION.
3. THICKNESS OF LINE BETWEEN FUNCTION INDICATES FLOW BETWEEN FUNCTIONS.

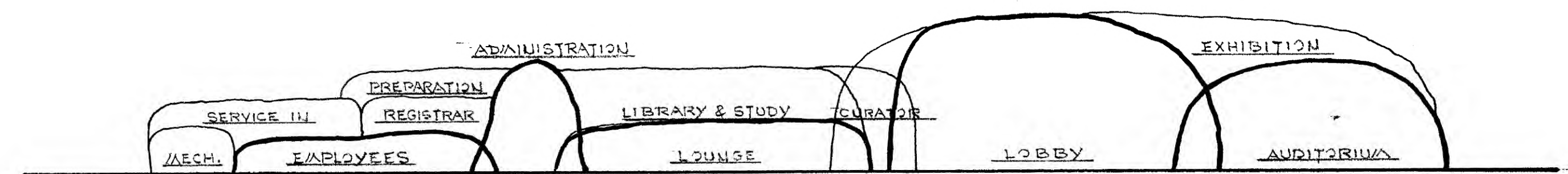


FLOW AND ZONE DIAGRAM ON SITE

1. LOBBY 2. INFORMATION DESK 3. COAT 4. TOILET 5. SPECIAL EXHIBITION 6. REGIONAL HISTORY 7. ANTHROPOLOGY 8. NATURAL HISTORY 9. STORAGE 10. CURATOR OFFICE 11. LIVE STORAGE 12. STUDY 13. LIBRARY OFFICE 14. LIBRARY STOCK 15. LENDING DEPT. 16. LOUNGE  
17. COFFEE SHOP 18. RECEPTION 19. CONFERENCE RM. 20. DIRECTOR'S OFFICE 21. CURATOR'S OFFICE 22. STAFF 23. SECRETARY 24. EMPLOYEES 25. REGISTRAR 26. MECH. RM. 27. SERVICE IN 28. PACKING RM. 29. SHOP 30. PHOTO 31. WORK AREA 32. AUDITORIUM 33. STAGE



SECTION B-B



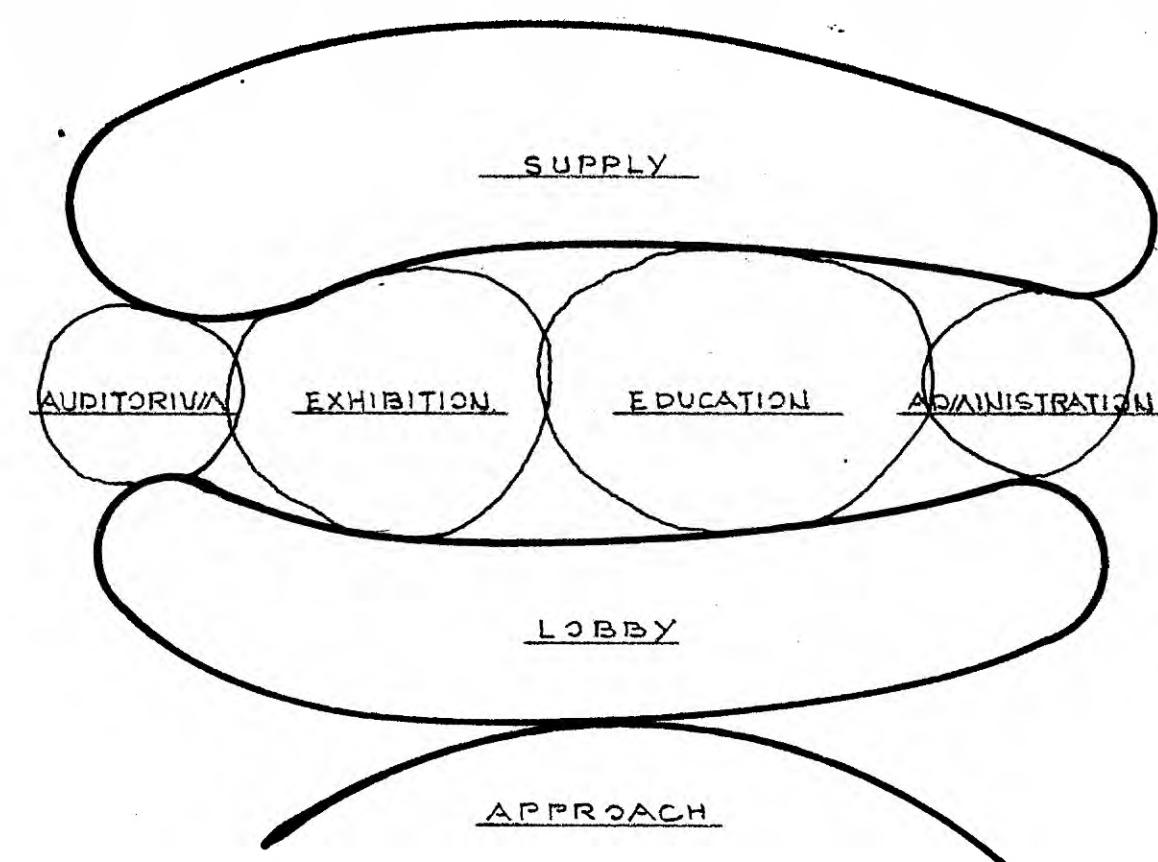
SECTION A-A

FUNCTION DIAGRAM OF MUSEUM

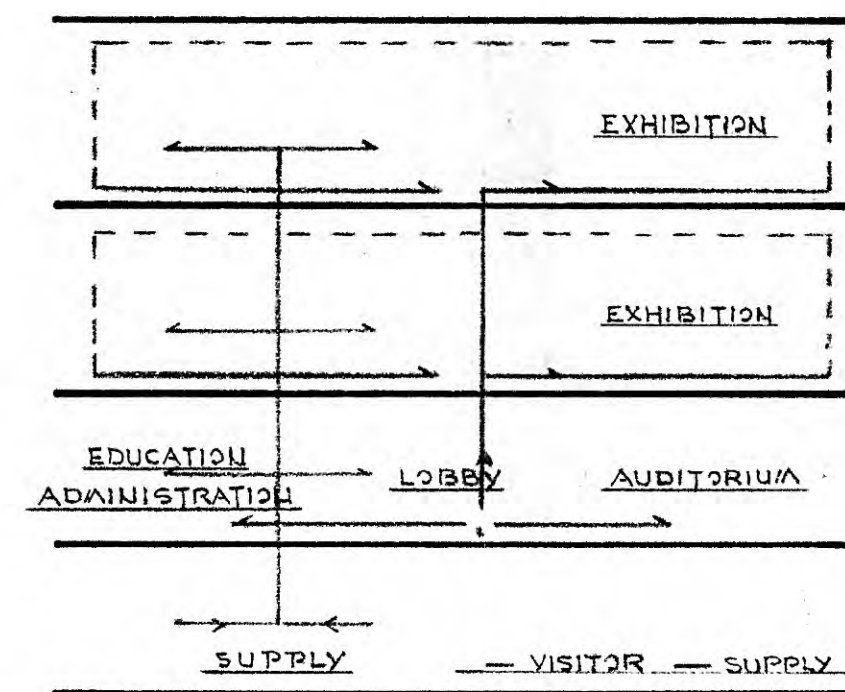
CIVIC CENTER FOR K.C.MO.

88

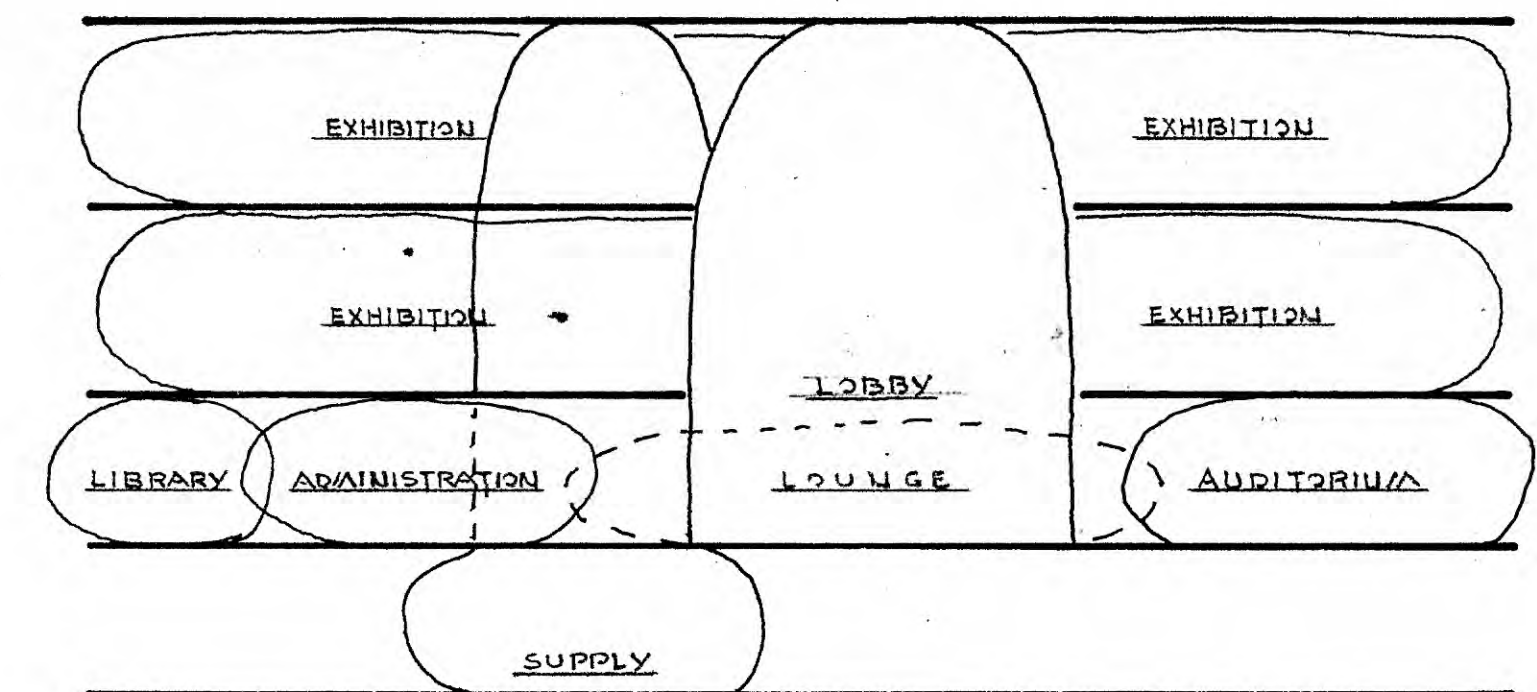




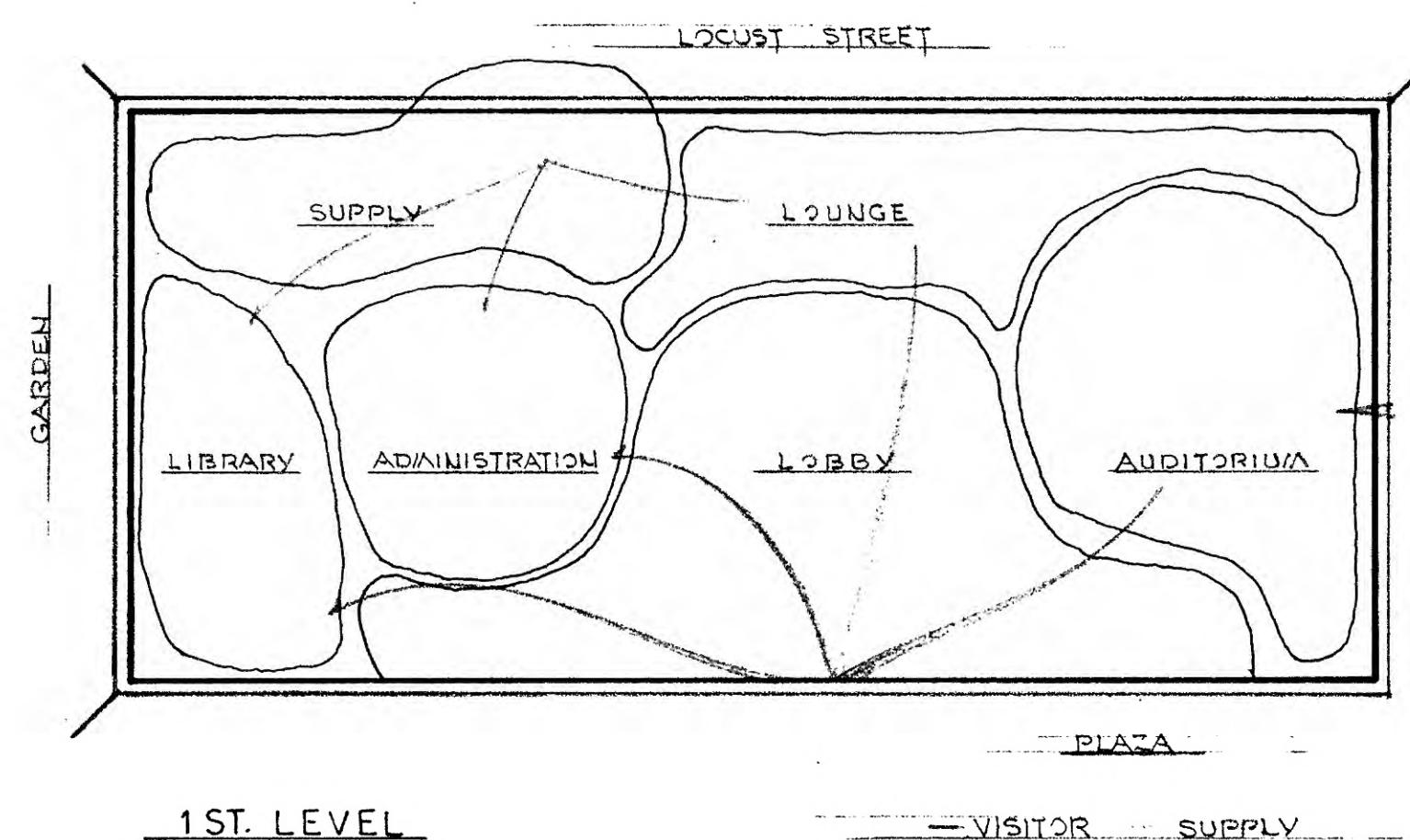
ZONE DIAGRAM



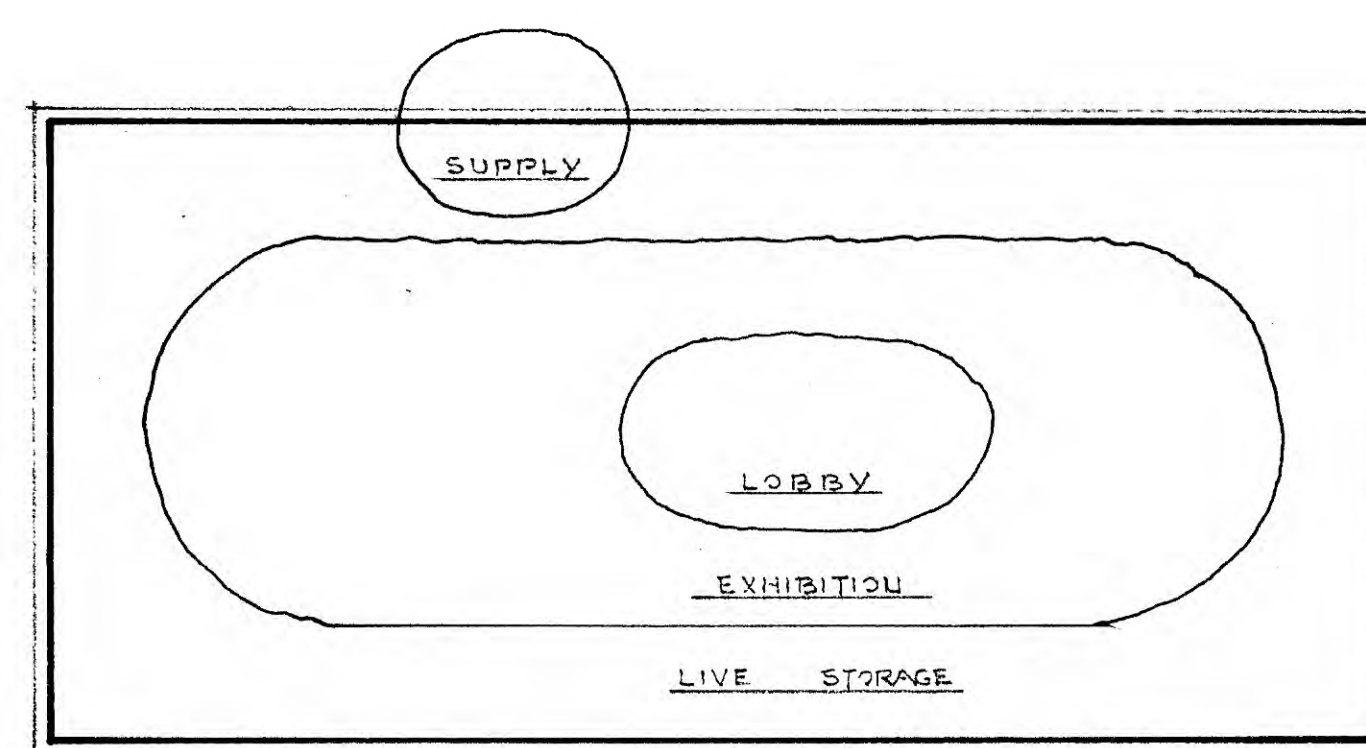
KEY OF SECTION



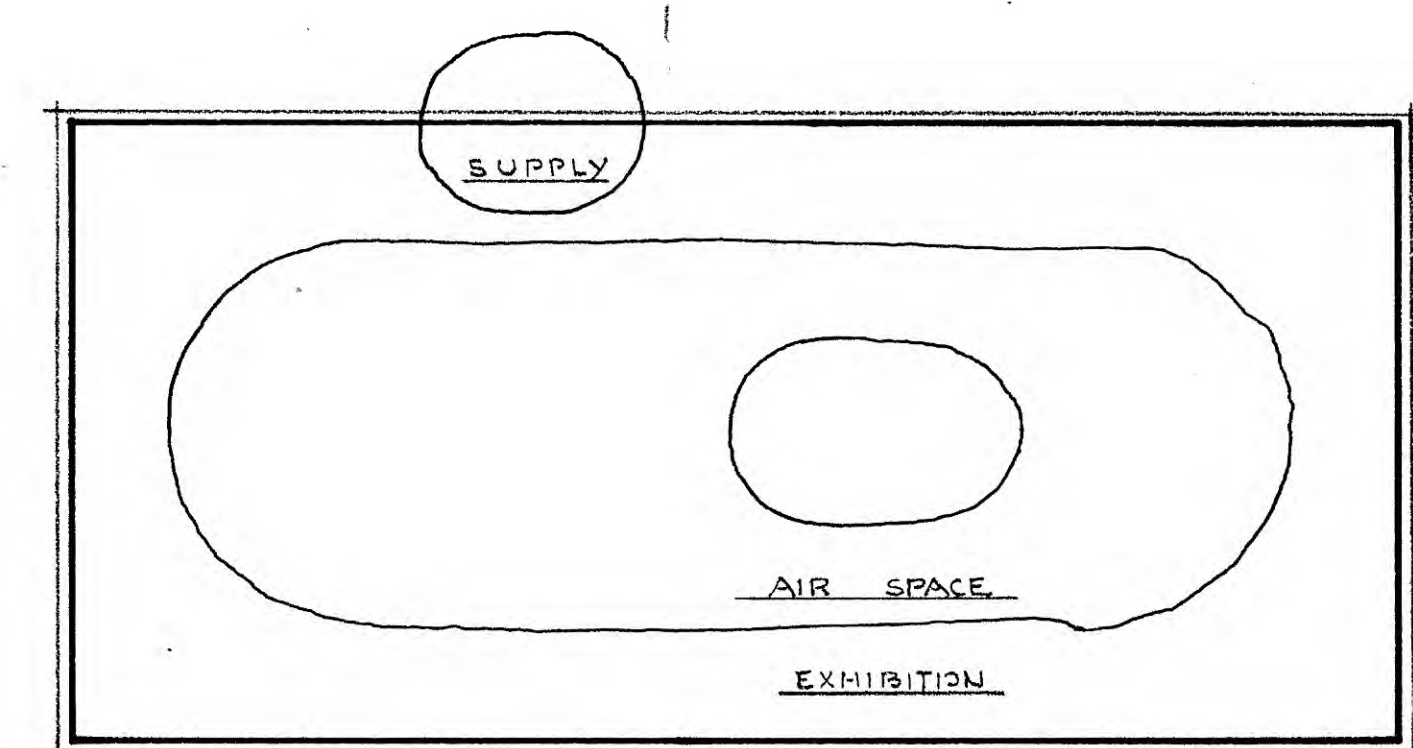
SECTION



1ST. LEVEL



2ND LEVEL

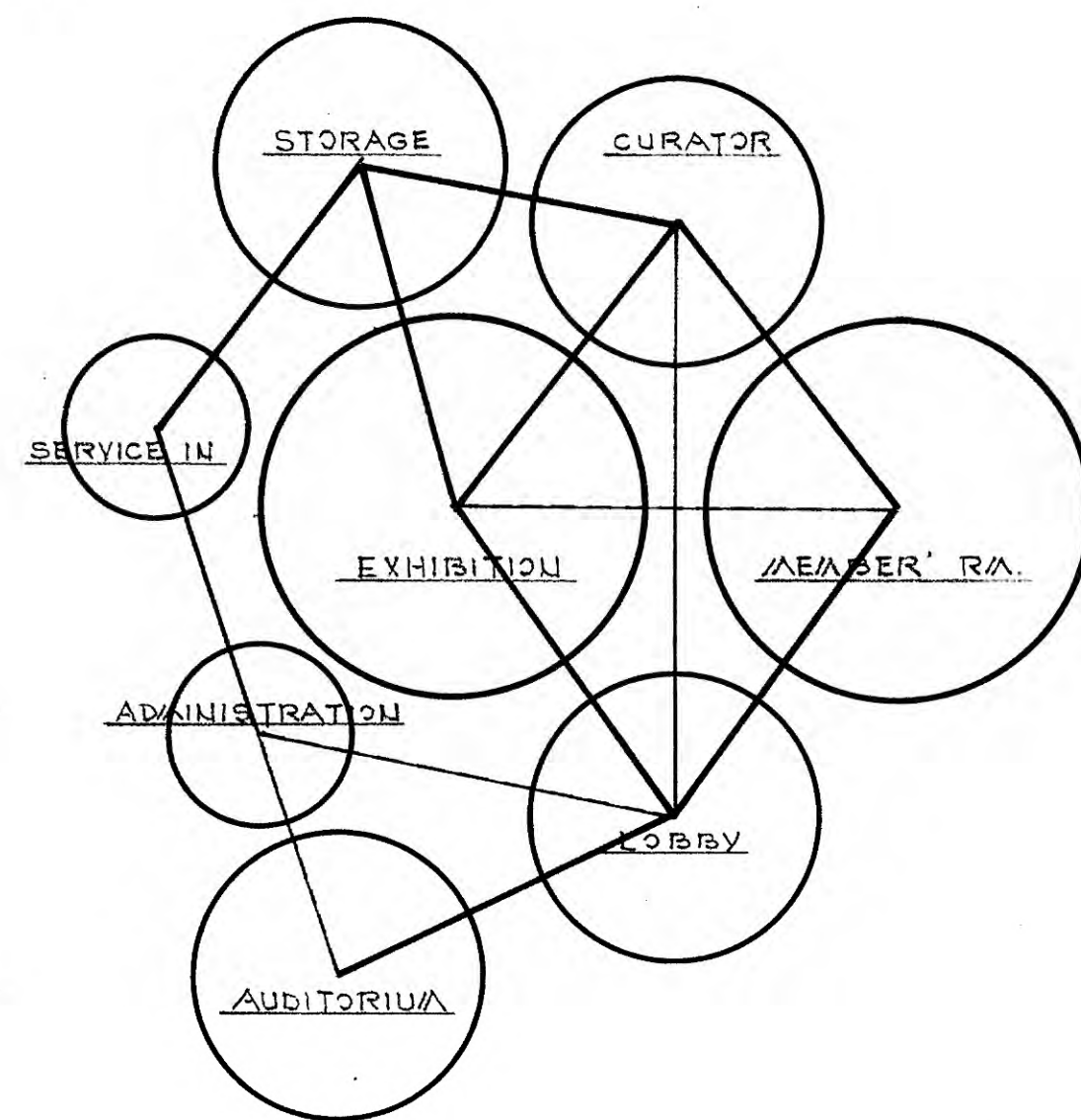


3RD LEVEL

FUNCTION DIARAM OF MUSEUM (STAGE 2)

