A THESIS

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for the Degree of

Master of Science in Architecture

By

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on

Museum for Kaduna

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I owe alot also to my typist Mr. John Audu and the Stenographer Mr. Halilu Ahmadu and to all those whose names are not mentioned but have contributed, I say thank you.

THESIS ABSTRACT.

TOPIC: Museum for Kaduna - with open space and tity cenre centre complex inclusive.

SITE: The museum will be located in the Kaduna city-centre core in the cultural area as provided by Gmokhodian and Associates planners. This lies within the former Magadishu Barracks area along the Ahmadu Bello Way.

AREAS: Cultural area - 3-0 HA.
Open Space - 4.0 HA.
City hall complex - 3.60 HA.

SPONSORS: Kaduna State Government. The ministries of Lands and Survey and the Kaduna Capital Development Board are responsible for the execution and supervision of the project.

COST: An estimated cost of N175 million is hoped to be spent by the Government in developing the whole city centre core.

CLIENT'S BRI5F: A Museum and Archives with library and a high level rotating restaurant open space - An amusement park with greenery.
City Hall complex - city hall, local government offices, governmental offices, post office, and shops.

DESIGN BRIEF: This project has been handled in three parts that is the Museum complex, the open space and the city hall complex. Though my main emphasis will be on the museum, However they will be made to look one piece by connections with covered walkways, ramps and common activities.

ORGANISATION: Science, ctntemporary and modern arts museums are grouped into one building. The Historica and Cultural Museum is housed in the 2nd floor to form the second building. The third building houses the Archives, Library and Administration.

DEDICATION.

Dedicated to:

- My late father Mr. Ishaku Istifanus from whom I first heard the word Architecture,
- to my mother for her tender love and care,
- to my brothers and sisters for their moral and financial support throughout thes. five years,
- to the department without which this writing would not have been possible,
- to all the lovers of museum.

CHAPTER ONE

INTRODUCTION.

Museum is a house that stores, preserves and exhibits artifacts for its viewers. Because of its nature of preservation to exhibit, it has to be under special conditons of treatment such that the objects under exhibition does not deteriorate with time. It is also a medium of communication of ojects of cultural and scientific interest. Although the method of communication is mainly visual and of a particular kind.

Why do we keep artifacts? For the purpose of (i) Posterity; (ii) so as to enlighten the people of its cultural and historical values of the past; (iii) to be able to admire and appreciate work's of art and (iv) to serve as an entertainment.

Museum attendants has steadily been on the increase and the sudden awareness of the Kaduna State Government that the people have lost contact with what was past, have necessigated them to specify a provision of a Museum and archives in the new city centre plan. Due to this deficiencies the

to the east. This plantation in the author's opinion will be left untoched. The terrain of the site will also be used to the maximum advantage.

The museum design will be in division of three parts: (1) Exhibition Area.

(2) Recreational Areas.

(3) Facility Areas - servant spaces
laboratory
offices, etc.

The main exhibition areas will be divided into:

(1) Historical Museum - M_1

(2) Cultural Museum - M_2

(3) Science Museum - M_3

(4) Contemporary and
Modern Art Museum - M_4

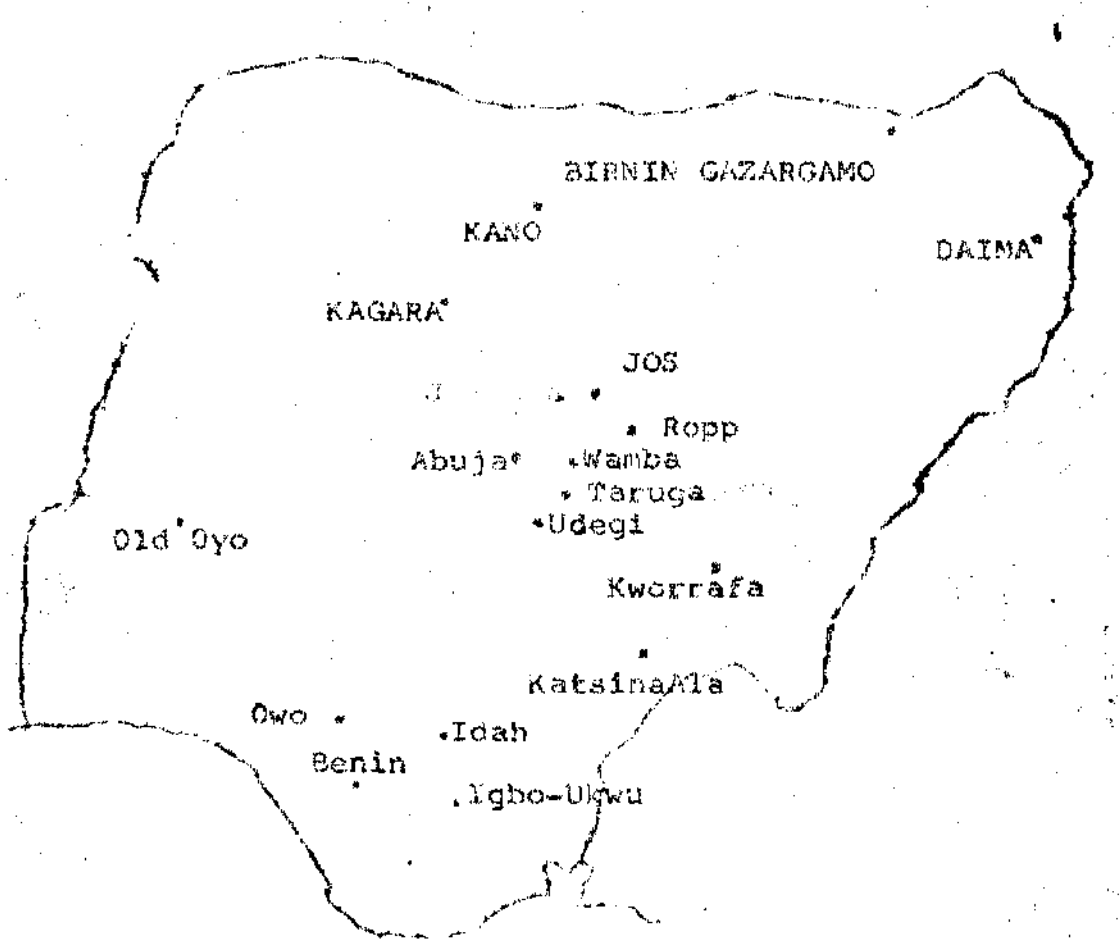
Historical and Cultural Museums (M_1 and M_2) are grouped together into the same exhibition areas because of their sensitivity to ligh (150 lux maximum light needed).

Science Museum (M_3) is placed at the lowest part and where large amount of light could be gained because things on exhibition are mostly in-sensitive to light and heavy.

Contemporary and Modern Arts have the highest sensitivity to light there the natural light is completely shaded and allowed only under special conditions. E.G. acyolic glasses used to remove the damaging ultra-violent radiations.

The more undefined the spaces, the more unlimited the choices, the better the answer considered to be. Several museums have aimed at this goal - cullinan hall; the Kunsthaus in Zurich; Sao Paulo's Museum of Art; the Helena Rubinstein Pavilion in Tel Aviv - though none perhaps has yet achieved this ideal. The author however hopes to achieve this in the design.

ARCHAEOLOGICAL SITES



ARCHAEOLOGICAL SITES IN NIGERIA EXCAVATED BY THE DEPARTMENT OF ANTIQUITIES.

CHAPTER TWO.

MOTIVATIONS.

The Kaduna State Government in deciding to have a museum, have these goals and objectives in mind which are:

1. To encourage and enhance the cultural awareness of the people.
2. To preserve and exhibit our cultural heritage.
3. To have a place within the centre where to relax and appreciate our culture.
4. To have a sought of recreational centre.
5. To have a place where people of different works of life and ethnic groups could intermingle within the centre.
6. To provide a place where scholars could go and reserrch into the cultural aspect of our tradition.

To encourage and enhance the cultural awareness of the people for example could be seen during the Argungu Fishing Festival. The Nation Council of Information have called on the Federal Military Government to make cultural study a must in all Varsities (see newspare cuttings in part 6 chapter 1).

During their last meeting at Sokoto, the council passed some resolutions so as to prevent the disappearance of our cultural values. These resolutions are:

(a) that cultural studies course for students in the Nigerian Universities which could make them aware of the country's history and philosophy springing from knowledge of their roots as necessary base of their various studies be introduced; and

(b) reviewing the present western oriented nursing rhymes to be changed for indigeneous ones and the content of tutorial materials at post-primary institutions to reflect our culture.

As the Sokoto State Commission for Information, Cultural and Internal Affairs - Mallam Lawal Mohammed Dunguru - said the council took these decisions to start cultural revival at grassroot level. To further enhance this, the Sokoto State had already gone further by eduction its citizens on the importance of their own culture through the cultural magazine called "Garuma". The commissioner also believed that efforts could be made in educating the people through local films for example that the features people like Sehu Umaru and now Kanta of Kebbi could achieve a lot.

Percentage attendance in the present Kaduna Museum has been growing at the rate of 30% annually. This has attracted the attention of the curators to have more exhibits on display but the limited space available could not allow this despite the fact that more than half of what are not on the exhibition are in poor shorage. Poor storage because they deteriorate with time especially those materials like leather which could be easily eaten by rats. Some rot away because they are not in use e.g. the drums. This therefore necessitated the need for an open air theatre where occassionally these drums could be taken out and traditionaldances performed. More so the removal of the present open air theatre (adjacent to Imam House along Ahmadu Bello Way) for tradional shows like wrestling by constructions of an office block have called for a new site. This function could be convinently transformed to the museum open air theatre. From the statistics so far taken by the author, no Nigerian Museum have more than half of its objects on exhibition. This means that the storage spaces provided will be large with sufficient protection against deterioration, theft, etc.

Preservation of artifacts require a high level of technology. Thus, the provision of a laboratory

to take care of these. The initial amendment and curing for presentation all takes place here. Display galleries are divided into divisions as the functions detects. Those artifacts that are insensitive to light are placed where they could have maximum light and those highly sensitive to natural light are to be kept completely without it. Artificial lighting to them are specially treated.

The Nigerian Army has of recent appealed to the public for donations of object that are worth keeping for posterity purposes to come forward with them. Such objects range from medals, decorations, uniforms, flags, currencies, maps, books, photographs, documents, ammunitions, weapons, vehicles, etc. (see newspaper part 6, chapter 1.)

The Gongola State Government in bid to preserving its fast disappearing artifacts have also decided to have small art galleries in the palaces of emirs and chiefs in the state (see newspaper par 6 chapter 1).

This is the only place within the city centre where one can talk of relaxation. All the other places are busy administrative, banks, commercial offices or department stores. The having of a museum here with an open space will give an adequate point for rest and allow people to watch and appreciate

their cultural heritage. To appreciate the work of art, it is absolutely clear th t one should watch in silence. Louis Kahn refers to silence as the beginning of art in the same way that Andre' Malraux called art the "voices of silence", for only silence prevails before knowledge.

To this effect natural and artificial means have been employed so that noise either from traffic or otherwise be minimised to the minimum. For example sand dunes, trees, water bodies, etc are to be used as noise screens.

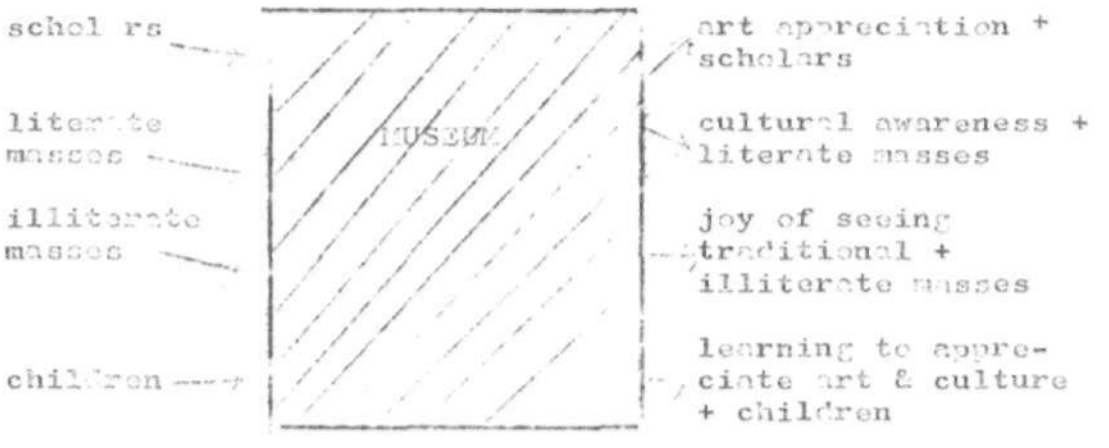
> --- we cannot therefore, presume that aesthetic considerations exist at the begining. The begining of art is in silence.
>
> Louis Kahn.

Enjoyment of art varies with individuals, since the rate of understanding and perception of individuals varies. Various exhibitions gives various viewers various impressions. Thus, I found out that while some people spare a lot of time in the poetry section, some spare more time in the arts section. While others could spend their whole time in the museum staying in the recreational areas. For example water pools, bars, restaurants, gardens, etc. It is also interesting to note that some people go to the museum not because they want to watch any art but are

pulled there because of the subsidiary functions like restaurant, bar, etc as mentioned above. To be able therefore to succeed entirely in the museum design I will employ the use of these pulling forces to bring people into the museum and cunningly force them through watching art. These can be seen achieved in the placing of the restaurant in between the galleries. The planning of the open space to merge with the cave exhibitions and the sculpture garden within the pools, fountains and gardens. Since museum going or art watching is such a tiring work not only in the walking about but in the fatigue of watching, these recreational spaces will serve a very useful relaxation points (estimated tiring linear distance is 2,000m^2) In the design, these points have been placed horizontally as well as vertically as the length detects. Or where the author fell most viewers could be tired at that point.

> It may well be that in many cases museum fatigue is thus not only due to the inevitable mental and emotional concentration combined with the physical effort of standing and walking, but also perhaps, to the tiring effects of excessively static illumination. The museum visitors may often, though probably less consciously, be as eye tired as foot sore, particularly since seeing is such a dominant part of the whole activity. Visual alertness and the capacity to appreciate will both diminish with tiredness, communication will become inefficient.-
>
> NEW MUSEUM

Museum in the heart of this city centre will encourage the intermingling of people of different ethnic groups and works of life. This will help in proper understanding of the public. The Plateau State Commissioner for Establishments, Internal Affairs and Information, Alhaji Hassan Ahmed II has called on the National Council for Arts and culture to explore ways of uniting the Nigerian Arts and Cultural heritage so that it could withstand the test of time and foster national consciousness and unity among the various ethnic groups in the country. The commissioner has been early to understand that museums - which is the house for arts and culture - will enhance the unity of the Nigerian people. This is also one of the aims of the museum.



This museum could also serve as a research points for scholars. Students could at last have where

to go and research into art and culture. This will help immensely as there has been no such concise museum with library to document and preserve works of art. The library here have been carefully placed where it could be approachable to those from the science museum and the history and culture museum.

> "... without objective research and exchange of experience on the global scale there can not be formed the proper course of development of science and technics to raise the level of the world culture
>
> - J.D.N PERRIN.

Socially, the museum will help bring people within the light and appreciation of the age-long cultural heritage. The knowing of the extent to which the people who lived say 2,000 years ago think and their environment(arts). Being able to evaluate the social set-up in those years from the available anti-facts. The sum total of these teach us to build a better tomorrow. For according to Santayana, "Those who refuse to learn the lessons of history are condemned to repeat it".

SITING :

The museum is sited in Kaduna because:

1. It is the state capital of Kaduna State.
2. The most commercial town in the state.
3. Has the highest population compared to any othertown within the state - (600,000).

4. Central position to most excavation sites within the country.
5. Has a lot of tourist visitors into the town so this will serve as a good tourist attraction.
6. Has a temporary existing museum with only 20% of its anti-facts in exhibition - which implies need for a bigger museum.
7. It is a comsmopolitan town.

CHAPTER THREE.

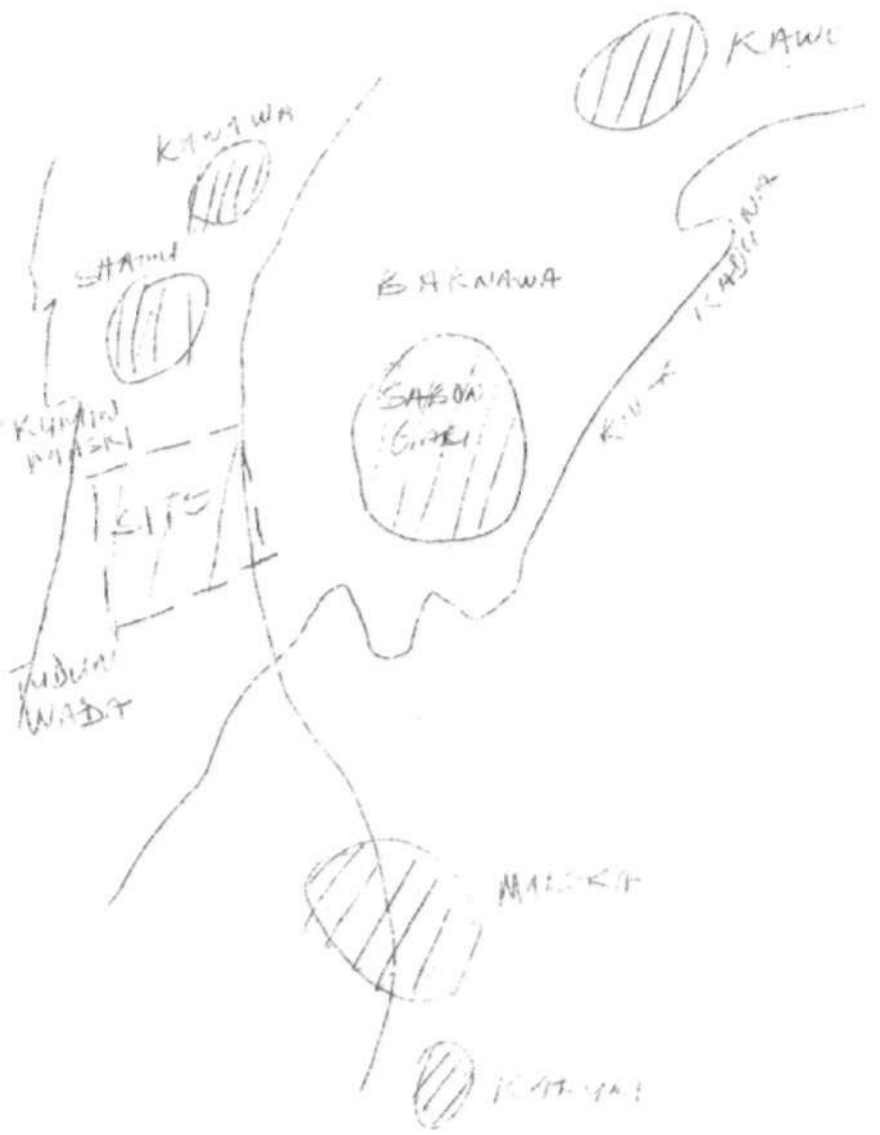
SOCIAL, ECONOMIC AND POLITICAL CONSIDERATIONS.

Kaduna is a cosmopolitan city with its population mostly of mass migration from the villages and other Nigerian towns. In the past ten years the population has grown almost four fold from under 40,000 in 1952 to 150,000 in 1963 and 600,00 in 1978. The growth rate annually has been put at 3.6%. It is estimated that by the year 2005 the population would have reached 2 million. During the 1966 disturbances a lot of social changes have taken place. The political situation then has caused many people to return to their province of birth. In 1965, 63% of the population were 15 years old or over and 37% were children. In 1952, it was 58% adults to 42% children. The ratio of males to females in 1965 was 1.2 to 1.0. Of the adults, the male to female ratio was 1.4 to 1.0. The ratio of children was 1.0 to 1.0. Over the region as a whole in 1952 there were many less adult males than females (0.88 to 1.0).

AGE AND SEX STRUCTURE SOCIAL SURVEY 1965.

KADUNA 1965 SURVEYS: North Region Census 1952.

Age Group	Males	Females	Total	Males	Females	Total
0-4 Years	15.1	21.2	17.8	Age groups are not comparable		
5-9 "	11.2	13.7	12.3			
10-14 "	7.3	6.0	6.7			
Total Children	33.6	40.9	36.8	45.1	39.6	42.3
15-19	10.2	15.0	12.3			
20-24	15.8	16.2	16.0			
25-34	22.3	17.6	20.2			
35-44	11.7	5.8	9.1			
45-54	4.3	2.6	3.2			
55 and Over	2.3	1.3	2.1			
Total Adults	66.4	59.1	63.2	54.9	60.4	57.7
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0
SAMPLE NUMBER	4250	3404	7654			



1965 CENSUS.

15 Years and above - 63% - Adults

15 Years and below - 37% - Children

Ratio of males to female - 1.2 to 1.0

Ratio of males to (adults) 1.4 to 1.0

Present traffic in Kaduna Museum is 36,000 persons annually. Expected volume in the year 1987 will be 100,000. Basing our data for the year 1987 museum attendance and considering the pecentage of adults to children and males to females of 1965 census we will have:

PERCENTAGE	MUSEUM ATTENDANCE 1987		
		MALES	FEMALES
63%	63,000	37,300	25,200
37%	37,000	25,900	11,100

Unfortunately, since the insoption of the Kaduna Museum in 1975 there has been no concise censue of the attendants. No specification of the number of sex and age groups that visited the museum. In this case I have worked out my data with the use of 1965 census and the present data collected at the museum as above. A typical example of museum attendance in Chicagee Museum of Science and Indestry according to their age and sex is shown below:

44% under 21

23% grown up women

28% grown up men

Number of visitors in the year:

1975	3,815,388
1970	3,231,963
1960	2,636,704
1950	1,669,379
1940	516,848

"1976 FACTS" - Museums of Science and Industry Chicago, 1976.

The daily journey to work map shown shows the relationship of the site to the movement of workers.

ECONOMY:

On the economical side, the museum will save our arts from being taken away and then sold or lent back to us at exubetant prizes. For example the FESTAC MASK which was to be borrowed to the Federal Military Government at about ₦4 million by the British Museum. Fees collected at the gate will help offset some of the museum's expenses though this is in a small fraction. As a treasure house, museums are usually valued at high prizes. For example the National Museum of Lagos with more than 500,000 collected items was valued at no less than ₦500 million. These if it were not kept prperly would have been lost to other countries or destroyed. Recently

the Federal Military Government gave out some money to the Ministry of External Affairs so that she could help recovery some of our lost art treasures from other coutries. They are also to use diplomatic means wherever possible in recovering these arts.

In recent years, due to the fashion for exotic varities, the removal of Africa's objects d'art to the west took on a truly terrific scale. The astronomical prices, the chance of making easy money have attracted not only professional businessmen to trading "exotics", but also pilots, scientists, tourists and even diplomats. According to Professor S. Diobaku, a well-developed network of profiteers is functioning in Nigeria, buying up and shipping works of art from the country. The scholar calculated that more than $30 million dollars worth of art and ritual objects have been stolen from Nigeria. The Paris MONDE writes that west European and American businessmen are purchasing works of art from the local population for every modest prices indeed. At times they even hire a local 'consultant' to help them acquire the most interesting and valuable works. At Auctions in Paris, London, Brussels, New York the unique objects are then re-sold at prices that are several dozens and even hundreds of times higher. Not long ago, a

statuette sculpted by ancient Cameroun Master, came under the bammer at London's Christle Gallery for £28 thousands pounds sterling. A scale of a collection consisting of 79 objects of African Art, held in Paris in the summer of 1975, brouhgt its owner 900 thousand French Francs. Among the most interesting objects sold was a wooden statuette carved by the masters from the Congolese tribe of Loulouave, as well as a Conglose ritual mask, each of which was sold for 184 thousand francs. Many African Goverments are doing their best to prevent works of art from being smuggled out. Special laws are being issued prohibiting their illegal removal. State Funds are being allocated for preserving the monuments, sanctuaries, burial places that have remained intact, for building national museums and training specialist. A rule in Nigeria for example, requires that anyone taking a work of art out ot the country should produce a document certifying that it is of no historical or artistic value. The same restrictions are in force in 26 other courties on the continent. These measures, however, prove insufficent for effectively fighting the drain of sultural values.

CHAPTER FOUR.

GEOGRAPHIC AND CLIMATIC CONDITIONS.

Kaduna was chose by Lugard as its administrative and military headquaters for four main reasons:-

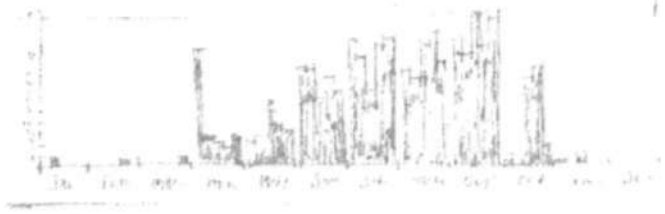
(a) It had water from the Kaduna River - an important tributary of the Niger.

(b) Kaduna was only slightly north of the centre of gravity of the thirteen emirates that made up the then protectorate of Northern Nigeria that had by 1912 become fused with Nigeria as a whole.

(c) Kaduna was then sened by the newly constructed (1911) railway stetching from Lagos to Kano and was planned to be the junction between this arm Linkig the North with the West and the line pushing northwards from Port-Harcourt in the East. Although this line was started on the coast in 1914, it did not reach Kaduna until 1927 when the branch line from Kafanchan to Jos was also opened. Kaduna's strategic advantage as envisaged by Lugard was then realised.

(d) Finally as a field administrative and military centre, Kaduna set in pagan Gwari country in the heart of Zaria province was isolated from existing towns and would therefore be free from local political complications.

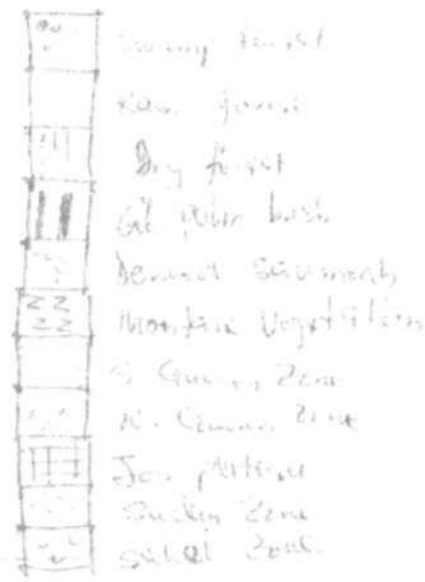
Kaduna is within the powerful Zaria Emirate. Descendants of those who were here before the Hausas came in the 13th - 14th century. The founding of Kaduna





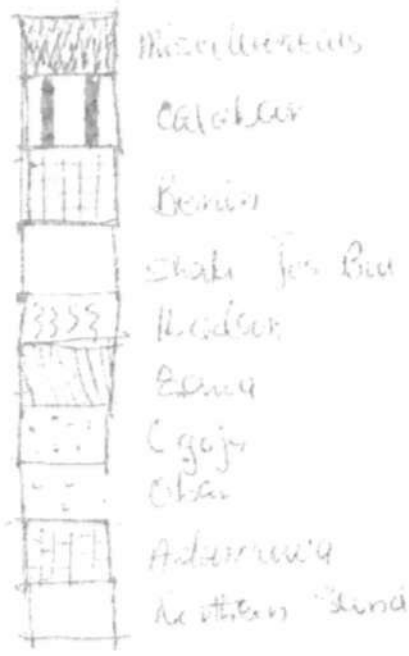
VEGETATION ZONES :





SOIL GROUP :





in order to supply its growing needs, attracted a growing agricultural population of indigenous Gwaris, and other pagan tribes from the Plateau to the east, as well as a deeper penetration of Hausa settlers from the North. National tribes among those in Kaduna are Hausa, Ibo, Yoruba, Nupe, Fulani, Tiv, Idoma and Kanuri. Language comuoly spoken is the Hausa. Islam and Christainity are widely practiced. These can be seen from the number of mosques and churches all around the town. Despite the strong influence of these religions, it has failed to change the belief of the pagan Gwaris who now live around Kaduna.

Topography and Geology:

Kaduna town lies within the plain lands of the country. The height is between 2,000-2,100 feet above sea level. The site lies within the contours of 2,000' and 2,010' (feet).

The geological structure is magmatic of mixed streaky rocks, granite in parts with darken, softer bands and much varied. Though most of the surfaces has decomposed into laterite. Water level in the town is quite high and wells are sunk to a shallow depth of 50 feet. There is abundant laterite, granite, sand and gravel at the river bottoms for construction.

Climatic Rainfall and Wind:

Dry season is between the months of November to March. This is the period we have the dust laden harmattan winds blowing from the North-east across the

Sahara regions. It is dry, cold and often strong. Wet season is between the months of April to October. Rains brought by the South-westernly winds which blows across the atlantic ocean. It is moisture laden. The rain storms come with voilent thunder and lighting. This is the time one needs most prevention from the climate because of the preceeding strong North-east winds. Total amount of rainfall during the wet season is between 40 - 60 inches which rises to peak during the late July to September. During heavy storms usually streets within Kawo and Tudun Wada areas are flooded to about 18 inches from the ground. Luckily, within the site there is no waterlogged area except to the western end. Because of the raised central portion of the site there is a quick run-off of rain water from the site. There can be seen a natural gutter formed due to the rain drainage along road 3.

Temperature:

Highest are in April and range between 95° - 105° and the lowest are in January between 45°-55°. The mean range is greater than that found in temperate climates and the extremes of hot and cold in a single day places a strain upon the inhabitants aggravated by considerable changes in humidity which in the dry season may well be below 10% in the afternoon and 30% at dawn. This causes paper to dry and curl and even seasoned wood warps and splits. (TAKE NOTE IN DESIGNING).

Vegetation:

Kaduna is situated in the north guinea savannah zone with slightly thicker wood than the Sudan zone. The egetation, when unmodified by man, consists of "orchard bush", a continuous cover of well developed trees some 30-40 feet high which is often dense enough to suppress grass. Due to the urbanisation in Kaduna most of the treees have tend to diminished.

Soils:

Soil cover in Kaduna are of laterite formed from drift deposits which mantle the solid sedmentary and -re?cambrian basement (granite) rocks. Kaduna lies within what is know as the "Zaria" soil group where the covering material may be up to 1¼ feet in depth. Being of fine texture this soil is relatively difficult to work because it tends to become waterlogged with heavy rain and to dry out and crack during the dry season (NOTE IN DESIGNING).

Ecology:

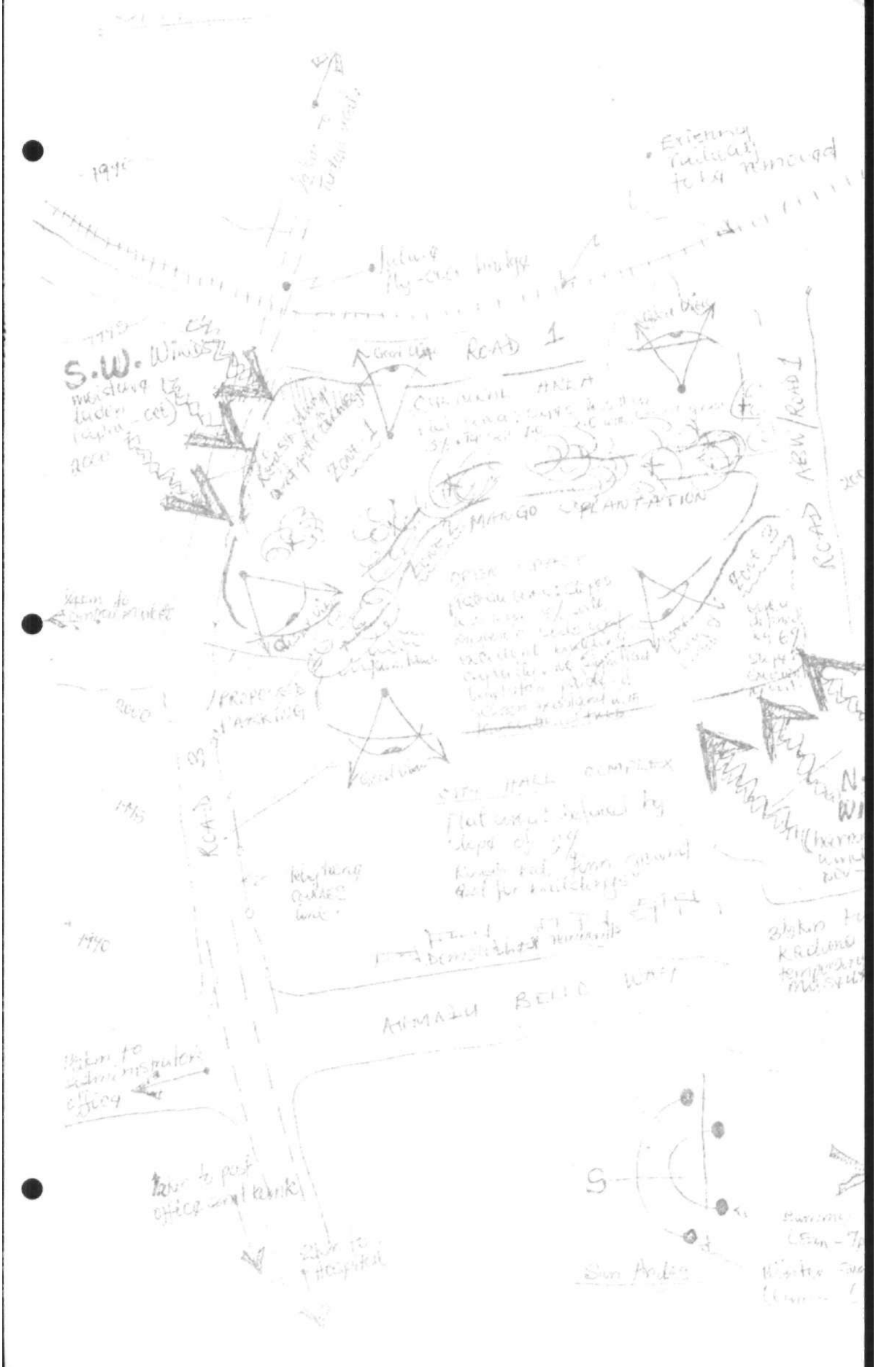
The site slopes gently from the middle portion towards east, west and south but rises towards the north. There is a thich plantation of mango trees in the western edge of the site. This is intended to be left untouched by the author. Grasses that grow here are seasonal.

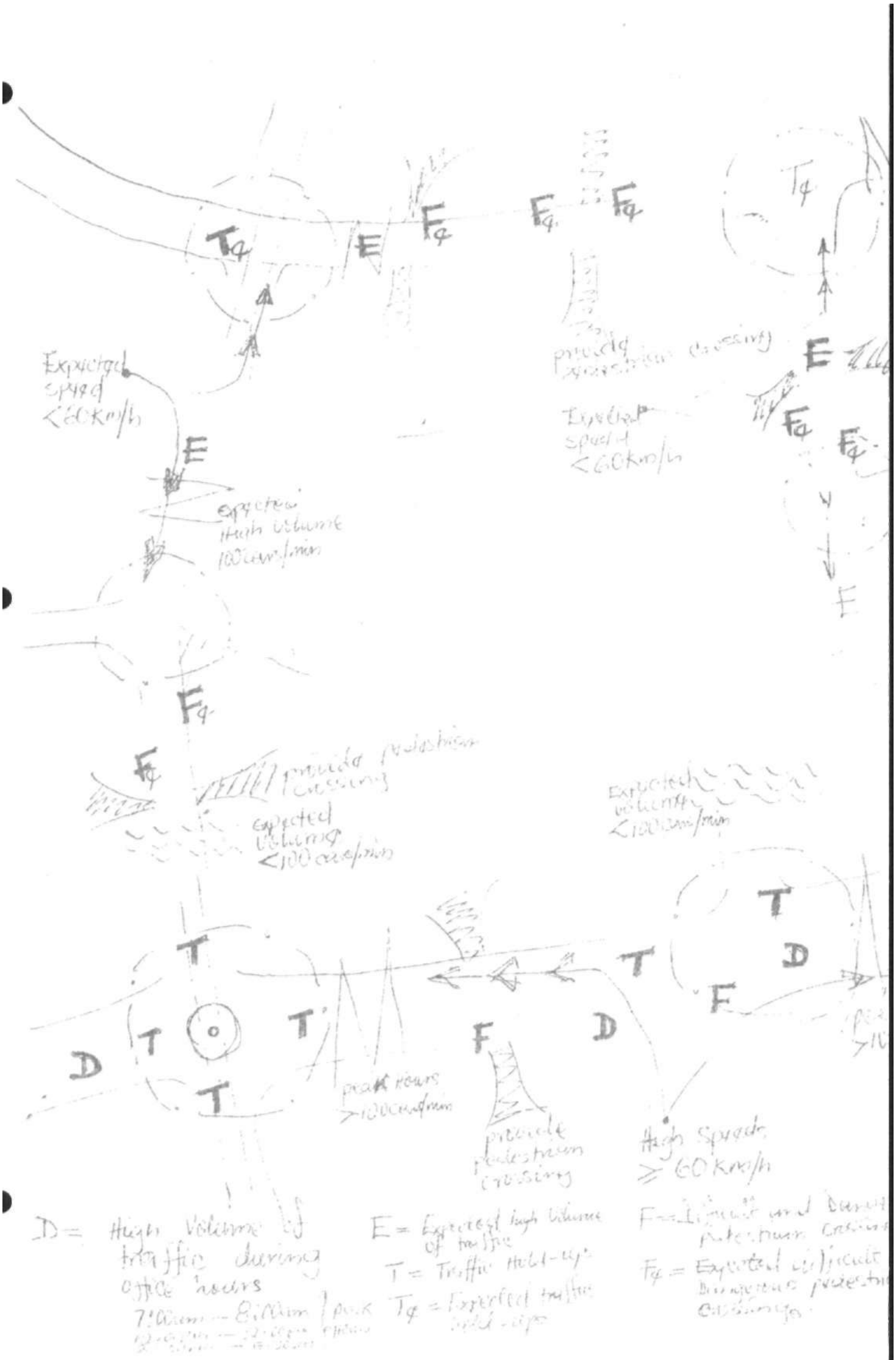
Man-Made Structures:

There is no existing building on the site. The former Magadishu Barracks which was demolished, had only its remains left over the site. These remains in form of broken blocks and stones could be seen towards the eastern part of the site. Electric and telephone lines are seen passed through the east adjacent to Ahmadu Bellow Way. The railway line in boundary on th western part is to be removed. Standing water pipes could also be seen on the site.

Physical Boundaries:

The site is bounded on the south by the road 3 on the map; to the west by road 1; to the north by Ahmadu Bello Way/Road 1 and to the east by Ahmadu Bello Way. There is presently a pathway at the central portion which crosses the site. Pedestrians use this path from the Ahmadu Bello Way/Road 1 to cross over to road 3 and then proceed to the market. At peak hours that is 7.00 a.m - 8.00 a.m or 12.00 p.m - 2.00 p.m or 3.30 p.m - 5.30 p.m; the traffic along Ahmadu Bello Way and road 3 is dense. There is congestion and traffic "go-slow" at these points. The round-about at the Ahmadu Bellow Way/road 3 has made this situation worse. This is also an accident point. At least two accidents are recorded in a day.


