

DESIGN PROPOSAL
FOR
ALAKE OF EGBALAND PALACE
ABEOKUTA
OGUN STATE
WITH FOCUS ON
ENERGY CONSERVATION IN BUILDING

BY

OLIYIDE AYODELE ABDULHAFEES

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M.TECH THESIS

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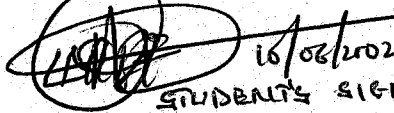
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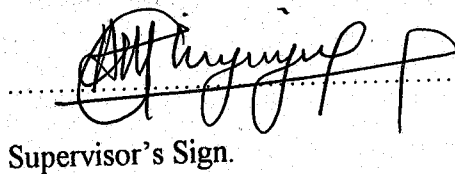
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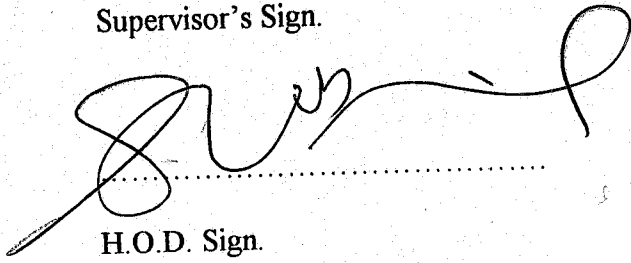
CERTIFICATION

This is to certify that this project work titled "DESIGN PROPOSAL FOR ALAKE OF EGBA LAND PALACE, ABEOKUTA, OGUN STATE WITH FOCUS ON ENERGY CONSERVATION IN BUILDINGS" was written by Oliyide Ayodele Abdul Hafees, M.Tech./SET/710/2000/2001, of the Department of Architecture School of Postgraduate Studies, Federal University of Technology, Minna, under the supervision and approval of


16/06/02
STUDENT'S SIGN


Supervisor's Sign.

22-05-02
Date


H.O.D. Sign.

10/6/02
Date

.....
Dean of School of Postgraduate
Studies

.....
Date

.....
External Supervisor

.....
Date

DEDICATION

To Almighty Allah and my beloved family.

ACKNOWLEDGEMENT

A project is a heavy under taking that requires an utmost popular input to attain its desired terms. Numerous indeed are those people whose contribution has yielded the expected result.

I cannot start by expressing a devotional and heartfelt gratitude to almighty Allah for His divine intervention guidance and assistance throughout the struggle in school.

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ABSTRACT

Socio-culturally rich building in Yoruba land and tradition is the palace which house the number one man according to the tradition, in person of the king of the particular kingdom.

Palaces are expected to portray the culture of the people of the town, city or village in question, even if no building or structure in the area depict the culture.

Since man's socio-cultural needs have long been neglected, this thesis critically looks into the socio-cultural setting, problems and potentials of Egba people.

Chapter one, deals with, what palace is in the Yoruba setting and also the socio-cultural structure of Egba people.

Chapter two of this thesis is based on the history of the Yorubas, looking into how the Egbas came to settle in the present Abeokuta, their palaces and the palace architecture.

Chapter three deals with the research area, which is the minimization or conservation of energy use in building as palace is more of residential and social building. The use of energy and proposals for conservation of energy were also treated.

Chapter four of the thesis is on case studies carried out on some existing palaces, so as to ascertain on what palaces look like, historical background, structure, Merits and demerits of the palaces in question.

Chapter five is based on data collected on the geographical location, climatic condition, vegetation, temperature and humidity, existing land use and future trend and socio-cultural sectors of the proposed site.

Chapter six deals with the analysis of the site selection, location, characteristics, access and circulation and general appraisal of site.

Chapter seven treated the design report, taking down the brief and analyzing the concept adopted – space requirement design consideration, spatial configuration, construction techniques, materials, finishes and fittings were also treated.

Chapter Eight of the thesis is based on design services, drainage and sewage, and refuse disposal, water supply fire safety, security and maintenance culture.

While chapter Nine is the concluding chapter of the thesis.

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CHAPTER ONE

1.0 INTRODUCTION

The palace is a center for socio-cultural, recreational, residential and administrative sit of the head of the community.

It is a place where men and women meet, based on the deeper Yoruba culture and on a wide range of activities, like music, dancing, drama, games, discussions, crafts, lecture, readily, and indeed whatever imagination could device.

“Whoever is not proud of his country is not fit to live” (J.K Aggreacy of Ghana), this statement, is consider incomplete, thus, should rather include “And whosoever is not proud of his culture is dead while living”. This explains why the palace is made (design) to portray the elegance, strength, culture and ideology of the people of the town. It also opens up opportunities and create avenues for communication between elements of the Yoruba society.

Before the advent of the Europeans, frontier among the three prominent Empire of this great country was the Oyo Empire. The Oyo Empire (Yoruba) had been known to evolved, organized and with complex human ecosystem and high level of administrative, culture, social and economic standards.

Alake of Egba-land was the host King that received other (sects) dialect that form the remaining part of Abeokuta (or Egba) of today when they first migrated from their original settlement. These sects include: -

- (i) THE OWU PEOPLE
- (ii) THE OKE-ONA EGBA PEOPLE
- (iii) THE GBAGURA PEOPLE
- (iv) THE IBARA PEOPLE

These sects form the Abeokuta of today and automatically the Egba people, with the people of the Ake inclusive. This forms the five seats of the Egba people.

The Alake of Egbaland by virtue of the aforementioned becomes the head of the Egba Obas council, and also the host of the secretariat of the Egba council of Obas.

1.2 MOTIVATION

The advent of the European, lead to bastardization and abandoning of our goal, aspiration, high standard and cultural heritage, though little was good for adoption. Our Architecture is one of those affected. Most of our cities were bastardized with their so-called modern or foreign architecture which doubtfully sooth our tropical environment. This blindfolded us to the extent that our sense of imagination to develop what is ours was forgotten.

With respect to the aforementioned, justification for the redesigning and making palaces in the Yoruba Kingdom befitting is brought about, since palaces are to portray the elegant, strength, culture and ideology of the people of the town and the [power] authority of the resident king. It would also open up opportunities and create avenues for communication between elements of the Yoruba society that have fallen and up grade the socio-cultural setting and potentials of the Yoruba empire.

The Alake of Egbaland palace though of more traditional materially built, need redesigning and reconstruction as the two times annexing of the palace only succeeded in abusing the zoning concept of residential building and the hierarchical classification of Yoruba palace architecture.

The latest annex building in particular is small compared to its function and resulted to over use of the building.

The buildings and the main environment in the palace do not portray the status of the resident king as the permanent head of the Egba Obas council.

All these sum up to justify the need for the redesigning of the palace as a whole.

1.3 AIM AND OBJECTIVES

AIM

The targeted purpose of this thesis is to celebrate the prestige and cultural heritage of the people of Abeokuta in the Oba's palace architecture.

OBJECTIVES

- (i) To create an architectural land scope in the royal environment with the use of construction element to celebrate the royal building.
- (ii) To accommodate all royal practice in the palace environment by the provision of building units to serve the purpose as there is separation of power in the government of Egba land.
- (iii) To separate the modulated function of some modern structures in the present palace by completely redesigning of the palace to sooth the traditional hierarchical of the palace.
- (iv) To encourage a conducive ruling environment for the royal father by introducing a proper zoning of building for convenience.
- (v) To blend the use of modern and traditional building material for a convenient and conducive interior, since the research area of the thesis is concerned with this.

- (vi) To promote the culture of the land architecturally with the use of ornaments and art design which portray palace architecture.
- (vii) To upgrade the present palace to an architecturally first-class palace with a well-planned and zoned redesigned palace.

1.4 RESEARCH METHODOLOGY

The research method adopted for the purpose of this project include:

- a. Data collection and interaction with people, sorting their views on the subject matters.
- b. Literature review of books and journals on palaces
- c. Carrying out case study on existing palaces.
- d. Assessing the problems and laxity of the present Alake of Egba land's place with a view of correcting them in the proposed design.
- e. Taking site inventory to ascertain what role the present activities on site might play in the future of the palace.

1.5 SCOPE OF WORK

The scope of this thesis is to redesign the present palace to accommodate all royal function with the exclusion of some traditionally spiritual power associated to building in the present palace.

This thesis will have the following: -

- i. oba's residence
- ii. Olori's residence

- iii. Main palace
- iv. GUEST Chalet
- v. Open air theatre
- vi. Administrative block
- vii. Gate house / Alake tower
- viii. Chapel
- ix. Mosque

1.6 IMPORTANCE OF STUDY

The main significant of this thesis is to upgrade the present Alake of Egba-land's palace to the status of the permanent chairman of the Egba council of Obas, by designing a befitting palace with significant palace architecture status.

CHAPTER TWO

LITERATURE REVIEW

2.0 BRIEF HISTORY OF THE YORUBA PEOPLE

The Yoruba people of Western Nigeria have three historical origin. The first one is credited to a big cock that came down from heaven. Purposely sent by Olodumare, the creator, to come and use its legs to bring out sand from the Ocean to form Ile-Ife, a town believed to be where life started.

Another one was the migration of lamrudu, the father of Oduduwa, an Arab from Mecca in Saudi- Arabia to ile- ife in western Nigeria. Oduduwa Ateworo now gave birth to seven children, who chartered all over the western region of Nigeria. Lastly, another story has it that, Oduduwa came down from heaven via a long chain that came down from the sky. This massive chain is still displayed at the palace of Ooni of Ife till date.

Going by these three stories, we can confirm that Ile-Ife is the cradle of the Yorubas. That is why it is stated in Ife that "Ife Ooye, nibi Ojumo tii mo wa, (Ife, where the dawn of life came from). Ile Ife became famous as a center for Yoruba traditional religion. The essence of this religion is the belief in, and worship of one Supreme Being called Olodumare and the recognition of some deities as intermediaries between him and man. Such deities include Obatala or Orisanla, Ogun, Sango, Yemoja etc. They are believed to be part of Oduduwas entourage to Ile-Ife.

His attitude is Oba, alase ekeji Orisa (king, the second in command to the gods). He is assisted by the Igbimo asofin to rule the empire. These people have some specific name in some places such as Oyomesi in Oyo, Iwarefa in Ijesa, Ife, Ekiti and Ondo town and Ogboni in Egba towns.

One thing that is very peculiar to these towns and cities is that one warrior or the other founded them. And they were also named by the circumstances involved in founding them. For example Ibadan founded by the great Ogunmola means a place close to the Savannah. Looking at the geographical location of Ibadan, it is quite close to the Savannah region. Oduduwa named Ile-Ife "meaning a land that is wide" on seeing the large area of land available to him. They Yoruba people can also be found in countries such as Brazil, Cuba, Benin Republic and Sudan.

2.1 BRIEF HISTORY OF THE EGBA PEOPLE

Egba people are direct descendants of Oduduwa like all other Yorubas. History has it that Alaketu one of the seven children of Oduduwa, was the father of Alake who left Ile-Ife first to settle in Ketu and later in the Egba forest. The wife of Oduduwa and mother of all seven children was so fond of her grandson that she eventually moved to the forest, she took with her the native jar of medicine used in nursing her children [the jar is still preserved at the Alake palace in the Yeye-monide shrine). She lived the rest of her life with the Alake and was buried at Orile-Ake so Omomide the mother of all Yorubas was buried at Abeokuta. Later other people moved to find town.

Prof. E. Bolaji Idowu (1990) pointed out that if religion permeates all the thinking of and lives of Yoruba people. It is no wonder that Ile-Ife, where that religion starts naturally had and still has a romantic attraction for people.

The major kingdom apart from Ife that developed in Yoruba land up to 1800 are Owu, Oyo, Ijebu, Ketu, Sabe, Dassa, Egbado, Igbomina and Egba.

The Ile-Ife town is notable for military and archaeological center for the Yoruba. The British colonial Masters further reinstate her central position and continuation. Ooni, the

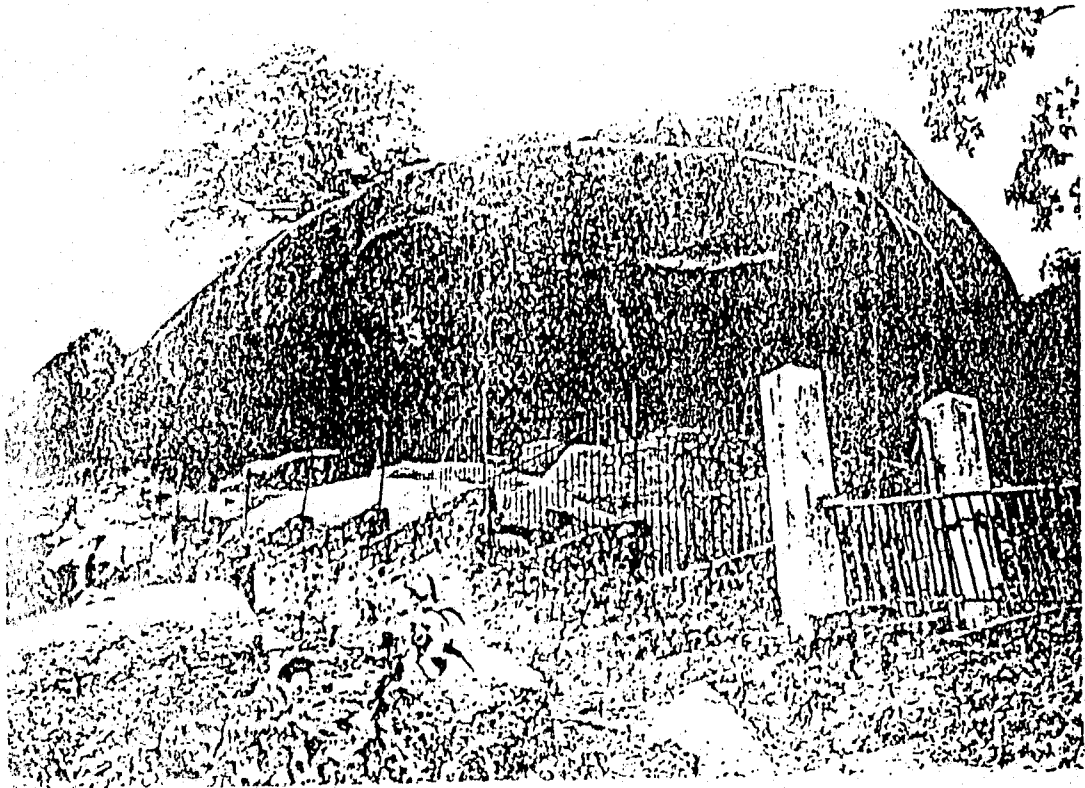


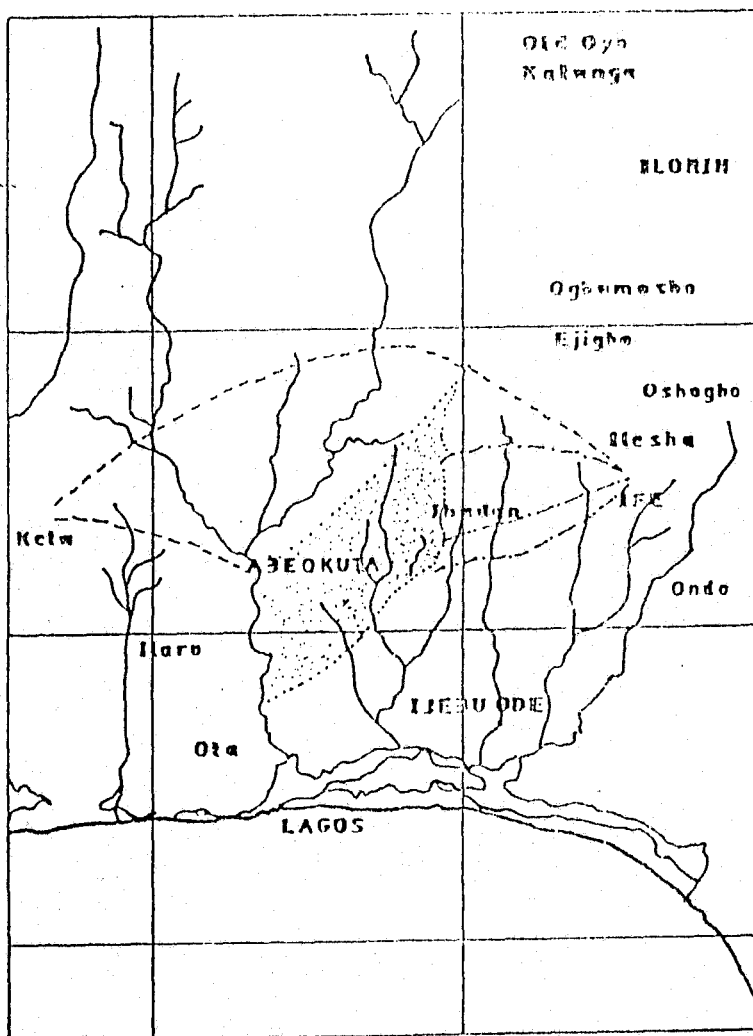
Plate 1. OTUNO ROCK

traditional rules, other wise called OLUAYE meaning the owner of the universe, was made the sole native authority. Ife held a central political economic structure in old western region and this is maintained up till date traditionally. Another historical town is Oyo Alaafin, the capital of the old oyo empire. This town can be regarded as the political base of Yoruba race. This is made possible by the fact that most notable Yoruba came from there. Such name as Aare-One-Kakanfor (this can be regarded as the General of the Yoruba army) Basorun Gaa, and Sango come to mind. Other major towns I Yoruba land includes Ilesha, Ibadan, Abeokuta, Akure and Ilorin.