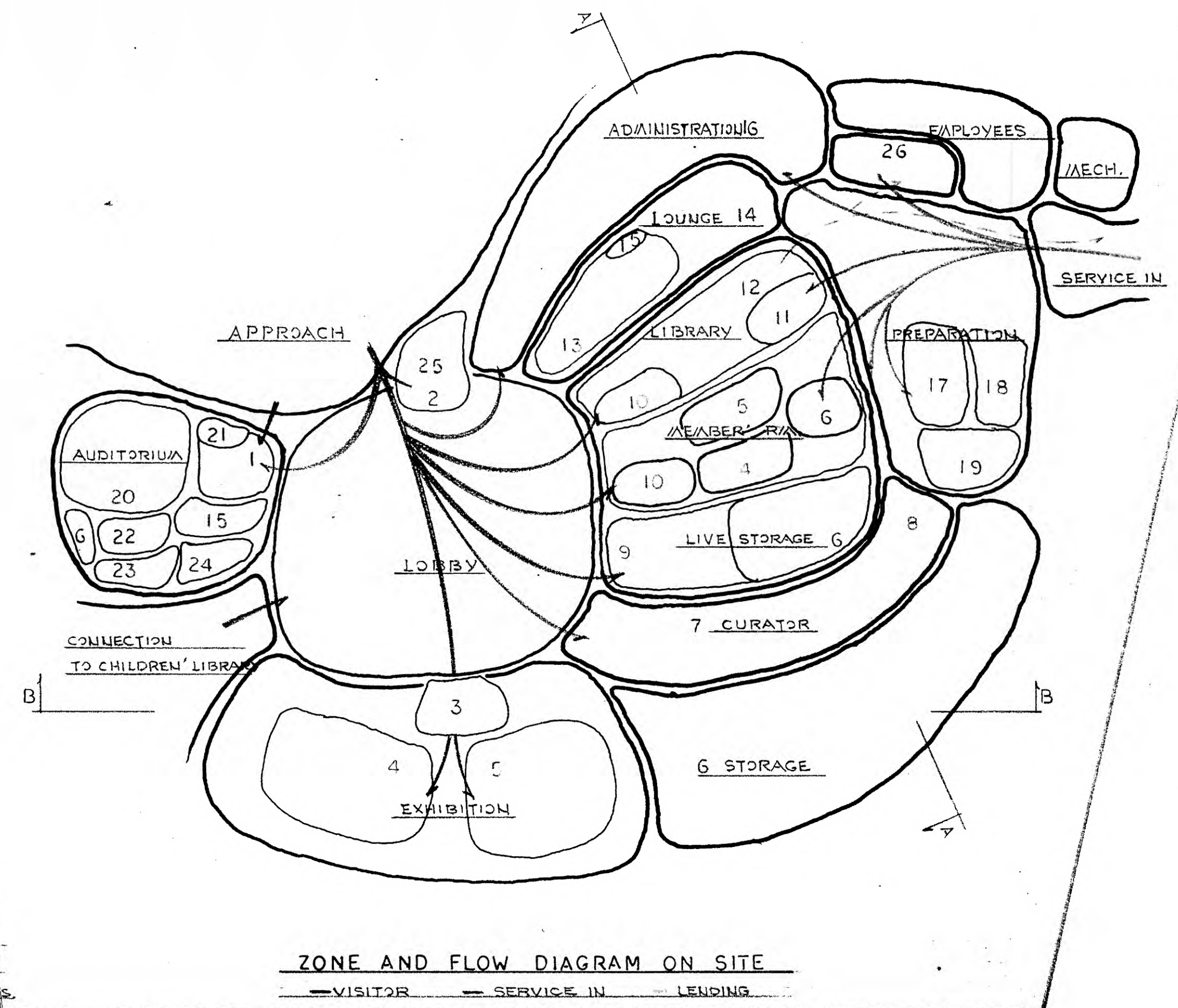
CIVIC CENTER FOR K.C.MO. 9





FUNCTION DIAGRAM

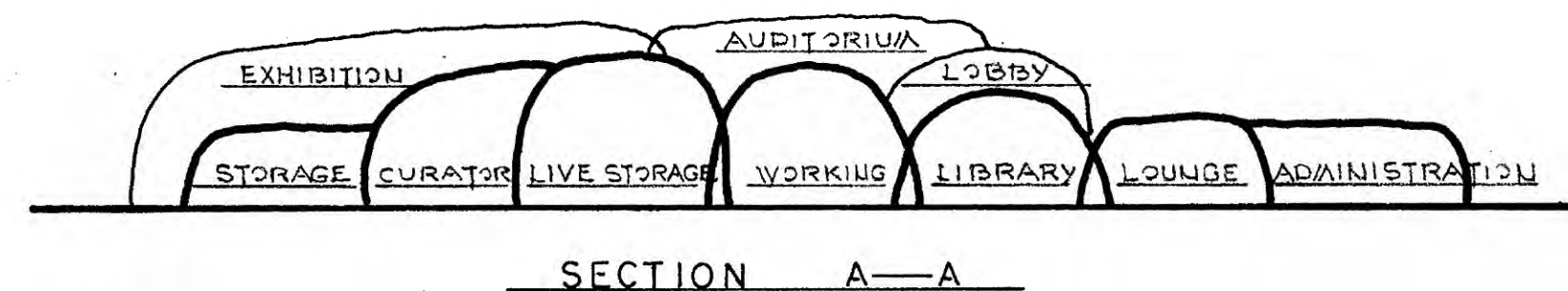
1. DISTANCE BETWEEN BALLOONS: RELATION OF FUNCTIONS TO EACH OTHER.
2. SIZE INDICATES IMPORTANCE OF FUNCTION.
3. THICKNESS OF LINE BETWEEN FUNCTION INDICATES FLOW BETWEEN FUNCTIONS.



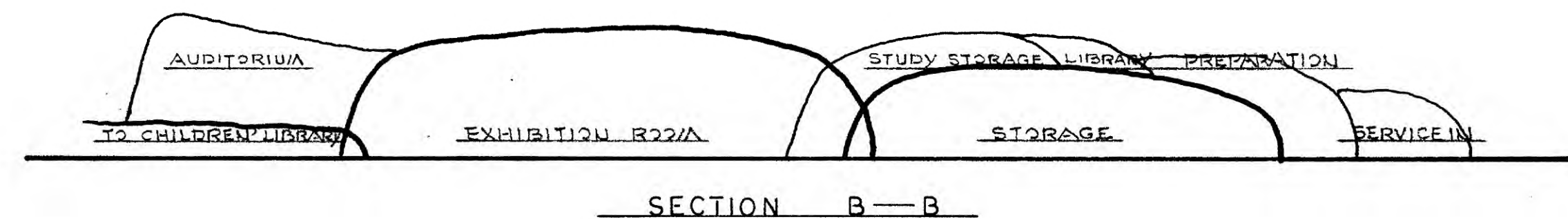
ZONE AND FLOW DIAGRAM ON SITE

— VISITOR — SERVICE IN — LENDING

1. LOBBY 2. INFORMATION 3. SPECIAL EXHIBITION 4. ARTS 5. SCIENCE 6. STORAGE 7. CURATOR 8. WORKING AREA 9. STUDY 10. OFFICE 11. LIBRARY STOCK 12. LENDING DEPARTMENT 13. LOUNGE  
14. LUNCHEON 15. TOILET 16. ADMINISTRATION 17. PACKING 18. SHOP 19. PHOTO & PRINTS 20. AUDITORIUM 21. COAT 22. STAGE 23. SERVICE IN 24. RECEPTION 25. SALES 26. REGISTRAR AND STORAGE



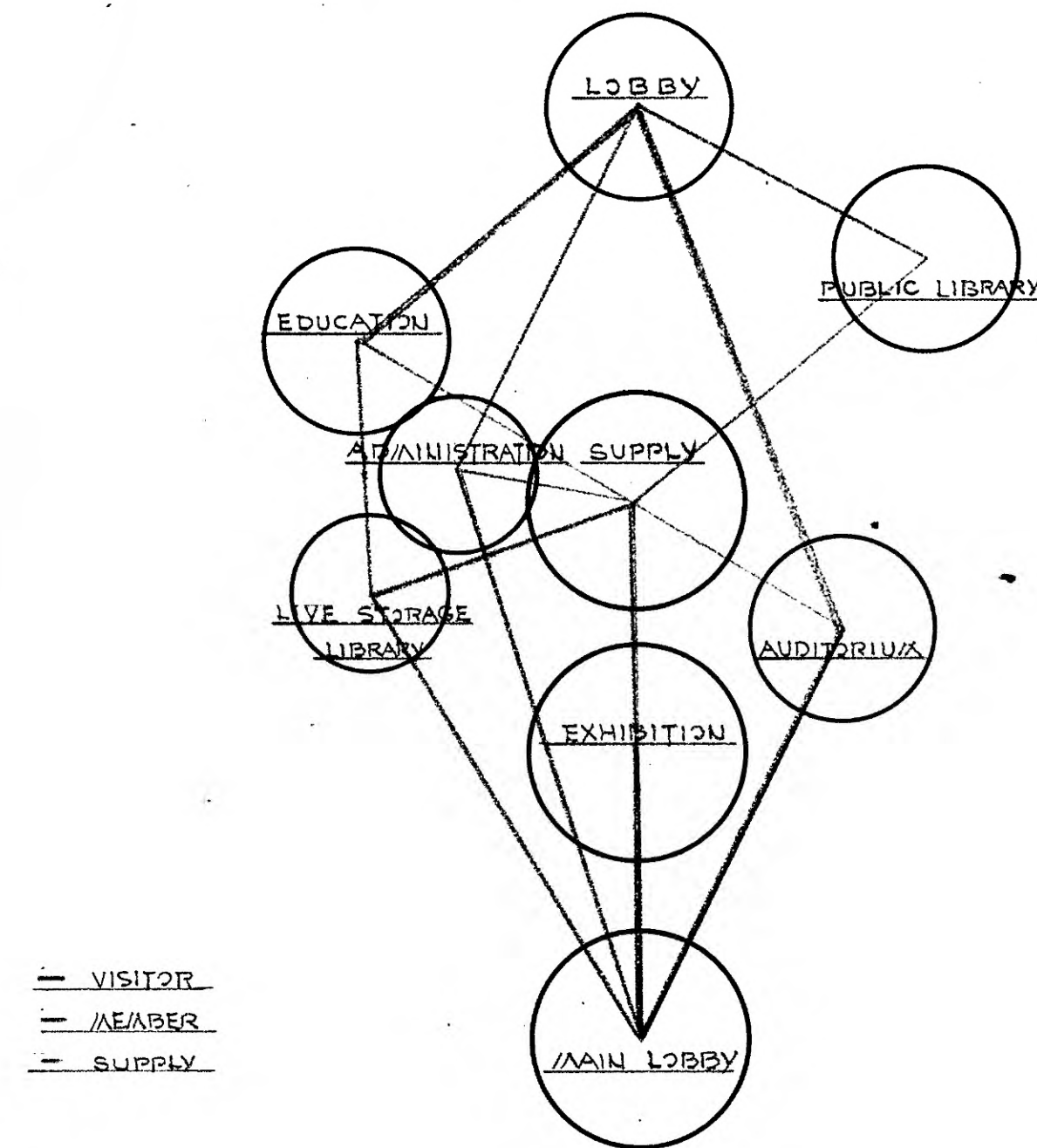
SECTION A—A



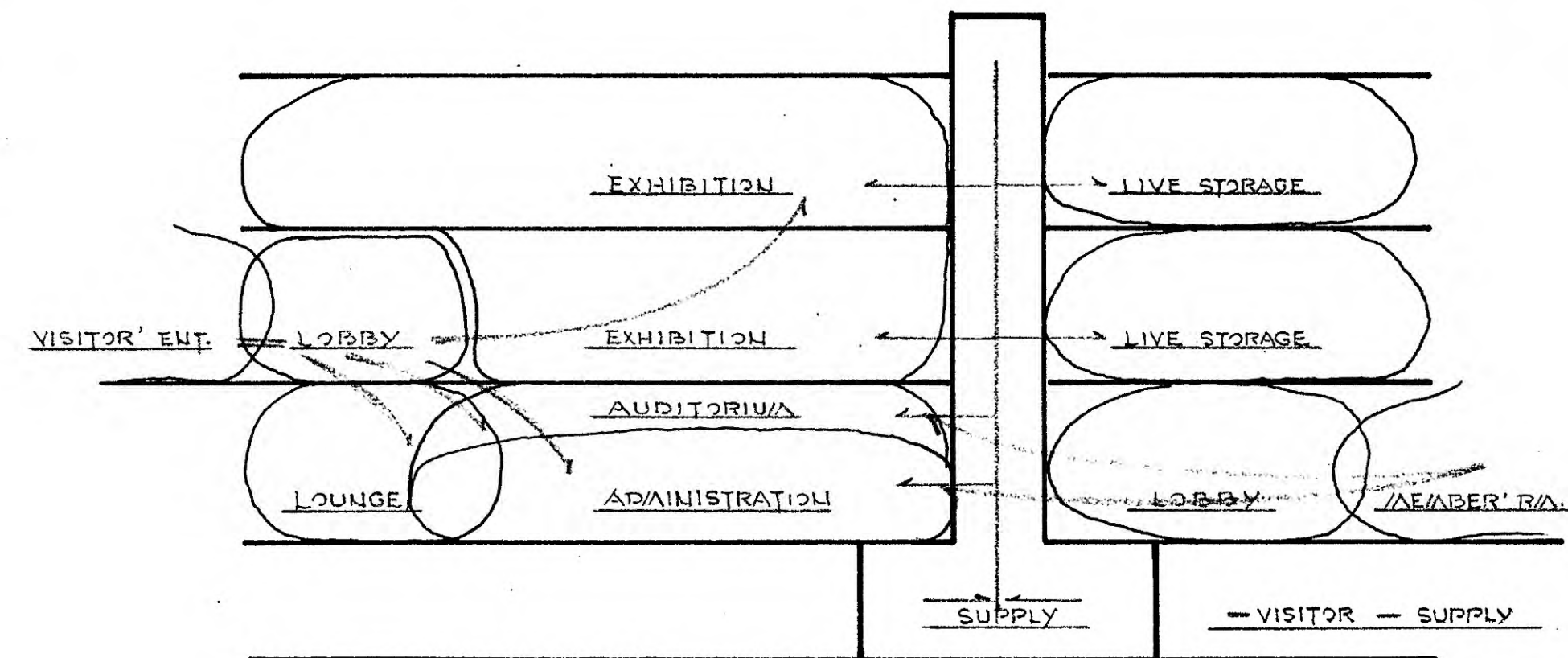
SECTION B—B

FUNCTION DIAGRAM OF CHILDREN MUSEUM



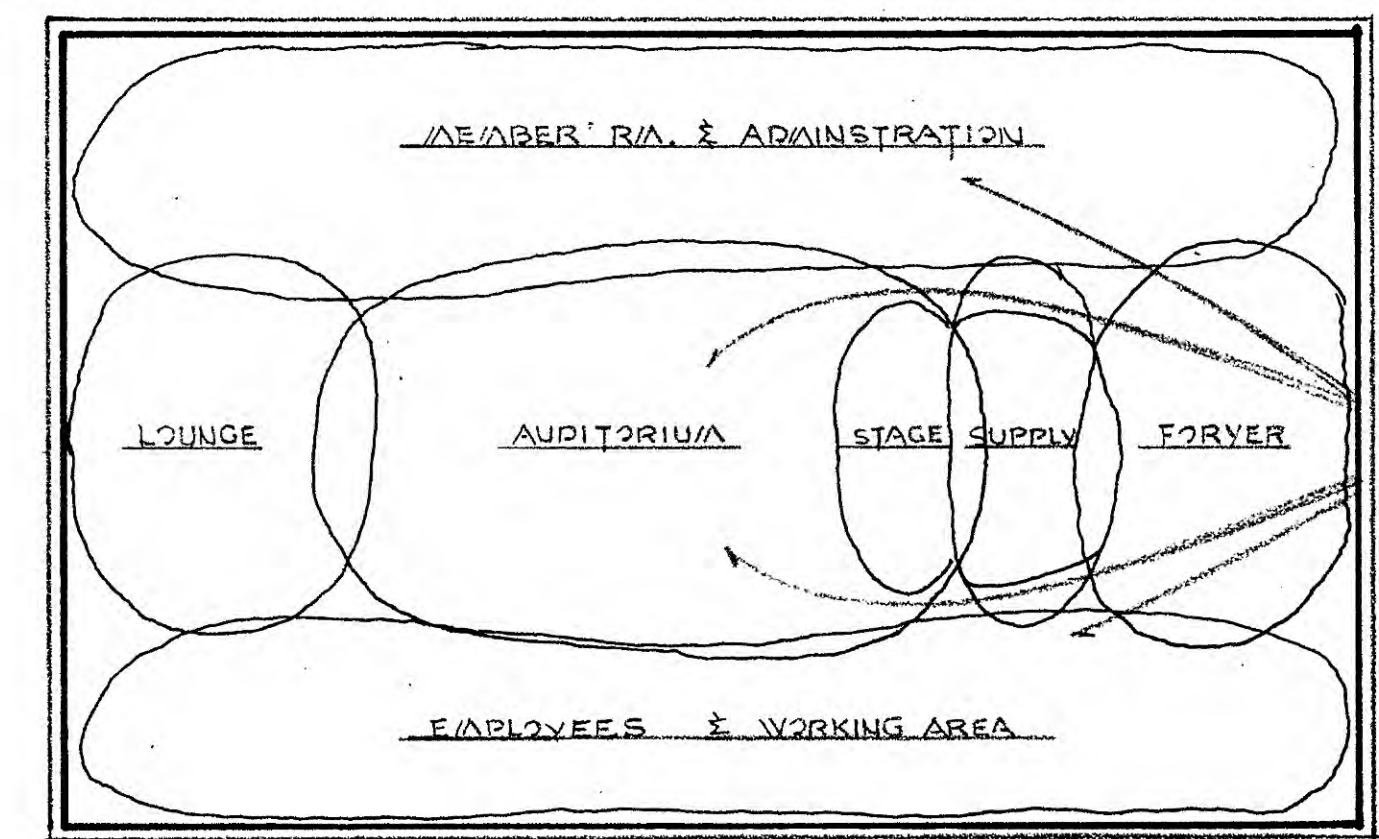
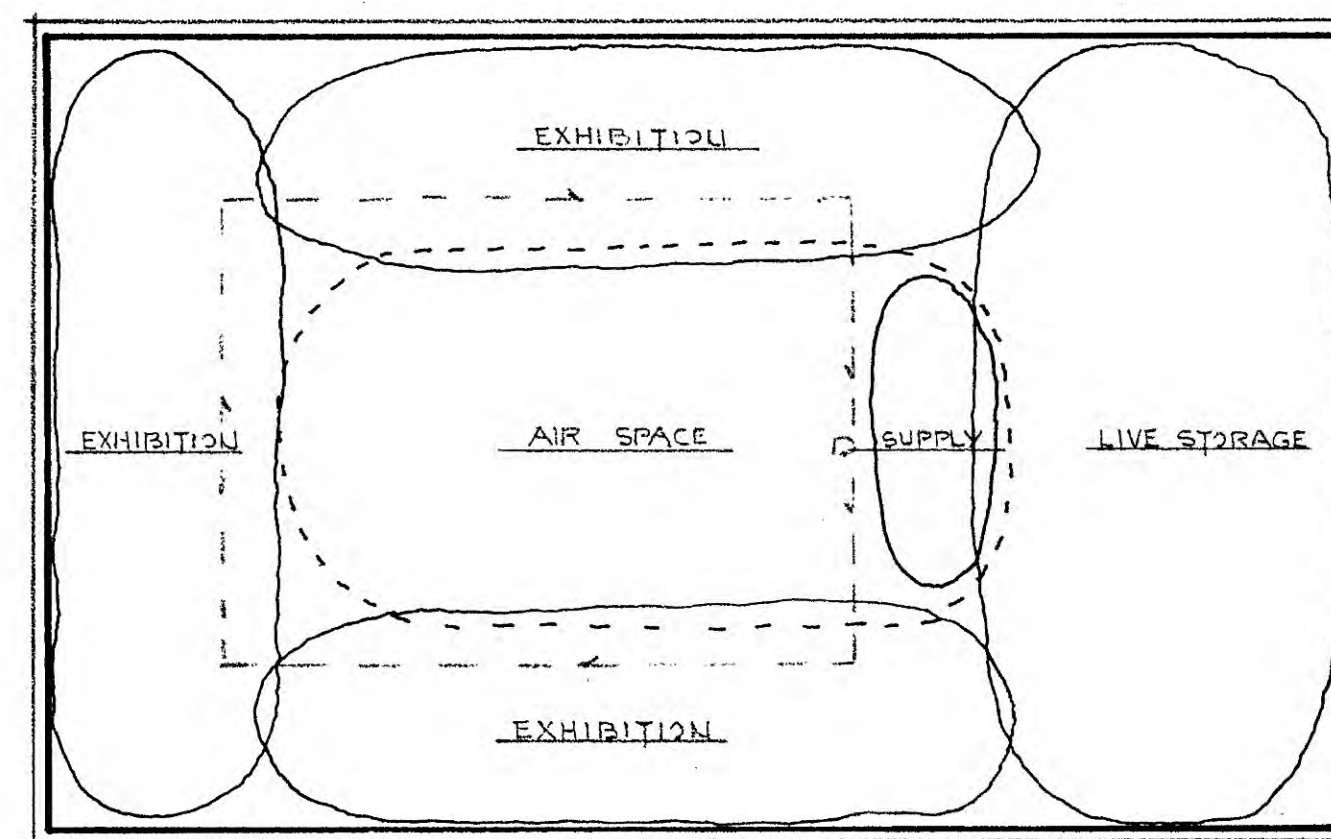
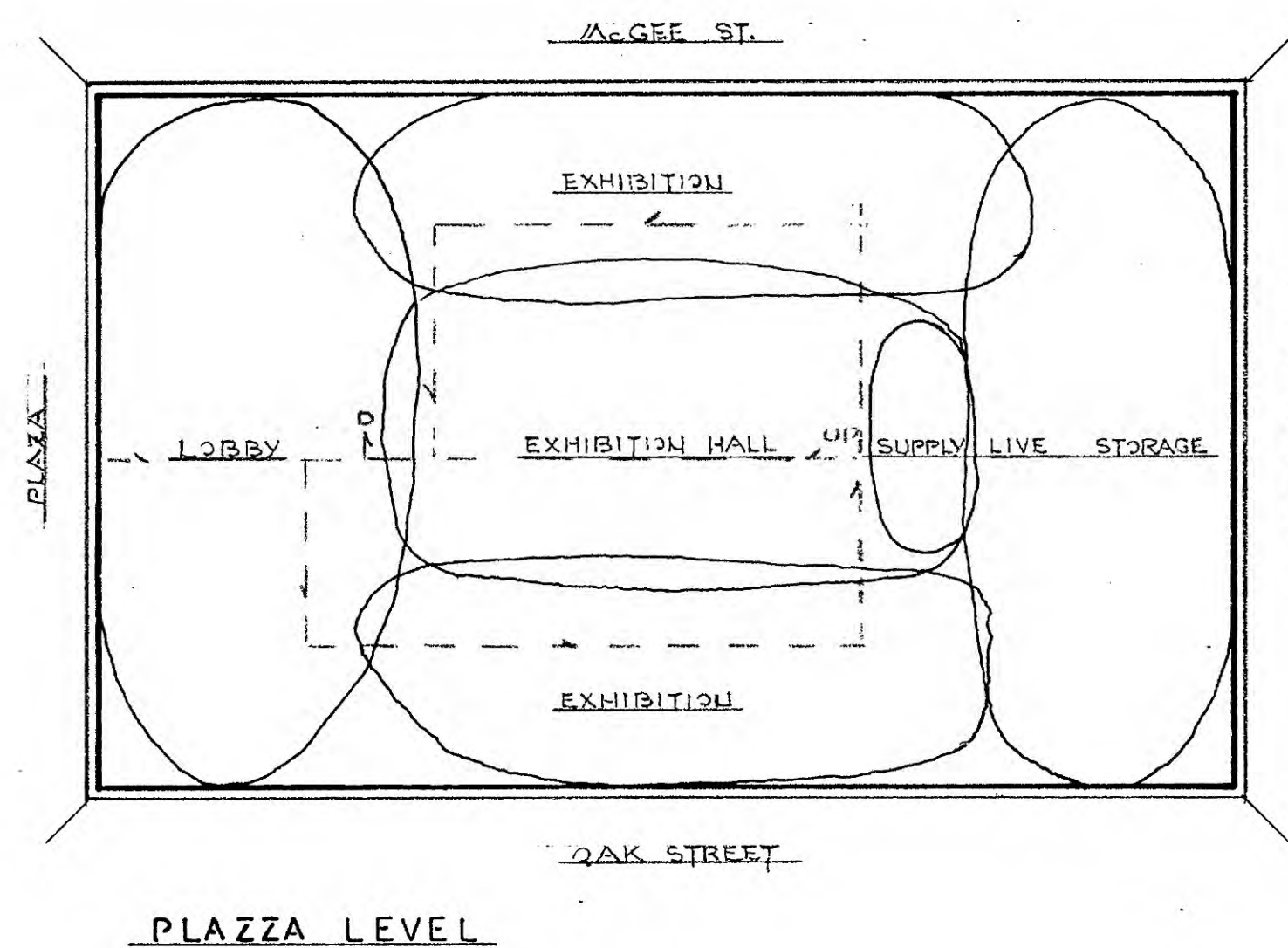


FUNCTION DIAGRAM



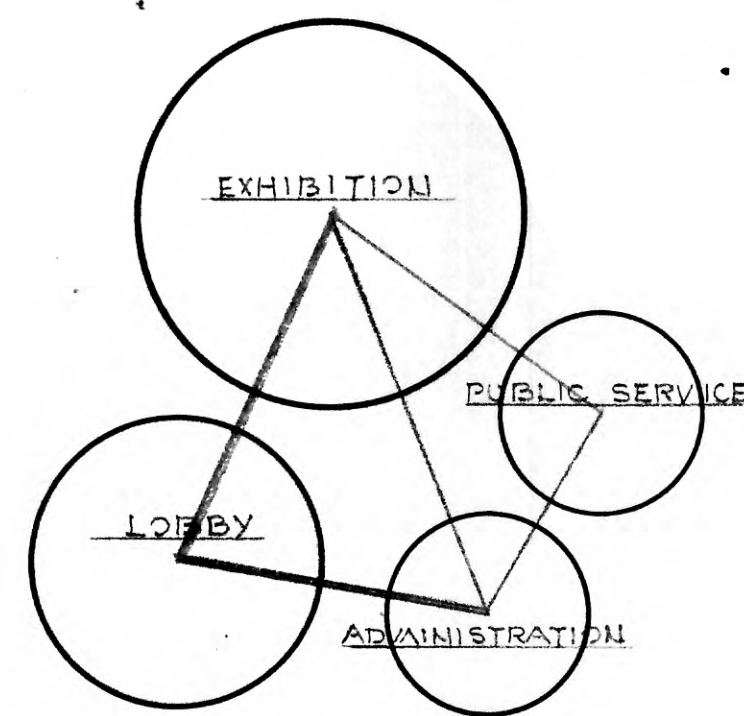
SECTION

1. DISTANCE BETWEEN BALLOONS: RELATION OF FUNCTIONS TO EACH OTHER. 2. SIZE INDICATES IMPORTANCE OF FUNCTION. 3. THICKNESS OF LINE BETWEEN FUNCTION INDICATES FLOW BETWEEN FUNCTIONS.