S.W. Winds
ROAD 1
MANGO PLANTATION
ANIMALS
S


Tq
E
Fq
Expected speed <60Km/h
expected High volume 100cars/min
provide pedestrian crossing
expected volume <100 cars/min
T
D
F
peak hours >1000cars/min
provide pedestrian crossing
High Speeds ≥60 Km/h
Expected volume <1000cars/min
D= High Volume of traffic during office hours
E= Expected high volume of traffic
T= Traffic Hold-up
Tq= Expected traffic hold-ups
F= Difficult and Dangerous pedestrian crossing
Fq= Expected difficult and Dangerous pedestrian crossings

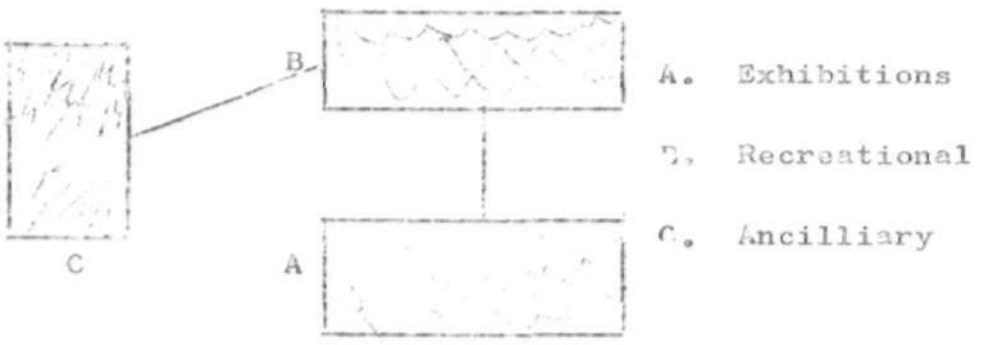
CHAPTER TWO

MUSEUM DEFINITION.

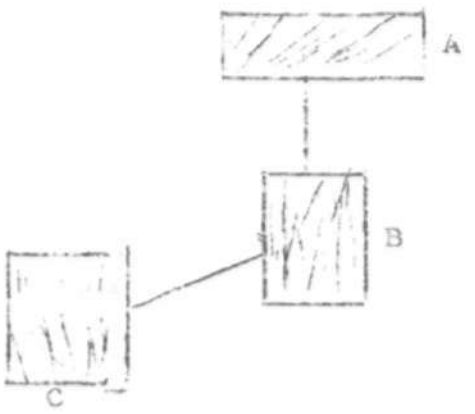
Like the bank where money is kept for withdrawal or like the oil storage tank where fuel is kept for consumption, or like the grain storage where food is left for later consumption, the Museum is a warehouse that stores antiquities for consumption. This unlike the food consumptio which takes place in the mouth, or the fuel consumption which takes place in the engine, or the money consumptio which takes place in purchasing; the museum consuption take place in the eyes by seeing. The understanding and appreciation of the art depends on the individual. Just like in reading a book or journal. It is another form of mass media which communicates to its viewers. The definition of the museum has for the past years now changed. There are now two schools of thought. The first one maintains the age-old definition of a museum. That it should be a house that houses antiquities and nothing else. Viewers purely come to consume the work of art. Its function here is one and defined only to storage and preservation for view, for example peabody museum, East India Square. The second school of thought, believes that the museum should basically serve three functions:

1. storage and preservation;
2. recreational and
3. ancilliary facilities.

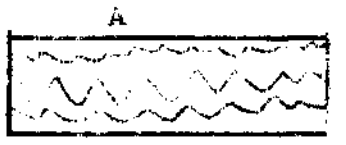
This is the modern trend now in museum design. This school of thought believes that the museum being only a storage and preservation house losses some of its important functions - consumption of art. That the sum total effect of enjoying art should be relaxing and pleasing and should not be boring or tiring. For this reason a recreational facility is necessary. And that for all to function properly, there must be the services - needed facilities which is termed under the ancilliary spaces. These three functions are distincly defined in modern museums like the Ontario Science Centre, Canada; Los Angeles Country museum, U.S.A.; Hirshhorn museum, U.S.A., etc.



1. ONTARIO SCIENCE CENTRE (2nd School of Thought)



2. LOS ANGELES COUNTY MUSEUM (2nd School of Thought)



3. PEABODY MUSEUM, EAST INDIA SQUARE (1st School of Though)

Since the primary function of a museum is storage and preservation for view, any architecture that houses these functions must take into consideration the lightining effects, security, routes, the observer, etc. It has been found out that the ultraviolent light has a great deal of damaging effects on the preserved antiquities. This therefore entiles that if natural light is allowed into galleries it should be under some control.

For this reason some museums cut-off natural light completely and uses artificial lighting or use acyclic glasses to remove the ultra-violent light before entering the building. Objects that are of high security risks are given special treatment. Some in showcases, or ligh beams which act as signals, or connected to electric alarms, etc. These in case of thief trigger off an alarm. The routes in a museum are of essential importance to the successful viewing. Many ways have been designed and no single one type of route is yet to be termed the best.

The best I will say lies in how many routes there are and how varried and functionally placed. The Guggenheim Museum, New York for example uses spiral route.

"The museum is, like the cinema or television, also a mass medium, but unlike them, does not presuppose a simultaneous audience; it is, like the illustrated book or journal, able to communicate to an individual at a time. Yet though it shares characteristics with each of these media, it profoundly differs from them. The printed illustration, the cinema screen and the television set are only able to transmit reproductions of the object, they create a new image, the museum is able to exhibit the object itself"[1]

Others question, is museum a public treasure house? A conspicuous display of private acquisitions? Or agent of social uplift? A community bulletin board? Or a monumental coffe table? <u>There are many roles for museums in our society, and all of them have some effect - if only indirect - on the architecture that contains them and symbolizes them.</u> Most of the architecture now produced for this field reflects the conservative idea to which most of the available money is dedicated; that the museum exists to protect a heritage of acknowledged art

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1. New Museum, by Michael Brawne, page 7, (Architecture and Display).

and to welcome those who enjoy it. If little else has changed over the past two decades, this welcome is usually more graciously expressed now in entrances, gardens, cafes, and gathering places. Architecturally, there has been an almost universal recognition of the need to be respectful of existing buildings and patterns.[2]

DETAIL DEFINITION

The term "museum" comes from an ancient Greek word "mouseion". This was the sanctuary of the three Muses (goddesses) of the Greek mythology. This term was initially used in reference to any atmosphere conducive to detached contemplation or "musing", and later, as a concrete institution, in reference to the "Hellenistic Museum of Alexandria". This was in its own time, the world's leading institution of higher learning attracting scholars and students from all coerners of the world and offering instruction in all known subjects. It had in addition to its collection of several thousand volumes of manuscripts various objects ranging from astronomical instruments to hides and skins of animals. This museum was destroyed in A.D. 391 by the Christian King of Rome who was out to eradicate "vestiges of pagan learning".[3] The only museums in France which

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2. Progressive Architecture, March 1975.
3. Alma S. Witlin, Museums: In Search of a Usable Feature (The MIT Press, Massachusetts, 1970) pp. 221-225.

was opened to the public came with its problems. The masses which were promised so much were disappointed because unlike their educated elites lack the knowledge essential to understanding and appreciation of these art treasures. Another point is that museums have not always been what we know them to be today. The museum as a public institution is actually a nineteenth century phenomenon.[4] It had developed and changed through time and there is no cause to think that it cannot be something else tomorrow. Each society has to redefine it in terms of its needs and expectations. The museum is a human institution and is created to serve human needs.[5]

Article 3 of the International Council of Museums (ICOM) statutes defines the museum as follows:

> "ICOM shall recognise as museum any permanent institution that conserves and displays, for purposes of study, education and enjoyment, collections of objects of cultural and scientific significance"6.

The definition above embraces what ICOM's Article 4 of the same statutes spells out:

> Within this definition fall:
>
> (a) exhibition galleries permanently maintained by public libraries and collections of archives;

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4. Duncan F. Cameron (ed), Are Art Galleries Obsolete? (Peter Martin Associates, Toronto, 1969), p. 73.
5. Witlin, op.cit., p. 204.
6. Jean Gabus (ed), The Problems of Museums in Countries Undergoing Rapid Change (UNESCO, Berne-Paris, 1964) Reports and Papers on Museum, p.30.

(b) historical monuments and parts of historical monuments or their dependencies, such as cathedral treasures, historical/archaeological and natural sites, which are open to the public;

(c) botanical and zoological gardens, acquaria, vivaria and other institutions which display living specimens;

(d) natural reserves.

This is the official and internationally accepted definition of museum. It embraces so much that it is obviously necessary to state which museums concern me. I have selected a more orthodox definition of the term "museum", because this fits into the Nigerian experience better and that this project has been conceived and carried out with it in mind:

> "A building or portion of a building used as a respository for the preservation and exhibition of objects illustrative of antiquities, natural history, fine and industrial art, or some particular branch of any of these subjects either generally or with reference to the definite region or period"7.

<u>This means that I will not be concerned with zoological and botanical gardens, historical/archaeological sites or monuments and any establishments that display living things.</u>

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7. The Compact Edition of Oxford English Dictionary.

Museum Display:

Museum Display is the way in which the curator or the exhibitor presents his objects to the public. These objects come in two main categories: the Primary Media of the 'real things and the Subsidiary Media of word, representations and reproductions. "Real" things are those objects that are not considered images or representations of other things. These real things are the proper language of the museum's communication system. The subsidiary media is made up of words written and spoken, sounds, images, models, smells and even tactile experiences. The exhibitor uses subsidiary media to qualify his primary media of real things. He selects such "subsidiary media which he can reasonably expect his visitors to understand"[8].

Museum Display is the result of a rational selection of:

(1) Primary Media.

(2) Subsidiary Media and

(3) Composing them within an appropriate environment .

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8. Duncan F. Cameron, "A Viewpoint: The Museum a Communications System and Implications for Museum Education" (Curator, Vol. 11, No. 1, page 36).

These decisions are usually taken on the basis of these considerations:[9]

(a) Aesthetic or Design Considerations:

Such considerations would be for these three basic purposes: projecting information,
projecting sublimal conditioning and
presenting the appearance of the display.[10]

(b) Interpretive or Didactic Considerations:

While design considerations basically motivate and sustain visitor interest, interpretive or didactic considerations must take over from there providing the visitor the message. It is here that we can first see whether the intended message has a chance of getting across to the public. While not doubting that design can drastically affect or even impede learning, it can, like considerations of security and conservation, effect only the quality of learning possible. Good design is like sugar to tea. Tea can be taken on its own but its bitter taste may prevent one from finishing a cup but with sugar one may take several.

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9. The four factors have been extracted from Coen's and Wright's list on page 283 in Curator, Vol. 8, No. 4.

10. See F. Dandridge, "The Value of Design in Visual Communication" (Curator, Vol. 9, No. 4, p. 332).

(c) Consideration of Security of Objects:

This is a very important consideration when exhibiting objects of high intrinsic value or those that are rare or particularly delicate. Special care must be taken to prevent their illegal removal or destruction while on display.

(d) Preservation of Objects:

Some objects may not be necessary valuable (in terms of cash value) or even delicate but they may be quite susceptiable to effects of light, dust, temperature, humidity or insects. Such objects would require special treatment with chemicals or when displayed they would be left in special environments where temperature, humidity and light can be held at required levels and inse ts fungi and dust prevented from entering. Showcases are mainly used for this and security purposes. It is an important museographical function which in closed system museums quite often usurps the primary concern of museum which is communication.[11]

Display as Museum Language:

The museum has been treated as a system of communication throughout this paper. It is necessary at this stage to show what place disply occupies, so that we could discern what aspects of this communication affect them.

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11. These are the museums where curators are more concerned with collection, preservation and reseatch rather than displaying items to the public.

THE MUSEUM AS A COMMUNICATION SYSTEM.

SMCR MODEL	SOURCE	MESSAGE		CHANNEL	RECEIVER
		Elements	Structure		
Museum Reality	Curator Exhibitor	Elements Exhibits	Structure Disply Techniques	Percepts	Visiting Public
	AIMS				
	1. Education	1. Primary Media	1. Design	1. Seeing	1. Scholars
				2. Hearing	2. Students
acters	2. Entertainment	2. Subsidiary Media	2. Interpretation	3. Touching	3. Literate Masses
	3. Information			4. Smelling	
		3. Supports	3. Security	5. Tasting	4. Illiterate Masses
			4. Preservation	6. Feeling	

Fig. 1

Referring to Fig. 1[12] and starting with the second column we come to source which is either the curator or the exhibotor. He (Curator/Exhibitor) is aware of the aims of the museum. These reasons are the cause for mounting exhibitions. He proceeds to encode his message by selecting appropriate media (objects, labels, etc) and gives them a meaningful structure. This is the code, the language of the museum; the display technique which the museum visitor must decipher in order to arrive at meaning. We can decode - or eperience anything - with our sensory organs. In this respect they are our channels. A display technique (or any code) usually determines the type of channel or channels that can be called up in a learning situation. These human channels are seeing, hearing, tasting, touching, smelling and even feeling. The effectiveness of museum learning expeience depends to a large extent on the professed involvement of all or most of our senses in one learning situation. The higher the number of our senses involved in one learning situation, the more profound is the learning experience. Hence the more channels a museum uses in reaching the public, the more certain it is of getting its messages across to them. The visiting public are its audience. They are the receivers of its messages.[13]

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12. This diagram has been based on Berlo's* on page 72; and Cameron's article - See footnote 8.

*See David K. Berlo, The Process of Communication (Rinehart Press, San Francisco, 1960) p. 72.

13. See Cameron (1968), pp. 35-38, and Berlo (1960), pp. 30-32.

I have not seen any public museum in Nigeria that claims to address itself exclusively to one segment of the public. Since everyone is literally welcome, the audience in the gallery would at most occassions be, at least theoretically, a representative sample of the cross-section of the Nigerian public. I have found it convenient for purposes of this write-up to divide the Nigerian adience into four classes,[14] comprising of:

(1) scholars and specialists who have indepth knowledge of exhibits on display,

(2) students and amateurs who are seeking specific information for examination or other purposes,

(3) the literature masses whose knowledge of the specialists area covered by museum exhbits is nil but have literacy as an asset and

(4) the illiterate masses.

The fourth group, the illiterate masses, are 10% of the Nigerian population[15] while the remaining 30% is shared amongst the first three groups. The more

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14. Kenneth M. Wilson, "A Philosophy of Museum Exhibition" (Museum News, October 1967, p. 15). I have added the forth group.

15. Lagos area and some parts of Eastern Nigeria have the highest literacy rates. This is only 25% (Nigeria Year Book, 1973; Lagos, Times, p. 221).

educated one is, the more is he capable of using most of the media found in the museum. He can understand spoken English, can read English or his language. He is used to photographs, drawings and graphs. By his systematic education he can process loads of information at a faster rate than the illiterate.[16] However, museums have taken it upon themselves to make themselves relevant not just to the educated few but also to the uneducated. They feel rightly concerned that the less priviledged, i.e. the uneducated or the poorly educated, should also have a share of knowledge and improve their lot as a result. Everywhere museums are becoming increasingly concerned with the ways they can speak to the greater majority whose need for education is really immense.

Concepts Used in Assessing Display Techniques:

Fidelity is an important concept in communication theory. The higher the fidelity of communication, the more efficient is the transimission of intended messages. That is, the intention of the exhibitor is largely realised as a result of his display efforts. But this concept depends on two determinants. The exhibitor must have been able to select the best display techniques that can convey his message efficiently on one hand and the audience must have had

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16. On a second thought this can be more easily accepted.

requisite skills to decode the message accurately on the other hand. The converse of fidelity is noise[17] which usually distort the message to some degree before it gets to the audience. If the aesthetic or design aspect of the display is not well taken care of, this introduces noise as well. Nobody wants to read a dirty scruffy label whatever the excellence of its information. However I am more concerned here with noise that occurs at the level interpretation of museum message. When the exhibitor fails to encode his message properly he introduces noise into it. When the audience cannot make meaning out of some aspects of the disply these become noise. Hence to an illiterate the [illegible] visual [illegible]. To the non-specialist but literate person jargon is noise since it distracts rather than help him understand the museum message. Of course some displays that would have fidelity to specialists may have no such fidelity to the non-specialists. The under-interpretive display cannot be so for every person. The fidelity of communication is what it is only when the audience is known. Already the Nigerian public has been divided into four broad categores.

In the rest of this write-up I shall try to establish the need for using those media through which

the museum can read the audience. This would be followed by a survey of the various media obtainable in the museum for their assets and hazards. By so doing I would show in what ways museums do communicate by display. It is obvously no intelligent thing to send recorded mus'c to be played to the listening pleasure of the deaf and dumb school. The aim of communicating with people is to put across one's views to them. In that case one must know that language they understand and then present his message accordingly.

This media we meet in the museum ranges from the spoken word of the museum guide to the real thing. The list is displayed in Fig. 2[18]. It has been divided into two basic groups comprising

(1) the natural and man-,ade or real things, and

(2) the subsidiary class of items which are man-made as well as being representations of other things.

Natural and man-made 'real' things are classed together, but there are fundamental differences between them. While a goat in Zaria City will look the same thing with that in Ghana, a hoe in Zaria may not look anything like that in Ibadan City.

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18. This list has been based on the "Cone of Experience"; see Edga Dale, Audio-Visual Methods in Teaching (Holt, Renehart and Winston, New York, 1954), p. 43.

Man-made items bear the imprint of their maker's culture. The implication of this shall now be elaborated.

Man is radically different from animals because of his ability to communicate symbolically.[19] Although research findings show that animals too communicate, none has been as yet seen to have developed the ability to communicate with symbols.[20] Man alone attaches meaning to things beyond their objective qualities. An innocent looking pot may contain the soul of a tribe and will be treated as no ordinary pot mould. This assigning of meaning to things is a distinctly human quality and does create problems where different human groups give conflicting meanings to the same item. In India, cows are gods and would not be killed or eaten while in Pakistan they are looked upon as excellent food source. Conflicts have occured there because of this but the cow still remains a cow. What then of the objects that are exhibited in museums? Usually such objects are unquestionably important; that being the reason for their being collected and exhibited by the museum.

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19. John R. Pierce, "Communication" (Scientific American, September, 1972, p. 3).

20. Edward O. Wilson, "Animal Communication" (Scientific American, Sept. 1972, pp. 29-36).

MEDIA CHART.

Medium	Channel	Illustrations
1. Verbal Symbols	Hearing	1. Spoken Words 2. Spoken Jargon 3. Taped Speech
2. Visual Symbols	Seeing	1. Written words 2. Graphic symbols 3. Diagrams
3. Recordings	Hearing	1, Speech in context 2. Natural sounds
4. Still pictures	Seeing	1. Linear drawings 2. Black/White photographs 3. Full-colour photographs
5. Motion pictures	Hearing Seeing	1. Black/White Film, T.V. 2. Silent Film 3. Full-colour film
6. Models	Hearing Seeing Touching	1. Infrastructure 2. Suggestive 3. Realistic
7. 'Real' things	Seeing Hearing Touching Tasting Smelling Feeling	1. Physical phenomena 2. Biological phenomena 3. Artifacts

Fig. 2.

There would be need to explain what these objects mean to people because they may not be aware of their significance or may attach meanings that are completely foreign to them.

It is an anthropological truth that artifacts are made according to societies' ideas of function and beauty. Those who posses these ideas can understand these objects. We would naturally expect communication breakdown when an object is lifted from one place and displayed in another culture, i.e to a people that do not share maker's culture. One may say that this argument does not apply to Nigeria because, museums here exhibit predominantly items of Nigerian culture.

Another object's objective qualities - or stimuli factors, are its shape, size, texture, colour, smell, weight, temperature, sound, etc. These qualities exist inspite of the observer and it is these qualities that we use in decoding it. They are the stimuli we perceive. These factors do not owe their existence to persons involved but are actually the cues we interprete.[21]

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21. Helen Coppen (1970), Visual Perception (Commonwealth Secretariat, London), p. 3.

The pot I described should demonstrate one truth: that meanings are not in objects. Meanings are in people. These presented with the stimuli that they have learned to attach significance to.[22]

> Meaning is the product of coding, and coding is a form of behaviour that is learnt and shared by members of a communicating group. Any behaviour that is learned and shared is cultural.[23]

I have already mentioned that museums communicate by means of real things; that being their speciality. But we have seen that real things apart from their objective qualities, also have a culture significance (i.e meanings). A painting is physically a piece of furniture that is usually hung on walls exposing one of the sides with patterned layers of paint or pigment. Many people are quite prepared to pay several thousands of naira to acquire an authentic picasso's painting. This is so because they know its significance. For those who have attached meaning to those paintings, their pricelessnes can be literal.

At this stage it would be necessary to sample the various characteristics of the media shown in Fig. 2 and describe them so that we may get to know what is more appropriate in reaching the spectrum of the Nigerian public. Each media will be discussed in its uniqueness. In reality, however, most media

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22. David K. Berlo (1960), p. 134.

do not occur in such single states. They often come in groups. When we listen to a man speak, we may watch his facial expressions as well. It would be impossible to describe all the characteristics of each medium and no attempt has been made to describe any effects of the various combinations of media because these would mean describing over a thousand or so possible combinations from the seven classes represented.

Referring to Fig 2 we start with the verbal symbol which is considered the most abstract medium when used in its pure form. This is the spoken word of the (museum) guide (or pure recorded speech) in the museum. It demands one channel - hearing - and requires the listener to have knowledge of what those specific sounds used mean. When we do not understand a language, say Chinese, we are likely to hear "funny" sounds. This is because the sound of words are arbitrary chosen and cannot mean anything to use unless we learn what they stand for. In reality however we can observe the speaker as he smiles, grins, "makes faces", point or perform other varied forms of what is now known as body language. Persons clever in social skills are capable of reading alot of meaning visually from the speaker whereas

his words may be saying the opposite of things. In this case, a recorded speech is less informative than a live one.

In museums of advanced nations, there are found taped descriptions of explanations of exhibits that can be heard by fixing up headphones and pressing relevant buttons. In Nigeria, however, I met nothing of that sort during my nation-wide tour, but I found a few museum guides who with the help of curators take occasional truck-loads of school children round the exhibits. It is often assumed that all students are following the descriptions but by interprosing himself for students to turn to teachers for answers. The true function of the museum guide should be to draw visitor's attention to salient points of the message and not to explain "all" rendering the very presence of the object useless.[25] They can perform an invaluable task by introducing visitors to the language of the museum. Where visitors are illiterate they can give basic guidance by telling visitors the gist or their exhibition and letting them fix up the details themselves. They, sort of, condition them on what to expect.[26] I found several museum

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25. Ducan F. Cameron (1968), p. 39.

26. Freeman Tilden has written a whole book, Interpreting our Heritage (University of North Carolina Press, 1967) in which he spells out how just this could be done.

more tangible than verbal symbols. For example, written language is more tangible than spoken one but it is more difficult to acquire the former since it involves literacy.

In museum situation, however, visual symbols come up more often as labels. While their usefulness is obvious, there are quite a number of complaints about their injudicious usage in museums. Many tend to be lengthy. It is observed that only students and scholars are prepared to read such labels while the majority of people neglect them altogether.[27] To attempt to go through all labels is an herculean task as many person who has visited the exemplary National Museum, Kaduna would realise. Not only that modern man seems to be in a constant state of hurry, he surely has not got all the time to be there and if he has to read length labels as well as examine all the exhibits on display, and do this in the most unusual position - standing - it is understandable while most person normally fails to read them. Most Museographers advocate a "jorunalistic" presentation of labels whereby large captions attract, hold attention and tell a brief tale about the exhibits while immediately below it but in smaller typeface

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27. UNESCO, The Organisation of Museums, Museums and Monuments IX (UNESCO, Paris, 1960) p. 74.

a fuller report is presented to whoever is interested in getting a more detailed explanation.[28] That is very good for the literates.

Literacy does not guarantee one the ability to understand all words. There is no key to the understanding of words from their spellings. As I have already mentioned, the sounds letters is arbitrarily chosen. They are conventions and unless we have learnt a lot of meanings, i.e acquired a good vocabulary, many words, especially those that lie in fields outside our specialisation, would not be understood. "Jargon" is a language that is specific to one discipline or profession and which is used and understood by its members.[29] It is a common human belief to think that because something is clear and obvious one, it must so be with others. Hence we find that curators share this belief in their selection and use of words on labels. How else can you reconcile the role of an otherwise scientifically accurate label written by the most qualified entomographer around and displayed to the teaming millions of illiterates in Niger? For these illiterates such labels are more visual

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29. Don Fabun, Communication: the Transfer of Meaning (Collier-McMillan, London, 1970), pp. 29-30

The other visual symbols are graphs and other diagrams. These demand some mathematical computation before understanding the.[30] However Fuglesang observed while carrying experiments on Africans in Zambia and other parts of East and South Africa that those requisite concepts upon which Western science and education are based on, e.g. conservation of space, mass, concept of the straight line as shortest distance between two points and verticality, were either absent or most unstable.[31] If one does not accept that a straight line is the shortest distance between two points and that the area of a tall rectangle of x^2 metres is the same with that ot a square of x^2 metres, he cannot interprete such "simple" graphs as the bar or linear graphs.

Fortunately very few museums were found to use such diagrams at all. I found that the Geological Survey Museum, Kaduna, Museum of the Institute of African Studies, University of Ibadan, and Natural History Museum, University of Ife, have a high percentage of elistist visitors who an understand those

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30. M.D. Vernon, The Psychology of Perception (Pelican Books, 1971), p. 113f.

31. Andreas Fuglesang, Applied Communications in Developing Countries: Ideas and Observations (The National Food and Nutrition Commission, P.O. Box 2669, Lusaka, Zambia, 1969), p. 54.

graphs etc. Of course other visual symbols like directional arrows require the least effort from the visitor. This effort is that he should not mistake such directional arrows for real.

Recordings:

Where these are of speech, they rightly belong to verbal symbols, but if these redorcings are done in context, i.e with the relevant background "noises", they have another dimension. Quite unlike any of the media described above, this medium has a direct relationship with its refrent. A recording of a bird's song relays same or similar sound ways to the human ears. If this was not so we could not recognise it as such. Radio stations have been able to exploit the possibilities of this medium to the fullest. During drama programmes, speech and other realistic sound effe'ts are simulated to give the audience the picture or the atmosphere in which an action is taking place.[32] But as I have mentioned elsewhere, our ability to recognise sounds also depend on past relevant experience.

In the museum situation sound recordings are often used to give special information or to create

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32. Marshall McLuhan, Understanding Media (A Signet Book, 1964), pp. 259-269.

a required atmosphere. A display of birds may include recorded bird song being played by visitors if they so wish. It gives the object a fourth dimension. If there is an exhibition of musical instruments it would highly be educational playing the recorded music produced by these instruments.[33] Some of the museums I visited had loudspeakers installed in their galleries. They can be used as public address systems in addition to either providing direct information as bird song or creating a conducive atmosphere. At times they can boredom in the museum. Some disciplined person can learn better with music-on.

Still Pictures range from linear drawings to full colour reproductions. Helen Coppen while writing on how we interprete pictures mentioned that:

> "... for the viewer meaning exists only to the extent with which to interprete the drawings and to the extent which the observer can relate lines on paper to the actual experience which it represents".[34]

The ability to relate lines or other visual cues to actual experience or reality which the drawings depict is a skill which, although simpler than the alphabet, must be learnt. The relationship between a picture and its referent is, like a recording,

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33. Jean Gabas (ed) 1964), p. 47.

34. Helen Coppen (1970), p. 3.

a direct one.[35] While linear drawings have a dificit of visual may have too much for the job in hand. once more Fuglesang observed that illiterates and the not-so-well educated could identify photographs of objects much faster and easier than linear drawings of some objects. He also found that photographs with irrelevant background detail erased were more easily recognised than those left normal.[36]

Many Nigerian musuems use photographs in their displays. I found them to be used in place of originals some as contextual information realting the object to its cultural or scientific backgroud, while yet another group was used to illustrating either the production of or usage of items displayed.

Motion Pictures: (Television, Films). I did not observe the use of any of these media in any of the Nigerian museums visited. I have brought them in because they have unique characteristics that make them invaluable in disply purposes. We now have two senses or channels involved in one learning situation.

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35. This is the key idea of Chapter II of E.H. Combrich's book, Art and Illusion (Phaidon, London, 1972), when he writes to its close: "But what matters to us is that the correct portrait, like the useful map, is an end product on a long way through schema and correction. It is not a faithful construction of a relational model". p. 73.

36. Andreas Fuglesang (1973),

We can see and verify with our cars or hear and verify with our eyes. Moving pictures introduce another dimension of movement in perception. Since dance, music and drama play an important role in the traditional African ways of life, and since some of these ways are now dying out, it would be a good idea to record them by film so that transient reality can be preserved.[37] Museums normallly collect musical instruments and dance equipment when they want to preserve something of these areas but they are often displayed as "passive" exhibits. This technique does not say much about the characteristics of the musical instruments. Masquerades are another popular African institution. Most ethnic groups have watched live performances of these masquerades fee that it amounts to an act of betrayal for museums to display them in the way the do.[38] One of the resolutions at the seminar on "The Problem of Museums in Countries Udergoing Rapid Change" was that museums should try to film some of the elements of the African arts. The Federal Department of Antiquities has established an Audio-Visual Section which I think is a good step in the right direction

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37. Jean Gabus (ed) 1964, p. 47

38. Jean Laude (trans. by Jean Decock), The Arts of Black Africa (Univ. of Calif. Press, 1971), p. 145.

39. Jean Gabus (ed) 1964, p. 47f.

Interesting though this may be, research findings caution the injudicious use of films. The film has a special language of its own. There are the "fade in" and "fade outs", the juxta-position of different aspects of some scene in one frame (very common with television) and approaching scenes from unusual angles.[41] It is my personal experience that the film is a popular medium in Nigeria. Film-going is a very popular past time in urban areas while mobile cinema vans from Ministries of Information or Agriculture and, at times, rich companies like the Niger Tobacco Company, frequent rural areas. Television sets are daily becoming popular household items especially among the well-to-do while public viewing centres provide the poorer persons their only opportunity of benefitting from the nation's television stations. This means that quite a number of Nigerians have learnt the language of this class of media and they can be safely used by museums on them.

I did not observe the use of any of this media although in places like Jos and Lagos, there are

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40. W. Seidenstiicker (ed) Museology in Nigeria (Zaria, 1976), Typescript, p. 31.

41. M.D. Vernon (1971), p. 105f.

provisions for showing films in their research libraries which can be easily converted when there is need. These halls are mainly used for showing films but to members of the Museum Society (in Jos and Lagos).[42]

Models:

They are the breaking-point between the two dimensional world and the three dimensional one. A model can be anything from a barebone hardly recognisable structure to things that are so realistic that one need look at them twice before confirming their artificiality. Some stuffed birds set up by taxidermists can be easily mistaken for real. Models show things in the rod while pictorial representations can only show one view per time. (Cubist painters usually show different altogether). Becuase they are three dimensional and concrete, they can be held, touched and may be smelt. With modern technology, models can be made to stimulate many "behaviours" of their referents.

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42. Information was acquired from the Curators of the two Museums. The Annual Report of the Antiquites Service of 1952/53 indicates that the Jos Museum Library was built with this purpose in mind.

A toy train can move; toy birds can chip somewhat. Another aspect of the model is that it can represent in concrete form those ideas that are not necessarily observable. The model of an atom does not claim to show how an atom looks like since nobody has seen one. Its structure is based on inferences made from their 'behaviour' by eminent scientists.

Models normally try to emphasize the key points about those objects they represent. Their strength and usefulness lies in this power to eliminate the inessential not their realism.[43] By this power of showing essentials they often reduce the "visual noise" when one looks at the real thing. It is easier to handle a piece of plastic "human flesh" than the real specimen.

Whatever educational good models make, the learning experience they offer is entirely of a different nature.[44] As such very few persons will knowingly accept a medical doctor who has studied all his anatomy and physiology from plaster models to operate on them.

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43. A.E. Parr, "Remarks on Layout, Display and Response to Design" (Curator, Vol, 7, No. 2, pp. 132-133).

44. Ducan F. Cameron (1968), p. 39.

I found that the use of models is not uncommon in our museums. The stuffed masquerade is a common theme. In Kaduna (National Museum) and Jos, some of these models are displyed on rotating drums. Whereas in Kaduna, one cannot move round the display, the rotation gives one the chance of seeing all sides of the masquerade. In Jos where one can comfortably walk round them one is compelled to think that they are meant to simulate real dancing . Where the music from the speakers is of different tempo from the clokwork rotating models of these masquerades, on feels that they are dancing out of tune. It is often very difficult to know where a cast or the original is used in either museums of the Federal Department of Antiquities, Geological Survey Museum, Kaduna, or Natural History Museum, Ife. In National Museum, Kaduna, and the Museum of the Institute of African Studies, University of Ibadan, I noticed excellent use of "exploded" versions of models displayed for didactic purposes.

Real Things:

We have now come back to the primary medium of the museum's communication system. A lot has already been said about this medium above. It is anthropological truth that human beings fashion objects based on their concepts of function and beauty. They use these objects for their daily needs and wants. As such any object that is produced by a

culture. When we sample various culture groups we can see a lot of variety in their products.
At times we may find two culture groups living together in the same environment but also find that is the only thing common between them. It is a well-known fact that culture influences people and can often explain why they behave in the ways they do.
The point here is that if a Nigerian is shown Chinese chopsticks, it will be a mirable if he can guess their use not to mention where they come from.
When we display objects (that may bestrange to the onlooker) in a museum and write a label, say "Chinese Chopsticks: used for eating in China", we may be leaving too much for the visitor to make up by imagination. For people who are used to eating rice with spoons or hands, "how on earth can human beings eat rice with those pointed sticks?" A film could help. A still photograph may be unconvincing.
Or a trained guide can give a live performance but since he cannot do this for every visitor and all day long, other media should be preferred. I found that most displays in Nigeria are the "object-and-label" type which, as we have seen expects too much of the visitor. It is therefore under-interpretive for the (more than) average Nigerians.

I have now come to a point where I can explain why items of Nigerian traditional culture must be explained to Nigerians. With the exception of a few science museums most museums display "antiquities". The common denominator of these antiquities is usuall their age. The rapid changes in the Nigerian society as a result of the colonial experience have rendered many of the antiquities obsolete: many are not in current usuage. Today the present generation of Nigerians stand enstranged from the artistic achievements of their forefathers. Not all Nigerians have abandoned the traditional ways of life but the difference among Nigerian peoples make it necessary to explain those items of say the Yoruba to the other two hundred or so ethnic groups in Nigeria. Of course, the pre-colonial trade ties, the colonial experience of being ruled by one government and the resultant sharing of amenities, language, etc. and the increased mobility of Nigerians out of their traditional localities to other areas has brought a good mix'ng of the peoples and an obvious sharing of values or culture. We can talk of a Nigerian culture in so far as these elements are considered.[45] There are obvious similarities but at the same time there are even more obvious differences.

45. Mr. Jackques Mackquet in his boo, Africanity: the Cultural Unity of Black Africa (UCLA Press, 1972) deals with those existential experiences that make Africa a cultural entity.

When we exhibit a Yoruba Ogboni (Secret Society) brass staff, we should not think that all Nigerians can understand its significance. Not allYorubas can even understand this any way. This should not be surprising because traditional art is closely related to our traditional religious systems and practices.[46] It is well-known that most of these objects are never displayed as clearly and as openly as they are found in museums. Most of them are often left at shrines and these are hardly public places. Shrines are often markedly isolated and their darkness does add some measure of mysticism to atmosphere. During festivistities or at funerals. Some of these "antiquities" may be brought out for use but as soon as these pass, they may be taken back to the shrines or tied up to the roofs where the smoke from cooking fires help preserve them. There is therefore the possibility of a Yoruba boy not seeing quite a number of those objects especially the most important ones. Since NigeriaN museums exhibit such vital objects there is an absolute need to explain them.

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46. This does not mean that all Africa art is religious, although quite often that is what one comes across. See Frank Willet, African Art (Thames and Hudson, London, 1971), p. 166.

Since Nigerian museums are open to all members of the public as well as tourists, and since there are so many culture groups in Nigeria, and once more, since most of these objects belong to culture sytems that are perhaps no more (e.g Nok Culture), I shall restate that museums must explore ways by which their message can reach the public.

> "A cultural institution is not a thing apart where principles and methods can be translated from one subject to another, one people to another, or one nation to another. ... in safar as it is successful, it a natural product of the society and nation in which it is founded. The final judgement (of a cultural institution) must depend on how well the institution serves the community of which it is a part"50 (cuthwaite).

The nation of "real" that characterises museum objects from other means of communication, endows the museum object with other means of communication. Supposing one saw a piece of art work that he appreciate and regarded a master piece, and later discovered

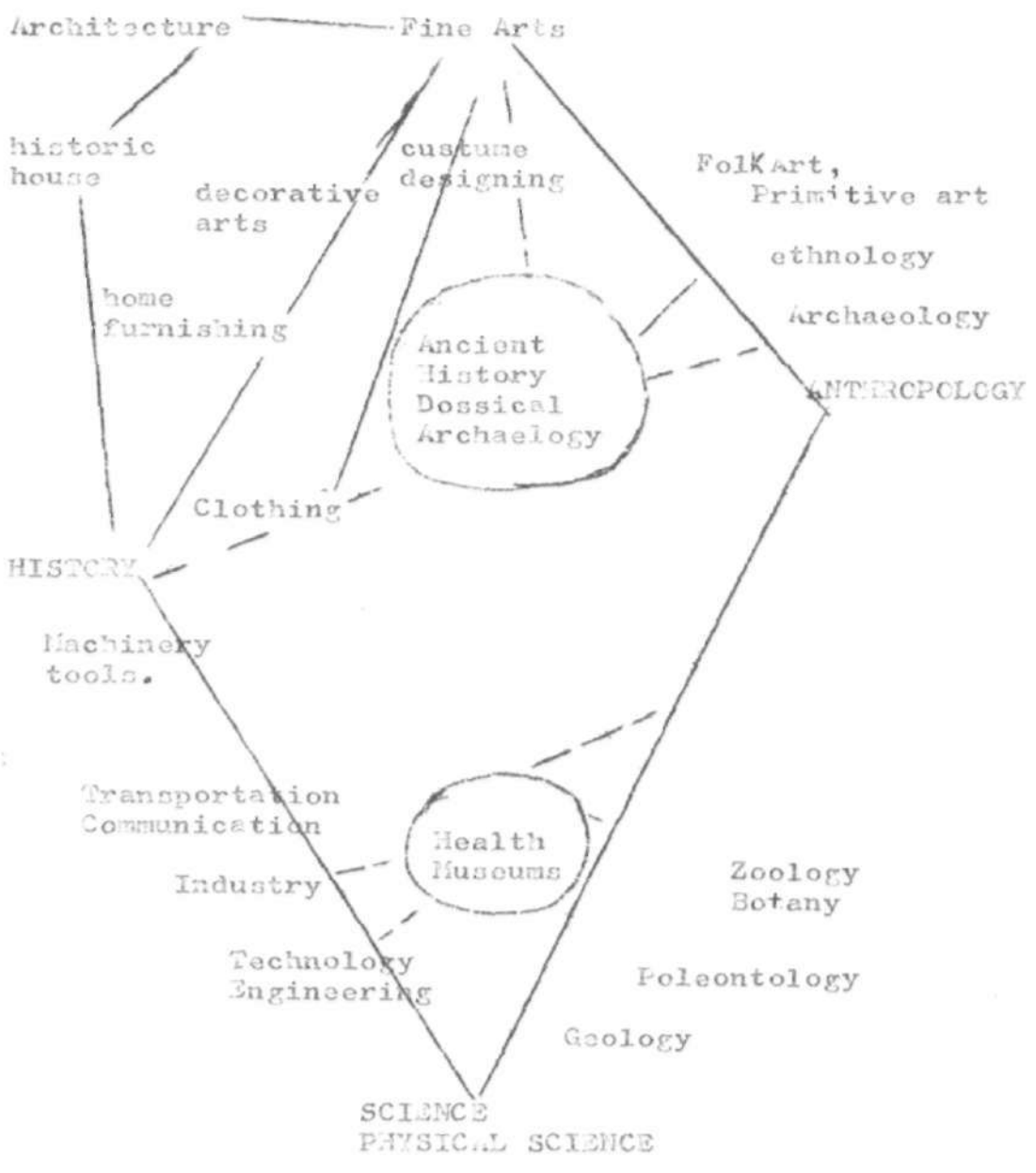
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50. Cuthwaite, L: Museums and the Future. An inquiry into the life and welfare of American Museums and other cultural institutions (Institute of Public Administration, New York 1967) p. 94 - of the section "Text of the Report".

that what he saw and probably bought was not after all, an original thing, does one in such a situation not experience a high degree of disappointment? His sense of disappointment is not only due to the price he probably paid for what he thought to be an original art piece, but perhaps more because he must have discovered that what he bought was not the "real thing". I am sure to such a person, the "realness" which is absent in that object is certainly greater than the difference between what he would have paid for the "real" object and the one he actually bought. In other words, the impact the "realness" of the obeject would have had on the buyer cannot be assessed in terms of money value - the object is invaluable!