As the head of government, the Oba was regarded as the king in theory, he has absolute powers he can kill at will, and has all the authority to save live. Such as Ijesa, Ikija, and Ikire. Keesi was founded by Ojo who hailed from Ife and Ilugun by emigrants from Oyo. Many Owu people left Orile-Owu in search of firewood during the reign of King Ogunija. Some later returned while those who did not return were then referred to as Egbados (Egbas of the lower side of the river). They founded places like Isaga, Ibara, Ioo Ota, Imale, Imeko and many other towns which either perished during the latter wars; or changed their names.

SETTLEMENT IN ABEOKUTA

Egba people started to settle in Abeokuta in 1830 or there about, each section settling I a separate quarter of the town. A strong system of relating with each and general governance of the Kingdom was later developed. At its peak, the kingdom covered a vast of land that stretched from river Oba on the North to Ebute Meta on the south in the present Lagos state and Osun river on the east to Ipokia and river Yewa on the west. The four section that formed the Egba Nation are **EGBA ALAKE**, **EGBA OKE-ONA**, **EGBA OLOWU**, and **EGBA AGURA**.



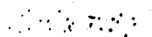
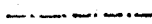

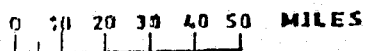
-  EGBA FOREST AREA
-  MIGRATIONS INTO EGBA FOREST
-  THE ALAKE MIGRATION

Fig 1: MIGRATION PATTERN INTO EGBALAND



SEPARATION OF POWERS IN ABEOKUTA

Governance is carried through a delicate balance of responsibilities among the following societies: Ogboni, Olorogun, Parakoyi and Ode.

The Ogbonis were the elite of the ruling class. They were in charge of making laws: They also judge classes, elect, discuss and advice the King in all affairs of the state the society ahs a chamber in very town where meeting were held to adjudicate on the affairs of the town.

The Olorogun were the war chiefs. They deliberate on military matters and advice the obas on wars and disputes.

The parakoyi were the members of the chambers of commerce. They are charged with furthering the commerce interest of their towns. They regulate and protect free trade and visits market to settle disputes.

The Odes were the warriors and they performed many war duties, which included scouting, spying and guarding the towns against marauders and enemies.

Before sodeke, the leader of the war torn Egba refuses consented to lead them there, he was first satisfied that the region was fertile enough to support an influx of people and defensively good. Hence the town Abeokuta (under the rock) was formed. The Oluwo Rock took its name being naturally furnished with apartments where human being could live. Hence Olumo (oluwa mo- built by the lord) but some historian say Oluwo is a contraction of Olu fimo meaning God has intervene.

The rock and caves of Abeokuta provided the core of refugee around which the 153 towns amalgamated. This method of amalgamation and strong influences on the development of the Federal structure of the political organization of the Egbas, a peculiarity not found so striking in any part of Yoruba land. Olumo rock is worshipped by the Egbas and developed into a tourist attraction.

Abeokuta was founded in the month of July 1830. The people of Ake moved to their present site in 1835.

The first Alake, Oba Okukenu, was crowned in the 8th August, 1854.

PAS TRADITIONAL RULERS OF ABEOKUTA SINCE ITS INCEPTION

Oba	Okukenu	I	1854	-	1862
Oba	Ademola	I	1869	-	1877
Oba	Oyeka		1879	-	1881
Oba	Oluwaji		1885	-	1889
Oba	Sokalu		1891	-	1898
Oba	Ademola	II	1920	-	1962
Oba	Gbadebo	II	1963	-	1971
Oba	Oyebade Lipede		1972	-	to date

2.2 HISTORY OF PALACES

Palace originally a royal residence for a king or emperor, the work being derived from the palliative Hill in Rome, where the Emperors of Rome built their residences. Later residences of bishops and Archbishops in England, France, and Spain came to be known as palaces and eventually the name was given to many large and imposing buildings, both public and private. Thus, in the united state for example there are colonial governors, palaces in Williamsburg Va.

The earliest known palaces are those built behind the temple of karnak in thebes by king thitnose III of Eqypt (reigned 1504-1450 BC). There are few remains of a palace erected by Amenhotes III (reigned 1417-1379B) also at Thebes, which had rectangular outer wall

enclosing a labyrinth of small dark rooms and courtyards. Much larger palaces were erected at Nimrud, Nineveh and Khorsabad in Assyria. The palace of Sargon II (reigned 721 – 705 BC) at Khorsabad (our Shorakin) extending over more than 25 acres (10 hectares) is built on a platform, in the city wall and contains two huge. Central courts and a disorganized mass of smaller court and rooms.

The architects of ancient Babylon achieved more symmetry in the palaces they designed for their kings using hallways and repeated grouping of rooms. In the 4th, 5th and 6th centuries BC, vast Persian palaces built at Susa and at Persepolis, where the residences of these low platforms raised upon a main platform that is reached by a double stair case. All of these eastern palaces were used not only as residences but also for governmental and religious purpose as were the Creton palaces at Phaestus and Knossos the later having several stories and featuring a grand stair case three stories high.

During the middle ages, palace building declined, but in Renaissance Italy every prince had his palazzo, such as the Pitti Palace in Florence and many splendid palaces lining the Grand Canal in Venice. In France, Royal Palaces were built, as were palaces, of justice (court houses) and of public assembly. Famous Spanish palaces include El Escorial outside Madrid, the Al-Hambra in Granada, and the Alcazar of Seville. There are three royal palaces - Buckingham, St. James and Whitehall Palace in London.

2.3 GENERAL HISTORY OF YORUBA PALACE

The history of Yoruba palaces dates back to the beginning of the first Yoruba settlement and consequently kingship in the ancient Yoruba kingdom when Oduduwa settled at Ile-Ife. He is said to be the ancestor of the Yoruba people and their first rulers. His seven

SIZES OF PALACES IN EASTERN AND WESTERN YORUBA LAND.

EASTERN YORUBALAND(IFE TYPE)			WESTERN YORUBALAND(OTHER TYPES)		
PALACES	Area of palace, including background forest, in acres	Approximate area of background forest, in acres	PALACES	Area of palace, including background forest, in acres	Approximate area of background forest, in acres
OWO	108.5	99	IJERU-ODE	12	About 12
ILESHA	51	45	OYO	17	Nil
ONDO	43	38	IDOWA	11	About 8
ADO-EKITI	27	14	OWU	7	About 4
IFE	20	15.6	ABEOKUTA(Ake)	6.1	Nil

children later scattered all over the seven original Yoruba kingdoms. It was concurrently with the establishment of this first Yoruba settlement that Obaship and Yoruba palaces evolved.

Therefore, as settlements grew in that order, usually through the immigration of other family groups who were apportioned lands by the established rulers. These family groups who came from various places as they settled in one area jointly and severally in this order constitute compounds which usually circumscribe that of the traditional ruler which was later to be referred to as the palace (Ajiboye, O.J Yoruba culture Revival in a new Approach to palace Design MED 1977/78).

The palace as mentioned earlier is the official home of the Oba in the town. It is not only his dwelling place but is the base from which he attends to and runs the affairs of his people and kingdom. It was also designed to preserve the Oba in the privacy and sanctity, which accorded his sacred status and the traditional, spiritual and religious leaders of his people.

The ancient Yoruba palaces were in many respects and the most impressive part of any town of all compounds in each town it occupied by far the largest area of land. It was itself a thickly walled multiple compound within a walled town. It had the most imposing architecture for it was for all purposes the embodiment of the arts and craft of the people. (Ojo, G.J.A. Yoruba palaces 1966).

The palace as mentioned was without question, the largest compound in the town, which contained it. It was usually larger and higher than other surrounding buildings and a lot of free grounds all round it. There was usually a kind of unspoken reverence of the surrounding buildings to the palace.

TYPES OF PALACES

The different categories of palaces in Yorubaland show the levels of importance of the Obas, so the palaces actually depend more on the traditional status of the Oba than on the size of status of the town which contained them.

Palaces in Yorubaland have been broadly classified into four types namely:-

- (i) OYO TYPE
 - (ii) IJEBU TYPE
 - (iii) IFE TYPE
 - (iv) EGBA TYPE
-
- (i) Oyo type:- The Oyo palace is the only one of its kind in the kingdom. Its uniqueness is with being the only king. In a large territory of many secondary towns.
 - (ii) IJEBU TYPE:- The character of the Ijebu type is the existence of as many as there are recognized ruling houses. What was obtained was that all the ruling houses had their palaces, until recently when, they now found a need to have a communal palace. A common feature in this kingdom was a common mausoleum for deceased Obas.
 - (ii) IFE TYPE:- These types of palaces are the most in Yoruba kingdom. They were usually very large in relation to the towns, which contained them. One important feature that is common to these palaces is their stability. The site where they exist is constant. They may have different ruling houses (i.e. selection of the Oba might be in form of rotation of different royal families). When an Oba is enthroned he leaves his house to the official residence provided.
 - (iv) EGBA TYPE:- palaces in the Egba kingdom have not been stable because of recurrency of wars and resettlement. As a result of this, Abeokuta consist of five

TYPES OF YORUBA PALACES

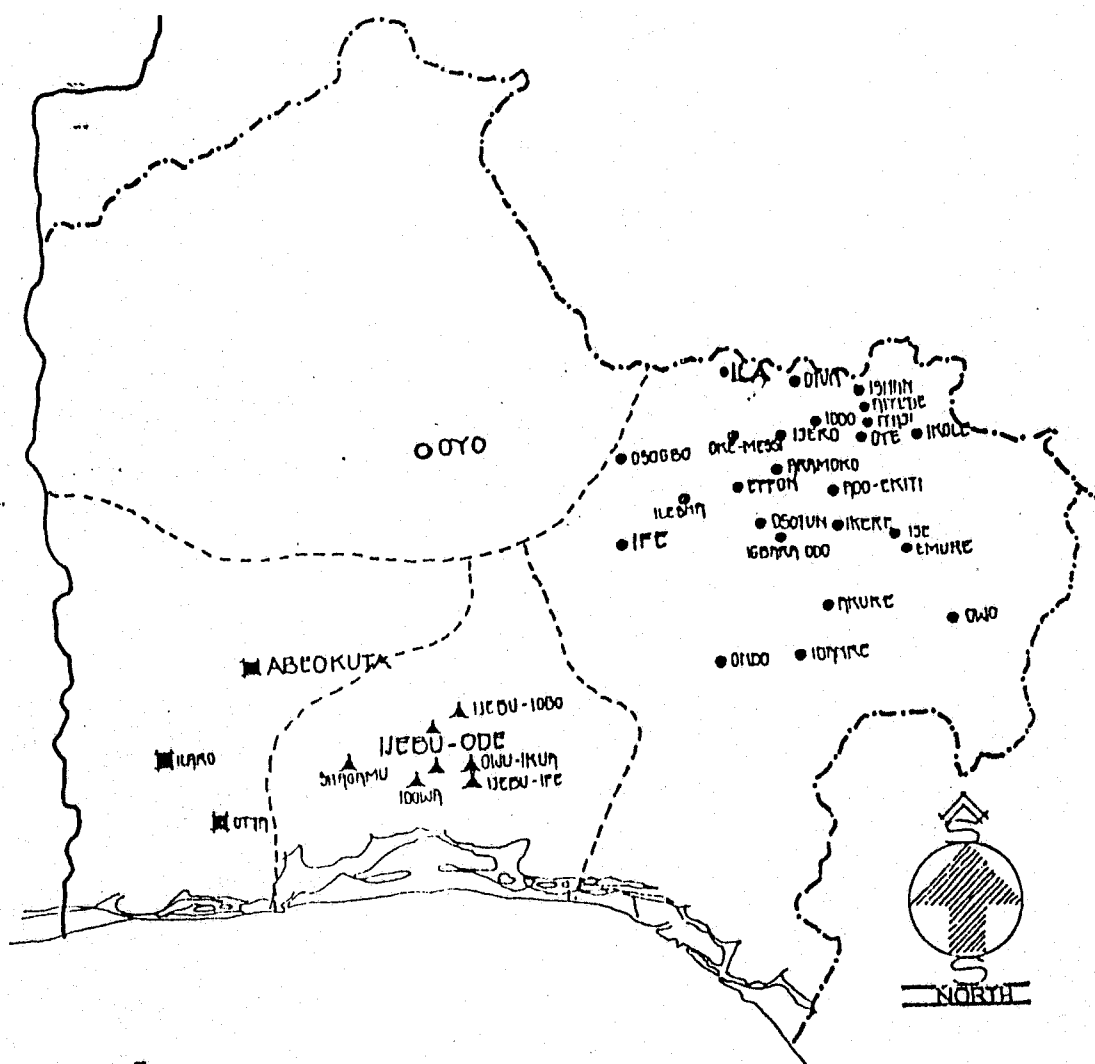












FIG 2

REFERENCE

-  INTERNATIONAL BOUNDARY.
-  REGIONAL BOUNDARY.
-  APPROXIMATE BOUNDARY OF TYPES OF PALACES.
-  IFE TOWNS WITH FIRST CLASS PALACES.
-  IJIRO TOWNS WITH SECOND CLASS PALACES.
-  EGBA TYPE.
-  IFE TYPE.
-  IJEBU TYPE.
-  OYO TYPE.
-  LAQOON.

SOURCE : G. J. A. OJO , YORUBA PALACES

different sub-settlement (Ake, Ibara, Owu, Gbaqwa and Oke-ona), and they all have their different palaces although Ake palace is the most important in terms of hierarchy than any of the other four palaces within Abeokuta or in the kingdom. Other types in this category are Ilaro and Otta.

METAMORPHOSIS OF PALACE DESIGN AND BUILDING

In all three different and distinct styles that can be identified in Yoruba palace, some palaces manifest one, two or all three of these styles, depending on the attitude adopted in conservation, or reconstruction. It should also be mentioned that the different Obas over the time played a major role in what palaces are today. One finds out that it is not only the dominant style of architecture that prevails, but the palaces are usually designed to the precise requirements and task of the reigning Oba's. This is as a result of man's dynamic response to changing environment and social needs.

The three styles mentioned above are:-

- (a) Pre-colonial / historic period
- (b) Colonial period
- (c) Post colonial / post independence period

PRE-COLONIAL PERIOD GENERAL CHARACTERISTICS

- * High and thick walls surrounding the palace ground
- * The kobi, (which resembles a porch) a projection of the wall into the courtyard at regular intervals.
- * Multiplicity and hierarchy of courtyards each bounded by a wide verandah.

- * Elaborate main entrance design
- * Rectangular plans
- * Use of local materials
- * One main gate coming from the Oja Oba (kings market)
- * Tokem poles or mud columns with bold sculptures supported eaves of roof along the verandah
- * Elaborate carved wood

COLONIAL PERIOD GENERAL CHARACTERISTICS

- ❖ A vertical growth in palace buildings and sequent change of style to Brazilian architecture.
- ❖ The use of modern construction material
- ❖ Large windows with wooden lintels.
- ❖ Adornment with Brazilian style of decoration and also use of bright colour.
- ❖ There were common corridors in the ruddle which rooms opened from both side.