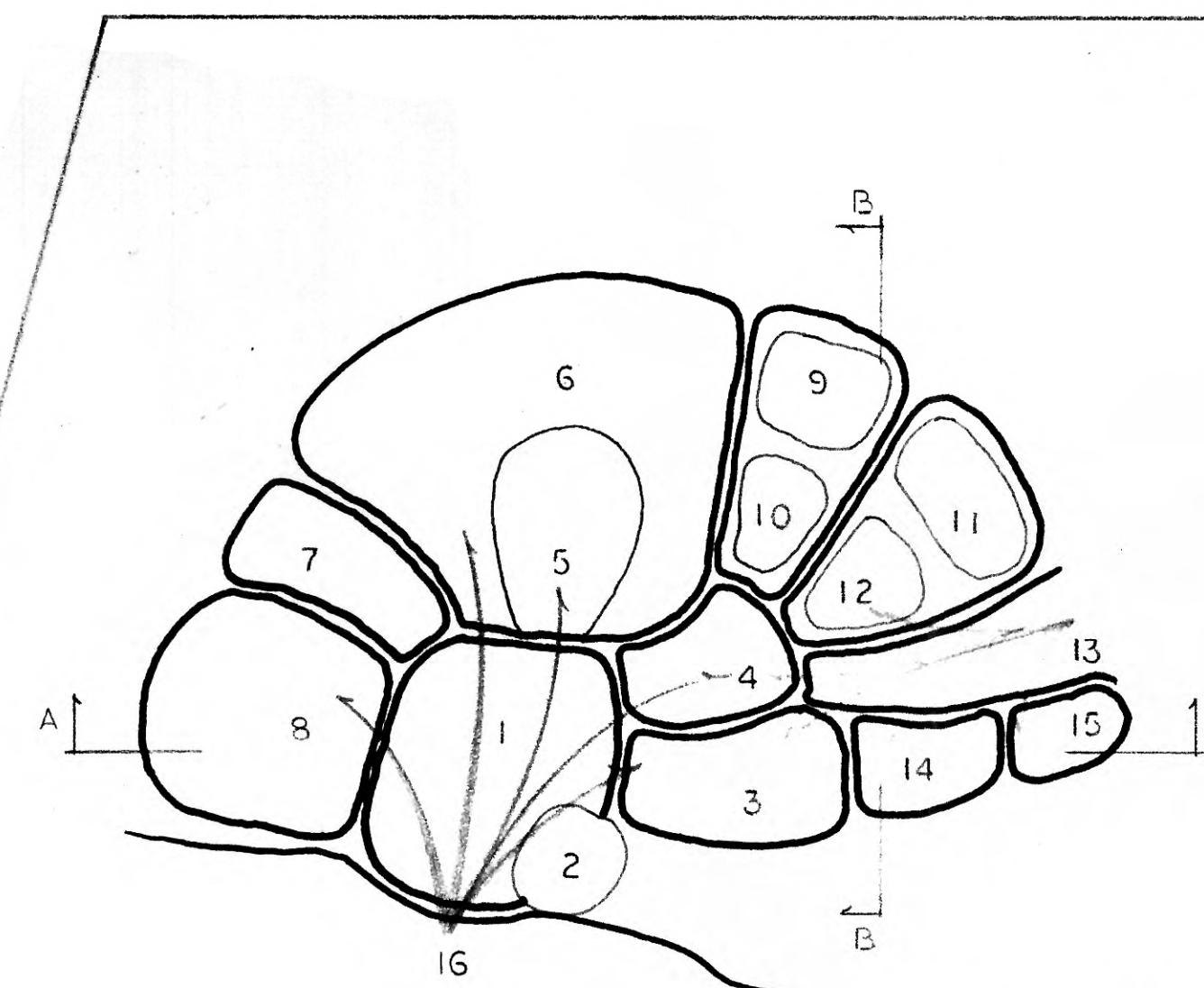
FUNCTION DIAGRAM OF THE CHILDREN' MUSEUM (STAGE 2)



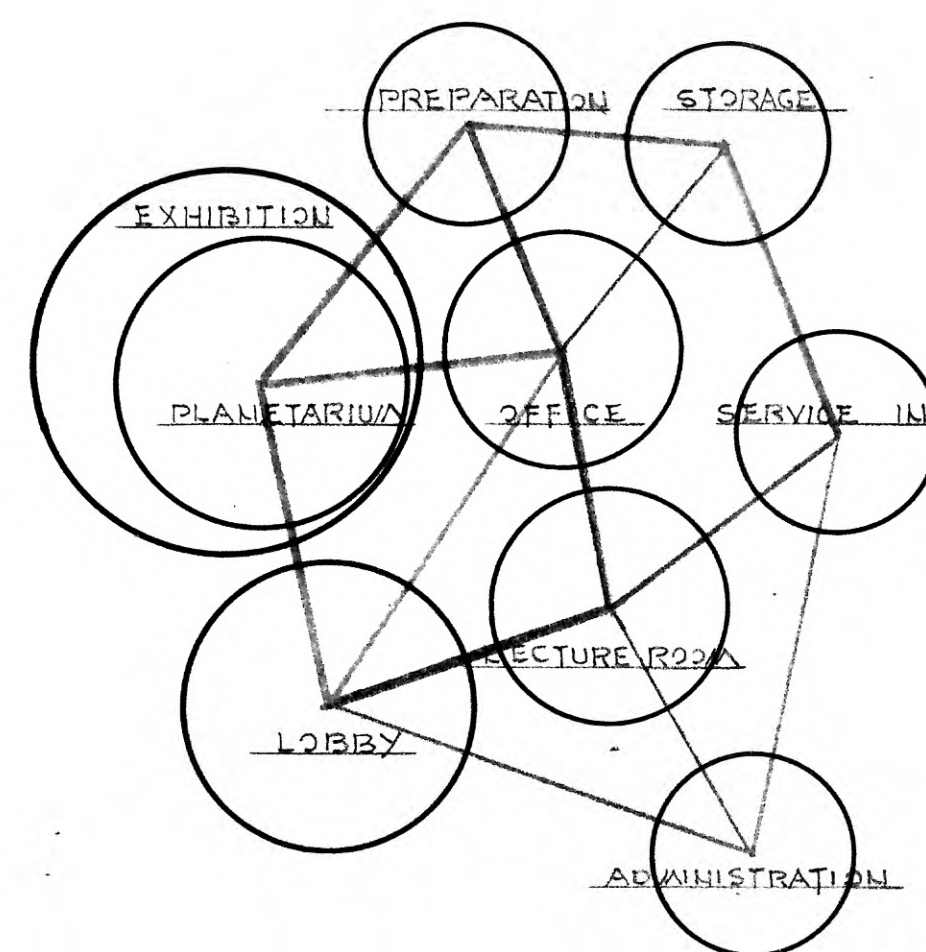


FUNCTION DIAGRAM 1.  
— VISITOR — STAFF

1. DISTANCE BETWEEN BALLOONS: RELATION OF FUNCTIONS TO EACH OTHER.
2. SIZE INDICATES IMPORTANCE OF FUNCTION.
3. THICKNESS OF LINE BETWEEN FUNCTION INDICATES FLOW BETWEEN FUNCTIONS.

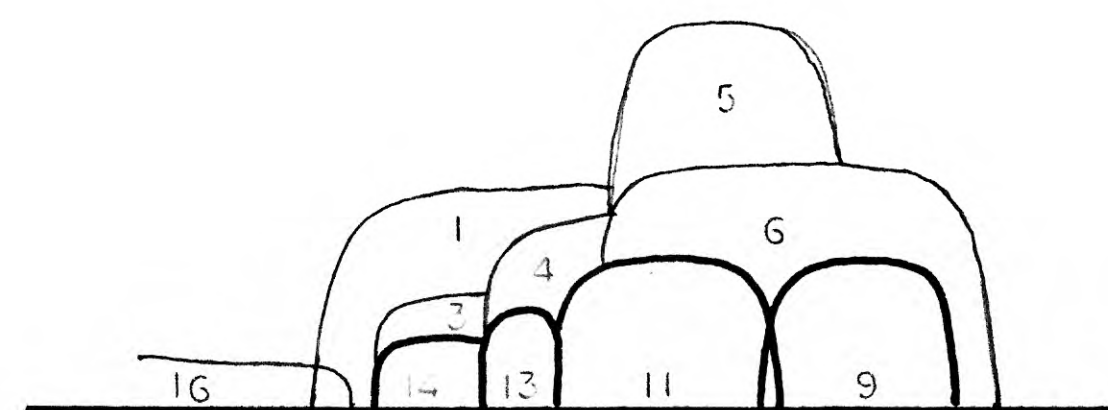


ZONE AND FLOW DIAGRAM ON SITE  
— VISITOR — SERVICE IN

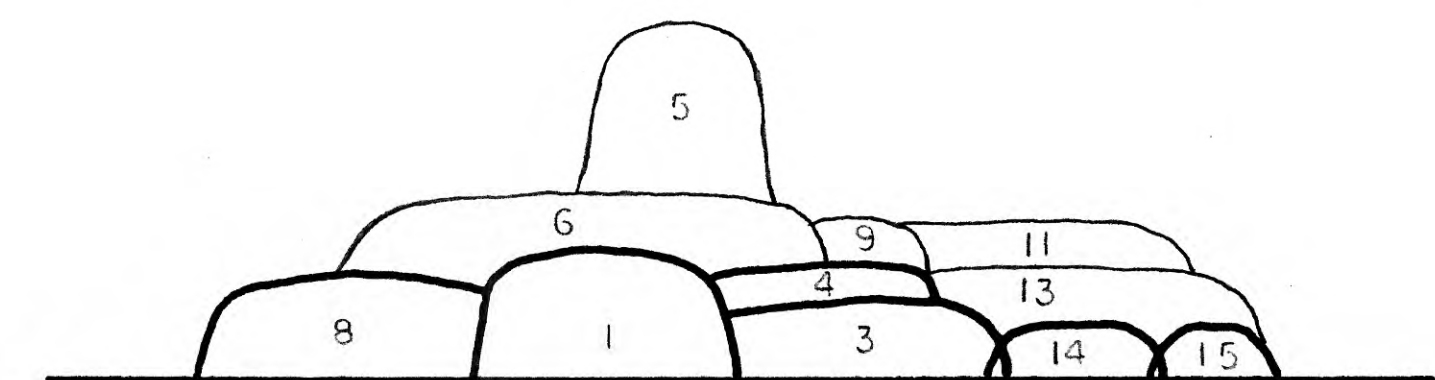


FUNCTION DIAGRAM 2.

1. LOBBY 2. CONTROL 3. ADMINISTRATION 4. ASTRONOMER 5. PLANETARIUM CHAMBER 6. EXHIBITION 7. LOUNGE 8. LECTURE RM.
9. STORAGE 10. PREPARATION RM. 11. SHOP 12. PACKING 13. SERVICE IN 14. EMPLOYEE'S ROOM 15. MECHANICAL RM. 16. APPROACH.



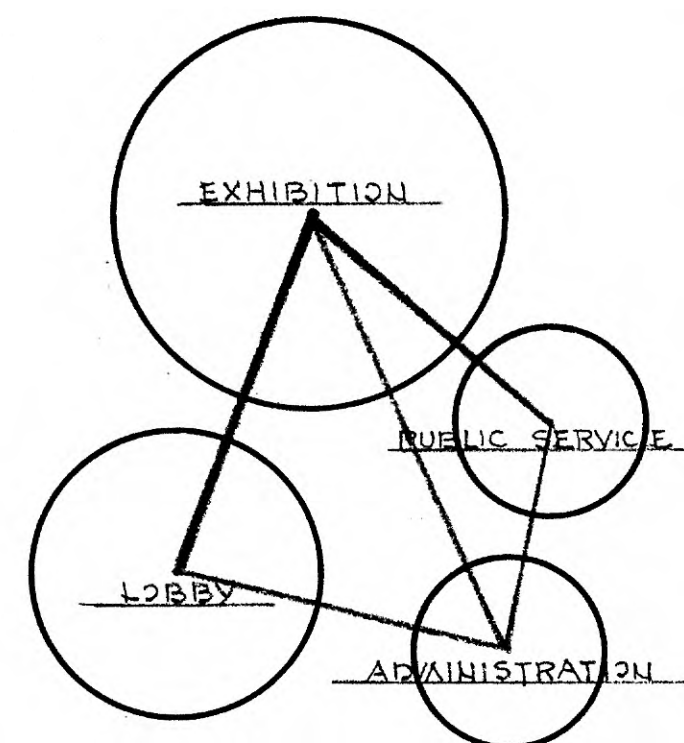
SECTION B—B



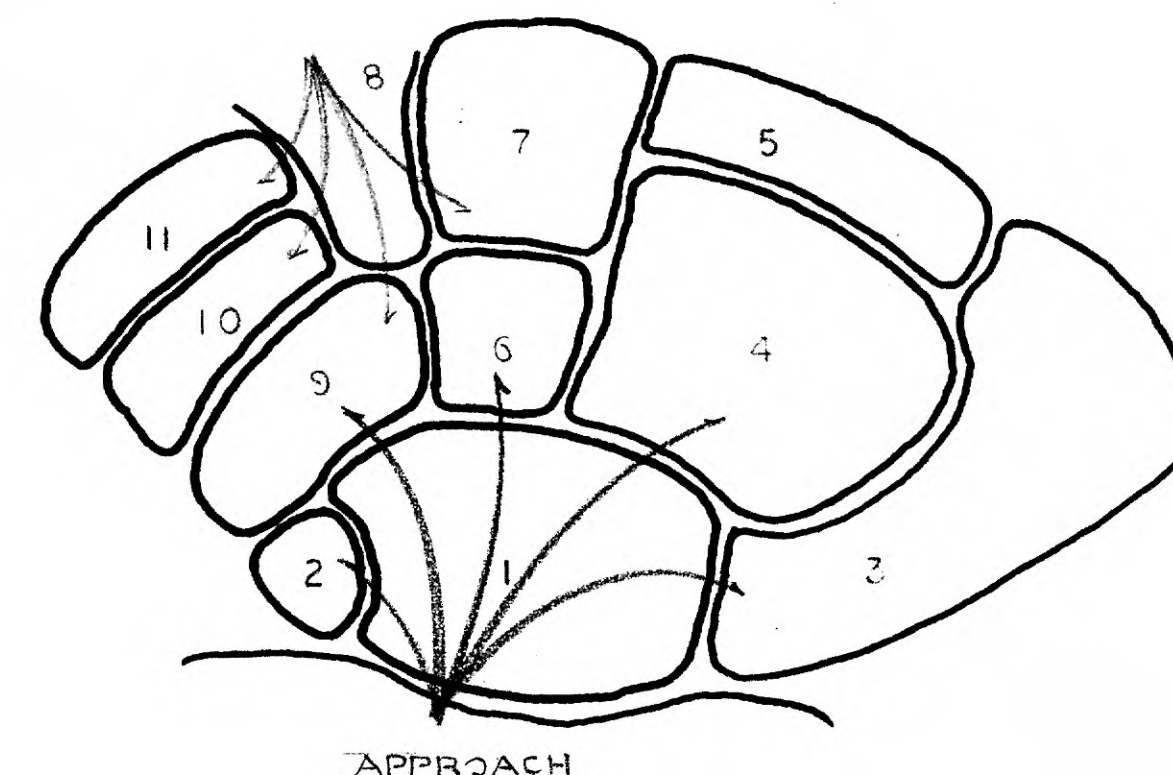
SECTION A—A

FUNCTION DIAGRAM OF THE PLANETARIUM





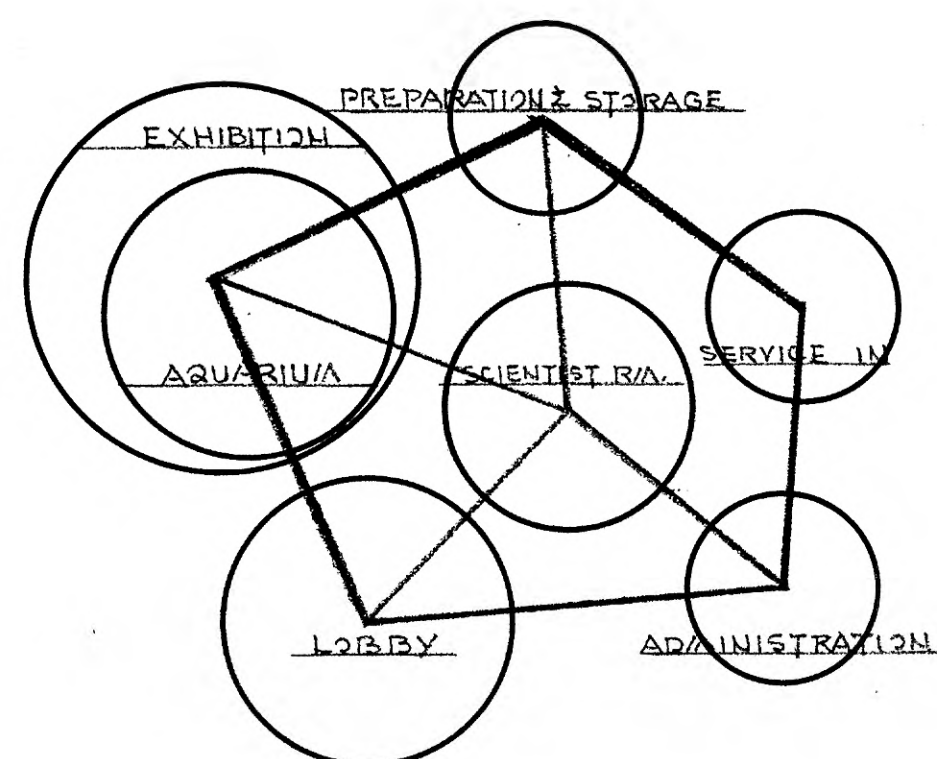
FUNCTION DIAGRAM 1



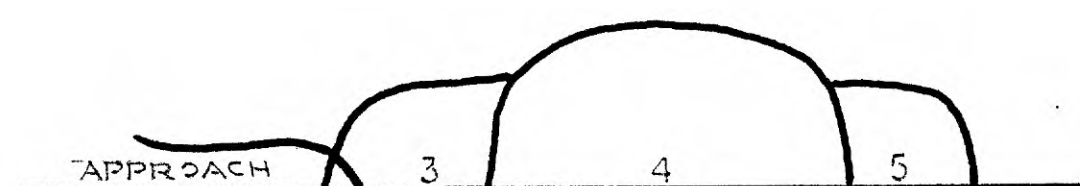
ZONE AND FLOW DIAGRAM

— VISITOR — SERVICE IN

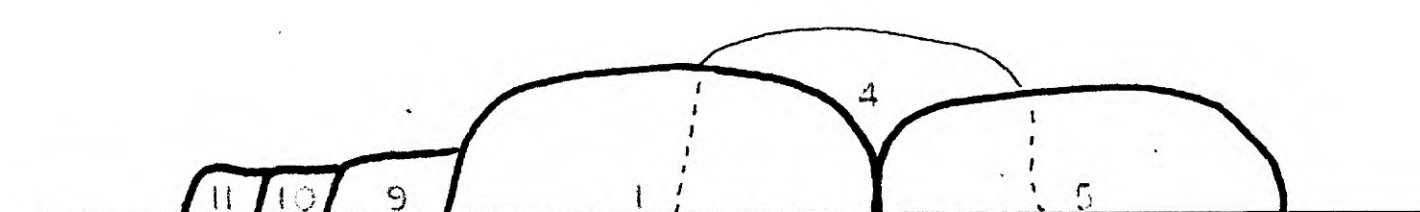
1. DISTANCE BETWEEN BALLOONS: RELATION OF FUNCTIONS TO EACH OTHER. 2. SIZE INDICATES IMPORTANCE OF FUNCTION.  
3. THICKNESS OF LINE BETWEEN FUNCTION INDICATES FLOW BETWEEN FUNCTIONS.  
1. LOBBY 2. CONTROL 3. EXHIBITION 4. AQUARIUM 5. PREPARATION 6. SCIENTIST R/A 7. STORAGE & SHOP 8. SERVICE IN 9. ADMINISTRATION 10. EMPLOYEES 11. TECH.