In the same way, the Nigerian would rather pay ₦4 million to get the Original of the FESTAC symbol (which is "real") while not spending a single kobo on its replica that was produced for the FESTAC. The replica may have all the aesthetic quality of the original of the symbol but because of the absence of "realness" its research potential or its general impact would be less or even non-existent.

INTER RELATIONS OF MUSEUMS[51]



51. Introduction to Museum Work.

A MUSEUM IN THE COUNTRY - JOS MUSEUM.

Jos Museum:

This museum was opened in 1952. Though museum and antiquities service had been active before this, the tin mining in Jos created the original archaeological interest. Tin was discovered here in 1903 and this made Jos to grow rapidly. Its becoming a state capital of the former Benue-Plateau in 1967 and later the Plateau State made it to expand of an enormous rate. The favourable climate and topographic conditions made it a major tourist attraction centre. A great attraction of the town is, of course, the museum which is famous throughout Africa. Jos is popularly known as the "Tin City". Not many people realise that it was as the result of this tin mining that was responsible for the foundation of the museum. It was the collection of items dug up in the 1920s and 1930s during mining operations and kept in an improptu "museum". whichfirst attracted the attention of archaeologists to the area. The history of the museum is so closely linked with that of the mining industry. It is often not appreciated that there is a long tradition of tin mining in the north of Nigeria long before the advent of foreign investment at the begning of this century. Like

other other well established industries such as Kano dyed clothes and Sokoto leather, tin ore, and later straw tin, was traded across the desert with Arabs and played an important part in the economy as far back as the 16th century. Tin was also a vital ingrdient for brass manufacture, particularly at Bida and for the brass and bronze work at Benin and Ile-Ife.

This is the second oldest museum in Nigeria, after the small museum at Esie, near Ilorin, which was opened in 1945. For many years Jos was the headquarters of the Federal Department of Antiquities until this was eventually transferred to Lagos. It is the second largest museum in the country offering a wide range of exhibits and facilities for visitors. It is also the principal research station for the Department. A collection of traditional works of art was first conceived by H.E. Duckworth in 1933. Also at this time certain people were making collections of their own to try to protect works of art from foreign buyers and neglect. In 1943 K.C. Murray persuaded the Government to set up the Nigerian Antiquities service. It was through the efforts of Murray and B. Fagg that this museum was founded following the discovering of the Nok figurine culture in Southern Zaria province in 1944. In the annual report for the Antiquities service for 1948, it was

Idoma face masks, Benin and Ife bronze castings, Hausa and Yoruba musical instruments, Hausa and Fulani traditional dress and material from the Ju'hun and Munyo peoples. There are two main archaeological displays in the permanent exhibition gallery. The first on entering the gallery is a display of the palaeolithic period. The Early Stone Age. This display traces the technological development of man since the begining. The earliest known stone Age is subsequently succeded by the midele stone Age and here Sanguan Industry succeeds the Achaulien. The middle stone Age is succeeded by the late stone Age. Here the trend moves towards smaller more varied tools as well.[52] The second major archaeological display features materials from the Nok culture collections. This display is one of the attractions in the gallery. The Nok culture is world-renounced for its remarkable corpus of terrcotta figurings. In this display are reprentative examples of some of the best Nok pirces. A visitor to the main gallery cannot help admiring the striking similarities between these pieces excavated from different Nok culture sites, some of which are over two hundred kilometres apart. Conspicuous in this display is the much illustrated Jema'a Head,

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52. Guide to Jos Museum.

which was rescued from a tin mine and was subsequently used as a scarcecrow before the Department of Antiquities rescued it. This is probably the best known head so far discovered and is about 2,200 years old. From the display, can be observed one of the decoration on the figurines. Most are lavishly adorned with beads and ornaments on their necks, arms, legs and waists. The Nok culture takes its name after the Jaba Village of Nok - the type site where the first example of the terracottas was found. Nok lies in an area to the West of the Jos Plateau in the South of Kaduna State. The present known distribution of this culture extends over 500 x 150 kilometres from Kagoro to Katsina Ala. The terracotta (backed clay) figurins that first drew attention to the presence of the culture. The majority of examples are human figures, mostly in head forms.

Transport Exhibition:

The most prominent of this exhibition is the rebuilt section of the Bauchi Light Railway which ran between Jos and Zatia from 1914 to 1957 it closed.

Craft Workshop:

Traditional craftmen are present here. These include weavers, leather workers and brass workers. In another part of the compound are two Biyi blacksmiths

who use authentic forge equipment, including stone quvils, and a woman potter from the Jarawa Village Of Fobur about 30 kilometres South-east of Jos.

Museum Store:

A massive part of the Museum never seen by the public is the store. In Jos there are two main stores. One for ethnographic materia which includes almost everything from carvings and costumes to musical instruments, agricultural implents and hunting equipment and the archaeological store. There is also a separate store for pottery. Inevitably only a tiny portion of the best of the Museum's collection is on display in the galleries but by means of temporary exhbitions such as this one more objects can be displayed.

Laboratories:

Before any antiquity can go on display or go into the store it has to be carefully documented and any place in the Museum laboratories by expert staff many specially trained in the Rome centre. The techniques they use include delicate rebuilding of broken pottery and chemical preseveration of decaying wooden objects with a mixture of xylene-toluene, citric acid against fungi and insect attact. Metallic objects are treated against impurities and rusting.

Library:

The Museum library has a collection of about 6,000 books and periodicals many related to the particular disciplines represented at the Museum. The library is preserving some of the oldest Arabic manuscripts still in existence in Nigeria. It also houses some other famous manscripts like the palmer papers on Northern Nigeria. The library is mainly for museum staff but other research fellows are generally allowed to use it with special permision.

Unesco Bi-Lingual Training School:

The centre was established in 1963 as a pilot scheme when the present buildings were opened as a regional centre for the preservation of cultural heritage. The centre serves African member states of UNESCO - United Nations Educational Scientific and Cultural Organization - South of the Sahara. The courses are held both in English and French. The centre seeks to provide the much needed training facilities for the conservation of Museum objects and monumnts and to provide adequately trained technical Museum Staff. It is jointly sponsored by UNESCO and the Federal Government, through the Department of Antiquities.

Zoo:

The collection of animals as well as antiquities started at Jos around 1956. Captive animals on their way to market which had been bought by benefactors were given to the Museum. The idea was to keep the zoo layout as informal and unobstrusive as possible; many of the animals' sleeping quarters were in the style of traditional granaries of the plateau. By 1960 the zoo had grown so much in size and popularity that the Zoological Society of Jos was formed to administer the Zoo as an independent entity, although still under the general control of the Department of Antiquities.

Motna:

The Museum of Traditional Nigerian Architecture. The MOTNA project is an open air museum of the most important examples of Nigerian architecture in the form of full scale exact replicas. The project was designed and has been supervised by Professor Z.R Dmoschowski, the Chief Architect of the Department. Work started in 1973 and the first phase was officially opened in 1978.

Pottery Museum:

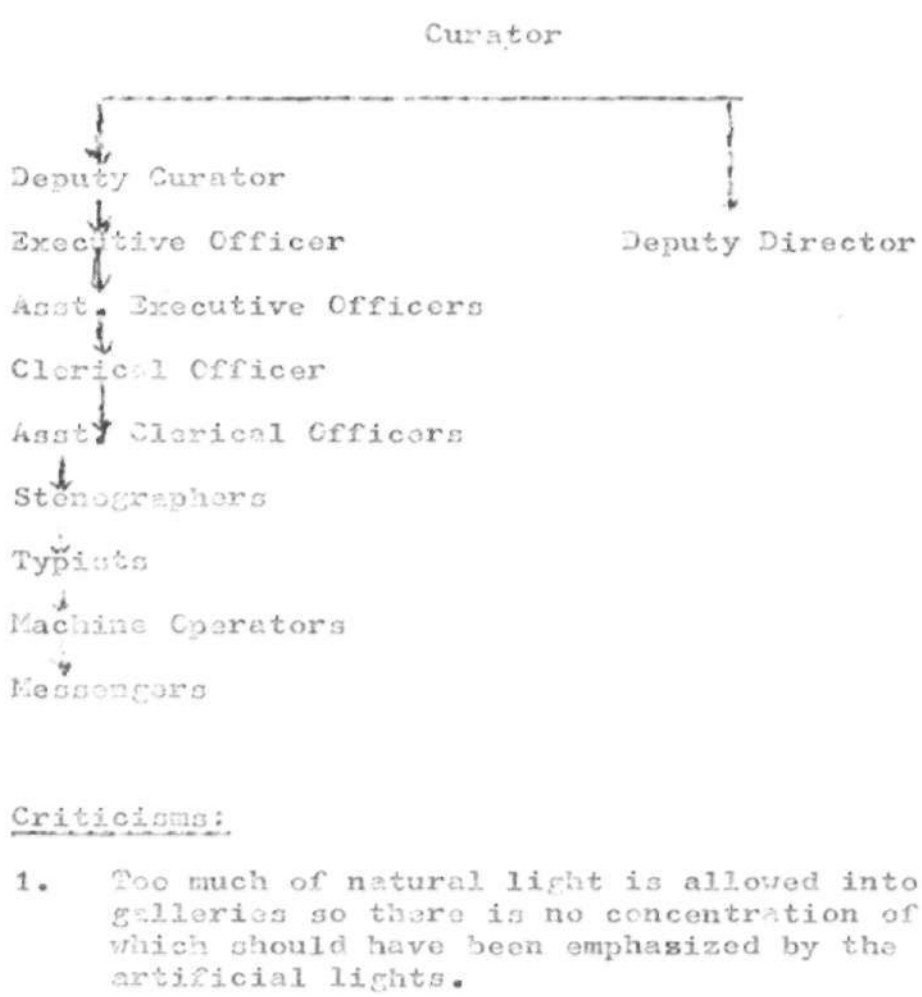
Mrs. Sylvia Leith Ross, spent some five years in Jos between 1957 and 1962 collecting pottery

specimens from all over the country of which about 300 are on disply. In the courtyard are different species of trees and shrubs selected from all over Africa and three fish ponds containing species of tropical African fish. The poetry Museum was opened in 1963.

Bight of Benin:

Another unique feature of the Mos Museum is the Bight of Benin, built in the style of a Benin Palace. The Bight of Benin is presently used as a topical eating house. This provides refreshments not only to the students of the UNESCO school and the Museum staff but also to bisitors and memebers of the public. The staff of "The Bight" provide a variety of delicacies including Kebabs and roast chicken which can enjoyed in some of the most pleasant and atmospheric surroundings in Nigeria.

Administration:



Criticisms:

1. Too much of natural light is allowed into the galleries so there is no concentration of view which should have been emphasized by the artificial lights.

2. Exhibitions should have been arranged in a way that people could move round it.

3. Movements through gallery to open exhibition should have been interrupted by exhibitions so as to force a view.

4. Display mostly in only one plane (vertical) which make viewing very boring, should have been in many planes.

5. Open air exhibition left at the mercy of climatic Conditions.

6. The refreshment place (The Bight of Benin) is too far removed from the main exhibition galleries. Could have curningly used this refreshment centre to force people through exhibition galleries.

7. The exhibits in the galleries last too long without changes, it leaves one to keep seeing the same thing whenever you visit the museum.

The museum media focuses only on the educated elites which constitutes less than 30% of the Nigerian public.

INTERVIEW WITH THE PRINCIPAL ENTHOGRAPHER-

KADUNA MUSEUM:

Mr. Moses Abun

Q: Why is Photography Prohibited in the Galleries?

A: This is because it could be used for many purposes which is not to the Museum or Government advantage. For example it could be made into a post-card and sold to the public without credit or interest to the government. However, photographs could be allowed only with permission from the headquarters.

Q: What Materials are Being Exhibited?

A: Most of the exhibited materials are those of historical, archaeological and ethnographical importance. Though the museum could expand its sections to include: 1. geological, 2. Natural, 3. Science and 4. Fauna and Floral museums.

Q: What Are the Main Functions of the Museum?

A: They are mainly three:

1. Collection of artifacts,
2. Exhibitions and
3. Preservation.

Q. What Does the Exhbited Materials Portray?

A: They potry the artistic values, religious rituals, the social pattern or set-up of the early people, etc.

Q: <u>Why Do you Preserve These Artifacts?</u>

A: Preserved for posterity.

Q: <u>Are There Any Government Future Plans?</u>

A: There is a government intention to add:

1. a natural history museum here.
2. to have a modern art museum in Lagos.
3. black African Art Museum - National Theatre.

Q: <u>Do You Get Collections Apart From the Country?</u>

A: There is hope to get collection from other neighbouring countries through diplomatic relationships.

Q: <u>How Do We Tell The Social Set Up of the Early People by these Objects?</u>

A: From exhibited Artifacts, - say in Jos Museum, it shows that there was a highly developed iron industry within the Nok culture.

Q: <u>What are the Ways of Acquiring Specimens?</u>

A: Through
(a) archaeological findings,
(b) traders - vendors - who buy from the villagers.
(c) donation - gifts from the people or organisations.
(d) compulsion, that is by confiscating it from people.
(e) through the police and customs.

Q: <u>How can one get an Art Legally out of the Coutry?</u>

A: By obtaining an export permit from the government. Though this permit could be refused on objects that are of historical and artistic values.

Q: <u>Is there any law banning the exportation of Antiquities?</u>

A: There is a decree banning the exportation of antiquities.

Q: Does the Museum Exhibit all its' Antiquities?

A: There is never a time a museum could be able to exhibit all it has. Temporary exhibitions could take place from time to time to show all that the museum has at a time. This could last months or weeks depending.

Q: What is the Funtion of your Store?

A: Primarily it:-
1. protects the objects;
2. allows researchers a continuation from the galleries to the store;
3. chemicals are treated to the objects here and lastly
4. fumigation also takes place.

Q: What is the percentage of Exhibited Antiquities to those in Storage?

A: There is no exact percentage number as of now. Due to lack of space some of the objects has been transfered to other Museums.

Q: What do you think shoud be the relationship Storage and Exhibition Galleries in terms of Size?

A: The storage could be design bigger than the exhibition galleries.

Q: But Do you think it is better to have more things stored than Exhibited?

A: It is true and better that you have more things exhibited. This depends on the planning. Our Museums were never planned for the future. It also depends on the museum type whether Historical, Ethnographical, Science, etc.

Q: What kind of Museum is most likely in Kaduna City Centre?

At present, a museum of antiquities is most likely to be built because of the wealth of the archaeological and ethnographical arti-facts we find in the country.

Q: How many Galleries would you Suggest?

A: If the museum could have as many as ten galleriesit will be alright. Some spaces could be left out for temporary exhibitions. Ther. could be another section on science, etc.

For example:-

1. Ethnographical collection.
2. Musical collection.
3. Historical and Natural collection.

Q: Is it necessary to have a refreshment Place?

A: A refreshment centre is necessity because you cannot cover the whole of the museum without feeling hungry or exhausted and need relaxation.

Q: Is an Open Air Theatre necessary for a Modern Museum?

A: An open air theatre is necessary in the modern Museum because the idea of objects in show cases are being abandoned. For example a masquerde mask, instead of living this mask in the showcases we use it in performing occassionally. This will be more pleasing since it is no longer static. We can also bring people from the villages to perform shows using the drums we have in this kind of theatre.

Q: On Audio-Visual Unit:

A: The showing of films and playback of traditional music has become the order of the day. No exhibits now without the show of slides as a supplement. For example, masquerading, their place of show and where they have been taken could be shown. Also films of festivals shown occassionally will educate the public more on the exhibits being seen.

Q: On Educational Centre:

A: This is good in that it could provide a pl ce where students could sit to learn from these museum objects. Learning of graphic arts-painting or making of models, etc. A museum educational services is necessary.

Q: On Museum Division:

A: There could be present three sections:

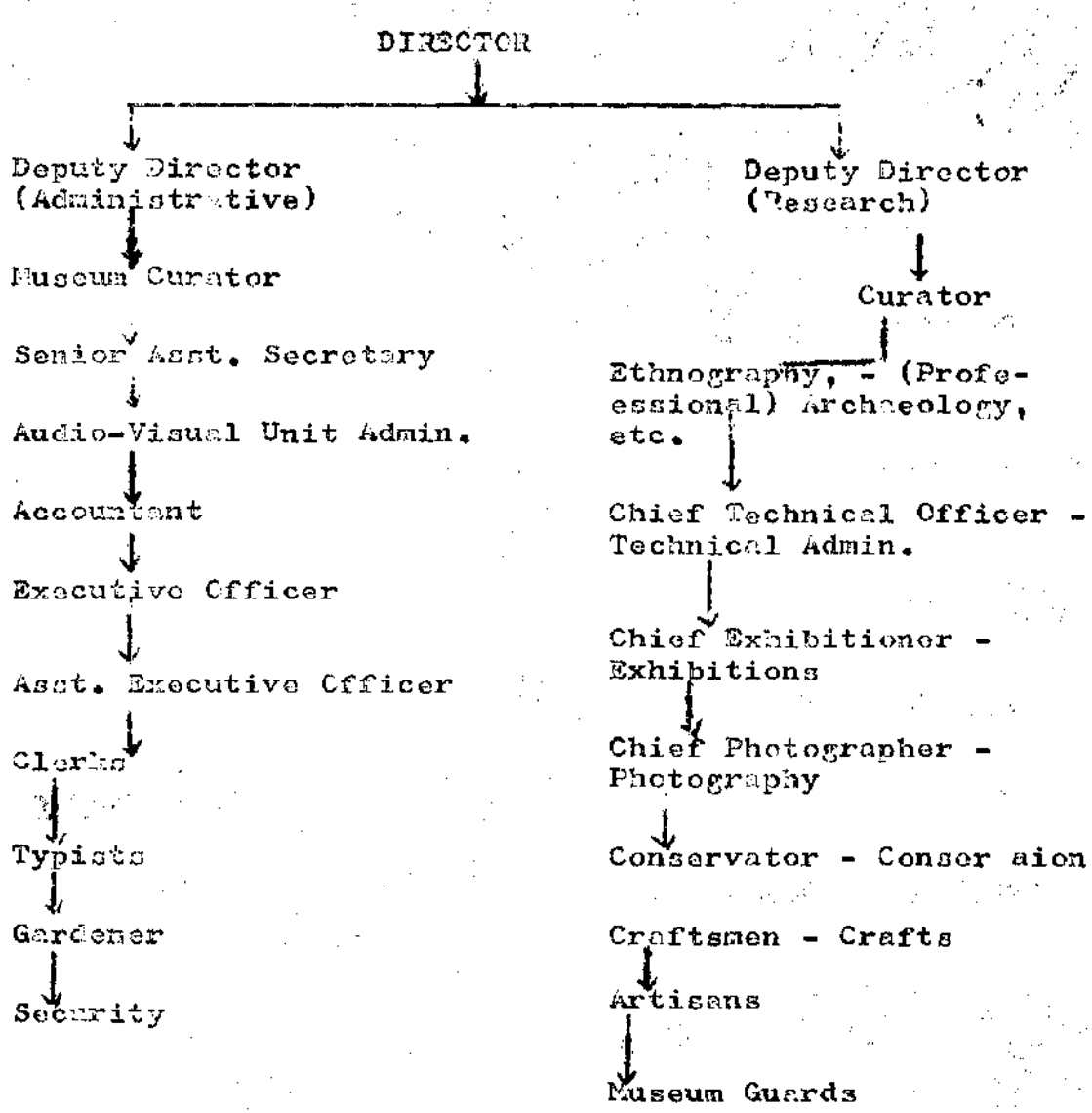
a. Ethnographic division.
b. Archaeological.
c. Monuments and Architectural division.

A Curator:

Is responsible for the administrative staff and exhibition of objects. There is possibility of having another system of administrative set-up.

This is say: Curator - Ethnography
Curator - Historical
Curator - Administrative
Curator - etc.

ON THE ADMINISTRATIVE STAFF:



ON THE MUSEUM OF TRADITIONAL ARCHITECTURE:

This the ethnographer said depends on the nature of the place. If there is enough space and raw materials for this kind of architecture he will have no objection. The idea of creating a kind of village in its natural form is interesting. For example the museum of Traditional Architecture in Jos. One move from nay Kano Walls (replica) to say Abuja Palace to Onitsha house and so on having the feeling of the architecture of these places. The ethnographer believes also that these kind of houses will be useful as exhibition places. It could have another function say accommodation. A typical example is the old Zaria Mosque being rebuilt in Jos museum could be used for say praying.

ADVICE FROM THE ETHNOGRAPHER:

1. Think of the ways of lightning and humidity control in the galleries.
2. Make a design that will fit into our tropical environment.
3. Provide prevention against rats which tamper with materials in the storage.
4. Define the type of audience and what they would like to see.

4. It is necessary that the archtiect plans his Museum with an expert e.g do you want the cafeteria with or separate

OR You are forced to pass through the museum galleries before you reach the restarant so that even if you are not interested in the exhibition you are forced to have a glance.

6. Museums should be centrally placed.

7. Provision for film shows will be good.

MR. MOSES ABUN
Principal Ethnographer,
National Museum, Kaduna.

INTERVIEWER: Author.

TRAFFIC IN THE MUSEUM:

Visiting hour - 6 a.m - 6 p.m

Average number of visitors per day - 61

Total number of visitors from 20th March 1975 to January 1979 - 142,007 visitors.

DATA:

October	1975	2779
November	1975	3341
December	1975	3353
January	1976	3229
February	1976	1994
March	1976	2344
April	1976	3348
May	1976	3124
June	1976	2506
July	1976	2299
August	1976	4160
September	1976	2655
October	1976	2691
November	1976	2415
December	1976	3394

GENERAL CHARACTERISTIC OF SOME EXISTING MUSEUMS.

1. ONTARIO SCIENCE CENTRE:

This museum is divided basically into three activity zones.

These are:

1. Reception and Information.
2. Preservation and Interaction and
3. Management and Operation.

The buildings coulg be seen defined along these patterns.

A. Reception Building - house the following:

1. Assembly Areas.
2. Cloak Rooms.
3. Wash rooms.
4. Ticket rooms.
5. Information couters.
6. Licensed restaurant.
7. Lounge.
8. Cafeteria.
9. Office space.
10. Science shop-book store.
11. Central services wing for heating and air conditioning.

B. Tower Building:

1. Administrative Offices.
2. 435 - seat auditorium.
3. Three small presentation theatres.
4. Workign space for scientist, designers and teachers.
5. Three exhibition halls.

C. Valley Building:

1. Wine exhibition Halls.
2. Workshops.
3. Teaching Laboratories.

2. LOS ANGELES COUNTRY MUSEUM OF ART.

The traffic in this museum is over 1.5 million a year. Likethe Cntario Science Centre, this museum is also in three complex buildings placed round a central scuopture garden. One of the buildings is for permanent exhibitions, one for loan exhibitions, and one for educational services.

A. Ahmanson Gallery: To the west house the p rmanent collections and information desk.

B. Frances and Armend Hammer Wing: In the central building are for changing exhibitions, contemp- art, and the conservation centre.

C. Leo S. Bing Centre: To the east houses the Bing Theatre, Plaza Cafe, Ticket Sales for concerts, films and lectures, members Loung, Education programs, Junior Art Workshop, Travel programs, Research Library, Slide Library, and Art Rental Gallery. Administrative and Curatorial Offices, Service and Work areas are below the plaza at a ground level common to all three buildings.

Visiting Hours:

Tuesday - Friday, 10 a.m - 5 p.m.

Saturday and Sunday, 10 a.m - 6 p.m.

Mondays, Thanksgiving, Christmas - Closed.

Museum Activities:

The museum has various activities. These include special exhibitions, film series (including a series for senior citizens), concerts, lectures, tours of the collection, and a student program. The museum also has a Research Library with over 57,000 volumes and 200 periodicals and an extensive slide library.

A. Ahmanson Gallery:

1. Permanent Collections.
2. Special Installations.
3. Free Daily Decent Tours.
4. Restrooms.
5. Public Telephones.

B. Frances and Armand Hammer Wing:

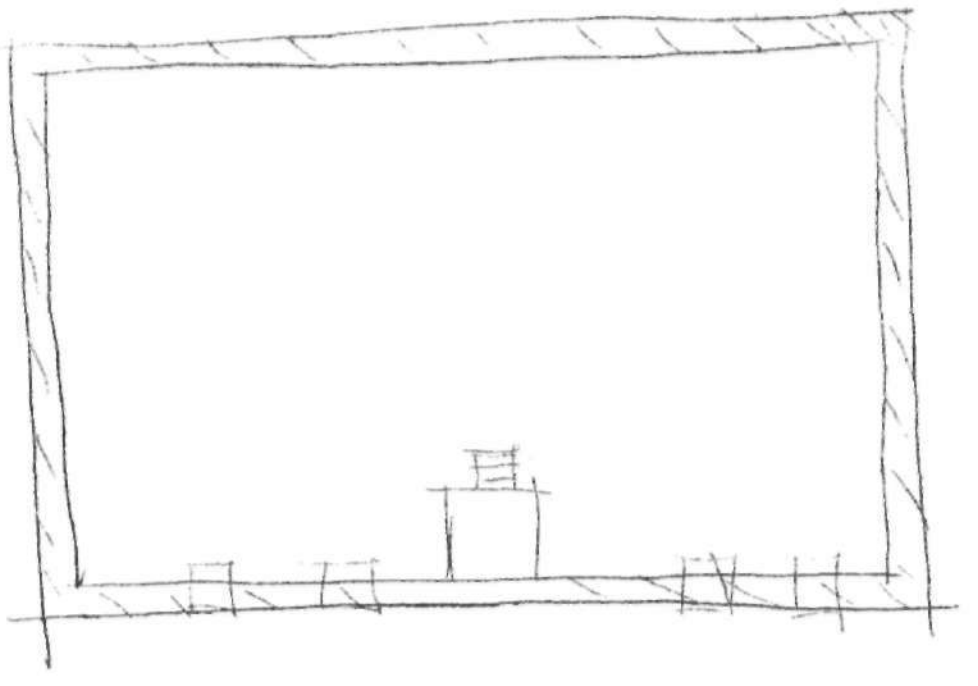
1. Plaza Level: Special Exhibitions.
2. Lytton Halls: Contemporary Art Galleries.
3. Ground Level: Administrative and Curatiorial Offices.
4. Restrooms.

C. Leo S. Bing Centre:

1. Bing Theatre: Special Programs.
2. Ticket Office: Concerts, Films, Lectures.
3. Plaza Cafe.
4. Art Rental Gallery.
5. Members' Travel Program.
6. Art Research and Slide Libraries.
7. Restrooms.
8. Public Telephones.

3. PEABODY MUSEUM, EAST INDIA SQUARE, SALEM MASSACHUSETTS.

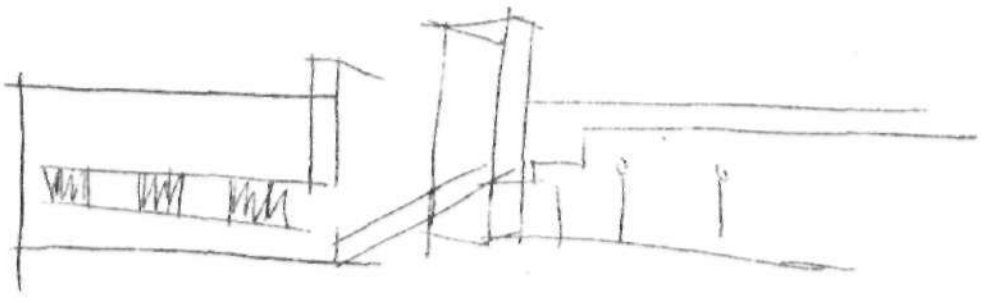
This museum was founded in 1799 and the first building was constructed in 1824. As the curator says "many of the problems encountered today were never considered then. Today some of the major concerns are conservation and utilization by the public, and for scholarly research". The exhibits are changed from time to time and special shows are arranged periodically so that a visitor will necessarily see exactly the same specimens on any tow successive visits to the museum. The collections are arranged in three main classe: Martime history, ethnology, and the natural history of Essex country. The library contains about 100,000 printed volumes relating to the three fields mentioned. It also holds large manustript collections consisting of more than 800 logbooks, 2500 shipping account books and journals, many thousand miscellaneous manuscript letters, accounts, and business papers, manuscript ship registers, 1200 clipper advertising cards, over 2000 maps and charts, some 6000 ships' plans, and a photographic collection of prints and negatives estimated at between one quarter and one half million.



PLAN FOR SECOND FLOOR.

4. THE TEL AVIV MUSEUM.

The plan of the museum included a spacious entrance hall, four major galleries (8,500 sq. ft each). There is also the LEON and Mathilde Recanati Auditorium (520 seats), the Mally Kaufman Hall (170 seats), the Helena Rubistein Art Library and the Cafeteria.



5. FINE ARTS GALLERY OF SAN DIEGO.

Attendance: July 1, 1977 - June 30, 1978.

Member and Visitors	-	346,042
Museum tours		
City Schools	298	5,147
Country Schools	199	4,513
Total Tours	1,039	15,892
Total Museum Visitors		361,934

6. YALE UNIVERSITY ART GALLERY.

The curator wrote, "The challenge was to get as much material as possible on display in existing space. To do this we went to the techniques of creating a maze 10½' high walls and of hanging pieces of furniture of the walls". "The principal shortcomings with the installation in my opinion are that the silver cases and glass and ceramics cases were not designed with tight enough seales. For the silver this means the objects tannish quickly. For the glass and ceramics it means increased maintenance since dust settles on the glass shelves".

7. HIRSHHORN MUSEUM AND SCULPTURE GARDEN, U.S.A.

"Because a museum has to respond to unique programatic constraints, site conditions, and clients, Hirshhorn Museum and Sculpture Garden is unique - as any museum solution should be". (Architec: Bordon Dunshaft). From a far, the building is imposing, prominent, easily noticed, identified, remembered. Even so, it is not readily percieved as a museum. There is, by virtue of the round form a vague association with the Guggenhein of course, but the Hirshhorn signified "museum" mostly by an unspoken common agreement. Actually, the museuam resembles an object - an art object. Yet its minimal or reductive sculptural quality does not necessarily qualify it as a work-in sculpture - it is too restricted to programmatic requirements to explore fully the nature of its sculpture form. Nor does it meet one's expectations of architecture: Missing is the architectural code with its internal logic of columns, doors, mullion, etc. that give a building scale,articulate its internal functions and create hierarchical definition. The most important aspect is human scale. In this case, the humanizing qualities of mass, space, and line so carefully argues years ago by Geoffrey Scott have been assumed to order. The

building/object walks in reverse of normal expectations: where the architectural model usually represents the real version in miniature, here the actual structure appears as a blow-up model. Considerations should be given to buildings around the site or to be erected structures so that the arriving new structure fits into it properly or as the case may become a third party (see below) - ABOVE.

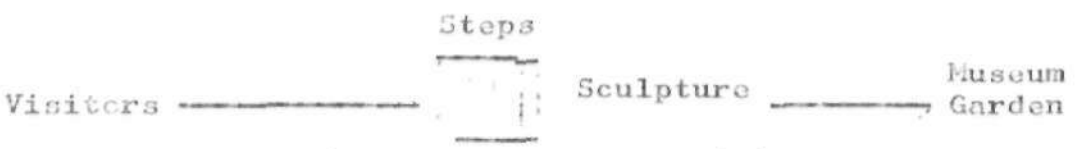
Rather than the building acting as a mediating force between two styles, scales, and materials it seems to arrive as a third party, caught accidentally between two extremes. Programmatically, the museum is a smashing success. Its circular galleries for exhibiting paintings and sculpture, organised around on open circular court, allow museum - goers to do exactly what they came to do: participate in the act of consuming culture quickly and efficiently.

The 15' high galleries with 3' - deep coffers provide easy circulation. Critics earlier feared a repeat of the Guggenheim Museum's problems in handling large paintings on curving walls, but here the 735 ft outer circumference allows walls to curve gently. Some also built a full-scale mockup 20ft long to test curves. Nevertheless 20ft long painting required built out wall.

Criticism was directed at its 50ft long sunken (7ft) sculpture garden stretching across the Mall, with a retaining wall as high as 18ft.

An observation deck on the third level overlooks the mall, the only break in the exterior surfaces of the drum while the view from within is impressive the problem of orienting the seating towards a concave wall becomes evident.

Originally the sculpture garden was to have connected to the museum's lower level which included a restaurant, but budgetary consideration necessitated a cutback in ancilliary spaces.



Museum to house 6,000 works of art, 4.4 acres.

8. MUSEUM OF MODERN ART, FLORENCE, ITALY.

The entire rear wall facing the courtyard is removed to open the interior to north light and to views of Florence. The visitor's visual experience is not limited only to the works of art, but is extended to the building itself and its environs. Yet through the more subtle, architectonic anayl··'s of the mass and scale of old and new, each is brought into a relationship of respect for the other, and ultimately each enhances the other with a force that could not have been possible otherwise.

9. VINCENT VAN GOGH MUSEUM, AMSTERDAM.

Each floor level received some direct overhead light from a flat roof pierced with glass. The ground floor shows an awareness of Rietvelds'

definition of space: a convergence of planes and lines, of space rushing about an intense locus. After the low entrance ceiling, the building seems to dissipate, upward towards the roof and outward past columns and around walls to windows that are suggested if not directly visible.

On this floor are cloakrooms, offices, exhibitions, bookshops, library, painting room for visitors, terrace restaurant, and a decidehy theatrical free standing staricase in a corner of the atrium, the principal means of public vertical circulation.

Even the central atrium is sealed off. Here drawings, watercolors, and prints, all sensitive to sunlight, are given a dank intimate setting of man-made light. The third floor is once again open to the atrium, though its exterior is controlled as below. Overhead is a fully luminous ceiling.

Natural light passes through a suspend "brise de soleil"

10. DOUGLAS COUNTY MUSEUM.

There was a provision for expansion Upgrade, - a 700 sq. ft. museum with Library and Research Centre not requiring stairs for access to display areas, with flexible interior and expandable design to be constructed at low cost. There is provision for amphitheatre. It is a courtyard system of design with bridges to connect to other displays.

Bridges

Court
Yard.

Included also is a research centre, a meeting room opening onto an amphi-theatre of terraced lawns, curatorial and administrative offices in the main tower, and the two enclosed courtyards.

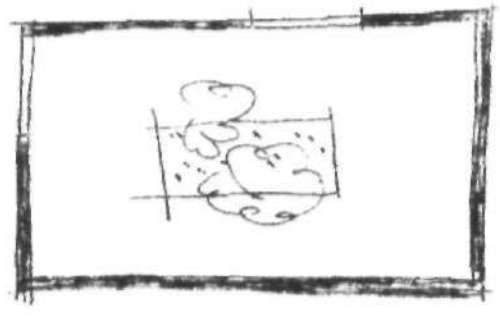
22½ pyramidal skylights, and plastic diffusing grid to enter the space (fluorescent tubes add reinforcement). Below this, off-white painted fibre-board covers brick walls in display areas. Neatly enclosed services and structural elements are also off-white. The floor is of brown or orange carpet.

In it one can almost hear Rietveld say "If, for a particular purpose, we separate, limit and bring into human scale a part of unlimited space, it is (if all goes well) a piece of space brought to life as reality. In this way, a special segment of space has been absorbed into our human system ... Was that general space, then not to be experienced as a reality? It was not real until there was introduced in it a limitation".

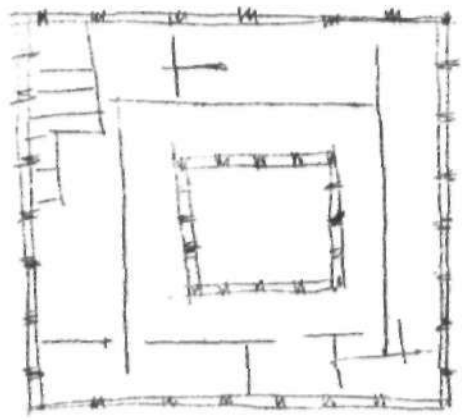
CHAPTER TWO - 5

ANALYSIS OF GEOMETRIES OF MUSEUM PLAN.

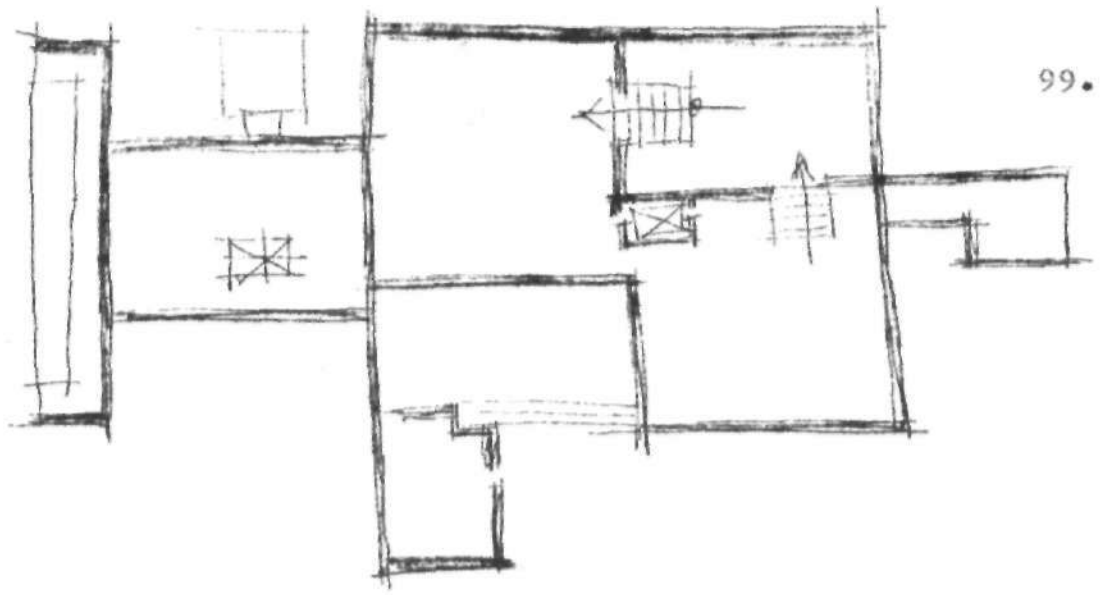
a. Rectangular

(i) 

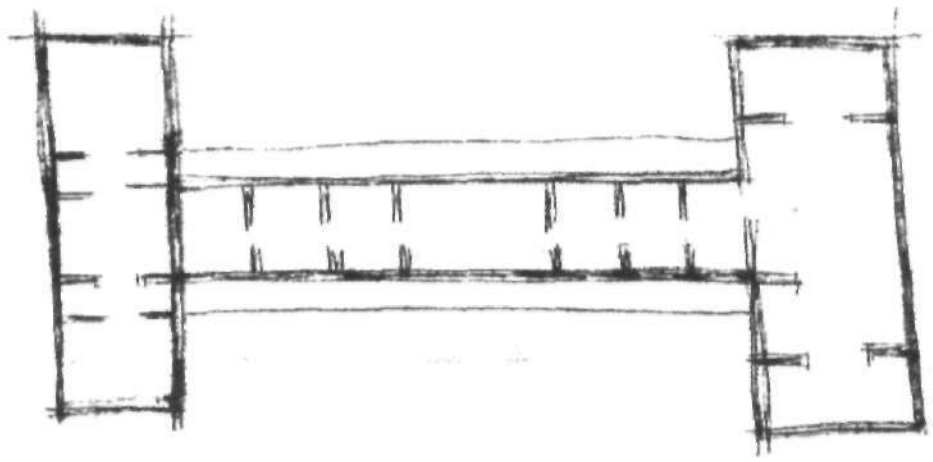
Calouste Gulbenkiah Museum, Lisbon; the museum is set with a small park adjacent to an auditorium and the foundation offices. It has very few windows and in most cases these are further sheilded by screens which limit the area within which there is a direct impingement of daylight.

