

DESIGN PROPOSAL FOR WATERWORLD ABUJA, NIGERIA.

WITH EMPHASIS ON

LANDSCAPING AND INTERIOR DECORATION

BY

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ARCHITECTURE.

AUGUST, 2003.

DECLARATION

I NASAMU OSHIOZHEKHA RAPHAELE hereby declare that this thesis titled "Design Proposal for WATERWORLD Abuja" is an original product of my own research work under the supervision of Dr. and Arc. Mrs. S. N. Zubairu.


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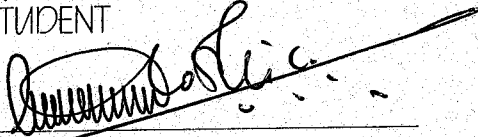
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CERTIFICATION

This is to certify that this thesis titled "Design proposal for WATERWORLD Abuja" is an original work undertaken by NASAMU OSHIOZEKHAL RAPHAEL of the Department of Architecture, Post Graduate School, Federal University of Technology Minna in partial fulfillment of the requirement for the award of M.TECH Degree in architecture and its contribution to knowledge and literacy reservation.

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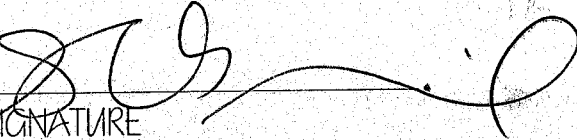
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DEDICATION

I dedicate this project to my beloved parents Mr. And Mrs. Raphael and Elizabeth Nasamu for their wonderful support for the past eight years. I also dedicate this thesis to my wonderful brothers and sisters for their prayers and blessing whose names are Ruth, Joy, Dinnabel, Anosi, Daniel, and Jerimiah. They have been wonderful people.

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ABSTRACT

The water work project is an unusual but exiting concept of recreation, it involves the creative display of architectural intellectualism combined with natural and biological configuration it is meant to transform completely the recreation tradition of the Nigeria people. Chapter one and two deals explicitly with the structure of the political terrains of the location and the aim of the project. Chapters three and four explains the concept of landscaping as the project area of concentration. They also provide adequate information on already existing and similar case studies. Chapters five and six deal exclusively with the physiographic details of the Abuja terrain and six chapter seven provides conclusive information on space requirement services and aesthetic value implemented. This project however is discovered to be a rare one various putting into consideration the magnitude of its scale. This led to the various limitations due to finance as the case is always with projects of it's type. However workable and tentative parameters have been developed include within.

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CHAPTER ONE

1.0 INTRODUCTION

When people hear the word "WATERWORLD" they tend to think that it deals only with life or living organisms of all sizes and species under the sea but in this case, the word is used to merge aquatic life with other aquatic activities that have something to do with water, though participants may not necessarily be aquatic dwelling organisms.

The water world is a recreational, scientific and educational facility fashioned for the important purpose of development to mankind. It is a common point where men and women of all Colours, ethnic groups, races, ages and sizes come together to experience each other under the common compound binding all men together which is WATER. All men do not eat all types of food, but everybody drinks or uses water because water is life and life is common to all and if water is life, it is also synonymous to growth and development because where there is life, growth is inevitable. The various factors (concepts) of growth and development form the basis for the shapes and patterns and are adopted here for the design of each recreational facility forming part of the hard landscape material comprising the entire WATER WORLD.

The location of this proposal is strategic and also scientific in concept, Abuja is the Federal Capital Territory, for the Federal Republic of Nigeria. It is a fast developing social centre by virtue of the conferment of the National Capital upon it. This has attracted a lot of rural dwellers to the territory to compete industrially with their urban counterparts. Activities of all calibre with respect to material productivity are constantly in progress, this ranges from service industries to production factories.

The people of Abuja after a hard day's job suffer multiple fatigues. Apart

from working stress, domestic locations are far away from work places and industrial layouts which creates a chance of being caught up in a traffic jam on one's way back home. However, when at home, outdoor recreational facilities could help alleviate the degree of stress experienced by people and could serve as a meeting place for men and women of good will. It could also serve as a place for family re-union where parents and children can have fun together and help each other grow psychologically.

Tourists from all walks of life and location will also find this place very attractive.

1.2 AIMS AND OBJECTIVES

- (i) The major aim of this study is to enlighten Africans on the physical and physiological importance of recreation in an aquatic environment or with aquatic activities.
- (ii) The study is also determined to educate the African people about aquatic life of all sizes and levels. This is to improve self-sufficiency of African people who live and work in riverine areas with respect to employment, agriculture, sports and education.
- (iii) To help bring people together from all walks of life to share what they have in common together.
- (iv) To aid effective child development
- (v) serve as a tourist centre attracting funds for the government of the Federal Republic of Nigeria for the purpose of investment on research in this field.
- (vi) To bring mankind closer to the aquatic organisms or "WATERWORLD".

1.3 RESEARCH METHODOLOGY

The method adopted for this research is the descriptive survey method. This involves firstly, the taking of case studies of already existing and similar facilities. Other procedures involved,

INTERVIEWS: Discussions were held with professionals in the field on matters like the positive effects or dangers of this Facility in a society like ours and commendable results were achieved.

VISITATION: Personal visits to existing facilities have been made and physical survey of location of project has also been made. site surveys and inventory show satisfactory provision for the location of this project.

LIBRARY: Various literature materials have been consulted, especially the Encyclopedia Britannica Vol.4 on issues concerning Aquatic life and activities. Handbooks and journals on water sports have proved relevant. Biological texts books on aquariums formed the foundation for confirmation of the possibility of the life size aquarium included in the project.

PICTURES: During my visitation to case study locations, some pictures were taken as inspirational visual aids during the design development; some pictures were also drawn from the Internet.

INTERNET: The Internet was very sufficient in the provision of information via the sports websites and the Encarta encyclopedia. Construction details for ships and dreadnoughts details were also drawn from the internet.

1.4 SCOPE OF THE STUDY

This study is expected to cover the following areas:

- (i) Provision of recreational facilities that have to do with water sports.
- (ii) Provision of restaurants and café implanted into a life size

aquarium.

- (iii) Hard landscape models and features used as casing for fluid passage,
- (iv) Administrative centre
- (v) Maintenance section
- (vi) Water suction, treatment, recycling and pump section
- (vii) Aquatic organisms (aquaria) treatment and retrieval section
- (viii) Swimming facilities
- (ix) Communication (information
- (x) Health facilities
- (xi) Sculpture gardens and pools
- (xii) Sea foods barbecue centres.

1.5 LIMITATION OF STUDY

With respect to the design of this project, the limitations faced as a matter of fact are the engineering drawings that make this project functional. These were not revealed and the mechanical processes were sketchedly explained. Access also to people with detailed working drawings and engineering plans proved impossible due to their location abroad, which was unreachable for me. The Internet only provided basic and political information about these facilities.

1.6 IMPORTANCE OF STUDY.

The importance of this study is to enlighten the Africans on the purpose of recreation and to teach the advantages of preservation (Conservation) of aquatic life, it is aimed at helping Africans learn the ability to appreciate things that are a product of natural occurrence. The possibility of the use of hard landscape materials in combination with a material as flexible as water is part of the importance of this study.

1.7 DEFINITION OF SOME COMMON TERMS.

AQUATIC: This means a habitat in water, with respect to animals and plants it means living in water (but not necessarily submerged) or on water or around the water. (Webster's Dictionary).

ORGANISM: Any living entity either plant, animal or bacteria.

WHIRL POOL: A collection of water that flows in twisted motion (spiral).

FOUNTAIN: An artificial projection of water through a jet using water pumps/pressure.

WATERFALL: Natural crevices beneath water bodies that cause a change in level of river beds such that the water falls from a higher level to a lower level.

SLIDE: A smooth frictionless surface inclined at a steep angle with grooves allowing human access.

AQUARIUM: An artificial environment made of glass created for housing aquatic animals either for decoration or education.

LANDSCAPE: These are components of the earth's crust on the surface level comprising of trees, rocks and various landforms.

RECREATION: To cause or enable one to pass time in a pleasant or agreeable occupation. It also means environment.

PSYCHOLOGY: The reasoning intellectual, mental, part of the human mind.

RACE: A division of mankind with respect to colour, location and cultural integration.

SPECIES: Classes or categories of organisms with respect to special features.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 HISTORY AND SOCIO - CULTURAL BACKGROUND OF ABUJA

The movement of the government seat from Lagos to Abuja has been a very controversial and political issue since 1976 under the government of Gen. Murtala Ramat Mohammed. It was politically aimed at reducing the strain, stress and decongestion of people from Lagos. Another strong political reason was the security of the nations Golden seat, as viewed that its location at the oceanic border was politically insecure.

The Federal Capital Territory was carved out of three states namely, Kwara, plateau and Niger state. It has a total land area of about 8000 square kilometers. The authorities were instituted and power vested on the FCDA (The Federal Capital Development Authority). The territory was therefore zoned into districts namely Wuse, Maitama, Asokoro, Garki and Abuja central area.

Abuja became the new seat of government under the General Babangida (Rtd) Administration and was considered as the symbol of unity and progress. The master plan was hereby produced by International planning Associates as a crescent shaped city centrally oriented and located with axial force on the highest point of Aso Hills, the current seat of Government.

As a federal property, a high number of the people resident in Abuja are engaged in Federal Government parastatals or ministries as the case may be. Other resident are privately employed.

2.2 TOURISM IN NIGERIA

After the independence of the Nigerian people in 1960, they have since adopted foreign habits or cultural ways of life which characterized the colonial

Era. The Nigerian Government and its people respect and recognize the general roles of tourism social and economic development and its educational significance and impact on the entire populace. These potentials if exploited maximally could improve immensely a nation's foreign currency earning (exchange) by attracting tourists from overseas who exchange money for local materials.

In 1962, a body was inaugurated to master and control tourism known as Nigeria Tourist Association (NTA). Its aim is to boost and harness tourism activities for the benefit of the Nation.

In 1976, a decree (decree 54) was released due to the findings of the Africans Development Bank in 1971. This led to the establishment of the Nigerian Tourism Board (NTB) in 1978 which was awarded right to provide a criteria for full and detailed exploration of tourism potentials in all government levels i.e. federal state or local levels. The NTB consists of 15 members encompassing all tourists travel industries where discipline cuts across tourism development.

The duties of the board include:

- (i) To provide financial assistance to the Federal Capital Territory in the field of tourism
- (ii) To promote research with respect to tourism
- (iii) To provide advisory support for tourism development
- (iv) To encourage tourism by providing amenities and facilities aiding tourism corporation.

2.2.1 PROBLEMS ASSOCIATED WITH TOURISM

Firstly, there cannot be tourism without tourists. The African People do not tour for pleasure. All their activities are centered around

business as usual not leisure. This is the reason why the private Sector is completely uninvolved in and with tourism activities. The Federal Government also has not implemented any public holidays or Vacations to mark this purpose. There is gross lack of amenities amongst the people about tourist centers. There are not infrastructures and communication links, bad roads among other factors have inhibited tourism activities greatly. Another problem is the lack of statistical data covering tourists and their activities.

2.3 RECREATION

This is the pleasurable and constructive use of spare time (Brockman and Merriam Jr., 1973)

The Webster's dictionary of contemporary English 1968 defines recreation as the refreshment of the body for the revival of strength and spirit after toil. It implies the act of diversion or play or even refreshment. It is also defined as an activity that rests men from work after giving them a change and restores their strength (de Grazia, 1962). Individuals, spend free time differently. What recreates one person might workout another, however recreation meets various needs at various times. Recreational preference not only changes at different times but also with respect to age and physical ability. (Brockman and Merriam Jr., 1973).

2.3.1 BENEFITS OF RECREATION

Recreational activities are very rewarding and beneficial depending on ones personal interest and options of activities. It enhances the physical and mental well being of people of all ages. Recreation in the real sense of it is a potent operational or motivational force. It may be creative as well as reactive. It

improves an individual's personality and social well being . Life is balance when routine supplements complement important accomplishments.

2.3.2 MAJOR INFLUENCE ON THE DEMAND FOR RECREATION

The growth of recreational needs are influenced by multiple factors as follows:

- (i) Absolute population increase
- (ii) Rising standard of living
- (iii) Exercise ambition at any given place
- (iv) Technological advancement (Pearce 1989)

On the other hand, other factors as stated below contribute to our growing recreational needs.

- (1) Population density
- (2) Population distribution and occupation.

CHAPTER THREE

3.0 RESEARCH AREA

3.1 LANDSCAPING

Landscaping cannot be defined without explaining it in its professional definition which is landscape architecture.

Landscape Architecture is the science and art of embellishing, and sometimes remodeling, expanses of land according to a comprehensive, aesthetic plan. Elements to be taken into consideration include topographical features such as hills, valleys, rivers, and ponds; vegetation such as trees, shrubbery, grass, and flowers; and constructions such as buildings, terraces, roads, bridges, fountains, and statuary. No strict rules exist in landscape architecture because each plot of ground offers unique challenges caused by size, topography, climate, and surrounding areas, and the wishes of the patron.

Landscape architecture was formerly called landscape gardening and was limited to the creation of gardens around private dwellings. Today landscape architecture covers a much wider area of concerns, ranging from the setting out of small gardens to the ordering of parks, malls, and highways. It includes landscape gardening, which is now understood as the work done by commercial gardeners, who install and care for flowers and greenery according to the design of landscape architects. The landscape architect, who usually holds an academic degree in this field, has the same professional standing as an architect or engineer and receives a fee directly from the client. The landscape gardener may be a commercial contractor or an amateur, who landscapes the grounds of a private home. Most large-scale gardens are planned by landscape architects, who not only devise the aesthetic and decorative aspects of the garden but also take into account such practical considerations as drainage

and gradient. Small gardens do not usually require the services of a landscape architect.

Landscaping therefore can be definable as the artificial influence of mankind on his environment (scenery) in such a way that he makes it so attractive, comfortable and conducive to live and function in. Whatever the scale of the project, the landscape architect first studies the site. Working alone or with a town planner, traffic engineer, or building architect, as the project requires, the landscape architect considers the proposed use for the site. Other considerations are the layout of the terrain, climate and soil conditions, and costs. Once this information is known, the landscape architect proceeds to the actual design.

An overall plan is established, which might be a formal garden based on a symmetrical arrangement of geometric beds or an informal arrangement of planting to make as much use as possible of the natural characteristics of the site. Alternatively, the plan might also be for a Japanese garden emphasizing the asymmetrical placement of rocks and sand, for a desert garden, or for a simplified massing of naturalistic shrubbery.

The landscape architect's plan takes into account proportion and scale. A small walled garden, for example, is scaled to close-range viewing; a large park, however, benefits from spacious vistas and massive groupings of trees. The plan also takes advantage of natural land formations, such as hills or pools, or alters them. The plan may provide for subdivisions of space, whether these are a series of enclosures featuring different colours or other variations or are loosely defined areas that flow into one another.

The landscape architect also considers contrasts in shady masses and open, sunny spaces, especially in relation to climate. Contrasts in the size, colour, and texture of vegetation are also important. Planting may be designed according to season so that different parts of a garden bloom at different times. A successful plan also requires knowledge of the characteristics, needs, and limitations of particular plants. Other elements in a landscape architect's plan may be fountains, streams, and pools; sculpture and benches; walls, walks, and terraces; and small structures such as gazebos, kiosks, and trellises.

The importance of landscape design cannot be over emphasized. The very essence can only be enhanced thus; with the use of various building materials.

Landscaping elements are grouped into two major groups listed below;

1) HARD LANDSCAPE ELEMENTS

2) SOFT LANDSCAPE ELEMENTS

Hard landscaping involves the use of hard inanimate objects and building materials for the purpose of beautifying the environment, these include the use of materials like those listed as follows; Glass, Zinc, Tin, Concrete, Bricks, Blocks, Terrazzo, Mud blocks, Timber, Sculptural pieces, Ceramics, Aluminium, and a host of many other materials.

On the other hand, soft landscaping includes the use of living things from plants and animals and even humans, but most especially plants of all species and sizes ranging from creepers, climbers, shrubs, grasses, to gigantic trees of all species. Examples of elements of soft landscapes are as follows; Bahama grass, chinese carpet grass, Oak tree, Elm tree, Balsam tree, palm tree, Baobab tree, Cactus plant, Mango tree, Citrus tree, Masquerade tree, Pine tree, Banana plant,

Lemon grass, Lemon tree, Yellow bush, Bush milk, Birch tree, Beech tree, Bougavillae plant and a host of many others.

3.2 HISTORY OF LANDSCAPING

As early as the 3rd millennium BC, the Egyptians planted gardens within the walled enclosures surrounding their homes. In time these gardens came to be formally laid out around a rectangular fish pond flanked by orderly rows of fruit trees and ornamental plants, as seen in tomb paintings.

In Mesopotamia, the Hanging Gardens of Babylon were one of the Seven Wonders of the Ancient World. They included full-sized trees planted on earth-covered terraces raised on stone vaults in a corner of the palace complex of Nebuchadnezzar II. In the highlands to the north, the Assyrians and Persians developed great tree-filled parks for hunting on horseback. They also planned rectangular walled formal gardens, irrigated by pools and canals and shaded by trees, usually set in vast barren plains. These gardens symbolized paradise and inspired the design of Persian carpets.

In ancient Greece, sacred groves were preserved as the habitats of divinities. Greek houses included a walled court or garden usually surrounded by a colonnade. In 5th-century BC Athens, public gardens and colonnaded walks attached to the Academy ("School") and the Lyceum ("gymnasium") were much frequented by philosophers and their disciples.

Roman houses, similar to Greek houses, included a colonnaded garden, as depicted in wall paintings at Pompeii and as described by Pliny the Elder. Villas on the hilly terrain near Rome were designed with terraced gardens. Rich Romans, such as Lucullus, Maecenas, and Sallust, laid out lavish pleasure grounds including porticoes, banqueting halls. The Muslims, living in areas where

the climate is generally hot and dry, were inspired by the desert oasis and the ancient Persian paradise garden, also centred on water. Muslim gardens usually consisted of one or more enclosed courts planted with trees and shrubs and surrounded by cool arcades. They were enlivened with coloured tilework, fountains and pools, and the interplay of light and shade. Before the 15th century, the Moors in Spain built such gardens at Cordoba, Toledo, and, most notably, at the Alhambra in Granada. Similar gardens, in which flowers, fruit trees, water, and shade were arranged in a unified composition, were built by the Mughals in 17th- and 18th-century India. The most notable examples are gardens of the Taj Mahal in Agra and the Shalimar Gardens in Lahore.

In China, palaces, temples, and houses were built around a series of courtyards, which might include trees and plants, often in pots so that they could be changed with the seasons, and pools. The Imperial City in Beijing contained elaborate pleasure gardens with trees, artificial lakes and hillocks, bridges, and pavilions.

Japan has a long tradition of gardens inspired by Chinese and Korean models. In former times, palaces, temples, tea-houses, and private houses all had garden settings that were closely integrated with the buildings. Kyoto was especially famous for its gardens. The gardens included pools and waterfalls; rocks, stone, and sand; and evergreens. They might also contain stone lanterns and sculptures, and wooden bridges, gates, and pavilions. Every element of a garden was carefully planned, sometimes by Zen monks and painters; the effect of restraint, harmony, and peace that they created is exemplified by the extant Katsura Detached Palace gardens in Kyoto. Such traditions continue to some extent in modern Japan and have influenced Western landscape architects.

In medieval Europe, ravaged by invasions and incessant wars, gardens were generally small and enclosed for protection within the fortified walls of monasteries and castles. The large garden at the 9th-century abbey of St Gall, in Switzerland, was divided into four areas, for herbs, vegetables, fruits, and flowers. The gardens of most monasteries were surrounded by cloistered walks and had a well or fountain at the centre, possibly inspired by Persian gardens, which was intended to enhance meditation. Castles might have a kitchen or herb garden, a private ornamental garden for the lord and lady, and a larger grassy area for the pleasure of the court.

During the Renaissance in Italy when conditions became more stable, castles gave way to palaces and villas with extensive grounds landscaped in the Roman tradition. The architect of the house usually designed its setting as well, thus ensuring a harmonious relationship between the two. The symmetrical, classically inspired plan of the house was repeated in the grounds. Laid out along a central axis, avenues, walks, and steps led from terrace to terrace, which, wherever possible, afforded fine views of the countryside. Borders of tall, dark cypresses and clipped yew hedges, geometric flower beds, stone balustrades, fountains, and sculptures conformed strictly to the overall plan. Examples from the 15th century include the gardens of the Medici, Palmieri, and La Pietra villas in or near Florence. Among increasingly formal and elaborate villa complexes in the 16th century are the Villa Lante in Bagnaia and the Villa Farnese in Caprarola, both designed by Giacomo da Vignola. Others are the Villa Madama and the Villa Medici in Rome and the Villa d'Este in Tivoli.

Italian gardens of the 17th century became even more complex. Influenced by the dramatic Baroque style, their design was distinguished by lavish use of serpentine lines, groups of sculptured allegorical figures in violent

movement, and a multiplicity of spouting fountains and waterfalls. Examples are the Villa Aldobrandini in Frascati, Villa Garzoni in Collodi, Villa Giovo in Como, and the gardens on the Island Bella on Lake Magyars.

Modified versions of Italian Renaissance and Baroque gardens appeared throughout Europe. In Spain, Moorish and Renaissance elements were combined in the gardens of the Alcázar in Seville. Dutch gardens with geometric flower beds were enclosed by brick walls. In France the great châteaux of the Loire valley, such as Chambord and Chenonceaux, were laid out with formal gardens, called *parterres*, and with extensive forested parks.

In the 17th century, France replaced Italy as the primary inspiration of architectural and landscape design. The vast building programmes instigated by Louis XIV included miles of symmetrically arranged gardens, which, like the royal architecture of the period, were designed to give an impression of limitless grandeur. The director of the royal gardens, André Le Nôtre, created at Versailles a series of great, open *parterres* that formed geometric patterns when seen from above. Beyond them stretched lawns and shrubbery merging into woodland. The grounds were regularly intersected by radiating alleys lined with trees or hedges and embellished with fountains, pavilions, and statuary placed axially in the main lines of view. Versailles and its immense gardens became the model for ambitious rulers and spawned splendid imitations in dozens of kingdoms and principalities throughout Europe.

3.3 CURRENT STATUS

In domestic architecture of the first half of the 20th century an attempt was made to achieve a closer integration between the house and its surroundings, as seen in the works of Sven Markelius in Sweden, Alvar Aalto in

Finland, and Frank Lloyd Wright in the United States. In areas with mild climates, such as California, a garden might be continued within the house. The worldwide economic depression between the two world wars, however, forced a shift in attention from domestic settings to large-scale public works; landscape architects and planners worked together on entire communities, regional areas, and vast state and national projects. The rising costs of labour and materials after World War II made careful planning imperative, especially in Europe and Asia, where entire cities had to be rebuilt within tightly restricted areas. In England, for example, the creation of completely new towns necessitated plans for the preservation of remaining open space, in which landscape architects played a significant role. In Canada and the United States, landscape architects were far less constrained, although they shared the concerns of their European counterparts, such as the need for greenbelts around cities, for scenic preservation, and for low-cost maintenance.

The proliferation of shopping malls, new suburbs, cultural centres, revitalized inner cities, and new educational facilities has given landscape architects in the later decades of this century unparalleled opportunities to exercise their talents and to create new forms.

They have become, in conjunction with their colleagues in architecture, engineering, planning, and public office, the shapers of both the present and the future physical environment.

3.3.1 LANDSCAPE PAINTING

This is the art of depicting natural scenery in painting. In the East, particularly China, it has long played a central role in art, but in the Western

world it did not become a separate branch of painting until the 16th century, and was initially considered of less importance than figure painting.

Landscape elements existed in ancient Egyptian and Greek art, but only as a setting for some other subject. The Romans seem to have been the first to enjoy landscape in painting for its own sake. They showed a great love of the countryside in their poetry, and in the 1st century AD Pliny the Elder wrote of the "fashion of painting walls with pictures of country houses and porticoes and landscape gardens, groves, woods, hills, fish-ponds, canals, rivers, coasts". A few fragments of such paintings have survived from Pompeii (which was destroyed by the eruption of Mount Vesuvius in AD 79).

In the middle Ages, when art was almost exclusively religious, landscape occurred only very occasionally in painting, as an incidental feature. From about the 14th century, however, it began to assume a more prominent place in art. Religious scenes were increasingly set in the real world (reflecting the new joy in nature that St Francis of Assisi introduced to Christianity as well as the scientific spirit of observation typical of the Renaissance). The first picture in Western art to depict a scene recognizable as a real place is generally agreed to be *The Miraculous Draught of Fishes* (Musée d'Art et d'Histoire, Geneva, 1444) by the Swiss painter Conrad Witz, which depicts part of Lake Geneva, and the earliest surviving European paintings to depict pure landscape, without any figures, are usually credited to the German artist Albrecht Altdorfer (an example, the St George altarpiece, c. 1520, is in the National Gallery, London).

By 1600 landscape had become established as an independent branch of art. Initially it was more popular in northern Europe and the word "landscape" ("landschap") was first used in Dutch; it entered the English language (as

"landschap") in the late 16th century. The first great flowering of landscape painting was in 17th-century Holland, an expression of the pride in their country felt by the Dutch, who had recently won independence from Spain. Jacob van Ruisdael is regarded as the greatest of all Dutch landscape painters, but he had many distinguished contemporaries. Dutch landscapes were usually naturalistic, but in Italy another tradition developed, known as the "ideal landscape": in this, the elements of nature were arranged into very grand, formalized compositions, used as settings for figures from mythological or religious subjects. The ideal landscape was invented by Annibale Carracci in the first decade of the 17th century and its most famous exponents were Claude Lorrain and Nicolas Poussin, French painters working in Rome. It was a highly popular and influential type of art, being adapted to British scenery, for example, by the 18th-century painter Richard Wilson, the first major British artist to specialize in landscape.

The ideal, or "classical", type of landscape continued to flourish in the 19th century, but other approaches also emerged, notably in the work of Romantic painters such as Caspar David Friedrich in Germany and J. M. W. Turner in Britain, who emphasized the awesome and mystical aspects of nature. A similar spirit, and also a patriotic desire to glorify their country, is seen in the work of several American painters of the 19th century, such as the members of the Hudson River School and Rocky Mountain School. They were often inspired by spectacular mountain scenery. At the same time painters such as Corot in France and Constable in Britain enriched the classical and naturalistic traditions with a new spirit of loving, unpretentious observation. Their work influenced the Impressionists, who helped to establish landscape as perhaps the most popular branch of painting. In the 20th century landscape has continued to be a

favourite subject for artists (architects) working in more or less traditional styles and has also formed the starting point for avant-garde developments, including abstract compositions and Surrealist fantasies.

3.4 INTERIOR DECORATION

This is a branch of interior designs and will be defined in that light.

3.4.1 INTERIOR DESIGN

This is the furnishing and decoration of indoor living and working spaces, usually involving both practical and aesthetic considerations.

3.4.2 HISTORY OF INTERIOR DECORATIONS

During medieval times the mass of people lived in hovels or huts that provided little but shelter; noblemen and their retainers lived mainly in castles. The principal room was the great hall, which served for cooking, dining, and sleeping. Until the use of separate rooms for sleeping, all the retainers slept in the great hall, the women occupying a space enclosed by curtains. The great hall might be as long as 18 m (60 ft) and up to 6 m (20 ft) wide. This large area was covered with a roof supported by great wooden beams or trusses, which in later times were carved or painted. The ground floor, which was made of stone, earth, brick, or tile, was usually covered with rushes, straw, or leaves. During the time of the Crusades the use of Oriental rugs and carpets, brought from the Middle East, came into vogue. The Normans hung tapestries on the walls of the great hall. The need for insulation against heat and cold led to the plastering of the stone walls; as plastering became common, walls were often decorated with paintings in fresco. The principal items of furniture were tables, benches, stools, and large storage chests. The chests, made of wrought iron or wood reinforced

with wrought iron, were particularly important; they held most of the possessions of the lord of the castle, and also those of his retainers, and could be moved quickly in the event of attack or fire.

After the development of cannons and gunpowder in the 14th century, the castle lost its invincibility. Relatively peaceful conditions also prevailed in Europe. This, together with the rise of a merchant middle class, led to a demand for the dwelling house, a home more comfortable than the castle and more suited to the needs of peaceful daily life. Consequently, the Gothic manor house and the château began to evolve. Two- and three-storey town and country houses were built, with living rooms, kitchen, bedrooms, and storage space. The first such houses appeared in Italy, England, and France by the 13th century. Decoration was sparse until after 1400, when tapestries, usually made in France, became general in northern Europe for wall coverings, for partitioning large rooms, for hanging over doors, and for enclosing beds. Wooden shutters, formerly used on windows, began to be replaced by curtains.