FUNCTION DIAGRAM 2



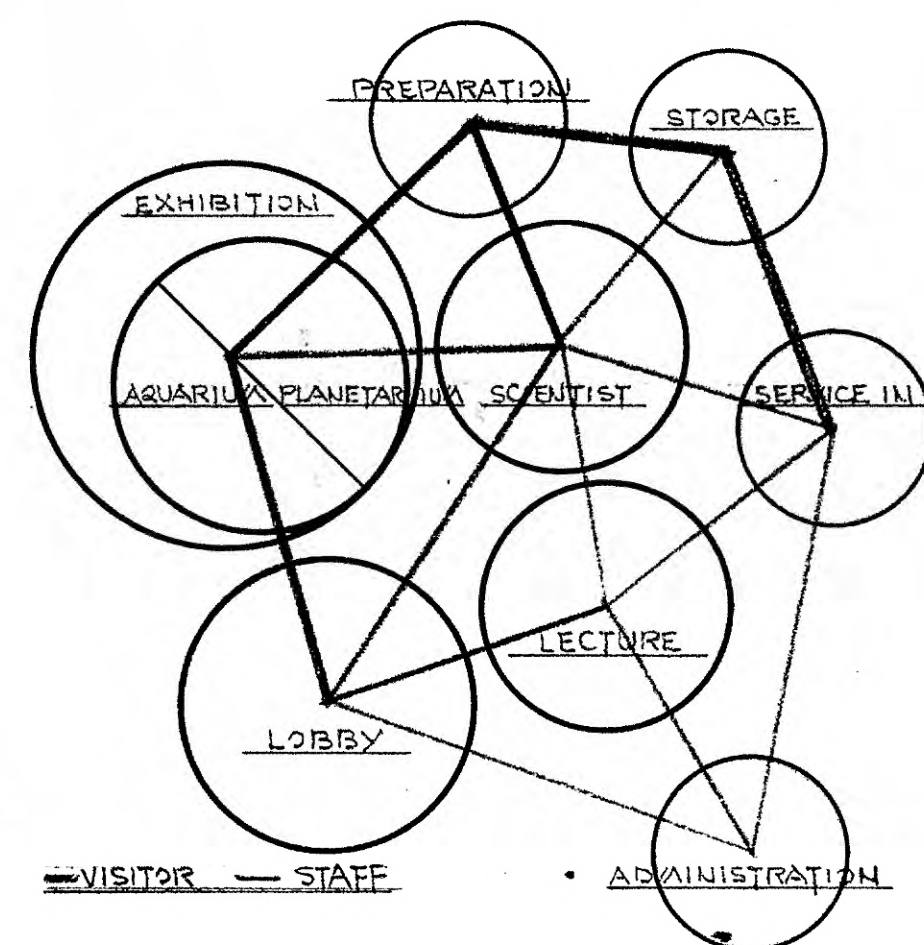
SECTION B—B



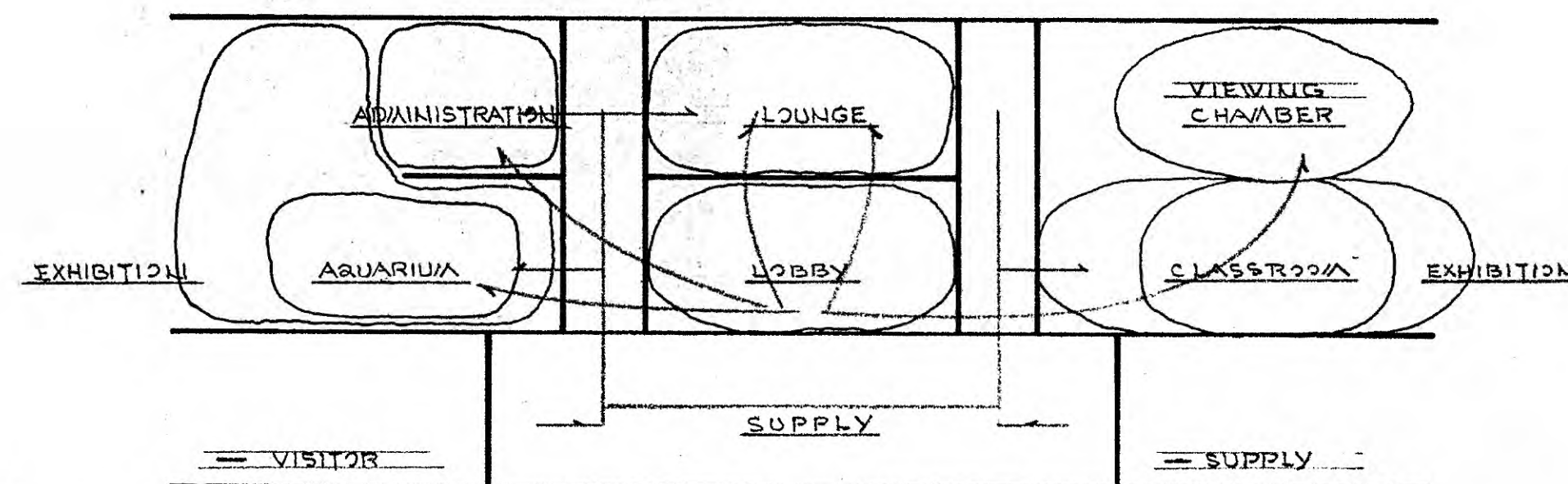
SECTION A—A

FUNCTION DIAGRAM OF THE AQUARIUM



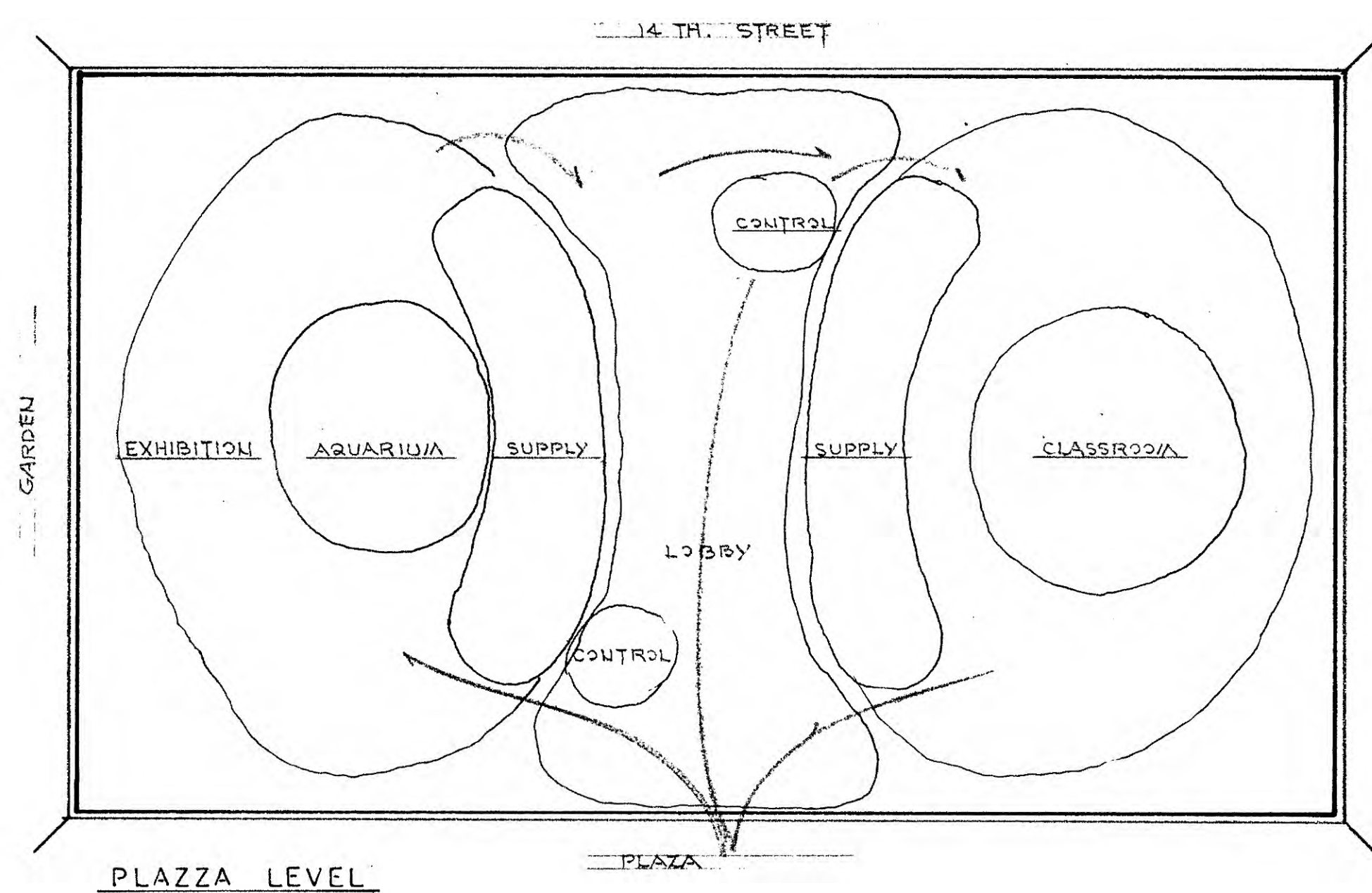


FUNCTION DIAGRAM

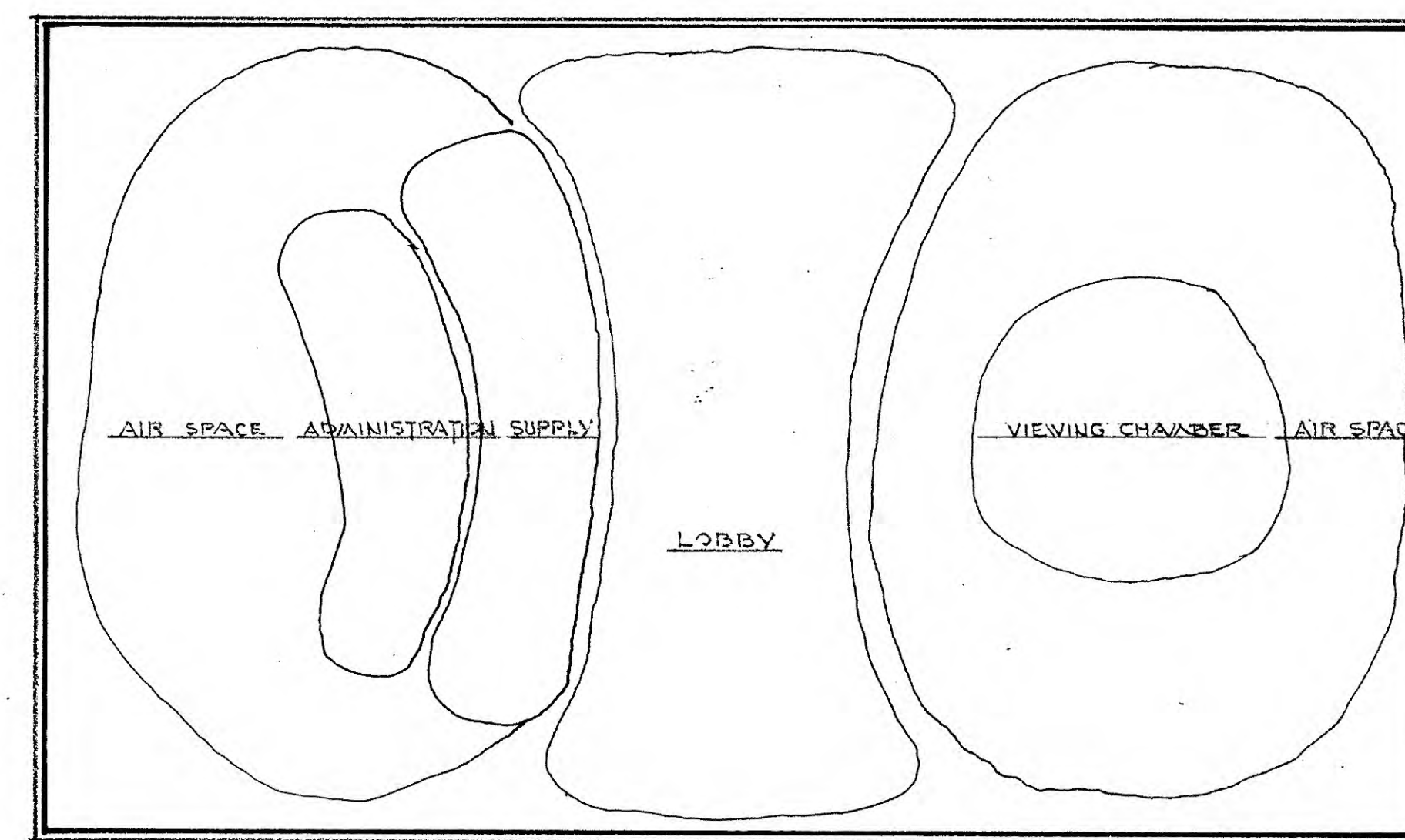


SECTION

1. DISTANCE BETWEEN BALLOONS: RELATION OF FUNCTIONS TO EACH OTHER. 2. SIZE INDICATES IMPORTANCE OF FUNCTION. 3. THICKNESS OF LINE BETWEEN FUNCTION INDICATES FLOW BETWEEN FUNCTIONS.



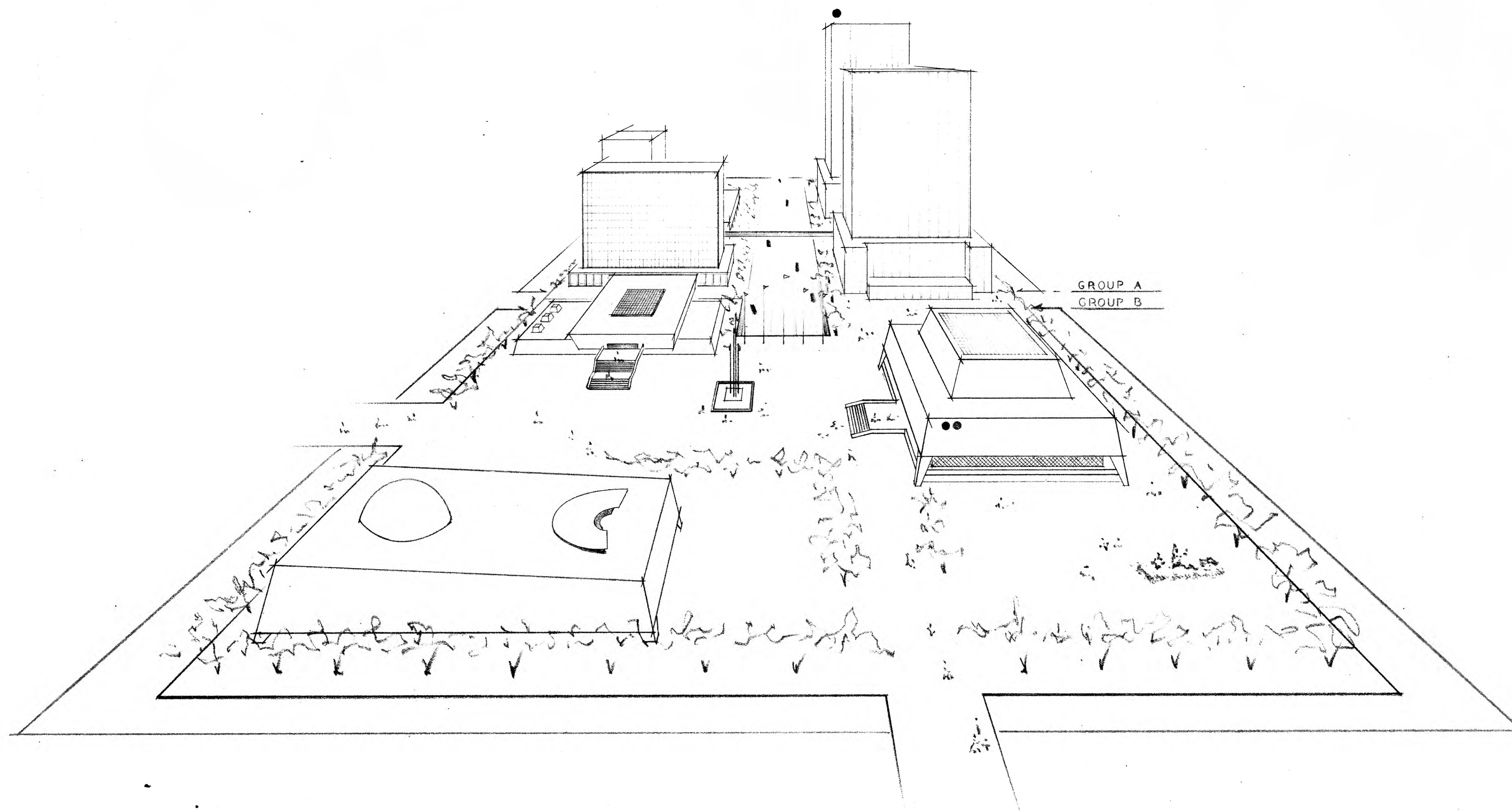
PLAZZA LEVEL



2ND LEVEL

FUNCTION DIAGRAM OF THE AQUARIUM-PLANETARIUM





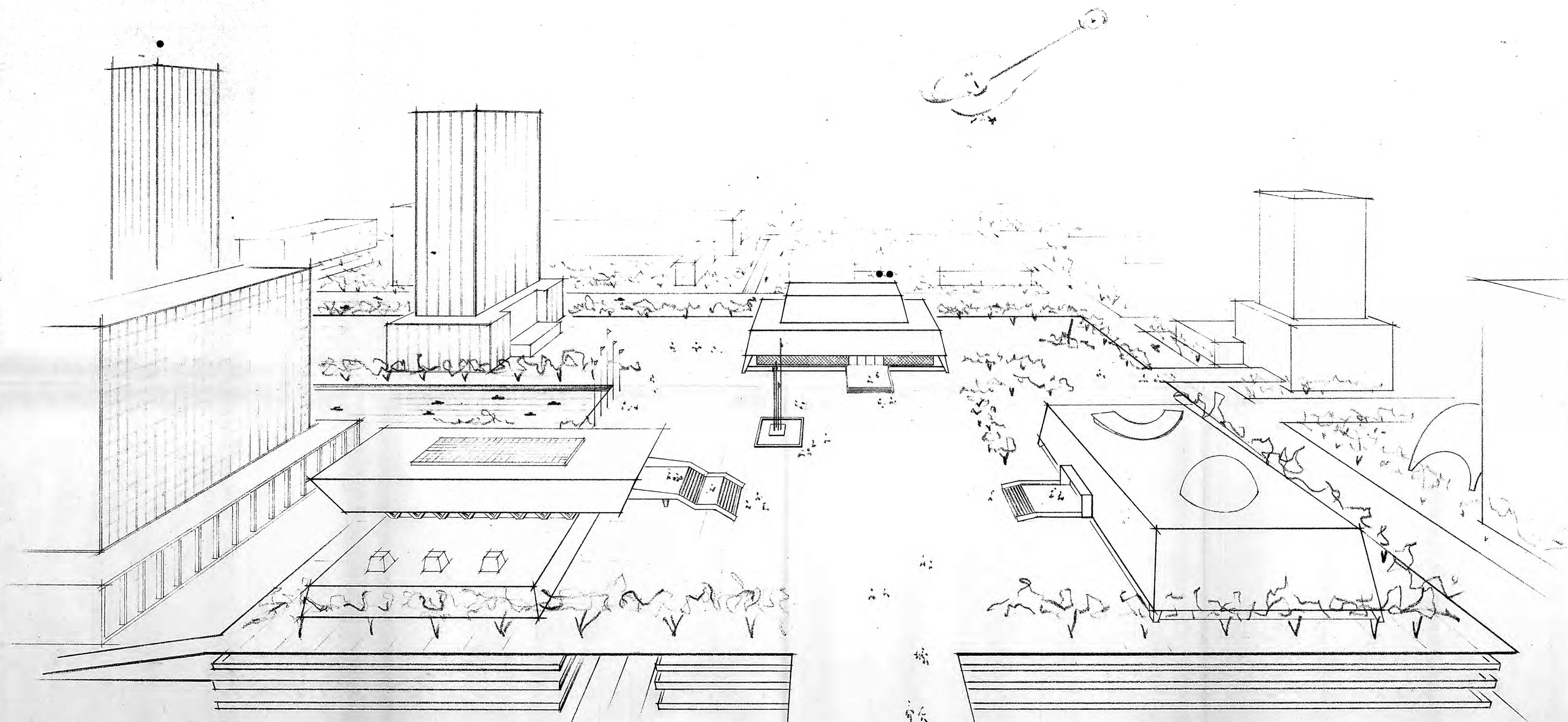
STUDY OF COMPOSITION

● CITY HALL IN "GROUP A" FITS THE TYPE "A" & TYPE "B" CLIMAXES. ●● K.C. MUSEUM IN "GROUP B" FITS THE TYPE "D" CLIMAX. LOOKING NORTH

NOTE: EXPLANATION, SEE "GROUP DESIGN" PAGE 34.

CIVIC CENTER FOR K.C. MO.





STUDY OF COMPOSITION

●● K.C. MUSEUM IN "GROUP B" FITS THE TYPE D CLIMAX

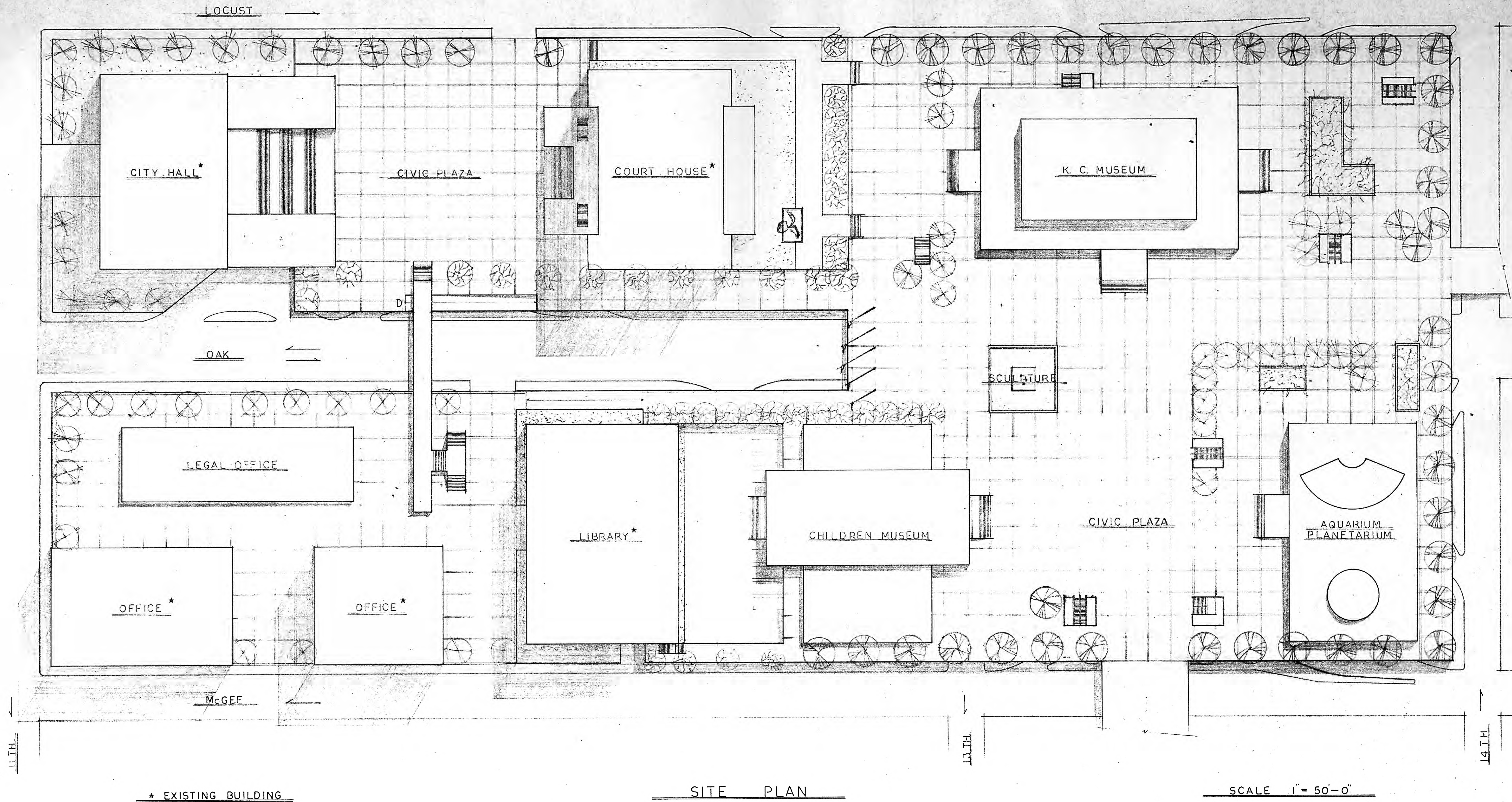
● CITY HALL IN GROUP A FITS THE TYPE A & B CLIMAX

LOOKING WEST

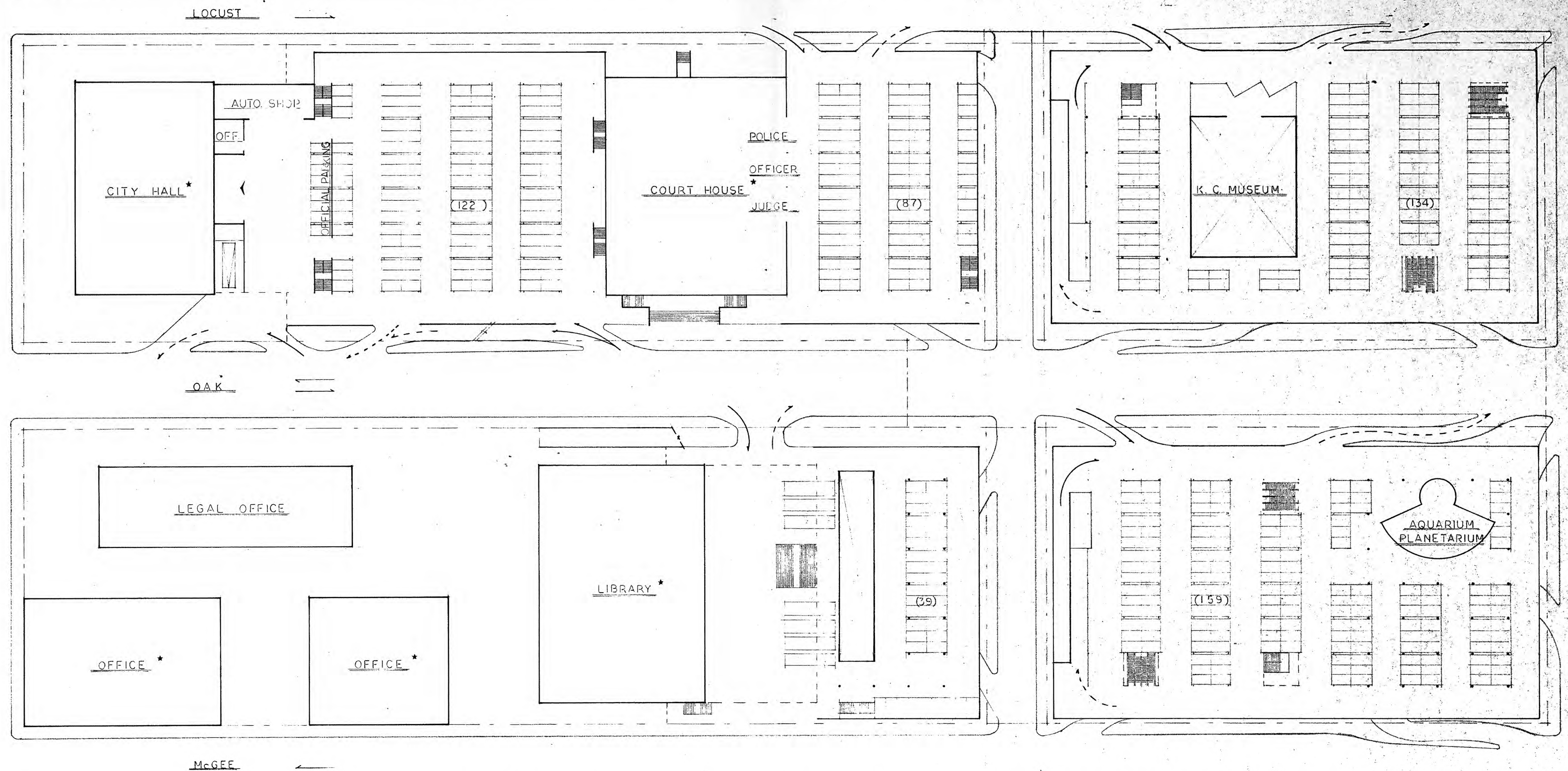
NOTE: EXPLANATION, SEE "GROUP DESIGN" PAGE 34.