POST COLONIAL PERIOD GENERAL CHARACTERISTICS

- ❖ The size of the palace was drastically reduced
- ❖ As a result of uncontrolled expansion in different directions the palace lost its place at the center of the town
- ❖ The buildings are devoid of any traditional motifs or characteristics.
- ❖ Absence of ornamentation e.g. carved posts sculpted walls motifs, artistic patterns reminiscent of past architecture

- ❖ Vertical development of palace building (two or more storey)
- ❖ Introduction of gentle slope for roofs, concrete roofs and parapet

YORUBA PALACE ARCHITECTURE

Historical background

We cannot study the Yoruba palace architecture without first of all studying the Yoruba architecture. Yoruba architecture is product of our culture and climatic conditions. Courtyards for relaxation, surrounded by long corridors leading directly into the rooms ventilate most of the buildings steep or highly pitched roofs too are seen all over the Yoruba land.

Most palaces in Yoruba land dated back to 18th century. The earliest ones like the palace of Olowo of Owo, and Ooni of Ife dated back to early 18th century. The Oba in a traditional Yoruba setting is regarded as semi god who can do many things unquestioned and get away with it who needed to be accompanied with many slaves as helpers, many babalawos, (Ifa priests) to consult the Oracle as soon as possible, many wives and children. All this people are to be housed within the palace. This means the provision of worship centers for the priests, bedrooms for the wives and children's with relaxation and playing areas. Also visitors such as another Oba and people who come on a visit too are provided for, the entertainers are also housed in the palace they include Akigbe, Onilu, Fabesona Gbegilere, labelua, Egungun, Ode. Their names and extent of involvement in the entertainment varies from palace to palaces.

The Gbegilere, labelua, Fabesona and Elesho, help in production of statues, ornaments; drum, trunks from furniture and art works. Most of their instruments range from cutlasses, chisel, stones, and traditional dyes to broken pots; woods and shells.

DECORATION IN TRADITIONAL YORUBA PALACE

ARCHITECTURE

This ranges from the use of beads, birds, crowns, human beings and some other images relevant to Yoruba cultures. These are usually used to celebrate entrance and space. They are also found around shrines and big courts.

Materials used include stones, woods abode, tusks, metals and clothes. These materials are used to carve out the decorations to be used for the Obas. Although some of them are made outside the palaces, but most are made within the palace premises.

ORNAMENTATION:- The ornamentation is done by the categories of people mentioned earlier. This includes carefully carved fascia boards, relief on wall, neatly carved and tapered columns and archways. Doors are also carved heavily to beautify the entrances. Balustrade and balusters are not left out also. This ornamentation are clearly shown I the dressing of the Oba and all his environment. Courses are also use in the ornamentation's and decoration of the palace.

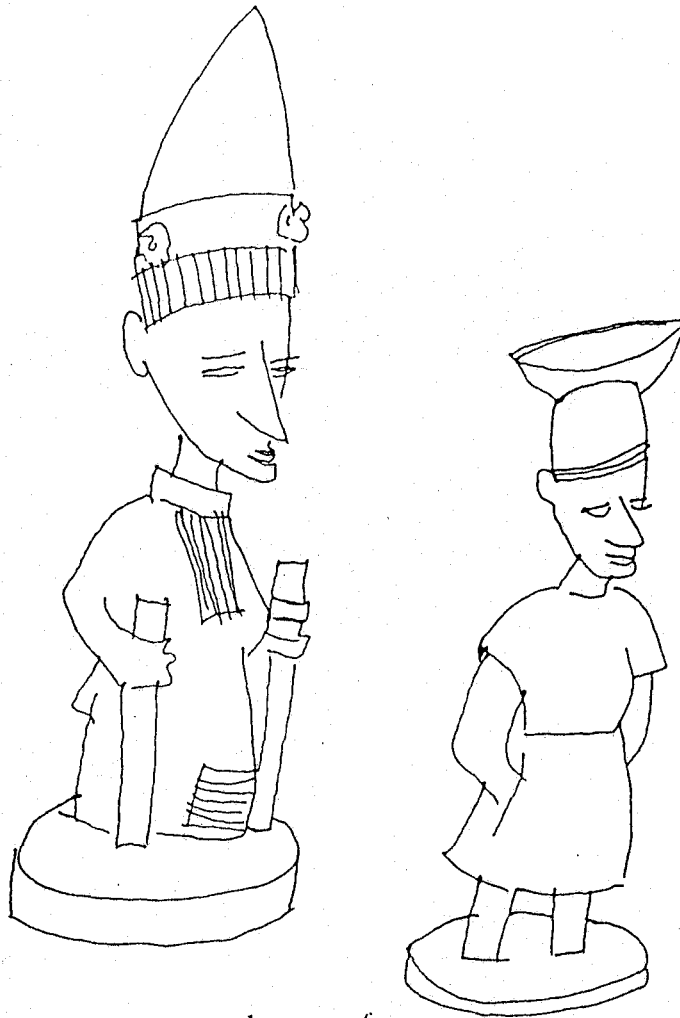
FUNCTION OF DECORATIONS

Decorations in Yoruba traditional palace signify the power, strength, great respect attributed to the Oba in Yoruba land. The Oba is otherwise known as Kabiyesi – meaning “nobody can question his authority”.

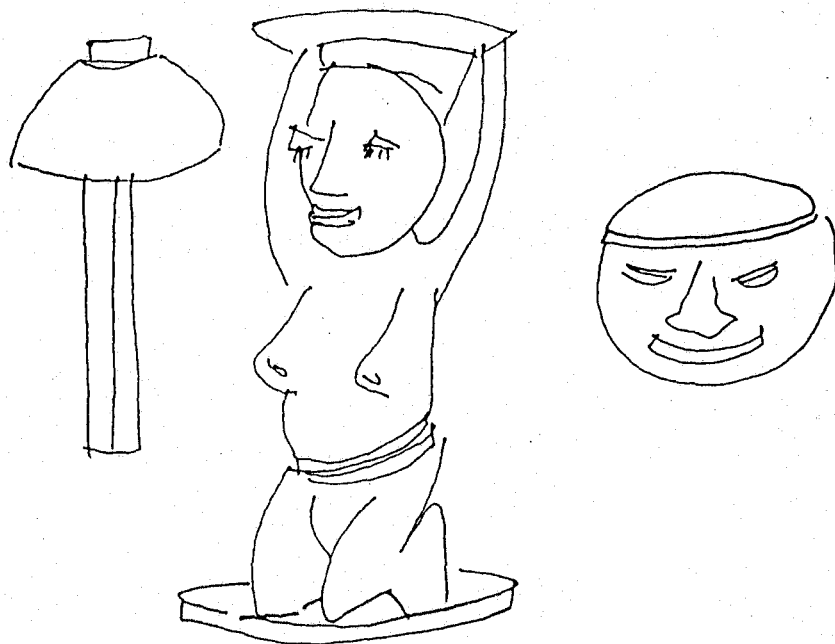
There are many other proverbs or appellations signifying the strength of the Oba or kabiyesi. The Oba being the head of the towns surrounded by the chief and many other accomplices such as slaves, drummers and Babalawos (priests).

The major functions of decorations in Yoruba palace architecture can be summarized as follows.

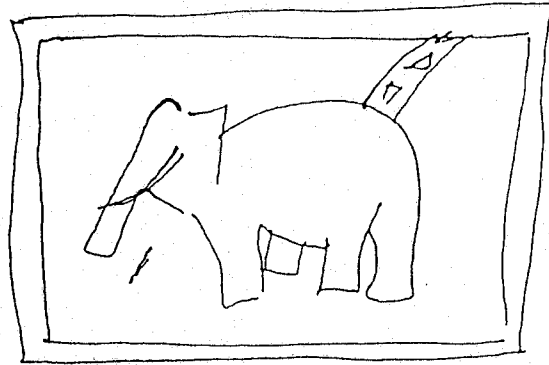
- (i) The presence of decoration in shrine and duties signifies a high respect to our ancestors and gods.
- (ii) It makes the environment look different from just ordinary and looks like an abode of the head community or a town.
- (iii) In a traditional Yoruba palace architecture, the decoration shows the strength of that town or community to send signal to the enemies in the older days. Most of them are war scenes.
- (iv) It is used to emphasize the throne, entrances or exist where nobody passes except the Oba.



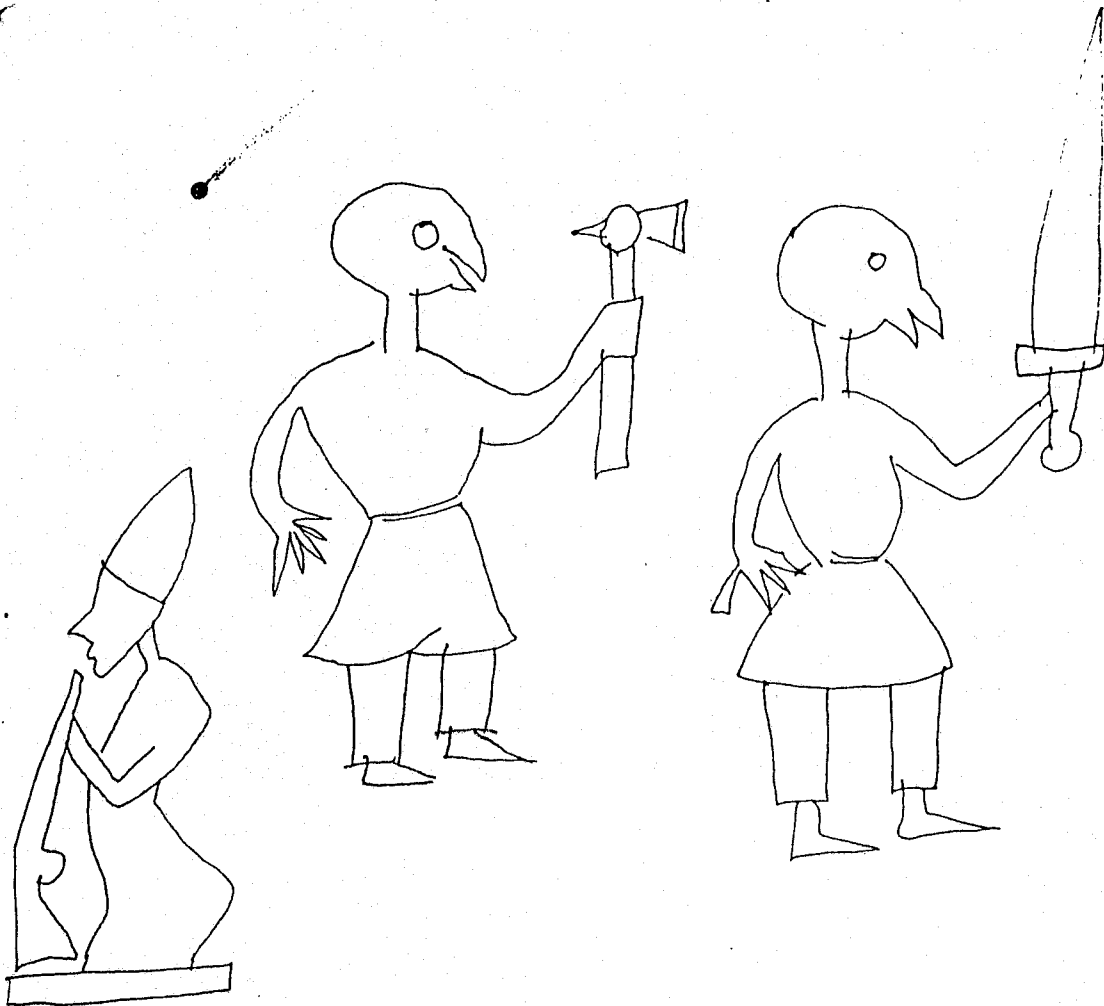
1-Abstract figures



2-Carved wooden frames.



3-War scenes and weapons.





CHAPTER THREE

3.0 ENERGY CONSERVATION IN BUILDING

Man has always sought to protect himself from the hazard of the climate; this was the major reason for the development of shelter. From the primitive age when lived in caves he has set himself to discover a better shelters and ways of building his shelter, not only to keep out the climatic elements but also to use the element to make his shelter comfortable.

As the effect of various climatic elements vary from one region to the other depending mainly on the distance of the sun from the particular region, there as evolved different ways and methods of building shelter to keep out or control the effect of this climatic elements.

Energy conscious design is about the design of building taking into consideration the effect of climatic elements on the space or spaces being created and its emerging implications. It seeks to proffer ways of controlling these elements through building elements and components.

However, after the development of the effective heating, ventilation and air conditioning equipment about the turn of the century, architects stopped thinking about such concerns as sun exposure wind patterns, prevailing temperature, because they felt confident that given enough equipment, they could overcome any difficulty.

Climatic design is also of general invests beyond the building profession. Central to understanding and appreciating architecture of any era and locale is how a building design fits its particular climate. How a building takes advantage of sun, breeze and vegetation and creates a unique microclimate is one subtle but enduring measures of the designer's skill.

Climate design is an approach to design which seeks to give high comfort level and to reduce energy cost of a building comprehensively in all climates, building built according to climatic design principle reduce the need for mechanical heating lighting and cooling by use of natural energy available from the climate at the building site. The long-term energy saving costs that results, make climatic design techniques the best financial investment for any building owner while enhancing theatrical comfort within the spaces in the building.

The thesis is concern mainly to reduce (the use) or conserve energy in building, which can only be achieve by considering:-

- (i) NATURAL LIGHTING
- (ii) HEAT EXCHANGE AND SOLAR RADIATION
- (iii) EXCHANGE AND VELOCITY OF WIND FLOW

3.1 NATURAL LIGHTING

Lighting in general is important from the point of view of illuminating and hygiene. It is of two types namely:-

NATURAL LIGHTING AND
ARTIFICIAL LIGHTING

Natural lighting is referred to as discrete or interrupted source of illumination from the sun for visibility purpose.

Natural lighting can be admitted into buildings through openings. In the building (i.e. windows mainly, screen wall, courtyards e.t.c. Admitting light into building needs careful consideration in the area of glare by strategically placement of the openings in the building. Good daylight is essential to promote the activities carried out within the building. It also

promotes the safety of people using the building i.e. less dependent on electrical lighting. It creates a pleasant and cool environment both within and outside the building.

The efficiency of a window as far as lighting is concerned is judged by means of percentage of external sunshine that is admitted into the rooms or space

SIZE OF WINDOWS:-The size of windows, which depends on the climatic condition of the area and the lighting requirement of the interior space of the facility, can be described through the height and length of the windows. The lengths of the windows on the long axes are more than $\frac{3}{4}$ of the total height and length of the building and the height is 1.2m (120mm).

GROUND REFLECTED LIGHT:- Both direct sunlight and diffuse light strike the ground and other objects outside a building as well as passing directly through windows and / or skylight. Some of this light is reflected into a building's interior, however, adding to the illumination level created from diffuse and direct source.

SCREEN WALL:- corridors (lobby) terminating as dead end in building may be too dark or cut off from light source, this corridors are mostly illuminated with use of screen wall at the terminated end.

COURTYARD:- the use of courtyard in building does not only signify functionality in planning but allow natural lighting in to the building.

For the purpose of this proposed design, the courtyard provided is covered with either the use of steel grill or sky light to reduce glare.

FUNCTIONAL REQUIREMENT

- (i) Building designs using natural lighting should minimize the undesirable features of the source as well as maximize its desirable qualities i.e. the natural light intensity inside a building should be distributed as evenly as possible and that interior spaces should be organized to minimize undesirable shadows and glare.
- (ii) Windows walls should be designed in such a way to distribute natural lighting intensities more evenly throughout a space.
- (iii) A work surface is not subject to shadows, glare or reflection.

3.2 HEAT EXCHANGE AND SOLAR MOTIVATION

Heat exchange could be termed change in temperature as a result of increase or decrease in temperature. This is brought about in 3 ways as a result of direct exposure to the sun.

- CONDUCTION
- CONVECTION
- RADIATION

Heat energy moves from one mass to another whenever there is a difference in temperature. The direction of the energy movement is from the higher temperature zone to the lower temperature zone. The speed or rate at which the energy transfer occurs, is usually a function of the amount of temperature difference.

CONDUCTION: This occurs through the walls to the interior space as a result of direct solar radiation incident on the building. This is caused by temperature gradient and is denoted by Q_c .

CONVECTION: This is the heat flow rate between the interior of a building and outdoor open air. This depends on the rate of ventilation and it is denoted by QV.

RADIATION:- This is the heat rate flow through an unglazed window, it will be reduced by solar gain factor which depends on the quality of the glass and on the angle of incidence. It is denoted by QS.