3.4.3 RENAISSANCE INTERIORS

The Renaissance houses in 15th-century Italy contained large rooms and high ceilings elaborately ornamented with painted decorations and plaster mouldings, usually in a style imitating or derived from ancient Greece and Rome. Both the decorations and the furniture of the rooms were intended to create an effect of richness and magnificence. In France and Italy, where such famous artists as Benvenuto Cellini and Raphael created household decorations, a room was judged by the ornamentation on the ceilings and walls. Little furniture was used. Sideboards (*dressoirs*), chests (*cassoni*), and wardrobes or clothes presses

(armoires) were designed to harmonize with the symmetrical architectural features of the rooms.

In England the early Renaissance house was constructed in the Tudor style, approximately half timber and half brick and stone. Lavish use was made of wood panelling and of such features as mullioned windows, elaborate chimneys, fireplaces, and mantels. Rooms were simple and dignified, with few items of furniture or accessories. Ceilings and walls were decorated with plaster mouldings or hung with tapestries. Windows, doors, and the large four-poster beds of period were draped with heavy velvets, damasks, and brocades.

3.4.4 BAROQUE INTERIORS

France set the style of interior decoration for most of Europe from the 17th to the 19th century. Two decorative styles predominated in 17th-century France, named after the kings in whose reigns they developed: Louis XIII (known as Louis Treize style) and Louis XIV (Louis Quatorze). The former style prevailed during approximately the first half of the century; it was a development of French Renaissance style that still retained some Gothic features, such as angular or square-shaped furniture. In the second half of the 17th century and the first two decades of the 18th century, the Louis XIV style prevailed; it was characterized by solidity, dignity, and a profusion of ormolu (gilt bronze) ornamentation. It possessed the classic quality of symmetry, but it was Baroque in its elaborateness and ostentation. The Palace of Versailles was the leading exemplar of the style; among the designers who contributed to its decoration were Jules Hardouin-Mansart and Charles Lebrun, director of the Gobelins factory, which manufactured all the royal furnishings. Gobelins tapestry was widely used in France and elsewhere during this period.

Walls, at this time, began to receive special attention as areas of decoration. Instead of solid wood panelling, walls were covered with graceful carvings, termed *boiserie*, often gilded and influenced by Oriental designs. From the 18th century onwards, walls were frequently framed in moulded strips of wood.

In England during the early part of the 17th century an elaborate fashion known as the Jacobean style was in vogue; it incorporated many elements derived from ancient Greece and Rome. During the Protectorate of Oliver Cromwell, when Puritan ideas flourished, the tendency was towards greater simplicity in the design and decoration of rooms. The Restoration of the monarchy in 1660 revived the fashion for heavy and ostentatious style. After the accession of William and Mary (1689), decorative influences from the Netherlands restored simplicity to English interiors. The English rooms of the last decade of the century were designed for intimate and comfortable living. They were small, with plain, low ceilings and many windows. Walls and floors were usually of wood. Oriental rugs were coming into wide use, and wallpaper was designed to resemble tapestry.

3.4.5 THE ADAM STYLE AND BEGINNING OF AMERICAN INTERIOR DECORATIONS

In England, interior decoration at the beginning of the 18th century was dominated by the Baroque. This was succeeded by the Georgian style, which was contemporaneous with the Louis XVI style in France and, like that style, was characterized by Classic simplicity. In interior decoration the work of Robert Adam and his brothers was outstanding. They were Scottish architects who also designed and decorated the interiors of the houses they built. Adam interiors are characterized by formality, symmetry, and simplicity, the use of details from ancient Greece and Rome, and of broad surfaces of delicate colour. These

beautifully proportioned and elegantly ornamented rooms had a great influence on the leading cabinetmakers of the period: Thomas Chippendale, George Hepplewhite, and Thomas Sheraton.

In early American homes comfort and beauty were secondary considerations. New England interiors of the early 17th century were characterized by low ceilings, large fireplaces, small windows, and basic furnishings. By the late 17th century, interiors had become more comfortable. The walls were finished with rectangular wood panels of upright boards; the ceilings were beamed; and the fireplace, centred in the house, took up most of one wall and was usually spanned with a heavy carved beam. The floors were constructed of wide boards and covered with small Oriental rugs. As the merchant class in the American colonies began to import books on architectural style and furniture from England, the colonial style, a modification of English Georgian style, developed. The Adam style of furniture and interior decoration influenced the work of the noted American architects Charles Bulfinch and Samuel McIntire. American interiors of the 18th century were characterized by painted woodwork, an abundant use of pilasters and cornices, mantelpieces of carved wood, and floors of wide boards. Imported wallpapers were in general use, as were rich fabrics such as damasks and satins for draperies.

Considered to be a consummate example of secular Rococo.

3.4. 6 20TH CENTURY APPROACH TO INTERIOR DESIGNS

After World War I the breach between the traditionalists, who devoted themselves to furnishing rooms with antiques or reproductions of them, and the functional modernists, whose aim was to originate new styles in keeping with 20th-century life, became even wider. The modernists themselves were divided

into several schools. One school, working in the Art Deco style, freely modified the traditional historical styles and adapted them to the needs of contemporary life. The interiors created by this school featured pastel colour schemes and richly textured draperies and upholstery. Another group, the Dutch de Stijl, designed interiors with violent colour schemes and Cubist patterns, with an emphasis on rectangular forms.

A third group of modernists, led by the Bauhaus school in Germany, designed interiors with the functionalism typical of modern architecture. Using steel, aluminium, and plywood, among other materials, this group made simple, practical furniture unlike that of any preceding style. The best-known exponents of the Bauhaus style were the architects Ludwig Mies van der Rohe, Marcel Breuer, and Walter Gropius. Designers in Scandinavian countries used bright colours, curves, and softly moulded but simple lines. Foremost among them was the Finnish architect Alvar Aalto, renowned for the chaste simplicity of his designs in wood.

In the United States, interior design has become a huge profession; its foremost exponents in contemporary design have been architects—such as Charles Eames and Eero Saarinen—and artists—such as the sculptors Harry Bertoia and Isamu Noguchi. Among the most prestigious design firms is Knoll International, founded as Knoll Associates in 1938 by the German-born entrepreneur Hans Knoll; he pioneered in the popularization of works by the Bauhaus designers and also commissioned work from Eames, Saarinen, Bertoia, and Noguchi, among many others. s

Not all modern interiors rely solely on 20th century ideas, however. Since the early 1950s, the influence of traditional design has taken its place

have prevailed and Japanese interior design has followed its own strict code. Rooms are divided by paper-covered screens, which are sometimes painted with landscapes or pastoral scenes. The main living area has alcoves, shelves, and certain objects on display; and floors are covered with straw mats known as *tatami*. Furniture is minimal; seating tends to consist of cushions and storage is concealed behind sliding paper screens. Like Islamic peoples, the Japanese have always had a great fondness for gardens and water, and invest as much time and effort in landscaping as in interior design.

In the West, the modern outline of interior design began to take shape in the Middle Ages in Europe. The remainder of this article is a historical survey of domestic interior design in Europe and America from that time to the present.

3.4.8 ROCOCO INTERIORS

In France the Baroque style fashionable in the age of Louis XIV (1643-1715) was succeeded in the reign of Louis XV (1715-1754) by the Rococo style. Rococo was characterized principally by elaborate but delicate curves and countercurves. The dwellings of the nobility generally had wall panels of carved wood. Unpanelled walls were sometimes painted in pastel colours, with motifs taken from Chinese art or with stylized representations of scenes from nature. A particular feature of the Louis XV room was its small marble mantel exquisitely carved with a curved design; above the mantel was a richly carved and painted overmantel with a *trumeau* (mirror). The draperies and upholstery used in the Louis XV style were finely textured and patterned with scroll, ribbon, and flower motifs. Lighting fixtures, fireplace accessories, and hardware were of finely chased, often gilded metalwork. The floors were of wood arranged in marquetry patterns or in larger, geometric parquet designs. The use of beautifully woven

alongside modern developments as an integral part of creative design schemes. A juxtaposition of fine antiques or reproductions with designs in steel and glass has enhanced many contemporary interiors.

3.4.7 THE ANCIENT WORLD

The simplest mud-brick houses of ancient Egypt were sparsely furnished and had little more than a coat of whitewash by way of decoration—a practice that remains commonplace even today. In the houses of those further up the social scale, greater use of colour was made, walls often being painted with striking patterns. Still wealthier people lived in more elaborate houses, usually built around courtyards. Rooms were decorated with painted panels which depicted typical Egyptian motifs such as the palmette and papyrus. Walls were usually covered with woven reed mats, and the furniture showed sophistication in both design and construction, sometimes incorporating inlays of ivory, precious stones, gold, and silver. Decoration in palaces tended to depict family groups, indicating the importance attached to family life. Floors were sometimes painted blue to create the tranquil appearance of water.

Ancient Greek architecture emphasised symmetry, unity, and simplicity, leaving little that could be improved upon by interior decoration. The pre-Hellenistic palaces of Mycenae and Crete, however, were richly decorated with boldly coloured frescoes and contained fine workmanship in ivory, ceramics, gold, bronze, and silver.

Early Indian design, dating from 2500 to 1700 BC, was plain and utilitarian, but the influence of other cultures gradually led to a change in taste.

Aubusson and Savonnerie carpets was a feature of the Louis XV room. Special kinds of furniture were created to fill the needs of intimate social life, among them the chaise longue, the type of chair known as the bergère, and a type of small desk called an escritoire.

In the last third of the 18th century the Louis XV style was succeeded by the Louis XVI, which, in contrast to the Louis XV, was characterized by Classical simplicity and was closely linked to Neo-Classical style. Louis XVI furniture and decorations had straight lines and right angles; rooms were smaller and less formal and became more specialized: the bedroom, boudoir, dining room, and library became distinctly different from each other. Wall panelling in the Louis XVI room was less profusely carved. Wall paintings tended to depict Classical images rather than scenes from nature. Doors, windows, and marble mantels were of Classic rectangular design. Ceilings were in most instances left unornamented; occasionally, when a more luxurious effect was wanted, ceilings were painted to represent sky and clouds. In Germany and Austria, and particularly in Bavaria, the Rococo style developed independently in a rich and fantastic manner. For example, the pilgrimage church of Die Wies (1745-1754) near Munich, designed by Dominikus Zimmermann, has an exuberant playfulness of form and decoration not found in religious structures west of the Rhine. The Flemish-born architect François de Cuvillies created the famous Amalienburg Pavilion (1734-1740), a royal hunting lodge in Munich that combines a chaste Neo-Classical exterior with opulent interiors.

3.4.9 ROCOCO AND ITS CONTRASTS

In 1699 Louis XIV had already called for a lighter, more youthful style of art. It was, however, under Louis XV that art decisively moved away from the

grandeur of the Baroque and the pompous rhetorical style promoted by the Academy to the lighter, more refined style of the Rococo. The first and perhaps greatest exponent of this new aesthetic was Antoine Watteau. He was born in Valenciennes, Flanders, which at that time had been a French possession for only six years. This background helps account for his passionate admiration for Rubens, the impact of whose work was later mixed with that of the great Venetian painters, especially Veronese. He moved to Paris in about 1702 and soon after began to show the symptoms of tuberculosis, which was to kill him. Watteau specialized in the genre known as the *fête galante*, involving depictions of elegant, well-dressed people at their leisure in the open air, as in *The Dance* (c.1717-1718, National Gallery of Scotland, Edinburgh). All his works show an extraordinary ability to capture the texture of clothing and the sense of occasion and, more importantly, a poetic, rather melancholy mood. Though the scenes are ostensibly joyful, they are also marked by a sense of the transitoriness of pleasure and hence of life itself. It is this pessimistic aspect that sets Watteau apart from subsequent Rococo painting.

One of Watteau's followers was Jean François de Troy, who likewise painted *fêtes galantes* and other outdoor scenes, such as those of hunting, as well as depictions of interiors filled with fashionably dressed figures. The more sensual, slightly titillating aspect of Rococo painting was developed by François Boucher and Jean-Honoré Fragonard. Having won the Prix de Rome in 1723, Boucher travelled to Italy, where he was struck by the work of Tiepolo, whose lively, supremely decorative style was to be the main influence on his work. Boucher specialized in mythological subject-matter, though he also painted some everyday scenes and occasional landscapes. His decorative talent was further employed in creating designs for tapestries and for the theatre. The light,

colourful style of his mythological paintings, as seen for example in *Leda and the Swan* (1741, Nationalmuseum, Stockholm), and their emphasis on feminine beauty caused some outcry at the time, especially from the rather moralistic critic Denis Diderot. Diderot claimed that Boucher was "the ruin of our young painting students" as he encouraged them to "sweat over garlanded putti, to paint rosy and dimpled behinds, and to indulge in all sorts of extravagances". The frequent erotic undertone of Boucher's work is even more pronounced in his treatment of contemporary subjects; for example, *Nude Girl* (1752, Alte Pinakothek, Munich) shows a young woman reclining provocatively on a luxuriously draped couch.

Like Boucher, under whom he studied from 1750 to 1752, Fragonard was closely interested in the work of Tiepolo and also spent some time in Italy (from 1756 to 1761) as a Prix de Rome winner. After a brief flirtation with the earnest subject-matter of history painting, Fragonard turned to the lighter subjects of everyday scenes. One of his most famous early works is *The Swing* (1766, Wallace Collection, London), which shows a young woman on a swing in a sunlit wood, her lover reclining on the ground as she kicks up her skirt in front of him. Such amorous escapades were given a fuller treatment in the series called *The Progress of Love* (c. 1770-1772, Frick Collection, New York), consisting of four main panels and several smaller scenes. They were painted for Louis XV's mistress Madame du Barry, who returned them to Fragonard, probably because she found them out of keeping with the comparatively sober building in which she planned to install them. Though Fragonard's work is often light-hearted and rather sentimental, it rarely has the saccharine quality found in the paintings of his contemporary Jean-Baptiste Greuze. His early paintings include many mawkish depictions of the poor and pitiful, which enjoyed a considerable

reputation at the time. He also produced a quantity of titillating pictures of young girls. By the end of his career his work was becoming hopelessly outmoded.

Much more important are the works of Jean-Siméon Chardin. In contrast to other painters of the Rococo period, his genre works treat the ordinary aspects of life and are emotionally subdued, as seen in *Girl Scraping Vegetables* (1738, National Gallery of Art, Washington, D.C.). The restrained, earthy colours and the choice of lowly subjects shows the influence of Dutch genre painting. The quiet gravity found in his genre scenes underpins his extraordinary still-life paintings, which comprise the bulk of his other pictures. They include depictions of humble household utensils, like *Pipe and Drinking Mugs* (1760-1763, Louvre, Paris), and careful depictions of bowls of fruit, game, and other everyday objects. These low-key images again owe something to Dutch painting and have a presence and stillness that transforms the ordinariness of the subject.

The painter Elisabeth Vigée-Lebrun was one of the most successful women artists of any time. She became a friend of Marie Antoinette and gained a prominent reputation all over Europe. She specialized primarily in portraits, particularly of women and children, as in *The Artist and her Daughter* (c. 1785, Louvre, Paris).

The outstanding French architect of the 18th century was Ange-Jacques Gabriel, whose work perfectly exemplifies the tasteful elegance of the period. His most famous building is the Petit Trianon (1761-1768) in the grounds of the Palace of Versailles. It has a classical dignity and poise, but also something of the lightness of spirit characteristic of the Rococo.

3.5 THE 19TH CENTURY

3.5.1 The Neo-Classical Age

Following the decorative, almost frivolous qualities of much 18th-century art, a more austere, emotionally cool style emerged towards the end of the century. This was Neo-Classicism, which soon began to take root all across Europe. Prompted by the rationalism of the Enlightenment, the order and harmony that underpin the style were in sharp contrast to the Rococo. In France, however, Neo-Classicism had a curiously double-edged meaning. Enlightenment thought had led to the radical liberalism that was a major cause of the French Revolution of 1789, and in this context Neo-Classicism seemed to be allied to the democratic and republican spirit of Classical art. When Napoleon declared himself Emperor (in 1804), however, it was easily adapted to emphasize links with Roman imperialism, suggesting that France was re-creating the great empires of the Classical world as its armies swept across the European continent.

Early signs of the classical revival can be seen in the work of the sculptor Edmé Bouchardon: his equestrian sculpture of Louis XV (1748-1762; destroyed 1792) refers back to the famous Roman equestrian portrait of Marcus Aurelius. The same taste for the Antique informs the work of the sculptor Jean-Baptiste Pigalle, whose most famous work is the nude portrait of *Voltaire* (1770-1776, Louvre, Paris). In architecture the spirit of the Enlightenment is seen most strikingly in the idealistic plans of Étienne-Louis Boullée—for example, his grandiose designs for a monument to Isaac Newton (1784)—and the designs and Neo-Classical buildings of Claude-Nicolas Ledoux.

The most notable exponent of French Neo-Classicism was the painter Jacques-Louis David, whose fervour for the ideals of the Revolution came to be

transferred to Napoleon. His images of the Classical world were mostly concentrated on scenes from Roman history, as these seemed to have the greatest contemporary resonance, as in *The Oath of the Horatii* (1784-1785, Louvre, Paris). He also painted scenes of contemporary Revolutionary history, such as *The Death of Marat* (1793, Musées Royaux, Brussels). Through grand, rhetorical paintings, he and his many pupils, among them Antoine-Jean Gros and Anne-Louis Girodet, helped form the idealized view of Napoleon and his rule that was to determine his image for posterity, as seen in such works as David's *The Coronation of Napoleon* (1805-1807, Louvre, Paris). Following in the footsteps of David, Jean-Auguste-Dominique Ingres became a standard bearer of the Classical tradition in his rather frigid history paintings (for example, *The Apotheosis of Homer*, 1827, Louvre, Paris) and in contemporary portraits (for example *Madame Moitessier*, 1856, National Gallery, London).

3.5.2 ROMANTICIS AND REALISTS

In the first half of the 19th century, the classical aesthetic faced rising opposition from Romanticism. This was centred on the idea of the artist as an individual, inspired genius whose duty it was to give expression to his emotions and instincts without regard for tradition—an attitude entirely at odds with the balanced harmony of Classicism. Romanticism burst on to the scene with such pictures as *The Raft of the Medusa* (1819, Louvre, Paris) by the tragically short-lived painter Théodore Géricault. The vivid colours and the very subject (a depiction of the survivors of an actual shipwreck) heralded a new era. Not only was there a difference of style but also of approach to art: it became increasingly common for the artist to be at odds with the public and critics, giving rise to the idea of an avant-garde—something in advance of its time and hence inevitably beyond the comprehension of anyone but a small elite. Eugène

Delacroix became the most famous Romantic artist, producing a series of dramatic, exotic works such as *The Death of Sardanapalus* (1827, Louvre, Paris). The radical distinction between his own approach to painting and that of Ingres turned contemporary discussion into a dispute over the relative merits of drawing (Classicism) and colour (Romanticism), which in essence repeated the arguments that had raged in the 17th century. It was the beginning of an ongoing attack on academic painting, which was not to be concluded for some decades.

While these empty, ultimately political, confrontations continued, yet other aesthetic forms were emerging. Jean-Baptiste Camille Corot breathed new life into landscape painting through his obsessive devotion to sketching nature on the spot (*en plein air*). His spontaneous, poetic works, executed in soft, inexact brushstrokes, were slow to gain favour but by the 1850s his reputation was well established. He was a powerful influence on the Barbizon School of painters, which included Jean-François Millet and Théodore Rousseau. The members of this loose grouping concentrated on landscapes and peasant scenes. Though some Barbizon paintings, especially those by Millet, were thought to have subversive "Socialist" connotations, the political possibilities of art were expressed much more directly by Gustave Courbet. In 1850 he outraged critics and public alike with the startling, revolutionary work *The Burial at Ornans* (Musée d'Orsay, Paris), which depicts a humble village burial on a scale usually reserved for grand historical scenes. An extremely political artist, Courbet objected to the assumption that there were only a few ideal, exclusive subjects that were appropriate for art, claiming that everyday scenes populated by ordinary people were as fit for art as images of kings or heroes. His Realist aesthetic

(expressed in his "Manifesto of Realism", 1855) began a revolution in art, freeing artists both from traditional styles and traditional subject-matter.

3.5.3 IMPRESSIONISM AND AFTER

Courbet's Realism had a great effect on the early work of Édouard Manet. His two celebrated paintings of 1863, *Le Déjeuner sur l'Herbe* and *Olympia* (both Musée d'Orsay, Paris), exhibited at the Salons of 1863 and 1865 respectively, caused an unprecedented outcry. The unidealized nude in the latter provoked accusations of immorality and depravity, though Manet saw himself as merely creating a new art for a new, modern world. Excited by his art, a group of mostly younger artists gathered round Manet. Among them were Edgar Degas, Claude Monet, Camille Pissarro, Auguste Renoir, and Alfred Sisley; it was these painters who were to form the core of the Impressionist movement. They first appeared as a coherent group at the first Impressionist Exhibition of 1874, though the movement had been developing since the mid-1860s.

The archetypal figure was Monet, who initially pursued a rigorous *plein-air* aesthetic, by painting his canvases in the open air (although in his later years he came to rely increasingly on studio work to complete his pictures). Degas followed a different path and was, in fact, not particularly pleased at being lumped together with the other Impressionists. His scenes of ballet dancers, cafés, and interiors share a common desire to make the modern world the subject of art, but they have a very distinctive style and subject-matter. Degas also produced highly original sculptures, notably those of ballet dancers (for example, the bronze *The Little Dancer Aged Fourteen*, 1880-1881, Musée d'Orsay, Paris, which has a real tutu). The Exhibition of 1874 was treated with derision by many critics, to whom it seemed that the paintings were unfinished

and technically incompetent. However, by the time of the last group exhibition (the eighth) in 1886, Impressionism was gaining acceptance and it had an enormous influence on late 19th-century and early 20th-century painting in France and elsewhere, undermining the academic tradition of large, highly finished pictures in favour of works that more immediately expressed the artist's response to the world. The spontaneous, loose brushwork of the Impressionists sprang from their desire to capture a vivid snapshot of a scene, without the mediation of endless deliberation or the imposition of aesthetic convention.

Contemporary with the Impressionists—and in some senses comparable, in that his art was similarly anti-academic—was the sculptor Auguste Rodin. He became the most famous sculptor of the late 19th century and was influenced by the work of Michelangelo, especially in his development of the idea of *non finito*, in which sculpture is deliberately left unfinished. Consequently, his sculptures have an impressionistic quality to them, though they are infused with tremendous expressive power. In addition to a number of single-figure monuments, one of his most important projects was the *Gates of Hell* (1880-1917, Musée Rodin, Paris) for the Musée des Arts Décoratifs, in Paris. The Gates were inspired by Ghiberti's *Gates of Paradise* and remained unfinished at Rodin's death.

Though he was briefly associated with the Impressionists, particularly Pissarro, Paul Cézanne developed his own unique style. Unlike the Impressionists, he sought an underlying structure in what he saw, developing a painstaking technique of applying small slabs of colour to the canvas to build up the final image. He became especially fascinated by Mont Sainte Victoire (a mountain near Aix-en-Provence), which is the theme of many of his works. This more systematic, structured approach to painting also characterizes Neo-

Impressionism. Its central figure was Georges Seurat. Influenced by contemporary scientific theories about colour (as were the Impressionists) and expression, Seurat painted serene, static works, such as *A Sunday Afternoon on the Island of La Grande Jatte* (1884-1886, Art Institute, Chicago), by the meticulous application of closely juxtaposed dots of colour—a technique called Pointillism. Various artists were influenced by this style, most notably Paul Signac. The cool objectivity of Pointillism contrasts sharply with the emotive subjectivity of Post-Impressionism (Cézanne, Paul Gauguin, Vincent van Gogh) and Symbolism. Gauguin was inspired first by the atmosphere he found at Pont-Aven, in Brittany, and later by the exoticism of Tahiti and the South Sea Islands. He developed a colourful, flat style called Synthetism or Cloissonism in which the image is infused with emotion and mood. Van Gogh chose more mundane subjects but likewise gave them an emotional impact that is complemented by the wild, thickly impasted technique. This subjectivism has strong parallels with the work of the Symbolist movement, which included the pioneers Gustave Moreau, Pierre Puvis de Chavannes, and Odilon Redon as well as a host of lesser artists who came to the fore in the 1880s and 1890s. As it emerged in the hands of poets such as Stéphane Mallarmé and Jean Moréas, the Symbolist aesthetic was heavily imbued with mysticism, religion, and metaphysics. The resulting works often have an oppressive, claustrophobic feeling derived from the artist's belief that some sort of access to other, more "real" worlds could be reached through the medium of the artist's vision.

These varied developments helped to make Paris unrivalled as the world capital of art in the late 19th century. France did not have such a central role in architecture at this time, but it was nevertheless the home of some of the most impressive work in traditional styles and of some of the most exciting and

forward-looking use of new materials. While the Impressionists were revolutionizing painting, the face of Paris was being transformed by the sweeping programme of modernization directed by Baron Georges Haussmann for the Emperor Napoleon III. From 1853, Haussmann demolished large areas of old Paris, replacing the cramped medieval street pattern with broad, straight, majestic boulevards, with many major new buildings acting as focal points at their intersections. Among these buildings is the Opéra (1861-1874) by Charles Garnier, which is the most resplendent example of the Beaux-Arts style—a richly ornate classical idiom that dominated official taste in French architecture at this time. The Opéra has a swaggering self-confidence that is fully in keeping with its function and which also perfectly epitomizes the vigour with which Paris was being rebuilt. Comparably self-confident, but in a totally different way, is the Eiffel Tower, built by the engineer Gustave Eiffel as the centrepiece of the Paris World's Fair of 1889 (marking the centenary of the French Revolution). Initially there was strong opposition to the tower from people who thought it would be out of scale and character with the city (Charles Garnier was among the distinguished figures who signed a petition against it), but it proved enormously popular (it had more than two million visitors during the exhibition) and its success marked the acceptance of iron as an architectural material. About a decade later, Hector Guimard began making memorable use of iron as a decorative medium in his entrances for various Paris Métro stations. The sinuous, plant-like forms he employed here are among the best representatives of the Art Nouveau style that was such a powerful force in the applied arts from about 1890 until World War I.

3.6. THE 20TH CENTURY

The discoveries and developments of the latter half of the 19th century were only gradually absorbed and, well into the 20th century, there were artists who were still working in mixtures and varieties of each of its styles: the work of Pierre Bonnard and Édouard Vuillard, for example, represents essentially a continuation of the Impressionist tradition. Increasingly in the early years of the century, Paris became the focal point for artists from all over the world. Such was the attraction of Paris that what is called "French art" in this period was not necessarily produced by artists born in France: one of its defining features and sources of innovation is its cosmopolitanism.

3.6.1 FAUVISM

The first avant-garde movement of the new century was, however, mainly the creation of native French artists—Fauvism, as espoused by André Derain, Albert Marquet, Henri Matisse, Georges Rouault, Maurice Vlaminck, and others. The style acquired its name at the Salon d'Automne of 1905, when paintings by these artists were described by the critic Louis Vauxcelles as the work of *fauves* ("wild beasts") because they seemed so violent and "crude". The Fauves were not a tightly knit group; rather they were bound by a common desire to oppose the stifling academicism that still lingered as establishment art. The hallmarks of their work were bright colours and an impetuous, expressionist technique. Matisse was seen as their leader, and Raoul Dufy and Georges Braque were later associates of the style.

3.6.2 CUBISM

Fauvism was short-lived, and in 1907 Pablo Picasso opened an entirely new path for art with his landmark work *Les Femmes d'Alger (O. J. R.)* (1906-1907,

Museum of Modern Art, New York). This painting draws on a variety of sources, including the painting of Cézanne, African art, and Iberian sculpture, and anticipated the development of Cubism. At the time Braque was one of the few artists both to see and to understand the work (it was not publicly exhibited until 1916), and he soon became a close friend of Picasso. Between them they developed Cubism into the most fruitful and radical of all modern movements. Other Cubists, such as Albert Gleizes and Jean Metzinger, made of it a public phenomenon and it soon affected art across the entire world. It influenced, for example, some of the early pictures of Marcel Duchamp.

3.6.3 DADA AND SURREALISM

Cubism continued through the hiatus of World War I and remained a force in French art into the 1920s. By that time it was an object of derision among the French Dadaists, who included Francis Picabia, and the emerging Surrealists around André Breton. The antics of Dada, which arrived in France with the Romanian poet Tristan Tzara in December 1919, were anarchic and outrageous, but lasted only a few years. In 1924 Breton published his *Surrealist Manifesto* and gathered around himself a number of artists, such as Max Ernst, André Masson, Yves Tanguy, and, later, Salvador Dalí. Surrealism was the dominant artistic movement of the inter-war period, and affected many artists who were never officially a part of it, including Picasso. Its emphasis on the subconscious led to two primary modes of artistic expression: an impulsive, near-abstract style based on automatism (an unimpaird exercise of the subconscious mind) as practised by Masson, and a careful, veristic depiction of a "Surreal" world, as seen in the work of Tanguy and Dalí. There was also Surrealist sculpture, such as that by Alberto Giacometti, who was Swiss by birth but worked mainly in Paris.