# CIVIC CENTER FOR K.C.M.O.









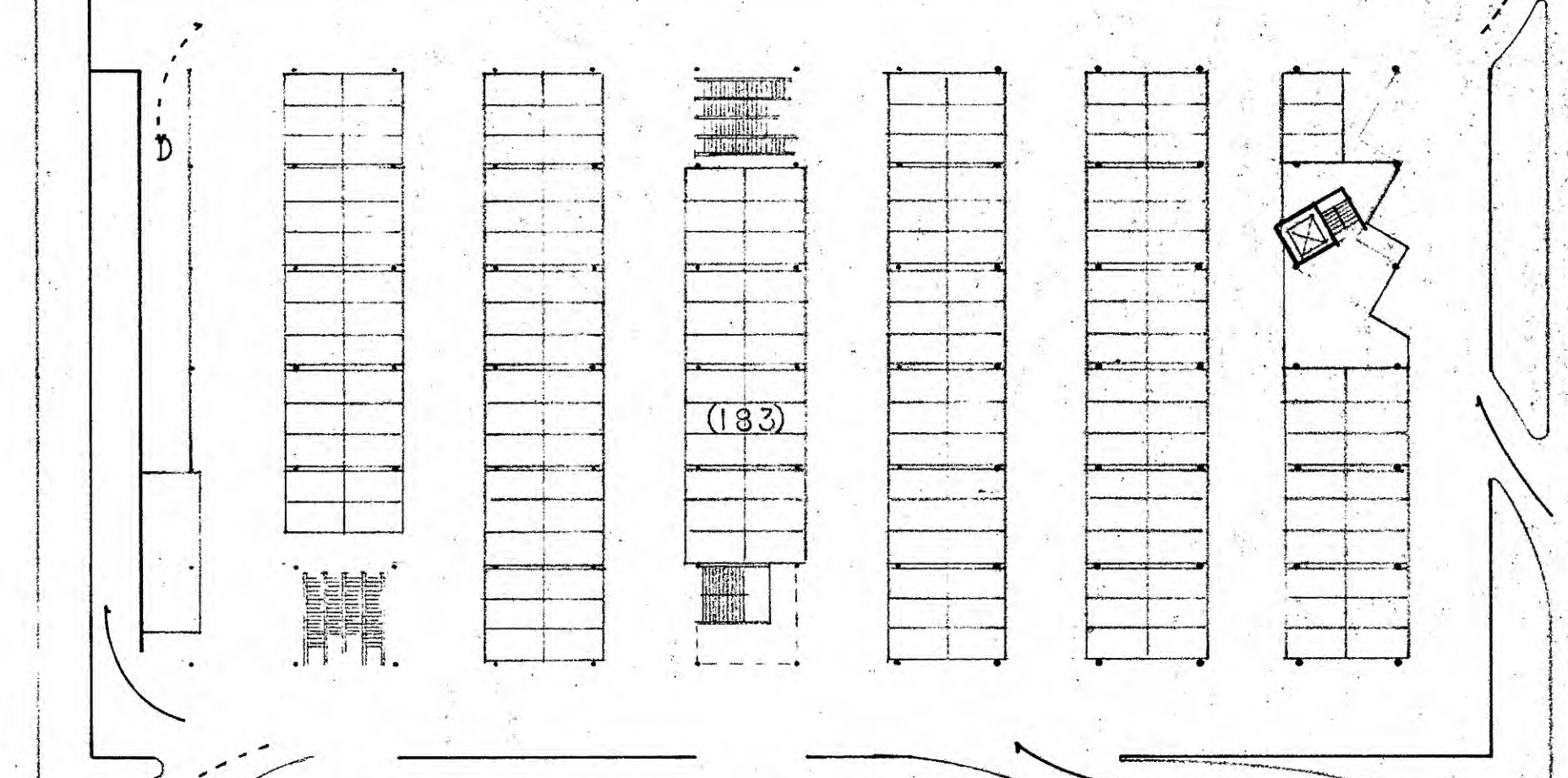
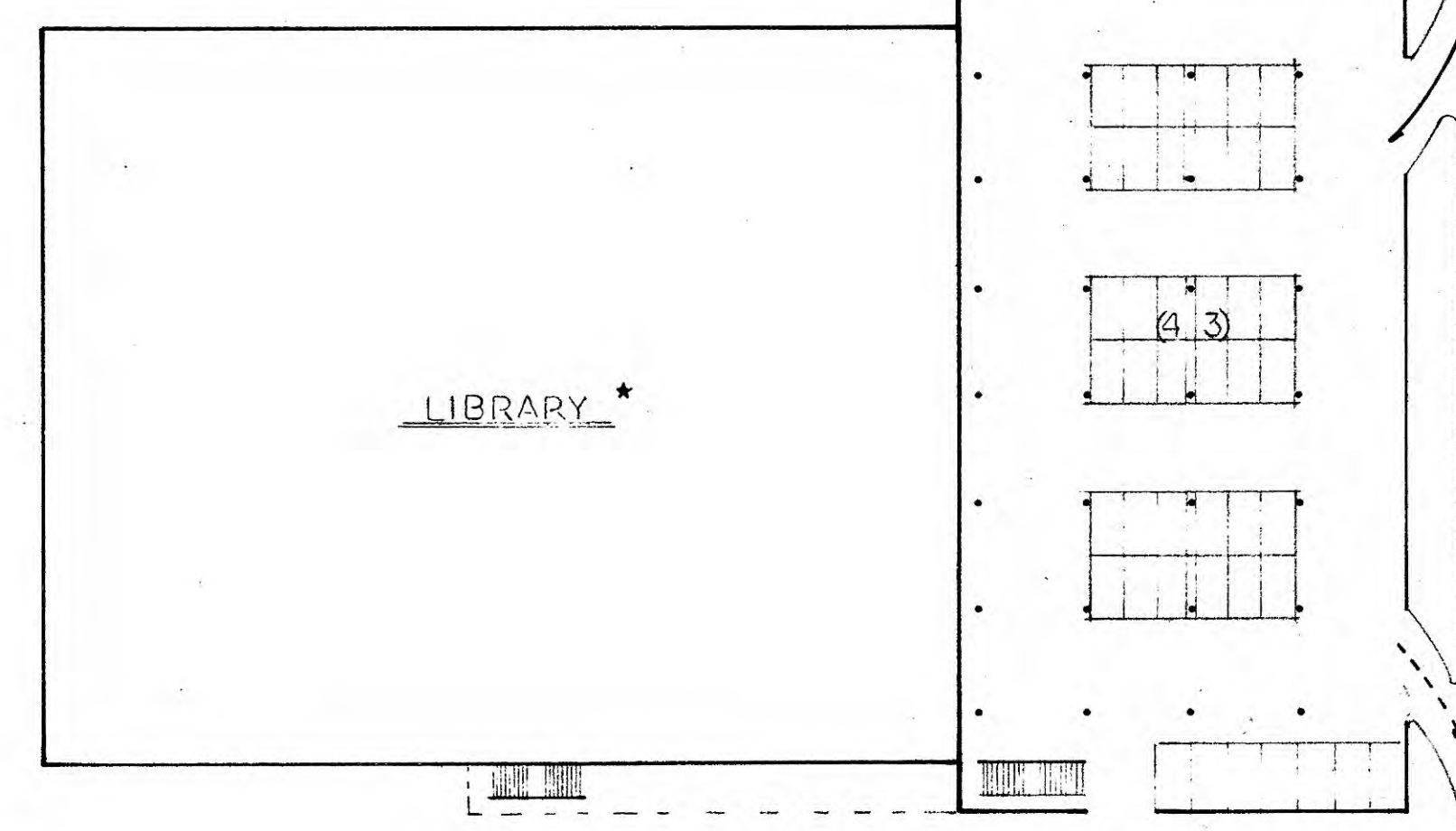
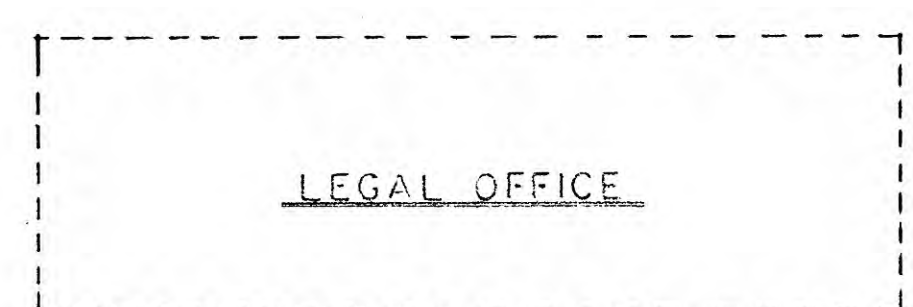
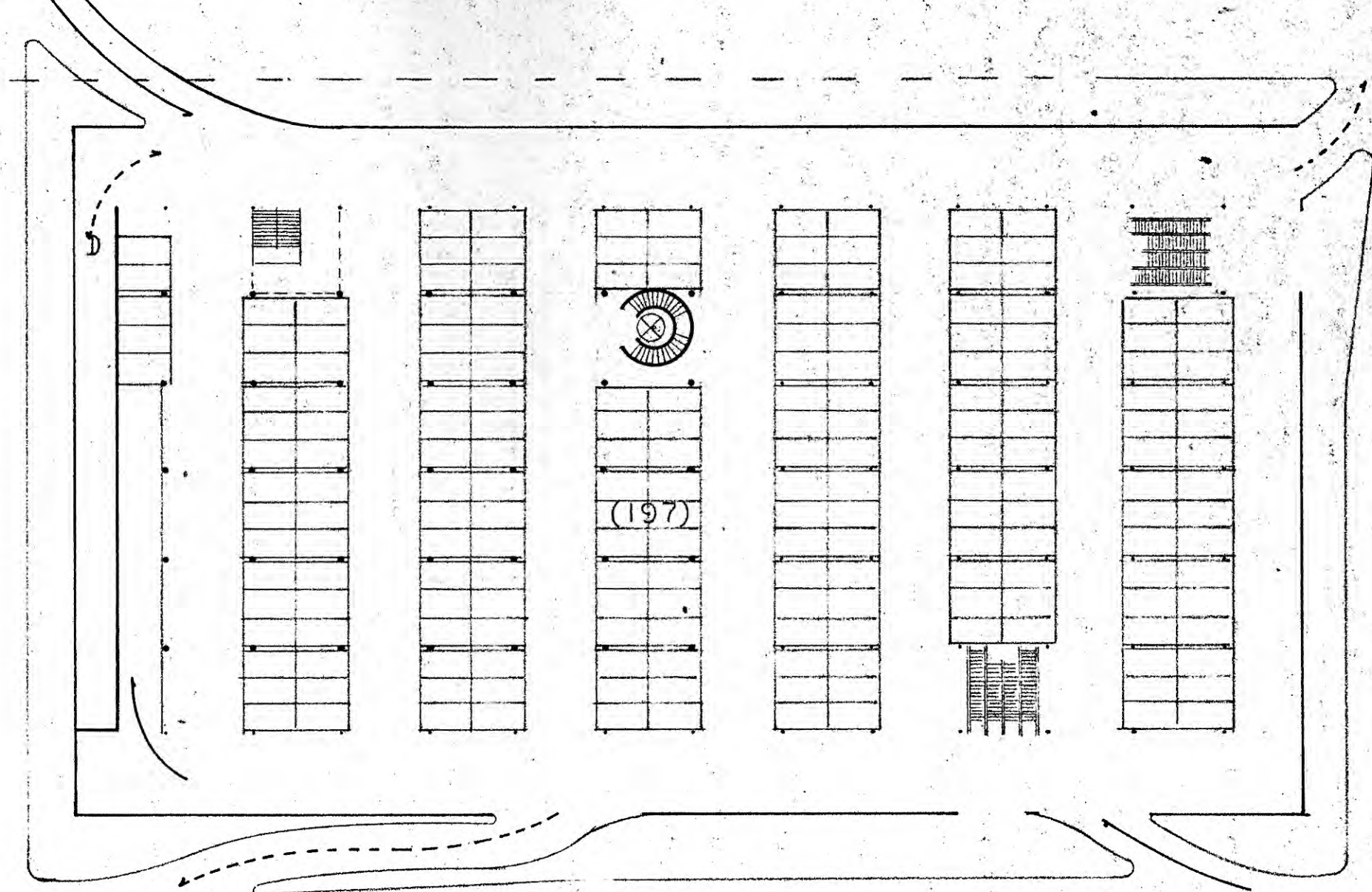
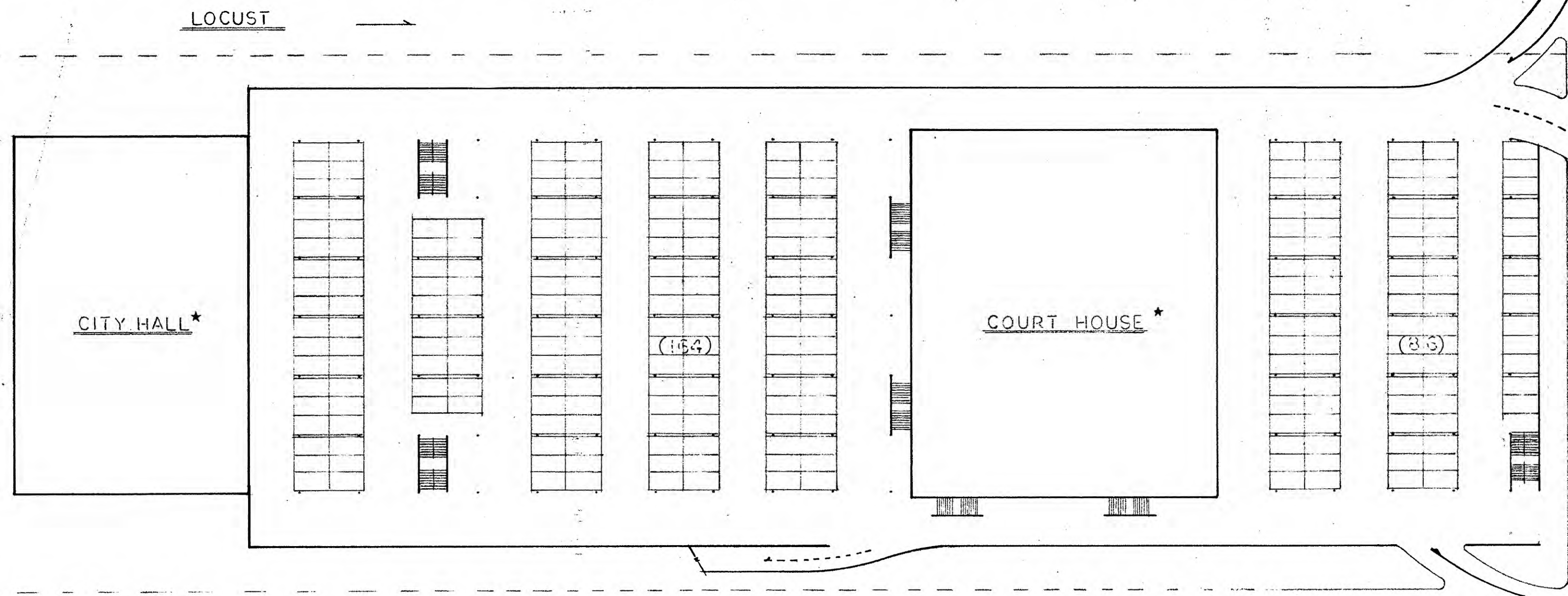
\* EXISTING BUILDING

2ND. PARKING LEVEL (541)

SCALE 1"=50'-0"

CIVIC CENTER FOR K.C.M.O. 188





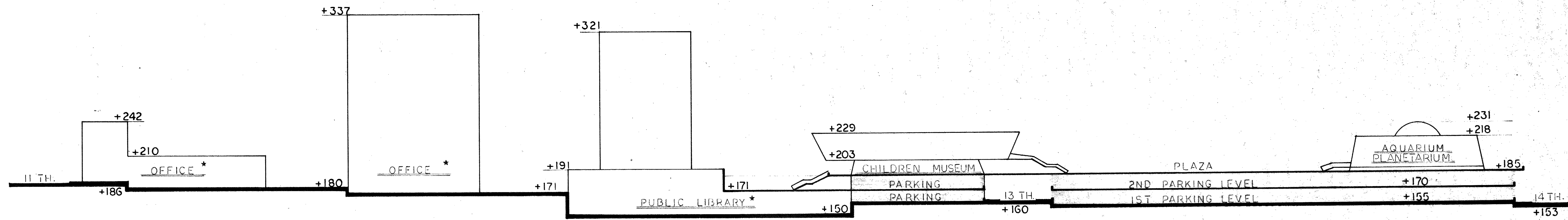
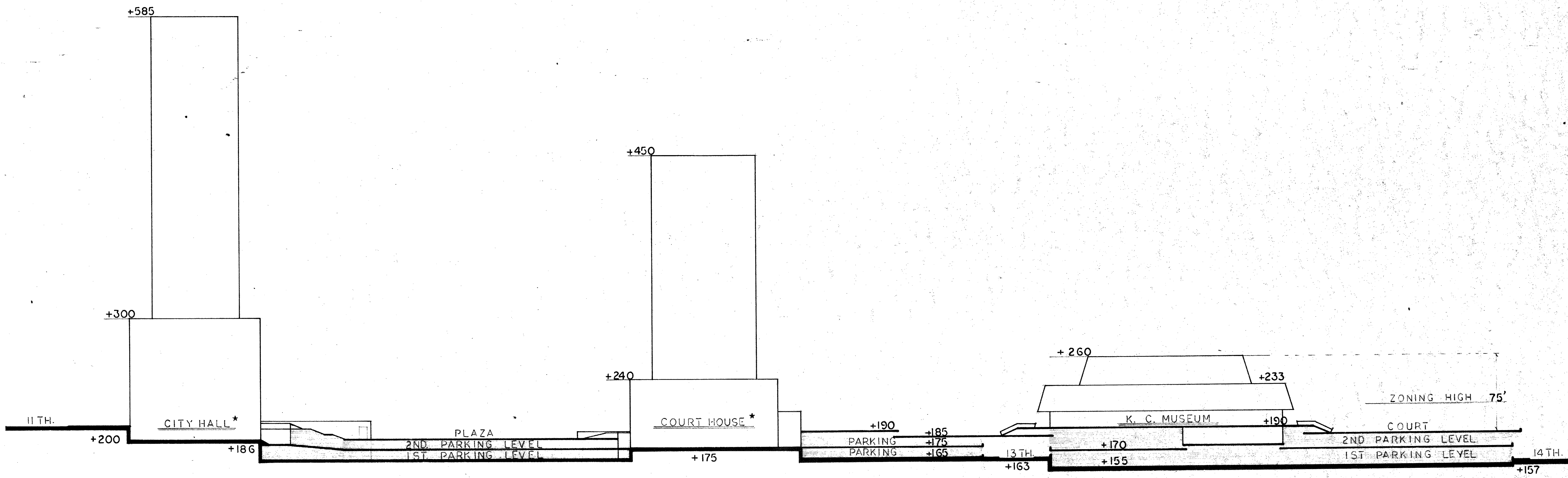
★ EXISTING BUILDING

1ST. PARKING LEVEL (683)

SCALE 1"= 50'-0"

# CIVIC CENTER FOR K.C.MO 19





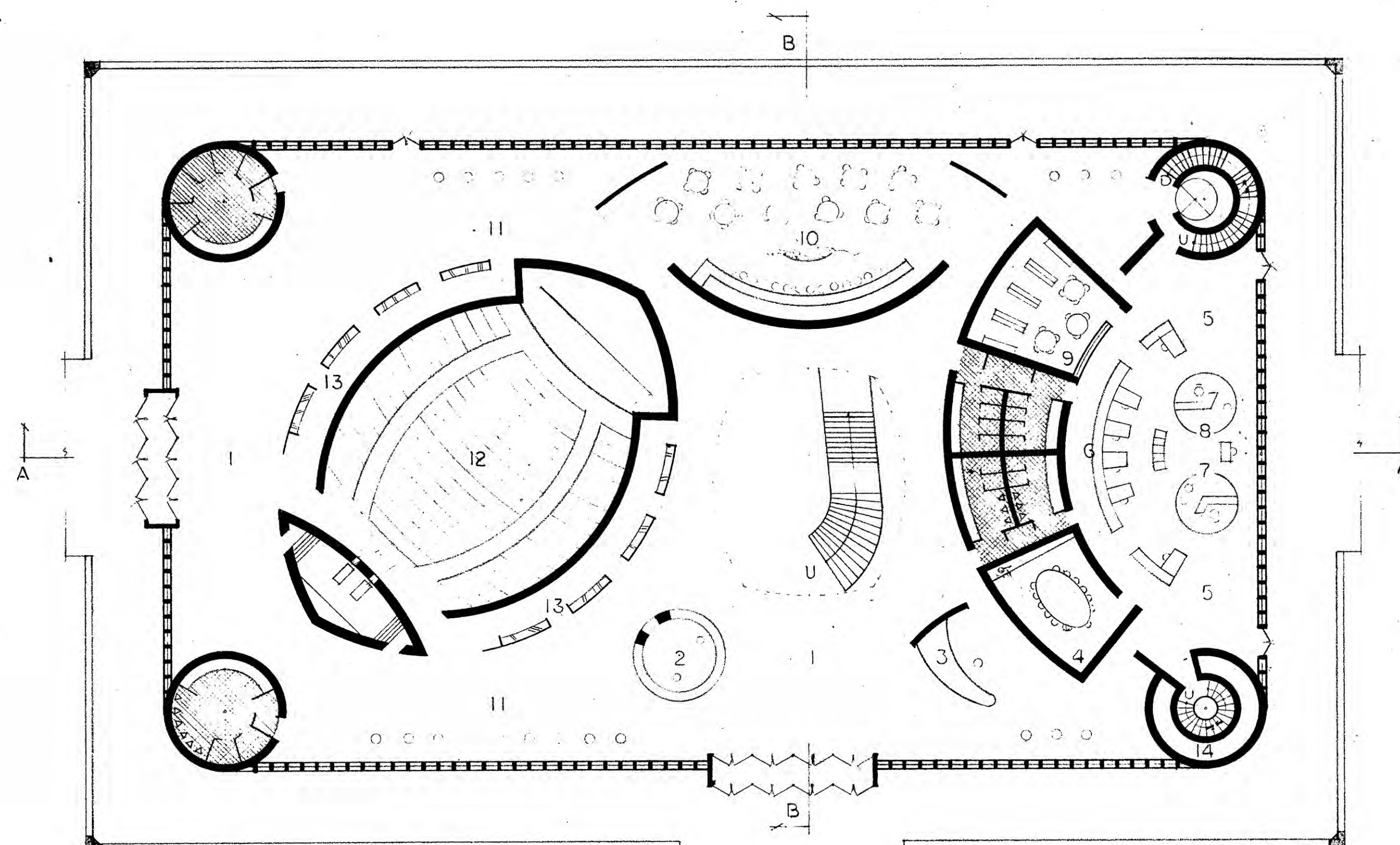
\* EXISTING BUILDING

NORTH-EAST SECTION

SCALE 1" = 50'-0"

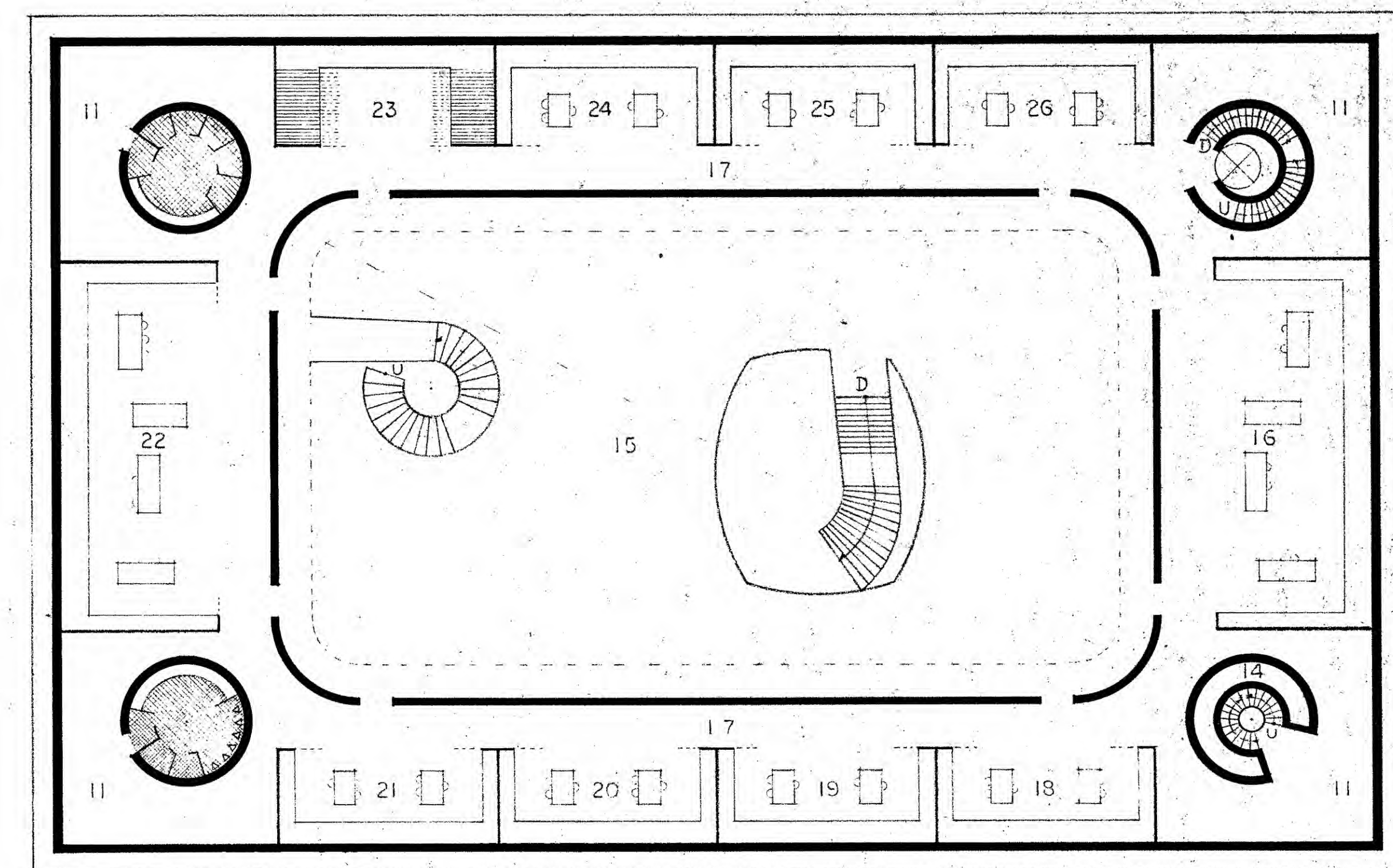
# CIVIC CENTER FOR K.C.M.O. 20





KANSAS CITY MUSEUM

PLAZA LEVEL



2ND LEVEL

SCALE 1" = 20'-0"