INTERNAL HEAT GAIN: This is the heat output rate of internal bodies, thus it is appropriate to the activity to be accommodated. Also total rate of energy emitted from electric lamp can be taken altogether as internal heat gain. It is denoted by Qi.

HEATING AND COOLING: This is the deliberate introduction or removal of heat using some form of mechanical control. It is denoted by QM

EVAPORATION: This is the rate of cooling which takes place on the surface of the building e.g. roof within the building. It produces cooling effect and is denoted by Qe.

THERMAL BALANCE IN BUILDING: This can be express with the equation below, combining all functions out form of heat transfer mentioned above.

$$Q_i \pm Q_s \pm Q_c \pm Q_v \pm Q_m - Q_e = 0$$

The building is bound to experience either cooling effect or increase in temperature if the equation is more than zero -ve or zero respectively.

EFFECT OF SOLAR RADIATION ON BUILDING

It is glaring that temperature build up depends on solar radiation incident upon the building fabric. This result its in thermal stress both day and night including interior and exterior spaces: increase in solar radiation make interior spaces uncomfortable for occupant.

DIRECT HEAT GAIN: the concept of heating system in the building is through direct heat gain system from the windows facing the south. Windows at any other orientation lose more heat than the gain.

The green house effect acts as one-way heat valve. It lets the short wave solar energy enter but block the heat from escaping. The thermal mess inside the building then absorbs this heat both to prevent daytime over heating and to store it for nighttime use.

3.3 EXCHANGE AND VELOCITY OF WIND FLOW

Discussing change of exchange of wind flow largely pipe down to the word ventilation which is a vital phenomenon in human life.

Ventilation is referred to as the replacement of stale air by fresh or outside air. (Givoni 1978). It can also be referred to as the method of removing unwanted heat. The purpose of ventilation is therefore to remove excess heat generated by the body, light fitting and to maintain a constant temperature. Proper ventilation in spaces is a primary factor affecting human health, comfort and well being (Givoni, 1976).

In warm humid climate, the predominant of high humidity necessitates a correspondingly high air velocity to increase the efficiency of sweat, evaporation and to avoid discomfort caused by moisture on skin and clothes. Continuous ventilation is therefore the

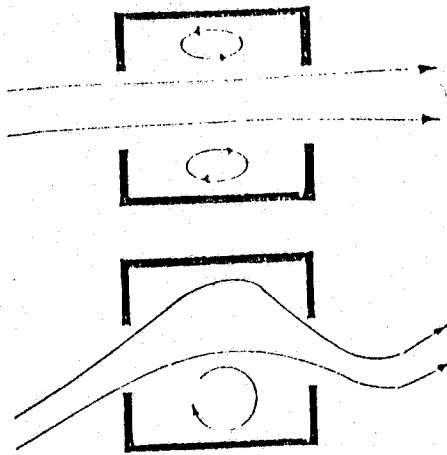


FIGURE ~~3.21.1~~ 3.21a
 Usually indoor ventilation is better from oblique winds than from head-on winds, because the oblique air stream covers more of the room

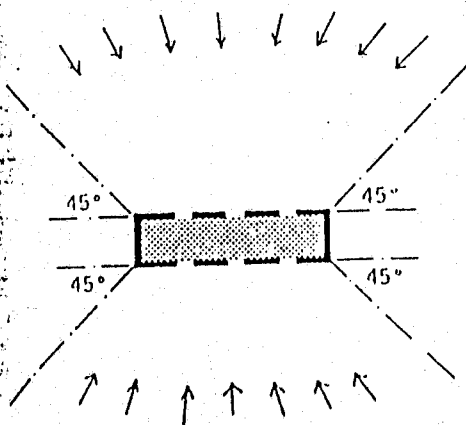


FIGURE ~~3.21.1~~ 3.21b
 Acceptable wind directions for the orientation that is best for summer shade and winter sun.

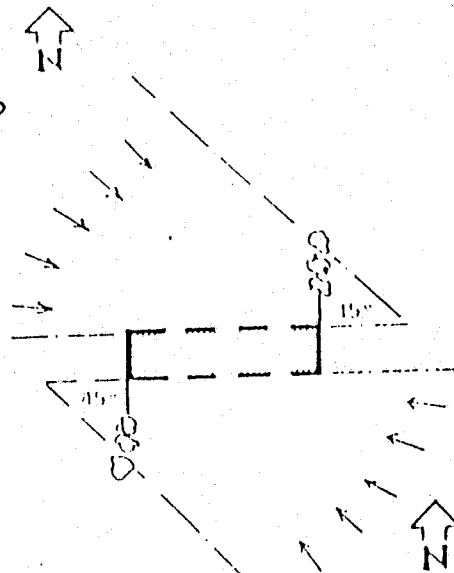


FIGURE ~~3.21.1~~ 3.21c
 Deflecting walls and vegetation can be used to change air flow direction so that the optimum solar orientation can be maintained

primary requirement for comfort (Koenigsberg et al 1978). In passive design, it is pointed out that the best type of space, which is suited for the climate, are spaces, which are cross-ventilated. This implies that these spaces must be opened at least on opposite side of wall but mostly it is on the adjacent side due to some design constraint.

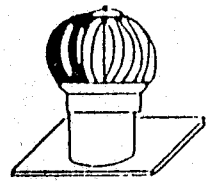
In order to optimize comfort in space in warm humid climate, there is need to re-examine factors affecting proper ventilation with respect to the design issue.

FACTORS AFFECTING VENTILATION

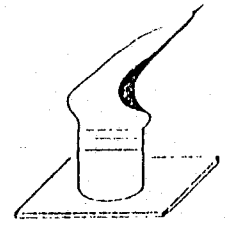
WINDOW ORIENTATION:- The orientation of the building is one of the important factor that affect ventilation. The flow of air into spaces is influenced by the relationship of their opening to the prevailing wind direction of that locality. There are three schools of thoughts about the effectiveness of velocity of wind in the interior spaces with respect to the orientation of the opening.

Firstly, opening orientation placed perpendicular to the direction of wind (Koenigsberg et al 1973), secondly, opening orientation placed at 45° to the incoming wind (Givoni 1978, Bouket 1978) and lastly, orientation placement between 0° and 30° to the incoming wind if building is oriented in a way where by opening could be located contractive to the direction of air flow, it will serve as hindrance to air flowing into a building, there by causing discomfort to the occupant.

WINDOW SIZE OF WINDOW/WALL AND WINDOW FLOOR AREA RATIO:- The size of opening in a room determines the amount of air flow through it. The distribution of air, various places is dependent on the width and height of the opening and also in the relative size of different openings (Givani 1978). (Chaud 1976), recommended that opening should



TURBINE
130%



DEFLECTOR
220%

3-2-19,

FIGURE [REDACTED]
The design of a roof ventilator has
great effect on its performance.
Percentages show relative
effectiveness.

FIGURE [REDACTED] 3-2-1-

To maximize ventilation a
rectangular room should have
windows on the short walls.

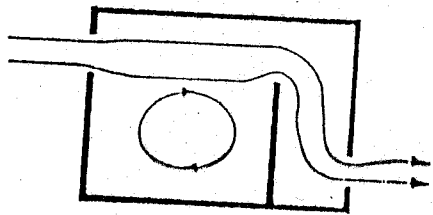
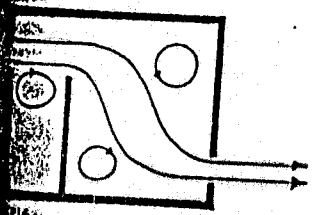
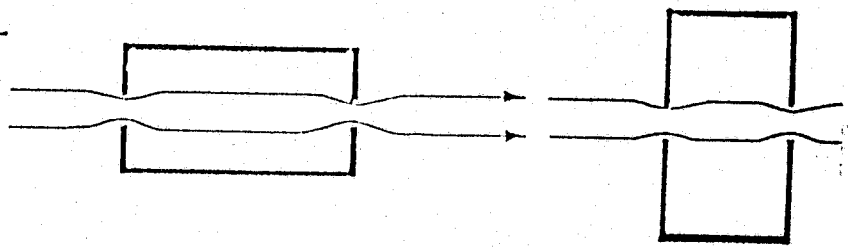


FIGURE [REDACTED] 3-
The best ventilation results when the
largest space is on the windward side
of a partition.

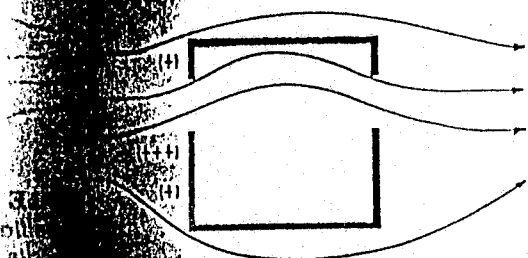


FIGURE 3-2.1i
 After positive pressure on one side of the window deflects the air in the wrong direction.

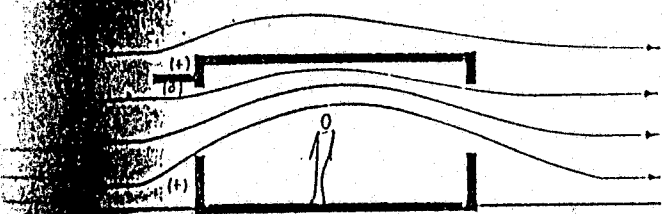


FIGURE 3-2.1k
 A horizontal overhang causes the air to deflect upward.

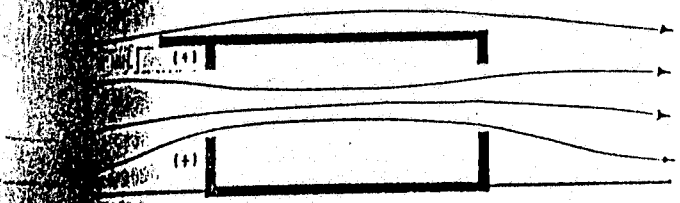


FIGURE 3-2.1m
 A horizontal overhang placed above the window will also deflect the air stream.

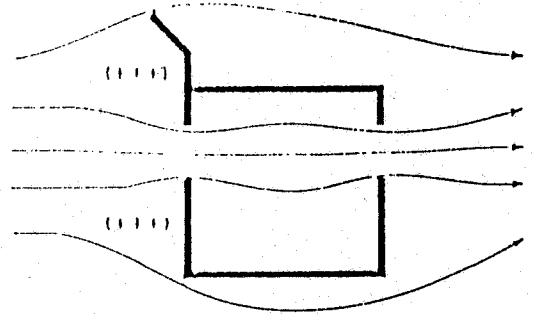


FIGURE 3-2.1j
 A fin wall can be used to direct the air stream through the center of the room.

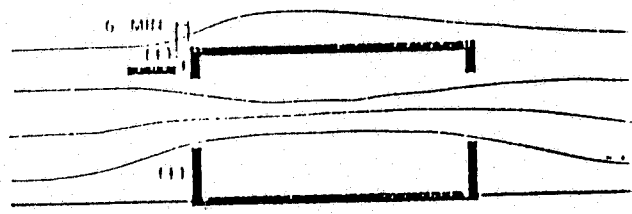


FIGURE 3-2.1l
 A gap in the horizontal overhang will allow the air stream to straighten out.

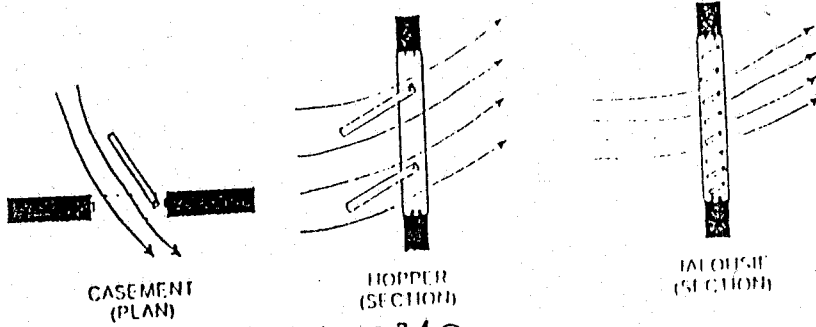


FIGURE ~~3-21a~~ 3-21a
 All but double hung and sliding windows have a strong effect on the direction of the air stream.

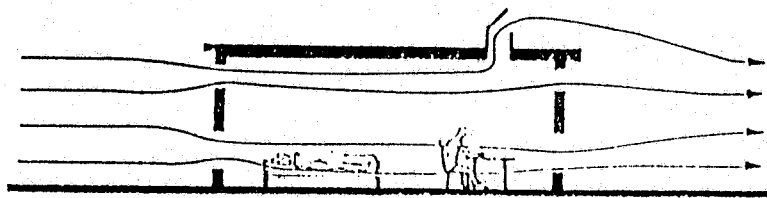


FIGURE ~~3-21b~~ 3-21b
 For comfort ventilation, openings should be at the level of the occupants. High openings vent the hot air collecting near the ceiling and are most useful for convective cooling.

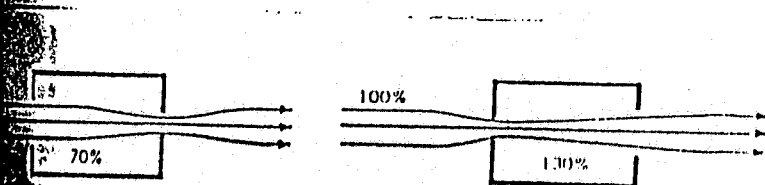


FIGURE ~~3-21c~~ 3-21c
 Inlets and outlets should be the same size. If they cannot be the same size, then the inlet should be smaller to maximize the velocity.

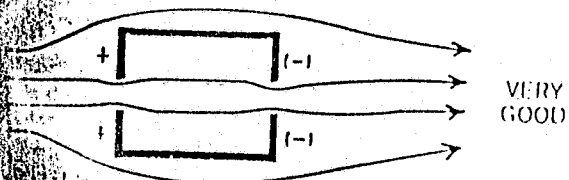
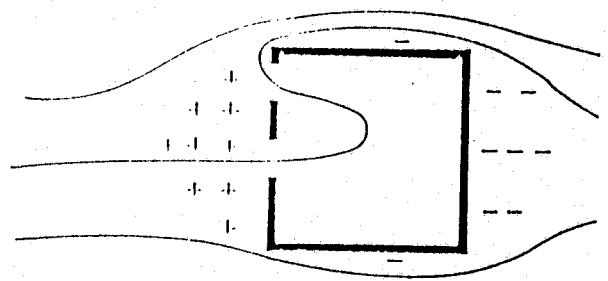
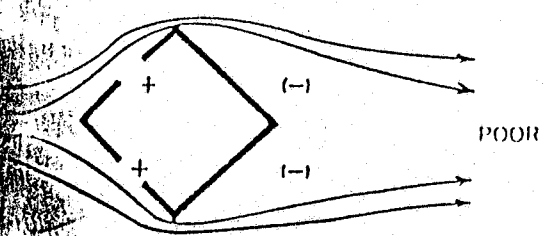


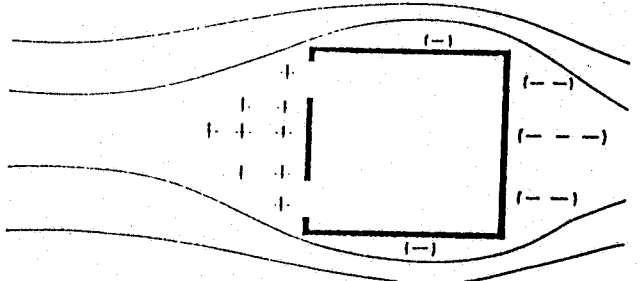
FIGURE 3.2.1d
 between windows
 is the ideal



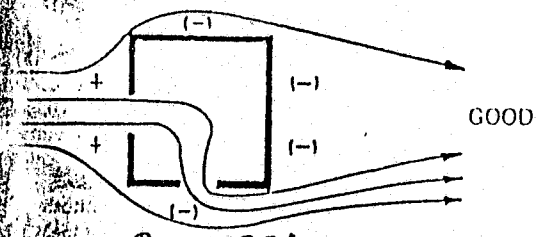
FAIR



POOR



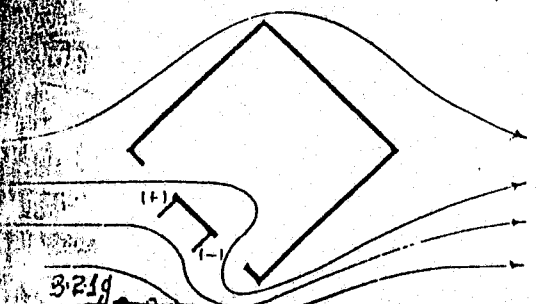
POOR



GOOD

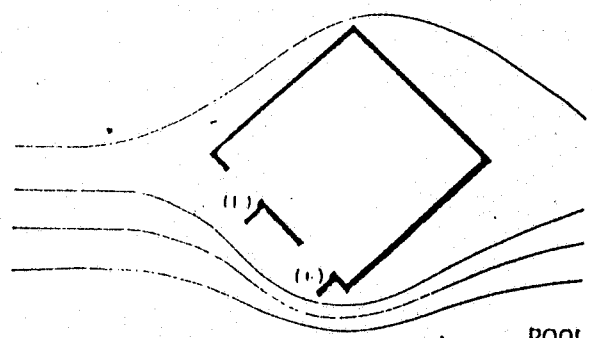
FIGURE 3.2.1f
 Some ventilation is possible in the
 asymmetric placement of windows
 because the relative pressure is
 greater at the center than at the
 sides of the windward wall.