(ii) 

Palazzo Farnesse, Rome by Sangallo designed in 1534; the first floor plan shows the characteristic enfiladed rooms of palaces of the time which influenced later museum planning.

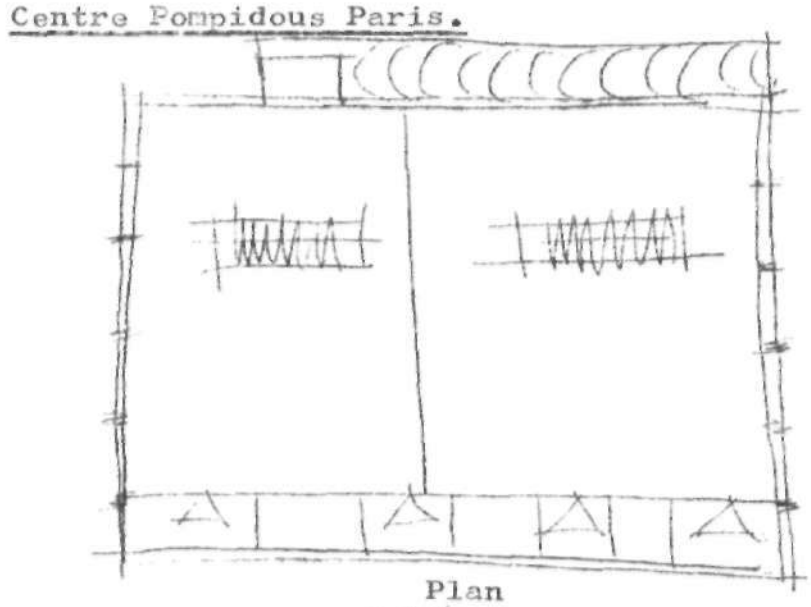


Walker Art Centre, Minneapolis, 1971; plan of second floor showing typical gallery layout of spaces spiralling at half level intervals around a central lift and stair case cove; unlike the continuous space of the Geggenheim this provides a variety of spaces; some with different ceiling heights.
Arch: Edward Larrabes Barbes.

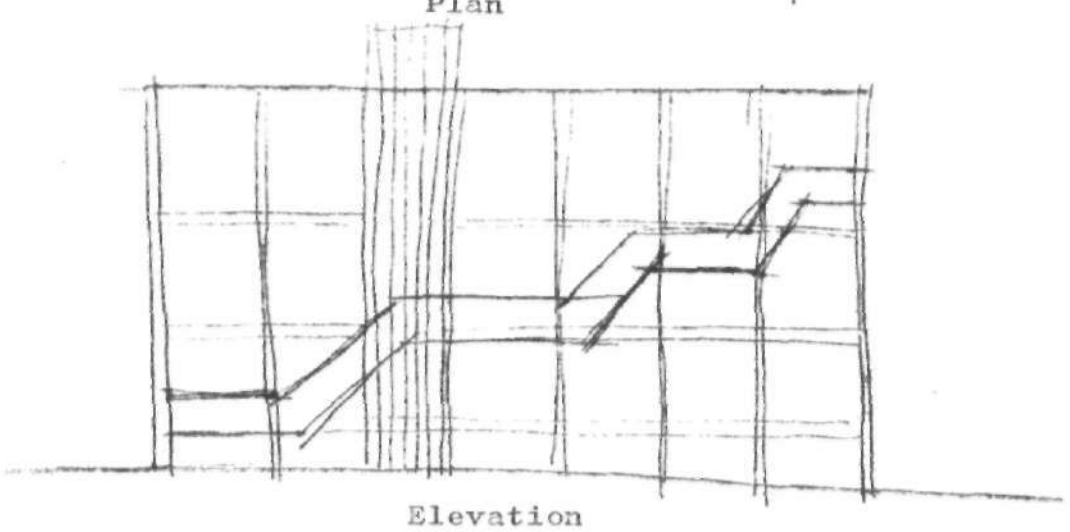


Alte Pincakothek, Munich, orginally designed by Leo Von Klenze and completed in 1836; reconstructed after war damage; the first floor shows the common arrangement of linked main galleries and side cabinets derived from palace plans such as the Farnese.

Centre Pompidous Paris.



Plan



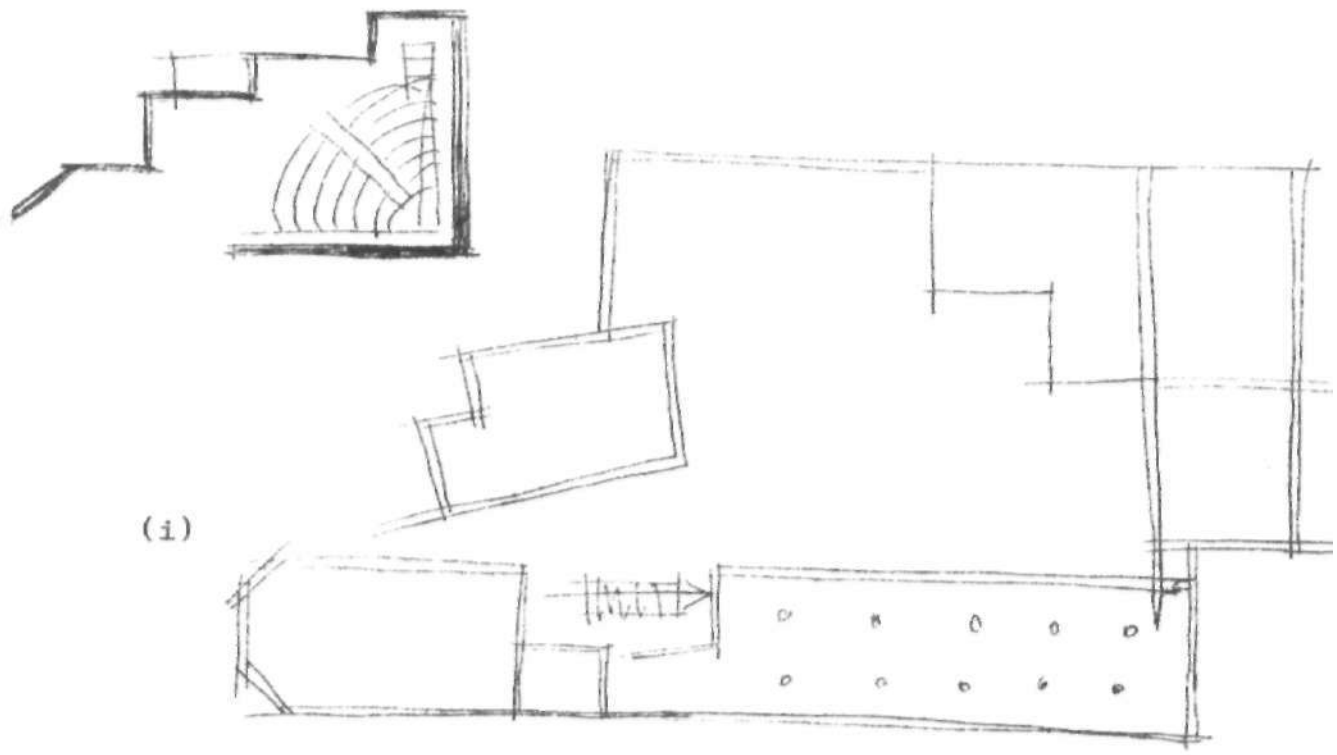
Elevation

Designed by Piano and Rogers in 1972. This was a winning competition from 681 entries from 49 countries. Sponsored by the Ministries for Cultural Affairs, Finance and Education. The winning project in ignoring all problems, was able to present a scheme of brilliant simplicity and clarity. Instead of thinking of the building as consisting of separate spaces with varying degrees of fixity and flexibility, it proposed a solution which the entire building was flexible and

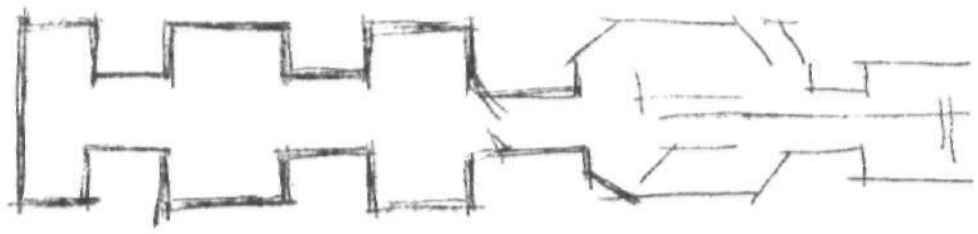
which consisted of a series of superimposed and uniform loft spaces. The structure, circulation and service elements were then pulled to the outside surfaces and used to give interest to facades which otherwise would have been without interest or meaning. According to the Jury's report, the buildings is: Transperant, Flexible and Functional.

b. Diagonal.

(i)

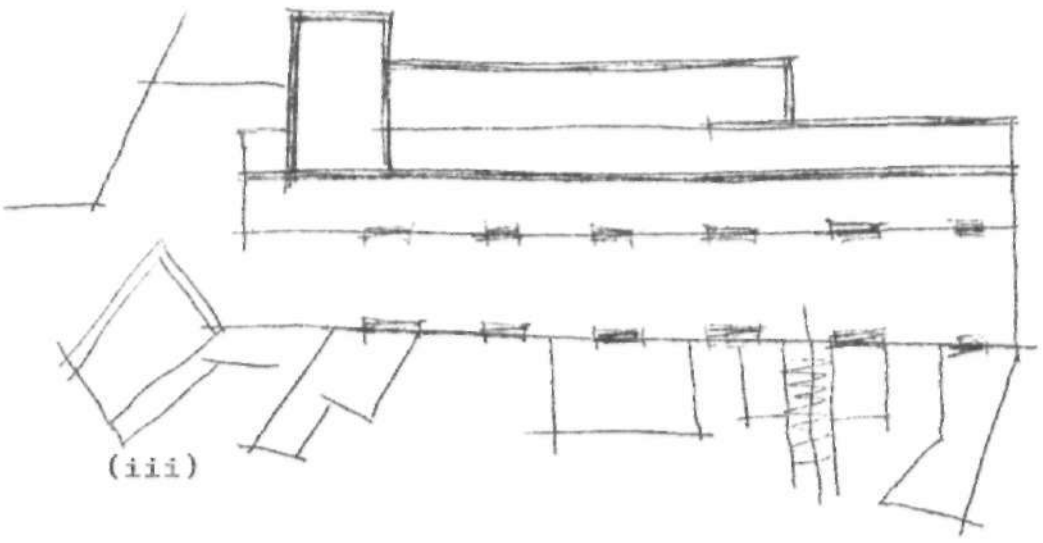


Dorset country Museum, Dorchester: ground floor plan of 19th century museum and recent addition; the inset plan top left shows the temporary exhibitions gallery arranged for a lecture or film show.

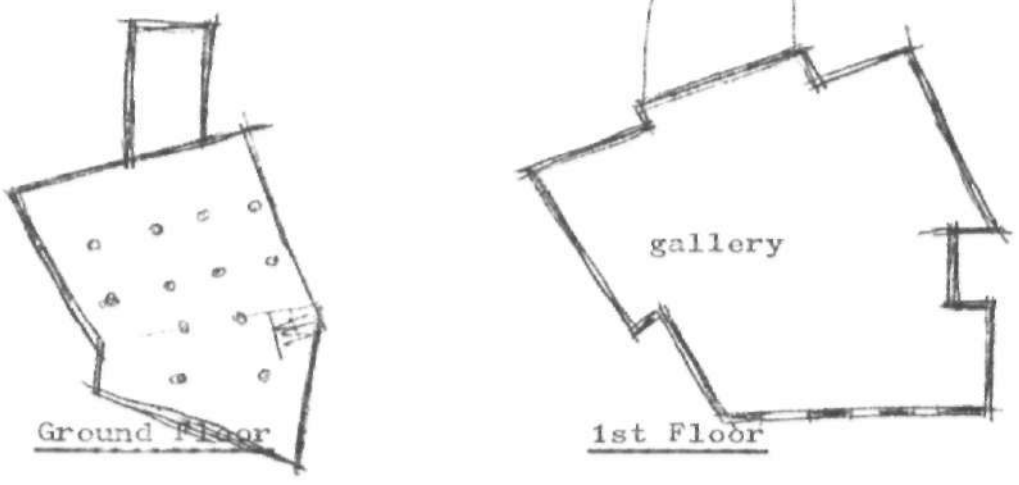


Tate Gallery; screens and lighting were erected by a specialist contractor within roughly ten days, Galleries for temporary exhinitions should ideally have less narrow and separated areas which may restrict layout.

Arch: Michael Browne

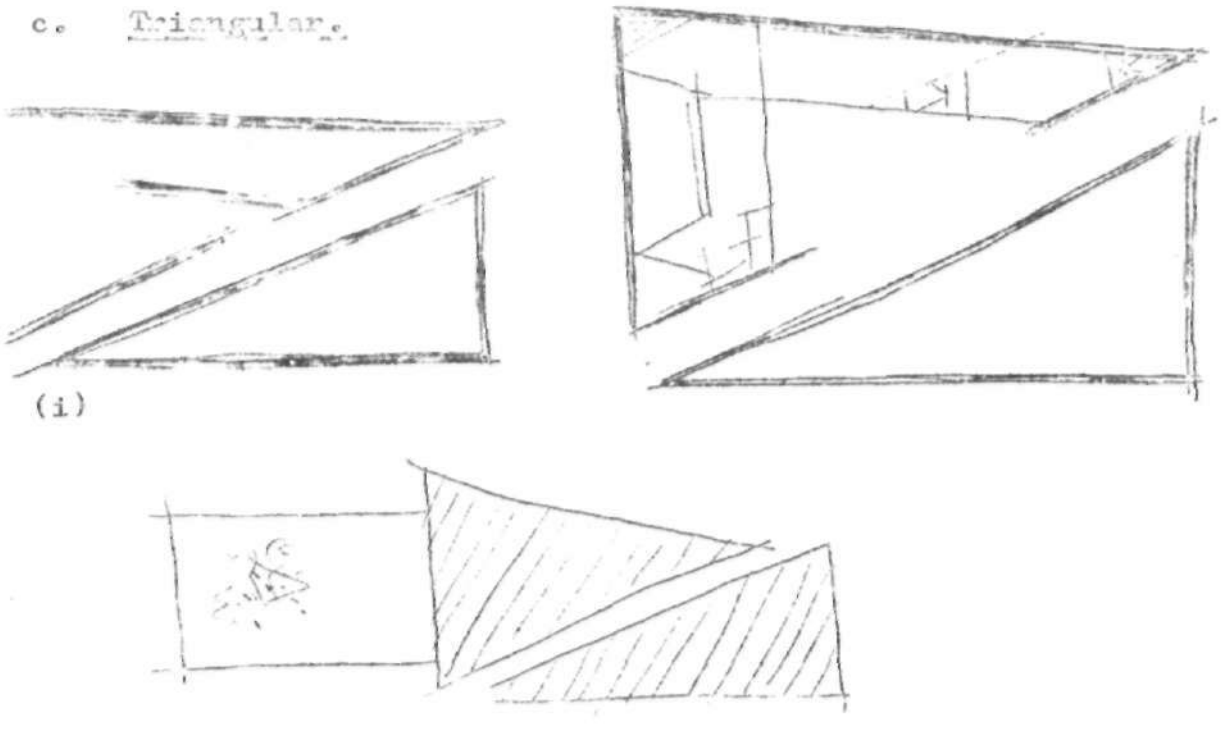


Uffizi, Florence, designed by Vasari in 1560; plan at the top floor as used as a gallery; a glazed corridor on the inner side ot the building links a series of spaces which can either be connected to each other or back to the main route.



Museum of Modern Art, Oxford. Strong simple interior little altered from corn house. Full height wall-like screen and simple flexible lighting. Essential space is given to storage and workshop.

c. Triangular.



(i)

East building, National Gallery of Art, Washington. Designed by I.M. PEI and Partners. This museum is designed adjacent to the old National Gallery. The central space is skilighted while the galleries are artificially lighted.

Site: 8.88 acreas adjacent to the National Gallery of Art.

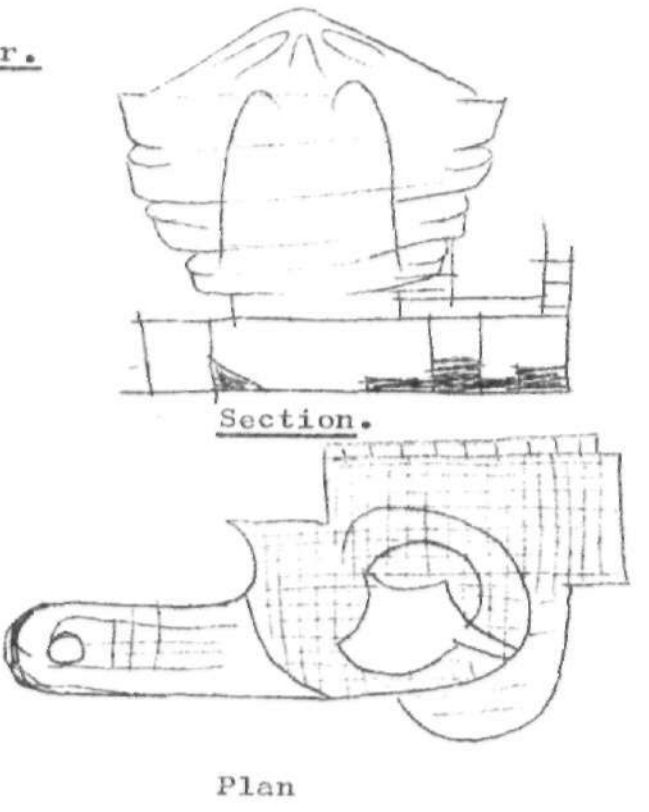
Brief: Space for temporary exhibition and modern collection, a study centre, shops, cafes, auditoria.

Areas: Total 604,000 sq. ft. 450,000 sq. ft East Building, 154,000 sq. ft. for underground connecting link.

Organisation: The gallery part of the building has four levels, three 110 ft. towers of galleries at each of the traiangle's points, around a central atrium 80ft high which is topped by a tetrahedronal skylight, comprising 25 space-frame modules 30ft x 45ft. The study centre wing is eight storeys with a 72ft high triangular court in the reading room.

d. Circular.

(i)

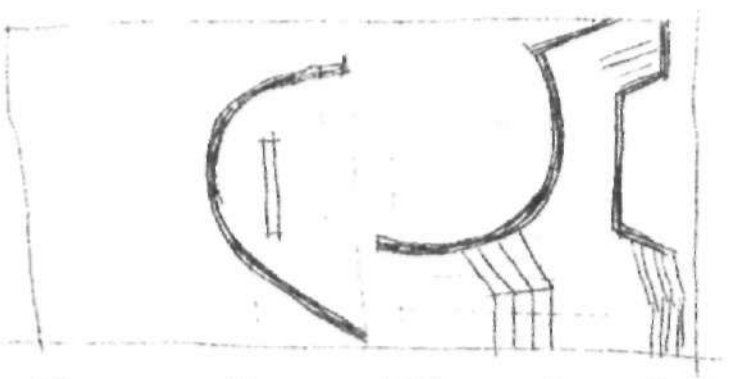


Section.

Plan

Frank Lloyd Wright's Guggenheim Museum, New York, 1956-1959; the section based on spiral route lined on its outer side by small chambers for paintings. First floor plan: only at this level is a variety of exhibition spaces available.

(ii)



Castello Sforzesco Museum, Milan; plan of the scarlioni Room. Michelangelo's unfinished pieta. Rondanini stands within an embrasure at the base of the steps. (Architects; Studio BBPR - Belgiojoso, Pevessutti, Rogers).

CHAPTER THREE I

AESTHETICAL VALUE.

"Museums take various forms, depending upon:

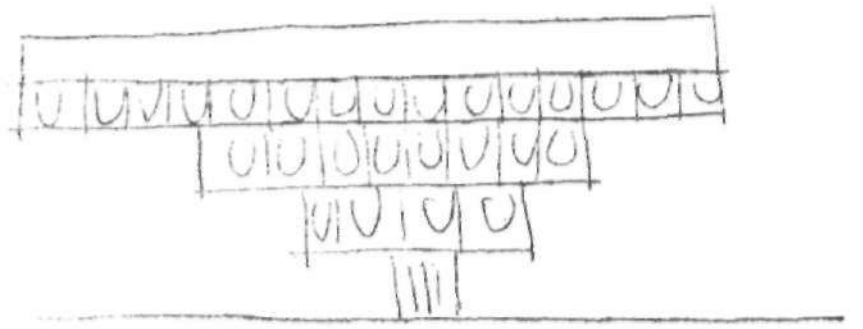
1. The relative importance given to the three major purposes of the museum: Study and Documentation, Conservation, and education and culture.
2. The nature of the major displine or disciplines co-ered - arts, the sciences of man, nature and the universe, advanced technologies - and the forms of presentation - monodisciplinary, multidisciplinary or intendisciplinary.
3. The architectural characteristics of the museum, according as to whether it is : (as) a new building or one adapted for the purpose and which may or may not be a historic building, with or without its own surroundings; (b) a systematic open-air museum, with or without the addition of buildings; (c) a natural park"

- Georges Henri Rivere.

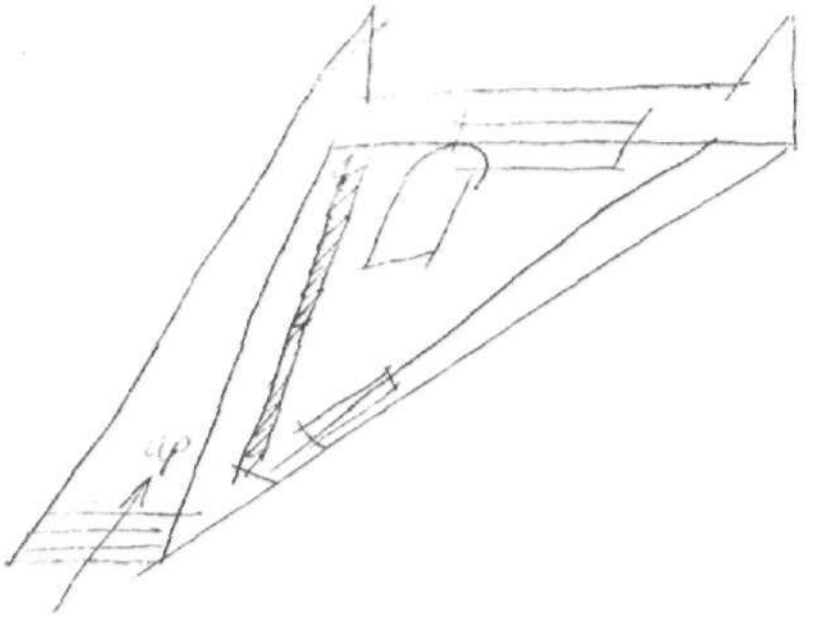
Because the museum exist not primarily to meet any objective requirements or to serve any utilitarian purpose, but to satify subjective needs, the architecture that expresses it has had various conceptions. Infact it has become a testing ground for newer forms. The

many imaginative and original buildings bear witness.

E.G



1. An impression of strength combined with irrationality is conveyed by this heavily overhanging design. Plan for a 'museum of the earth' - Brasilia Architect: Oskar Niemeyer.



2. Winnipeg Art Gallery. Example of a piece of modern architecture which is irrational and formalistic Architect: Gustavo da Roza.

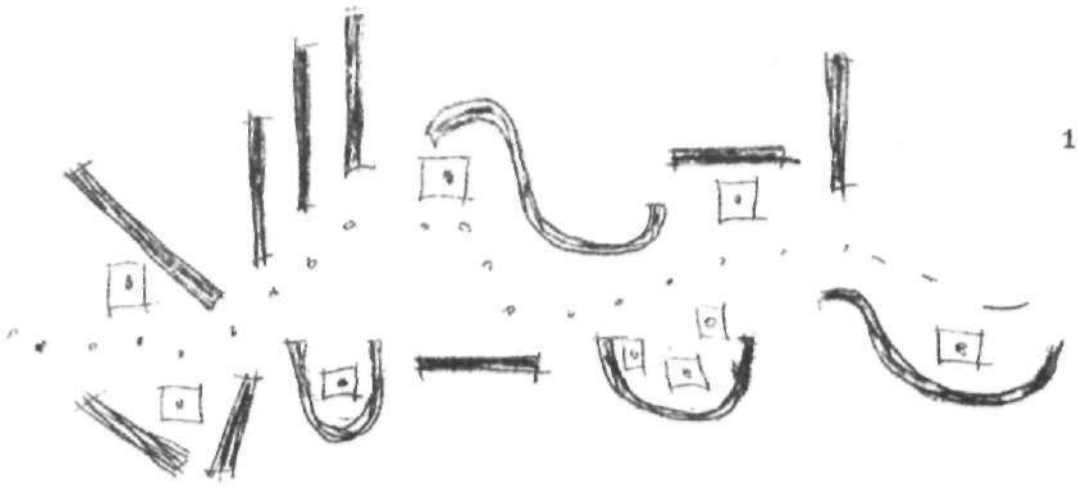
To have a museum purely based on the principle of 'functional warehouse' is to say having a tea without sugar. Which ofcourse will be an uninteresting tea. The design of a museum should bear test or expression of permanance or monumentality. An expression which is unique to its type of museum. An expression which suggest new or change in its architectural language. "The faceles, purely functional 'warehouse' style is an unsuitable as an obsessive and extravagant proocupation with form" - Manfred Lehmbruck.

Recent physiological study of human perception has shown that information aesthetics is based on physiologically measurable units of perception which are recorded in a process oscillating between differentiation and integration of the object. The length of time taken by this process depends on the quality of the object. The amount of information received and the time taken to 'use' it gives described quantitatively and even to be arithmetically measured.[53]

Measure and proportion with existing or to be built environs should always be used as the guiding principle.

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53. UNESCO - Museum Architecture - Quarterly Publication 3/4/1974.

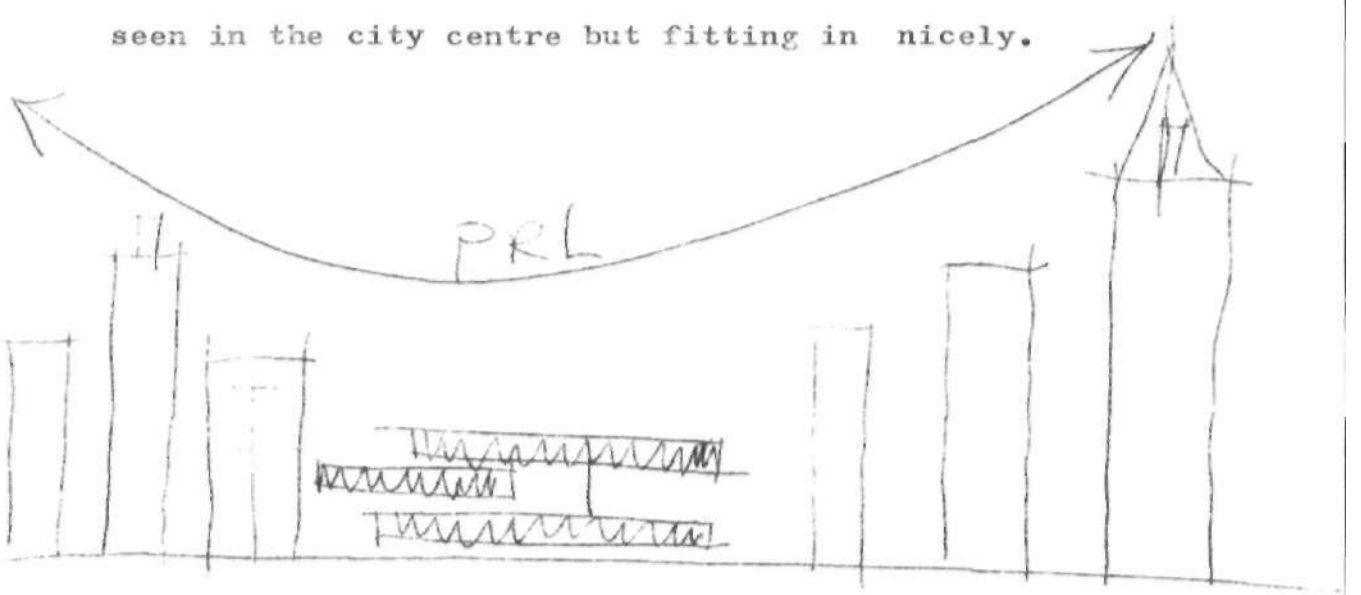


The 'journey of discovery' effect can only be archieved when a pre-determined sequence is followed. This must be ensured by an architectural layout which guides the visitor by subconscious suggestion. The configuration of the circuit also has emotional significance.

PERCEPTION RELATIONSHIP TO SITE.

THE MUSEUM:

Several sketches were made across the site so as to achieve a balance between the whole city high-rises and the museum complex which is to be site. In view of the fact that I wanted tension within harmony i.e a building that is a little way out of the ones seen in the city centre but fitting in nicely.



(a) horizontal planes - breakes away from the monotonous vertical planes.

Visual disadvantages:

(1) horizontality too pronounced.

(2) contrast too sharp for a visual change.

(3) tension but no harmony.

(4) needs a little emphasis in the vertical planes.

Domes This emphasis volumes which is out of content.

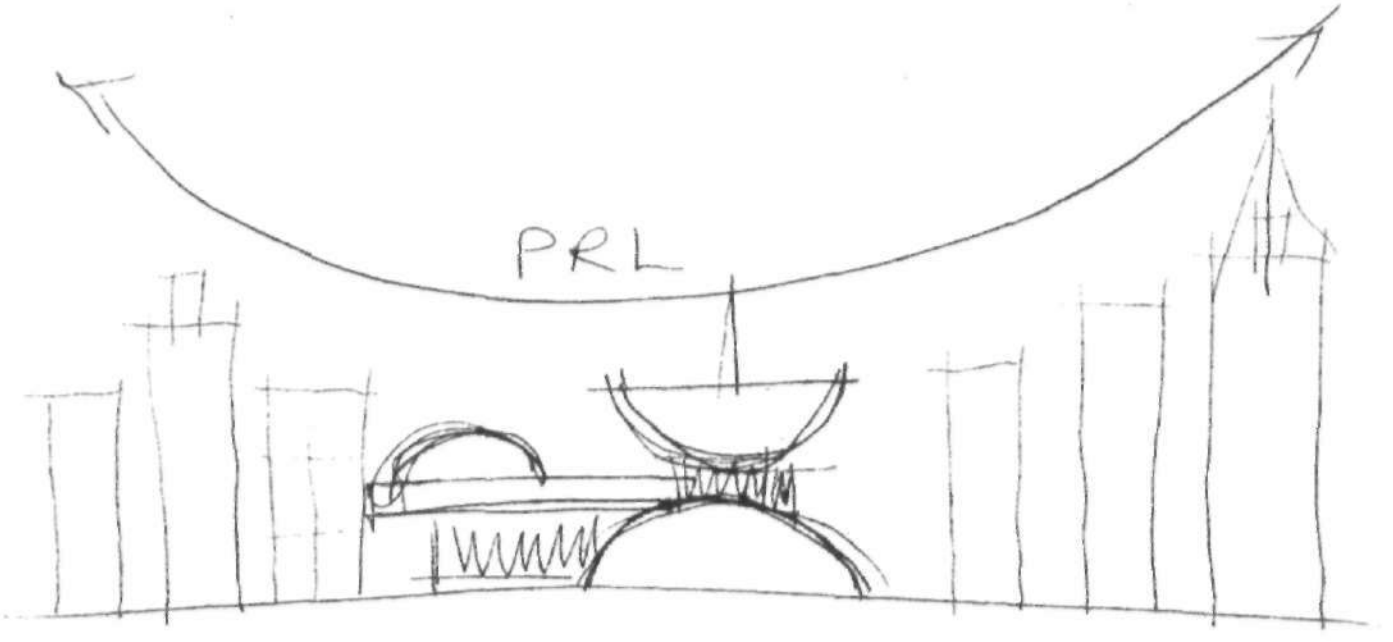
(b) Visual Disadvantages

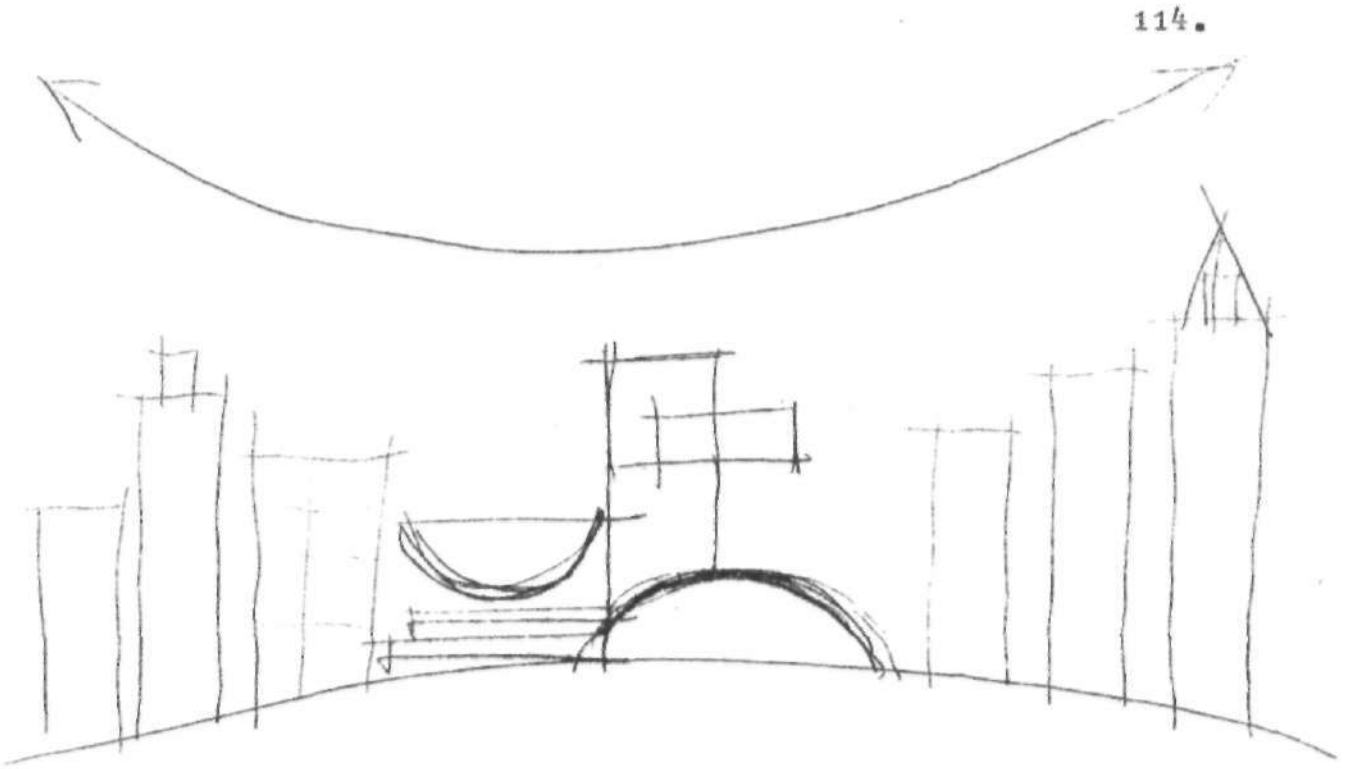
(i) Volumes does not impress anything in this content.

(ii) Buildings are seen here in planes i.e. vertical planes predominantly.

(iii) Does not fit in visually whether in tension of in harmony.

(iv) Visually distubing and seems imposed to the surrouding envi··ons.





(c) Vertical and Dome: Harmony out of content.

Visual disadvantages:

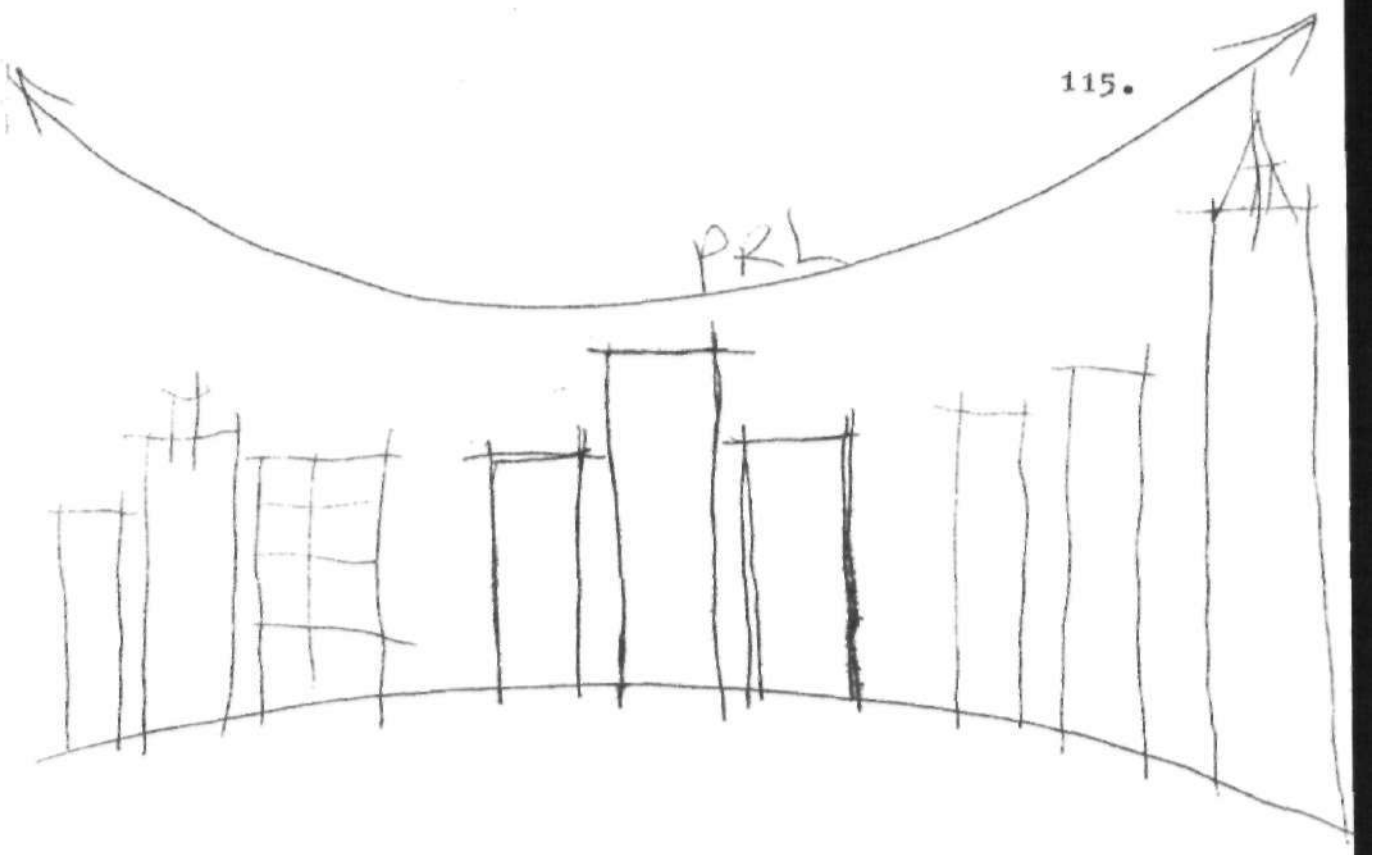
(i) The vertical plane harmonises with those in the site.

(ii) The domes fall out of content.

(iii) The horizontal element contrast.

(iv) The whole complex looks dd and complicated.

Visually not in any content. No visual balance and expression.



(d) Vertical Planes: Harmony within harmony.