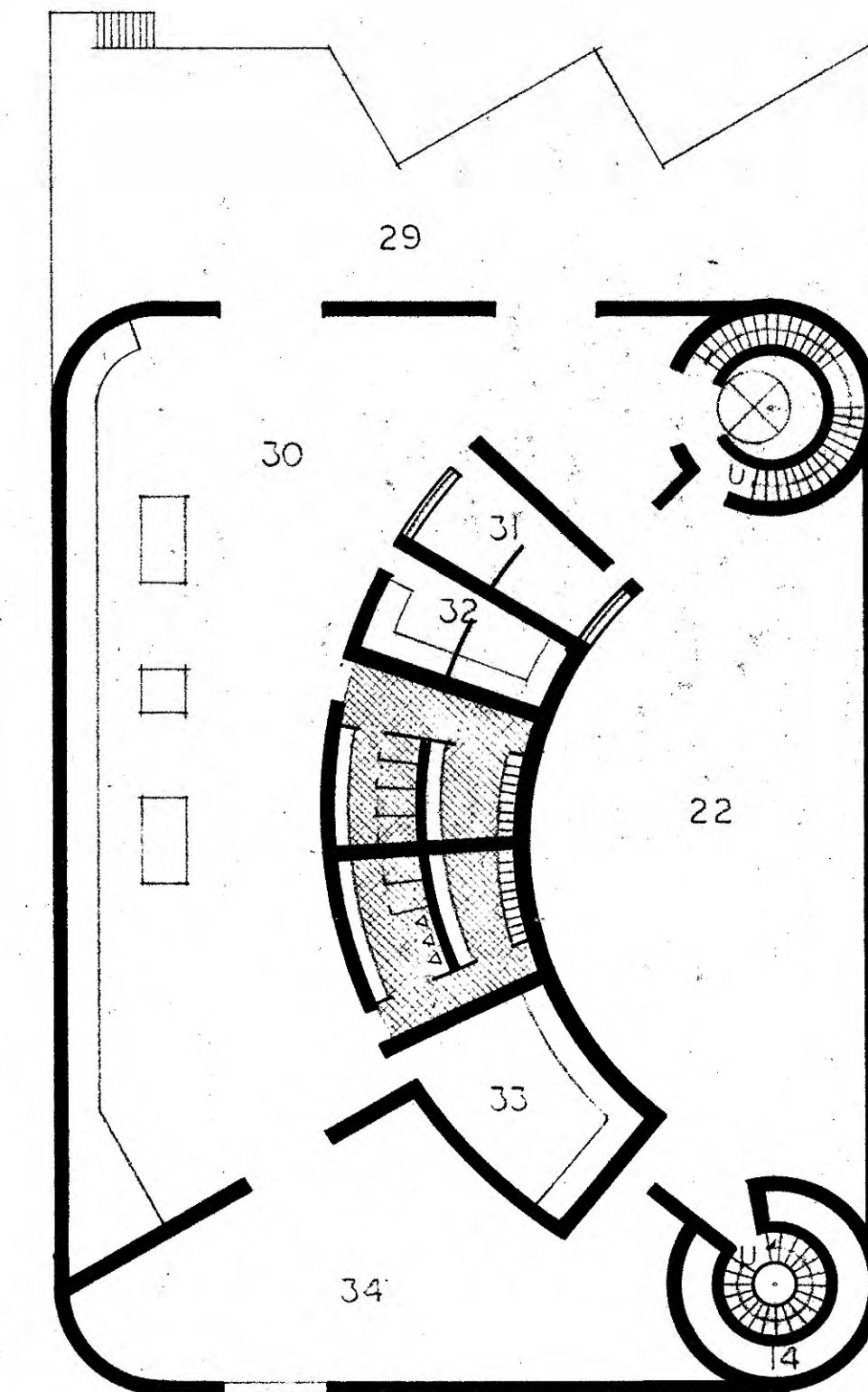
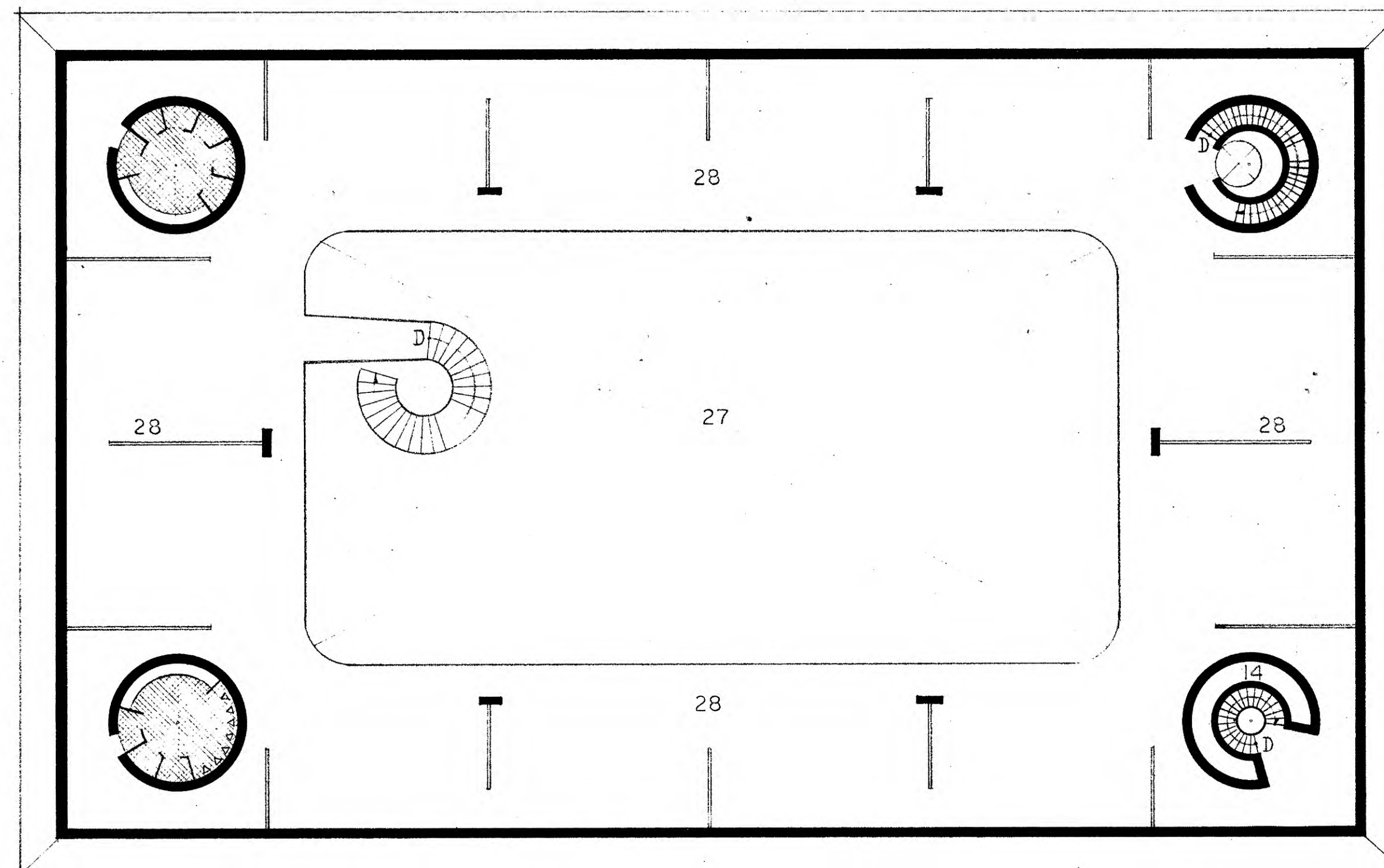
1. LOBBY 2. SALES 3. INFORMATION 4. CONF. RM.  
15. EXHIBITION AREA 16. PREPARATION AREA

5. RECEPTION 6. ADMINISTRATION 7. DIRECTOR 8. CURATOR 9. LIBRARY 10. COFFEE SHOP 11. LOUNGE 12. AUDITORIUM (400 SEATS) 13. COAT 14. DUCT  
17. LIVE STORAGE 18. MINEROLOGY 19. BOTANY 20. ZOOLOGY 21. ANTHROPOLOGY 22. STORAGE 23. PAINTING 24. MISC. CLAY 25. BRONE 26. SCULPTURE



# KANSAS CITY MUSEUM

14. DUCT 22. STORAGE  
27. AIR SPACE 28. GALLERY 29. LOADING 30. WORKING AREA 31. SUPT. OFF. 32. DARK ROOM 33. EMPLOYEES 34. MECH.

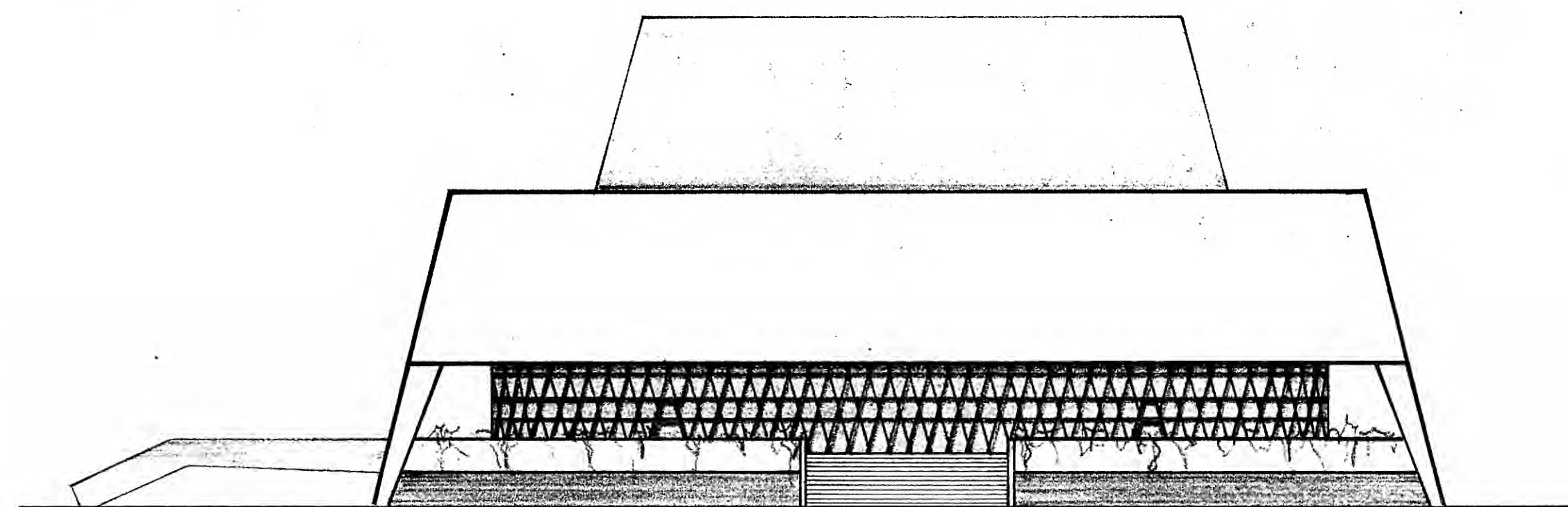


3RD LEVEL

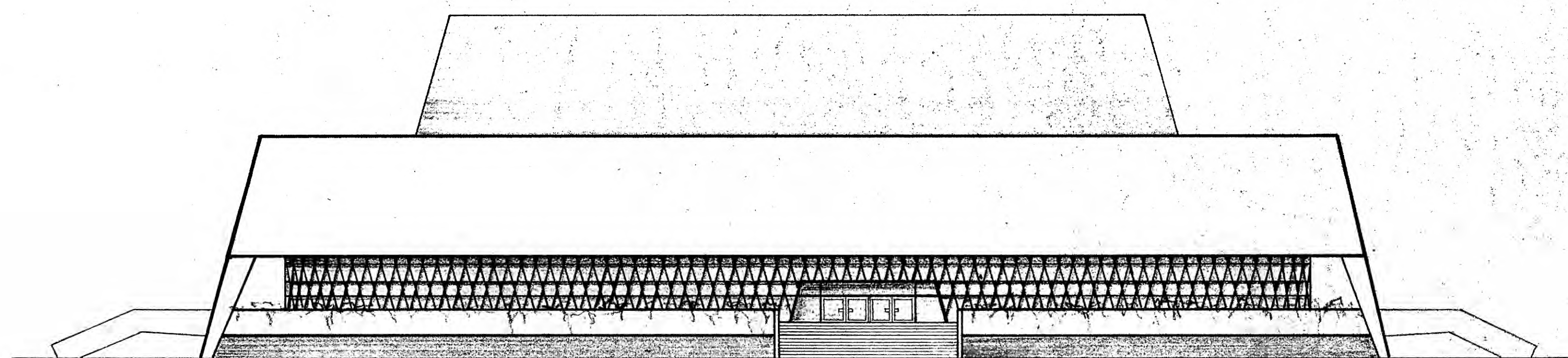
LOWER LEVEL

SCALE 1" = 20'-0"



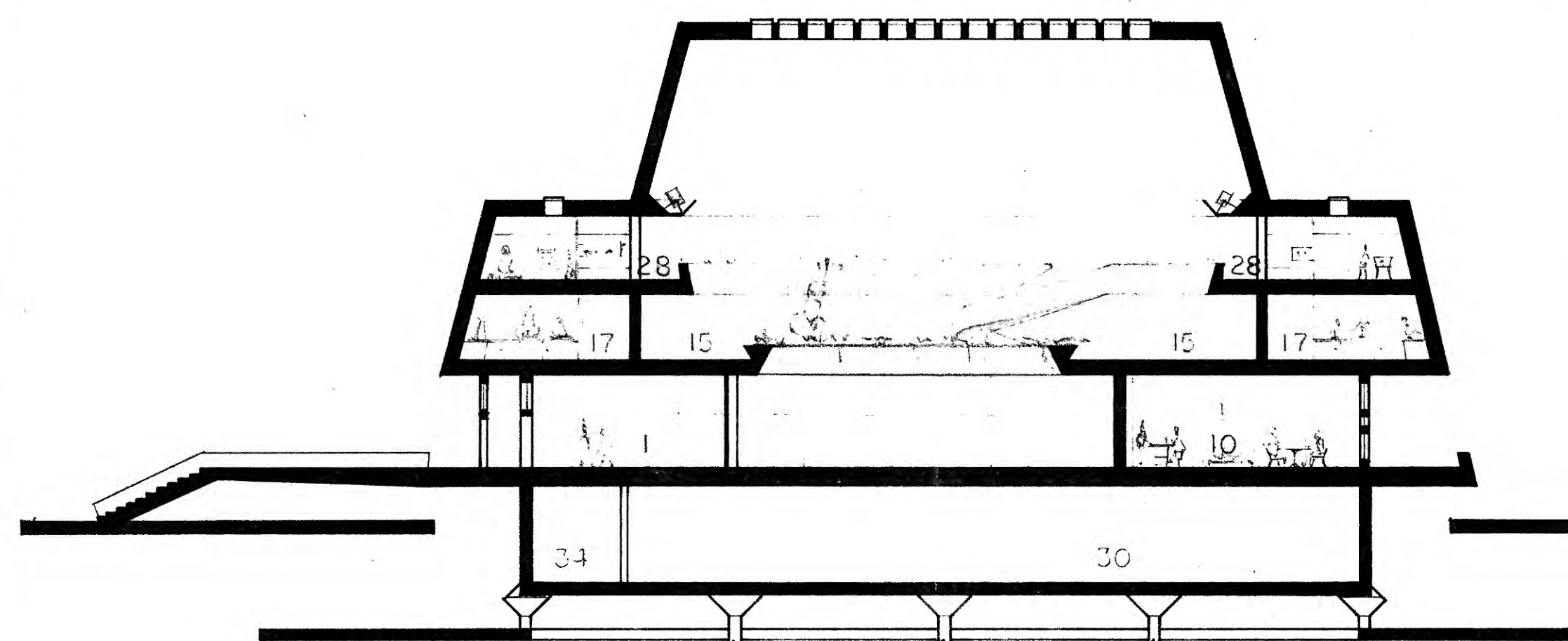


SOUTH (SIMILAR TO NORTH)

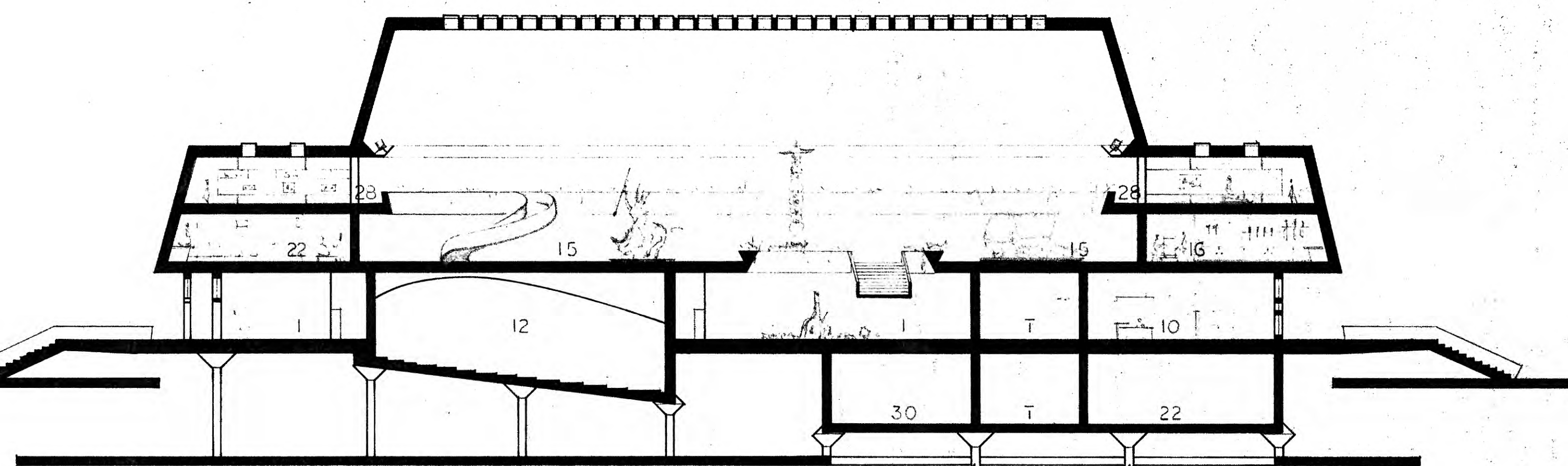


WEST (SIMILAR TO EAST)

SCALE 1"=20'-0"



SECTION B-B



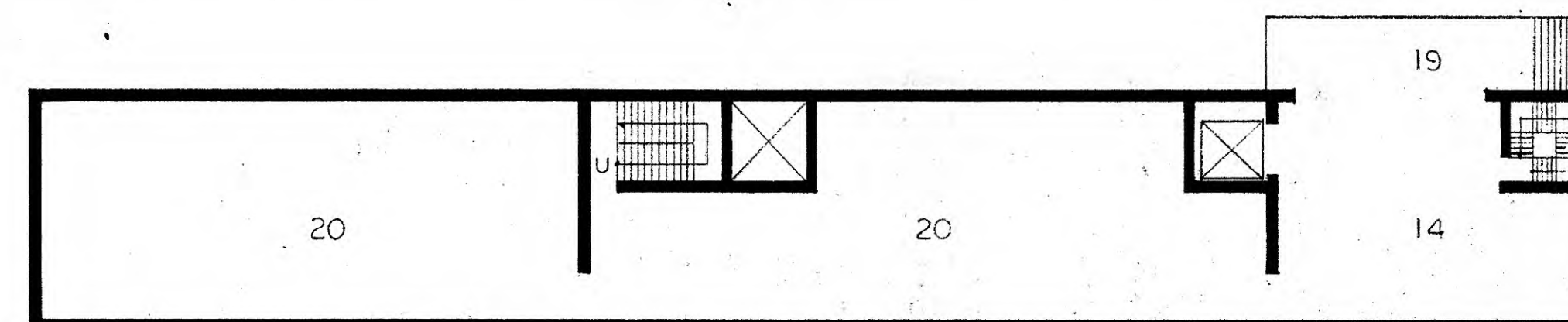
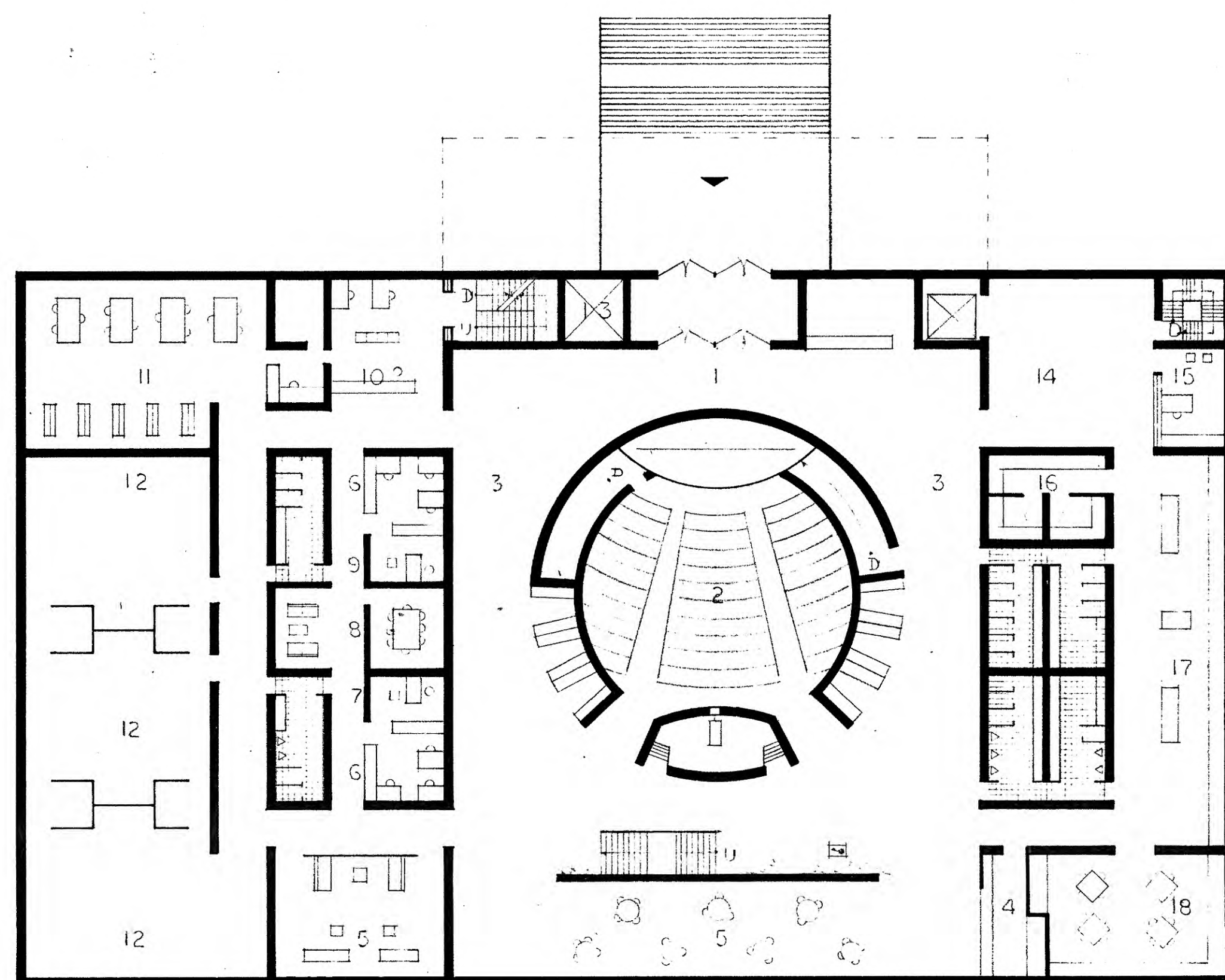
SECTION A-A

SCALE 1"=20'-0"

KANSAS CITY MUSEUM

CIVIC CENTER FOR K.C.MO. 23





LOWER LEVEL

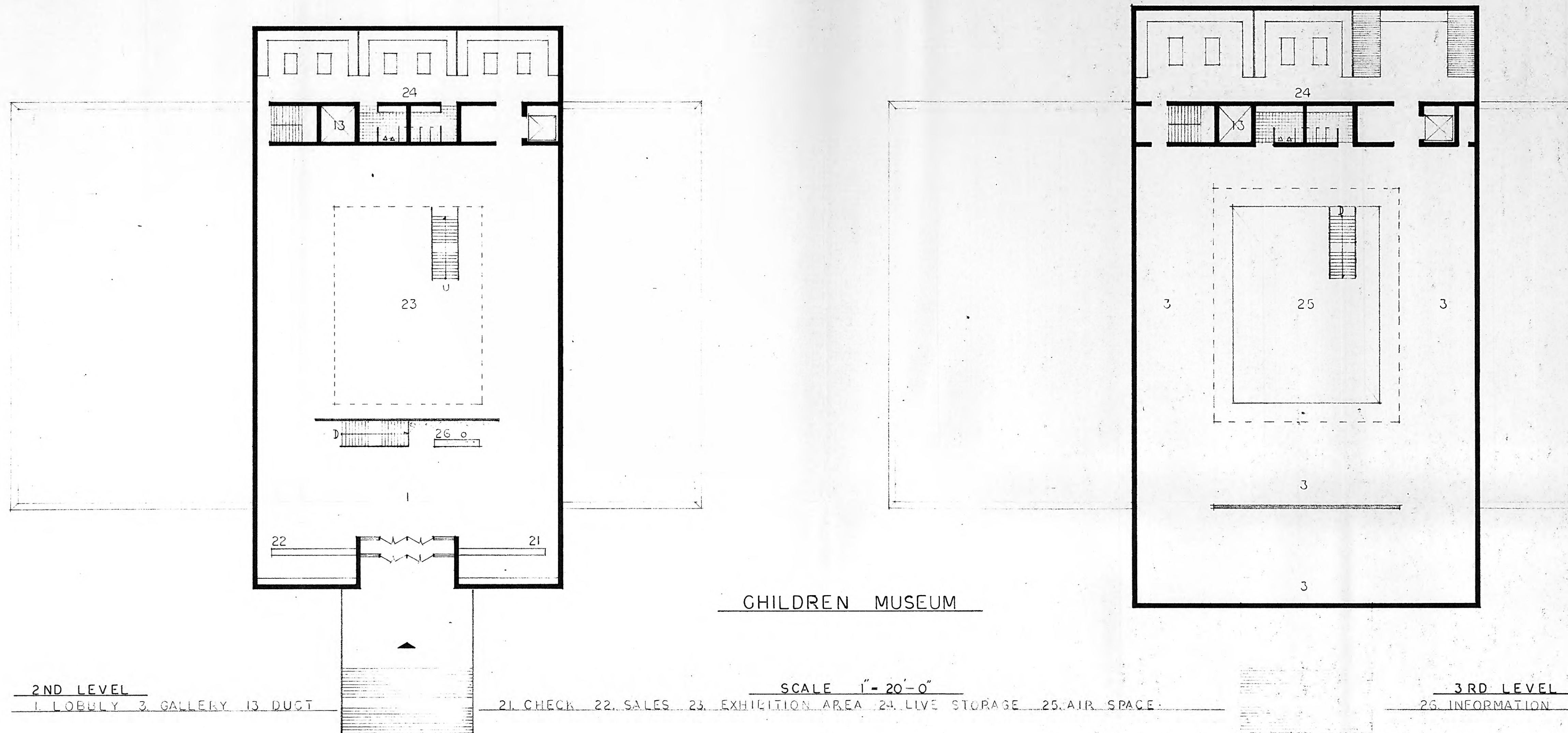
SCALE 1" = 20'-0"

PLAZA LEVEL  
SCALE 1" = 20'-0"