A loosely ordered group of abstract artists founded the group Abstraction-Création in 1931 as a united opposition to the Surrealists. Including painters and sculptors such as Jean Arp and Auguste Herbin, they worked in a variety of styles, though geometric abstraction was dominant. Another opposition to Surrealism came from those artists who found its political commitment too equivocal in the 1930s, a time when democracy was being attacked on all fronts internationally. The artists of the group Forces Nouvelles, for example, painted figurative works with a heavy-handed didactic content. This group was founded in 1934 and continued to hold exhibitions until 1943, but it lost much of its impetus with the outbreak of World War II.

In architecture, the dominant avant-garde idiom in the inter-war years was the International Style, characterized by cool rationality of design, with clean, generally cubic shapes and a conscious renunciation of historicist details. Le Corbusier was a leading and highly influential exponent of the style, but after World War II he turned to a more massive and expressive idiom, with which he again exerted a powerful impact on other architects.

3.64 THE POST WAR YEARS

During World War II many artists left Europe to seek refuge in the United States, and this migration of talent was a major factor in Paris conceding to New York its role as the world capital of avant-garde art. New York has maintained this position ever since, and in the post-war years French art has been more influenced by American art than vice versa. However, there have still been original and significant developments in France during this period. Some of the art of the immediate post-war period had a savagery that seemed an appropriate reaction to the atrocities of the war: the Art Brut of Jean Dubuffet

was inspired by graffiti, primitive art, and the art of the mentally ill. During and after the war Jean Fautrier painted near-abstract images in thick impasto that seem to embody some nameless, mute horror. Less clearly tied to the historical context is the work of Balthus (Balthasar Klossowski), with its erotic undertones. There was also a French counterpart to American Abstract Expressionism in the form of Tachisme, leading practitioners of which included Georges Mathieu and Pierre Soulages. Tachisme takes its name from the word *tache* (French for "spot" or "blotch"). With its stress on intuitive self-expression, it is close in spirit to Abstract Expressionism, but Tachiste pictures tend to more suave and less aggressive than their American counterparts, continuing the French tradition of *belle facture* ("beautiful handling").

American art was also the prompt for the Nouveaux Réalistes of the late 1950s and 1960s. Drawing on Pop Art and the work of such artists as Jasper Johns and Robert Rauschenberg, Nouveaux Réalisme often involved the use of junk material continuing the trend initiated by Dubuffet. The movement's artists, such as Yves Klein and Jean Tinguely, engaged with society in a way that abstract artists did not. Klein assaulted the commercialism of the art world through a series of extreme, baffling works such as *The Void* of 1958, which consisted of an empty gallery, while Tinguely made self-destructive machines that mocked consumerism and technology. Such works come within the orbit of Kinetic Art, which Tinguely helped to establish as a distinct genre (he was one of the exhibitors at "Le Mouvement" at the Denise René Gallery, Paris, in 1955, the show that did more than any other to put Kinetic Art on the map). Closer to American Pop Art are the works of Alain Jacquet and Martial Raysse, such as the latter's *Simple and Quiet Painting* (1965, Museum Ludwig, Cologne), a photograph to which paint and other materials were added. Among more recent works are

those of Gérard Garouste, whose paintings make a parody of the styles of earlier masters, such as Tintoretto, Picasso, and others. Christian Boltanski is regarded as one of the leading contemporary figures in experimental art. Typically he uses assemblages of old photographs (sometimes evoking the Holocaust) combined with everyday objects and small electric lights.

In reaction against such avant-garde forms of expression, certain French artists have tried to reaffirm the traditional centrality of painting, notably the group Supports-Surfaces, active from 1967 to 1972. Similarly, in three-dimensional work, artists such as Bernard Pagès have pursued an intellectual enquiry into the nature of sculpture.

3.6.5 RECENT ARCHITECTURE

Whereas French painting and sculpture in the late 20th century have generally not lived up to the country's earlier great achievements in these fields, some of the major French buildings of recent years rank among the most impressive of the age anywhere in the world. The key work in generating the French building boom has been the Pompidou Centre in Paris (1971-1977), a giant arts centre named after President Georges Pompidou and designed by the Anglo-Italian team of Renzo Piano and Richard Rogers. The enormous publicity enjoyed by the building has encouraged the presidents who succeeded Pompidou to leave memorials to their own periods of office in the form of comparably ambitious "Grands Projets". Like the Pompidou Centre, many of these buildings have been designed by illustrious non-French architects, sometimes following major international competitions. The best-known of these buildings is probably the Louvre's spectacular glass pyramid (1989) by the Chinese-born American I. M. Pei. The pyramid, which forms a new entrance to the museum, has great purity of form, whereas the Pompidou Centre is almost jocularly exuberant, and there is

comparable stylistic variation in the other Grands Projets. They include the transformation of a disused 19th-century railway station into the Musée d'Orsay (opened 1986) by Pierre Colbec and the Italian Gae Aulenti, and the colossal Grande Arche (1981-1989) at La Défense (a business district on the outskirts of Paris), designed by the Danish architect Otto von Spreckelsen. Rising to 160 m (525 ft), the Grande Arche is more than three times the height of the famous Arc de Triomphe (1806-1835) in the centre of Paris, the form of which it consciously echoes. Whereas the Arc de Triomphe is essentially a decorative structure, however, the Grande Arche contains office blocks and a gallery. In addition to these undertakings in the capital, there have also been what amount to provincial versions of the Grands Projets, for example the Library and Art Gallery at Nîmes (1984-1993) by the British architect Norman Foster.

3.7 PRINCIPLES OF INTERIOR DESIGNS

Interior design applies both to private interiors, usually flats and houses, and to indoor public spaces, such as concert halls, banks, offices, theatres, restaurants, hotels, and places of worship.

Sometimes the architect of a building is also its interior designer; more often, an architect and an interior designer work together on a project to create a unified whole. Usually, however, the interior designer works independently in an existing space creating a decorative scheme that complements the building's architecture.

Professional designers normally work from a scale drawing, usually of an existing space that cannot be changed, although minor changes (the location of doors, walls, electrical outlets, and lighting fixtures, for example) may be made. The designer creates effects with a wide variety of design components, all of

which must be harmonized into a coherent and pleasing scheme. Among these components are Lighting, colours, fabrics, floor and wall finishes, decorative elements, and furniture, guiding the designer's final choices must be the client's tastes and budget, as well as the intended function of a given room.

Lighting, whether natural, artificial, or a combination of the two, contributes greatly to the atmosphere of the room, and is taken into account when a colour scheme is chosen. Cool colours (blue, green, grey) and warm colours (red, yellow, orange, brown), strong, dramatic colours (red, brown, purple, black), and less prominent colours (beige, pink) can contribute much to the atmosphere of a room. Certain colours, (notably white and cool, light colours) create the illusion of greater space; others black and warm, dark colours) seem to diminish it. By varying their tone and intensity, certain colours can be made either to blend unobtrusively with other colours or to stand out strikingly. Small objects in a room can be made conspicuous if they are of a colour that contrasts with the background colours of the room.

The texture of furnishings is another element that contributes to the overall impression given by a room. Slate, brick, glass, and plaster, polished wood, linoleum, tile, glazed chintz, damask, linen, silk, and wool all have different textures that can be exploited for the effects they create.

The proportions of the furniture must equate with the size of the room as well as with the other pieces of furniture; the height of coffee tables, occasional tables, and cupboards must be convenient as well as aesthetically pleasing in relation to sofas and chairs. Lamplight must be adjusted to fall where reading convenience requires, as well as above or below that level for general and accent lighting. Wall decorations must be placed at the eye level of the viewer, either seated or standing, and also at levels and positions related to other objects in the room. The placement of furniture of varying colours and textures must be balanced so that the room as a whole does not appear to be lighter on one side.

CHAPTER FOUR

4.0 CASE STUDIES

For a research procedure to be comprehensive, some case studies of existing structures of the kind have to be carried out to ensure proper enlightenment on the topic. This research programme led to the careful study of these already existing facilities and their details are given in the following pages:

4.1 CASE STUDY ONE

LAKE LEISURE WORLD (BADAGRY) LAGOS

4.1.1. BRIEF HISTORY OF LAKE LEISURE WORLD

The Lake Leisure World Badagry was established a few years ago in Lagos, the main aim of doing so was to create an environment where people can go and take some time out in the evening to enjoy something serene after a day's hard job. It was also designed to meet the demanding needs of the people of Lagos who at the time were complaining of over population of public places due to their proximity to town or their position in town. These are the factors that led to its subsequent location.

4.1.2 DESCRIPTION

The Lake Leisure World is a relatively small facility built around a lake within the premises of the International Trade Fair Complex in Badagry Lagos. It consists mainly of conference rooms, banquet halls, bars (indoors and outdoors), a playground for children, a boat yard and a lush garden on the east side. The buildings were made with glass and steel frames on a concrete foundation. There are road networks within the premises made of tar and a couple of foot paths made with concrete slabs. Also inclusive within the area is a gift shop for children.

4.1.3. MERITS

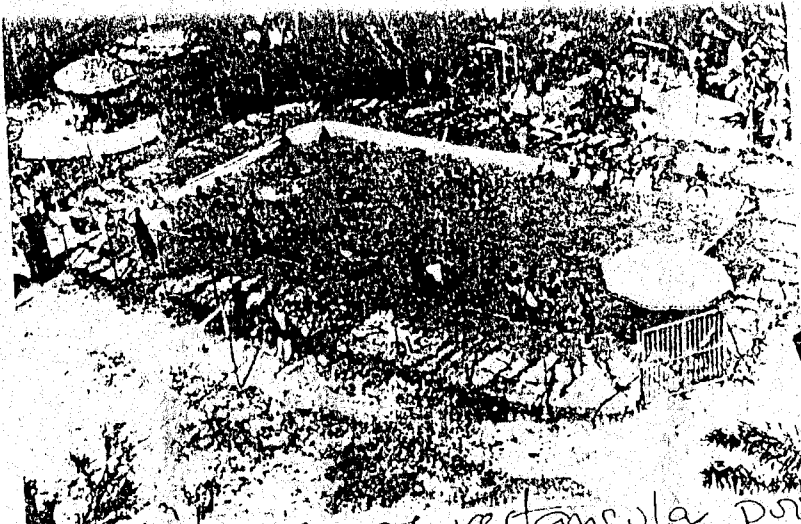
- 2) There is provision of an outdoor playground for children.
- 2) Beautiful landscapes work with grass are provided.
- 3) Beautiful lake view and access are provided.
- 4) Well decorated interiors of their banquet halls and conference rooms are provided.
- 5) There is provision of gifts shop for children.
- 6) Yachts and boat sails are available
- 7) There is provision of indoor restaurants for guests.
- 8) There is provision of a gazebo to reflect our tradition

4.1.4' DEMERITS

1. The park is still too small to meet with the population demands of the people in Lagos.
2. The park is too far from town and the transport system in Lagos is nothing to reckon with as plenty of time would be spent trying to get back from the park.
3. The lake leisure world looks more like an administrative structure than recreational.
4. There is no provision for health care in case Of Casualties

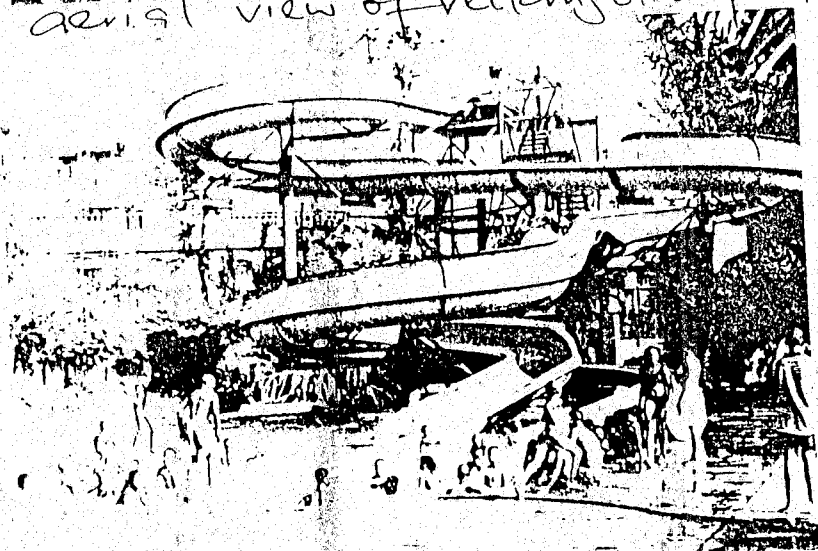
- 4) The range of recreational facilities provided is too narrow. It doesn't allow for much choice from a variety.
- 5) Water in the pools is not changed daily as required for good sanitation.

Ikeja
Lagos



aerial view of rectangular pool

Plate 4



Water slide for kids

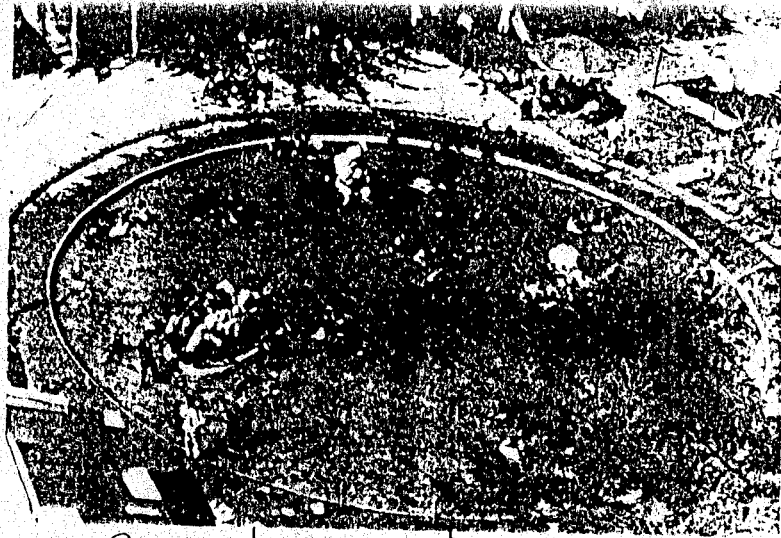
Plate 5



aerial view of Water slide

Plate 6

Water
parks
Ikeja
Lagos



Circular pool

Plate 7



Plate 8

closer view of visitors having fun



Plate 9

Outdoor restaurants

4.3 CASE STUDY THREE

4.3.1 THE DOE RUN LODGE (U.S.A)



Plate 10

The Doe Run Lodge is located at 289 mile post in the U.S.A. There is provision for an accommodating resort where tourists can stop and imbibe the Appalachian experience. The Doe Run Lodge offers an inviting retreat of comfortable accommodations nestled in a remote mountain setting, perfect for family vacations, romantic getaways, and business conferences. The High Country restaurant is the focal point of the lodge. A dining experience at the High Country restaurant surpasses any typical resort fare. A unique menu boasts offerings of quality seafood, steak, and other recipes particular to the region. The dining room reveals special views of the mountainside and also offers an

open-air patio for outdoor dining pleasure. The High Country restaurant is known for its excellent food, including fresh seafood from the coast and other special attractions.

4.3.2 MERITS

- 1) The Doe Run Lodge is strategically located to meet travelers (tourists) needs.
- 2) The Doe Run Lodge is architecturally sound being that its located in the Ice tropics.
- 3) It offers special facilities that enhance comfort ability.
- 4) Accommodation is their primary objective.

4.3.3 DEMERITS

- 1) It is located in the Ice tropics which is a very cold place to situate this kind of facility.
- 2) Outdoor activities can not be enhanced due to weather related problems.

4.4 CASE STUDY FOUR

4.4.1 THE BLUE BRIDGE PARK WAY (U.S.A)



Plate 11

4.4 .1 BRIEF DESCRIPTION OF THE BLUE RIDGE PARKWAY.

The Blue Ridge Parkway came out of the Great Depression as a Way to link the Shenandoah and Great Smoky Mountains national Parks by way of a recreational motor road. Campgrounds, picnic areas, visitor centers, lodges and restaurants offer places of recreation, relaxation, or education. Log Cabins and turn-of-the- Century mansions bring opportunities to learn about the people Who have called the Blue bridge their home. The Blue bridge Parkway is ranked "America's most scenic drive" by leading travel writers. The Parkway follows the mountain crests from Shenandoah National Park in Virginia to Great Smoky Mountains during the first explosion of colorful wildflowers in spring to the refreshing coolness of summer to the fall extravaganza in red and gold to the serene blanket of winter's snow, each season is a feast for the senses.

CHAPTER FIVE

5.0 DATA COLLECTION

5.1 CLIMATE CONDITION.

The examination of the climate situation of this region was for the enhancement of proper plans and space circulatory allocations. Information about this was collated from various documents which includes the Abuja master plan of greater Usuma town (tourist resort, Abuja site appraisal, draft 1 and use). Details of total climatic elements and constituents are as follows in the text beneath.

5.1.1 SEASONS

The region is characterized by two main seasons namely rainy and dry season. The dry season occurs between November and March in which extreme Harmattan conditions are experienced between November and January, while on the other hand the rainy season occurs between April till September. The dry season ushers in heat and the depletion of vegetation due to prolonged absence of moisture while the rainy season is marked by a rejuvenating and restoration process as all vegetation grow and recuperate during this time.

5.1.2 WINDS

Two alternating wind system influenced by the seasonal shifting of pressure belts prevail in the region. The cool south west wind resulting from the formation of warm and moist tropical maritime air mass over the Atlantic ocean is predominant between May and September. This wind blowing towards the North-East direction and influences or induces the rainy season. The dry dust laden tropical continental air mass formed over the Sahara desert results in predominance of the North-East trade winds during the months between November and March.

This wind blows towards the South-West direction and ushers in dry

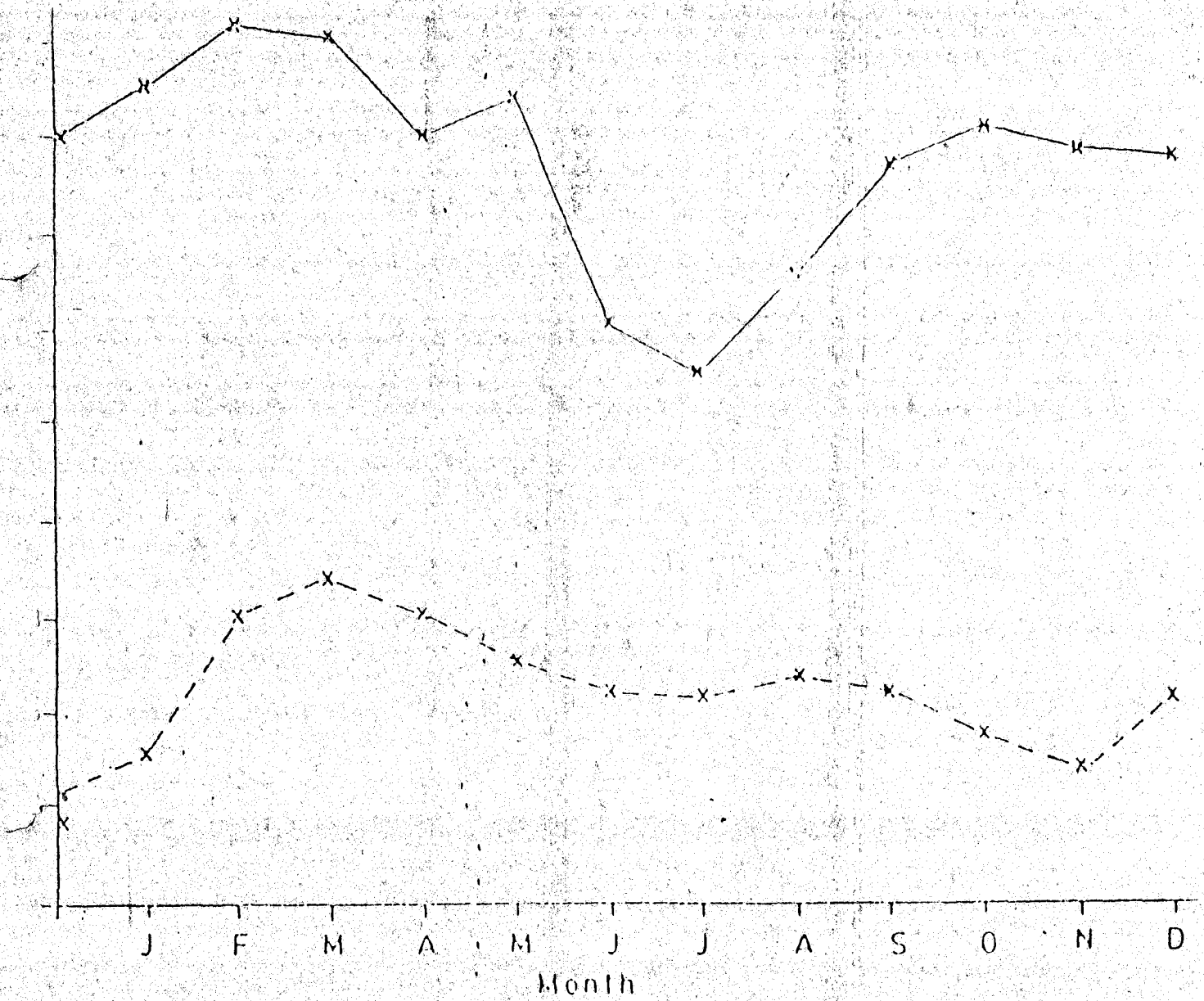
season. The region however is relatively free from violent wind erosion which could constitute a danger to buildings and any enclosure whatsoever.

5.1.3 TEMPERATURE.

The temperature of the region is characterized high almost throughout the year. The maximum temperatures are usually experienced during the months of March and April when daily temperature may rise above 32°C . The maximum temperature occurs during the harmattan months of December and January when temperature could drop below 16°C . Generally the temperature of the site varies between 25°C to 30°C during the rainy season and between 32°C and 37°C during the dry season (see fig.1).

These Temperature variation are sure indicators that this region is a hot environment. It is therefore very important that adequate attention be given to ways of reducing heat production and heat gain by radiation on site through careful orientation, design of buildings and materials used for adequate landscaping of adjoining open spaces.

The hot environment also suggests the need to consider specially the provision of all forms of shading devices. Which includes the use of trees, shade plants, material of low reflectivity to reduce or eliminate glare, the optimization of the cooling effect of water through a creative use of the Lake Reservoir on site.



∴ Daily maximum and minimum temperature (°C) ABU

(Source: TUNA Consultant 1989)

Fig. 1

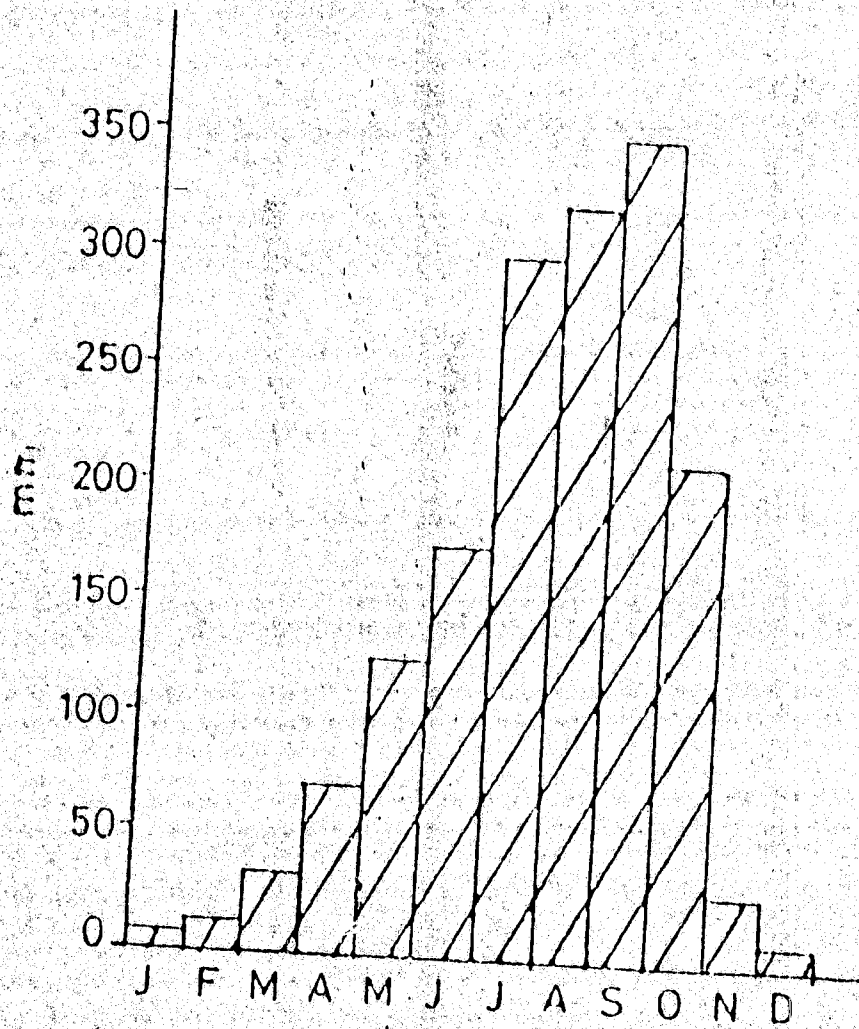
5.1.4 RAIN FALL

The region is associated with a relatively long rainy season which runs between April to October. The mean monthly rainfall is at 122mm falling to about 6mm during the dry season and rising to about 205mm during the wet season. (see fig. 2).

The region also experiences frequent squalls characterized by dense clouds with thunder and lightning followed by strong wind and intense the rainfall and the probability of receiving a shower during the dry season is about 30%.

The pattern of rainfall has the following planning implication.

- i. Rapid growth of plants will be promoted and this can enhance landscape development on the site as well as serve as ready source of food for grazers and browsers.
- ii. The high intensity of rainfall will promote soil erosion. This suggests that the land surface should not be exposed without adequate protection or appropriate, landscape treatment.
- iii. The relative long period of rainfall coupled with relatively short time within which the flow of the river system reaches its peak, is capable of causing rivers to overflow their banks and cause applicable damage to the adjoining properties. This suggest that flood control measures should be incorporated with the Waterworld's plan to cater for the water overflow.



Mean Monthly rainfall (Abuja)

Fig. 2 (Source: TUNA Consultants, 1989)
source.

5.2.5 RELATIVE HUMIDITY.

The maximum relative humidity in the region exceeds 80% during the wet season and about 40% during the dry season. The lowest humidity levels are experienced in February and the highest in August (see Fig. 3) The pattern of relative humidity suggests the need for the water world to explore means of moisture control. This will result in the provision of open spaces to enhance free air movement. Building materials will also need to be protected from rust, decay and fungal attacks whose growth is promoted by high humidity.

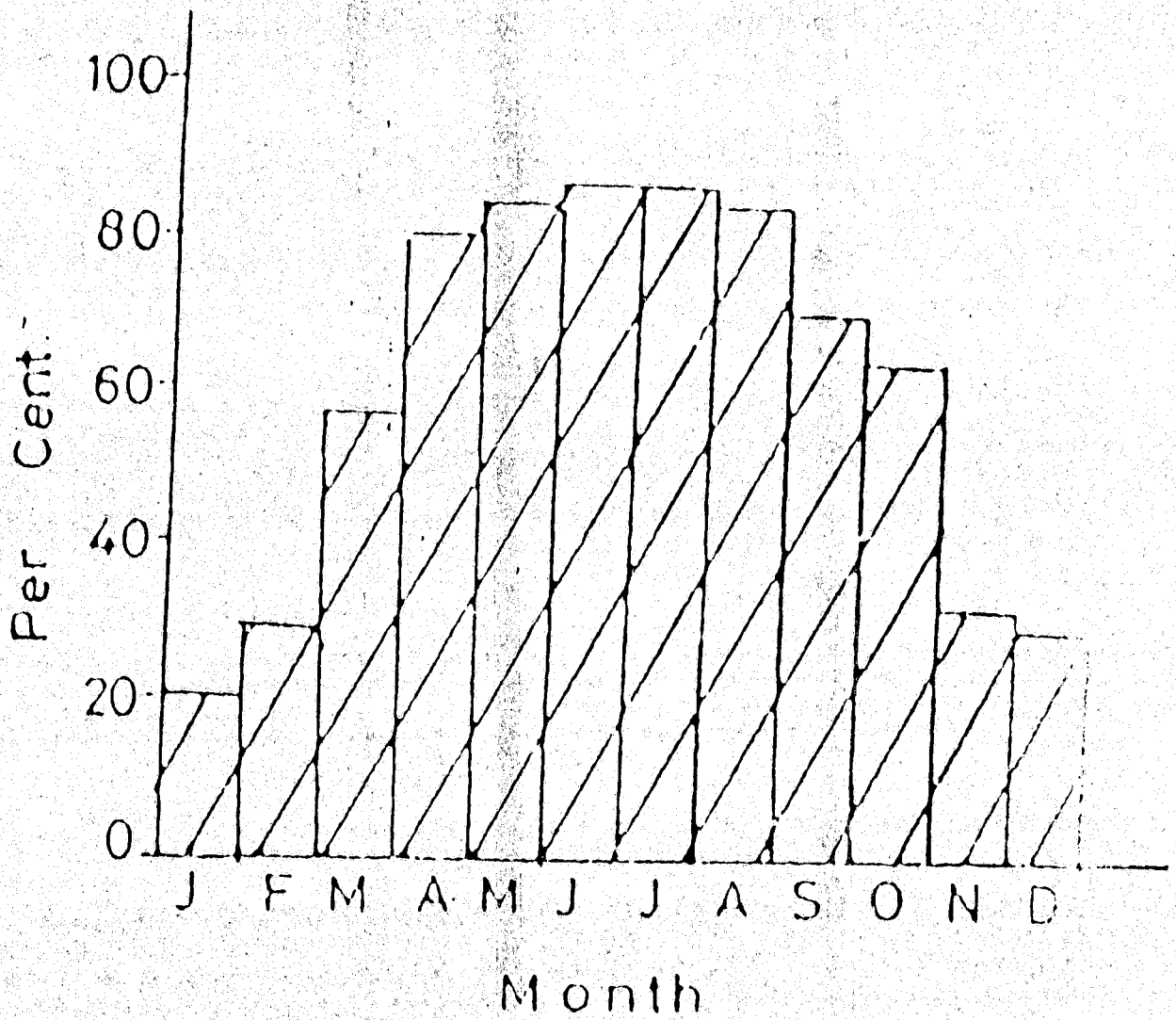


Fig. 3 Mean Relative humidity

5.2.6 SUNSHINE

Cloud situation and the length of the days determine the amount of Solar radiation received by the earth's surface. The sunshine during the dry season months November to March in particular is over 275 hours per month. With increase in cloudiness as the rainy season approaches, there is a decline in the sunshine hours in the lowest values being in November to August? (see Fig 4).