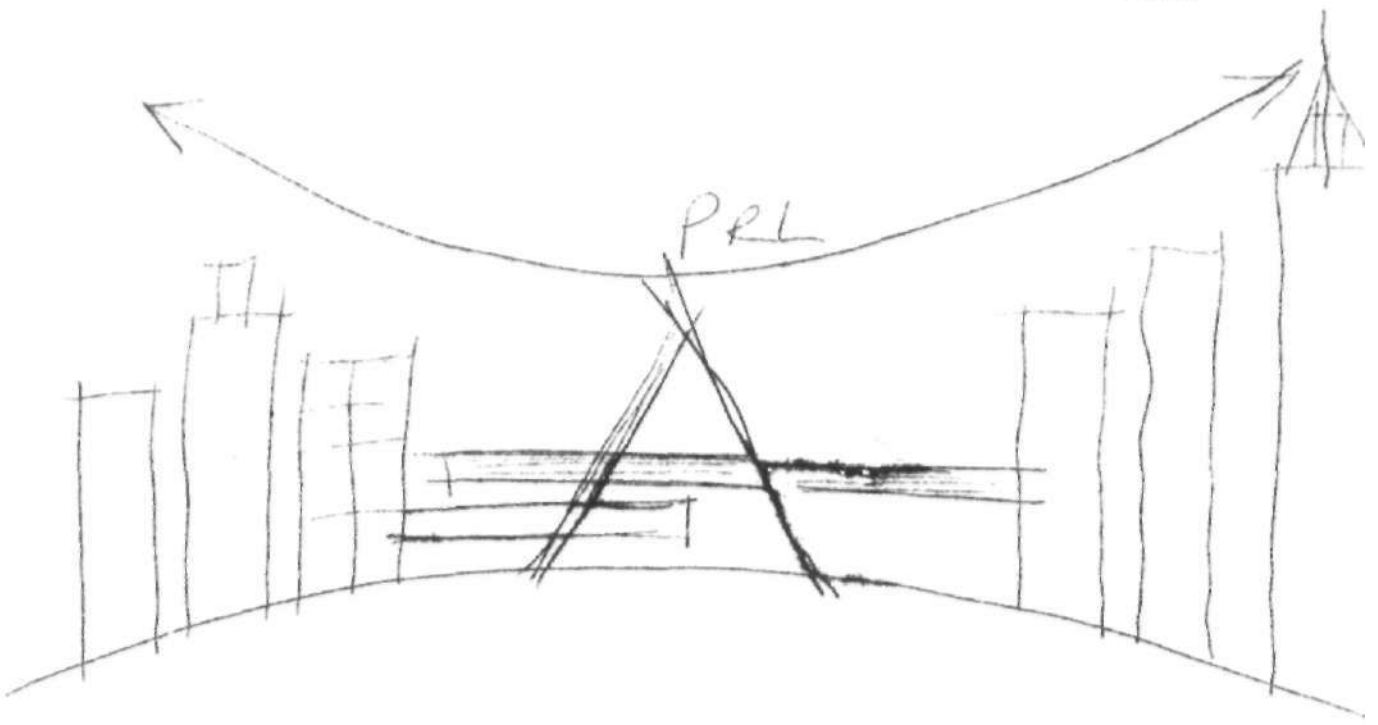
Visual disadvantages.

(i) Expresses nothing like a museum.

(ii) It's vertically harmonises as one of those buildings.

(iii) Visual tension not expressed.

(iv) Its boring.



(e) Inclined Planes: Visual contrast in inclined plane.

Visual disadvantages:

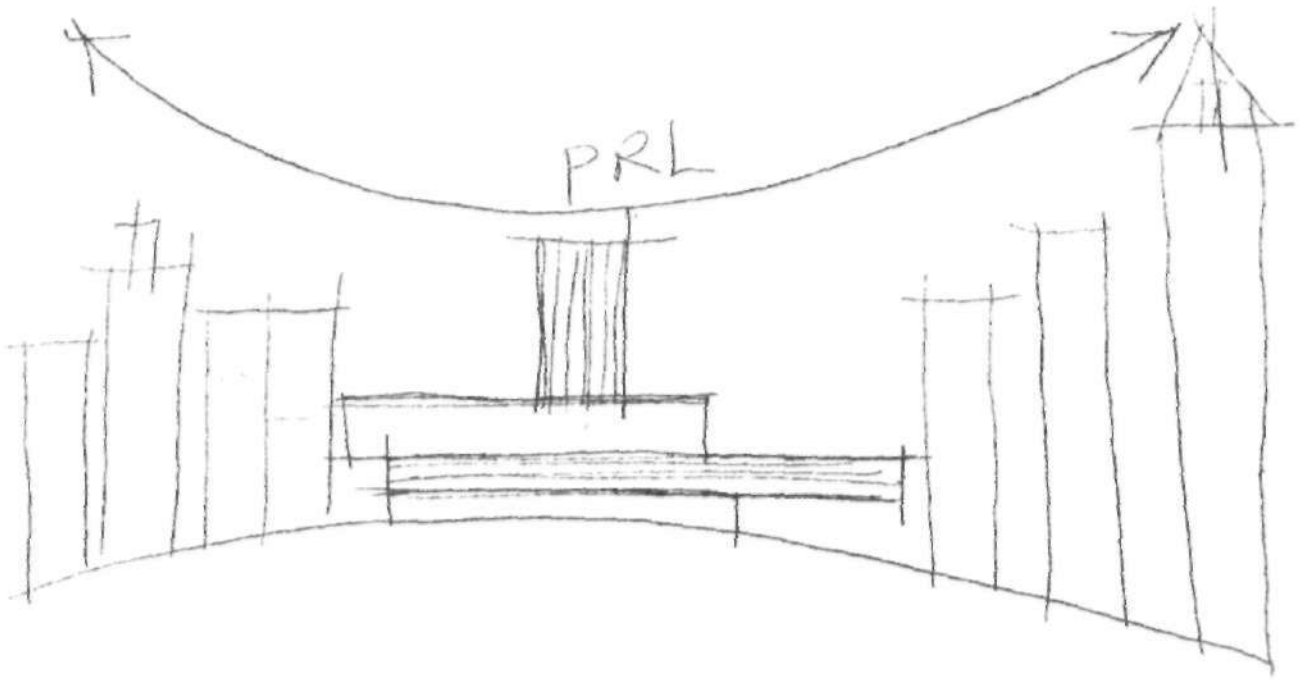
(i) Contrasted sharply without expression.

(ii) Horizontal planes also in contrast.

Visual advantages:

(i) Gives tension within the site.

(ii) Raised an expression in the viewers mind giving an impression of a special building.



(f) Vertical and Horizontal Planes: Gives the desired effect of tension within harmony.

Visual disadvantages:

(i) Its verticality has to be in proportion a desired appreciation.

(ii) No sharp expression of a special building lying too soft.

Visual advantages:

(i) Its horizontal plane contrasts tension.

(ii) With proper balance in scale the desired tension within harmony effect will be achieved.

(iii) Its vertical plane harmonises with the environs - harmony.

(iv) Gives an observer time for expression.

CHAPTER THREE(A)

SPACE REQUIREMENTS - MUSEUM

Working on the assumption that the Kaduna Museum now holds more than 250,000 objects in storage and that for every 20 objects we allocate $1m^2$; we shall therefore have:

$1m^2$ - 20 objects

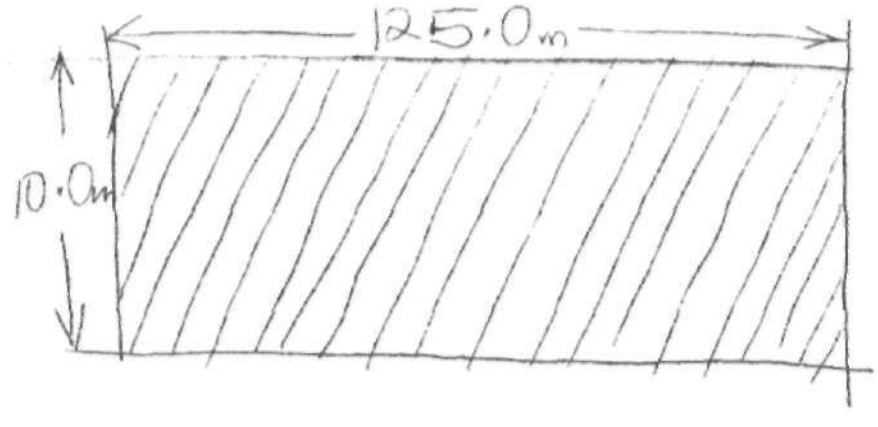
$\therefore$ 250,000 objects - $\frac{250,000}{20}$ = $12,500m^2$

Our sum estimated total area of galleries = $12,500m^2$

From the interview with the ethnographer; I have decided to adhere to his giving 10 galleries.

From this therefore we have:

One gallery = $\frac{12,500}{10}$ = $1,250m^2$



I am going to use this estimated gallery space as guide line in aportioning the required spaces to different parts of the museum galleries. For example, since we are richer in cultural and historical artifacts, this will have the largest share of area space.

SPACE REQUIREMENTS IN THE MUSEUM.

Museum galleries: Area (m^2)

a. M_1 - Historical Museum)
b. M_2 - Cultural Museum) 5,000

c. M_3 - Science Museum - 3,500

d. M_4 - Modern and Contemporary Arts Museum 3,000m^2

a. M_1 - Historical Museum

b. M_2 - Cultural Museum

	Population	Area
Curator	1	24
Assistant Curator	1	12
Senior Assistant Secretary	1	12
Executive Officers	3	36
Asst. Executive Officers	3	24
Clerks and Typists	6	24
TOTAL	15	134

c. M_3 - Science Museum

	Population	Area
Curator	1	24
Asst, Curator	1	12
Senior Asst. Secretary	1	12
Executive Officers	1	24
Asst. Executive Officers	2	16
Clerks and Typists	5	20
	12	108

d. Modern and Contemporary Arts Museum

	Population	Area M^2
Curator	1	24
Assistant Curator	1	12
Senior Assistant Secretary	1	12
Executive Officers	2	24
Asst. Executive Officers	2	16
Clerks and Typists	5	20
	12	108

Senior General Staffing:	Population	Area
Directo	1	30
Deputy Director - Admin	1	24
Deputy Director - Research	1	24
	3	78

1. Deputy Director - Administration

	Population	Area
Museum Curator	1	24
Senior Asst. Secretary	1	12
Audio-Visual Unit Admin.	1	12
Accountant	1	16
Accounts Clerks and Typist	5	20
Executive Officers	2	16
Asst. Executive Officers	2	16
	13	116

	Population	Area
Clerks and Typists	5	20
Gardeners and Securitymen	20	16
	25	36

2. Deputy Director - Research

	Population	Area (ft^2)
Curator	1	24
Ethnographer	1	12
Chief Tech. Officer	1	12
Chief Exhibitioner	1	12
Chief Photographer	1	12
Photo Studios	-	30
Conservators	2	16
Craftsmen	-	25
Artisans and Guards	20	16
	27	159

3. Theatre

	Population	Area
Theatre Technician	1	6
Theatre Operators	2	9
Theatre Capacity	400	500
	403	515

C. Library	Population	Areas(M^2)
Library capacity	300	700
Chief Librarian	1	24
Librarian	1	12
Asst. Librarian	1	12
Clerks and Typists	5	20
Store	-	100
	308	868

D. Restaurant	Population	Area(M^2)
Restaurant capacity	400	400
Chief shef	1	8
Asst Shef	1	8
FMB Manager	1	12
Cooks	20	-
	423	428
Restaurant Kitchen	-	300
	423	728

E. Open Space: provision of an open space have been made between the cultural area and the city hall complex. An area of about 33,000 sq m. have been allocated. This portion is sunken down to about 3.0m depth to give its proper impression of an within which the city centre.

F.	Storage	Population	Area (M^2)
	Storage to History Museum	-	500
	Storage to cultural Museum	-	500
	Storage to Science Mesuem	-	300
	Storage to Contemporary Mesuem and Modern Arts	-	200
		-	1500m^{2*}

G.	Archives	Population	Area(M^2)
	Archives capacity		500
	Chief Archivist	1	12
	Archives Assts.	3	40
	Executive Officers	4	36
	Asst. Executive Officers	3	24
	Clerks and Typists	5	20
		16	632

H.	Documentation	Population	Area (M^2)
	Departmental Head	1	12
	Asst. Dept. Head	1	12
	Photographer	20	20
	Printers	4	30
	Attendants	3	18
	Graphic Artists	2	20
	Graphic Arts Attendants	2	12
	Equipment Room	-	50
		33	174
	Photo Studios	10	80
		43	254

*If more space than needed ate provided for storage, it will not be a waste.

I. Workshop	Population	Area (m^2)
Workshop Head	1	12
Technical Officers	10	64
Technical Assistants	10	64
Equipment Store	-	35
TOTAL	21	175

J. Conference Hall	Population	Area (m^2)
Conference Hall	-	200

K. Laboratory	Population	Area (m^2)
Chief Lab. Officer	1	12
Laboratory Assistants	4	16
Laboratory Equipment	-	90
Laboratory Store	-	45
TOTAL	5	163

CHAPTER THREE (B)

CITY HALL COMPLEX - ADMINISTRATIVE COMPLEX.

The city administrative centre which is named as above contends the local government offices and post offices, and the city hall itself. There is also to be a governmental office ministry of information as provided by the planners. For the matter of design I have decided to separate the design into three distinct functional zones as provided by the planners.

1. The City Hall.
2. The Local Government and
3. The Post Office Ministry of Information and the Kaduna Development Board (KCDB).

1. The City Hall: which comprise of the auditorium to handle a capacity of at least 500 people. Because of the large number of people it which it will handle, the auditorium is expected to be big. For this reason I have decided on two things; (a) that for its nature and prominance, the auditoria will be placed nearer to the Ahmadu Bello Way with ample parking space all round it; (b) that an oval or round shape of shell nature will be adapted for its strength and large spans without inter-mediate supports.



Facilities to be provided.

	Population	Space Required in m^2
Auditorium	700	500
Foyer		350
Toilets		170
Ticket Office		8
Public Lounge		150
Project Room		12
	700	1,190m^2

Total area provided in design is approximately 1,200m^2.

2. Local Government Offices.

This will contain the following:-

a. Central Administrative Office.

		Population	Area
1.	Administrstive Assistants	4	50
2.	Stenographers and Typists	16	80
3.	Clerical Officers and Assistants	17	105
4.	Duplicating and Photo copy	-	30
		37	265

b. Establishment Unit:	Population	Area
Chief personnel Officer	1	24
Personnel Officers and Assistants	5	60
Confidential Secretaries	2	16
Clerical Officers and Assistants	18	108
Stenographers and Typists	10	50
	36	258

C. Staff Management and Training:

	Population	Area
Principal Executive Officers	1	24
Executive Officers	5	60
Confidential Secretaries	2	16
Clerks and Typists	10	48
	18	148

D. Labour Unit:	Population	Area
Personnel Officer incharge	1	18
Personnel Officer and Assistants	5	60
Clerical Officers	6	36
Messengers	3	12
	15	126

E. Statistics Unit:	Population	Area
Statisticians and Planners	3	48
Executive Officers	6	48
Clerical Officers	6	36
Typist	3	15
Messengers	2	8
	18	155

F. Legal	Population	Area
Chief legal officer	1	24
Asst. legal Officer	1	20
Solicitors	4	54
Confidential Secretaries	4	30
Messengers	4	16
Reference Room	-	30
	14	174

G. City Treasur's Office	Population	Area (m^2)
City Treasurer	1	30
Receptionist and Messenger	2	15
Confidential Secretary	1	10
	5	55

H. Departmental Administration:

	Population	Area(m^2)
Clerical Officers	15	90
Stenographers and Typists	10	50
Administrative Executives	4	48
Stores	-	15
	29	203

I. Licencing

	Population	Area (m^2)
Clerical Officers	15	80
Executives	4	48
Public Circulation	-	80
	19	208

J. Cash Office

	Population	Area (m^2)
Clerical Officers	12	75
Executive Officers	4	48
Public Circulation	-	80
	16	203

K. Accounts

	Population	Area (m^2)
Accountants and Assistants	5	80
Clerical Officers	10	60
Machine Operators	2	25
	17	165

C. The Kaduna Capital Development Board contains the following offices.

1. Health Education	Population	Area (m^2)
Health Education Officers	3	36
Typists and Clerks	3	15
	6	51

2. Environmental Health Services.	Population	Area (m^2)
Health Superintendents	2	20
Health Inspectors	3	20
Messengers	1	5
	6	45

3. Market	Population	Area (m^2)
Market Superintendent Incharge	1	15
Copy Typist	:	12
	3	27

4. Social Welfare	Population	Area (m^2)
Chief Social Welfare Officer	1	25
Social Welfare Workers	10	90
Social Welfare Research	8	90
Clerks and Typists	5	30
Store	-	15
Document Room	-	20
	23	350

5. City Engineer's Office.	Population	Area (m^2)
Receptionist and Messenger	2	30
Confidential Secretary	1	15
Interview Room	1	36
	5	91

6. Chief Architects.	Population	Area (m^2)
Confidential Secretary and Reception	1	15
Chief Architect	1	30
	2	45

7. Departmental Administration.

	Population	Area (m^2)
Clerical Officers	10	60
Stenographers and Typists	4	20
Executive Officers	4	50
Store	-	20
Accounts Officers	3	20
	21	170

8. Architecture and Building Design.

	Population	Area (m^2)
Draughftmen - Design and Drawing Studio	20	120
Architects	5	75
	25	195

9. Civil Works and Engineering Design.

	Population	Area (m^2)
Engineers	4	60
Technical Officers	8	64
Draughtsmen	5	45
Equipment Store	-	35
	17	204

10. Planning and Building Control.

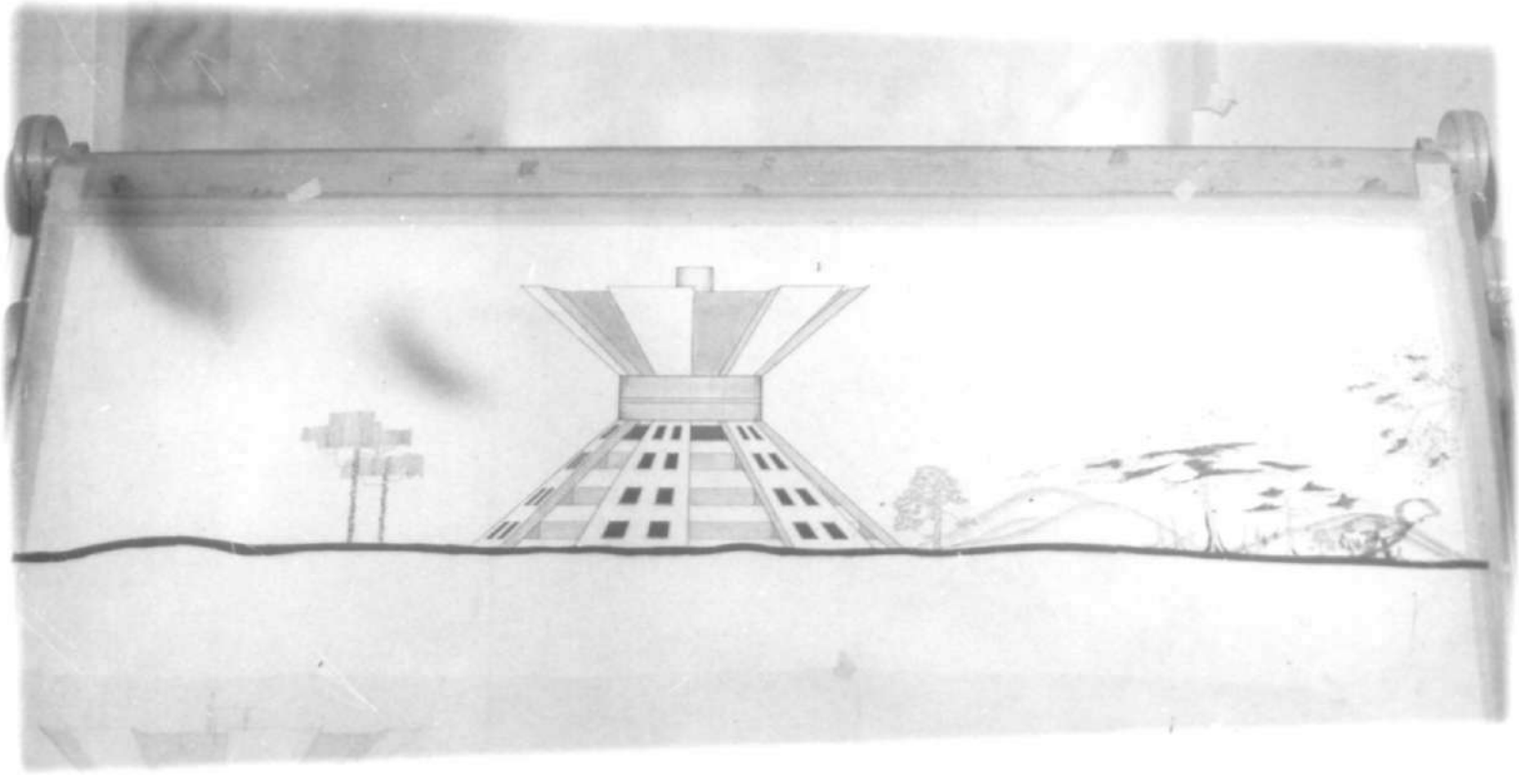
	Population	Area (m^2)
Planners and Architects	4	60
Structural Engineers	2	30
Technicians and Draughtmen	10	80
	16	170

11. Capital Works.

	Population	Area (m^2)
Technical Officers and Assistants	10	80
Surveyors and Assistants	3	30
	13	110

12. Public Parks and Cemetries.

	Population	Area (m^2)
Landscape Officers and Assistants	3	36
Park Superintendents	3	30
Draughtsmen	5	40
	11	106



13. Refuse Unit.	Population	Area (m^2)
Densing Superintendents and Assistants	3	30
Messengers and Clerks	3	15
	6	45

14. Medical Officer of Health.	Population	Area (m^2)
Chief Consultant	1	30
Receptionist and Messenger	2	15
Confidential Secretary	1	10
Interview Room	1	36
	5	91

15. Health Administration.	Population	Area
Executive Officers	5	60
Clerical Officers and Assistants	6	36
Stenographers and Typists	4	20
Office Equipment Store	-	15
	15	131

16. Epidemology and Statistics.	Population	Area
Consultant Health Officer	1	20
Medical Officers and Registrar	2	30
Health Superintendents	2	20
Health Inspectors and Assistants	3	20
Typists	3	18
	11	108

17. School Health.	Population	Area
Health Sisters Incharge	2	20
Clerical Officers and Typists	2	10
	4	30

B. The third part of this design will house the post office, the ministry of information and the Kaduna Capital Development Board (KCDB).

a. The Post Office.	Population	Area (m^2)
Post Master	1	24
Asst. Post Masters	3	30
Clerical Officers	24	150
Executive Office	4	48
Public Circulation	-	100
Messengers	6	24
	38	376

b.1 The Ministry of Information.

	Population	Area (m^2)
Permanent Secretary	1	24
Chief Information Officer	1	24
Asst. Chief Information Officer	1	24
Confidential Secretary and Typists	6	45
Reception and Messengers	2	40
Meeting and Interview Room	-	50
	11	207

2. Accounts.	Population	Area (m^2)
Accountants and Assistants	3	80
Clerical Officers	10	60
Machine Operators	2	25
	17	165

3. Printing and Graphic Arts.	Population	Area
Printers	4	30
Attendants	3	18
Graphic Artists	2	20
Graphic Arts Attendants	2	12
Equipment Room	-	50
	11	130

4. Internal Audit.	Population	Area (m^2)
Auditors and Assistants	5	60
Audit Clerks and Assistants	8	48
	13	108

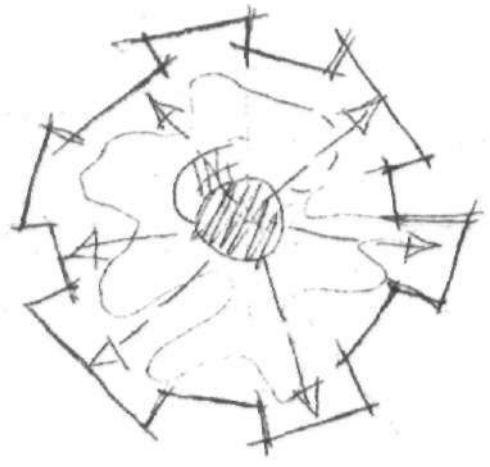
5. Requisition and Supply.	Population	Area (m^2)
Executive Officers	2	20
Clerical Officers and Assistants	6	36
	8	56

6. Printing and Photocoping.	Population	Area (m^2)
Printers and Assistants	4	30
Stores and Machine Room	-	80
	4	110

CHAPTER THREE - 4

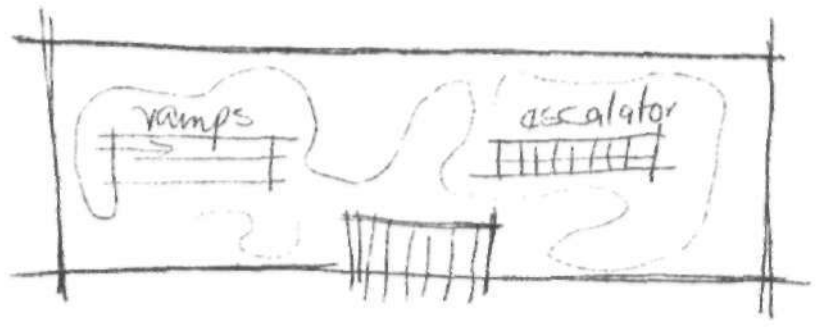
SPACES AND ROUTES.

Science and Arts Museum:



This central access of lifts and staircase offers the widest range of possibilities. The area is large enough for flexibility to be unimpaired.

Historical and Cultural Museum:



Access here also is central with ramps and escalators to carry visitors to the first floor. This gives you also a wide range of possibilities and flexibility.

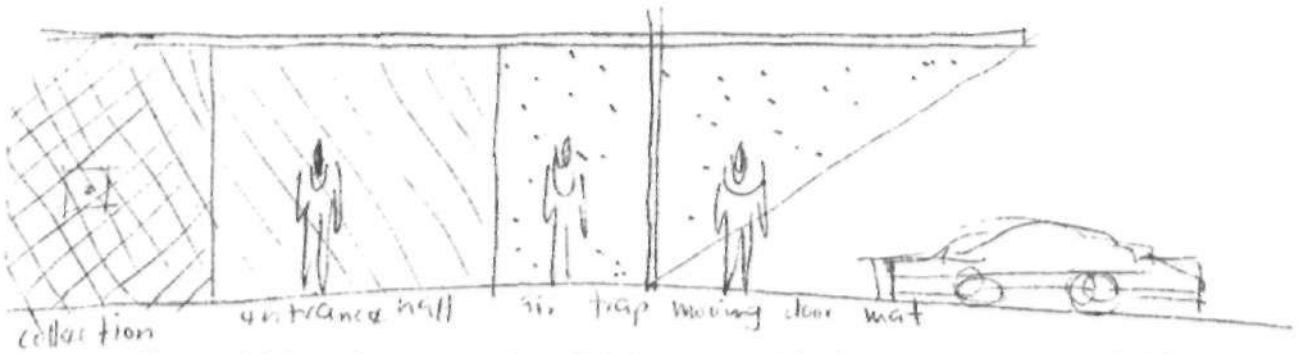
CHAPTER THREE (5)

LIGHTING.

DAYLIGHT.

In the museum it is the organ of sight which plays the determing role.

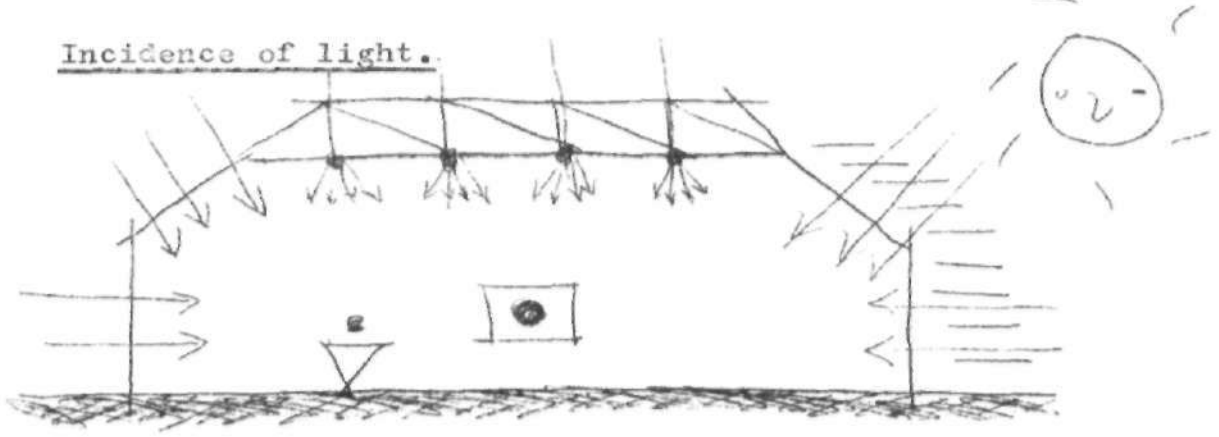
The eye is capable of seeing clearly and selectively in lighting ranging from a few lux to over 100,000 luminousity is as important here as intensity.



Transitional zone should be provided to accustomed the visitor to the new level of illumination as above.

For physiological reasons preference must be given to daylight whenever conservation requirements allow this (for sculptures for example). In most cases, however, a device should be interposed so as to subdue the light (e.g screens), The question of whether diffused light or moving projected shadowas are acceptable will depend on the aim of the presentation.

Incidence of light.



Vertical light is approximately twice as bright as horizontal light and is generally diffused by means of aspecial covering suspended beneath and screening the outer roof covering.

Light which is mainly horizontal may be better controlled from the climatic point of view of one faces away from the sun. There is a great psychological advantage in letting the light penetrate the rooms unchanged and unhindered; care must be taken only to avoid reflection from the environment (houses, tree, etc). Certical lights must be subdued by sun-blinds, so that they reach exhibited interiors as diffused light.

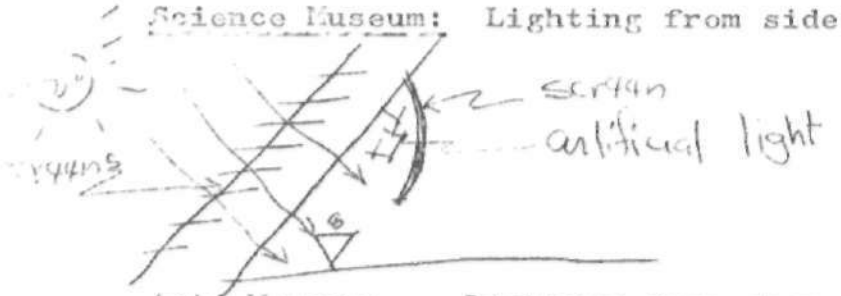
> "The choice is thus not merely a matter of lighting techniques and organization, but also envinces a philosphical and aesthetical proference for simplicity and natural affects. A combination of diffused vertical light, as basic ambient lightin and oblique or horizontal light in order to pinpoint the object, has proved satisfactory from the physiological point of view since it is relatively balanced"
>
> Lehmbruck

> "The direction of the light has a great influence on the over-all architectural design, If overhead lighting is chosen, the exhibition sector can cover only one floor. When side-lighting is chosen, the depth of the building from back to front is limited and if a north light is prefered it is impossible to avoid a stereotyped positioning of the building from the initial stage onwards, therefore, it is necessary to study the content of the collection in order to examine the various possibilities for lighting techniques"
>
> - Manfred Lehmbruck.

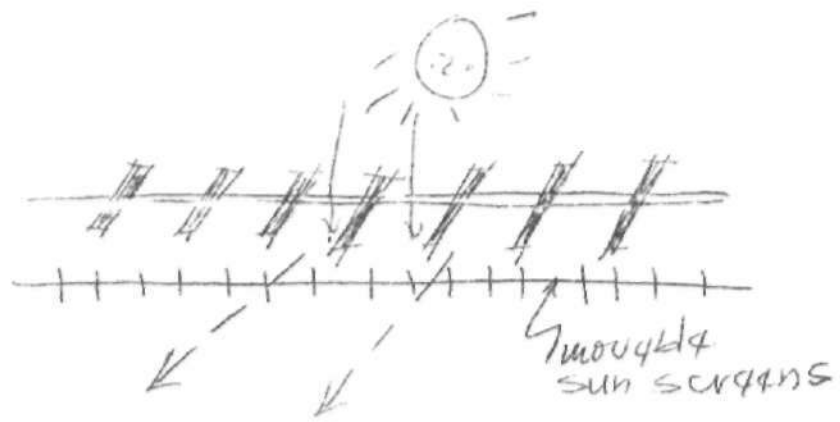
Light directed along the same axis as the line of vision gives no contrast and makes perception of space more difficult; light coming straight from above projects heavy shadows and distorts perception; light coming obliquely from above and from the side in relation to the line of vision facilitates perception. These considerations are valid also for painting.

With this regard the design has taken into consideration the above.

Science Museum: Lighting from sides



Arts Museum: Lighting from above.



Recommended levels of illumination for various activities:

Reading	300 lux (in library reading rooms)
Engine assembly	500 lux (in factories)
Serving	1000 lux (in factories)
Instrument assembly	1500 lux (in workshops)

MUSEUMS:

Recommended Maximum Values illumination objects	Recommended Maximum value of illumination
1. Objects insensitive to light, e.g metal, stone, glass and ceramics, stained glass, jewellery, enamel	Unlimited, but in practice subject to display and radiant heat considerations.
2. Oil and termpara painting, undyed leather, horn, bone, ivory, wood and lacquer (oriental and European)	150 lux
3. Objects specially sensitive to light e.g textiles, constumes, water colour, tapestries, prints and drawings, stamps, manuscripts, miniatures, paintings in distemper media, wall papers, gouache, dyed leather, many natural history exhibits, especially those including skin and botanical specimens.	50 lux

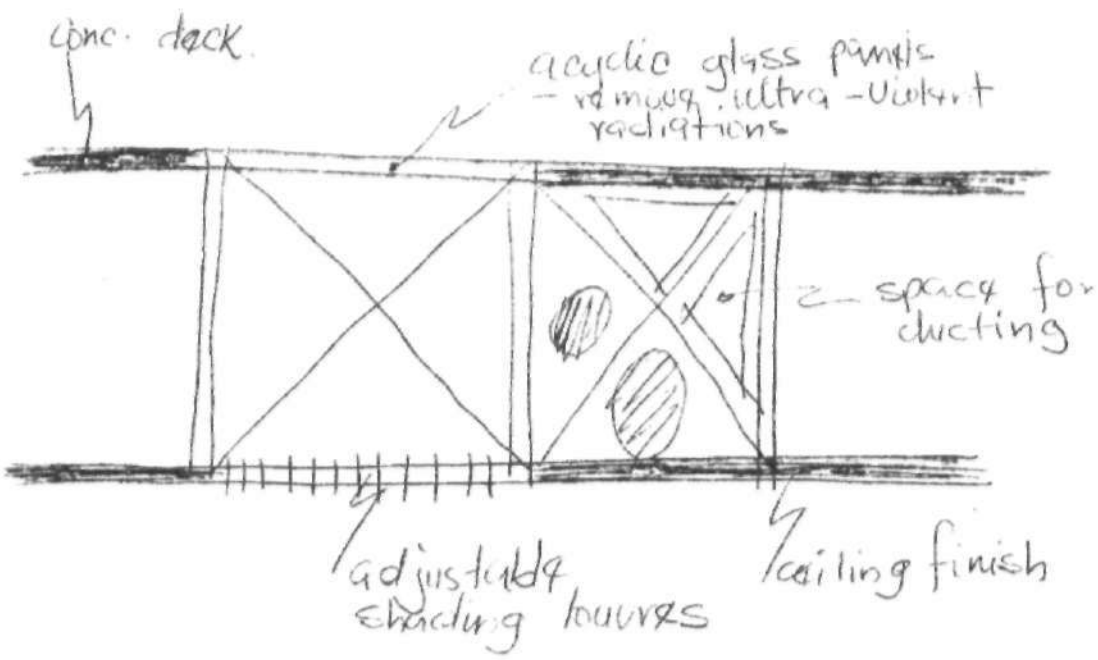
As it is both intensity and duration which will cause deterioration, the total exposure time is important: another way of expressing the upper safe limit would be in the case of the second category of objects; 500,000 lux hours per year: this is equivalent to 150 lux during normal hours of opening.[54]

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54. Sources: IES Technical Report No. 14 1970 lighting of art galleris and museums, IES code, Interior lighting 1973 G. Thomson (National Gallery London).

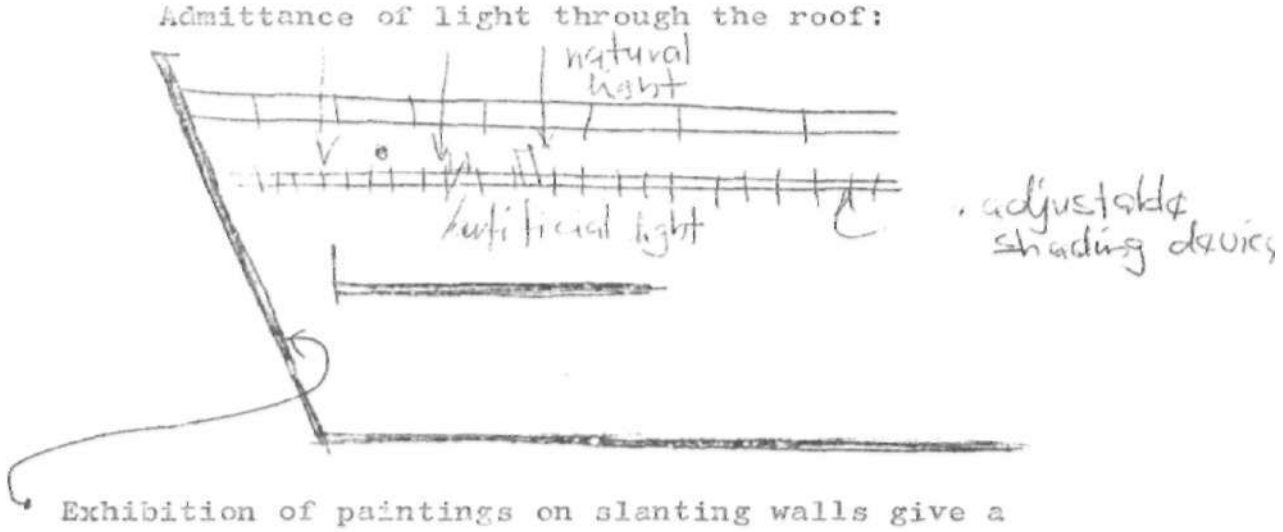
Light into Historical and Cultural Museum.

Admittance of light is through the roof only. Shading devices are used to control the intensity. Special acyclic glass panels are used as roofing material so as to remove the damaging ultral-violent radiations.

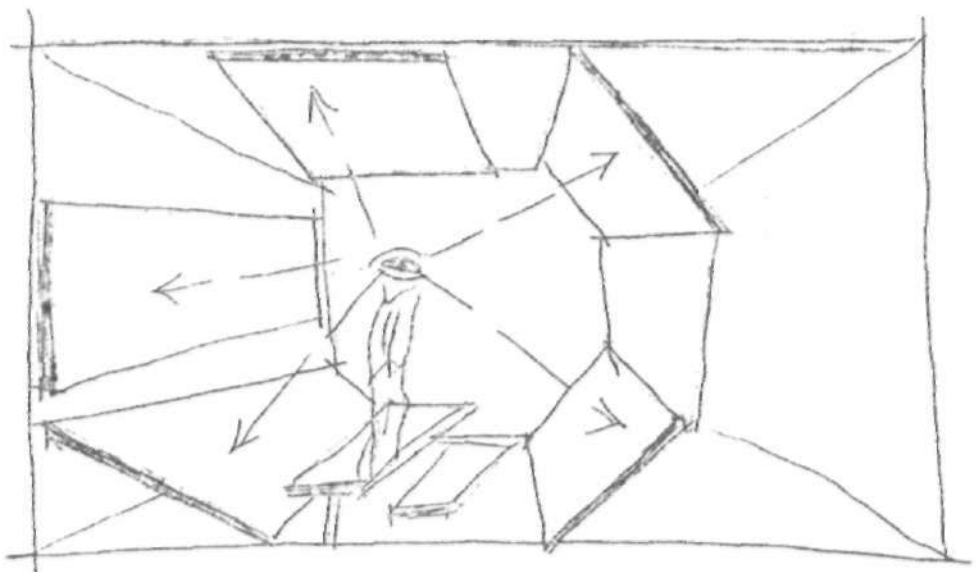


Light into contemporary and Modern Arts.