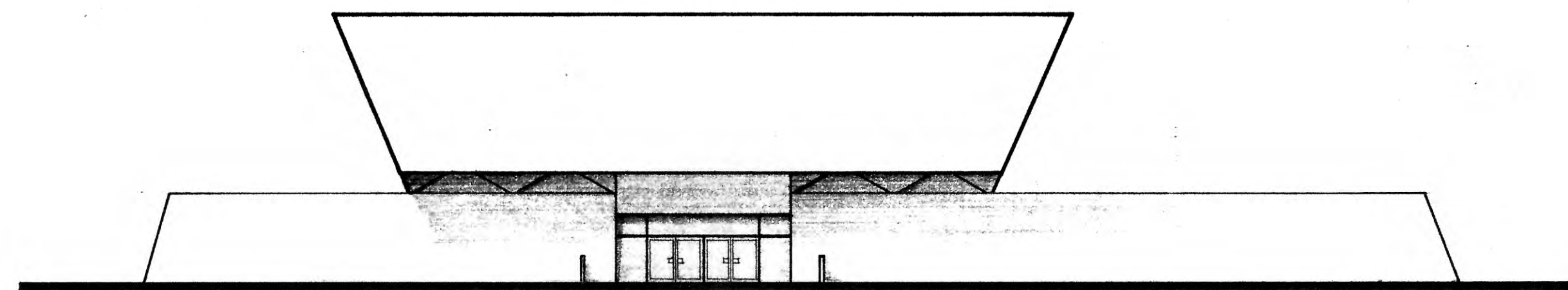
1. LOBBY 2. AUDITORIUM (200 SEATS) 3. GALLERY 4. SNACK 5. LOUNGE 6. STAFF OFFICE  
7. DIRECTOR 8. BOARD 9. CURATOR 10. LENDING DEPT. 11. LIBRARY 12. MEMBERS' ROOM  
13. DUCT 14. WORK AREA 15. SUPT. OFF. 16. DARK RM. 17. CRAFTS 18. EMPLOYEES 19. LOAD-  
ING 20. MECHANICAL ROOM

CHILDREN MUSEUM

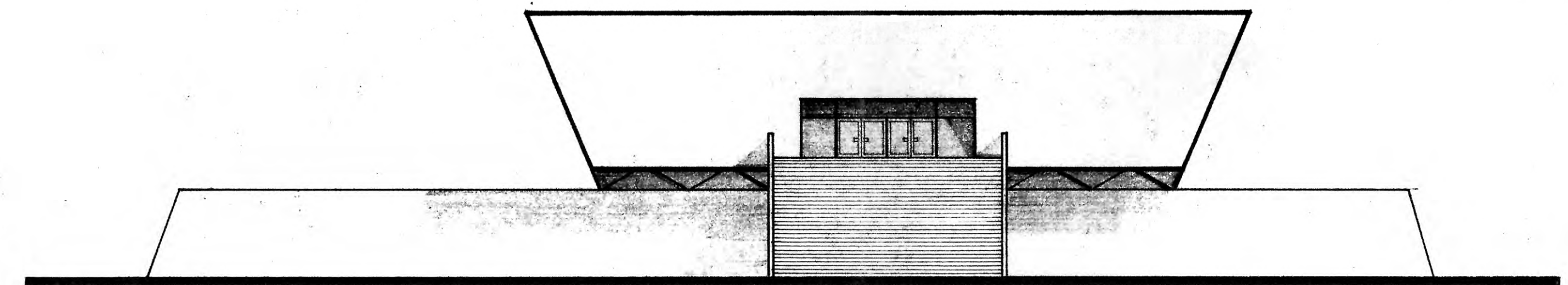






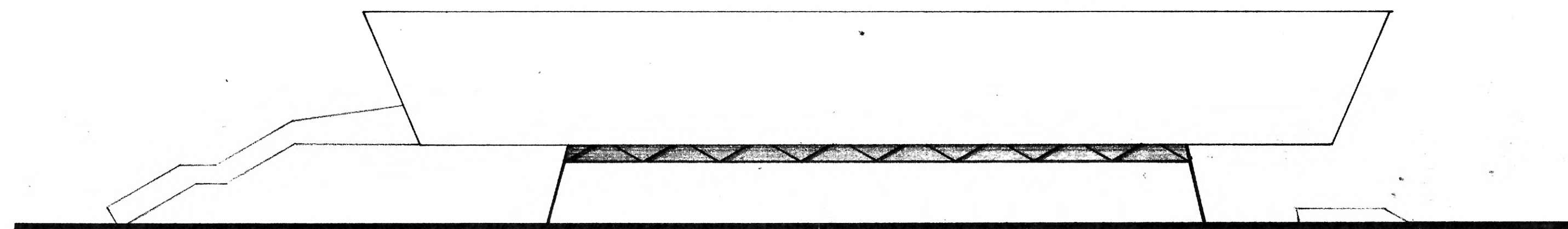


NORTH

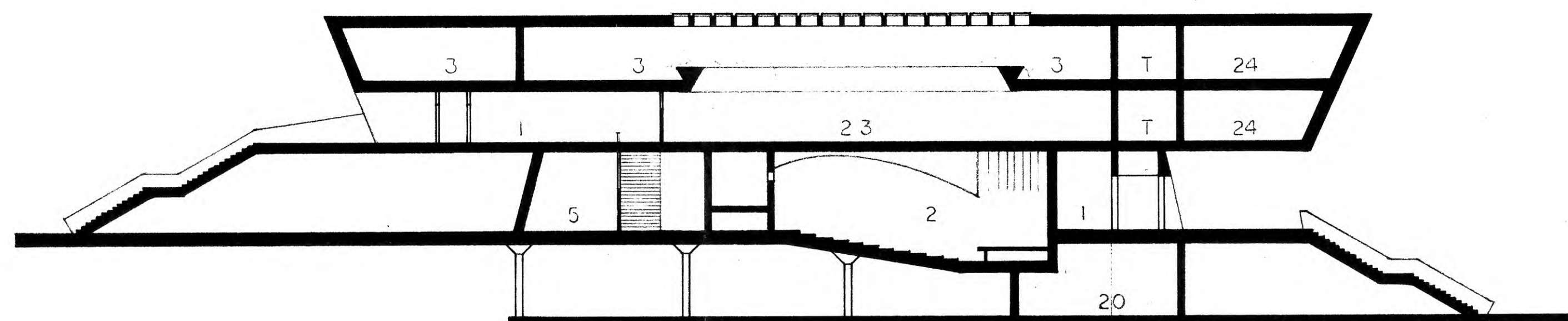


SOUTH

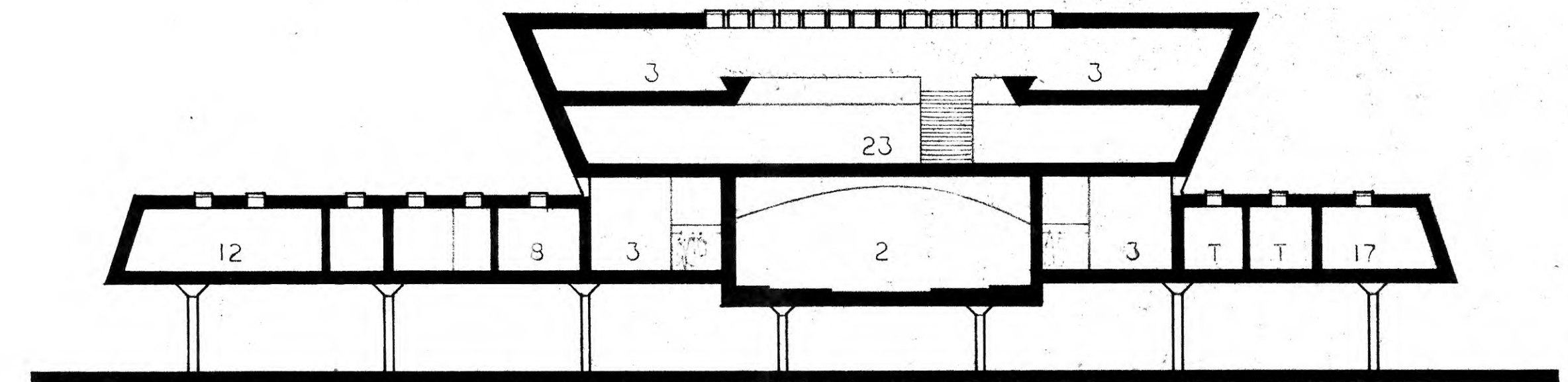
SCALE 1" = 20'-0"



EAST (SIMILAR TO WEST)



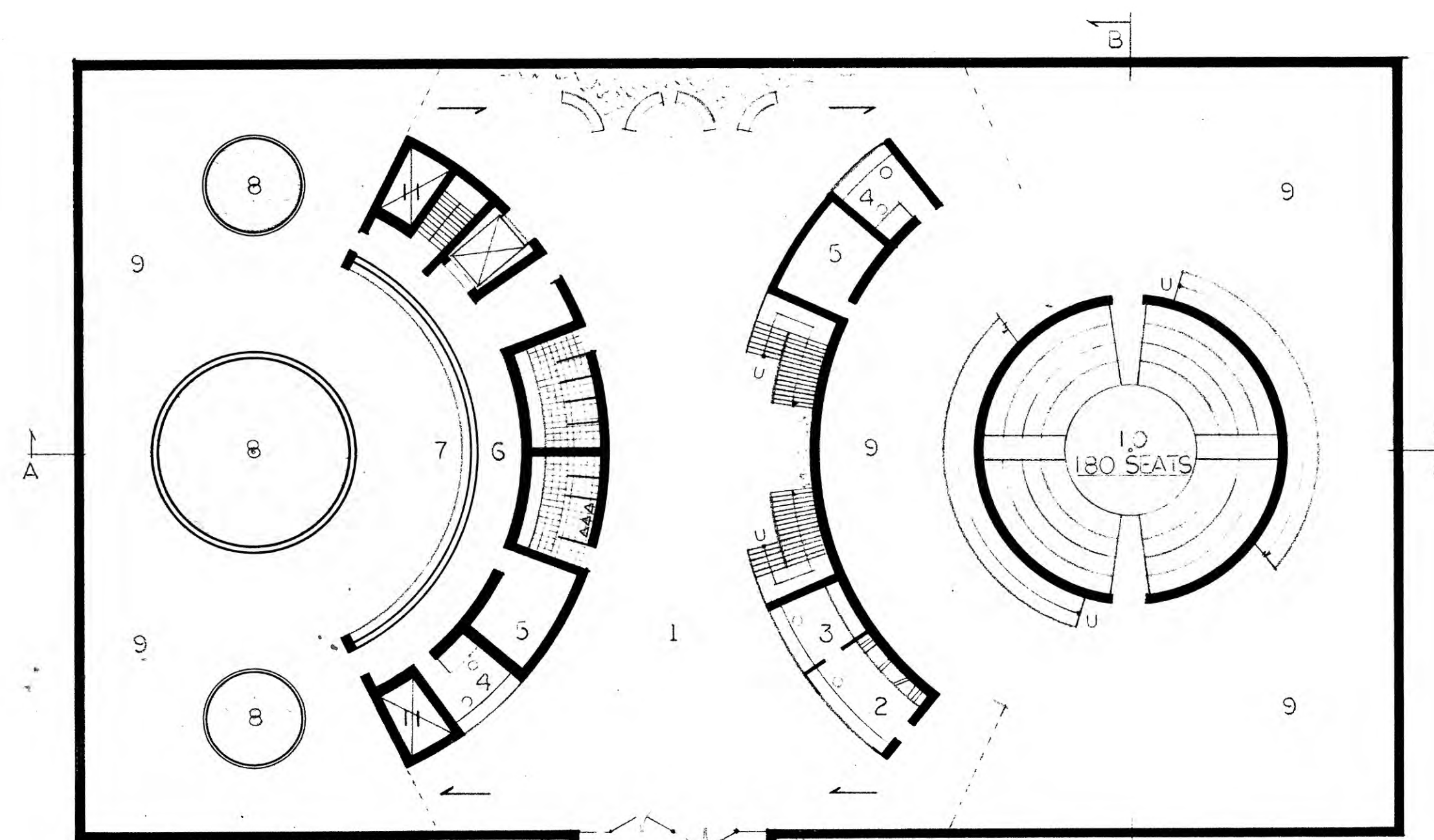
SECTION A-A



SECTION B-B

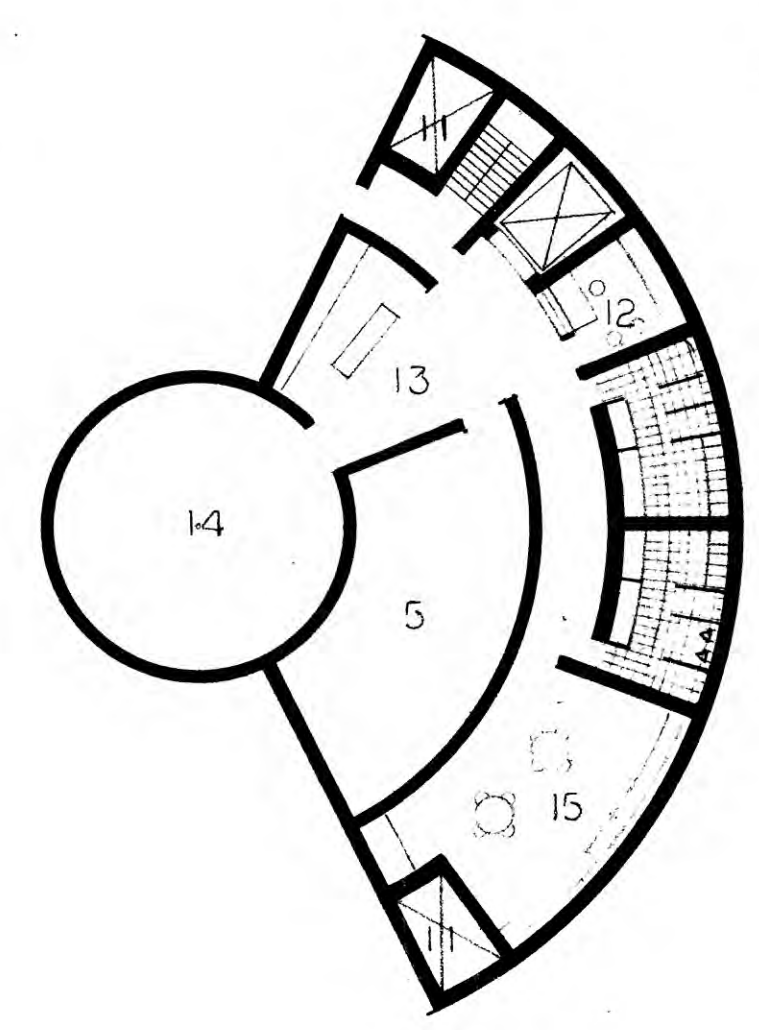
SCALE 1" = 20'-0"



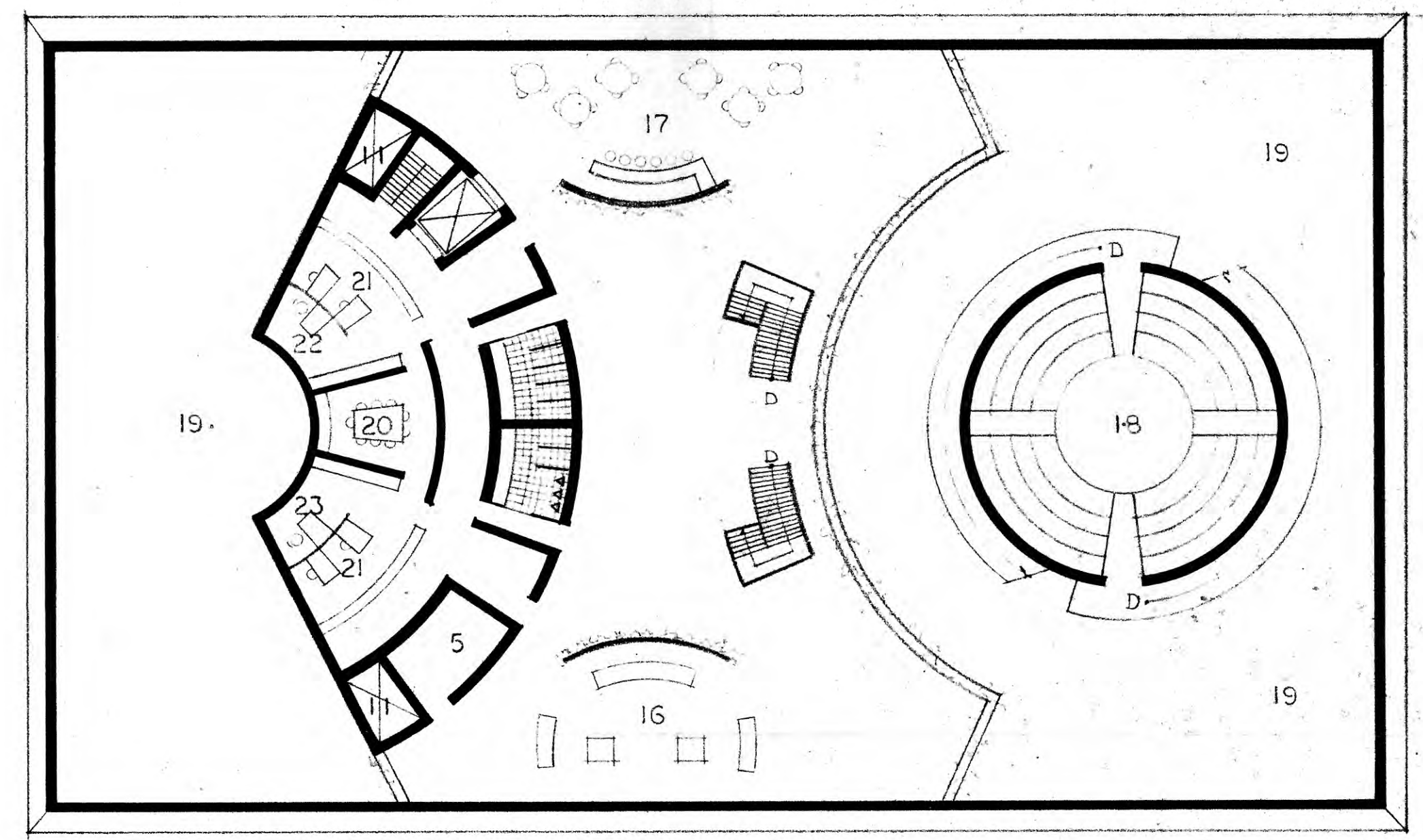


SCALE 1"=20'-0"

PLAZA LEVEL



LOWER LEVEL



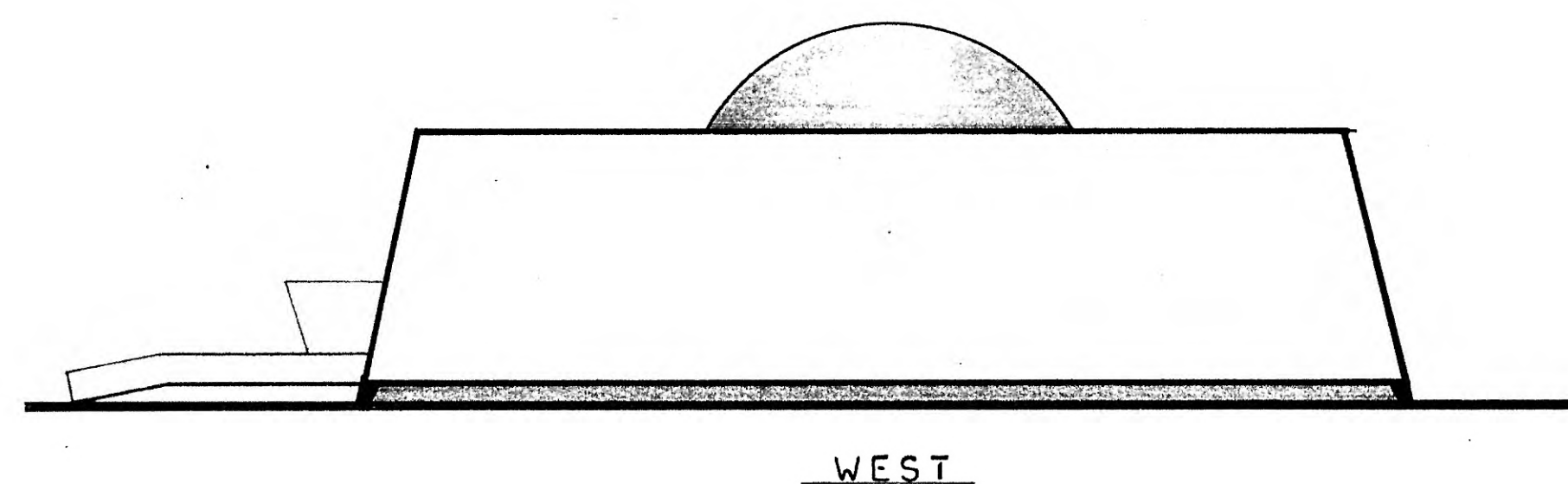
UPPER LEVEL

SCALE 1"=20'-0"

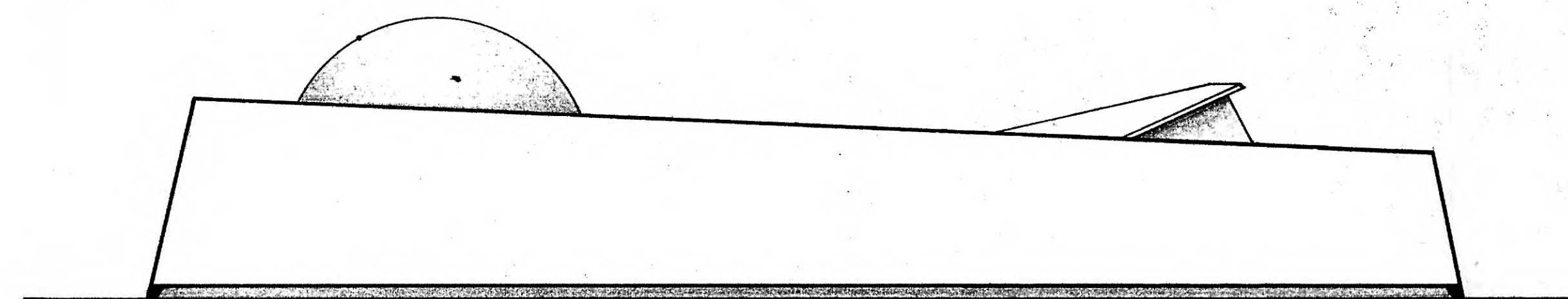
1. LOBBY 2. CHECK 3. SALES 4. TICKET 5. STORAGE 6. SUPPLY ALLEY 7. DISPLAY BOXES 8. FISH POND 9. EXHIBITION 10. CLASS ROOM (180 SEATS) 11. REST 12. SUPT. OFFICE 13. WORK AREA 14. MECH. ROOM 15. EMPLOYEES 16. LUNGE 17. SNACK 18. PLANETARIUM CHAMBER (180 SEATS) 19. AIR SP. 20. BOARD 21. STAFF 22. CURATOR 23. DIRECTOR OFF.