FIGURE 3.2.1e
 from adjacent windows
 poor or good depending on
 direction.



FAIR

3.2.1g
 significantly increase
 through windows on the



POOR

FIGURE 3.2.1h
 Poor ventilation results from fin walls
 placed on the same side of each
 window or if two fins are used on
 each window

be within 30 – 50% of the wall area and 20-30% of the floor area of space for effective indoor movement.

AIR VELOCITY

Air velocity, affects the human body in two different ways firstly, it determines the convective heat exchange of the body and secondly, it affects the evaporative capacity air and consequently the cooling efficiency of sweating (Griepert 1928). The effect of air velocity and air temperature on the convective heat exchange are interrelated as the convection is a function of the product of some power of the velocity and the temperature difference between the skin and the air.

When the air temperature is above the skin temperature, the two effects of air velocity work in opposite directions. On one hand, increase in air velocity causes higher convective heat exchange and warms the body on the other hand, a increase in air velocity increase the evaporative capacity and hence the cooling effect.

3.4 MASS EFFECT OF CONSTRUCTION MATERIAL

Mass effect of various construction materials goes a long way in determining how fast or how slow heat gain occurs in a building. The amount of time lag required for each wall and roof differs. This is very important in keeping the interior cool and comfortable while the out-door is or hot warm. The use of different roofing material with difference in tight of pitch of the roof vary the comfort in the interior, while a low roof or low pitched roof makes the interior to get hot easily, the high pitched or high roof reduces the rate due to rate of heat transfer in different media.

Wall materials and shapes of building also contribute to the rate of heat in flow in to the building, as the sue of round shaped building which reflects heat from all angle reducing the absorption to other shapes and mud, compressed or burnt which also reduce the rate of heat transfer compared to sand crete hollowed block.

3.5 DEDUCTION AND RECOMMENDATION

For effective cross ventilation in building, window opening under climatic condition should be between 30% - 50% of wall area and 20-30% of floor area of space for effective indoor movement. Residential houses should be properly ventilated so as to prevent the interior spaces from being too hot for comfort rooms should be provided with doors and windows on the leeward and wind ward sides of the building.

Adequate open planning and wide free space and courtyards between buildings should be considered at design stage.

USE OF SHADING DEVICES

Provision of shading can be done externally as in the case of planting vegetation around the building through the use of horizontal or vertical shading devices or fitting of windows or by using conquer proof over hang.

Shading devices perform the functions of controlling heat gain into the building by reflecting back excessive solar radiation in overheated periods and then admitting it in during under heated periods.

BUILDING ORIENTATION

The orientation of the buildings on should be in such a way that longer rows are on the east and west and major openings on the north and south direction so that wind could easily gain entrance into interior spaces.

MASS EFFECT OF BUILDING MATERIALS

The advantages of the properties of various building materials delaying heat from entering into the building should be considered when specifying their uses during design stage.

CHAPTER FOUR

4.0 CASE STUDY

4.1.0 CRITERIA FOR CASE STUDY SELECTION

The selection of the case study as far as this thesis is concerned is based on similarities in character with the proposed project. The selected case studies have some solution to the problems to be solved in them.

Palaces are selected around the Yoruba land so as to be able to incorporate the tradition of the land in the proposed project.

4.2 CASE STUDY ONE

OONI OF IFE PALACE, IFE, OSUN STATE

4.2.1 INTRODUCTION

The palace is and remains the historical origin of all Yoruba according to the history of the Yoruba. It is dated back to Yoruba origin when Oduduwa settled at Ile-Ife.

A survey of the palace in 1964, confirmed that it consists of two separate compounds, which communicated by one side door only (Ojo G.J.A 1966 Yoruba palace pg 53). The old part of the palace has been practically abandoned and only the Oba and his servants are allowed to enter the grounds. It consists of some old building and a shrine. The other part of the palace has buildings that were erected as early as 1922 (i.e. the Ile nla, the palace hall) so also was the Ile Emeses, which is an attachment to the ile-nla. Subsequent buildings have been springing on the palace grounds today.

4.2.2 ARCHITECTURE

The architecture of the palace is nearly the Yoruba palace type which is typical of the Ife palace described in chapter two. The compound of the palace adopt the private, semi-private and the public zoning concept which is the normal and acceptable zoning concept of residential buildings.

The palace as discuss in the introduction part of this chapter has the old building modified to suit the harsh weather and the modern architecture, while the new annex is being made (i.e. Oba's residence).

4.2.3 OBSERVATION

MERIT

Well-located site

Availability of banquet hall well zones structures

Provision of policepost

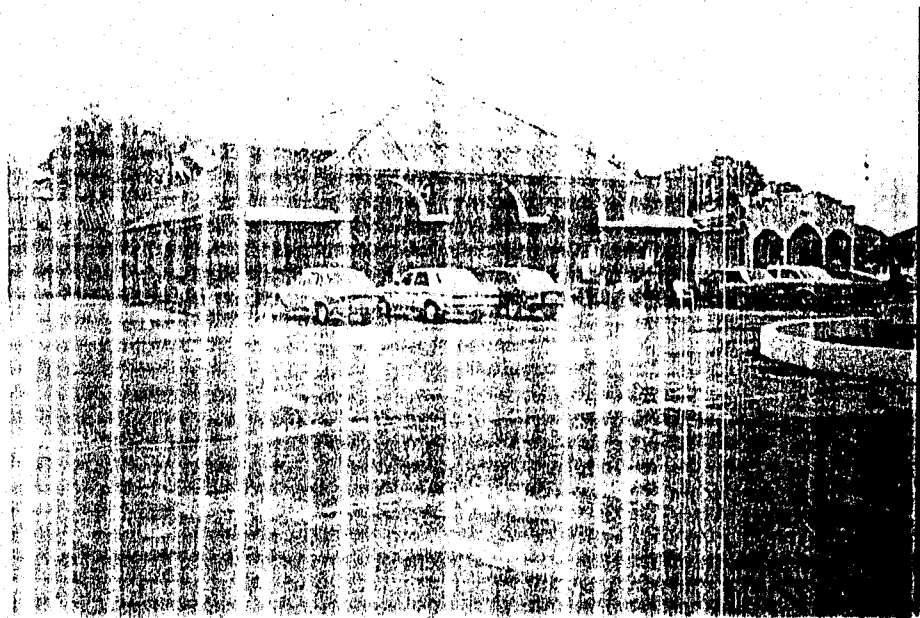
Well-organized palace environment.

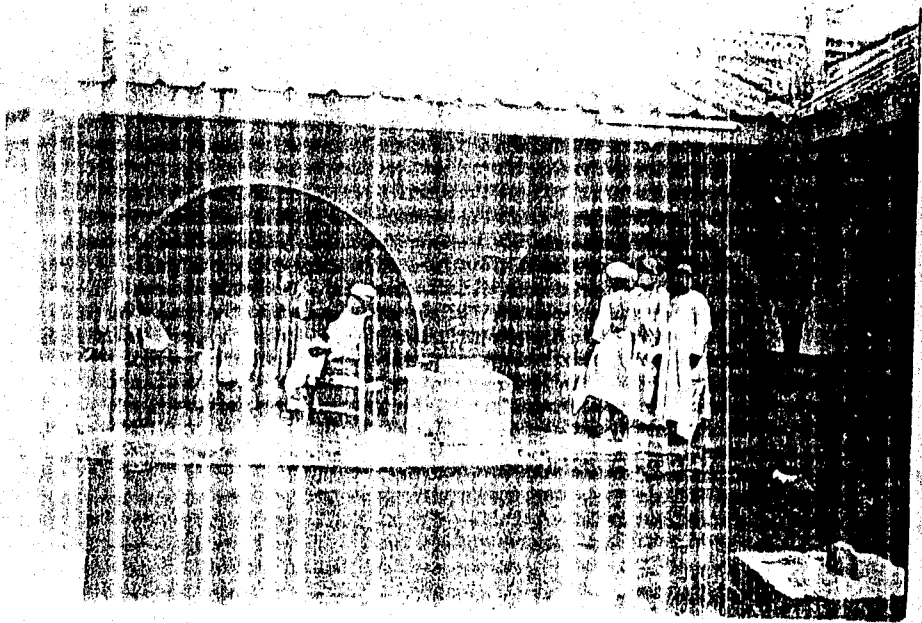
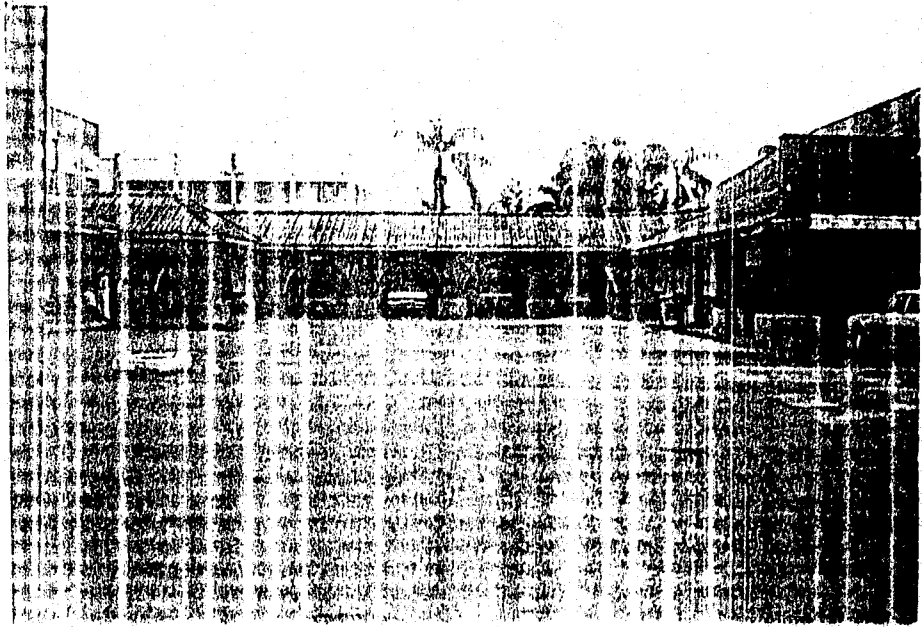
DEMERIT

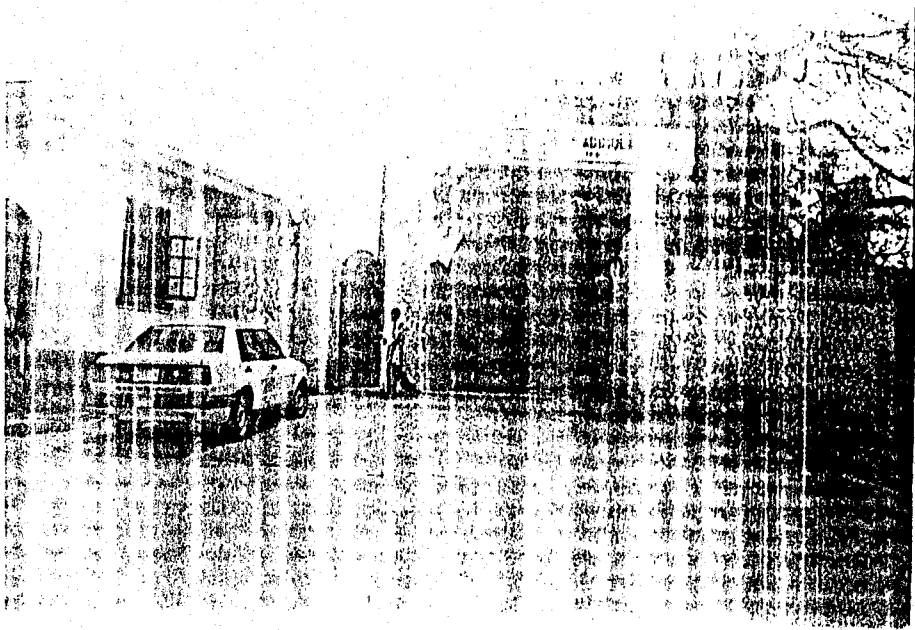
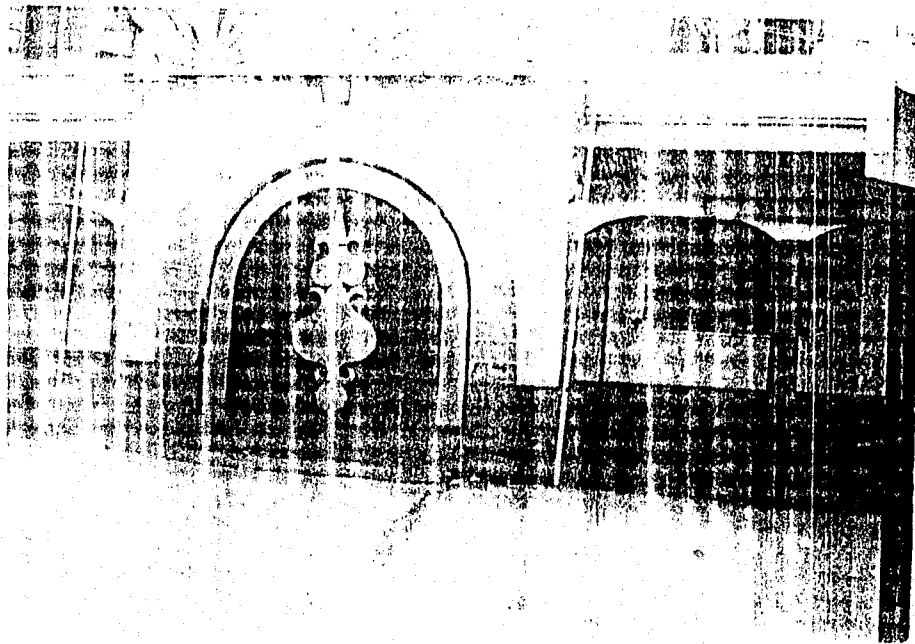
Absence of accommodation for people of the town during festive period

Absence of chaple and mosque

Lack of guest accommodation







4.3.0 CASE STUDY TWO

AWUJALE OF IJEBULAND'S PALACE

4.3.1 INTRODUCTION

The palace is a recently constructed one as the old palace was abandoned completely. The new palace was designed by Arc. Kuku and constructed in 1995. As stated the palace is a newly constructed one but still portray the organizational setting of the old Yoruba palace architecture.

4.3.2 ARCHITECTURE

The architecture of the palace is mainly the Yoruba palace type, typical of the Ijebu also previously described in chapter. The palace, because it is a newly constructed one, modern days construction material and modern day forms in architecture, to withstand the weather condition.

The compound of the palace is design in conformity with the residential zoning concept (i.e. private semi-private and public), which gives the palace its rituals and spiritual privacy.