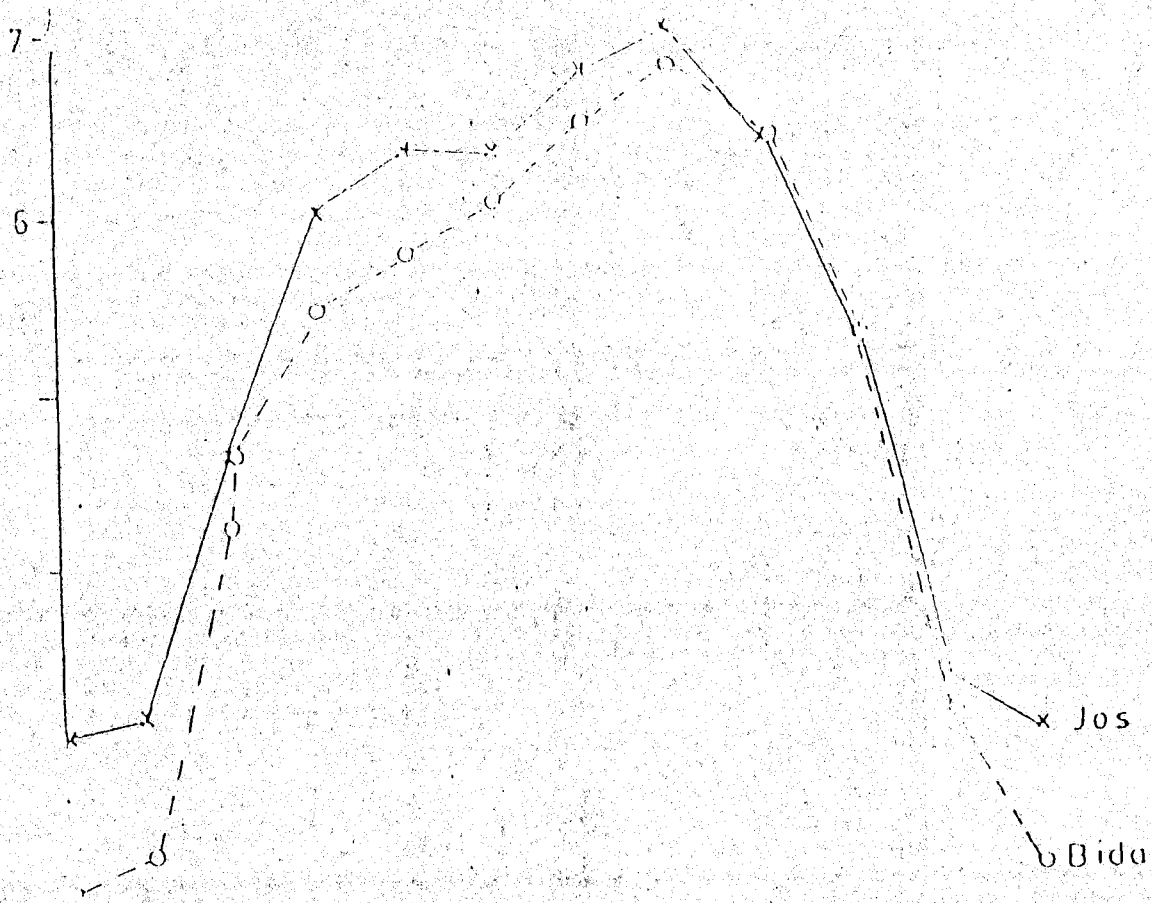
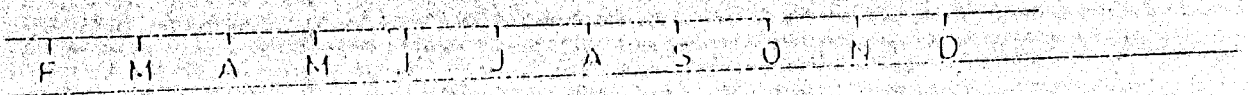


Fig. - Cloud cover variation in stations around Abuja

(Source: TUNA consultants, 1989)

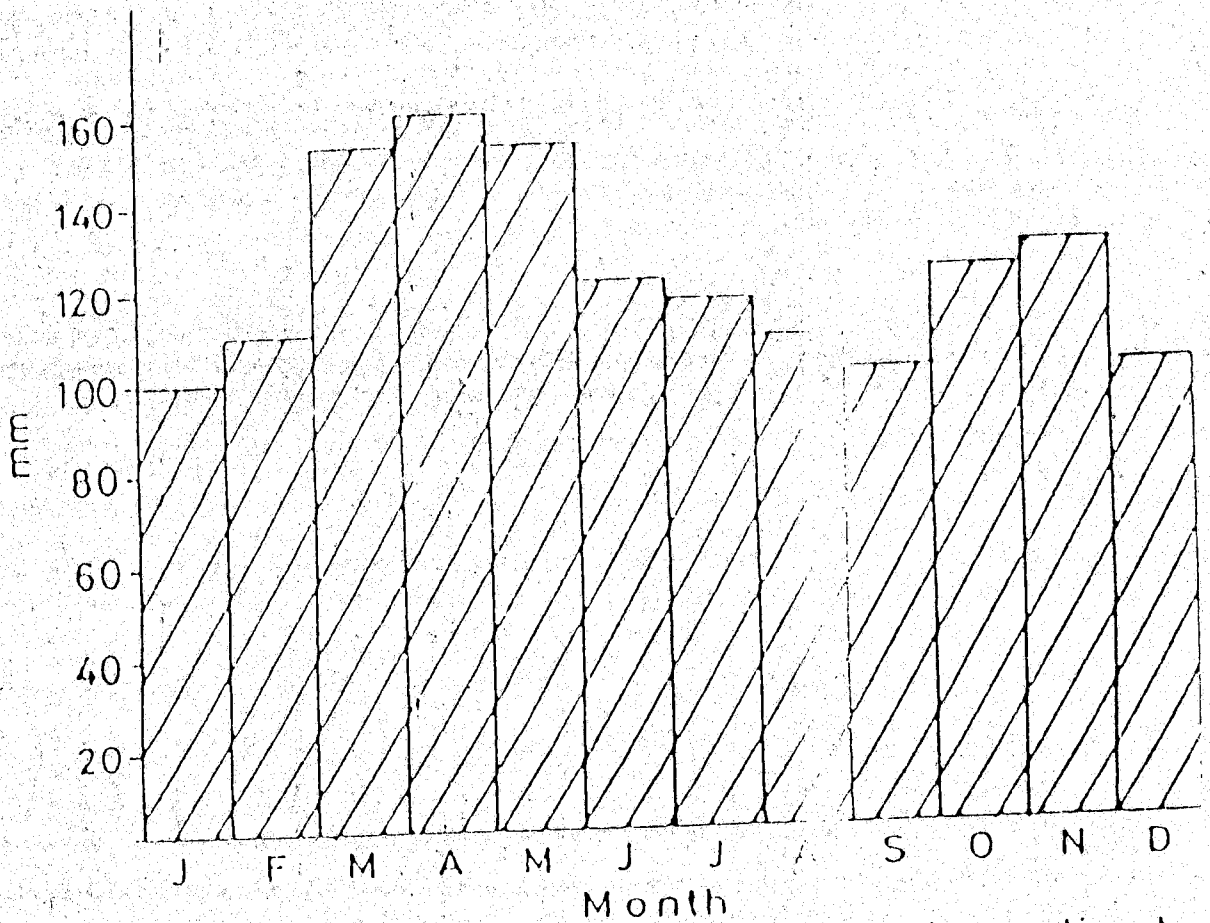
Fig. 4



5.2.7 EVAPOTRANSPIRATION.

The monthly variations in the potential evapotranspiration over the region is obvious. The lowest potentiality of 100mm is recorded in the month of January and December (see Fig 5).

The evapotranspiration Condition implies that the region will be very dry during dry season and the possibility of fire out break is high. Fire fighting facilities would therefore be provided on the site to Control possible fire out break



Mean Potential Evapotranspiration estimator

(Source) TUINA consultant 1989

fig 5 -

CHAPTER SIX

SITE LOCATION.

The lower Usuma dam is located in Bwari Abuja. It is located between a man made rock based barrier and natural igneous rock landscape. The region in study is in the North Eastern part of the Abuja metropolis, it is about 30 Kilometers away from Zuba Junction and 38 Kilometers North of Abuja municipality.

6.2. SITE INVENTORY

6.2.2 TOPOGRAPHY.

The areas topography ranges from gently undulating terrains interlaced by riverine depressions to belts of extreme rough terrains at its north western edge with heights exceeding 700 metres above sea level.

6.2.2 GEOLOGY

The whole federal capital territory is characterized by two main type of rocks. They are the crystalline rocks, the metamorphic and igneous rocks which are of Precambrian origin. Others which are sporadically noticeable are the sedimentary rock types which are of cretaceous origin (Eye, et al, 2997.)

6.2.3 WATER RESOURCES

The space water consist of a rough fan shaped perimetral network of Valleys and depressions (IPA 1979) the territory can thus be divided into small contiguous water sides, all converging at one point. The Gwagwa plain drains in the (Usuma river, in the west or south western direction, streams are composed of poorly drained alluvial soil which becomes narrower as the water entrenches deeply down stream.

6.2.4 VEGETATION.

Generally, the vegetation of the site is the park savannah category which is characterized by scattered trees and tall grasses. There are multiple patches of Dense forest along the more humid areas of the rivers valley and around the footstep of the hills.

6.2.5 SOIL TEXTURE.

The soil underlaying the region are generally deep and well drained. They have been derived from granitic genesis with magmite. Fertility is generally high and erosion (leaching) occurs where the soils are shallow and stony. The region with clayey, swelling are poorly drained (I PA 1979).

6.3 ACCESS AND CIRCULATION.

Current access to the site is via Bwari, the RCDA housing estate. This is a well planned road network from eastern Bwari that sets you on the rock barrier engulfing the dam. Other accesses to the site are via the western foot of the stream towards the Gwagwa plain drains. Circulation is basically enhanced with the use of motor vehicles or foot since the area covered is very large.

6.4 UTILITIES

There is a power generation plant linked nearby to the dam on the west side of the site. Electricity therefore is not a problem. Phone Service is also available at the site. The network runs along with the electric power lines.

Drawings of network analysis for telephone and electric power have to be obtained before construction work commences.

6.5 ARTIFICIAL FEATURE:

The whole dam structure was an artificial creation. The rock barrier that prevents water from overflowing on the Westside is also an artificial Creation. There is a pump station in the middle of the reservoir, which is also an artificial structure located within the lake.

6.6 ENVIRONMENTAL PROBLEMS.

When a location is being chosen for the site of a project, a proper knowledge of the environmental problems most likely to affect the whole procedure and finished project has to be put into serious consideration. The site however is located in a very safe region without any threat of falling rocks or land slides, but special care has to be taken for swimmers and those who practice all forms of aquatic sports since the water level rises considerably during raining season as the lake is the lowest level where all water on the site drains into.

6.6.1 GULLY EROSION

This results when running water channels deepen and create a very wide gutter on a surface that once was plain. This however, has been taken care of by proper compacting of the soil.

6.6.2 SHEET EROSION

This results when the area in consideration is relatively flat and water runs off the surface consistently and evenly there by ridding the surface soil of its nutrients resulting in draught. This however, is reduce due to the gradient of site.

6.6.3 REEL EROSION

This type of erosion is just like the gully explain above but it occurs in a smaller magnitude. Terraces will eliminate this problem

6.7 DEDUCTION.

This location is well suited for the purpose of this design because of its distance from the mainland and its isolation from blighted areas in Abuja metropolis.

This project itself would not pose or be the result of some form of environmental degradation as activities to be carried out carry within themselves adequate maintenance programmes and facilities.

The whole project would cost very less to construct compared to others of its type and would produce maximum recreational efficiency.

CHAPTER SEVEN

7.1 DESIGN CONCEPT

The design concept for this project is analogical and is gotten from the shape of marine objects. A ship, a sea anemone and the shape of all the other buildings simulate the shape of marine organisms like crustaceans, shellfishes and Corals.

The concept is therefore reflected on the life size aquarium (Ship), the restaurant (sea anemone) the museum (Crustacean) and the guest chalets (Corals)

The structural complexities are to be achieved by the use of light weight but highly efficient and newly improved building materials like steel cables and reinforced glass elements combined with fibrous materials or Perspex.

7.2 DESIGN PHILOSOPHY.

The philosophy of the design is based on interactive functional spaces within the structure and on the general external landscape. This is meant to familiarize mankind with aquatic beauty and make him comfortable with it.

7.3 MATERIAL AND CONSTRUCTION.

It must be noted that the philosophy of this design was inspired by aquatic organisms and their various structural formations.

Most aquatic organism are either Soft bodied or Carapaced (Shelled), only very few come in scales and are still Classified as soft bodied because that's what's responsible for their flexibility in motion.

Materials therefore used in the design of structures for this project are such that have been simulated structurally to look like various parts of the organism depicted even though such materials are not exactly of the same

biological configuration and composition with the creature or organism depicted though it would exhibit some similarities when a mathematical resolution of forces is considered.

Firstly, the mystery ship which is the centre of attraction was made with flat sheet of stainless steel laid over wooden internal stiffeners. This was necessary to lighten up the structure thereby reducing compression stress on the aquarium resting beneath. The life size aquarium is made with very thick sheets of transparent fibre glass and Perspex at specified intervals. This is necessary first to achieve visual access of organisms within the aquarium to tourists, secondly to create an almost natural habitat for enclosed organisms and also to help achieve proper stability of the whole structure since fibre glass is rich in tensile strength which helps in the resistance of the pressure caused by the rivers movements. The entire structure rests on three reinforced concrete pile foundations resting at intervals in the riverbed. Each pile foundation is 15 meters wide at the anchor jaw and slims down to 10m meters at its base. Its smoothness and curved nature helps in minimizing hydro pressure.

The ship also has timber members from the main deck to the masts to help in weight reduction and floatation in case of emergency.

Basically, all other structures have more of concrete, glass and natural stones, steel and used construction materials.

The entire Water world's landscape is dotted carefully with element of both hard and soft landscape to provide the picturesque view expected to be expressed.

Plants of various botanical origins and various structural dispositions are planted at strategic and most appropriate location to maximize their functional and aesthetic relevance to mankind. Stones and rocks rarely seen are used for pavement, walls, terrace barriers and some are laid in place of concrete slabs on

the ground as step on walk ways.

Concrete and stone are used mainly for the construction of various foundations. This is to create the physiological effort of the presence of water every where around the site to tourist and visitors.

7.3.1 LANDSCAPE

The area where the museum is located is landscaped in typical park style which ground cover greenery and shady trees. There are open spaces provided with footlights and seat-outs for comfort.

The glass house restaurant is strategically located on the shore line which gives a rather imposing yet beautiful effect to the landscape.

The gift shops with their unconventional appearance add a touch of marine life to the landscape.

The mystery ship which is positioned in the middle of the water body now becomes the centre of admiration because it can be seen from almost any point of the WATERWORLD.

7.3.2 CONSTRUCTION .

The method of Construction in this project involves both preservation of natural features and alteration via ground modelling and erected structures. Basically, even with artificial influence a seeming natural and biological undisturbed environment is created. Sloppy areas where built into without alteration and more sloppy areas where simulated by effective terrace elements professionally incorporated.

7.4 SPACE REQUIREMENTS

For the WATERWORLD to reach its standard projected status, with respect to tourism, education and recreation, conservation and employment opportunities, this pacing technique adopted is categorized into 8 groups as follows:

1. Car parking lots
2. Main entrance plaza.
This is located at the tail end of the bridge leading to the WATERWORLD
3. Play grounds and picnic Areas
4. Lake view and swimming pools
5. Museum
6. Restaurant and snack bars.
7. Gift shops
8. mystery ship

7.5 DESIGN SERVICES

7.5.1 ELECTRICAL SERVICES

Electrical services required to be used here are standardized and conventional electrical fittings and high quality cables made of durable and efficient materials will be used. Artificial lighting and heavy duty equipment providing recreational services will be powered by these cables, power source is from the locations listed below:

1. The National Electric power Authority (N.E.P.A).
2. Hydro Electric power Generating plants from the dam.
3. Heavy Duty power Plants (Private).
4. The Exclusive use of solar Panels.

Wiring within all built up areas will be Conduit and underground Cable will transfer electric current to sites from these various sources. The choice of

electrical bolbs used are durable and such without high radiation but colourful output, under water wiring and lighting is inevitable for security reasons,

Automatic circuit breakers are installed at various but strategic points to minimize fatal electrical accident and damages during transfer of power from one source to another.

Transformers and both lighting and receptacle feeders form part of the electric landscape in the WATERWORLD for highly classified reasons, there however will not be overhead electric wiring present as all wiring and major current carrying cables will be passed underground,

7.6 FIRE SERVICES

The availability of suitable building materials is intimately linked to the development of skills needed to exploit them and influenced the shapes of buildings and their preservation.

The location of this project in a wood land allowed for the free exploration of wooden materials in construction. These were used as trusses and wooden overlays for the interiors of the Mystery ship. In other areas like the museum interior and the gift shops, stone and marble were chosen for important reasons because they are fireproof and durable. Stone is also a sculptural material; stone architecture was often integral with stone sculpture. The use of stone declined today because a number of other

materials, such as glass, steel, prestressed concrete and wood are more economical to use and assemble.

In regions where both timber and stone are scarce, earth itself is used as a building material. Mud or clay is compacted into walls or made into bricks that are dried in the sun. Later, bricks were baked in kilns, which give them greater durability and higher fire resistance.

All these material selections in variation determined the type of fire protection service to be adopted, therefore, the most important reason for passing Cables in Conduit and underground is for fire safety, this to a high extent minimizes or eliminates short-circuiting that is Contact between two or more higher voltage and current carrying cables resulting in a fire due to the region highly vegetative features which could be highly flammable or fuel any accidental flame.

There also will be fire hydrants placed at various strategic points and all built up areas will have bases and fire extinguishing facilities installed like fire extinguishers both water based and chemical based, sprinkler, smoke and flame detecting facilities will be placed in all built up areas in strong connection with an effective fire alarm network

7.7 UTILITIES

For the purpose of conveniences, toilets are provided at strategic locations around the site, All the toilets are of ultra-modern design and material composition.

On the mystery ship, conveniences (toilets and bath) are provided basically for staff use and rare emergency cases with tourists, Toilets on the ship have a central sewage system to the ships hull while toilets offshore also have a central sewage disposal system connection.

When special programmes are been held in the WATERWORLD'S premise and the population exceeds the capacity expected for utility services, make shift restrooms (toilets and baths) with mobile septic tanks will be provided to take adequate care of that situation.

7.6 PLUMBING

Due to the extensive use of water based (dependent) facilities, the need for effective piping (plumbing) cannot be over looked, Plumbing enhances smooth and effective distribution of clean potable water around the site and also ensures adequate and healthy disposal of water from points of use to points of effective disposal.

Waste and soil water are collected via P.V.C pipes to various collection tanks, while high pressure pumped water is passed through to site via steel pipes.

7.9 DRAINAGE

This is the removal of surface or subsurface water from a given area by natural or artificial means. The term is commonly applied to the removal of excess water by canals, drains, ditches, culverts, and other structures designed to collect and transport water either by gravity or by pumping.

The essential principle of any type of land drainage is to provide an open, adequate, and readily accessible channel through which the surface or subsoil water can flow. For this purpose open ditches have been used in this project, but these are not always satisfactory because they may become choked with sediment and vegetation, therefore underground drains were employed.

Effective terracing carried out on the site ensures that all water drains to the reservoir, This prevents ponds and puddles from forming on the site and eliminates unnecessary waterlogs.

8.0 ACOUSTICS

Acoustics (sound) (Greek, akouein, "to hear"), is a term sometimes used for the science of sound in general. It is more commonly used for the special branch of that science, architectural acoustics, that deals with the construction of enclosed areas so as to enhance the hearing of speech, music or all other forms of audible noise.

The acoustics of buildings was an undeveloped aspect of the study of sound until comparatively recent times.

8.0.1 REVERBERATION

A major problem of design is that acoustics sound behaves very differently in an enclosed space and outdoors. In a gymnasium, for example, the benches, walls, and ceilings cause sound waves to bounce back, or reverberate. Outside, sound seems quieter because there are fewer obstacles to reflect the sound waves back towards the listener.

Acoustic design must take into consideration the fact that, in addition to physiological peculiarities of the ear, hearing is complicated by psychological peculiarities. For example, sounds that are unfamiliar seem unnatural. Sound produced in an ordinary room is somewhat modified by reverberations due to reflections from walls and furniture; for this reason, a broadcasting studio should have a normal degree of reverberation to ensure natural reproduction of sound. For the best acoustic qualities, rooms are designed to reflect sound sufficiently strongly to give a natural quality, without introducing excessive reverberation at any frequency, without echoing certain frequencies unnaturally, and without producing undesirable interference effects or distortion.

The time required for a sound to diminish to one-millionth of its original intensity is called reverberation time. An appreciable

reverberation time improves the acoustic effect, especially for music; in an auditorium a loud sound should still be barely audible for one to two seconds after its source has stopped. In a private home a shorter but still discernible reverberation time is desirable.

8.0.2 ABSORPTION

Since most of the structures in the WATERWORLD are not for high sound performances, the reverberations can be modified by using two types of materials, sound-absorbent and sound-reflecting materials, to coat the surfaces of ceilings, walls, and floors. Soft materials such as cork and felt absorb most of the sound that strikes them, although they may reflect some of the low-frequency sounds. Hard materials such as stone and metals reflect most of the sound that strikes them. The acoustics of a large auditorium may be very different when it is full from when it is empty; empty seats reflect sound, whereas an audience absorbs sound.

In most cases, the acoustics of a room will be satisfactory if a proper balance between sound-absorbing and sound-reflecting materials is created. Special treatment was given to the elimination of interference. Such interference arises from the difference in the distances traversed by the direct and the reflected sound and produces so-called dead spots, in which certain ranges of frequency are cancelled out.

Another important factor considered of room acoustics is insulation from unwanted sound. This is obtained by sealing of even the smallest openings that can leak sound.

All the structures have sound padded walls with acoustic materials like wood and chipboard, The restaurant floors are finished with marble tiles while floors on the mystery ship are made of polished wooden overlays. these enhance sound treatments either by absorption, reflection and insulation.

8.1 AESTHETICS

This is a branch of philosophy concerned with the essence and perception of beauty and ugliness. Aesthetics also deals with the question of whether such qualities are objectively present in the things they appear to qualify, or whether they exist only in the mind of the individual; hence, whether objects are perceived by a particular mode, the aesthetic mode, or, instead, whether the objects have, in themselves, special qualities—*aesthetic qualities*. Aesthetics also asks if there is a difference between the beautiful and the sublime.

The psychology of art is concerned with such elements of the arts as human responses to colour, sound, line, form, and words, and with the ways in which the emotions condition such responses.

Landscaping and interior decorations are the primary element enhanced for aesthetic expressions and pleasure in this project. The concept and design of all the building structures simulated the shapes of various aquatic organisms or marine and forms. They all constitute to the picturesque expression that characterizes the Waterworld. It is a mixed expression and combination of nature and artificial intelligence which made it all rather adventurous and eclectic that is, untraditional.

CONCLUSION

The Waterworlds concept is a unique biological and socio-cultural creation proposed for the purpose of recreation and general education of mankind.

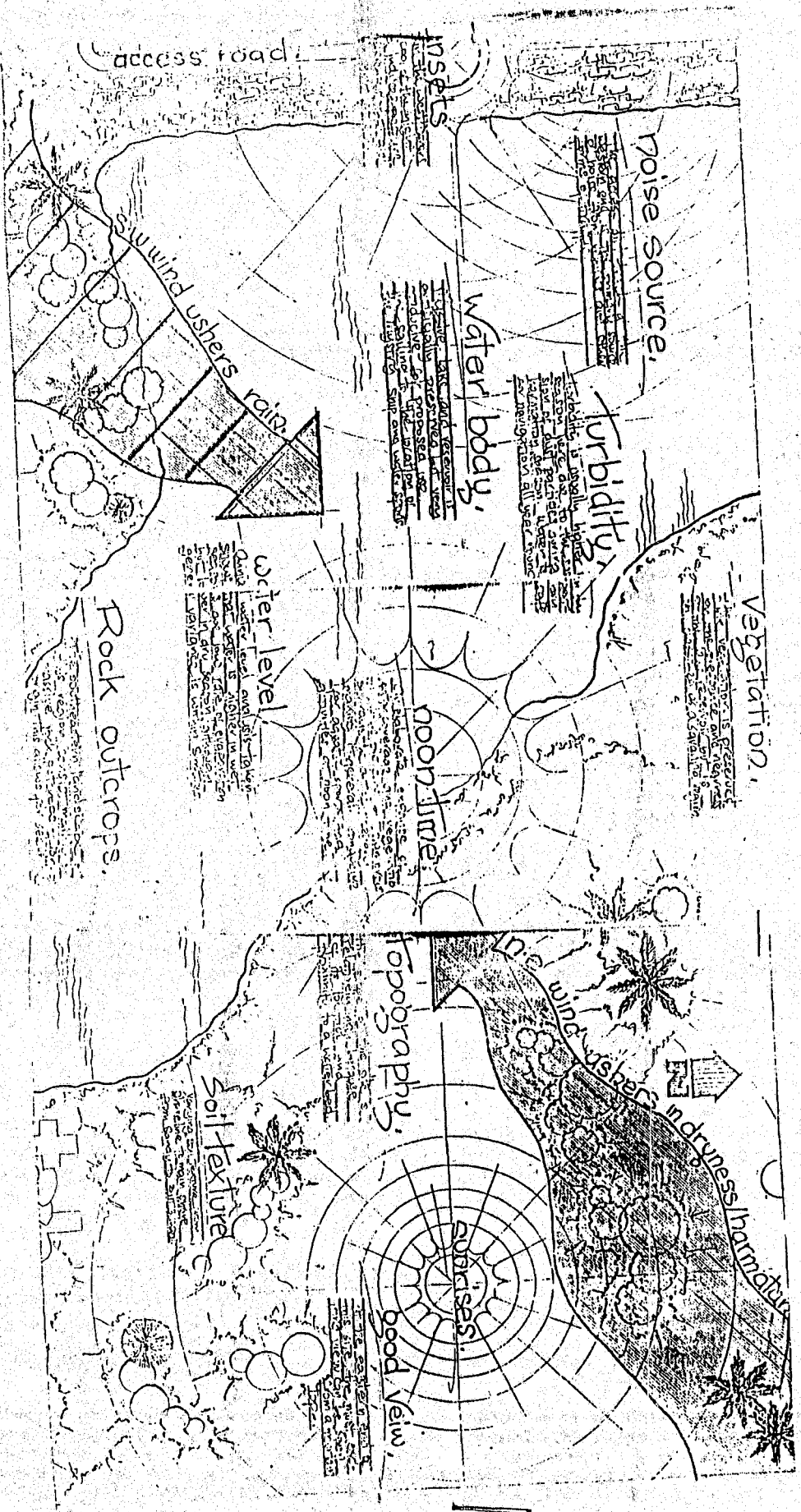
This project Thesis has exhaustively presented practical proofs and exonerated all doubts that all proposed concepts within are possible and actually workable, All technical requirements that grants professional justifications to the execution of this project have been attained and is therefore presented by my humble self as a major contribution to revolutionary Architecture and virtual actualization of forms that will aid in crystallizing our dreams of a great country in Africa.