Admittance of light through the roof:



Exhibition of paintings on slanting walls give a different and better viewing. It is too demanding and tiring when the eyes views only in vertical planes. (See below).

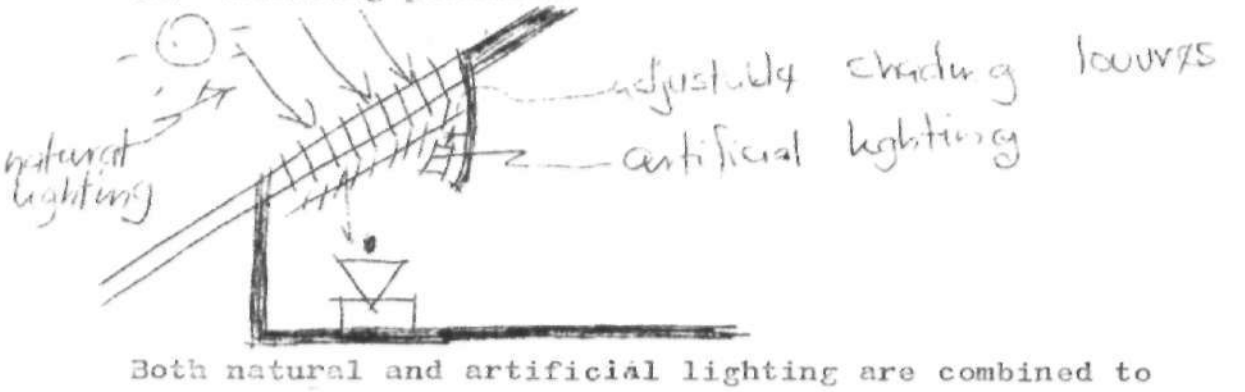


Herbert Bayer's diagram shows the position of some possible display surfaces.

Light into Science Museum:

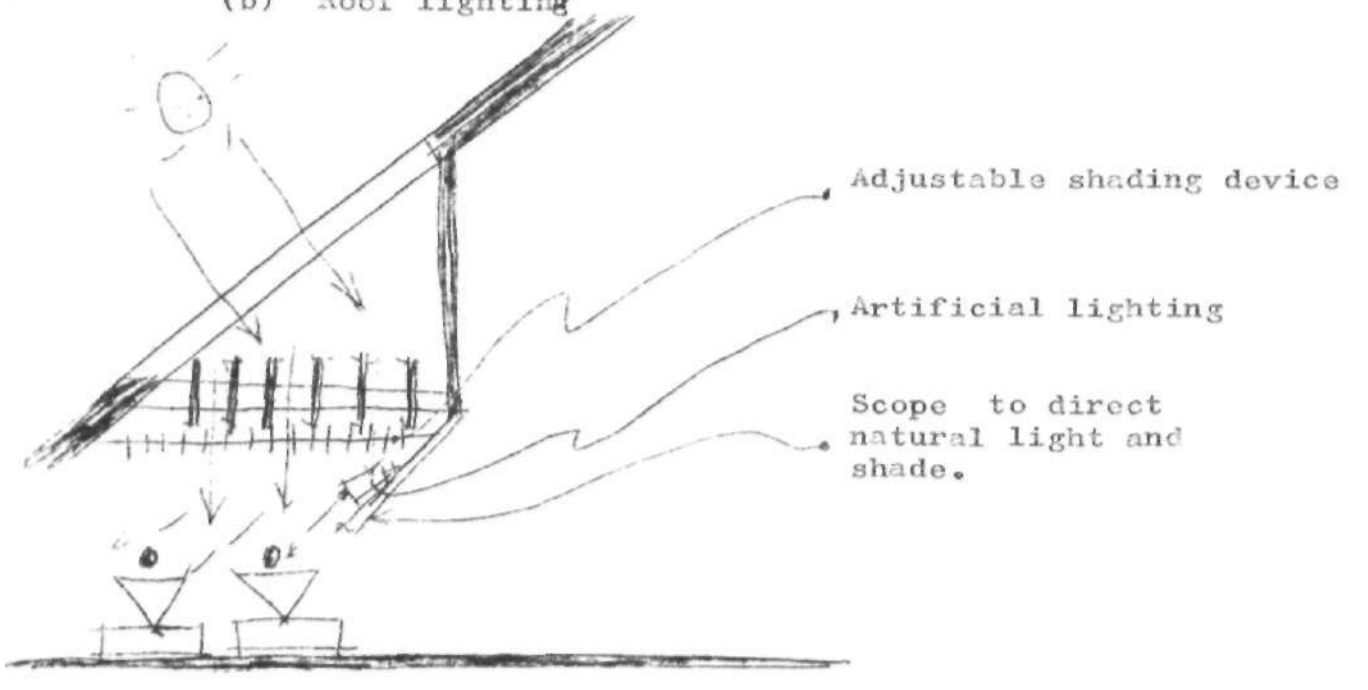
Admittance of light is through two directions.

(a) Slanting position



Both natural and artificial lighting are combined to light the exhibitions. According to Manfield Lembruht, this is the best possible way of museum lighting (natural and artificial).

(b) Roof lighting

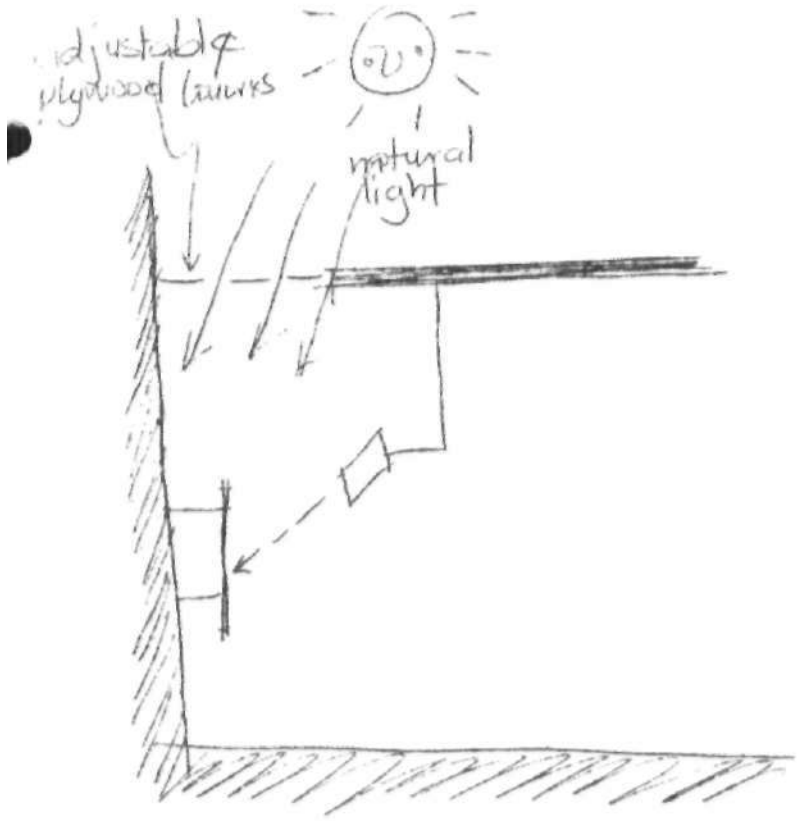


Artificial Lighting:

The exclusive use of artificial light presents great advantages: (1) it is possible to regulate to a large extent the intensity and the spectral composition of the light; (2) sources of lifht may be arranged flexibly and made to pinpoint the objects.

The disadvantages: (1) monotony, which deadens the physiological reactions; (2) the difficulty in regard to how contast are to be distributed; the resulting rise in temperature (especially where incandescent lamps are used).

Artifical lighting has great advantages for freedom of planning. A study in depth may make it possible to eliminate causes of discomfort such as dazzling, reflections, viewing distance, etc.



All glass show case set against the wall, with continues groves for holding display filments and shelves in daylight. Wall case, cross-section. Owing to the use of both natural and artificial light the show case is more brightly lit than the visitor's area and reflection cannot occur,

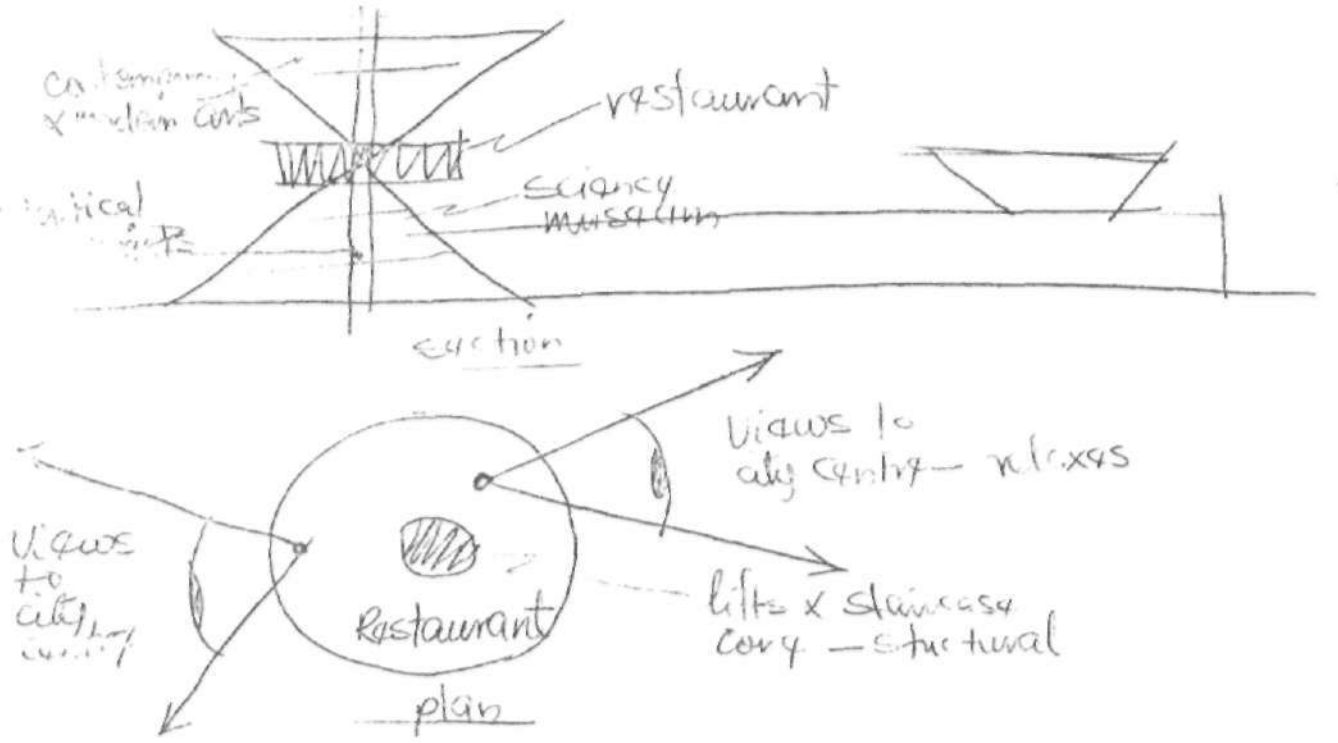
Arch: Manfred Lehmruck.

The argument that modern man lives in any case in an artificial environment is a further reason for refusing to accept this solution for museums. The museum should be a place of authenticity, with regards both to the objects and to the environment. The museum should not function according to the laws of the world or production, but according to those of the natural environment.

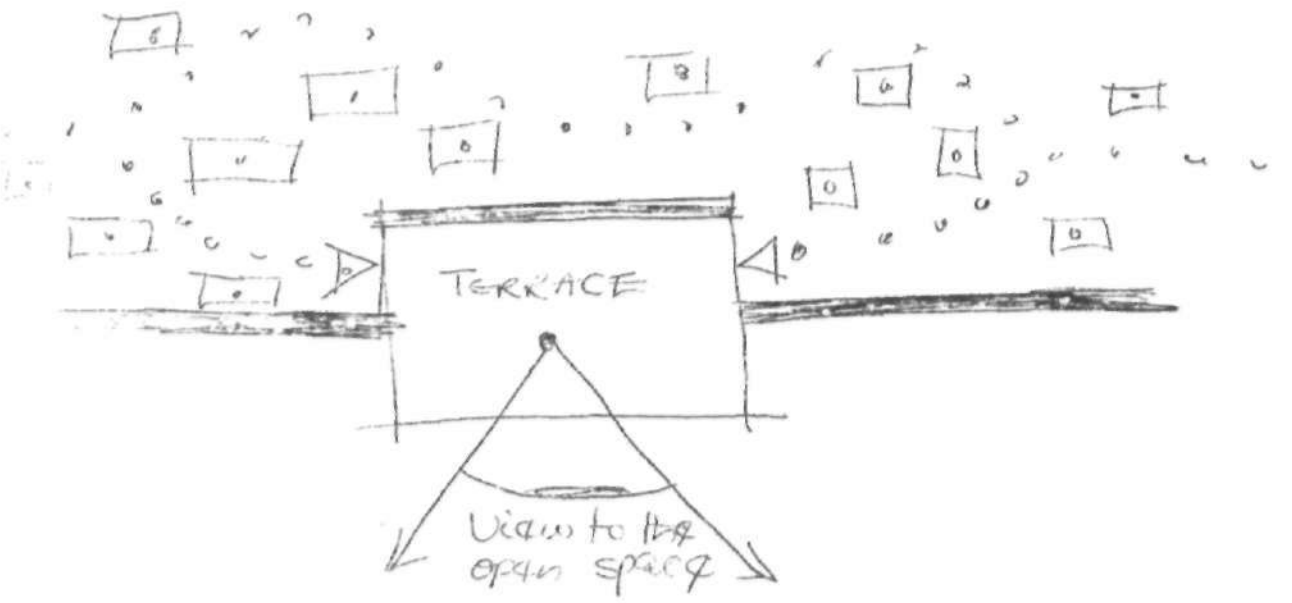
CHAPTER THREE - 5

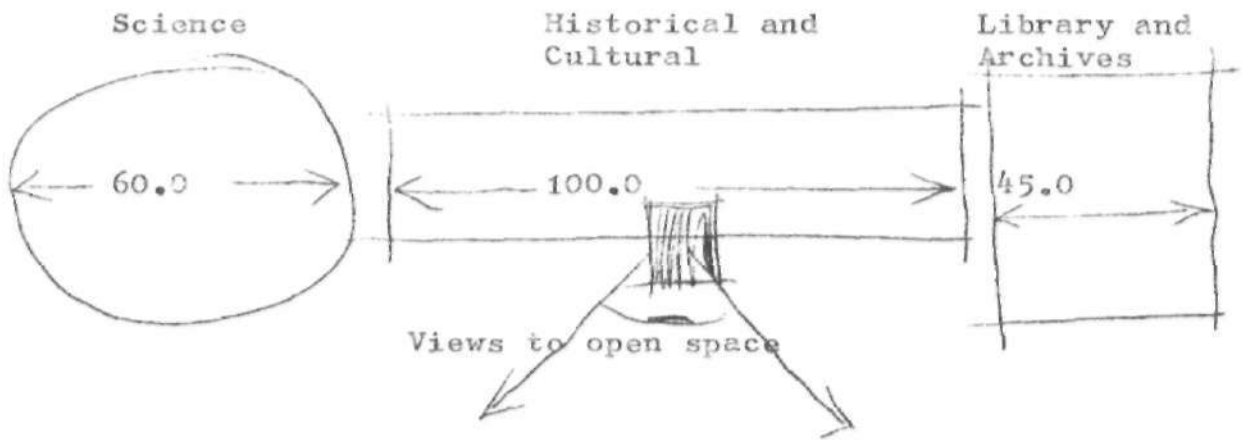
RELAXATION.

Relaxation points are placed within the museum considering the linear distance of 2,000m^2 at which a normal human being after covering should be tired. And were the designer thought normally people will want to rest there. There are two main rest-stops:
(a) the restaurant which connects the Science and Contemporary arts museum.



(b) the relaxation terrace in the centre of the historical and cultural museums' first floor.





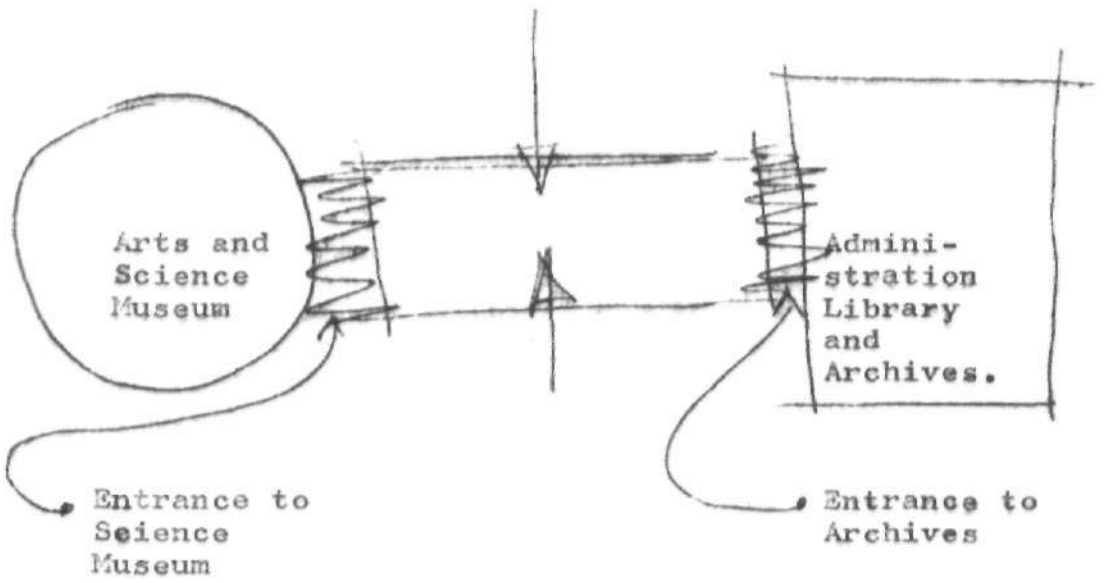
"As the eye normally leaps from one object to the other, the fact of concentrating on static forms and colours requires an effort which may be measured by the contraction of the pupil. To compensate, the eye must be given the opportunity of moving, according to a certain rhythm, from near vision, which is fairly tiring, to distant vision, which is relaxing, from bright colours to resful neutrality, from light to dark, from small to large and vise versal"

- Manfred Lehmbruck.

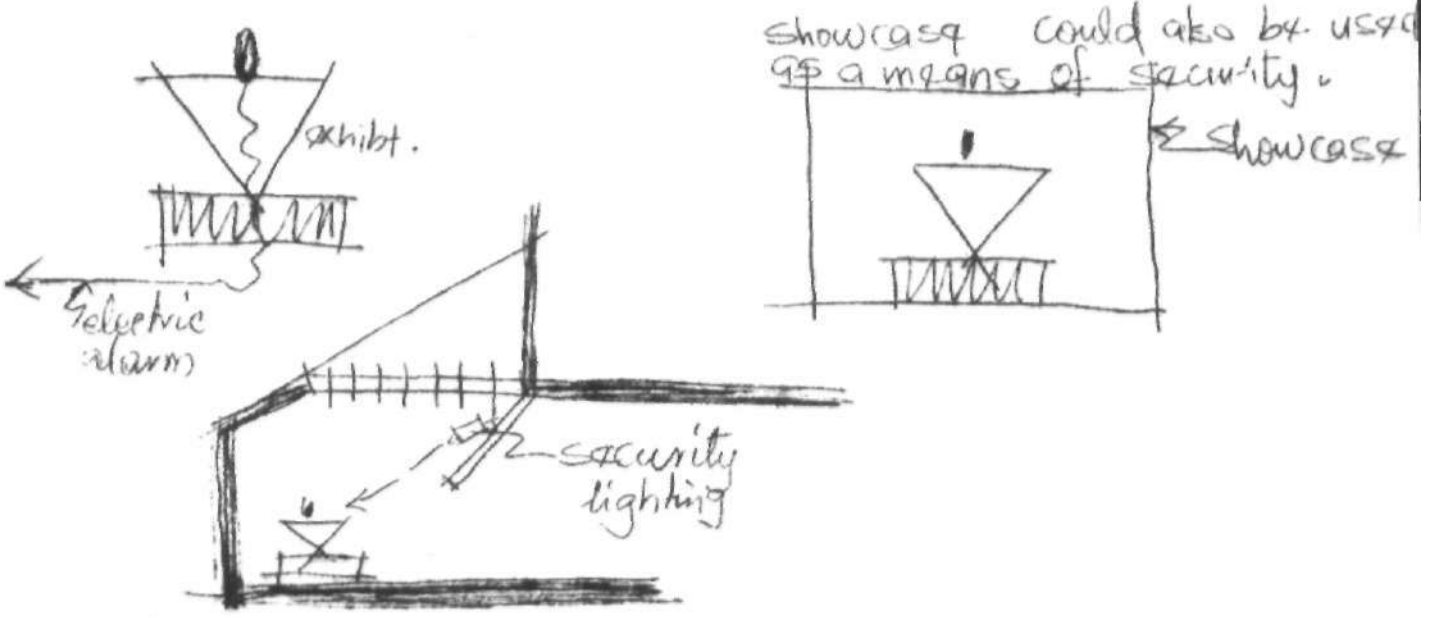
SECURITY AND FIRE CONTROL.

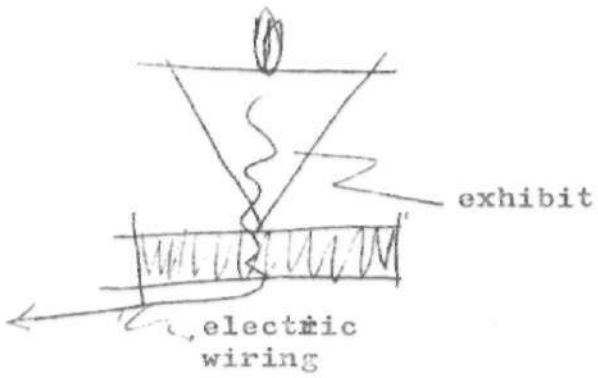
Security:

There are two main entrance points in this complex. One to the Science Museum and the other to the Administration and Archives. These points are placed on the ground floor with vertical movements to the cultural and historical museum above.

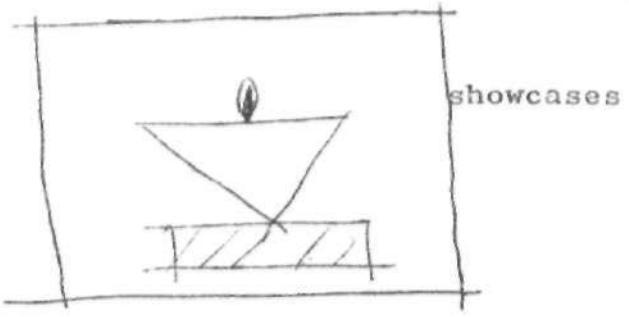


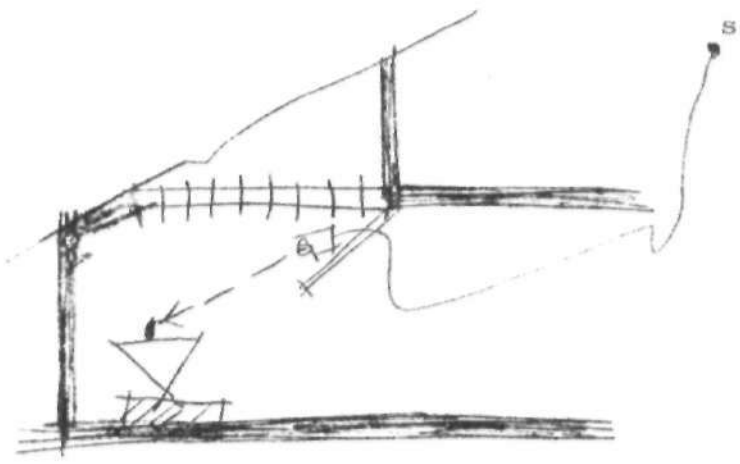
These entrances are kept under special security locks after closing hours. High security exhibits are to have electric alarm connected to it or light beams so as to trigger off an alarm in case of theft.



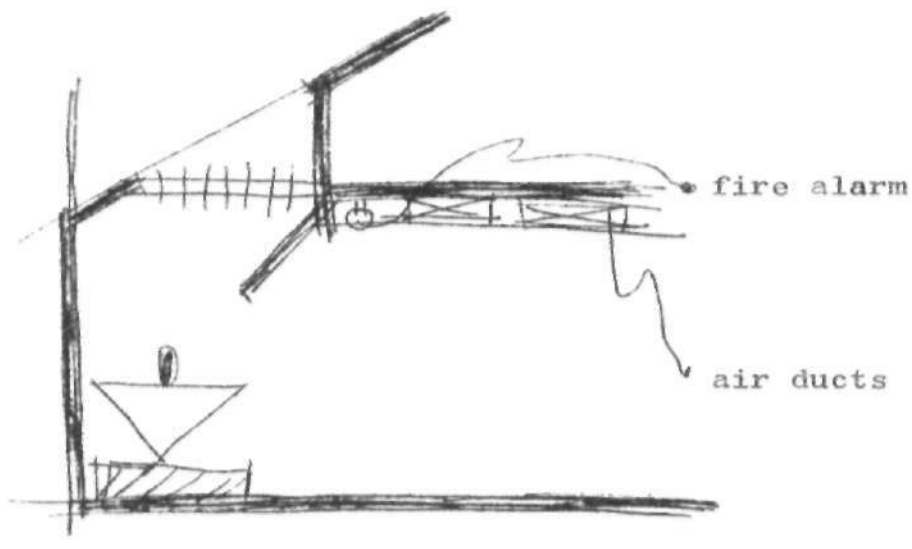


Show cases could also be used as a means of security.





<u>Fire Alarm:</u> will be connected to the lighting systems.



CHAPTER THREE - 6

DESIGN CONCEPTS.

1. Match the scale of the Museum complex with that of the city centre.
2. Revine some of the old aspects of the city in modern terms by placing the buildings some distance from the roads and pedestrians pathways to be defined.
3. Harmoninze the buildings with the form of the site by a L-shaped floor plan or organised activity patterns if possible.
4. Put the auditorium, which by nature must have vast spaces in the centre of the site where it is not directly vissible from the side walk or push it underground.
5. Put the open air theatre in the southern part of the cultural area where it has the best possible orientation.
6. Blend the exterior with the site to a maximum degree by using an image that has the warm traditional Hausa forms.
7. Use an over-all hot and cool colours to contrast.
8. Rejection of the design concept seen on the city centre master plan.
9. Taking advantage of the site to facilitate sewage and surgace drainage.

SITING:

The museum is sited in Kaduna because;

1. It is the state capital of Kaduna State.
2. The most commercial town in the state.
3. Has the highest population compared to any other town within the state - (600,000).
4. Central position to most excavation sites within the country.
5. Has alot of tourist visitors into the town so this will serve as good tourist attraction.
6. Has a temporary existing museum with only 20% of its artifacts in exhibition - which implies need for a bigger museum.
7. It is a cosmopolitan town.

COMPOSITION:

Museum galleries, Theatre, Restaurant, Library, Open Spaces for displays, Archives, Storage, Laboratory, Administrative Offices, etc.

DEFINITION OF COMPOSITION:

a. Museum Display - This is where the actual display of the antiquities will take place. The area of this varies greatly since only 50% of the antiquities that goes into museums are on display at the best. To ascertain the number of antiquities to be displayed is also not easy since this vary from town to town and on the administrative set-up. The more the research into getting antiquities the more there will

be to be exhibited. I will however design a museum with the future expansion in mind. Since afterall museum is a growing organisation.

b. Theatre - This is for lectures and film shows which will occassionally take place especially when students are on tour. The provision of this is to house a normal theatre capacity of about 400 persons.

c. Library - The seating capacity of this library will be about 200. This is also because the library is just a part of the meseum. For those who have related studies with museum objects. The library will contain shelves for the display of these antiquities so as to give the individual an opportunity to be able to see and review at close look the subject matter.

d. Restaurant: Museums nowadays make this provision. So as to break away from the old tradition that museum is solely a place for the display of antiquities only. This gives a sought of rest refreshment point from where you contine your viewing or rest finally after viewing. This will also attract people to the museum. The restaurant here is to the museum as a swimming pool is to the hotel. Where it is not the most important part but most exist so as to pull "market".

e. Open Spaces: - This is a provision made for the display of sculptures and other antiquities which are of large sizes. These usually are of weather resistant elements. All exhibited materials are passed through the laboratory for treatment.

f. Laboratory - Where all the antiquities pass through for treatment. It is an important part of the museum which is always neglected. Broken parts are replaced and coated with resistant chemicals to weathering, insects, etc. The laboratory here is a complicated part of the museum which needs expertise. This is placed near or within the storage area.

g. Storage: All has been observed that the materials which go into the museums, at best have only 50% of it exhibited. The remaining are kept in the store. This implies that the storage space should be big enough to take them In my own case of the museum, I will rather prefer I have about 80% of the materials on display than

However mystorage space will be big considering the future since museum is a growing business, what ever the storage space it will never be too big. This and the main galleries are where we shall have the maximum security systems.

h. Archives:- This is a storage on presentation place for government or public records. Design similar to library where public can have access to the records except those that are secret.

i. Administrative Offices -

1. Curator.
2. Deputy Curators.
3. Executive Officers.
4. Assistant Executive Officers.
5. Clerical Officers.
6. Assistant Clerical Officers.
7. Stenographers.
8. Typists.
9. Machine Operators.
10. Chief Driver.
11. Chief Mechanic (Workshop).
12. Assistant Clerical Officers.
13. Telephone Operators, Cleaners, Security Guards, etc.

j. Documentation:- (including photography)

This department documents the Nigerian cultural heritage through the production of film strips, sound recordings, slides, photographs, and other visual aid materials including graphic arts.
The photographic section is especially important during archaelogical fieldwork, architectural and social occassions.

DESIGN PROGRAMME.

a. Sources of exhibits.

b. Exhibitions in the museum.

c. Area Requirements.

Sources of Exhbits:- Arti-facts on exhibition in most of our Nigerian museums are got from excavations. Most excavations are accidental. e.g most of the antiquities got from Jos was as the result of the tin mining operations. Excavation sites could be found in other parts of the country like Nok, Birnin Gazargamu, Jebba, Warra, Old Oyo, Ife, Igboukwu, etc. (see map).

c. Exhbitions in the museum:- Will mainly be Composed of archaelogical and ethnographical findings. Though provision will be made for future so that Science and Historical exhibitions are also included.

Museum Division:

i. Administrative.

ii. Display galleries.

iii. Storage and Laboratories.

iv. Open spaces.

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4. Ducan F. Cameron (ed), Are Art Galleries Obsolete? (Peter Martin Associates, Toronto, 1960), p. 73.

5. Witlin, op.cit., p. 204.

6. Jean Gabus (ed), The Problems of Museums in Countries Undergoing Rapid Change (UNESCO), Berne-Paris, 1964) Reports and Papers on Museum, p.30.

7. The Compact Edition of Oxford English Dictionary.

8. Ducan F. Cameron, "A Viewpoint: The Museum as a Communications System and Implications for Museum Education" (Curator, Vol. 11, No. 1, p.36).

9. The four factors have been extracted from Coen's and Wright's list on page 283 in Curator, vol. 8, No. 4.

10. See F. Dandridge, "The Value of Design in Visual Communication" (Curator, Vol. 9, No. 4, p.332).

11. These are the museums where curators are more concerned with collection, preservation and research rather than displaying items to the public.

12. This diagram has been based on Berlo's* on page 72; and Cameron's article - see footnote 8.

13. See Cameron (1968), pp. 35-38, and Berlo (1960), pp. 30-32.

14. Kenneth M. Wilson, "A Philosophy of Museum Exhibition" (Museum News, Oct, 1967, p. 15). I have added the fourth group.

15. Lagos area and some parts of Eastern Nigeria have the highest literarcy rates. This is only 25% (Nigeria Year Book 1973, Lagos, Times, p. 221).

17. This list has been based on the "Core of Experience" see Edgar Dale, Audio-Visual Methods in Teaching (Holt, Rinehart and Wnston, New York, 1954) p.43.

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* See David K. Berlo, The Process of Communication (Rinehart Press, San Francisco, 1960) p. 72.

18. John R. Pierce, "Communication" (Scientific American, Sept. 1972, p. 3).

19. Edward O. Wilson, "Animal Communication" (Scientific American, Sept. 1972, pp. 29-36).

20. Helen Coppen (1970), Visual Perception (C/Wealth Secretariat, London), p. 3.

21. David K. Berlo (1960), p. 184.

22. Ducan F. Cameron (1968), p. 39.

23. Freeman Tilden has written a whole book, Interpreting our Heritage (Univ. of North Carolina Press, 1967) in which he spells out how just this could be done.

24. UNESCO, The Organisation of Museums, Museums and Monuments IX (UNESCO, Paris, 1960), p. 74.

25. UNESCO, The Organisation of Museums, p. 130.

26. Don Fabun, Communication: the Transfer of Meaning (Collier-McMillan, London, 1970), pp. 29-30).

27. M.D. Vernon, The Psychology of Perception, (Pelican Books, 1971), p. 113f.

28. Andreas Fugleasang, Applied Communications in Developing Countries: Ideas and Observations (The National Food and Nutrition Commission, P.O. Box 2669, Lusaka, Zambi, 1969), p. 54.

29. Marshall McLuha, Understanding Media (A Signet Book, 1964), pp. 259-268.

30. Jean Cabus (ed) 1964 p.47.

31. Helen Coppen (1970), p. 3.

32. This is the key idea of Chapter II of E.H. Combrich's book,, Art and Illusion (Phaidon, London, 1972), When he writes to its close: "But what matters to us is that the correct portrait, like the useful map, is an end production on a long way through schema and correction. It is not a faithful record of a visual experience but the faithful construction of a relational model". (p. 78).

33. Andreas Fugleasang (1973).

34. Jean Gabus (ed) 1964, p. 47.

35. Jean Laude (trans. by Jean Decock), The Arts of Black Africa (Univ. of Calif. Press, 1971), p. 145.

36. Jean Gabus (ed) 1964, p. 47f.

37. J. Seidensticker (ed) Museology in Nigeria (Zaria, 1976), Typescript, p. 21.

38. M.D. Vernon (1971), p. 105f.

39. Information was acquired from the Curators of the two Museums. The Annual Report of the Antiquities Service of 1952/53 indicates that the Jos Museum Library was built with this purpose in mind.

40. A.E. Parr, "Remarks on Layout, Display and Response to Design" (Curator, Vol.7, No. 2, pp. 132-133).

41. Ducan F. Cameron (1968), p. 39.

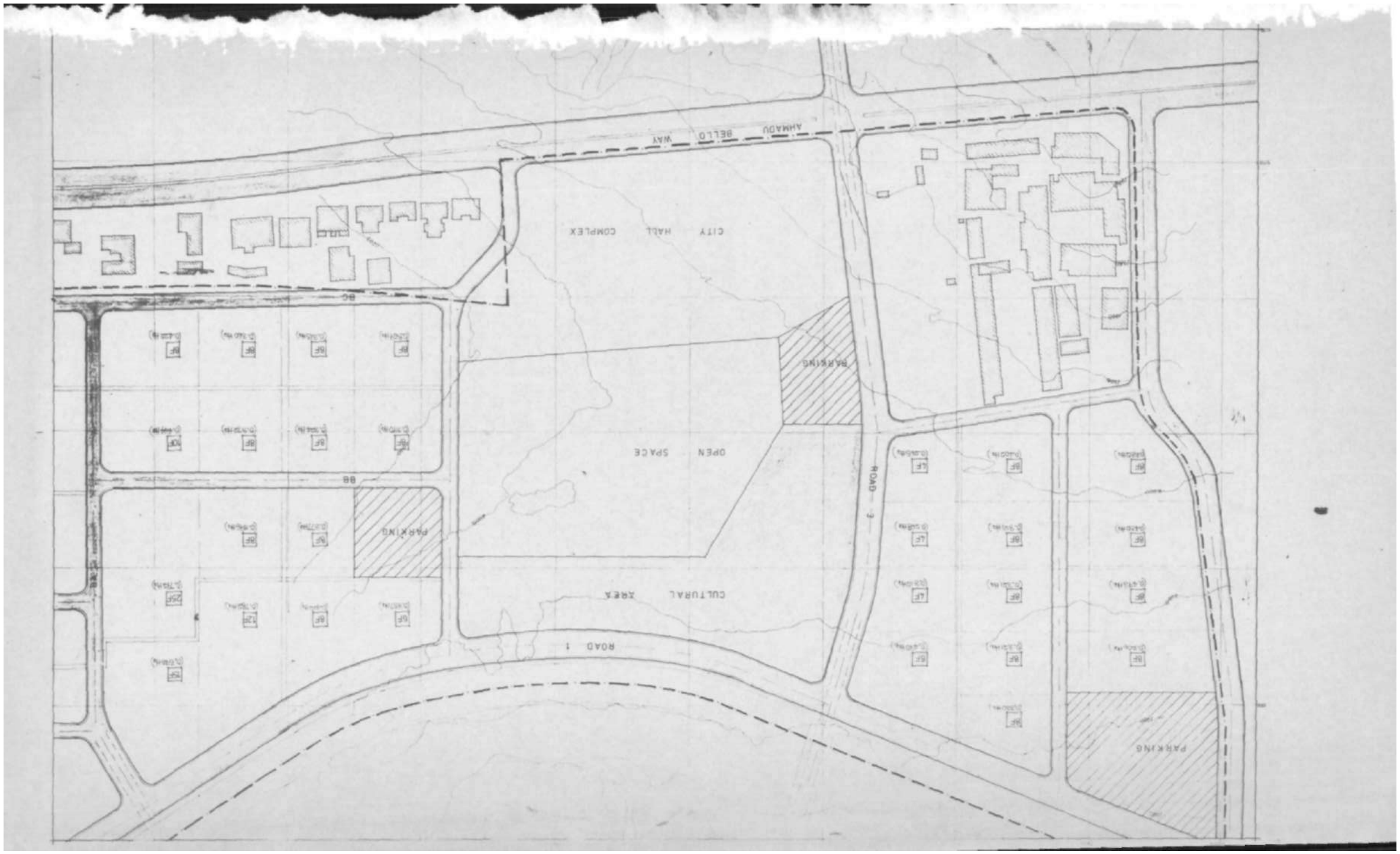
42. Mr. Jackques Mackquet in his book Africanity: the Cultural Unity of Black Africa (UCLA Press, 1972) deals with those existential experiences that make Africa a cultural entity.

43. This does not mean that all African art is religious, although quite often that is what one comes across. See Frank Willet, African Art (Thames and Hudson, London, 1971), p. 166.

44. Cuthwaite, L:, Museums and the Future. An inqury into the life and welfare of American Museums and other cultural institutions (Institute of Public Administration, New York 1967), p. 94 of the section "Text of the Report".