4.3.3 OBSERVATION

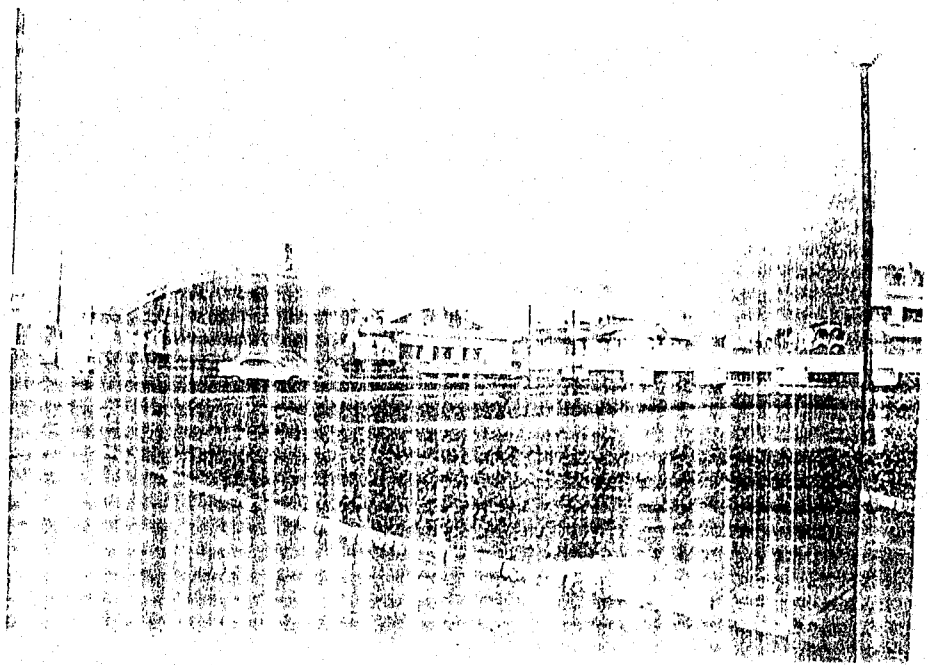
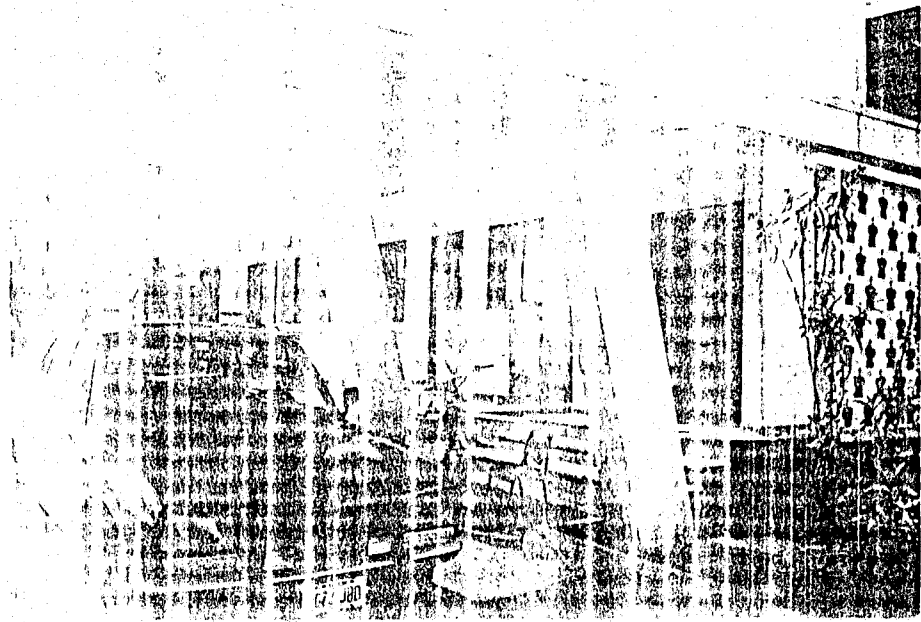
MERIT

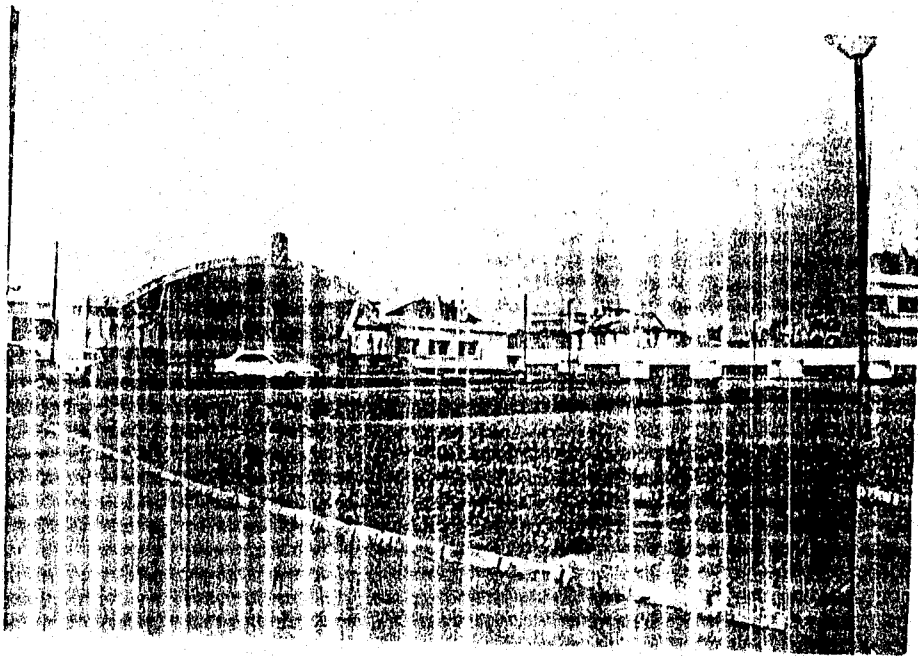
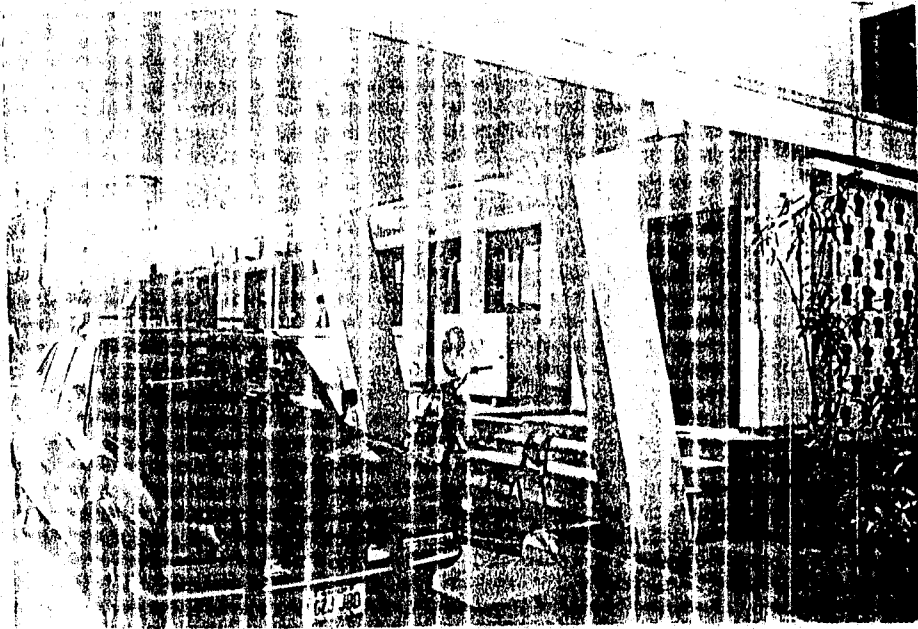
Well located

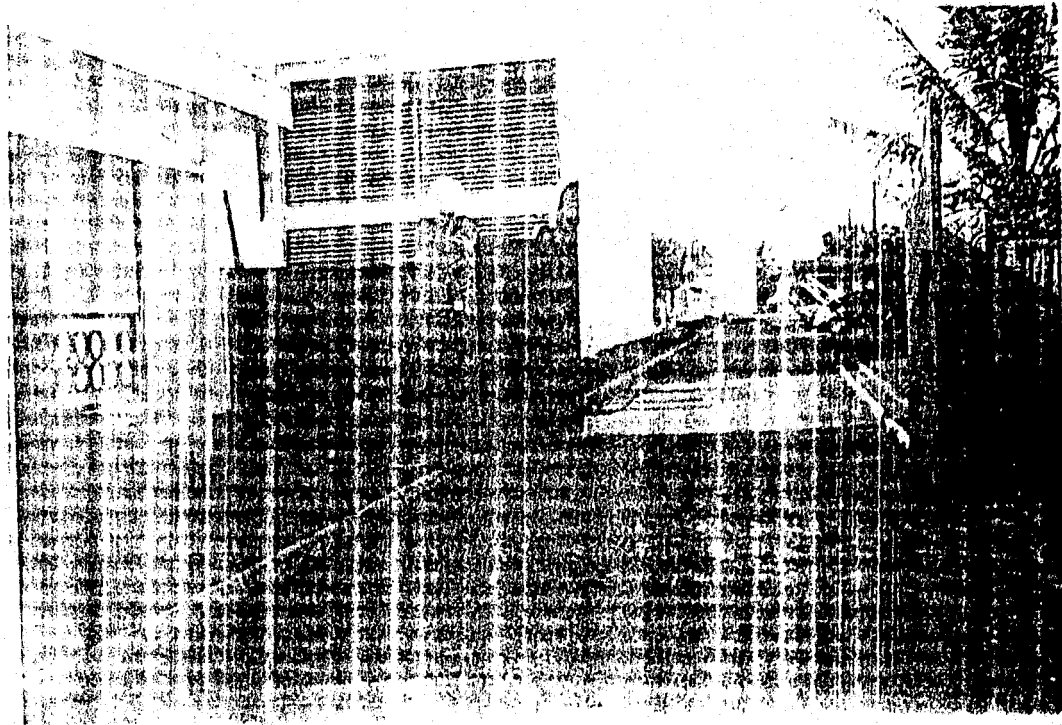
Well planned

Provision for guest accommodation

Availability of banquet hall;







It serves as an architectural landmark in the history of Yoruba palace architecture

DEMERIT

Reception of indigenes during festive period is architecturally provided for

Absence of police post

Absence of chapel and mosque

4.1.0 CASE STUDY THREE

ALAKE OF EGBALAND'S PALACE

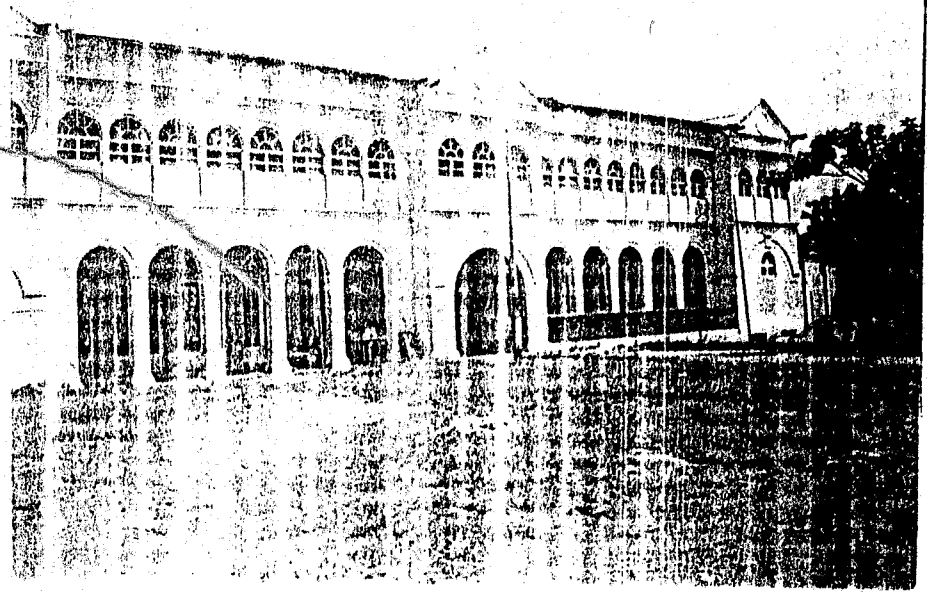
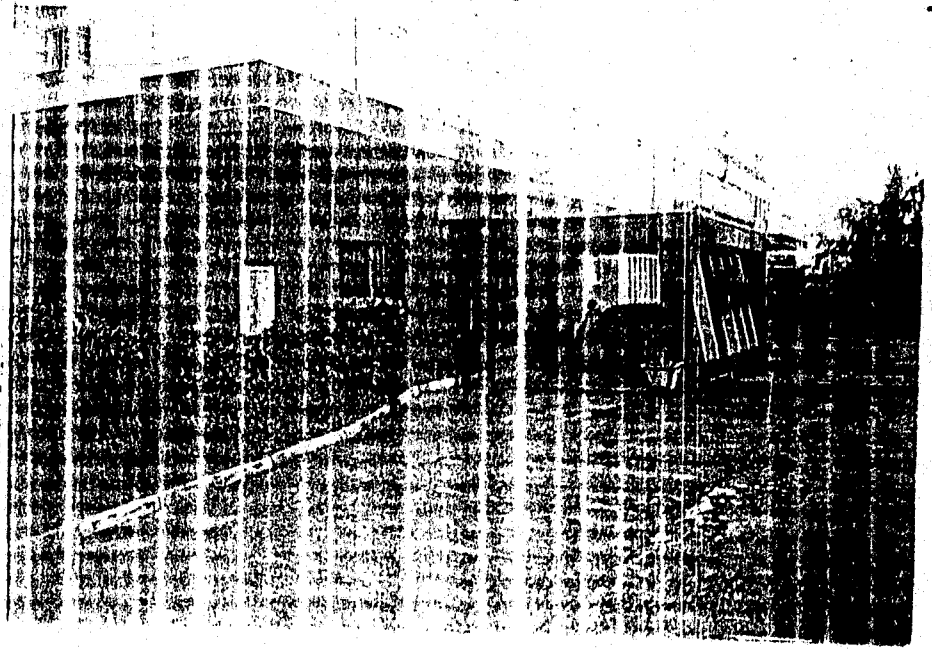
4.4.1 INTRODUCTION

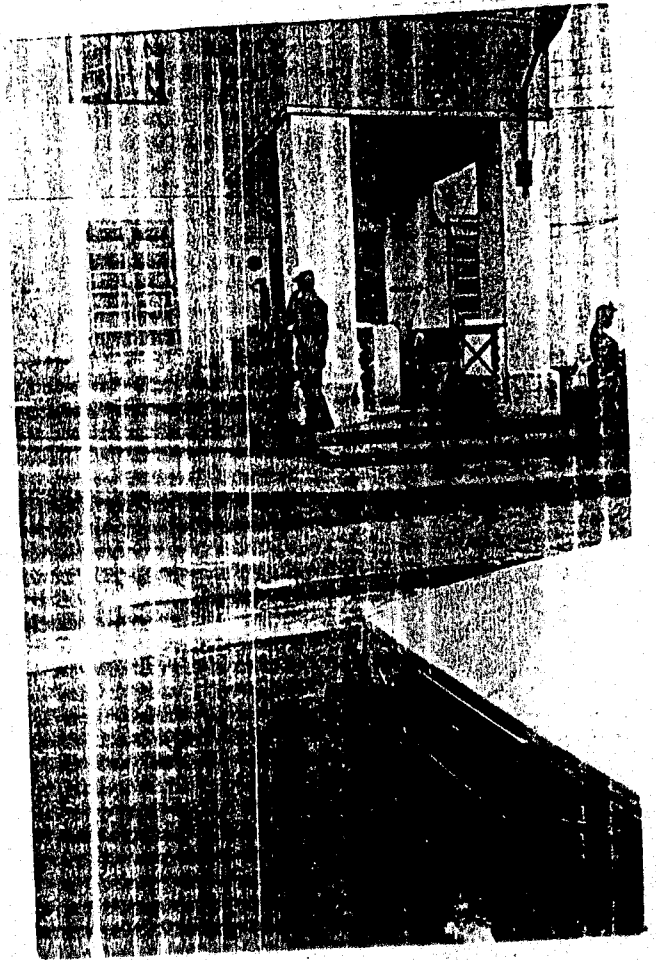
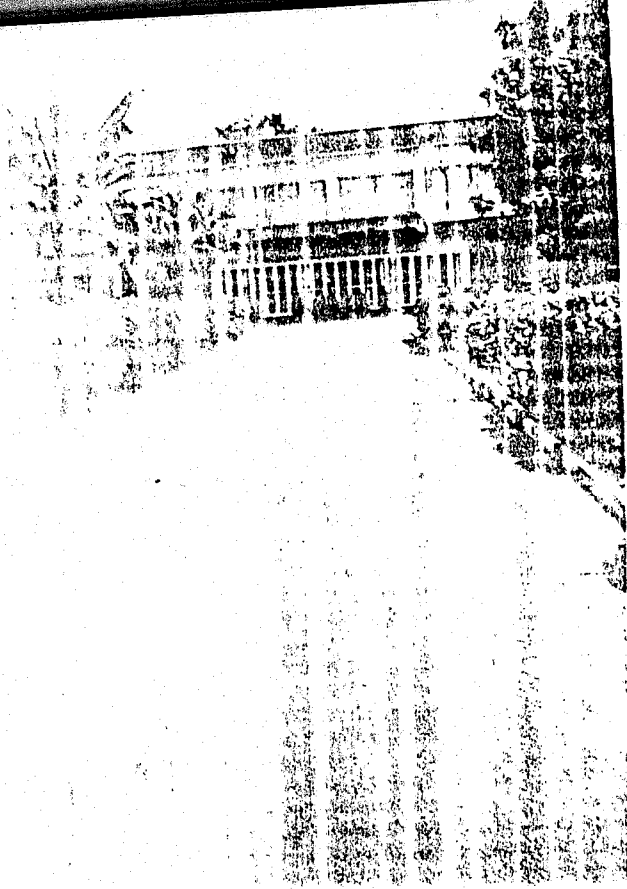
The palace is an historical palace in the history of Yoruba land and in Egba-land to be precise as it remains the palace where the ancestral mother of Yorubas (Omomide the wife of Oduduwa) died and was buried.