REFERENCES

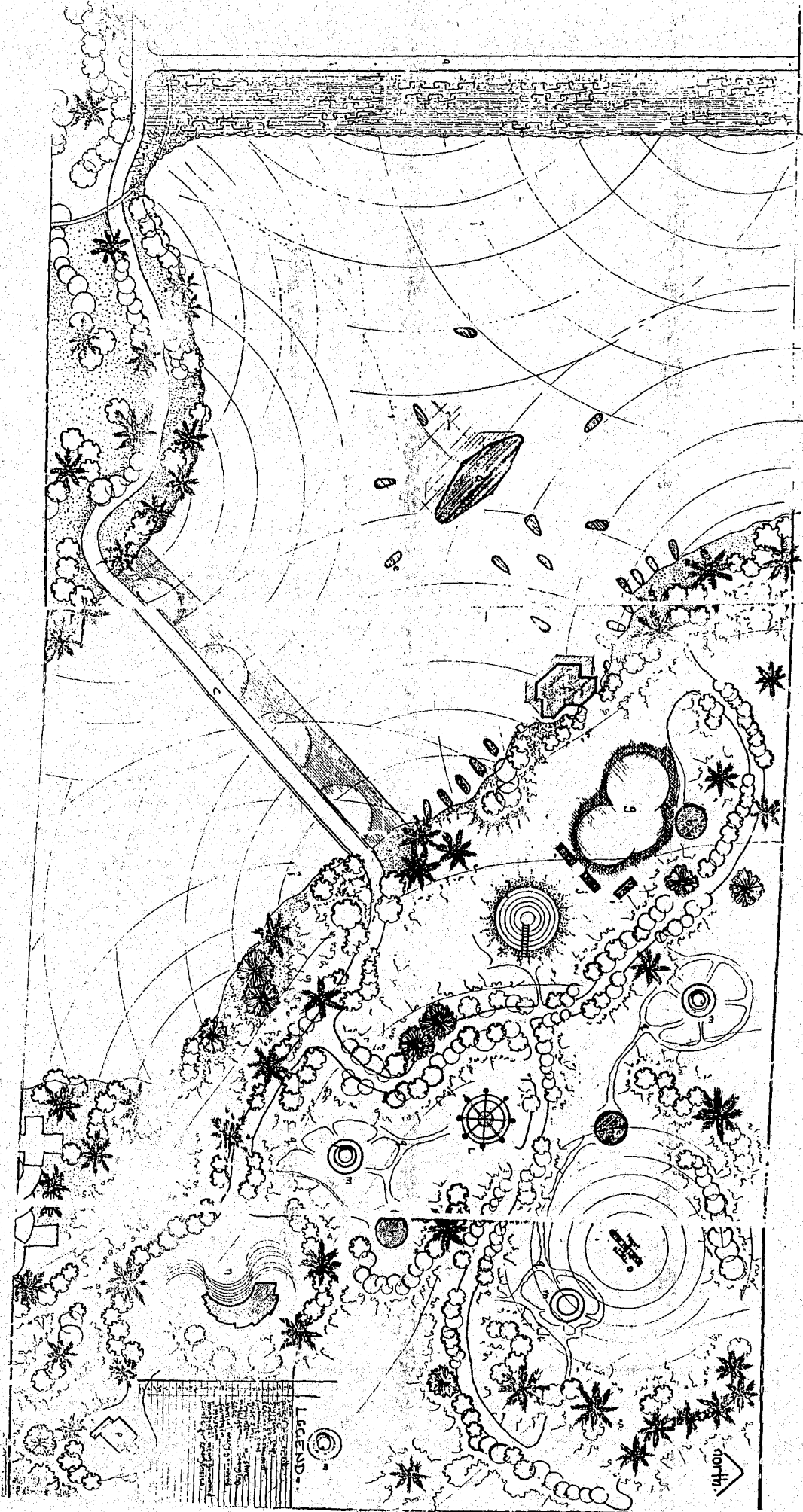
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APPENDICES

SITE ANALYSIS



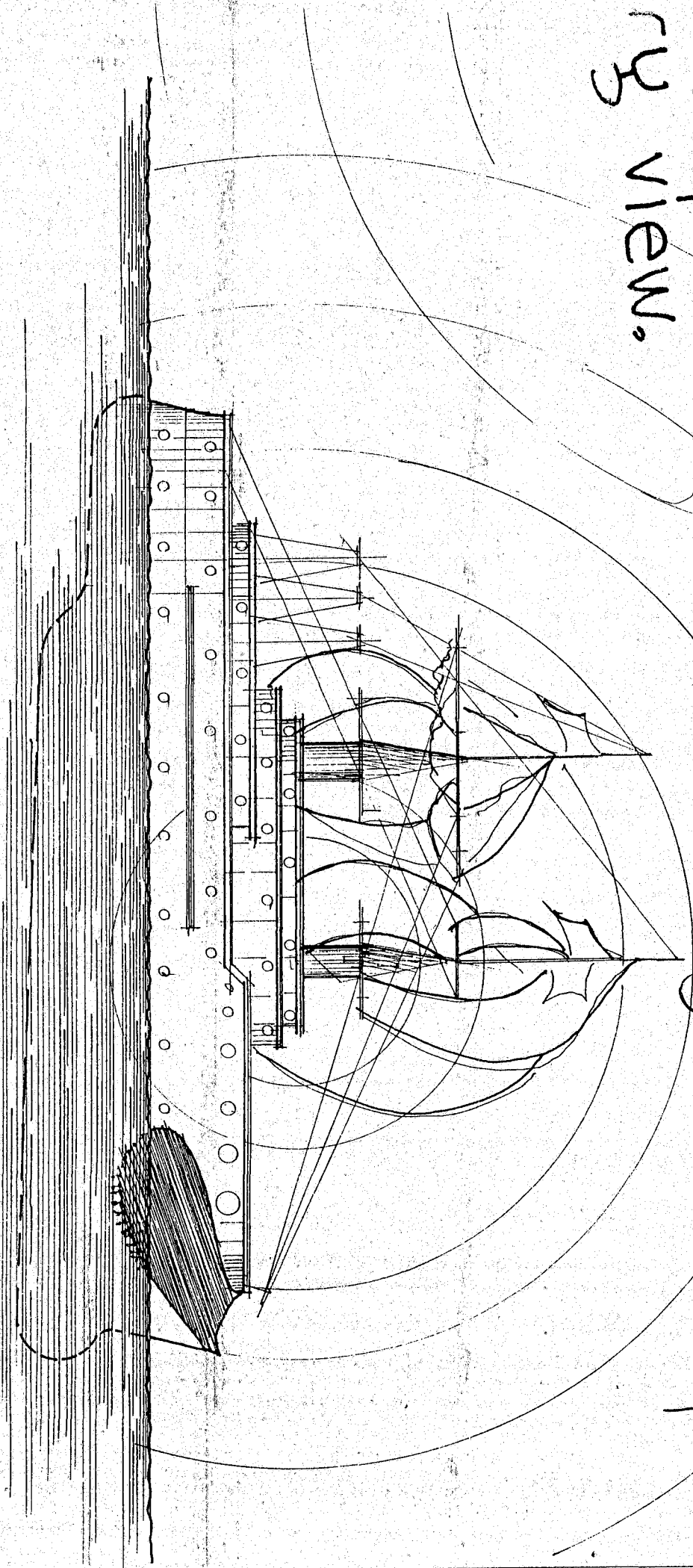
SITE PLAN



dockyard.

ry view.

dreadnoughts metamorphosis



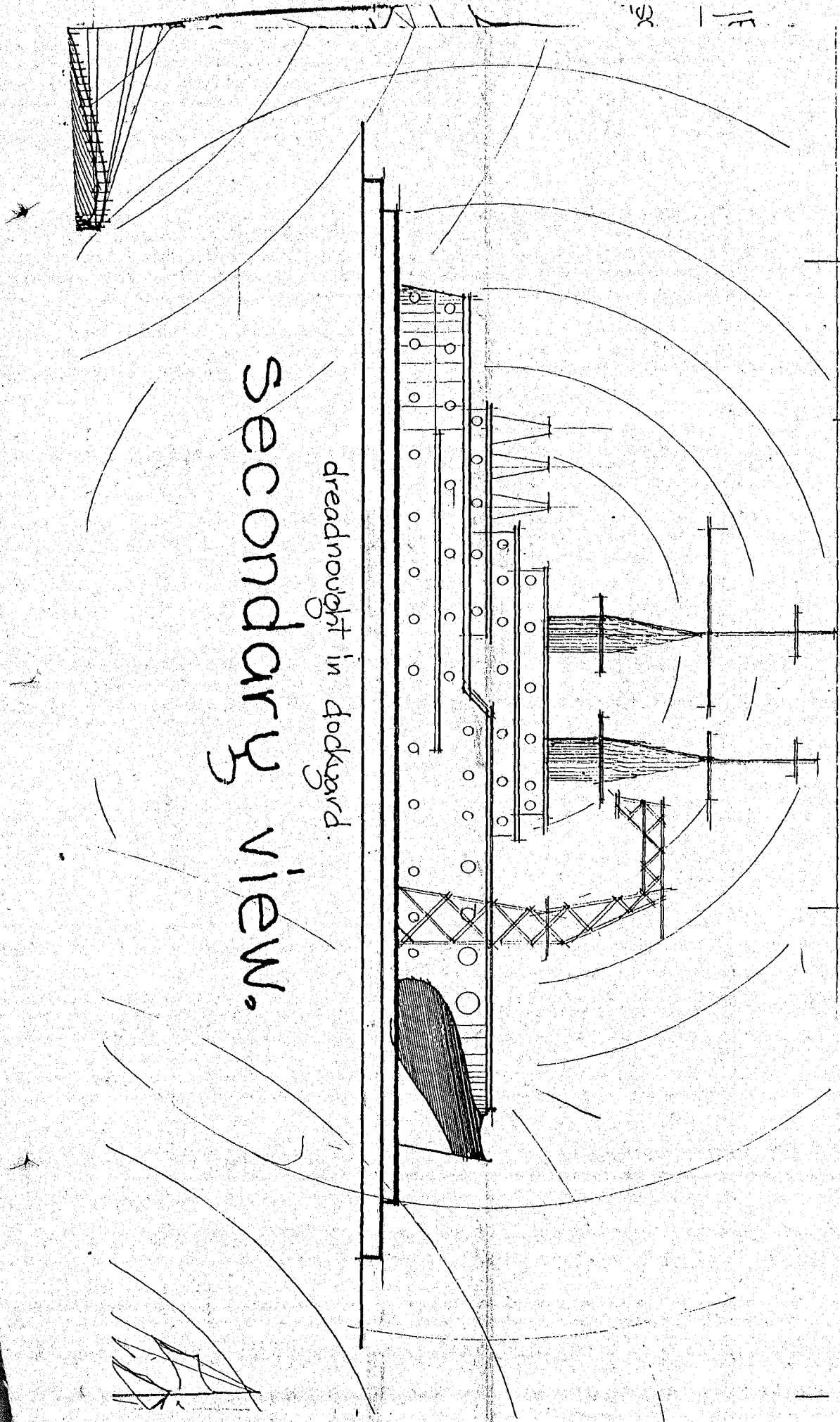
initial views,

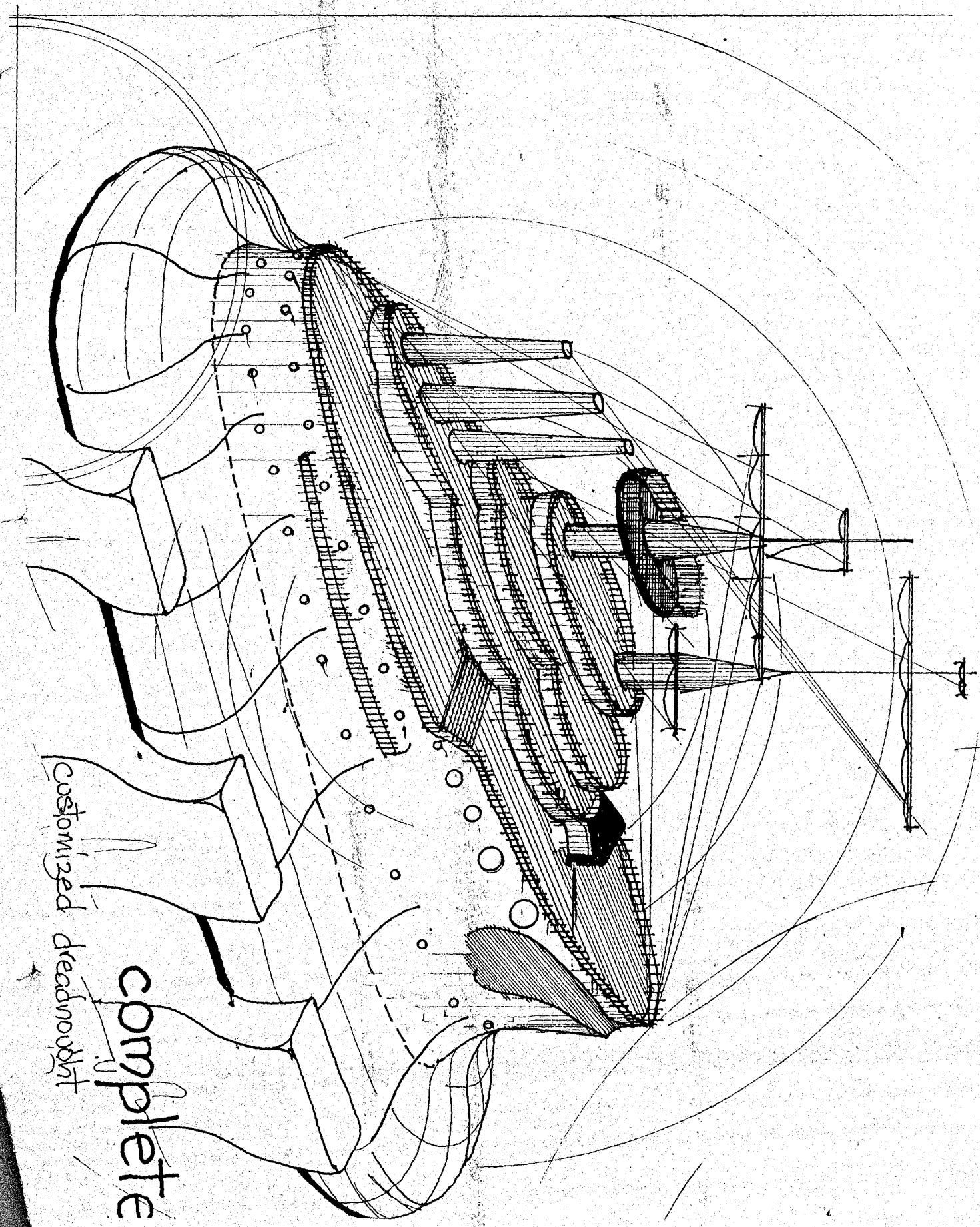
dreadnought at sea.

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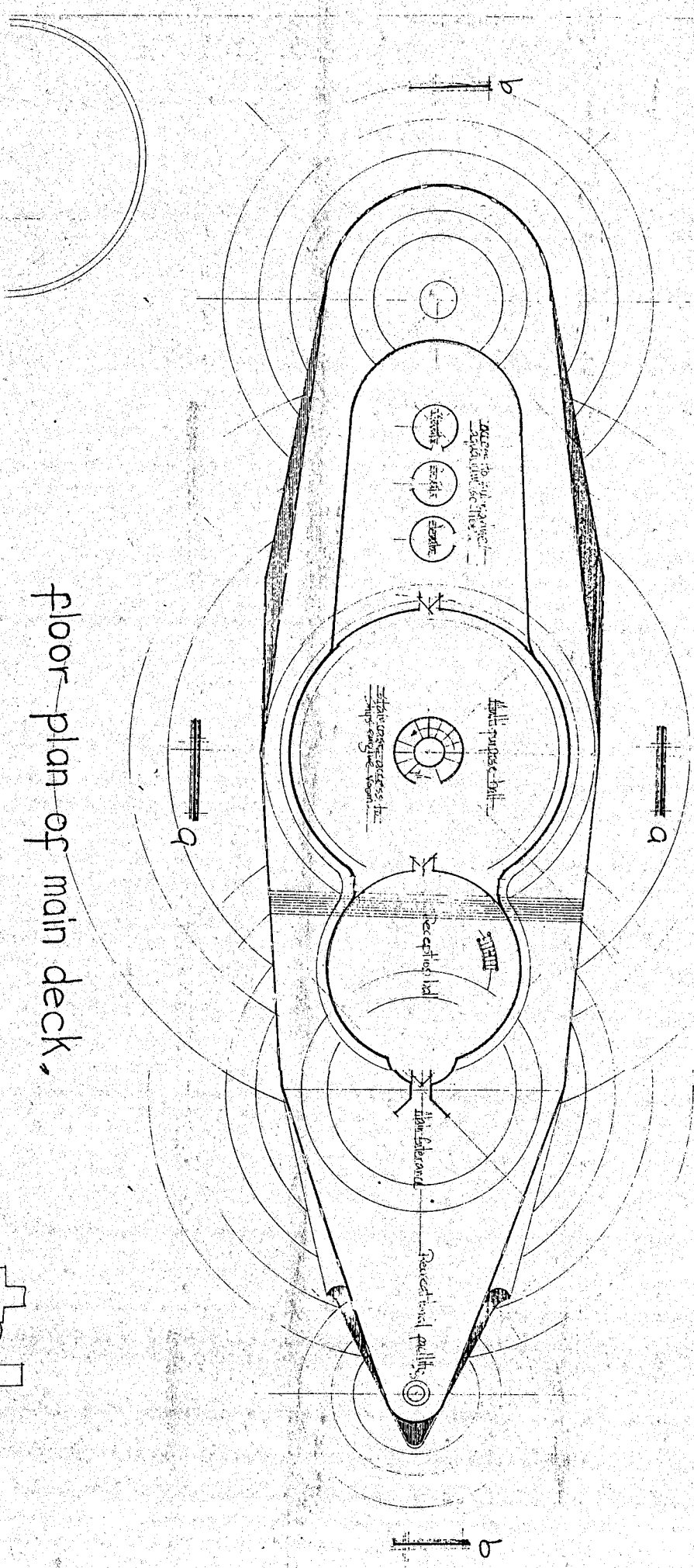
dreadnought in dockyard.
secondary view.





complete
customized dreadnought

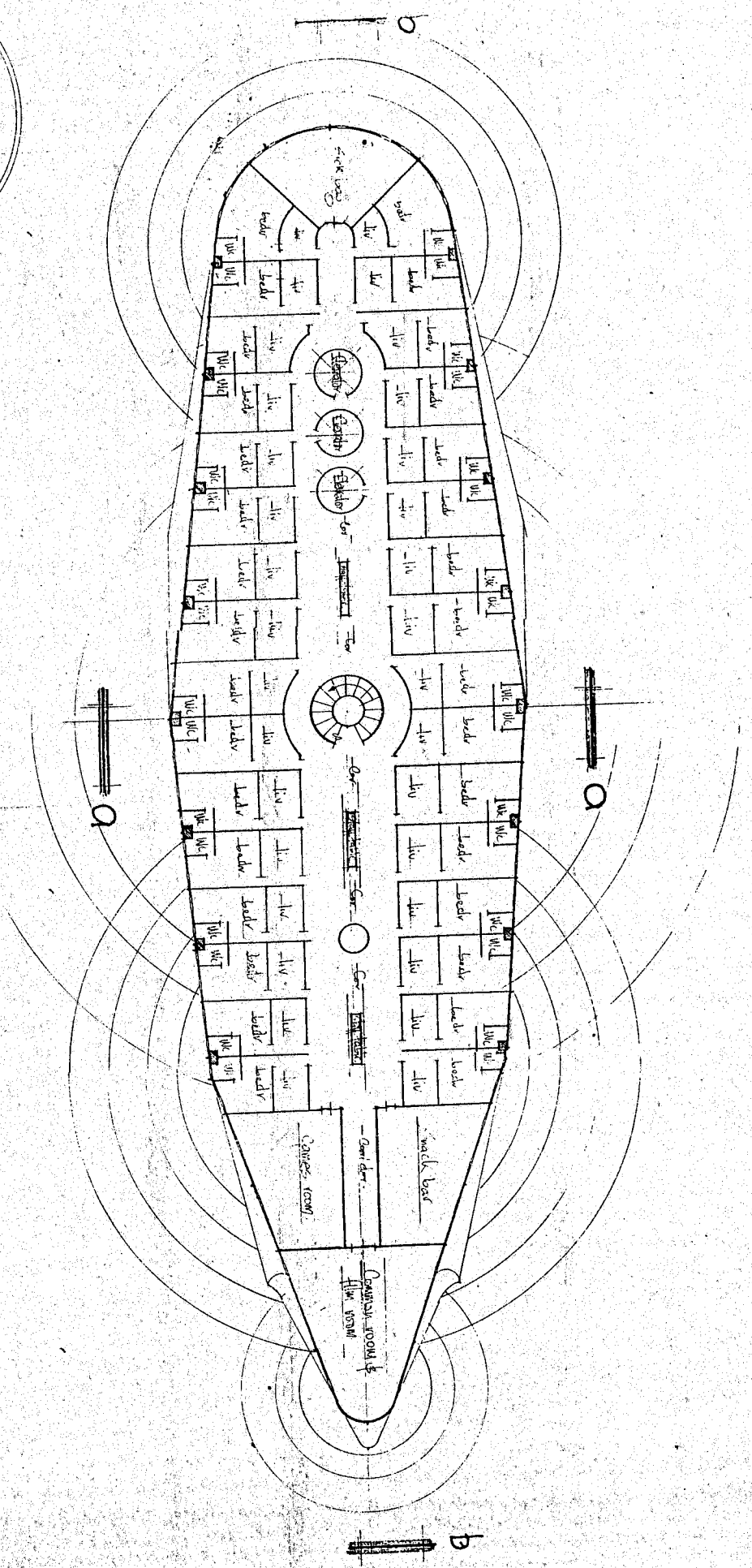
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floor plan of main deck.



MARSHALL ISLAND

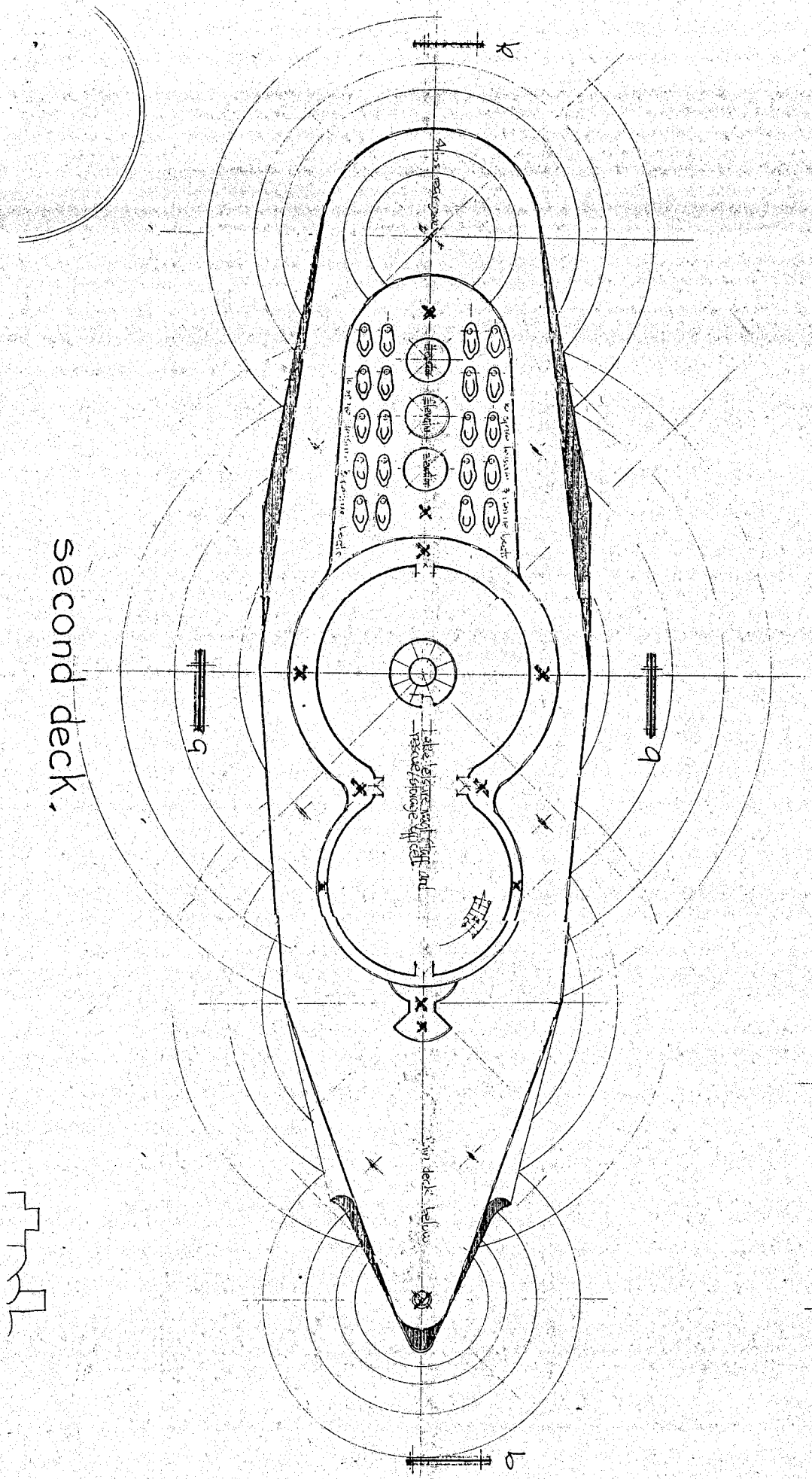


floor plan below main deck for accommodation.

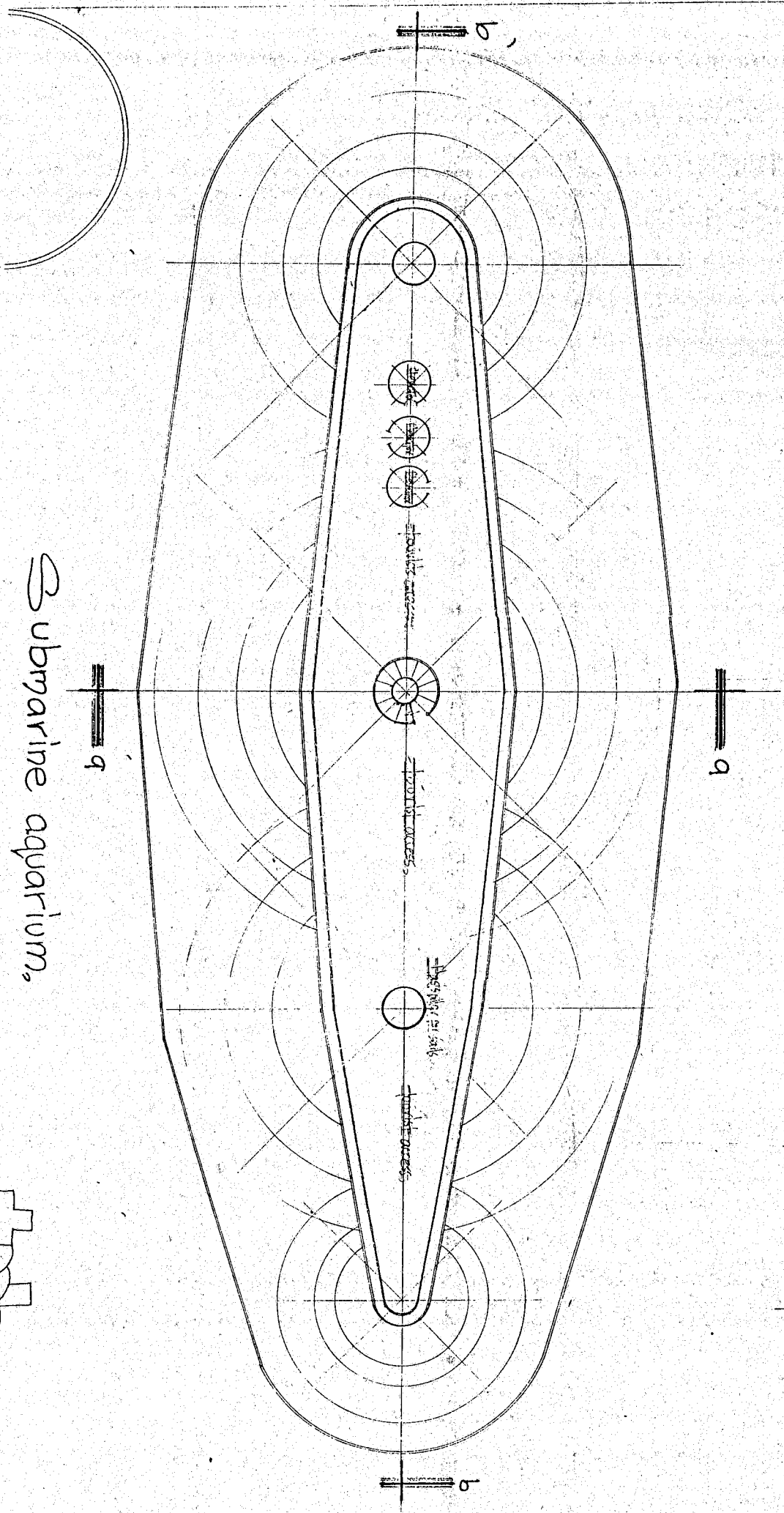


CRUZZER SHIP

second deck.