45. Bureaw, Introduction to Museum Work.

46. Guide to Jos Museum.


AHMADU BELLO WAY
CITY HALL COMPLEX
OPEN SPACE
CULTURAL AREA
PARKING
ROAD 1
ROAD 2
PARKING
PARKING

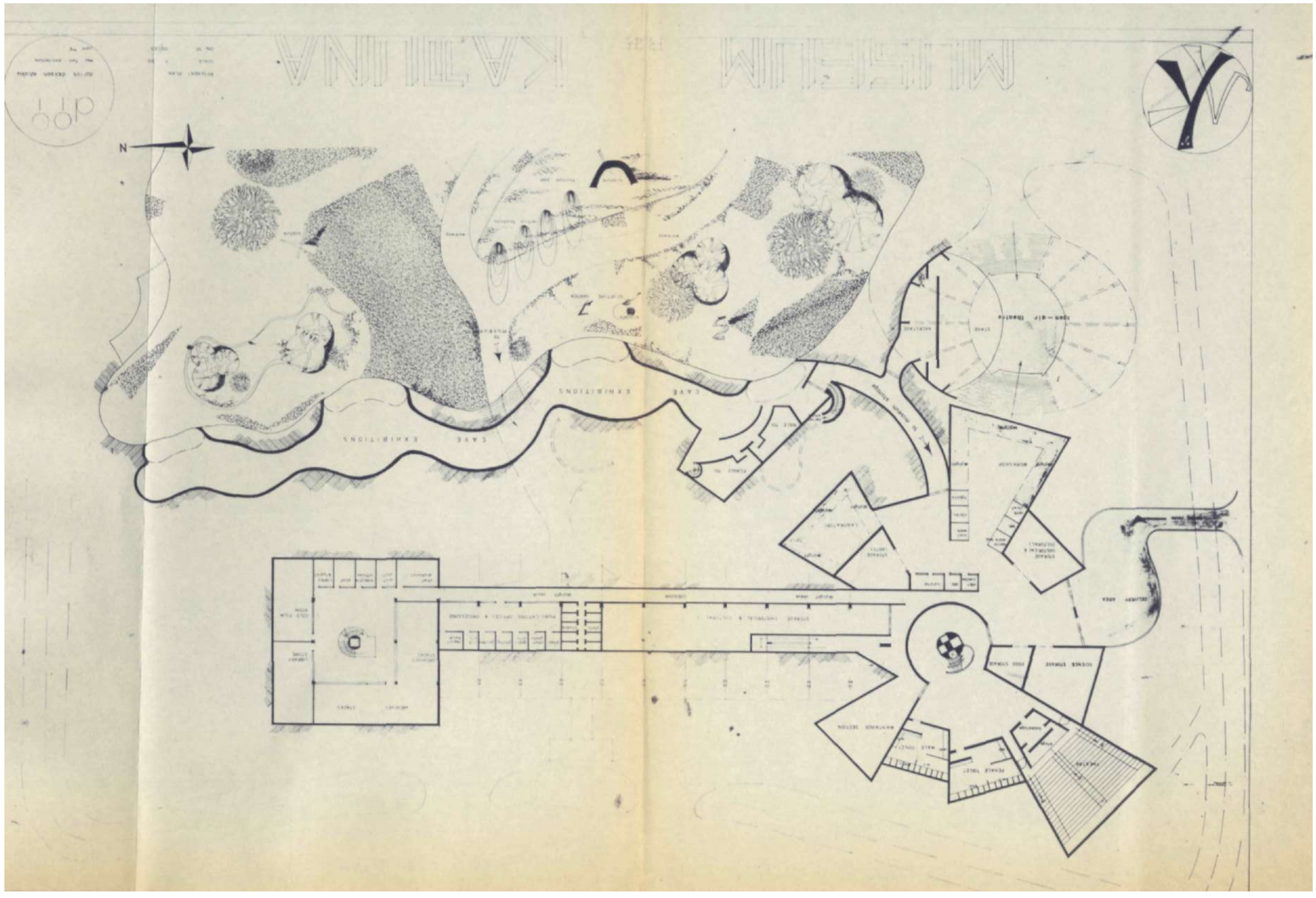
area SCHEDULE DESIGN CONCEPT

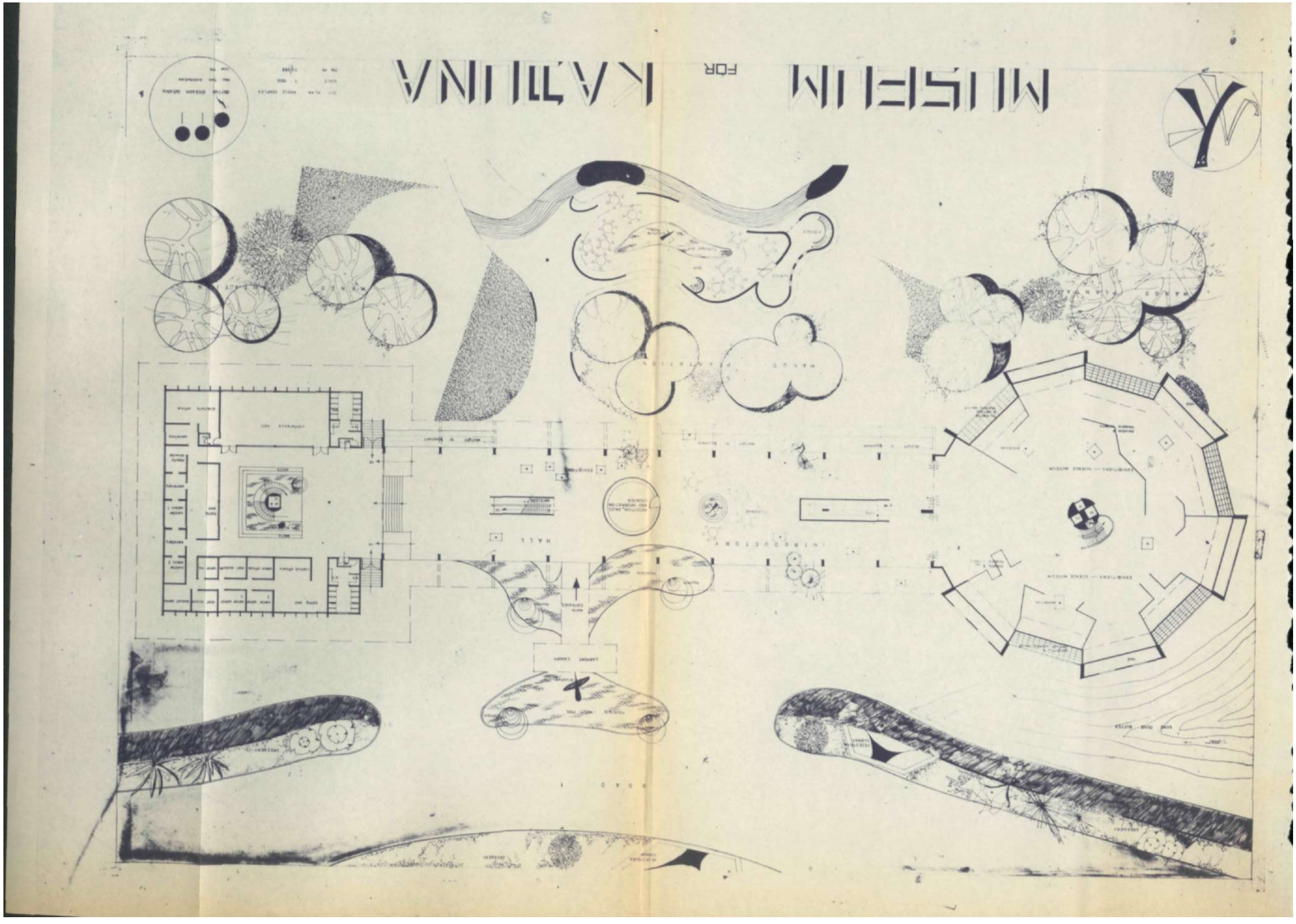
		APPROXIMATE AREA IN SQ. M.	REMARKS :
1.	PUBLIC RECEPTION & COMMERCIAL.		
2.	AUDITORIA & TEMPORARY EXHIBITIONS.		
3.	ADMINISTRATION.		ABOUT 200 ADMINISTRATIVE STAFF.
4.	STORAGE, LABORATORY & WORKSHOP.		
5.	EXHIBITION GALLERIES	15,000	12 EXHIBITION HALLS.
6.	THEATRE	500	FOR ABOUT 400 PERSONS
7.	LIBRARY	700	FOR ABOUT 300 PERSONS
8.	RESTAURANT	400	FOR ABOUT 200 PERSONS
9.	ARCHIVES	500	
10.	OPEN SPACES	10,000	INCLUDES CRAFTS VILLAGE AND TRADITIONAL REPLICAE.
11.	PARKING	7,200	EXPECTED NUMBER OF ABOUT 400 CARS
12.	TOTAL AREA REQUIRED	65,000	
13.	GROSS SITE AREA	36,000	
14.	EXTRA NEEDED AREA	29,000	THIS EXTRA AREA TO BE PUSHED UPWARDS OR DOWNWARDS AS WILL BE DICTATED BY THE SITE CONDITIONS.
15.			
16.			
	EXPECTED VISITORS VOLUME:	PRESENT TRAFFIC IN KADUNA MUSEUM IS 36,000 PERSONS ANNUALLY.	EXPECTED VOLUME IN THE YEAR 1987 WILL BE = 100,000 PERSONS ANNUALLY.

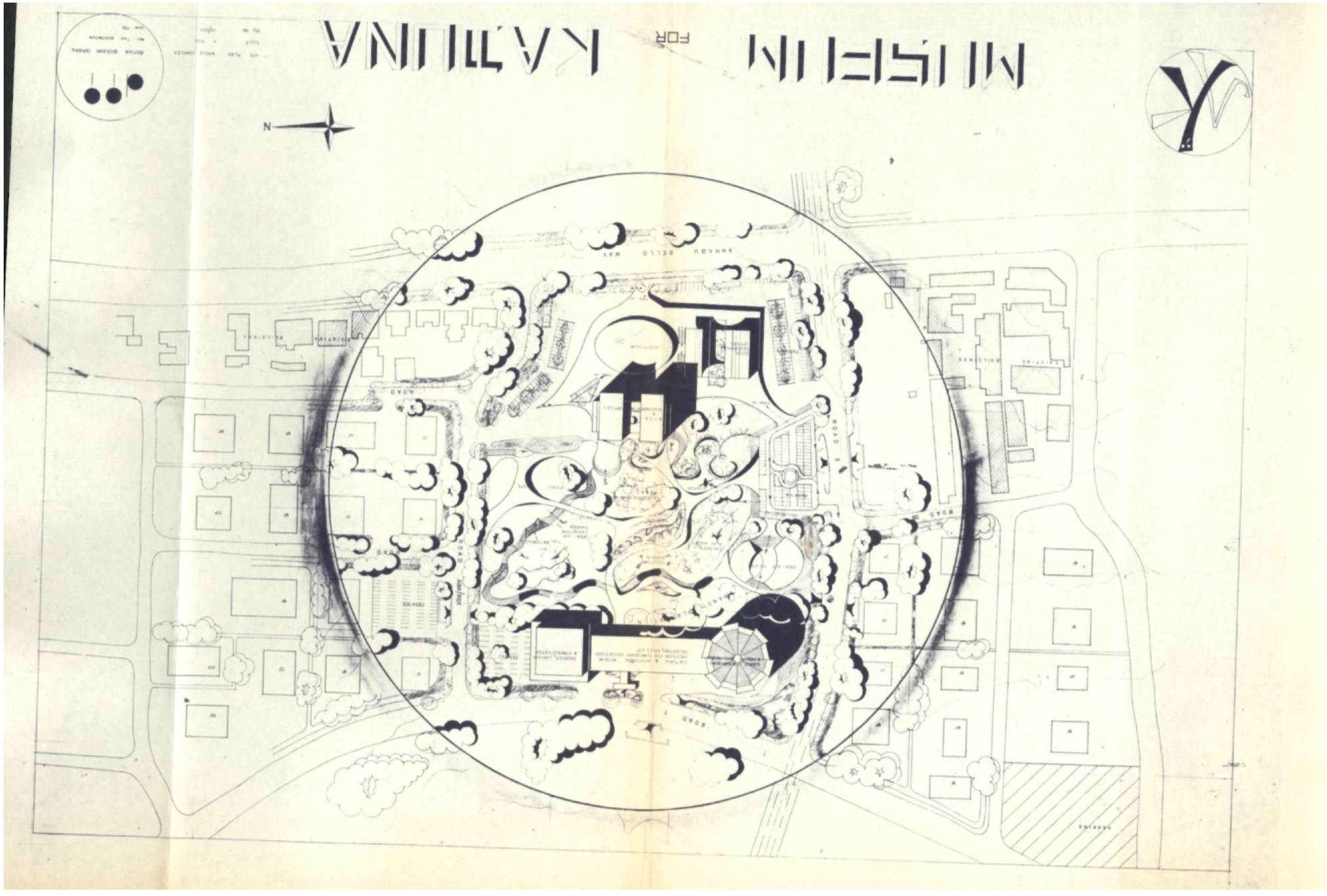
* TENSION WITHIN HARMONY THEORY :-

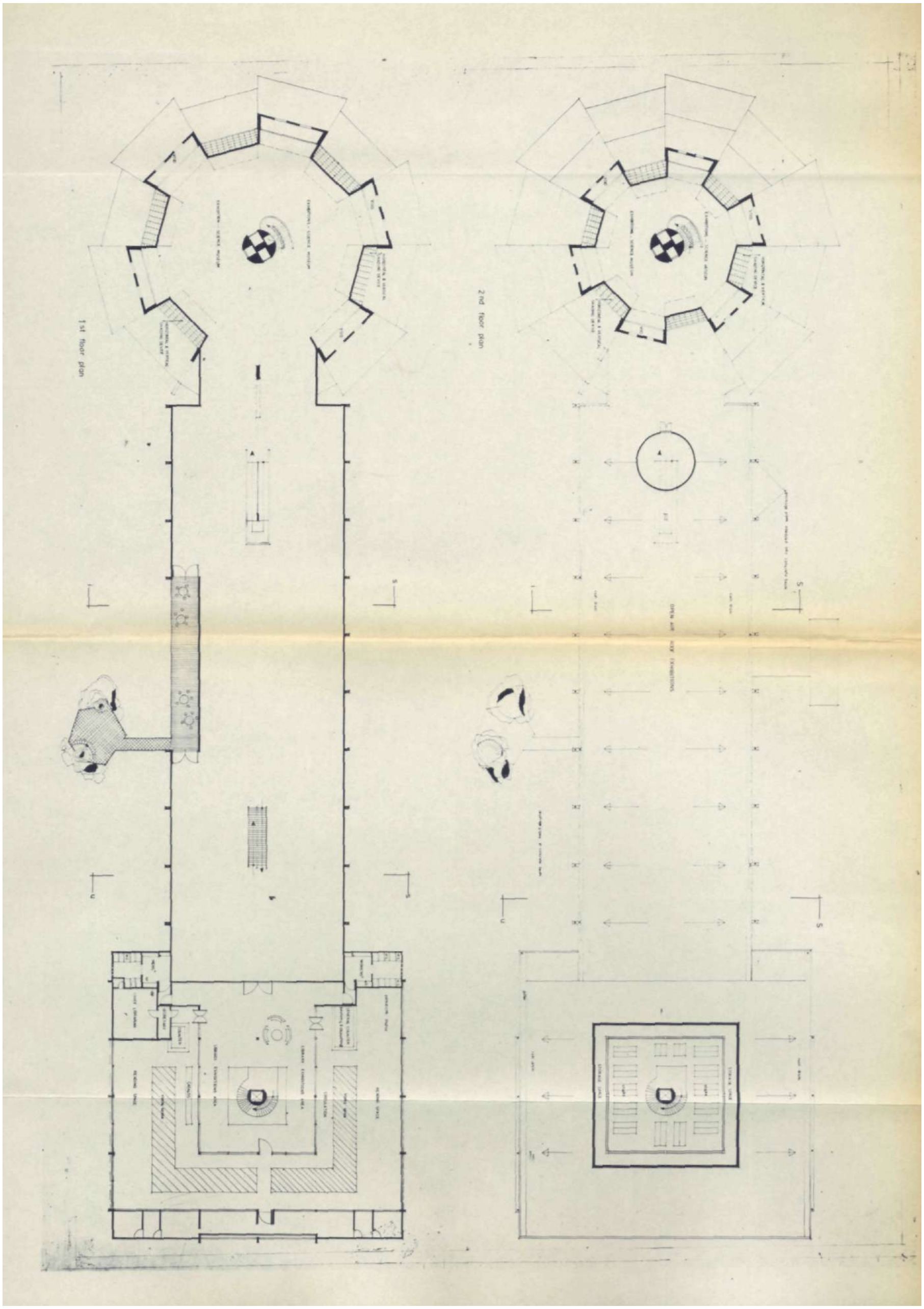
WE ALL BELIEVE THAT THE BODY FUNCTIONS PROPERLY BECAUSE OF THE TENSION EXPERIENCED & SUFFERED BY THE BRAIN AND IMPULSES RELEASED TO ALLOW ITS FUNCTIONING. THE SAME SYSTEM OF FUNCTIONING WILL BE APPLIED TO THIS DESIGN. I.E. DESIGN THAT IS ARTIFICIAL TO THE ENVIRONS, AT THE SAME TIME BLENDS WITH IT AND ALL WORKING PATTERNS.

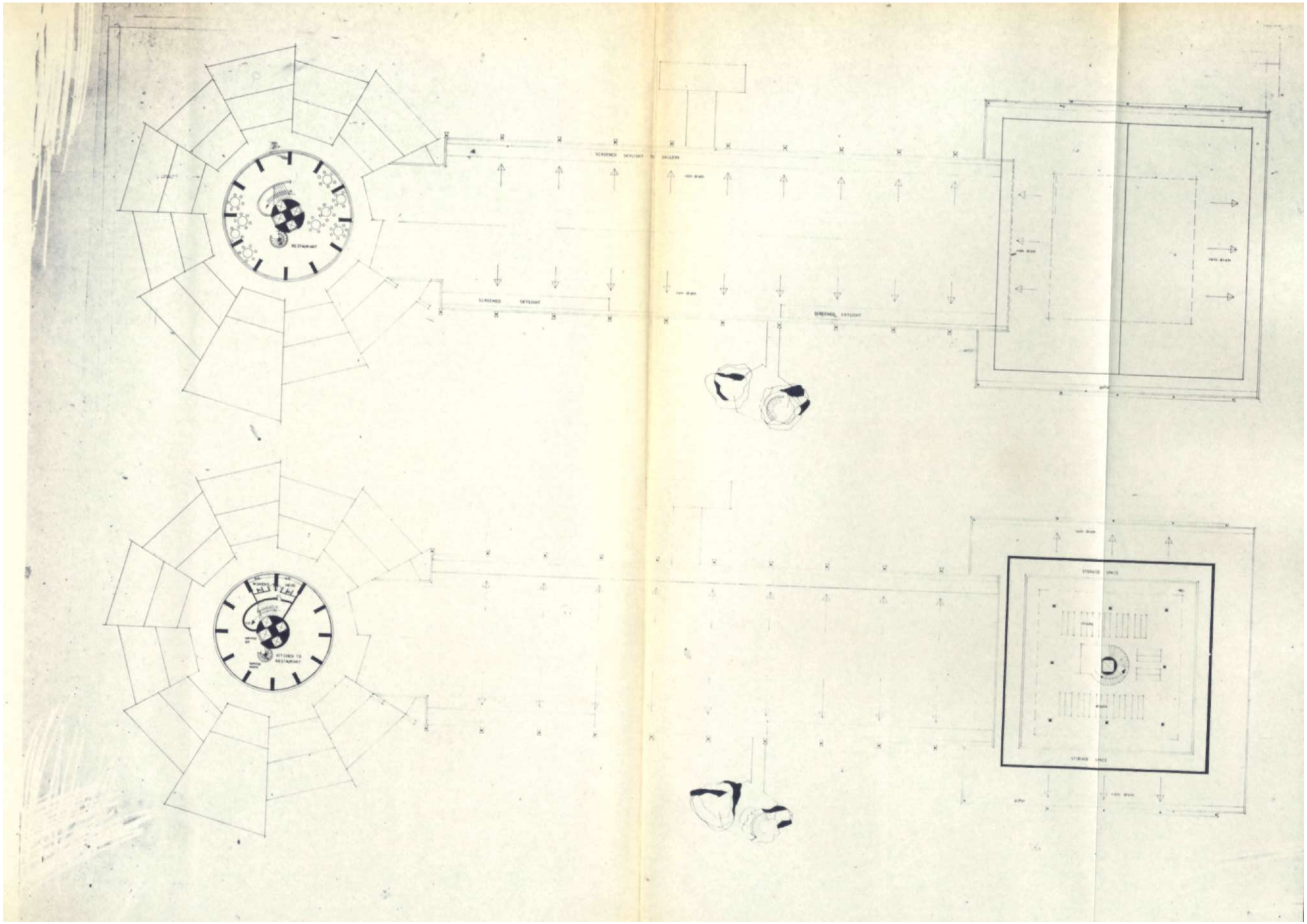
1. — TENSION WITHIN HARMONY —
2.
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7. — TENSION WITHIN HARMONY —
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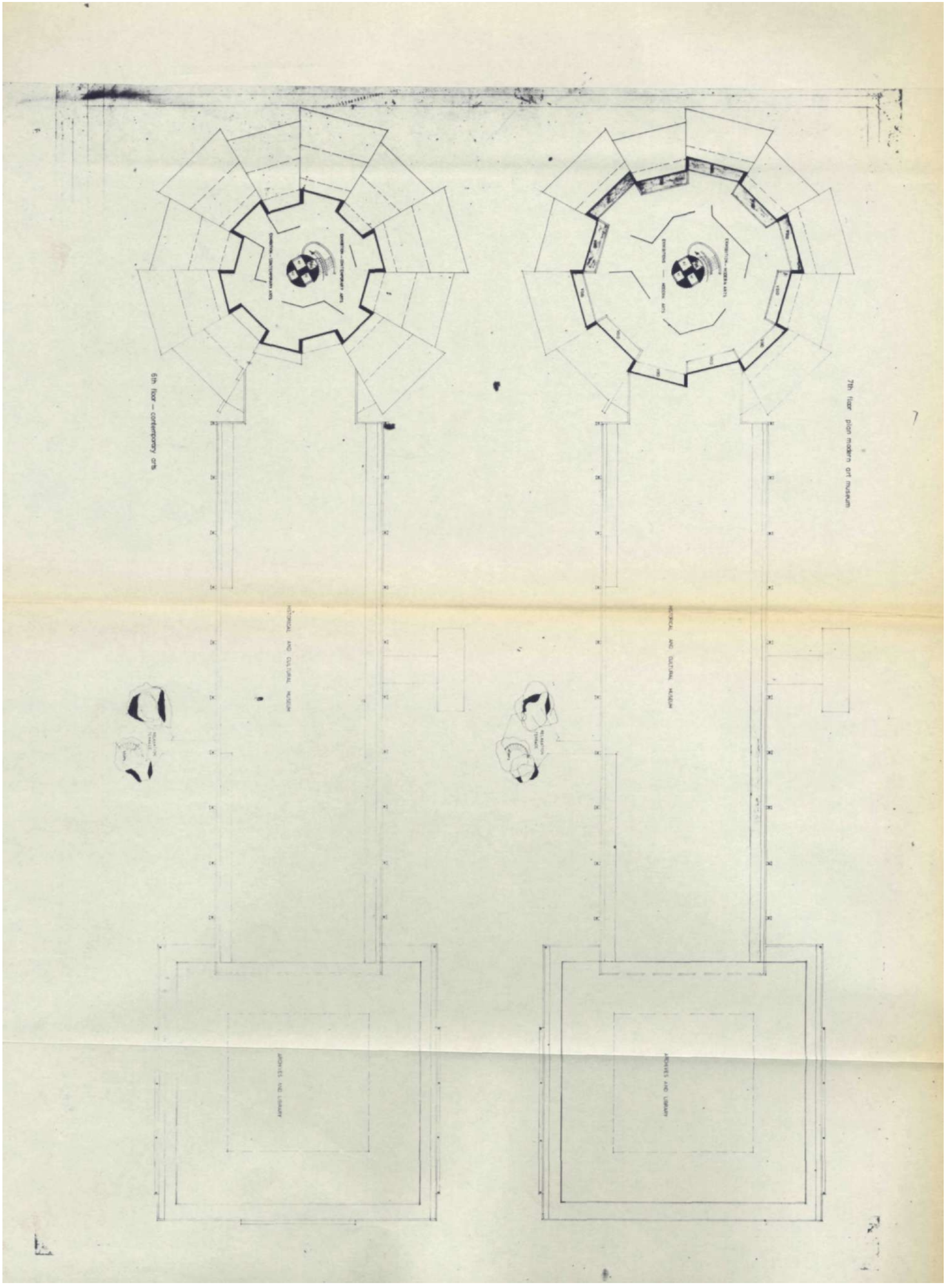

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CAFE
EXHIBITIONS
CAFE
EXHIBITIONS