The palace was built in 1854 (the old palace) it was first annex in 1900 with the introduction of the then age architecture of palace. The latest annexing of the palace was the one of Jan 1985, which remains the most modern and present day architecture, though combine functional use arbitrarily.

The old palace and the middle aged one (i.e. the 1854 and 1900 palaces) are still in use for one thing or the other as they have been modified to suit the weather conditions, the middle age palace is used as the throne where the chiefs meets the Oba while the old palace is presently used by the town representatives (honourables).







4.4.2 ARCHITECTURE

The architecture of the palace is type described in chapter, which is typical of Egba type palace. The old palace was built of mud and burnt bricks for the middle age but sand Crete block and concrete is used for the most recently constructed one. The compound is not well zoned due to the arbitrarily combination of function in the most recently constructed part of the palace.

4.4.3 OBSERVATION

MERIT

Well-located site

Availability of space for future expansion

Presences of mosque and chapel

Presence of summer garden

DEMERIT

Poor zoning of the palace structure

Arbitrary combination of function in buildings

Poor landscaping of the palace environment

Absence of police post

4.5.0 DEDUCTION

In the case studies carried out, it was gathered that zoning of structures in the palace is a significant issue, which later bring about court yard system. Focusing on the present Alake

of Egbaland palace as a case study, shows that structure of rituals and spiritually significant cannot be relocated due to their historical background.

CHAPTER FIVE

5.0 DATA COLLECTION

5.1 GEOGRAPHICAL LOCATION

A superficial look at a typical indigenous Yoruba town conveys a haphazard, disorderly layout but a closer and detailed look reveal that at subtle but definite order links the compounds together. This order derives mainly from the socio-political structure of the Yorubas. According to Lloyd:- The components parts of this structure are lineage, the age grades and sets, the council of chiefs and the kingship. There is a graduation in the responsibilities of the lineage to the chiefs and finally to the Oba. The Oba is the center of the structure. Every compound in the town is directly related in its orientation to the palace of the Obas.

In the past when the socio-political structure was still very effective, the palace was sited on relatively elevated land in the middle of the town or as close to the middle as possible.

The location of the proposed Alake of Egba-land palace is the site of the present palace sited on the main road to Ibadan, opposite the centenary Hall a Orile Ake Abeokuta, Ogunstate. The site slopes 3 m from the south up to the North.

Orile-Ake is located in Abeokuta division of Ogun state according to the virtue of promulgation of administrative division (established) Edict NO. 3 of April 1968.

Orile-Ake is on the southern part of Abeokuta in Ogun state in Abeokuta south local government authority. It is surrounded by towns, which include poro-Ake, Ijemo, Itoko, Lantoro, Ijewu, Adatan etc.

MAP OF OGUN STATE SHOWING THE ZOLOGICAL GOVT. AREAS

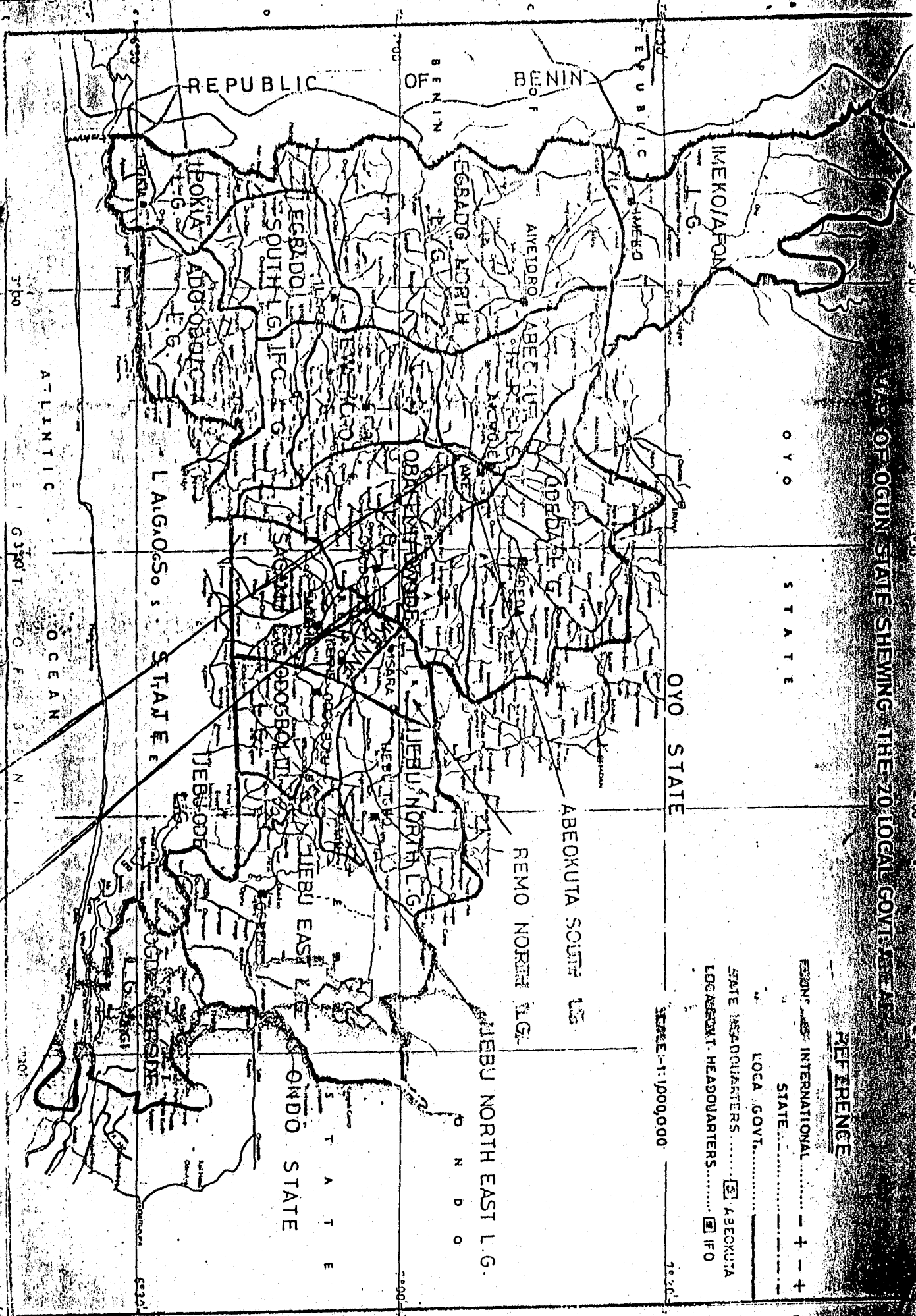
OYO STATE

OYO STATE

REFERENCE

- INTERNATIONAL + - +
- STATE
- LOCAL GOVT.
- STATE HEADQUARTERS [] ABEOKUTA
- LOCAL GOVT. HEADQUARTERS [] IFO

SCALE: 1:1,000,000



REPUBLIC OF BENIN

ATLANTIC OCEAN

OGUN STATE

OGUN STATE

3° 30'

3° 30' O F S N I

120°

120°

LOCATION OF OGUN STATE

Ogun state, which accommodates Abeokuta the city that has Ake town in it, is located on the western part of Nigeria. It remains the closest to Lagos state and also shares all borders with it. Ogun state or Abeokuta to be precise is a 1 hour driving distance at a 90KM/h speed, showing how close Abeokuta is to Lagos state.

5.2 CLIMATIC CONDITION

Since the proposed site for the proposed palace is located at Abeokuta, with a distance of 90km (kilometer) apart few climatic features will be shared and subsequently could be taken as climate change of Abeokuta, but metrology department of the ministry of Aviation Oke-mosau Abeokuta produces the weather and climatic chart in varying cases for Abeokuta.

5.21 RAINFALL

As aforementioned, Abeokuta is located in western part of Nigeria, which fall in the zone that experience relatively high amount of rainfall. The town experience rainfall between the months of April to October every year.

5.22 TEMPERATURE AND HUMIDITY

The maximum mean monthly temperature fluctuates around 33⁰C while the minimum mean monthly temperature is around 28⁰C, difference means monthly average temperature in the various month are relatively longer in the month and smaller in the rainy months. The relative humidity measured at Abeokuta station showed that humidity is generally high

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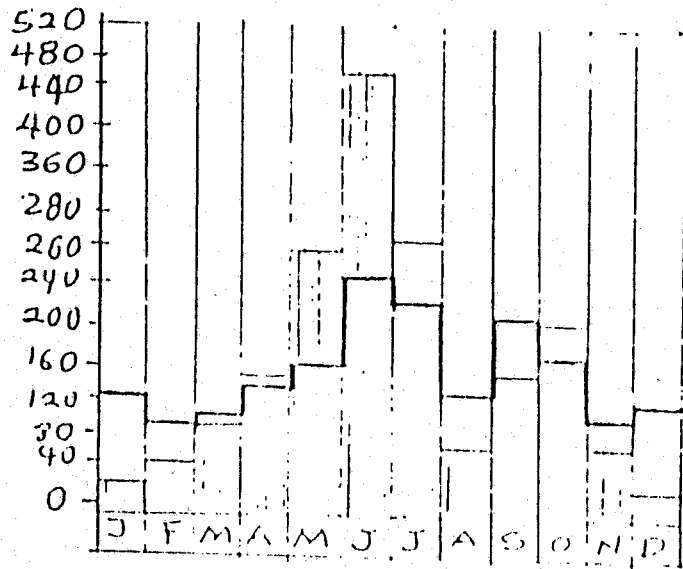
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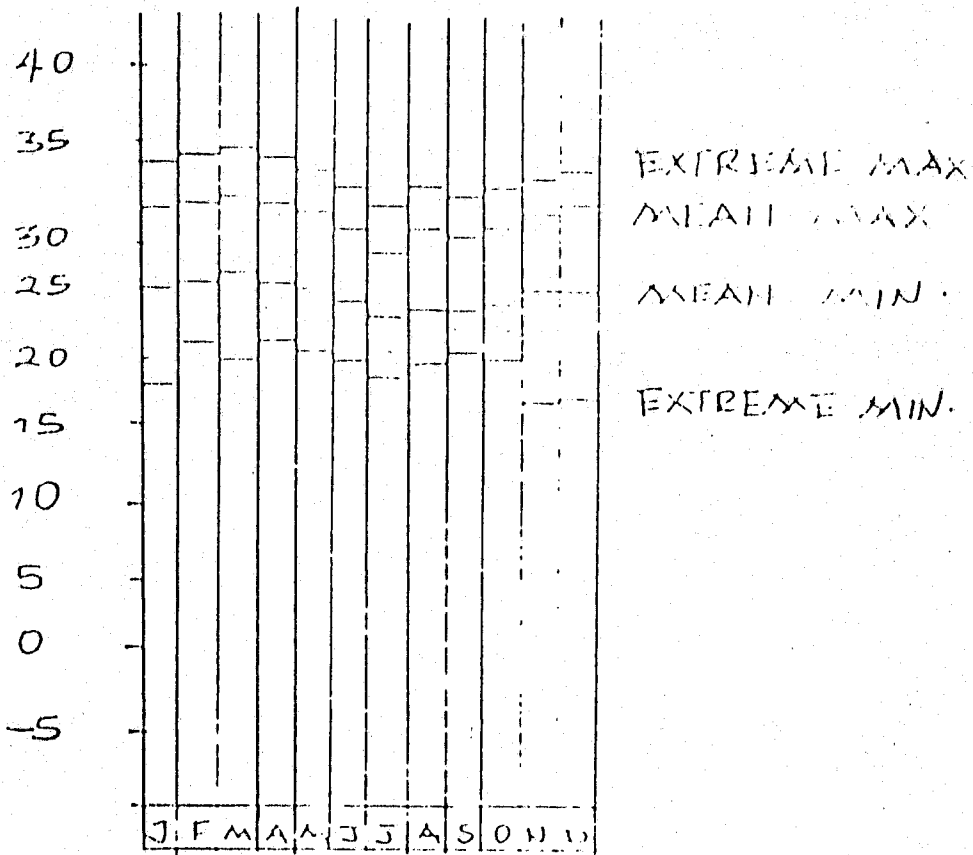
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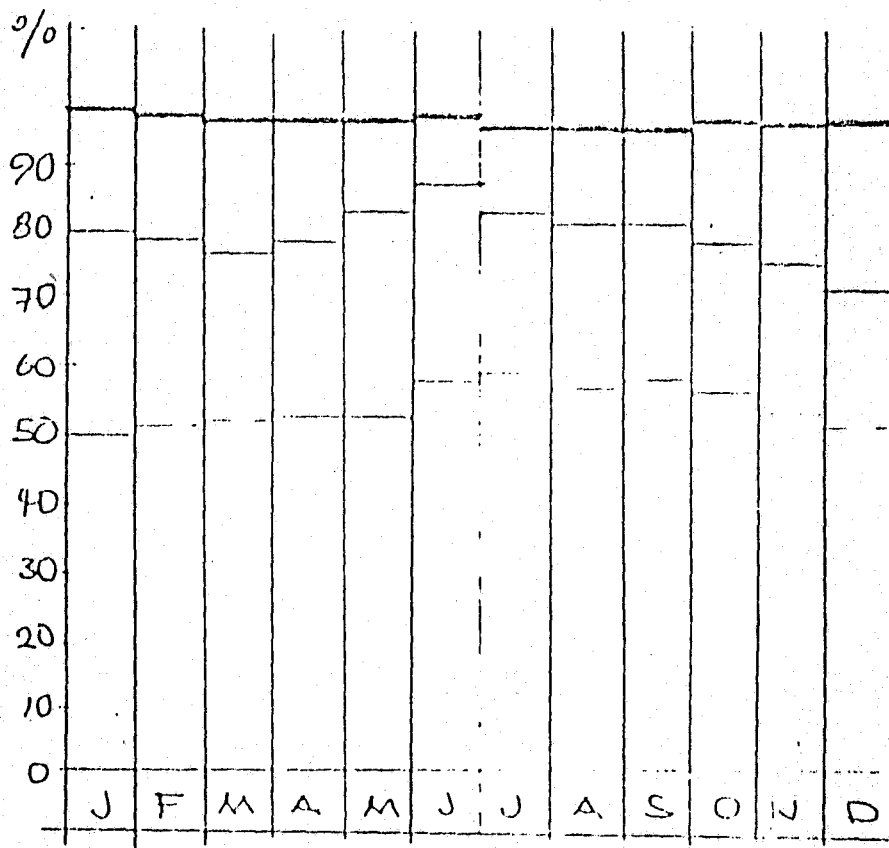
— HIGHEST DAILY RAINFALL RECORDED
 - - - - - MEAN ANNUAL RAINFALL - 1851 MAX
 ABSOLUTE MEAN MONTHLY RAINFALL



ABSOLUTE MEAN MONTHLY TEMPERATURE (in °)

SOURCE: FES' MEANS FROM DEPARTMENT OF AGRICULTURE
 OGUN STATE.

MONTHLY RELATIVE HUMIDITY FOR AN ARBORETA STATION



- MAX RELATIVE HUMIDITY AT 6 AM
- MEAN RELATIVE HUMIDITY
- MIN. RELATIVE HUMIDITY AT 4 PM

SOURCE: FEDERAL BUREAU OF SURVEYING AND MAPPING
 GOVERNMENT PRINTING OFFICE

between 50% and 30% for the high mean monthly average. However, the relative humidity is higher in the early hours of the morning (7-10 am) and lower in the afternoon hours (of 1-4 p.m). this is characterized for all the year round.