CRUISER SHIP



Submarine aquarium,



roof coverings at various levels.

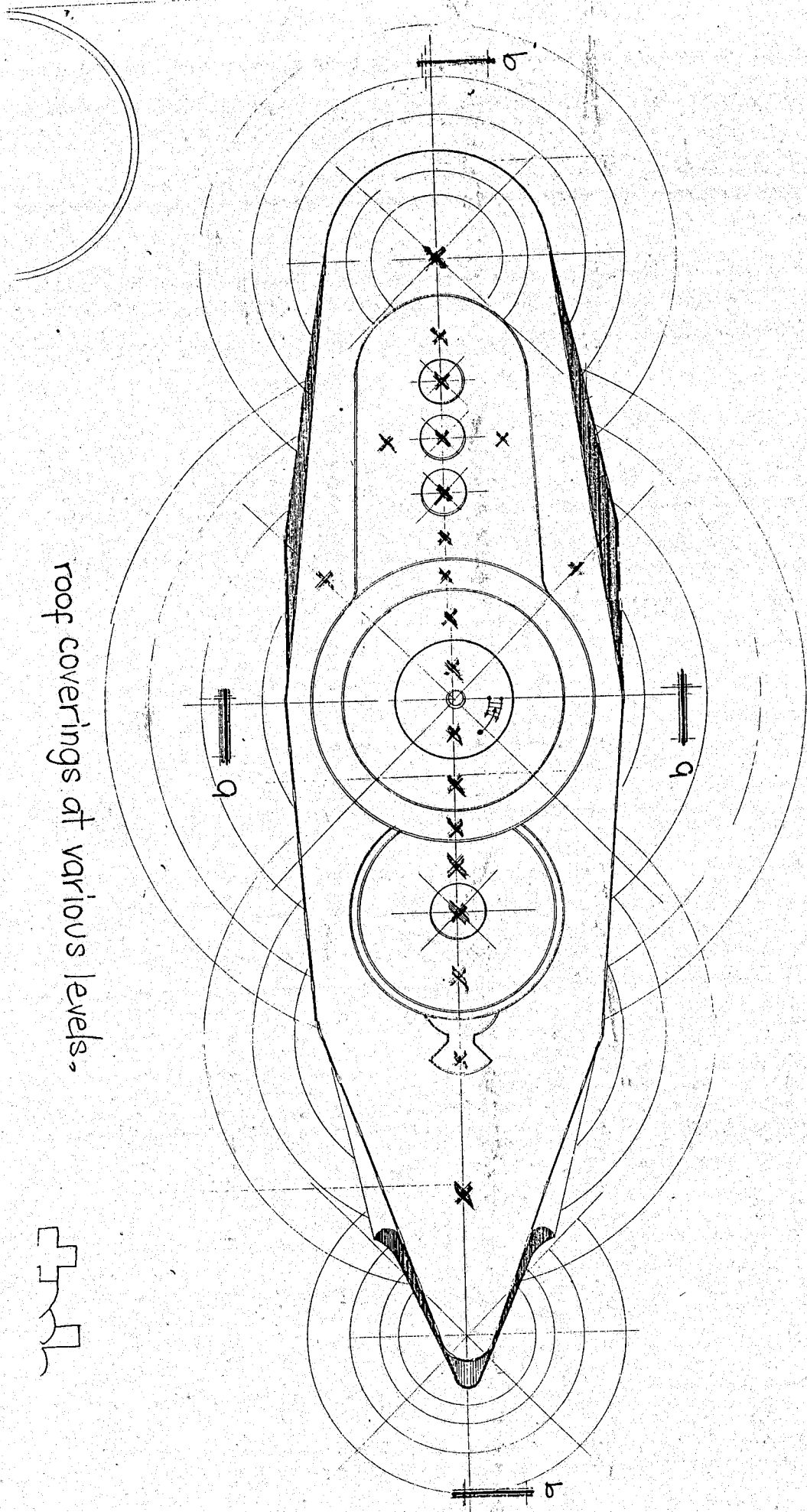
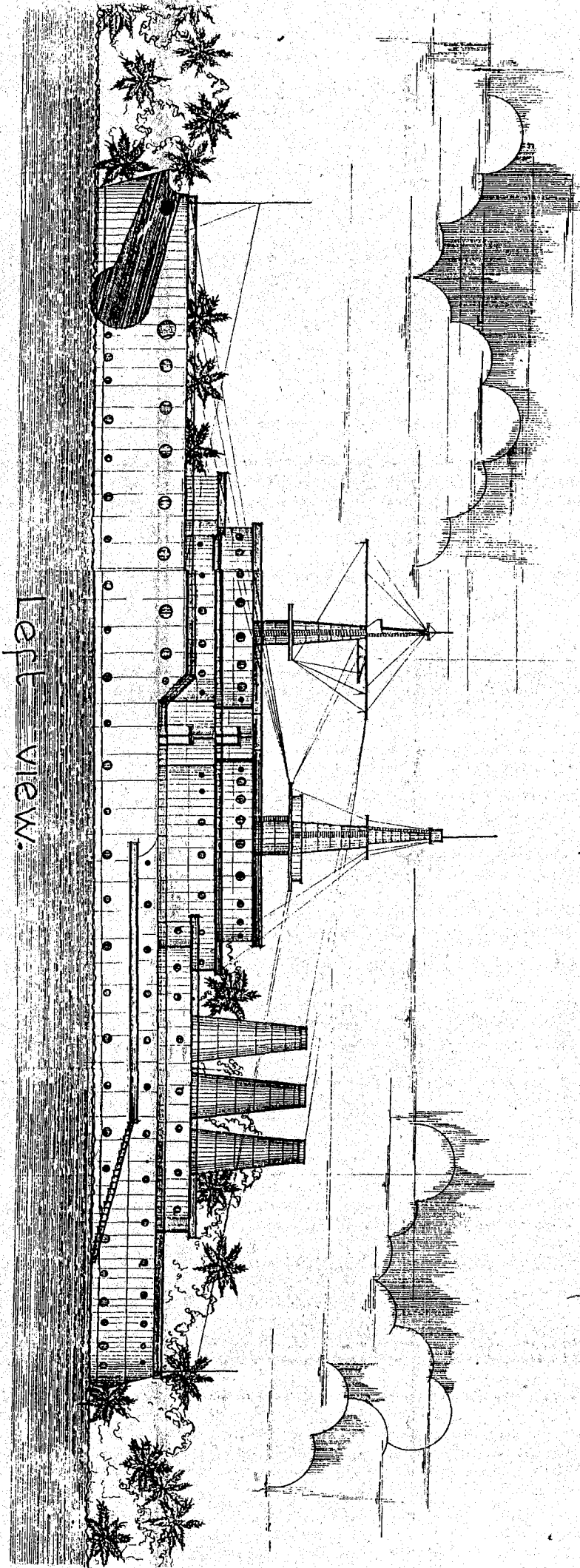


Diagram illustrating the roof coverings at various levels, showing the layout of the roof structure with concentric circles and radial lines, and a small detail of a roof section.

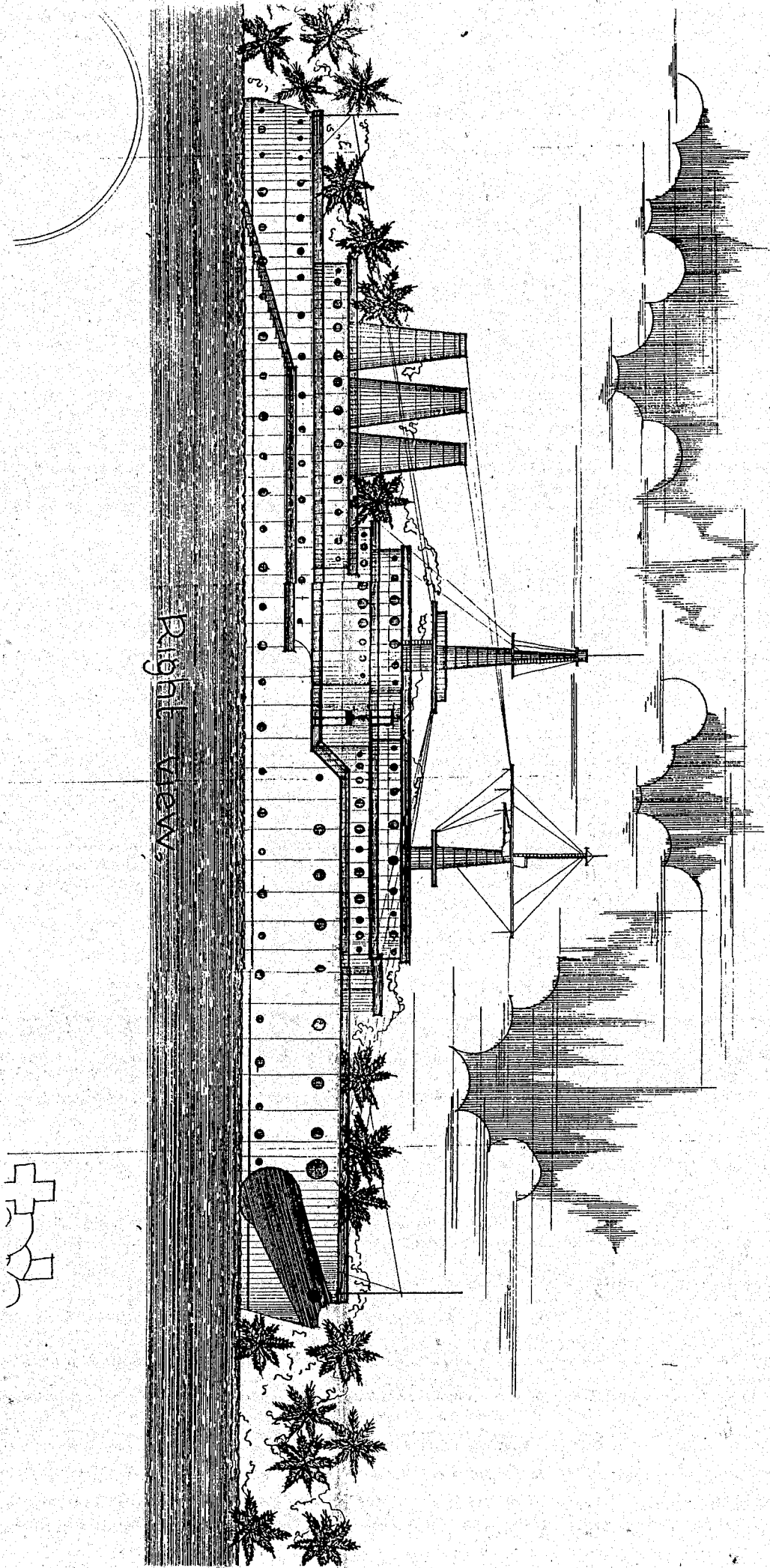


Left View.

100

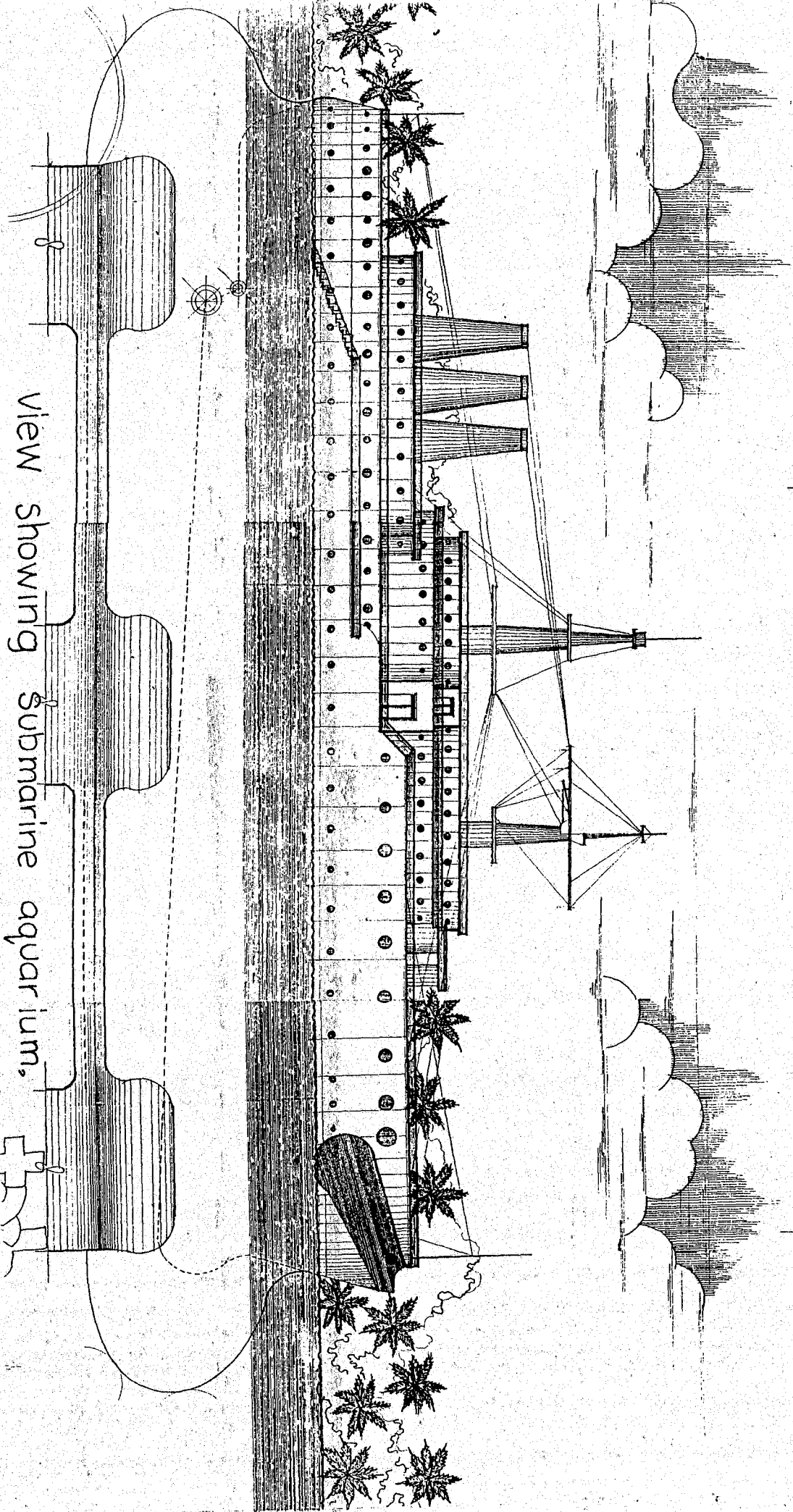
W. P. ESTERLINE

Right view,



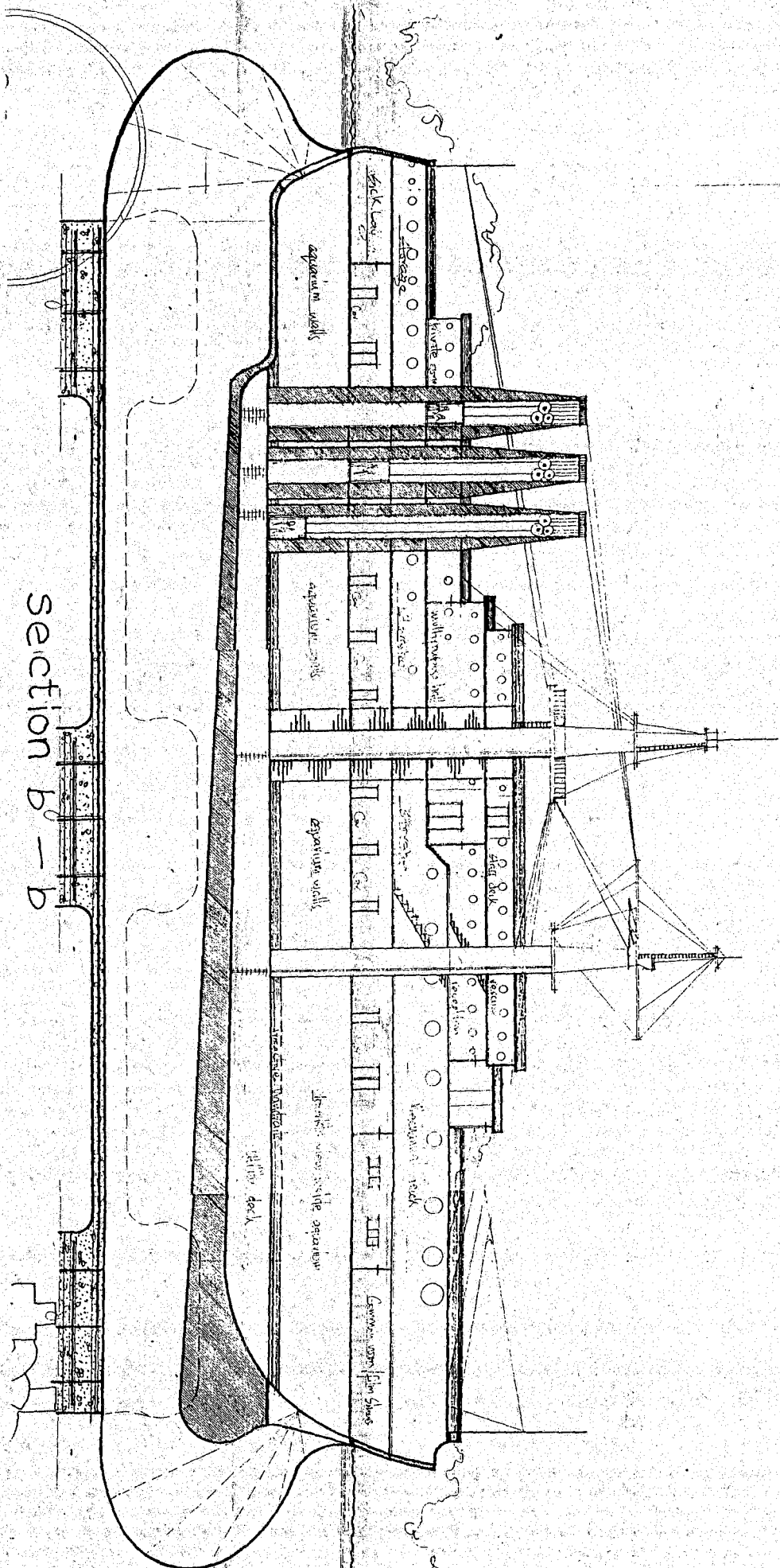
DESIGNER

View showing submarine aquarium,



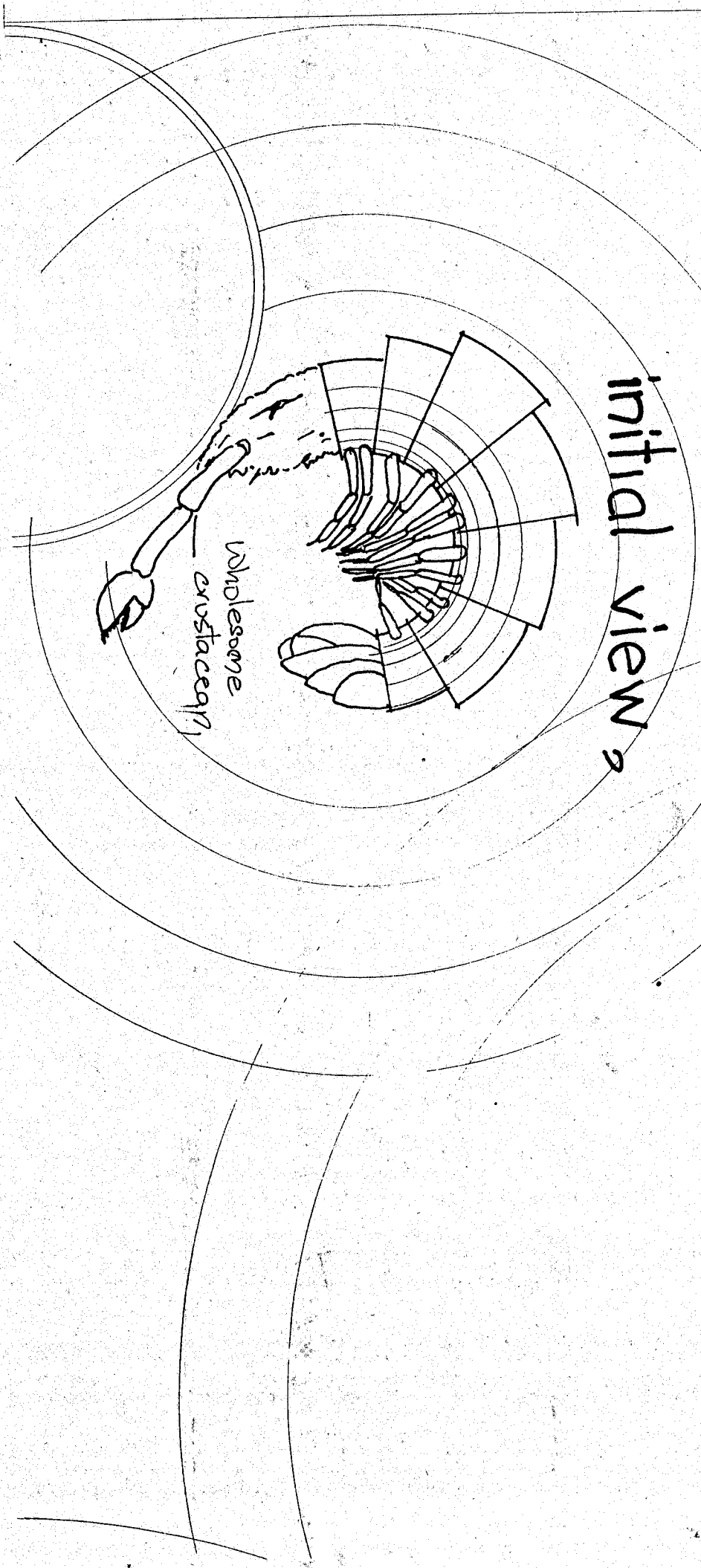
WATER SHIP

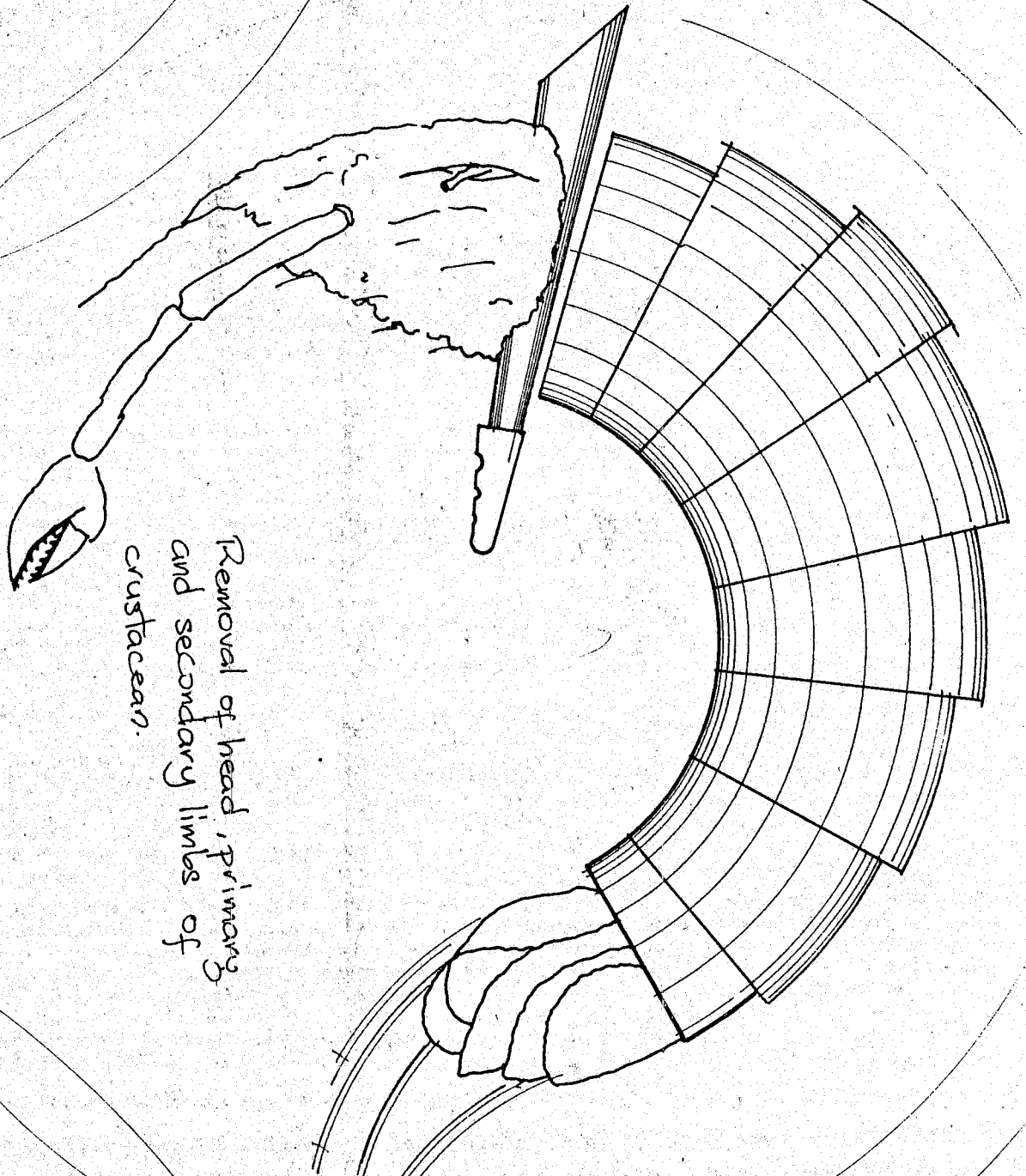
MARYESTER WILSON



concept in view of museum.
crustacean metamorphosis.