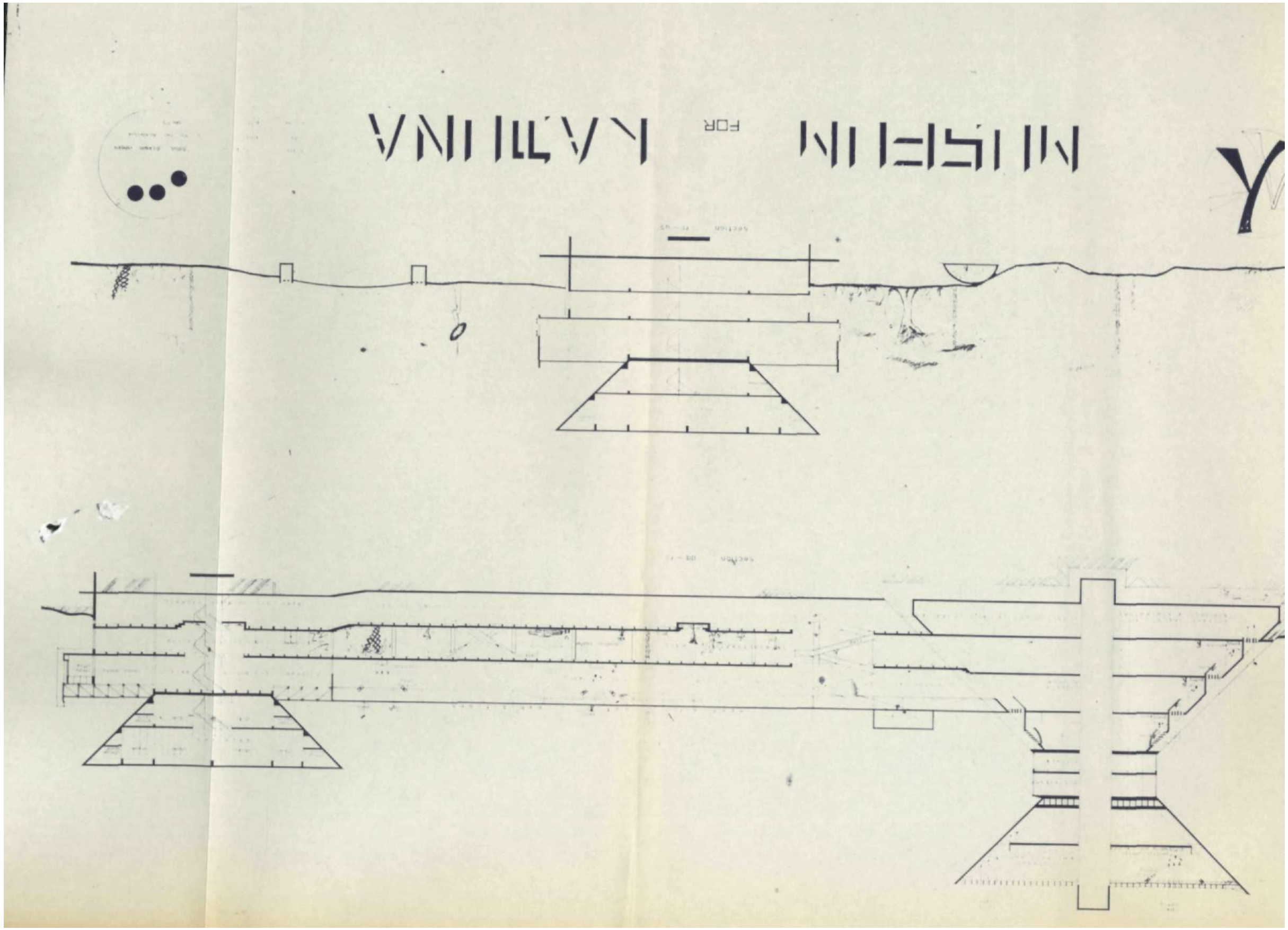

MUSEUM FOR KAMAKURA

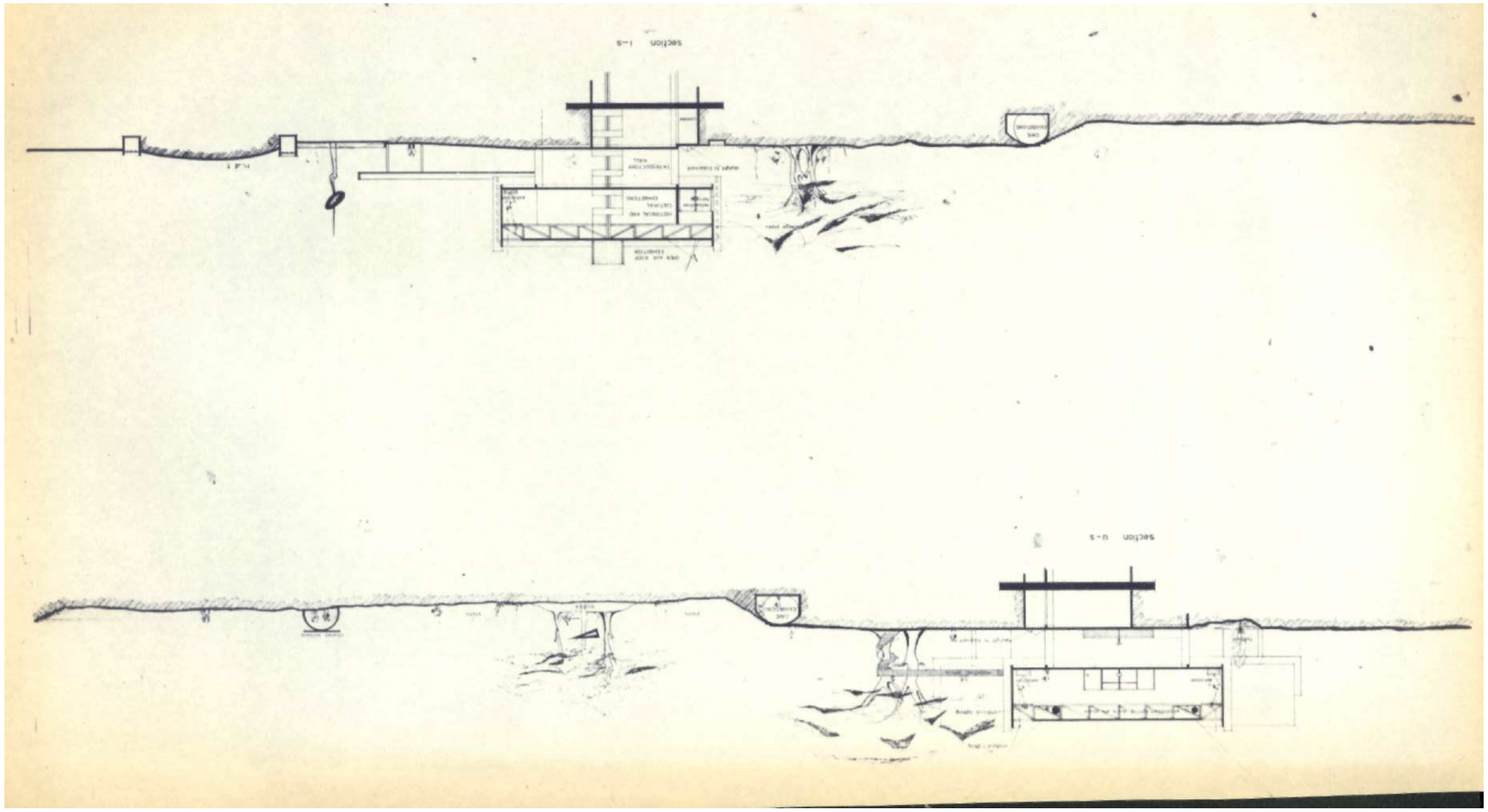

MUSEUM FOR KAMILINA
N


1st floor plan
2nd floor plan

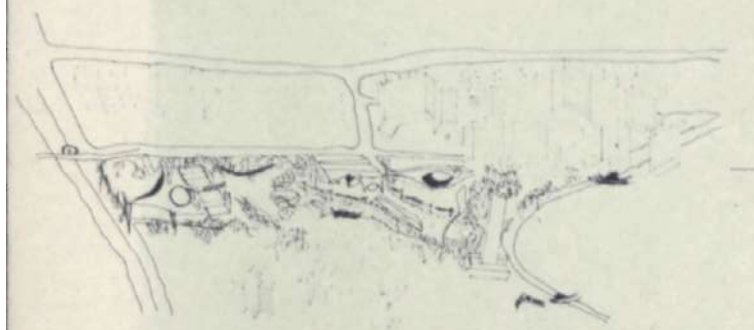

SCREENED SKYLIGHT
SCREENED SKYLIGHT
SCREENED SKYLIGHT
STORAGE SPACE
STORAGE SPACE


7th floor plan modern art museum
6th floor — contemporary arts

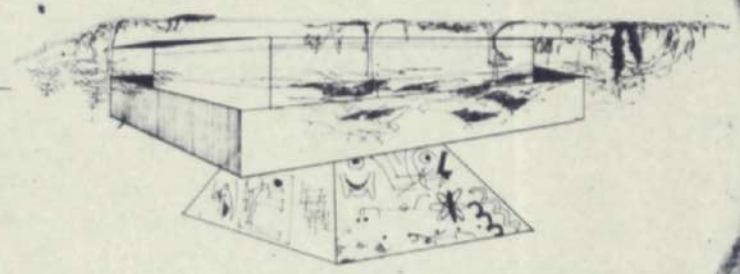


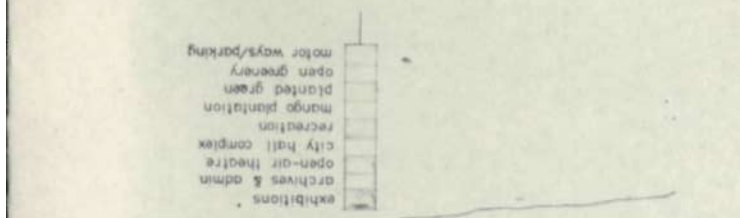


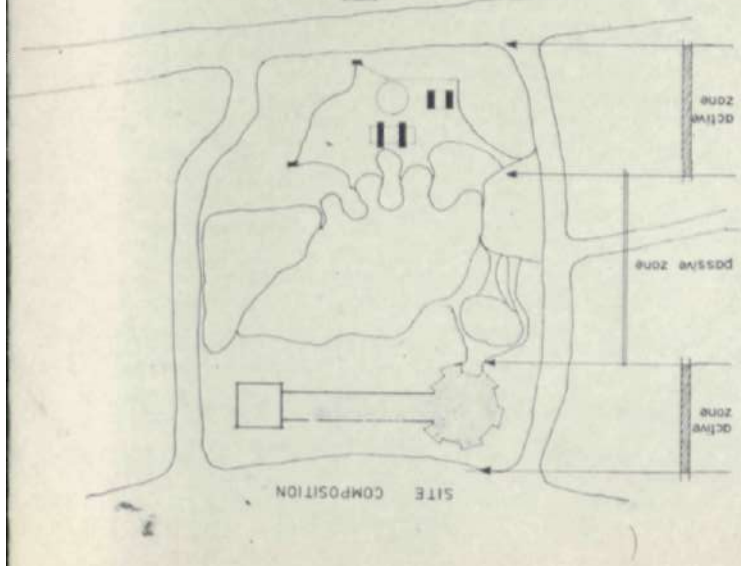
site perspective



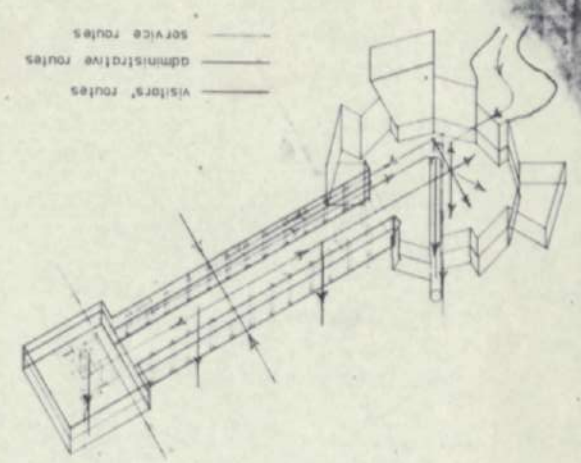
perspective— archives







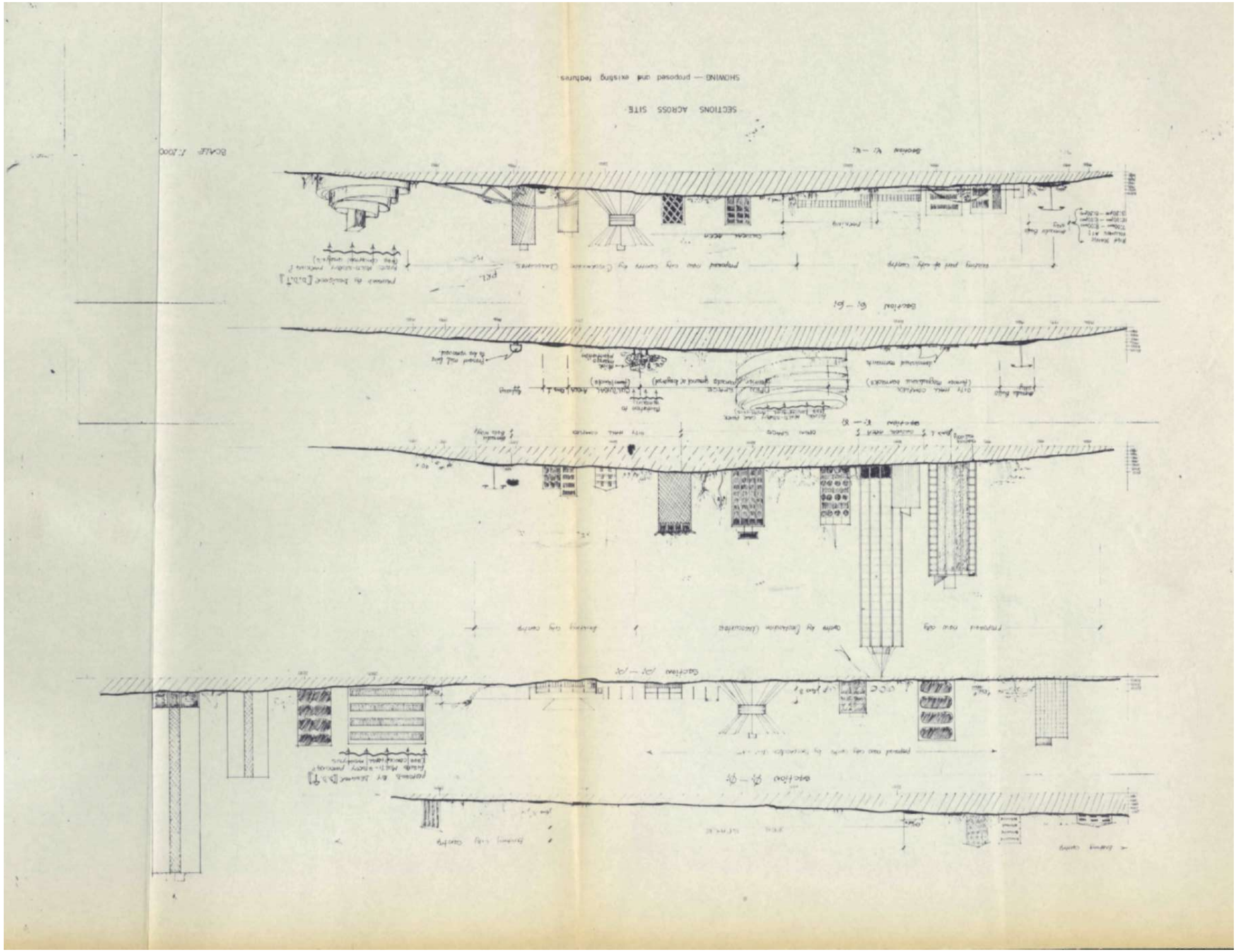
SITE COMPOSITION

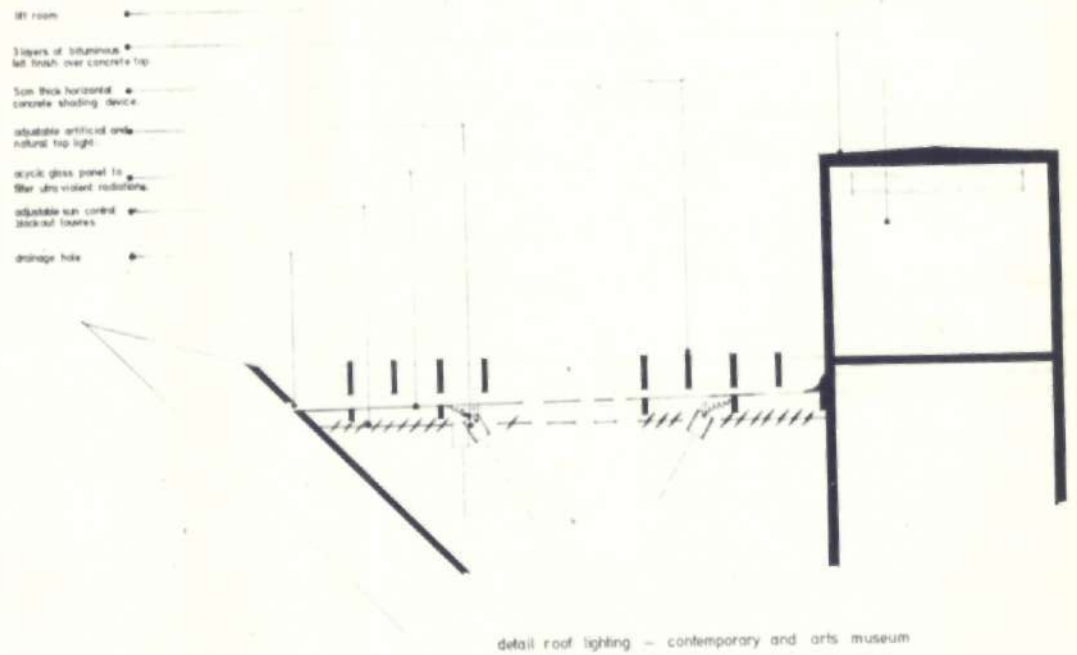


ROUTES

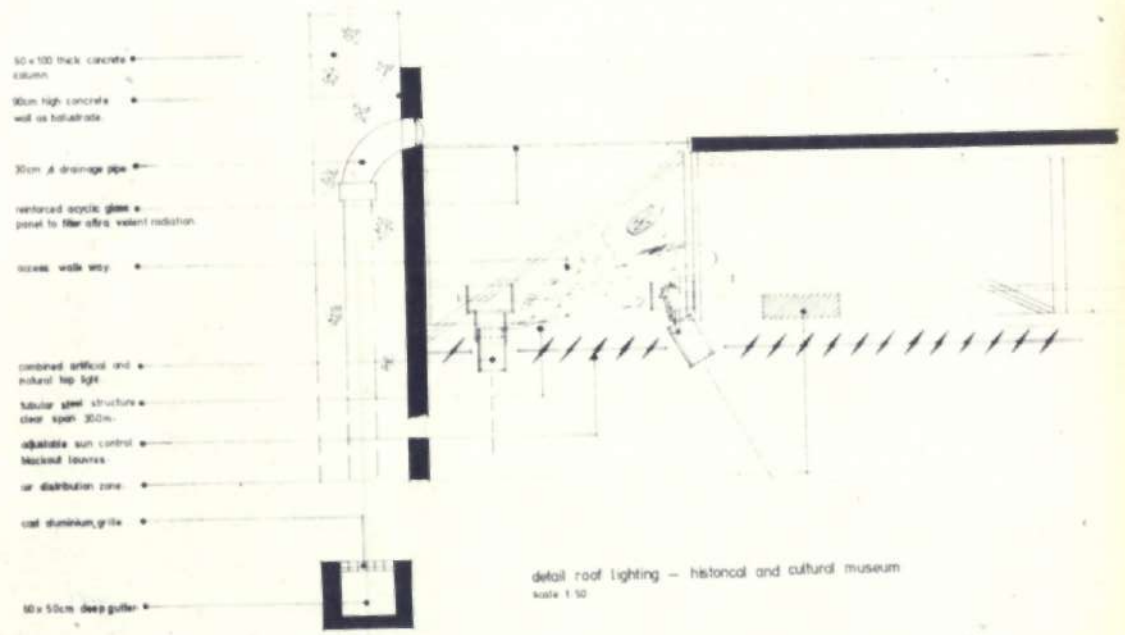
SECTIONS ACROSS SITE

SHOWING — proposed and existing features

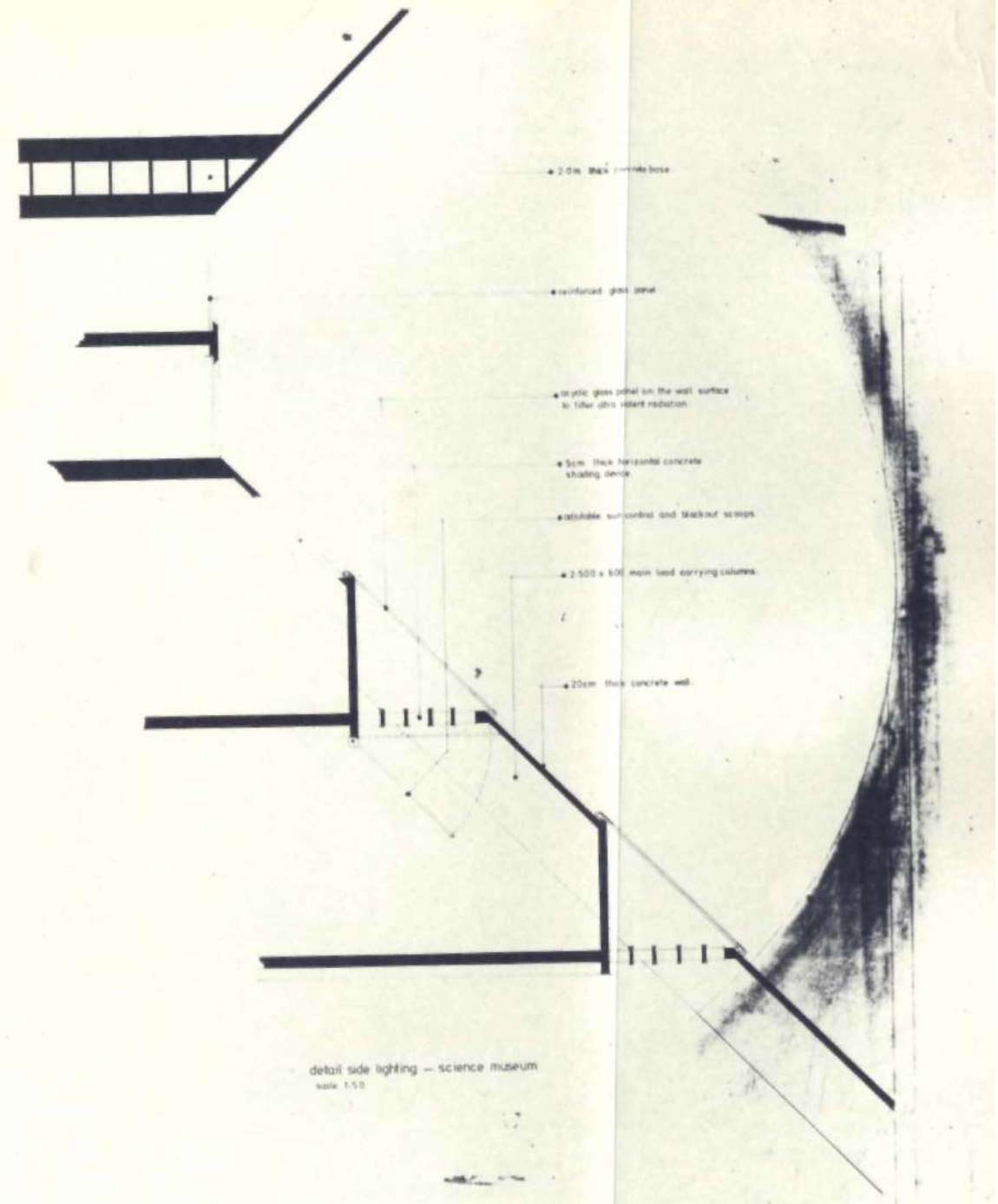




detail roof lighting – contemporary and arts museum
scale 1:50

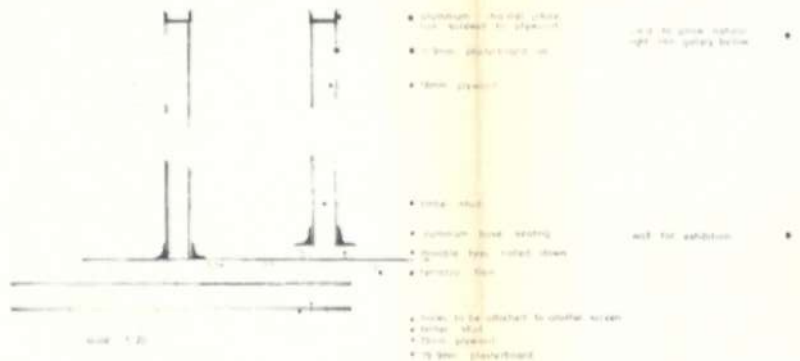


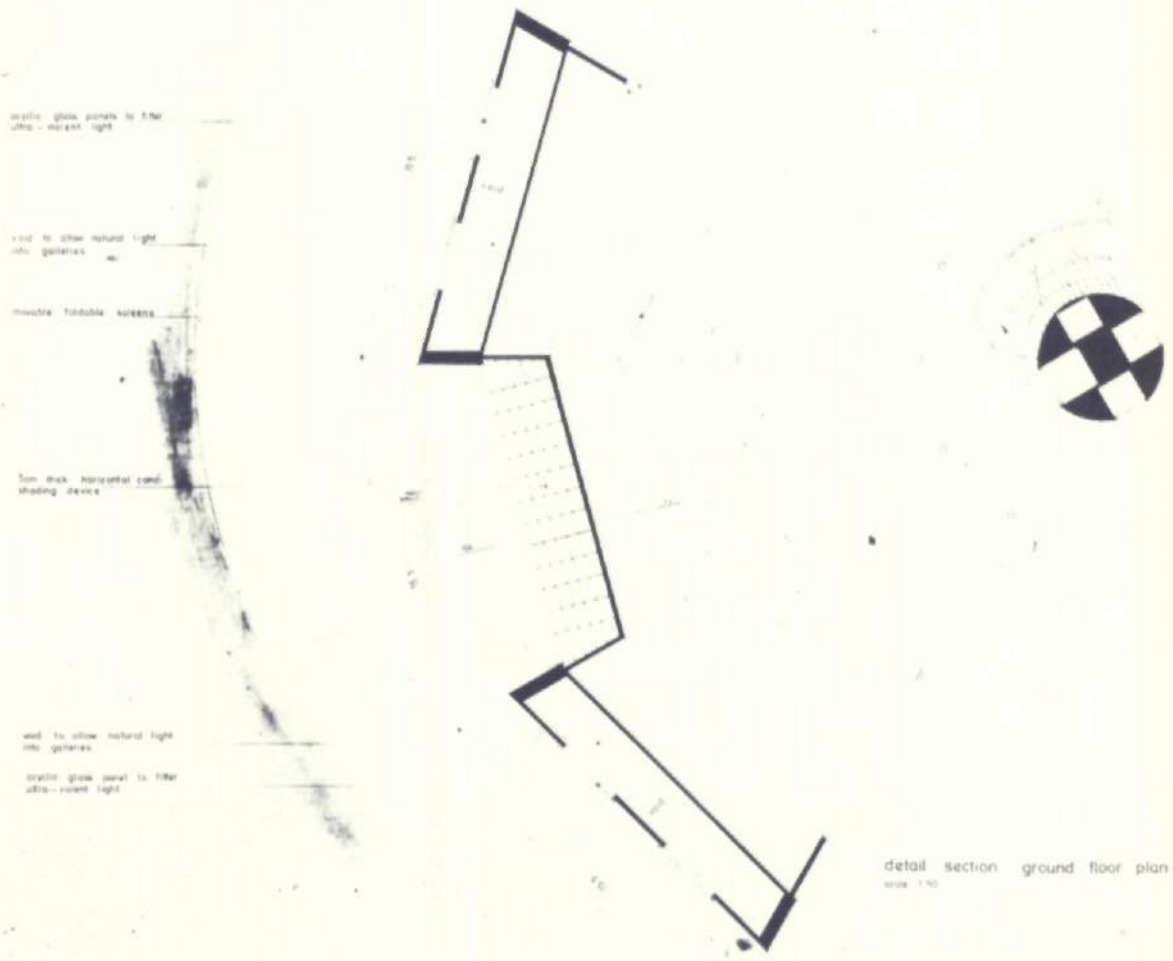
detail roof lighting – historical and cultural museum
scale 1:50



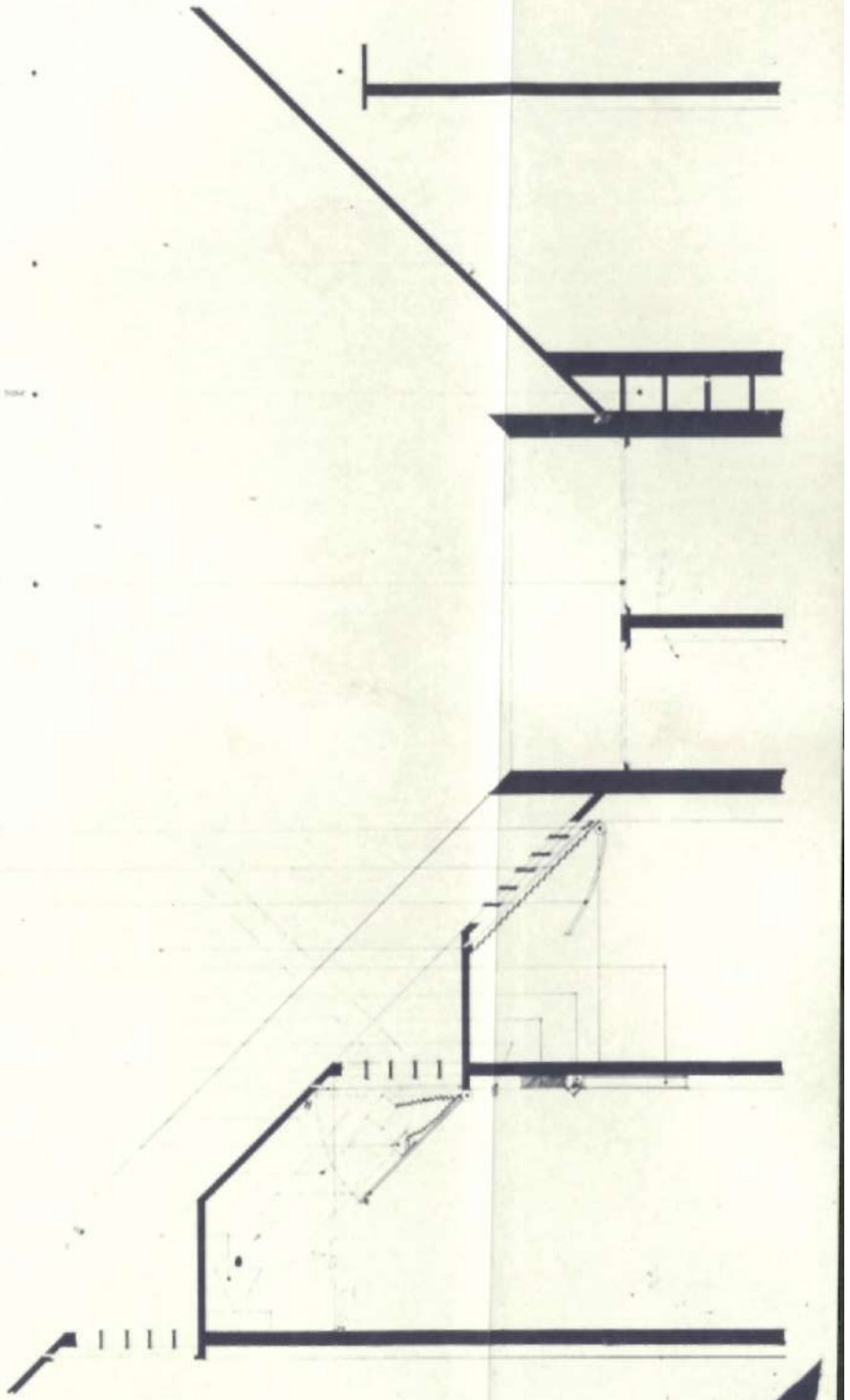
detail side lighting – science museum
scale 1:50

detail movable foldable screens

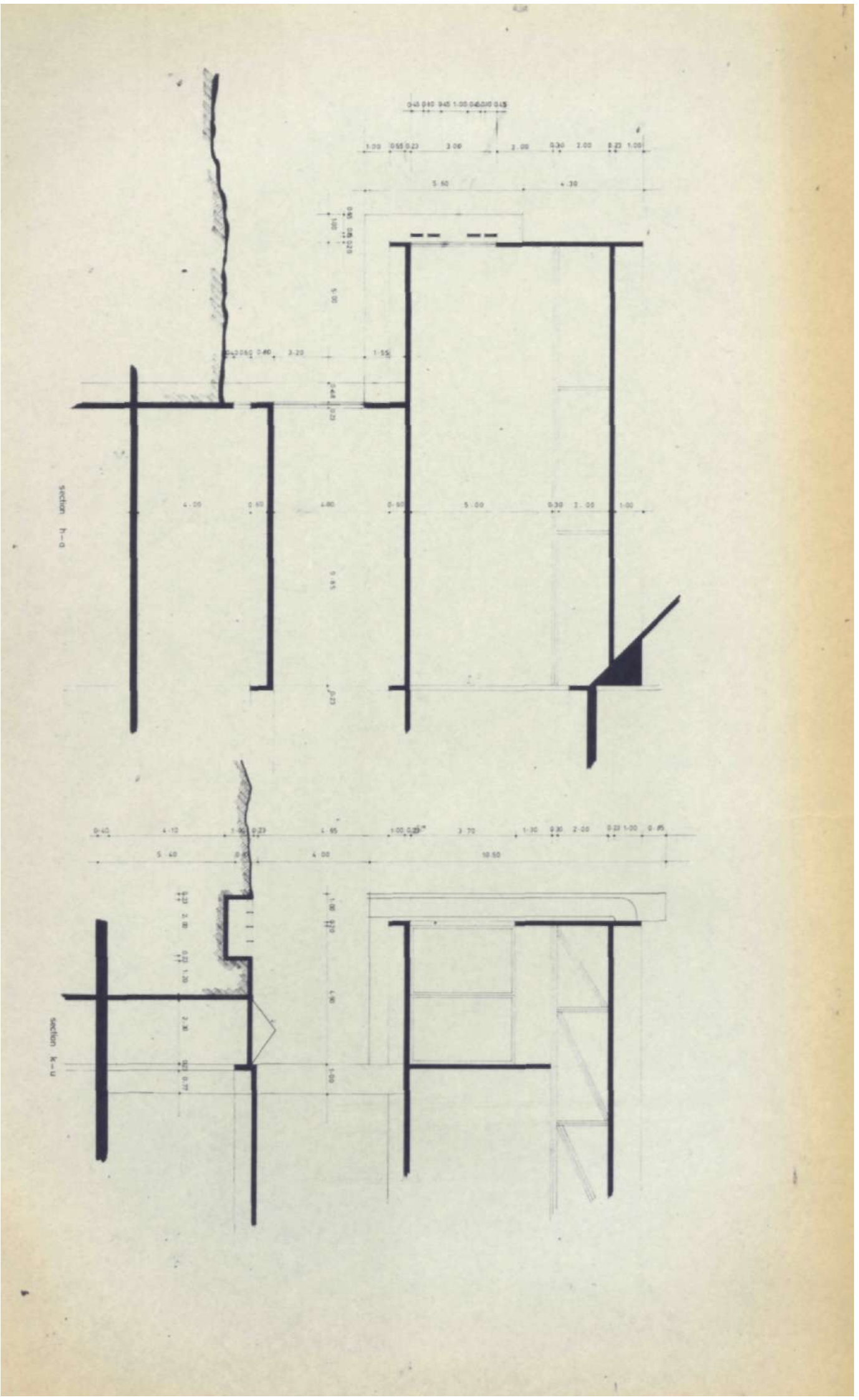




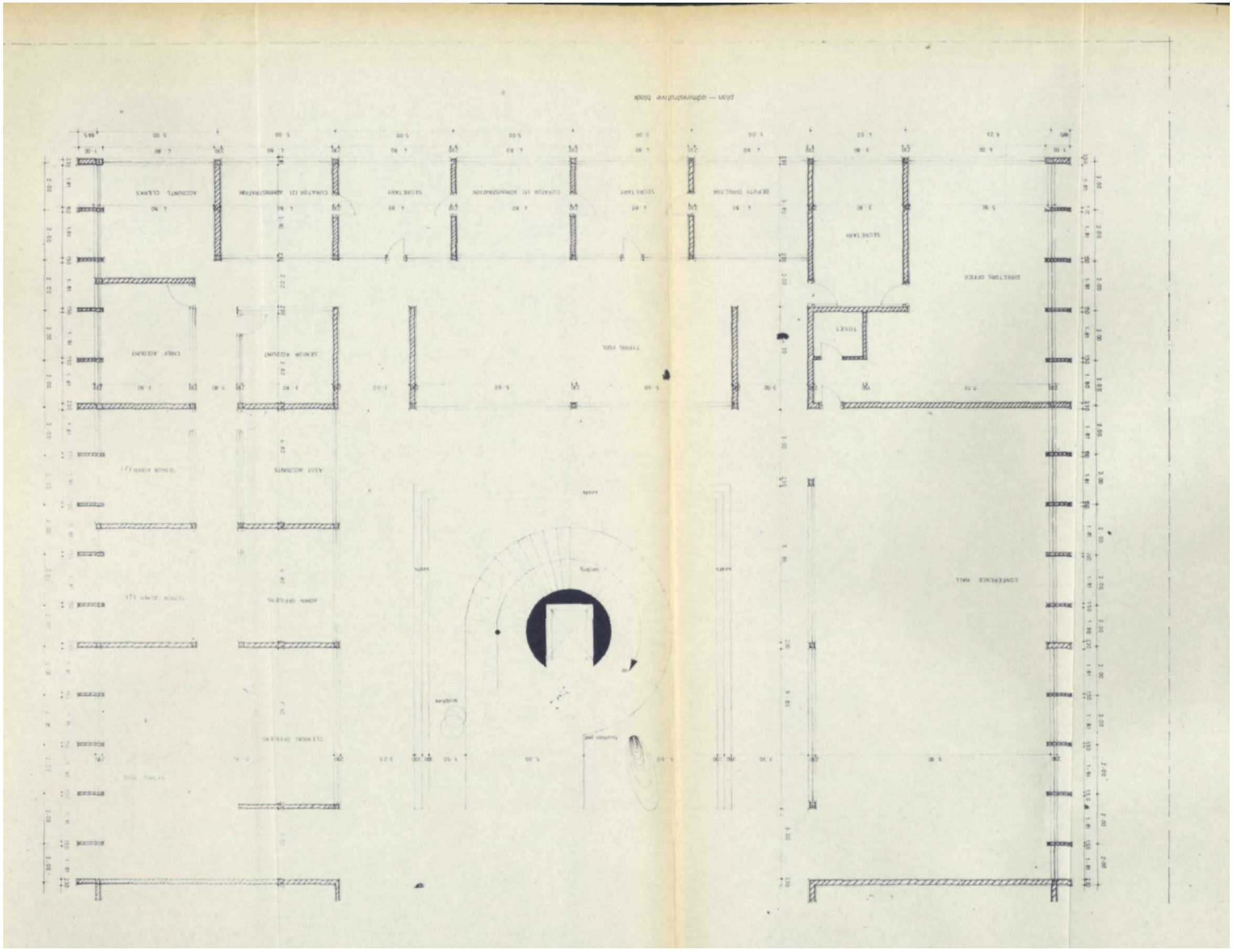
detail section ground floor plan



detail section longitudinal


section h–a
section k–u

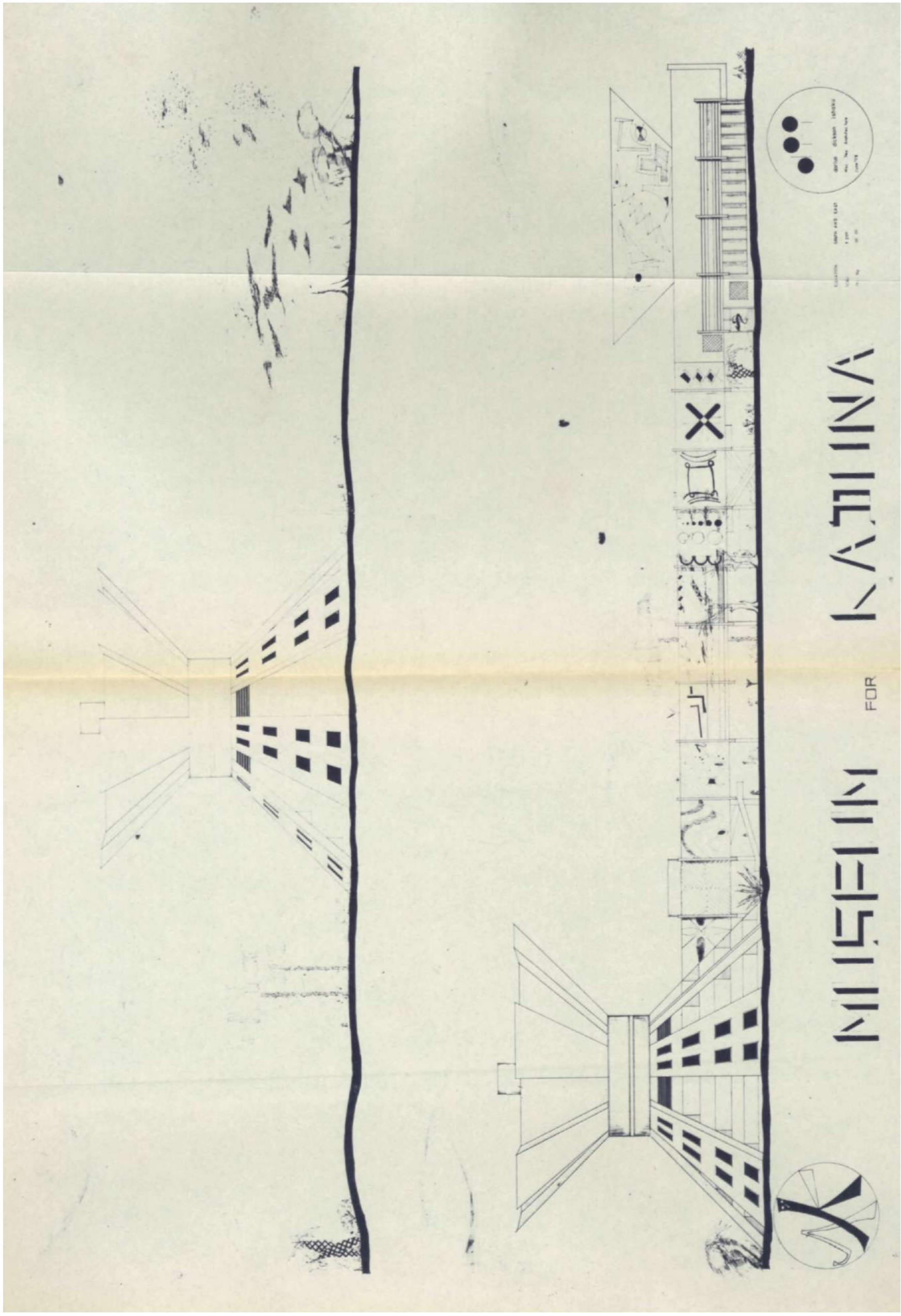
plan — administrative block



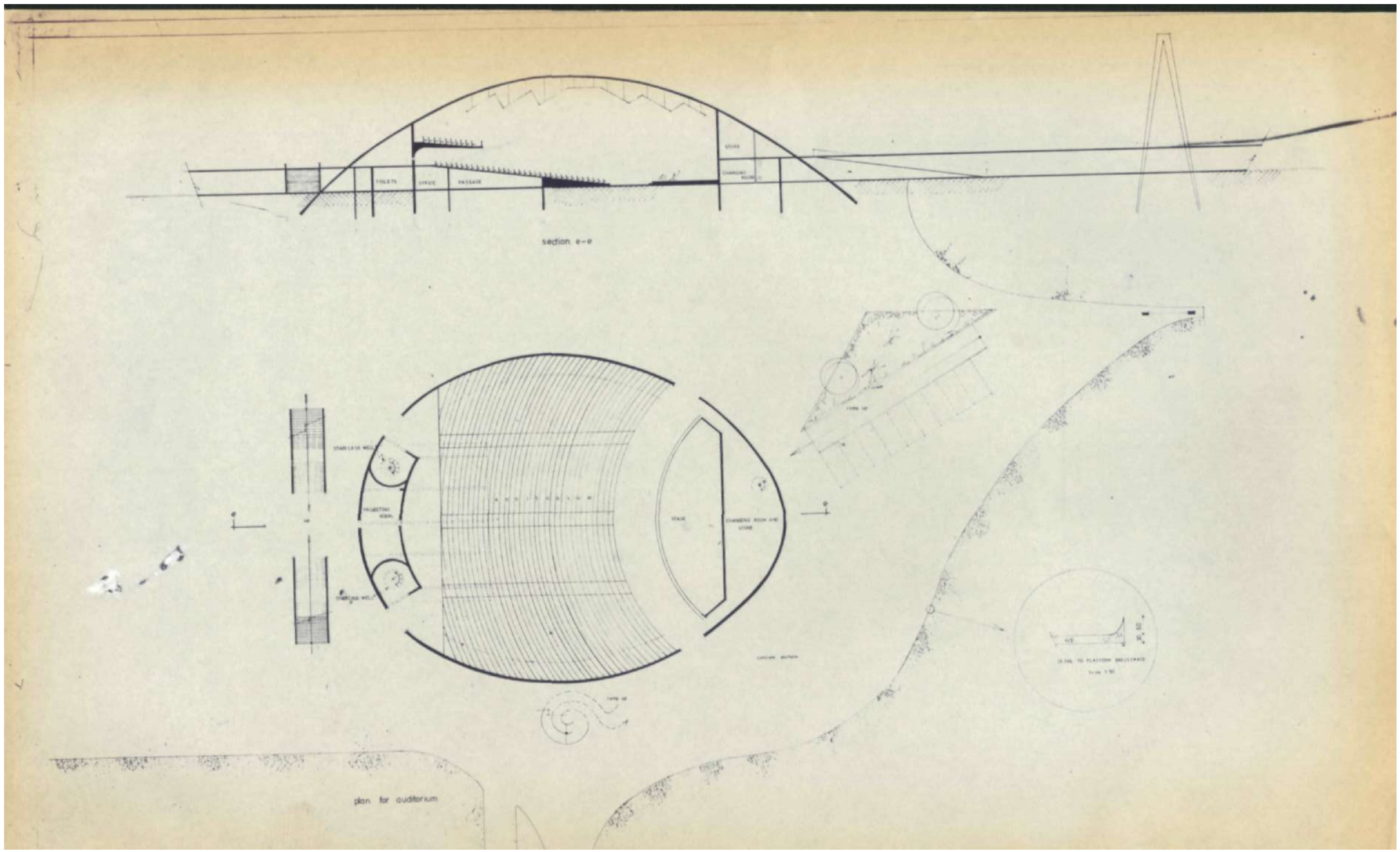
MUSEUM FOR KAMUNA

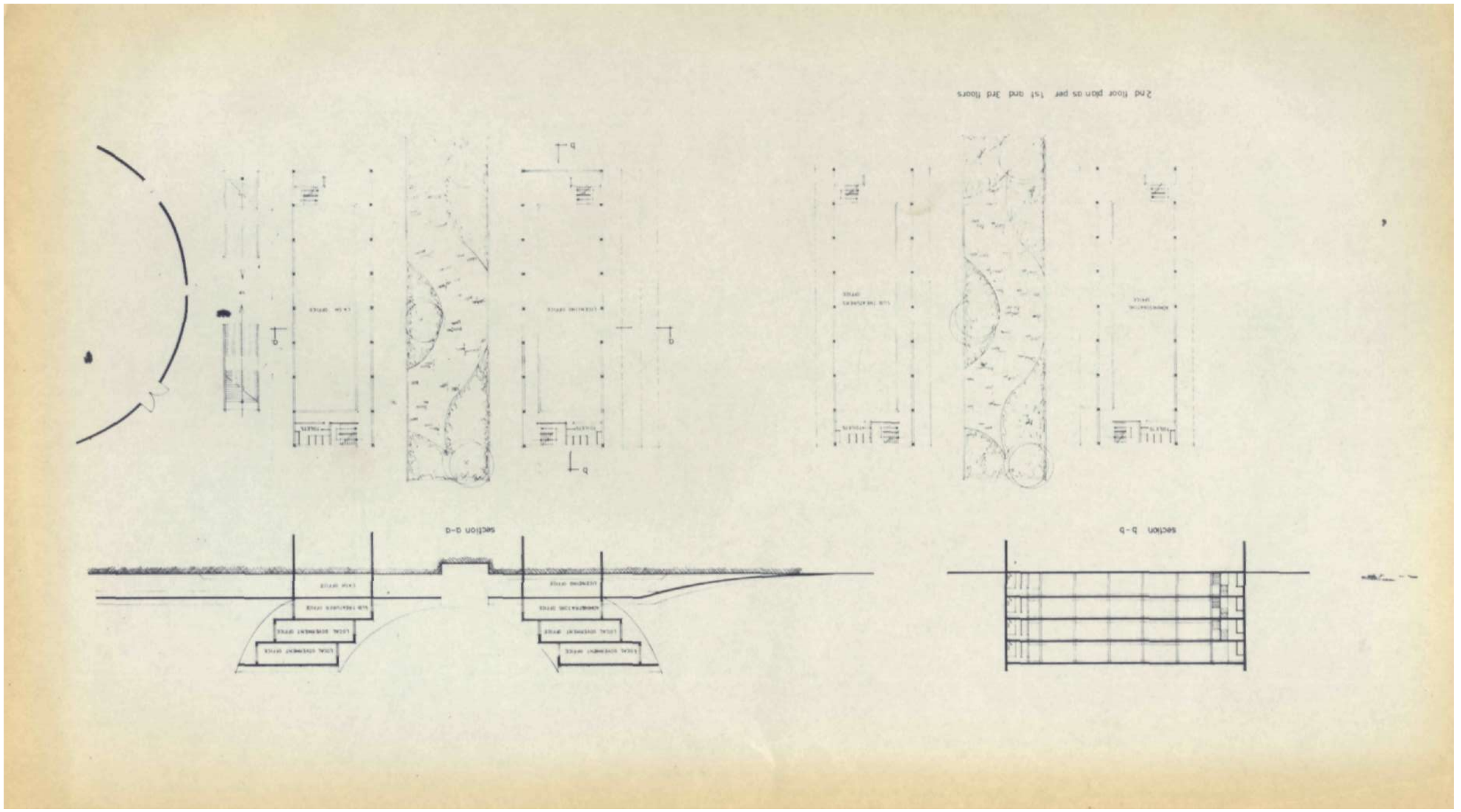
north elevation

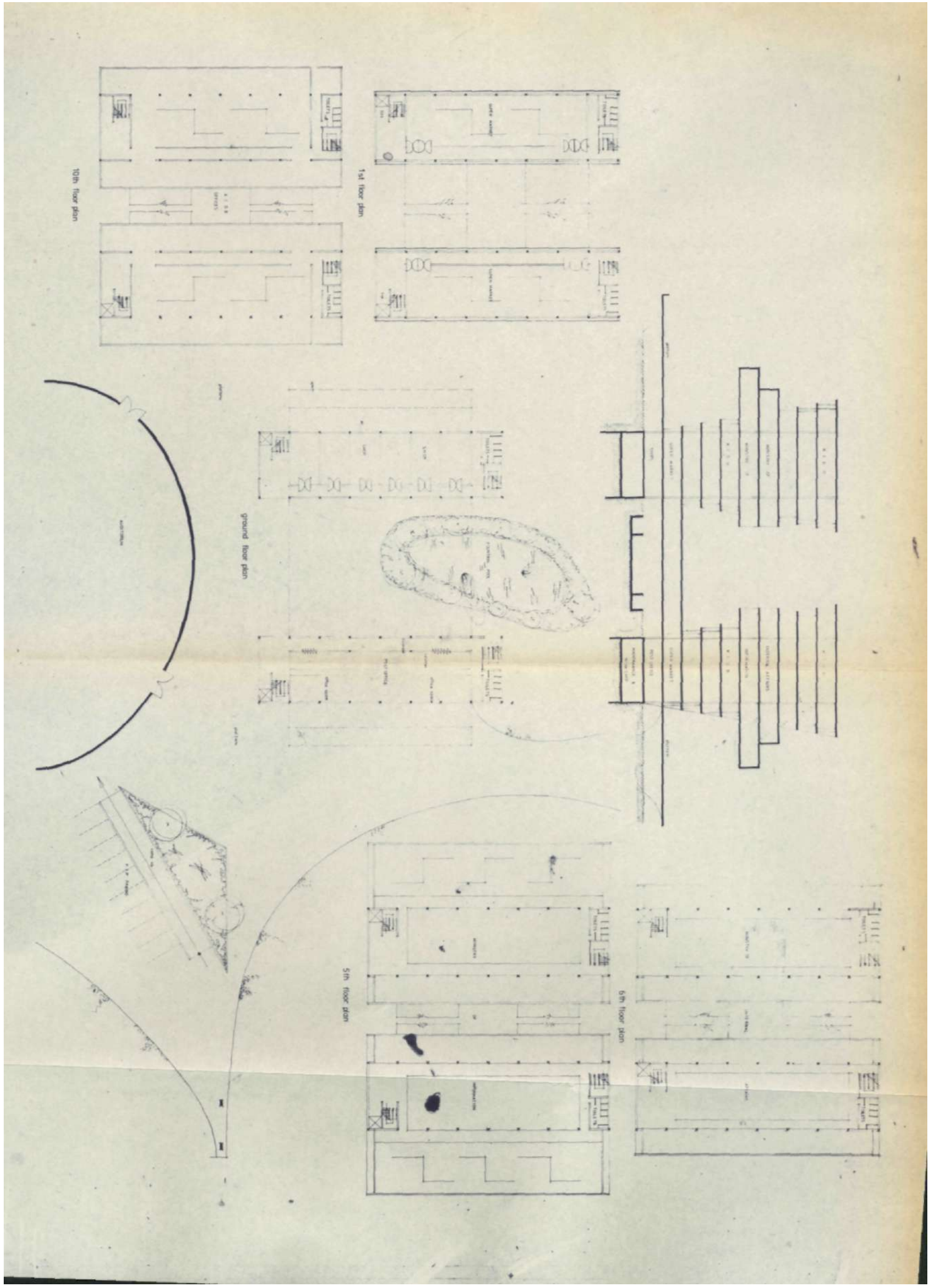
west elevation


VANILLA
FOR




section e-e
plan for auditorium


2nd floor plan as per 1st and 3rd floors
section a-a
section b-b


10th floor plan
1st floor plan
ground floor plan
5th floor plan
6th floor plan