PLANS OF THE AQUARIUM—PLANETARIUM



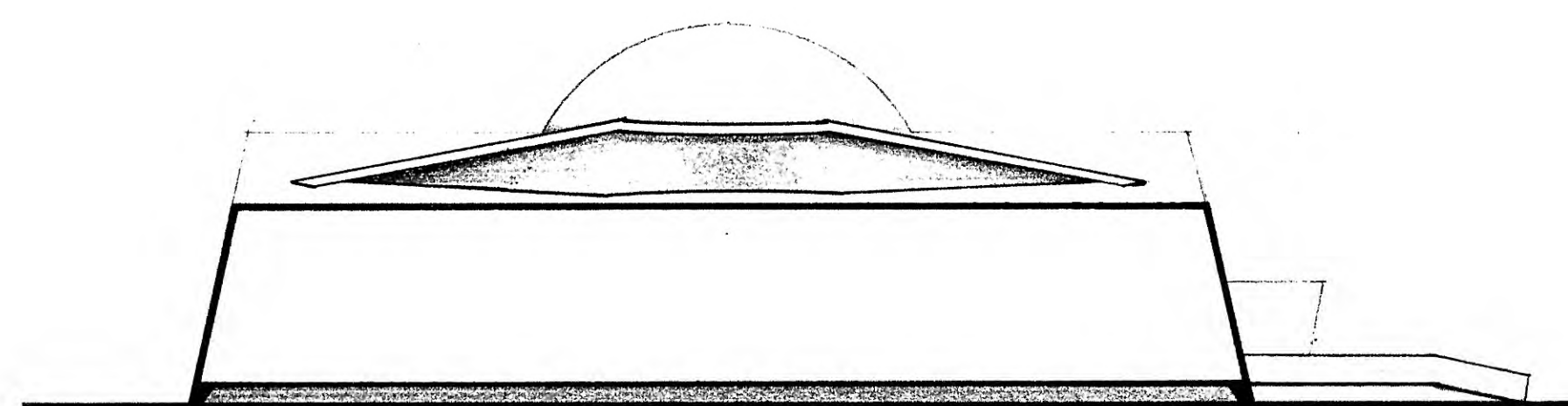


WEST

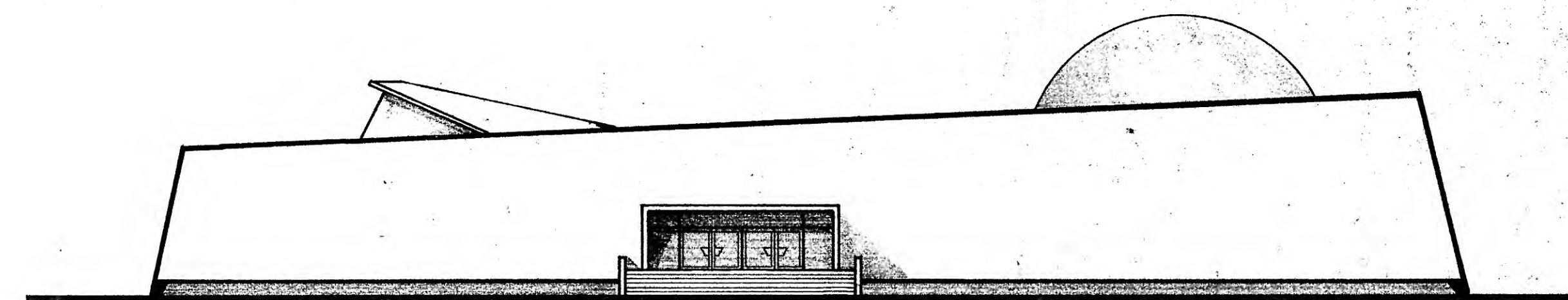


SOUTH

SCALE 1" = 20'-0"

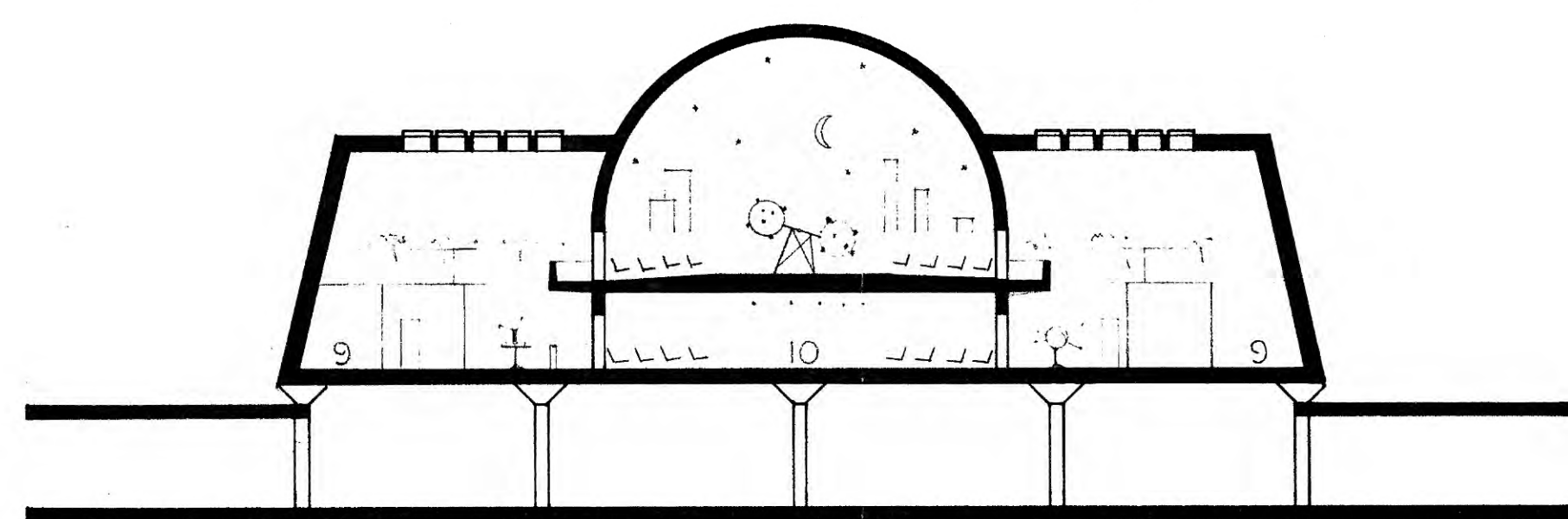


EAST

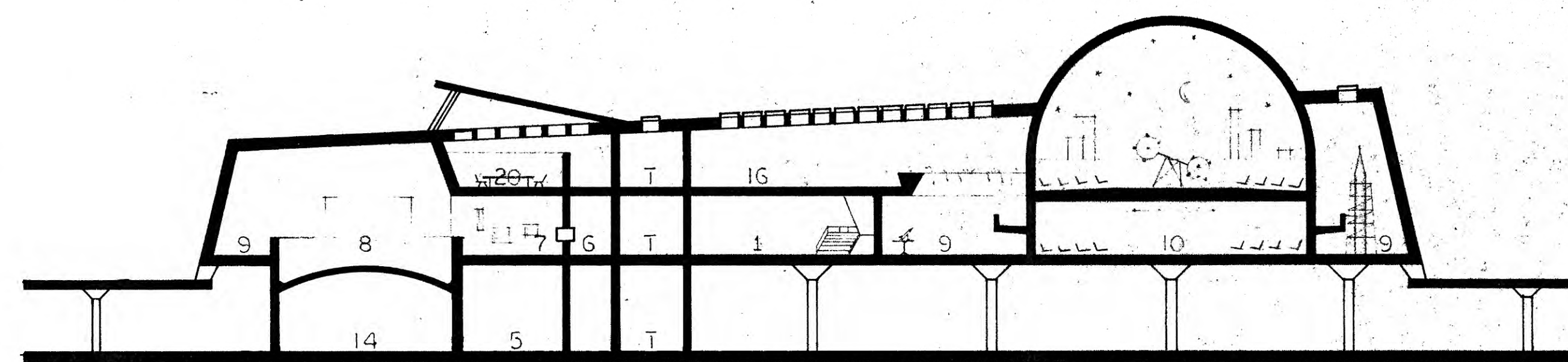


NORTH

SCALE 1" = 20'-0"



SECTION B-B



SECTION A-A

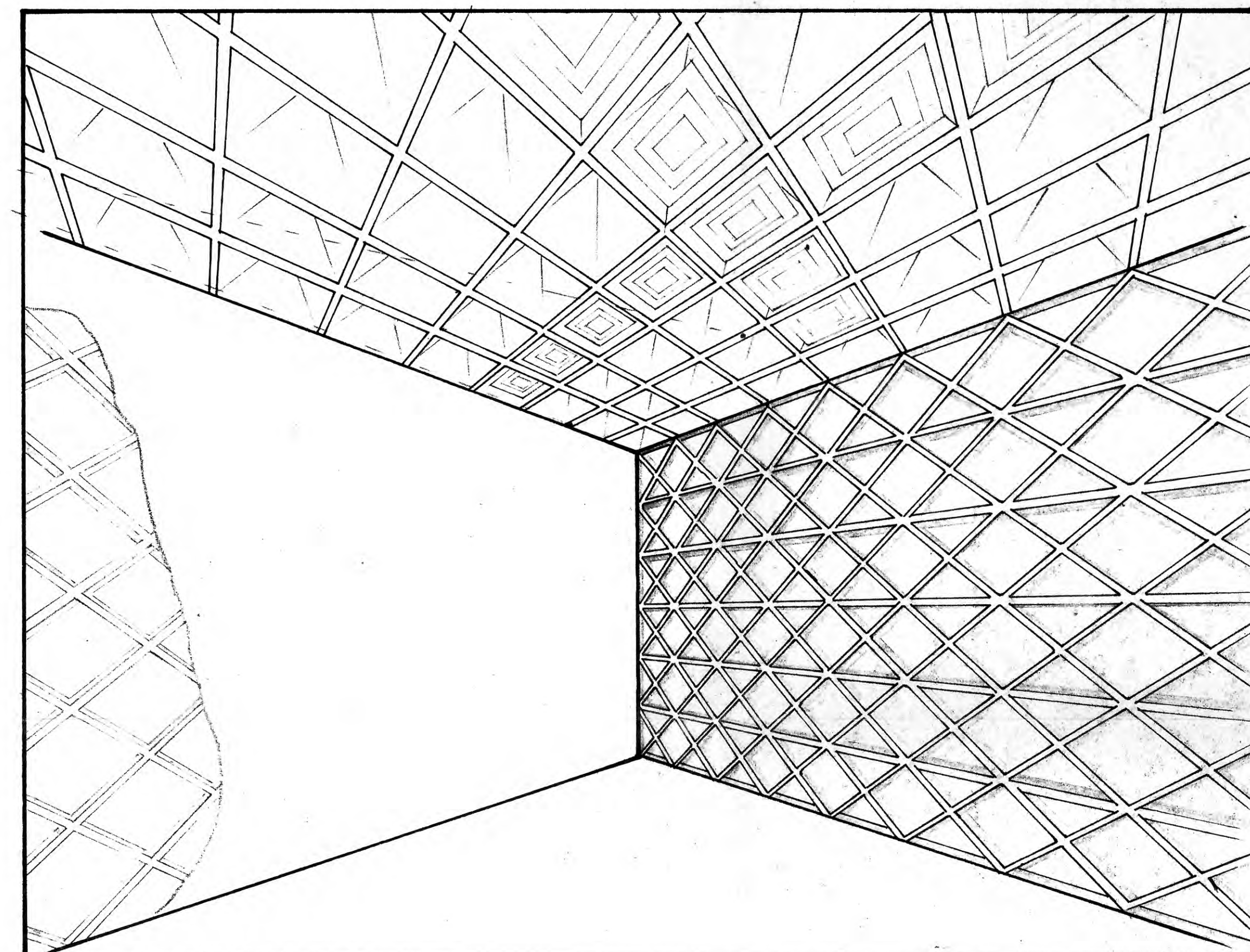
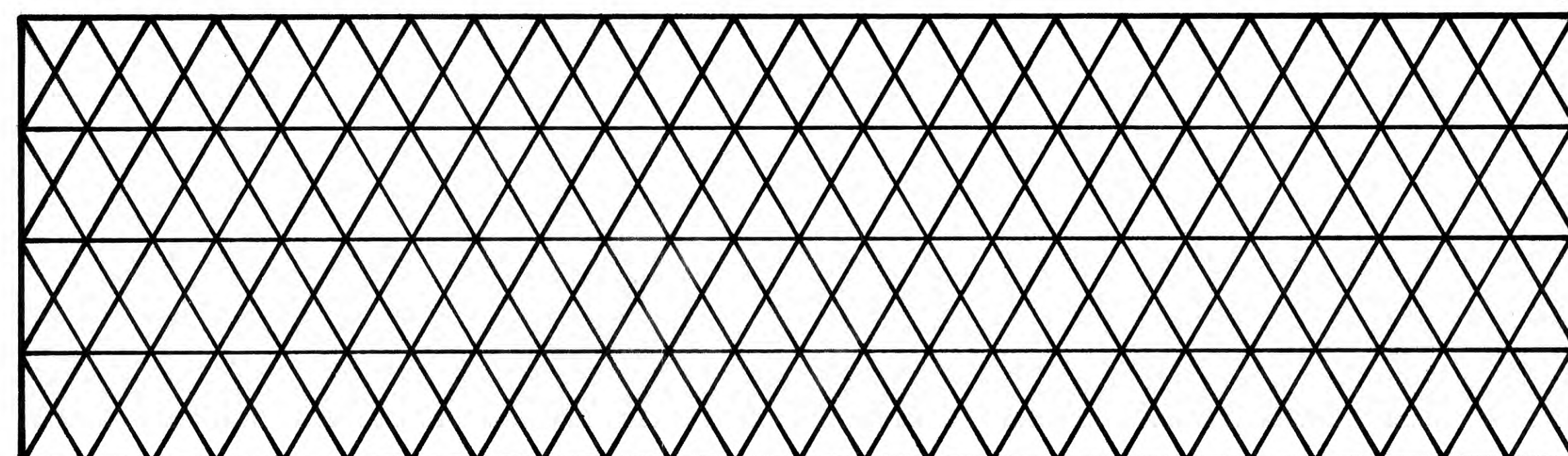
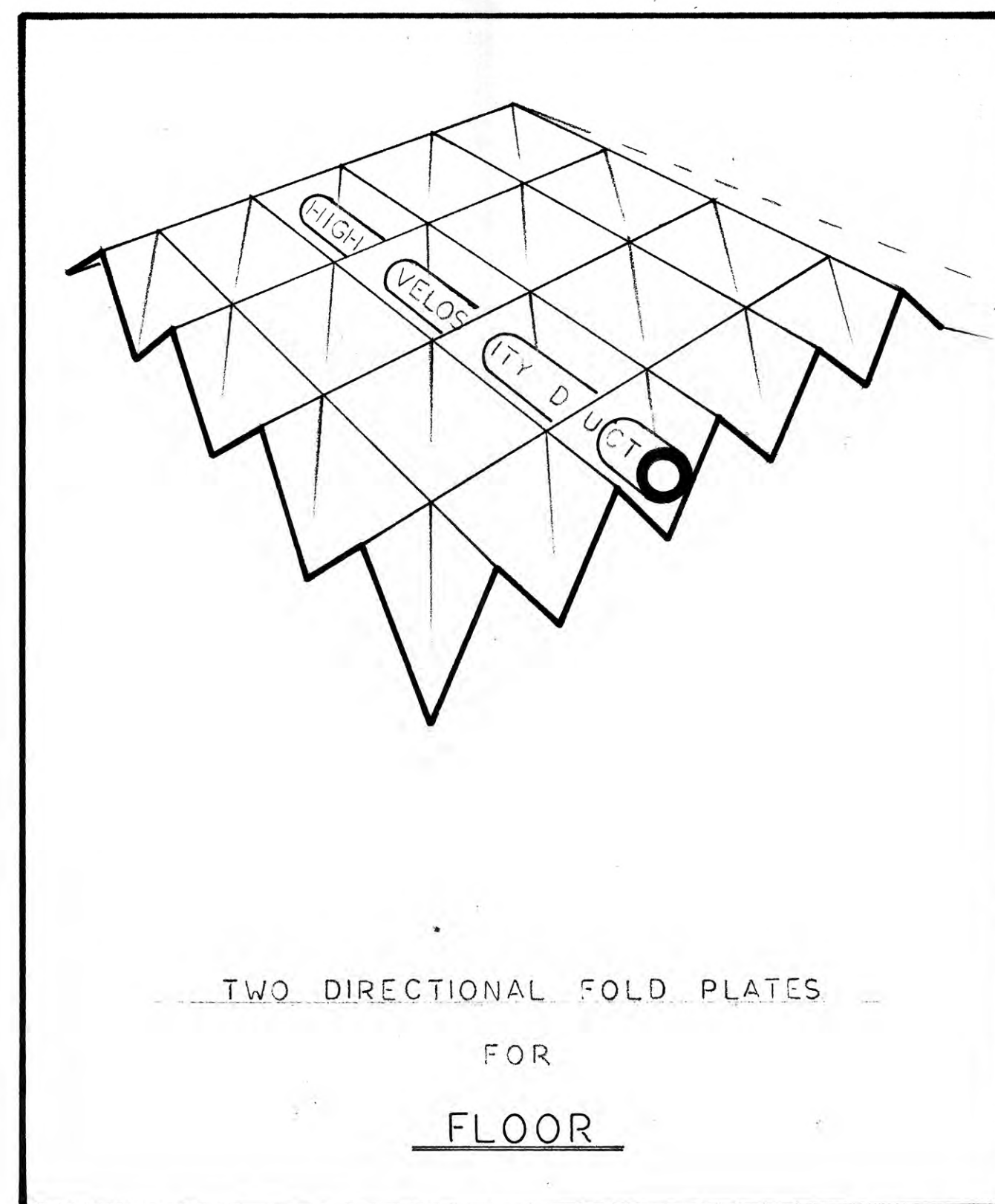
SCALE 1" = 20'-0"

THE ELEVATIONS AND SECTIONS OF THE AQUARIUM—PLANETARIUM

CIVIC CENTER FOR K.C.MO.

28

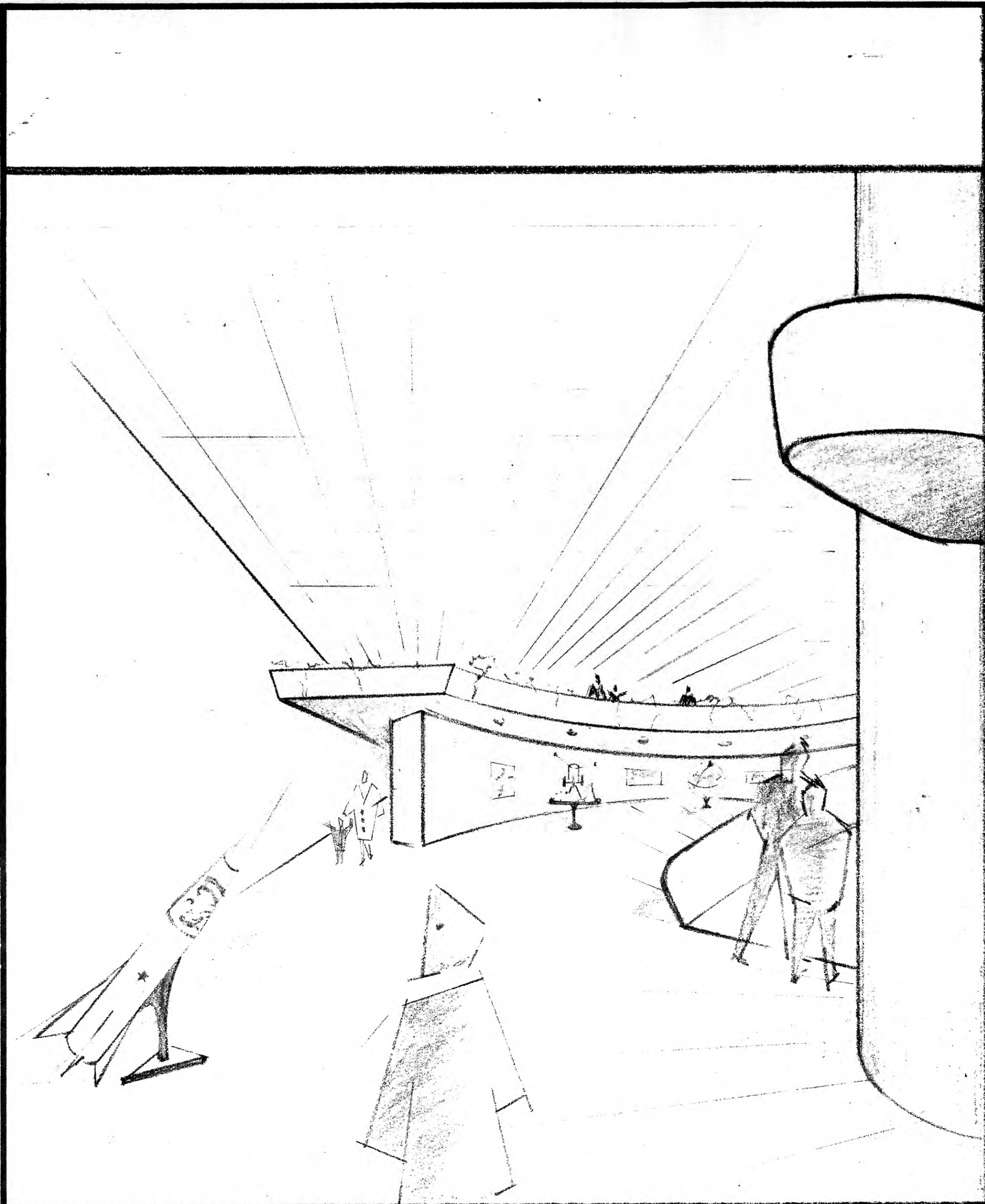




← WALL AND ROOF : PRECAST DIAGONALLY INTERSECTING LATTICEWORK OF REINFORCED CONCRETE

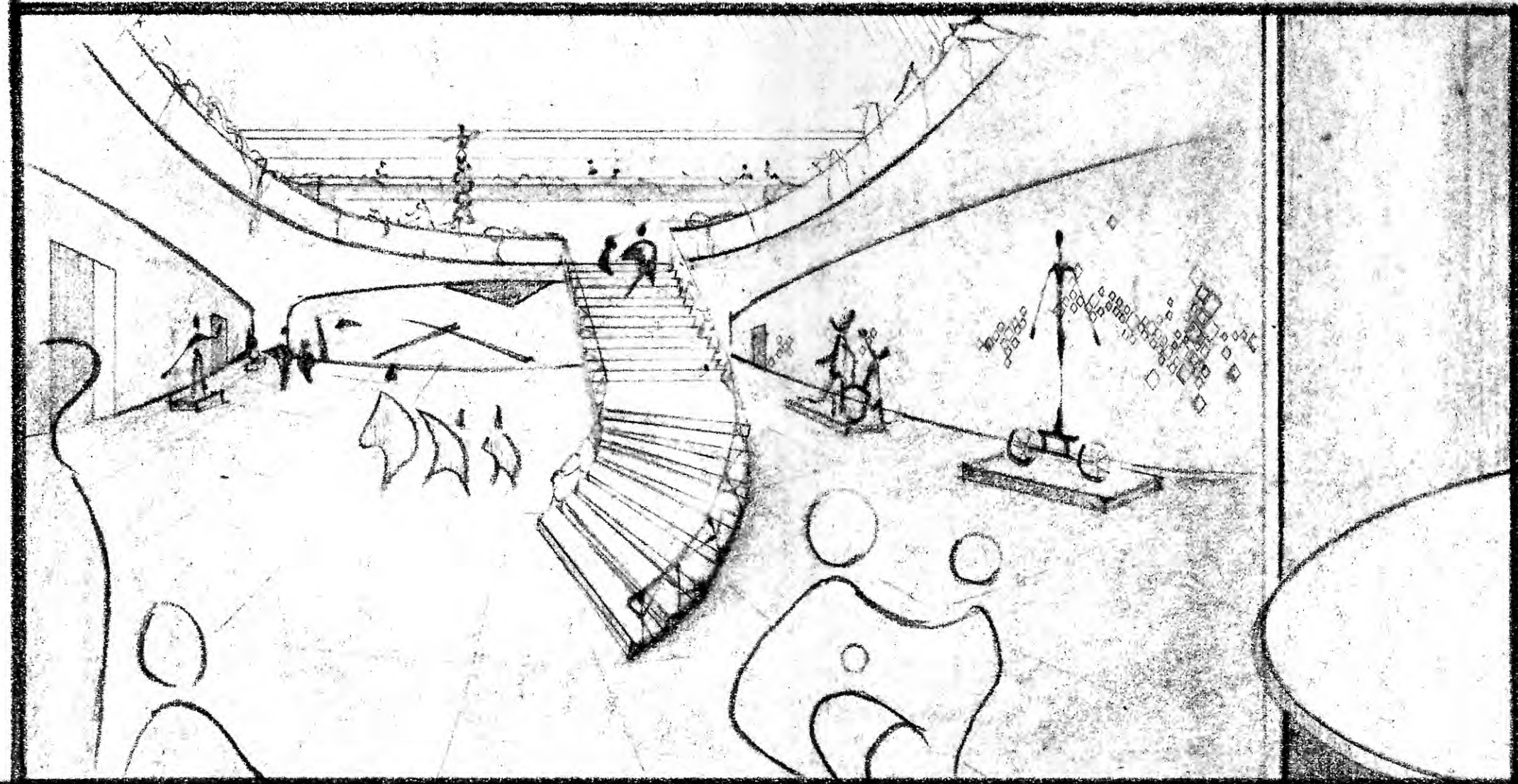
BASIC TYPE OF STRUCTURE





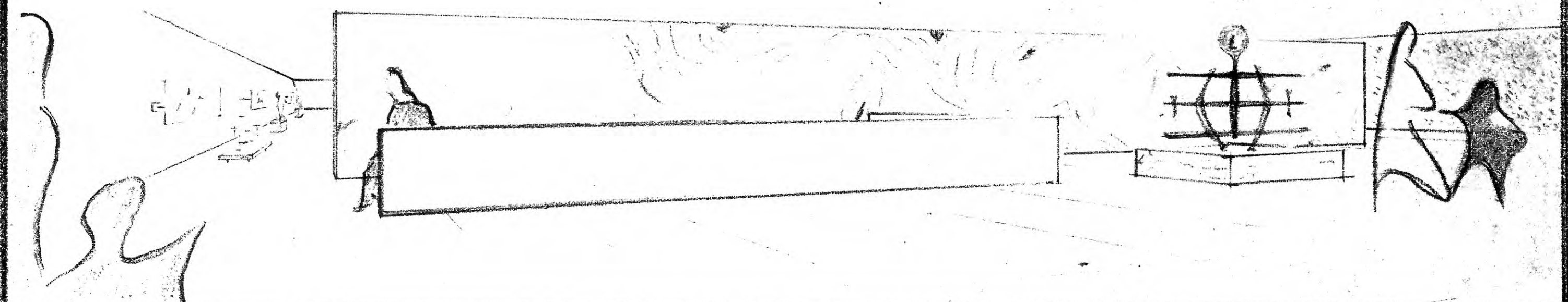
INTERIOR SKETCH

PLANTARIUM



MAIN LOBBY OF THE K. C. MUSEUM

MAIN LOBBY OF THE CHILDREN MUSEUM





A CIVIC CENTER DESIGN

by

JU CHIEH RU

B. S. Arch., National Chiba University  
Chiba, Japan, 1957

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AN ABSTRACT OF  
A MASTER'S THESIS

submitted in partial fulfillment of the  
requirements for the degree

MASTER OF ARCHITECTURE

Department of Architecture

KANSAS STATE UNIVERSITY  
Manhattan, Kansas

1961



The proposed Civic Center design is primarily an exercise of space relation. The space arrangement of the physical structure must satisfy not only the functions of shelter, but must create an environment of containment. So the group planning is an imaginative exercise of the greatest complexity. There are numerous factors to control, both practical and aesthetic. There is the establishment of a correct and logical and functional order throughout the composition, in addition to the necessity of tying it all together by safe, simple, and efficient means of communication. There is the study of harmony in the group as a whole and of continuity between its varied parts. There is the problem of achieving the correct and dynamic balance and of the creation of adequate climaxes.

The planning of the larger area with single underlying design requires a concept to hold together the individual parts and to make them into a work of art.

To practice the art, the following procedures are necessary:

1. Observation of collected data and references.
2. Recording of observation.
3. Study of CBD background and traffic.
4. Relationship between Civic Center and CBD.
5. Analysis of site
  - a. Physical size, limitation characteristics.
  - b. Traffic to the site.
  - c. Topography.
  - d. Location of existing buildings.

6. Program for individual buildings

- a. Kansas City Museum.
- b. Children's Museum.
- c. Planetarium-Aquarium.

7. The building elements: functional interrelationships.

8. The architectural organism: planning.

9. The plan: synthesis

further plan study and correction.

The final analysis and design is to recognize that a Civic Center design is more than the functional arranging of buildings; it is a spatial composition based on physical desires and concluded on aesthetic needs.