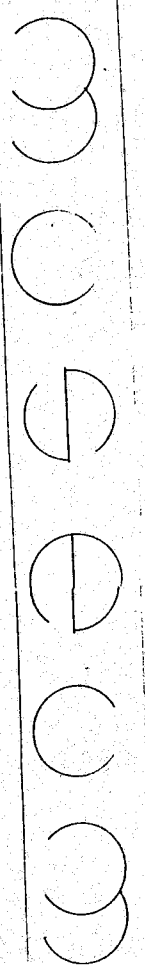
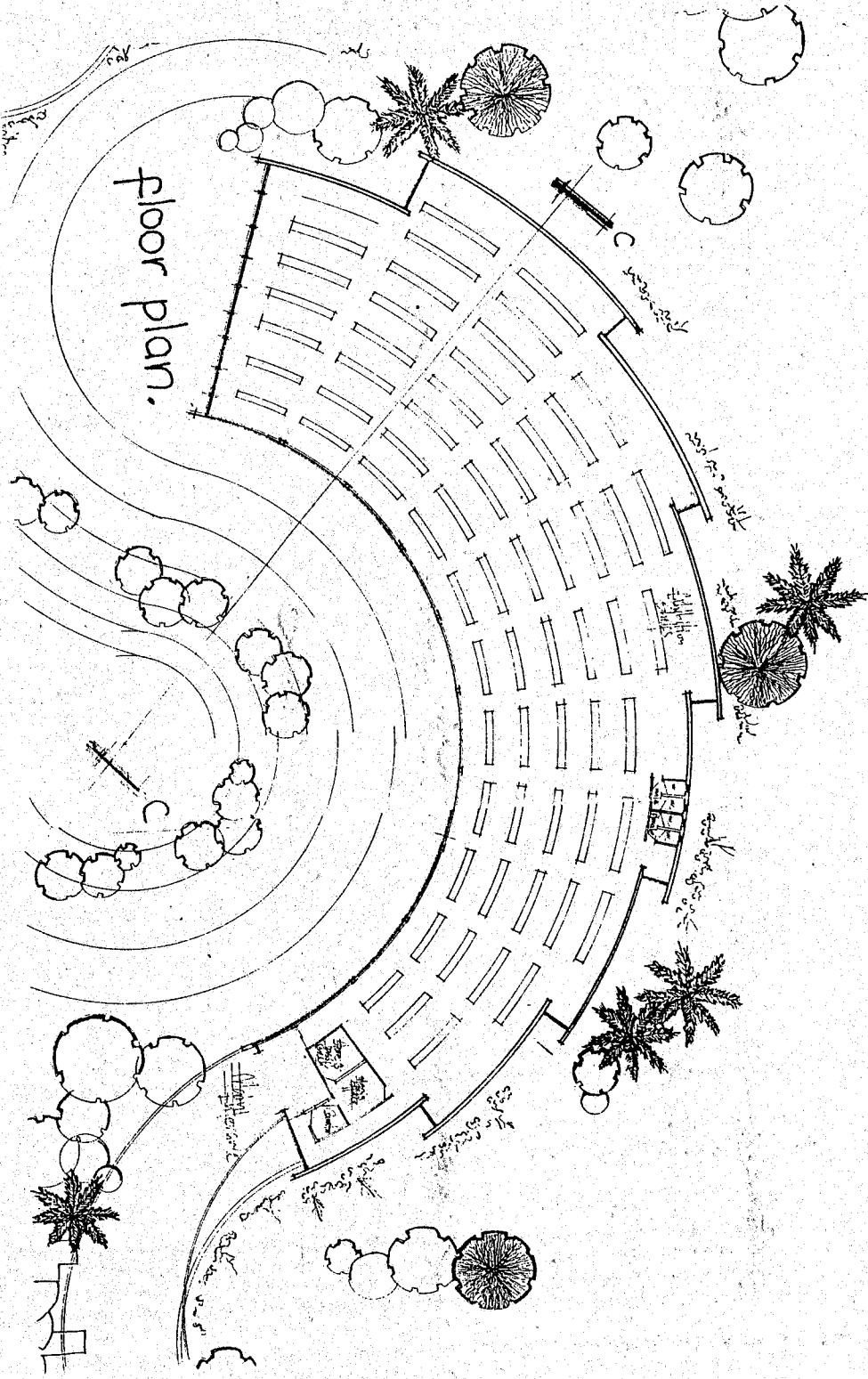
initial view

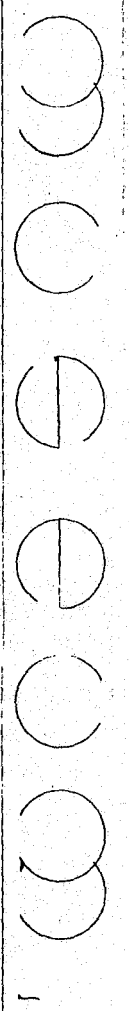
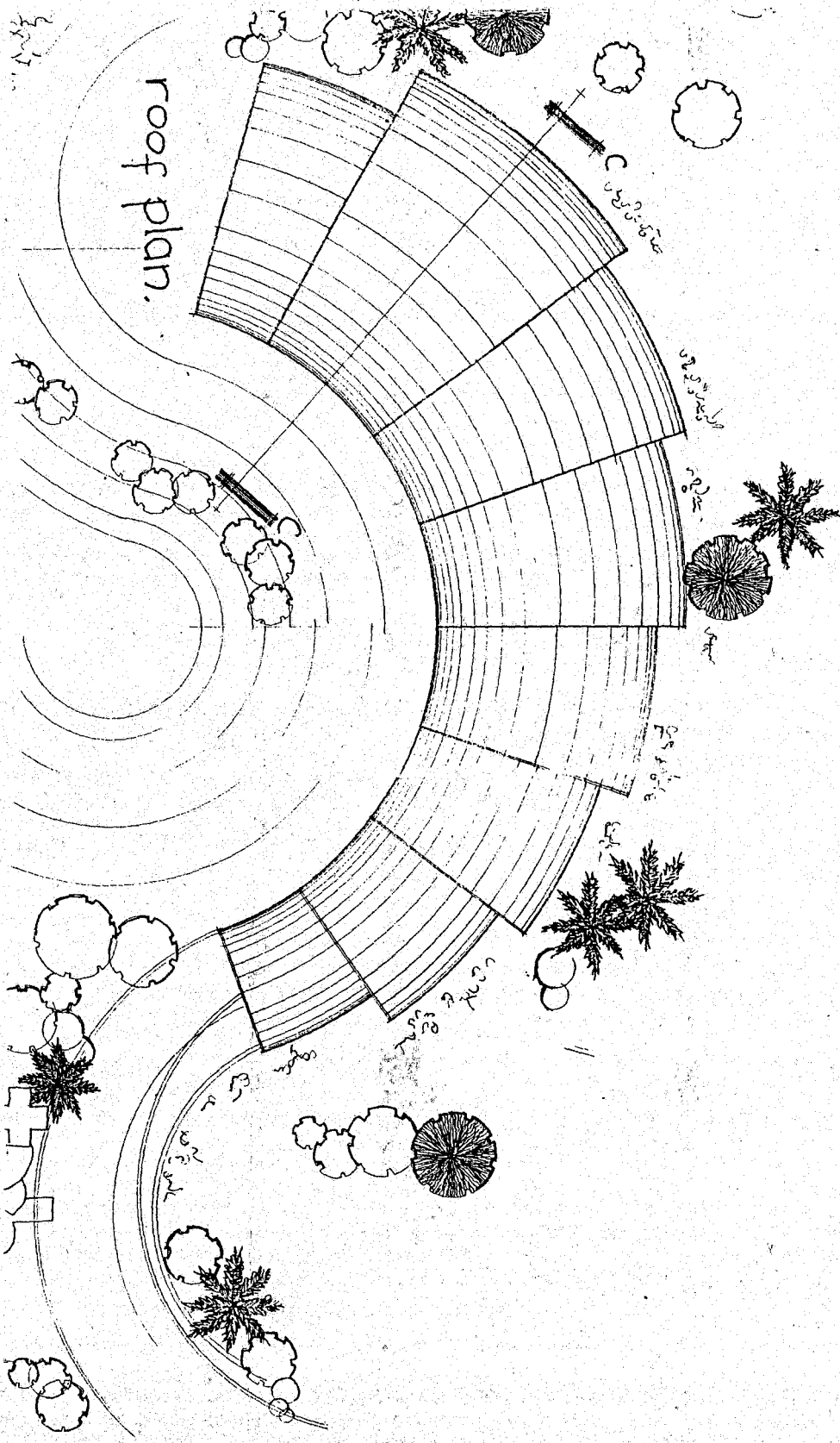




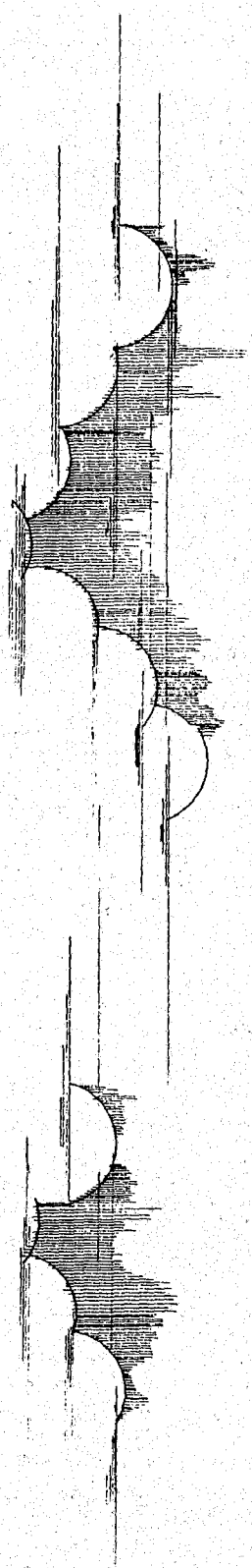
Removal of head, primary
and secondary limbs of
crustacean.

Secondary view,

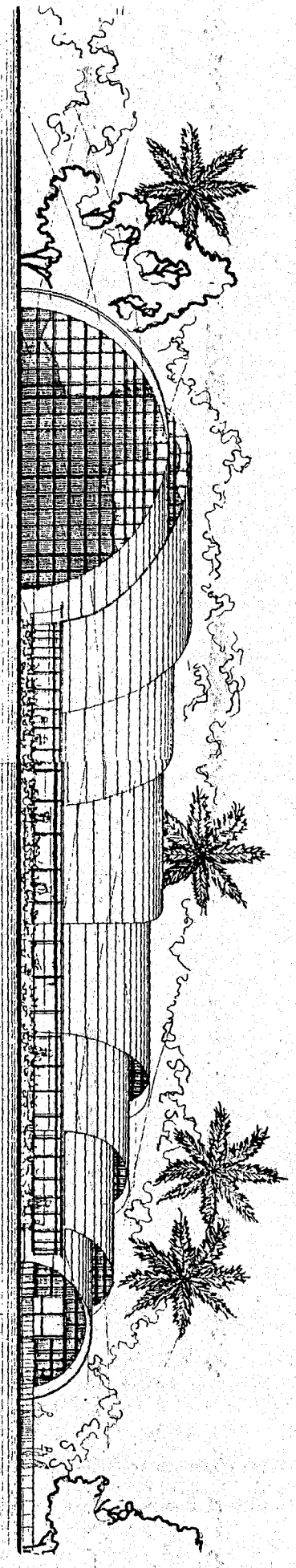




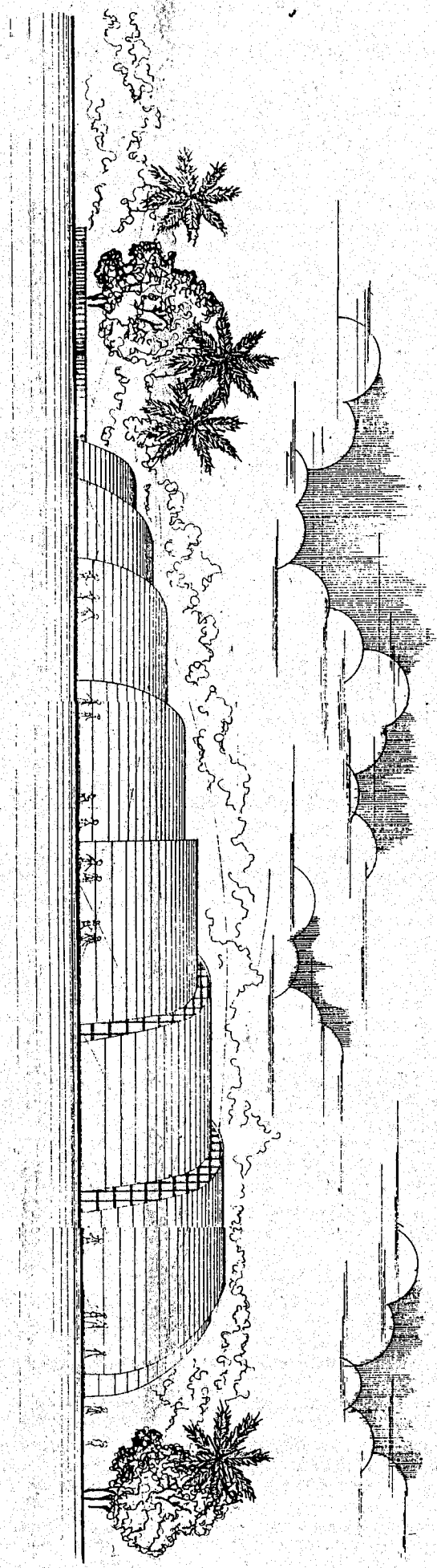
JOSEPH



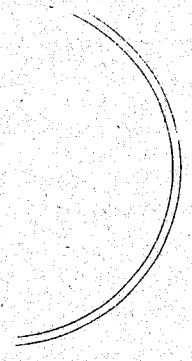
approach view

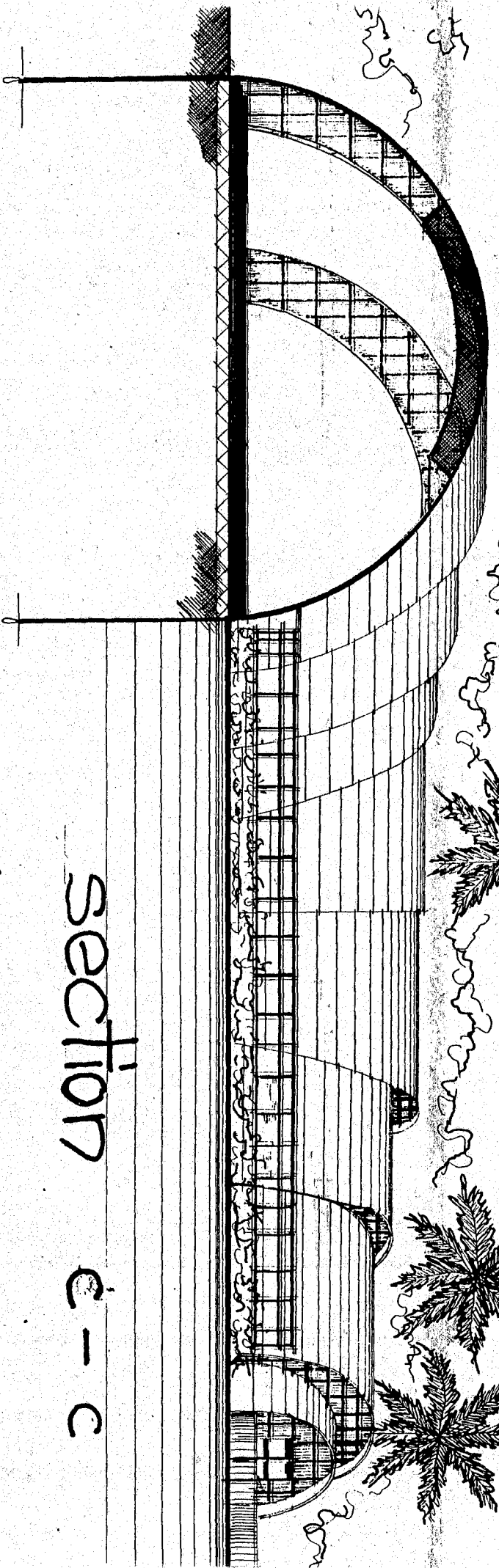


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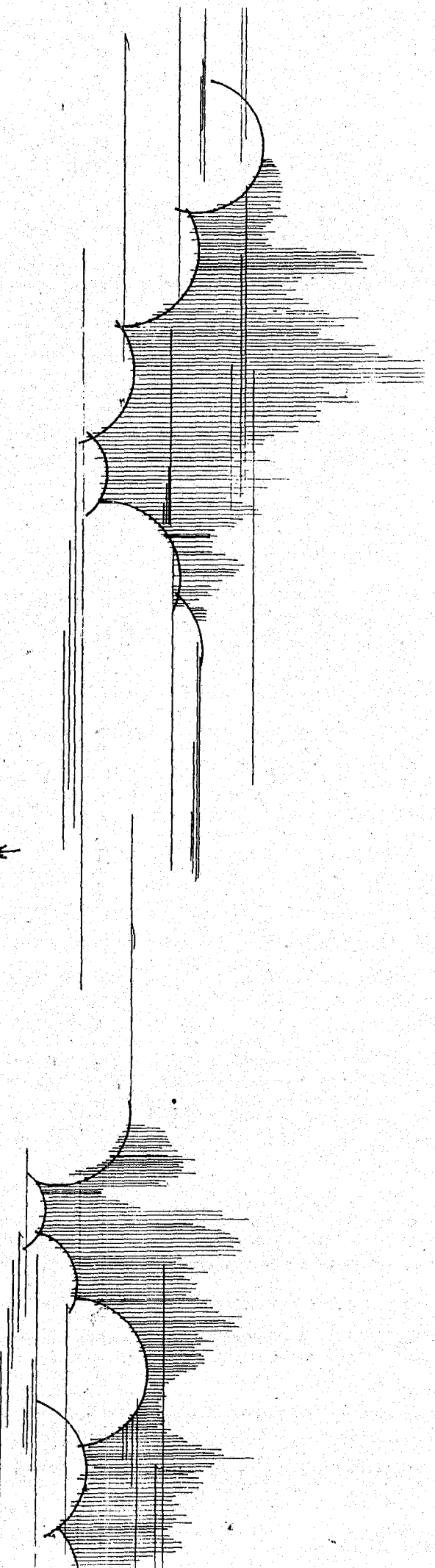


right view.

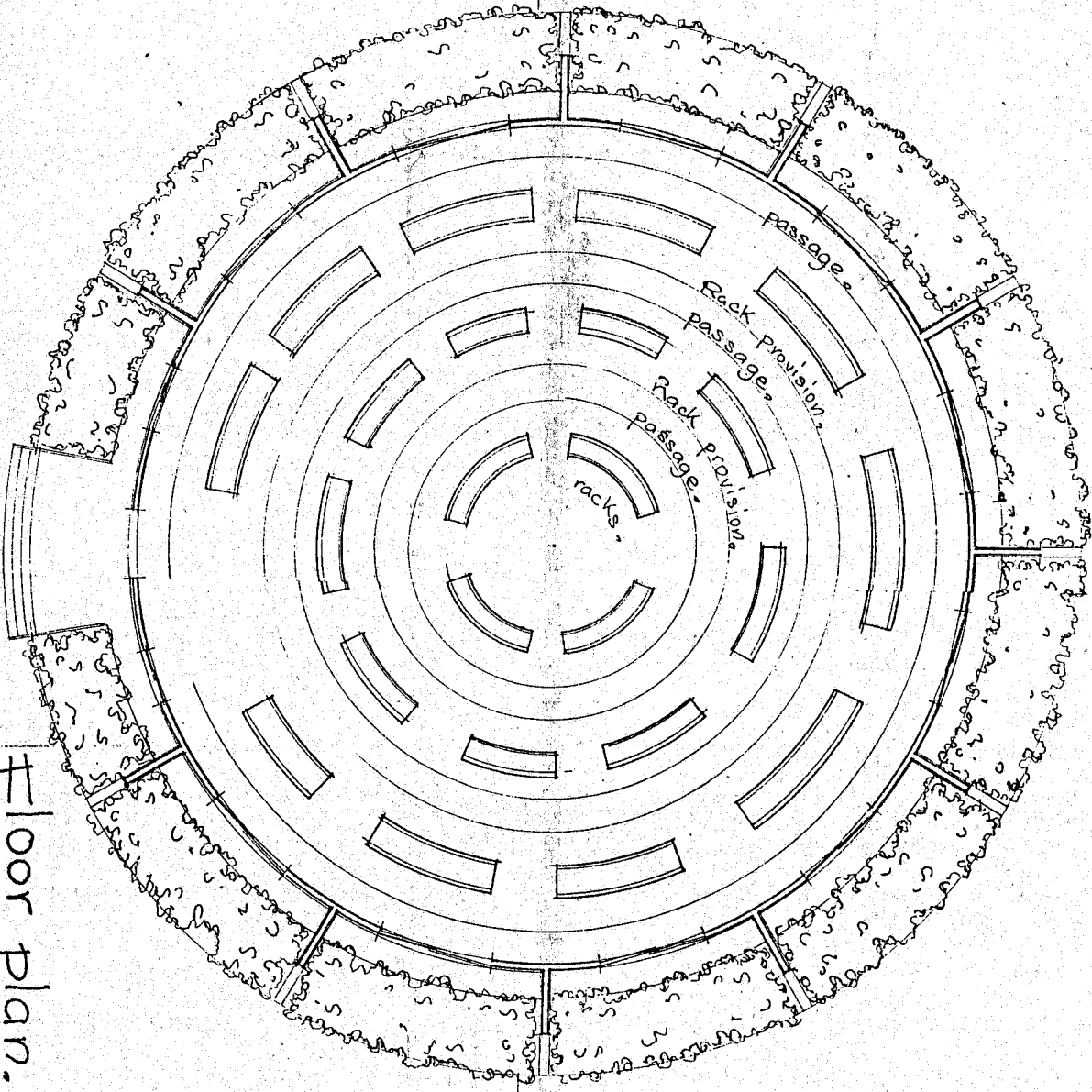




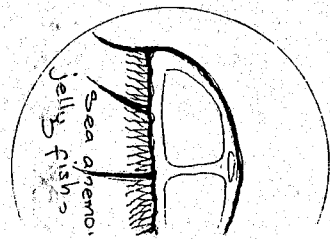
Section c-c



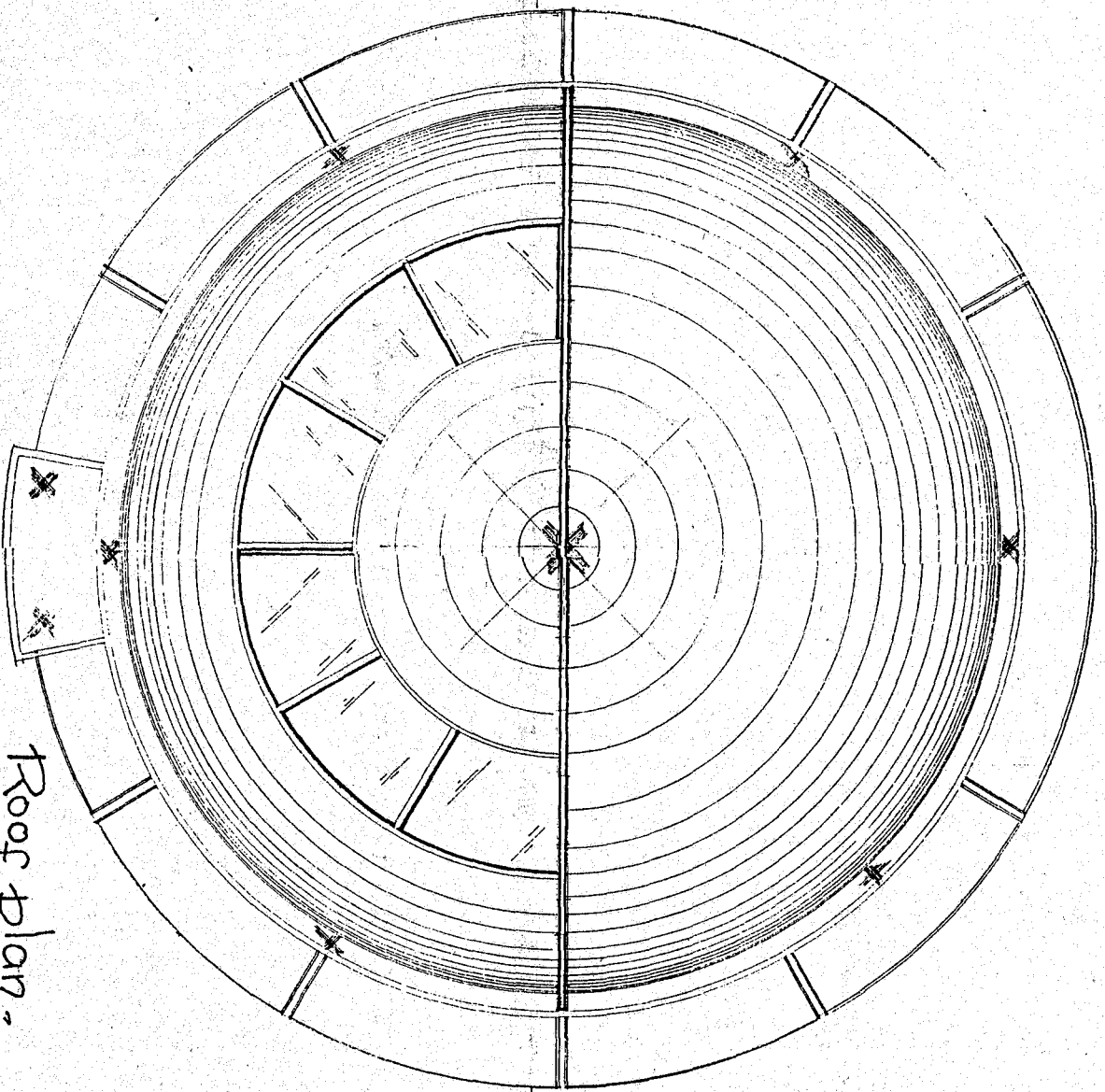
OFFSHORE PROPOSES



Floor plan.



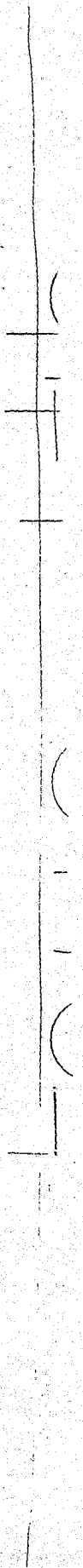
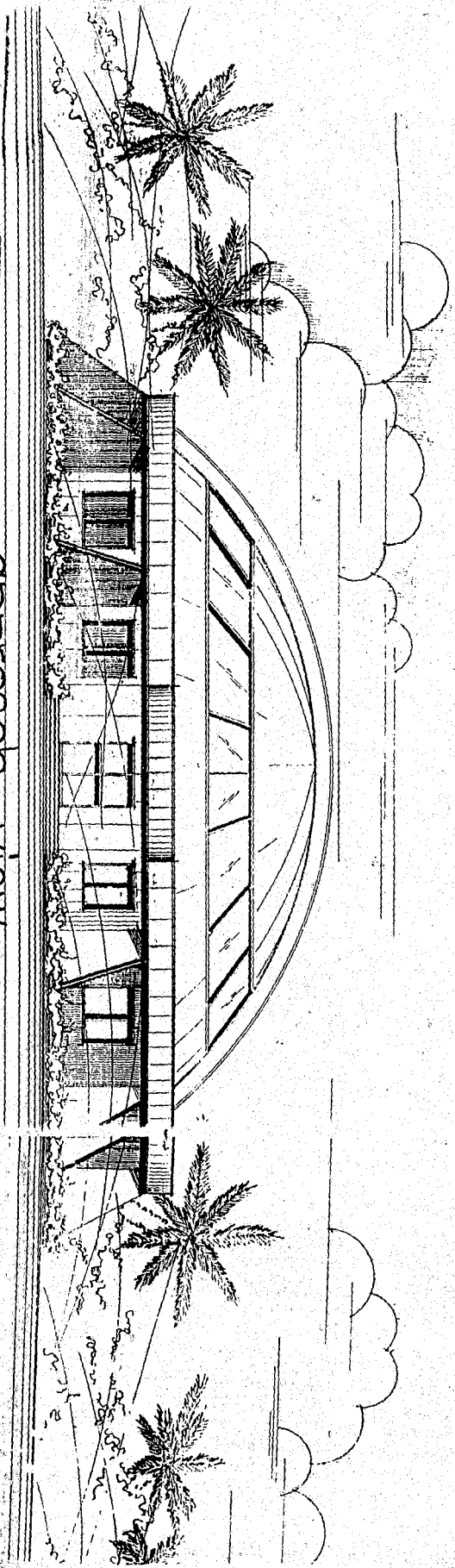
SHROPSHIRE

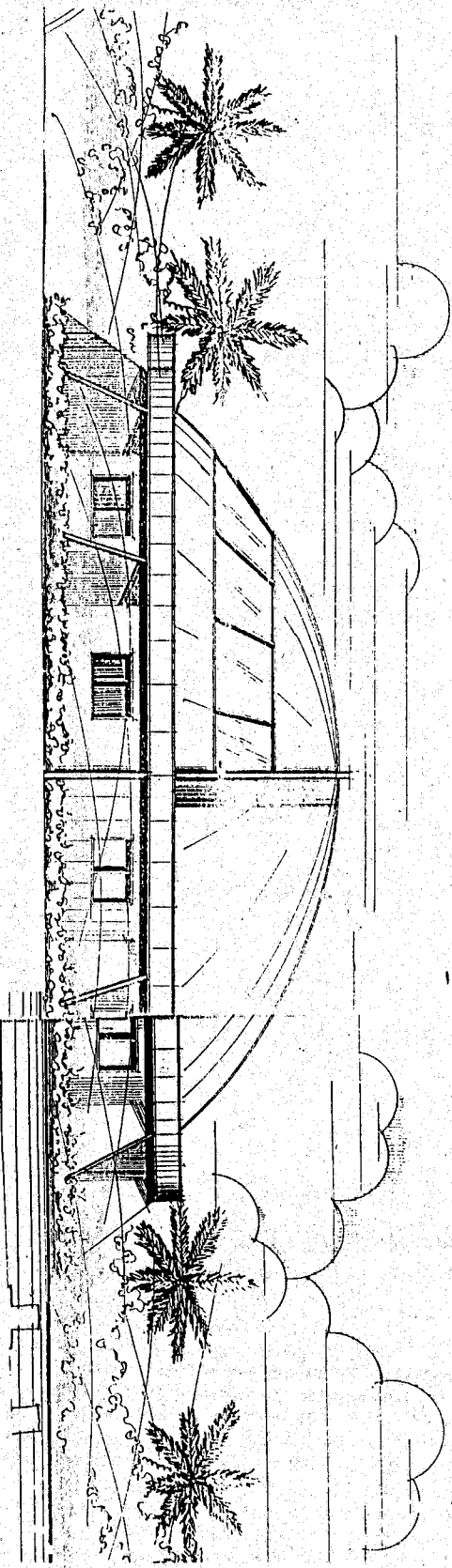


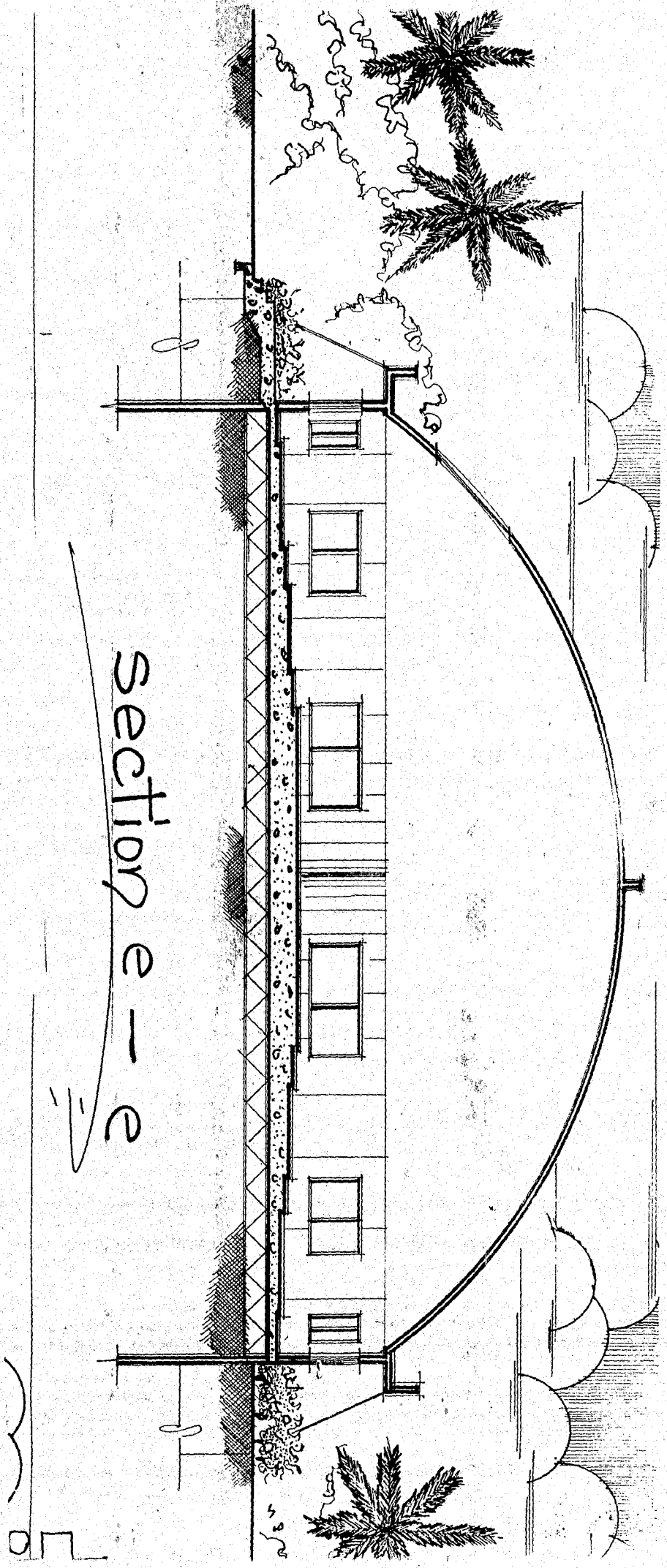
Roof plan



approach view.



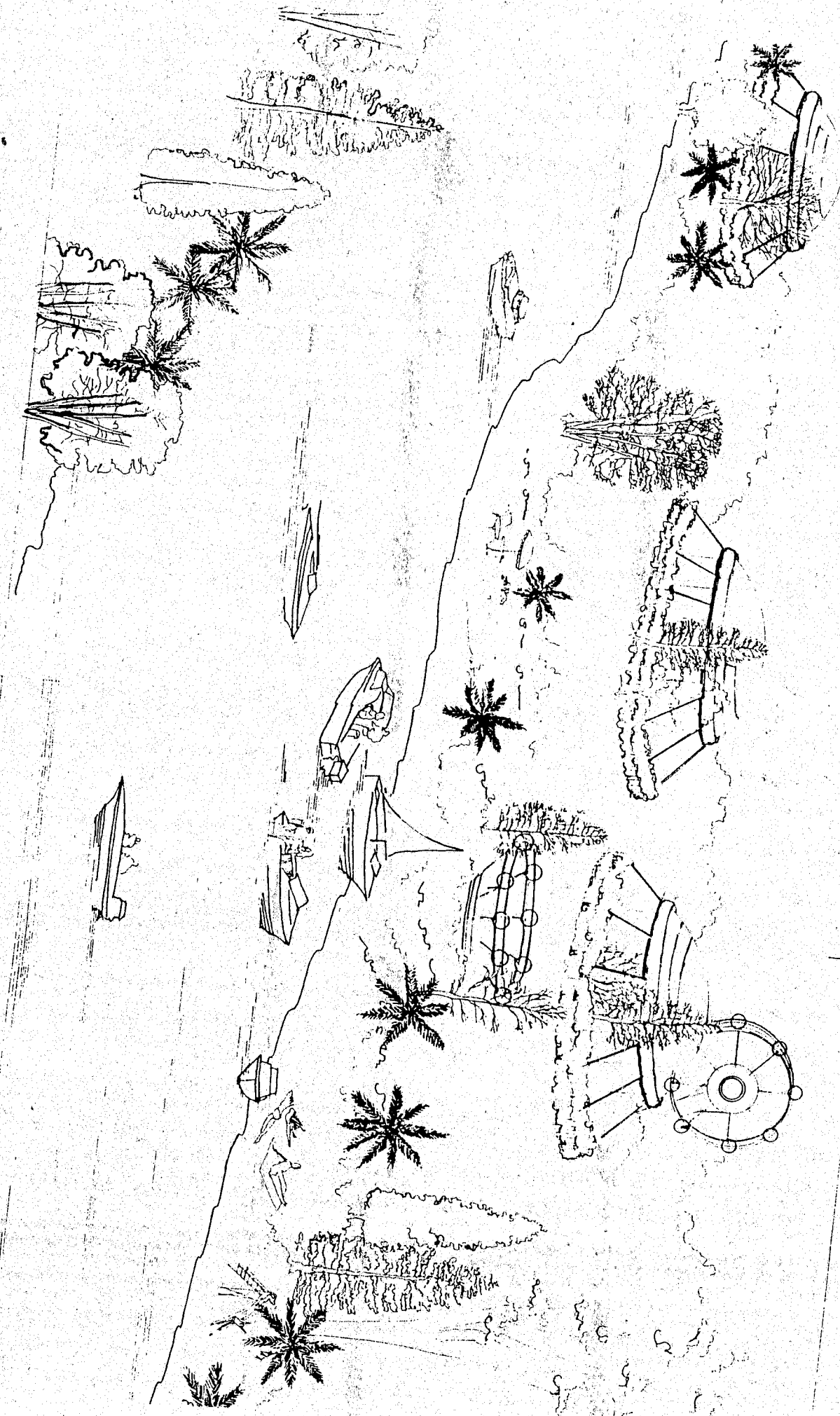




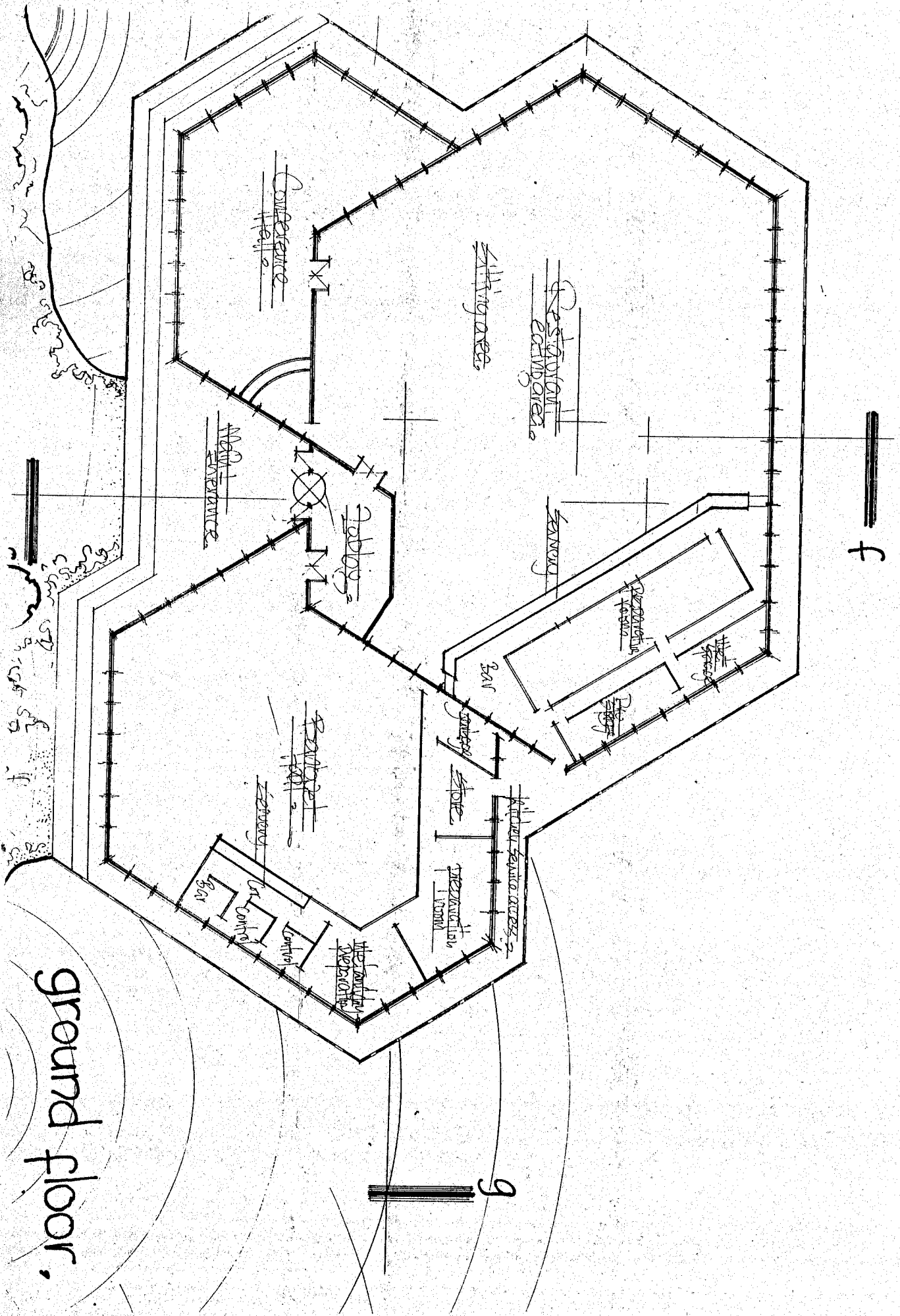
Section e - e

07

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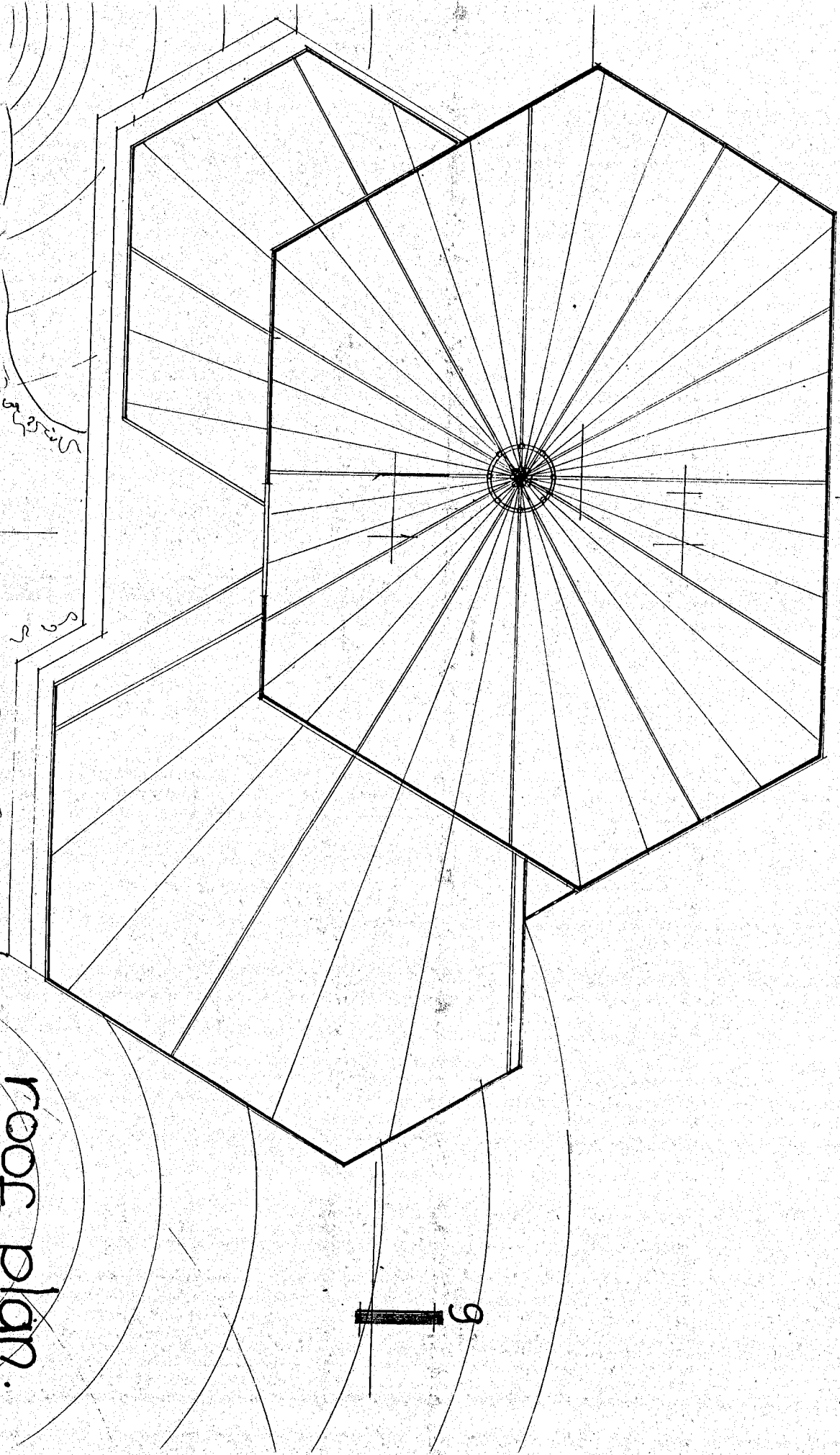


ground floor,

f

g

roof plan.

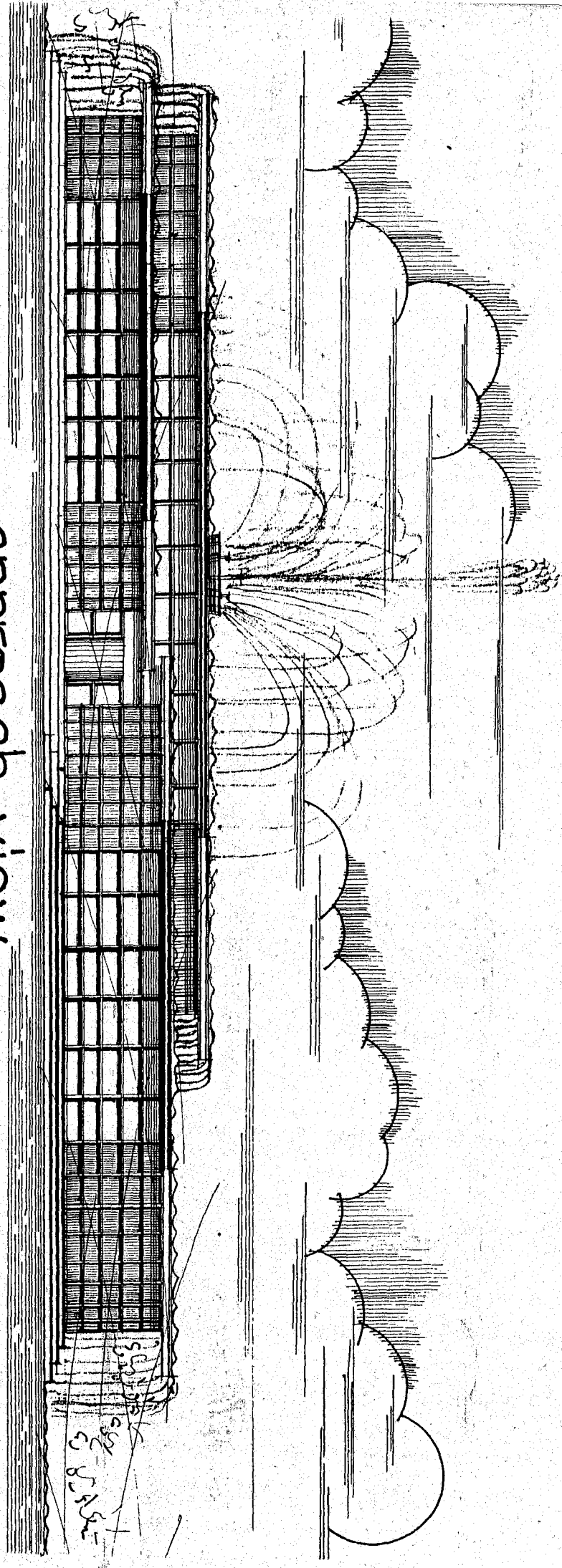


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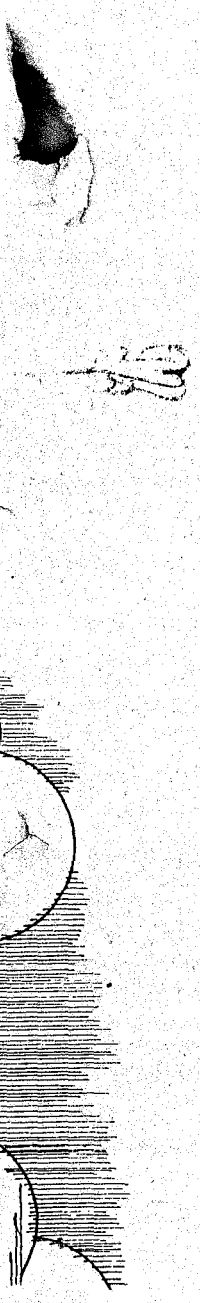
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restaurant.

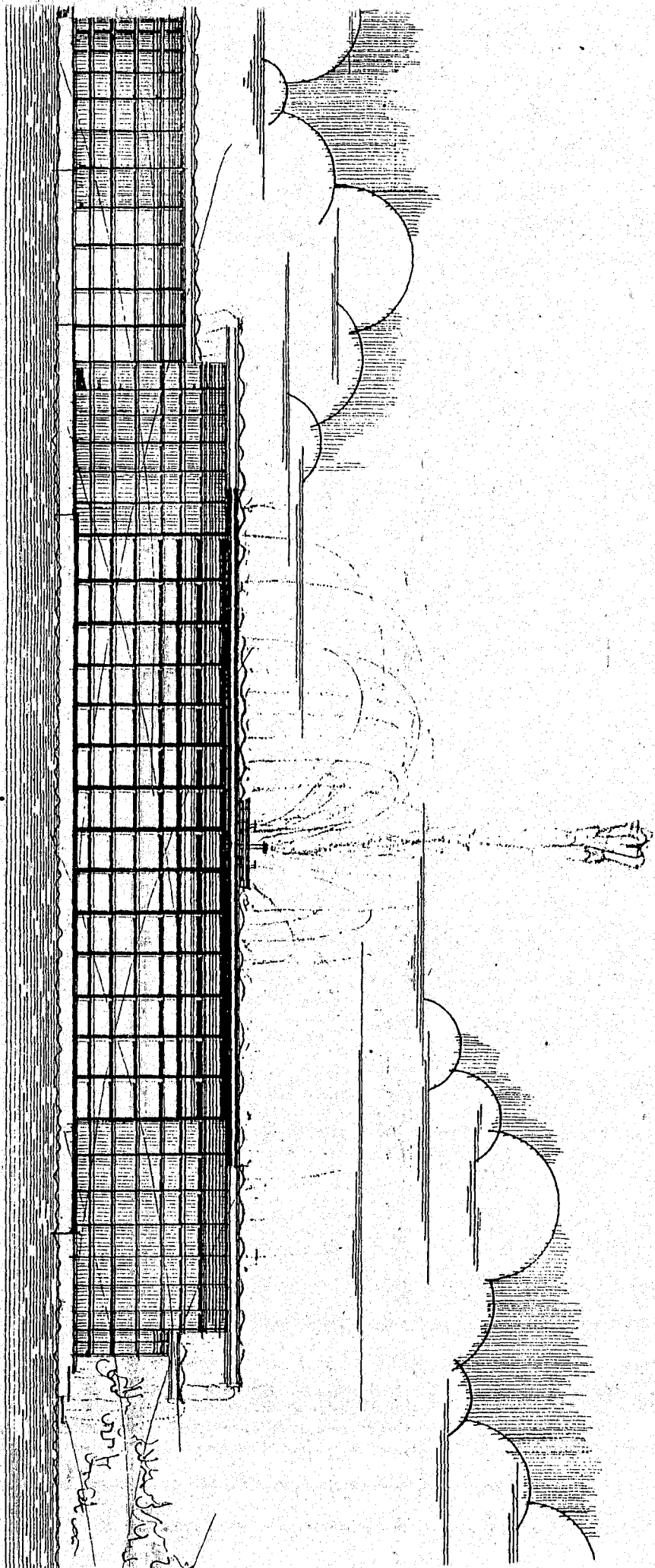
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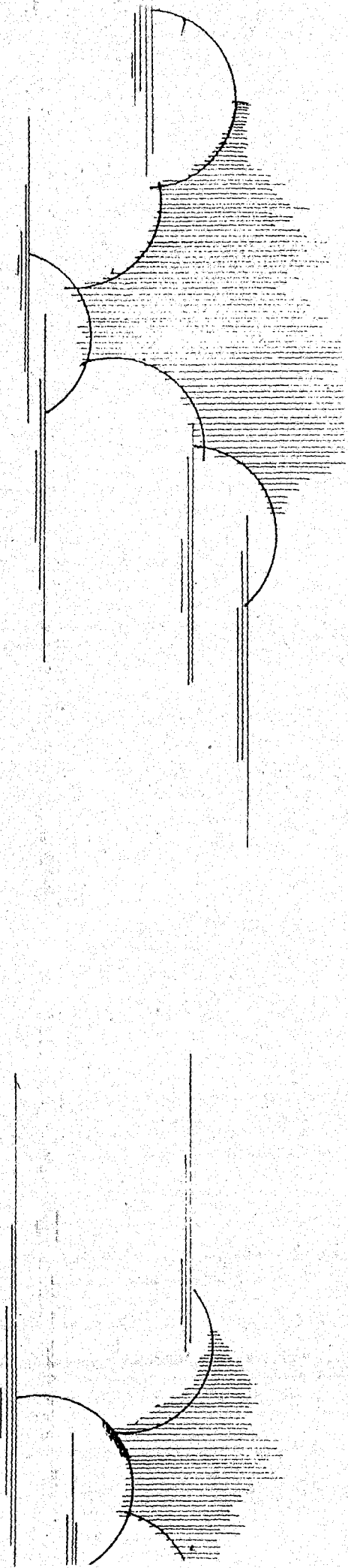
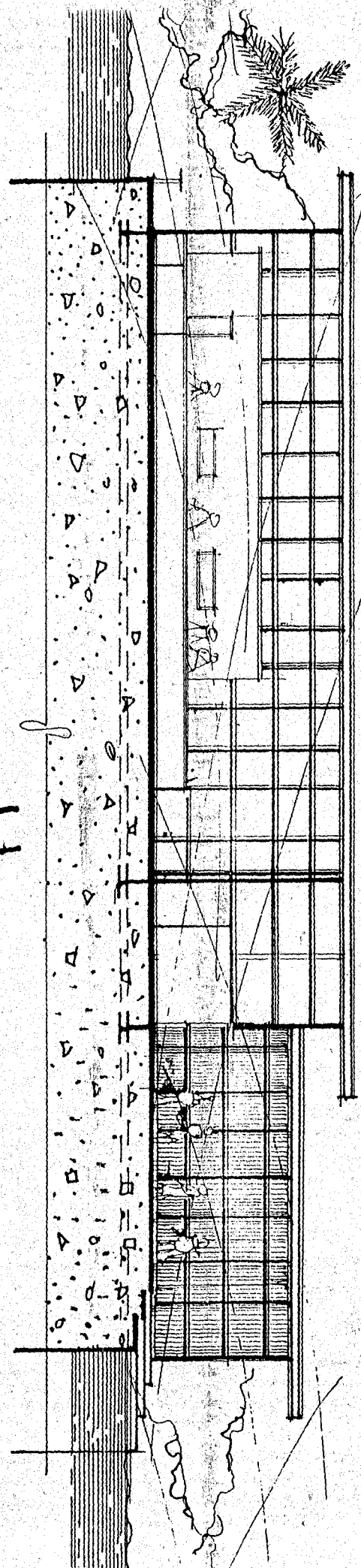
approach view



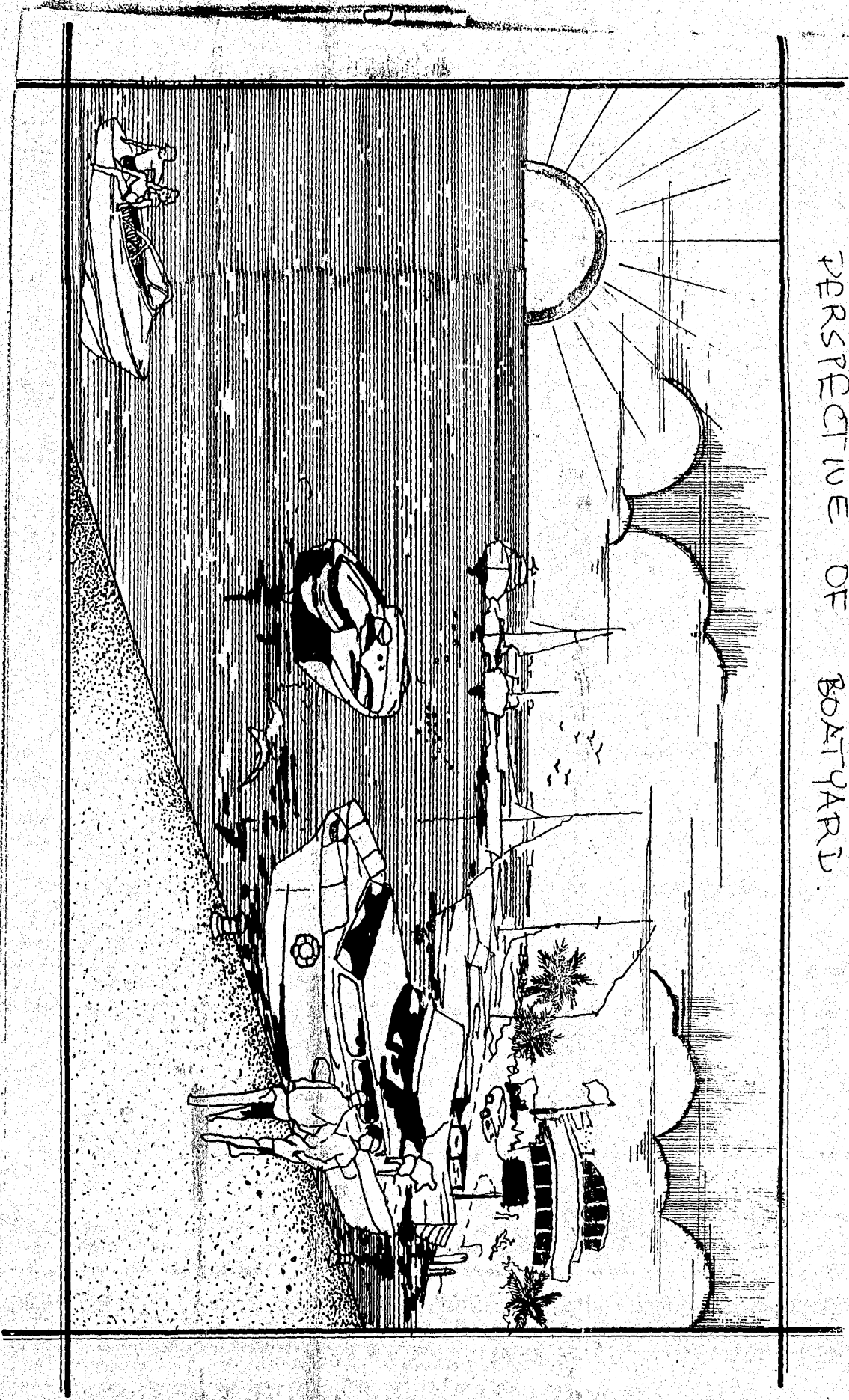
REAR VIEW.



Section f-f



PERSPECTIVE OF BOATYARD.



Interior view of museum
showing wall decors and finishes.