Source: Department of meteorology, ministry of Aviation Oke-mosan Abeokuta, Ogun State.

5.3 TOPOGRAPHY

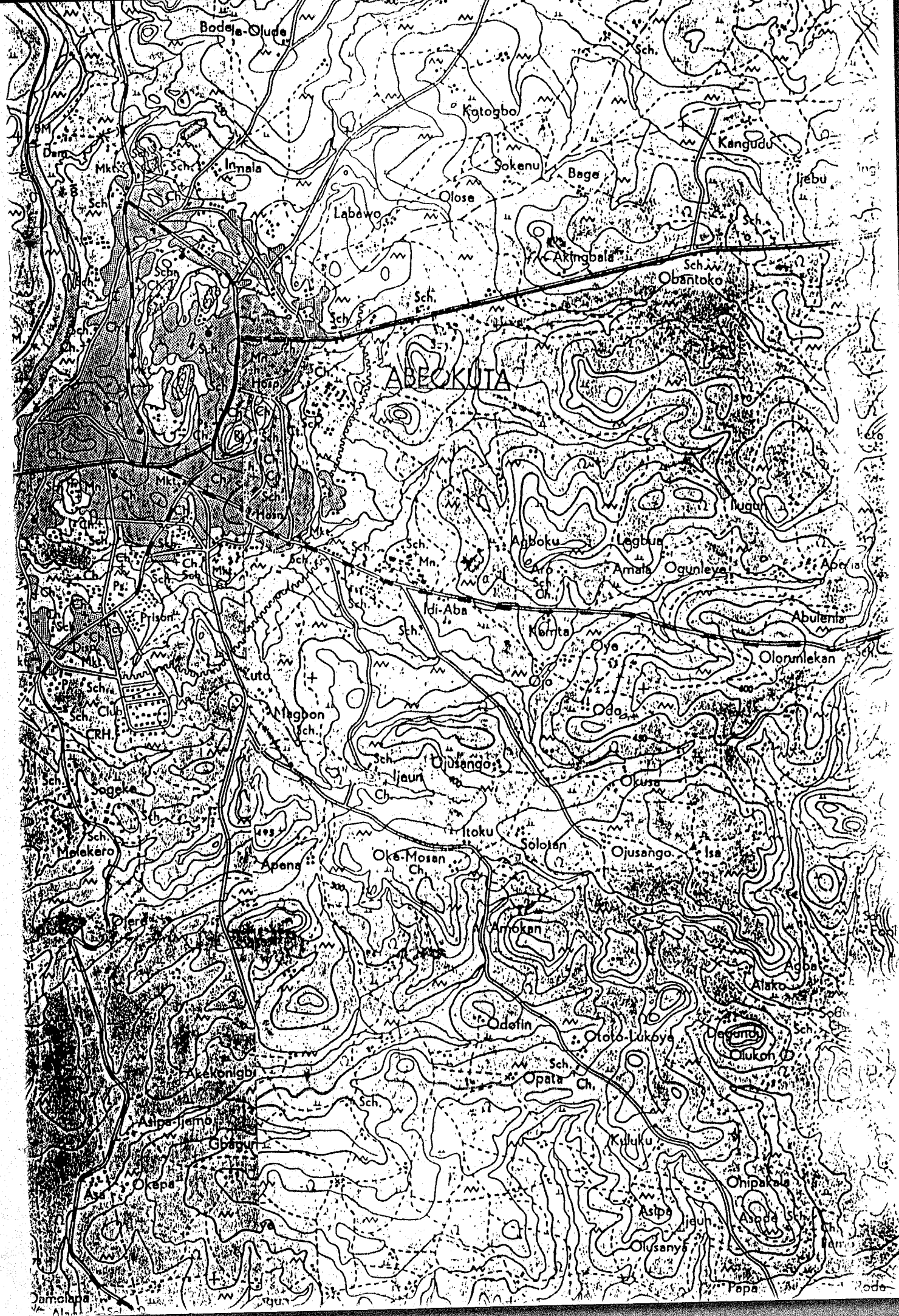
Ogun state in general has a relatively flat ground in a considerable percentage, but Abeokuta to be precise is a rocky city, showing reason for the name of the town, (which means under the stone). The proposed site is a relatively flat ground but slope 3m from the south to the north of the site.

5.4 VEGETATION

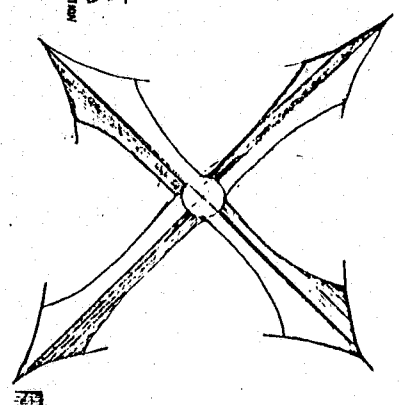
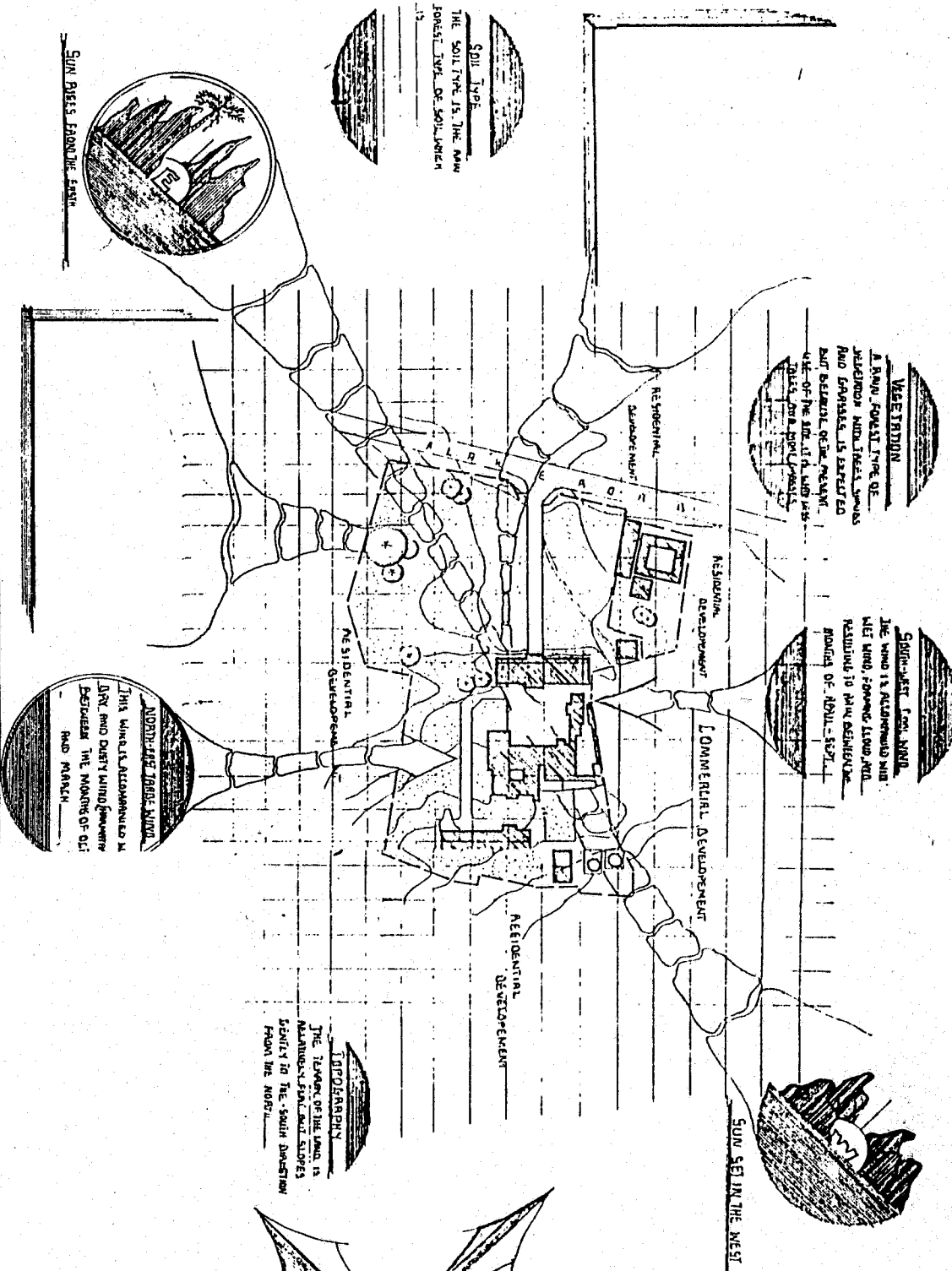
This site existed in the forest or guinea savannah belt of Nigerian vegetation chart with a mixture of secondary bush growth (like shrubs and grass). Presently, the site is as good as cleared with few trees and grasses, due to the development presently on the site.

5.5 EXISTING LAND USE AND FUTURE TRENDS area deve

The site is presently a part of Egba land palace, with about 38% of the site loped. The site is 2.47 hectares (61 acres), which is although very small when compared with palaces like Oyo palace with 6.88 hectare. The site is not water logged but is with soil type of clay and silt. The slope of the site allows for naturally drained.



Name _____
 Division B.P. _____
 Department Dept _____
 Level _____
 PROJECT DESIGNER
 MORNING TO DAWN STAGE



Elements presently on the site that are historical and spiritual in the land remain part of the future trends and the proposed design.

5.6 DEDUCTION

The data collected on the site give significant information, which will help in the site planning the active the conservation of energy. It was also deduce that the topography of the site will help in the drainage system of the site.

CHAPTER SIX

6.0 SITE ANALYSIS

6.1 CRITERIA FOR SITE SELECTION

The site selected for the proposed project is based on some socio-political structure of the Yorubas; which, apart from the chosen site being the present site of the present palace, and the spiritual and historical significance which makes the site unchangeable, satisfy the conditions which include:-

Selecting relatively elevated land in the center of the town or as close to the middle as feasible.

Closeness to the market

And according to Liyod; the component parts of this structure are lineage, the age grades, and sets, the little societies, the council of chiefs and the kingship. This shows a graduation in the responsibilities of the lineage to the chiefs and finally to the Oba.

The present palace site remains the chosen site because it satisfies the cultural criteria and couple with the fact that the ancestral mother of the Yorubas lived and buried their and also for some spiritual significant unrevealed, forming part of the limitation of the project.

6.2 SITE LOCATION

The site for the proposed is located on Alake road via the main road to Ibadan opposite the centenary hall, built in 1930, to celebrate the founding of the town.

It falls under the Abeokuta south local government area of Ogun state. The site is bounded around by residential, commercial and social development it also has the local government area secretariat along the same road.

6.3 SITE CHARACTERISTICS

A good analysis of the site shows the physical features, which needs to be considered in the construction of the proposed design. It also shows that the present structural use of buildings is being over stretched due to lack of enough building for the purpose, some of these buildings are also of substandard or degrading to the statues of the alake of Egbaland as the chairman of the royal council.

TOPOGRAPHY

The site is relatively flat but slope from the north to the south with a gradient of 3m. Though Abeokuta is known to be rock but the site is not.

VEGETATION

The site existed in the forest or rain forest of the Nigeria vegetation chart with a mixture of secondary bush growth (e.g. shrubs and grasses).

CLIMATE

The region, in which the site falls in, has two main season in the years, the wet and dry seasons. The dry season has low humidity and high temperature. Rainfall is usually high during the months of April Hill August. Also windstorms and driving rain are rampant, with sharp increase of solar angle especially at the rising and setting of the sun. The harmmatan season, which is accompanied with dry and dusty winds, is experienced during the months of October to January and at times till March.

PHYSICAL CONDITIONS ON THE SITE

The site is about 38% developed with shrine, the throne, Oba's residence/ Administrative block, council's building, and summer garden, Ipebi etc. The site is not waterlogged but with soil type of clay and silt.

DRAINAGE

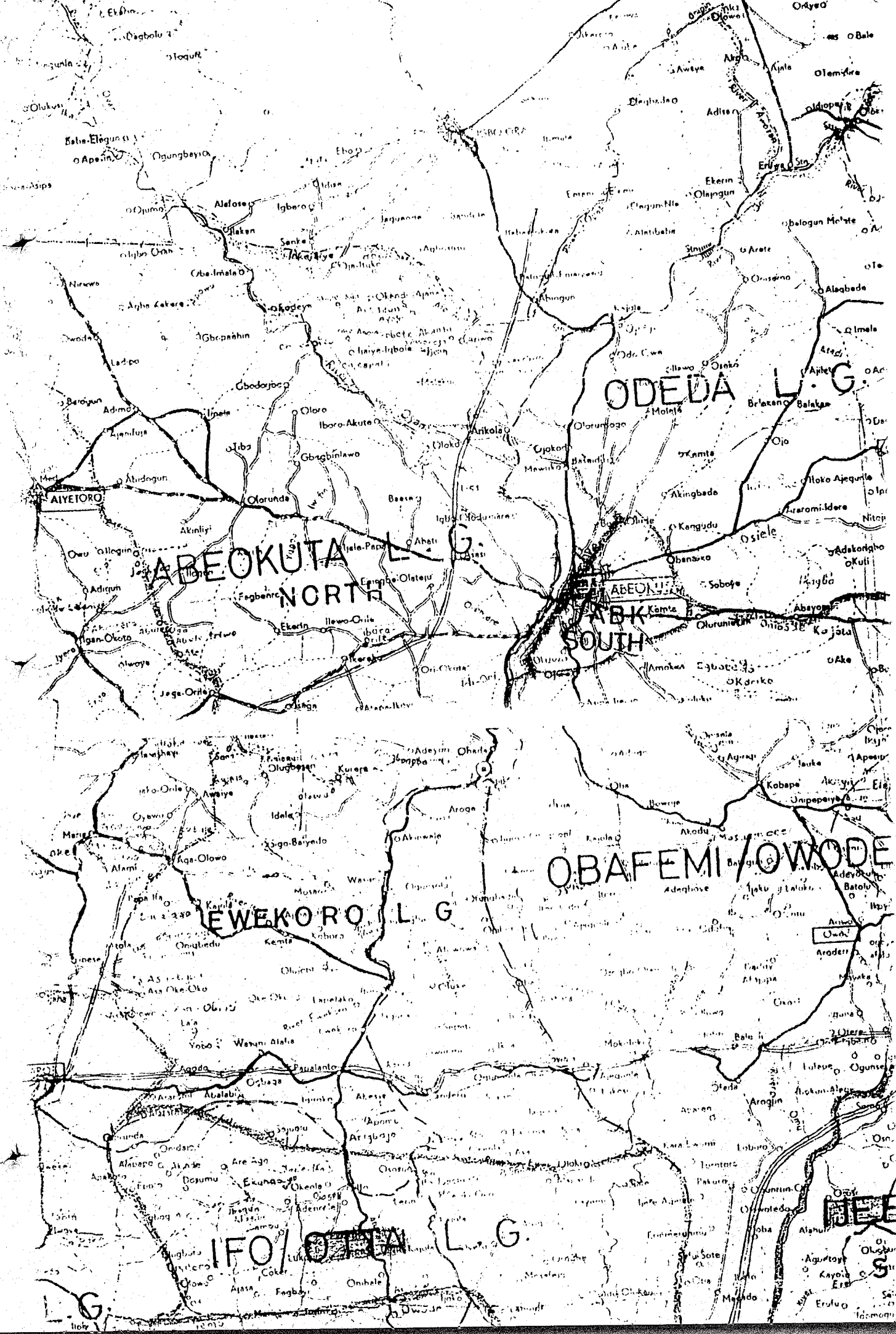
The draining of water etc on the site is made easy naturally because of the gentle slope of the site with gradient of 3 m from another side to the southern side of the site.

6.4 ACCESS AND CIRCULATION

As part of the criteria for site selection in a Yoruba community, most primary road networks are expected to converge at the palace frontage, the site partial fulfill this criteria as it could be accessed from most neighborhood. (ie from Poro Ake, Adatan, Sapon, Iresi, Okejigo, etc), from different road.

6.5 GENERAL APPRAISAL OF THE SITE

The site as aforementioned, has and historical and spiritual belief and significant which makes it the best location to site the palace, apart from the traditional criteria which it also satisfy, though remain small with 6.1 acres compared to those of Oyo of 6.88 hectares, Ife of 8.9 hectares and others.



AIYEIORO

ABEOKUTA NORTH

Odeda L.G.

ABEOKUTA SOUTH

EWEKORO L.G.

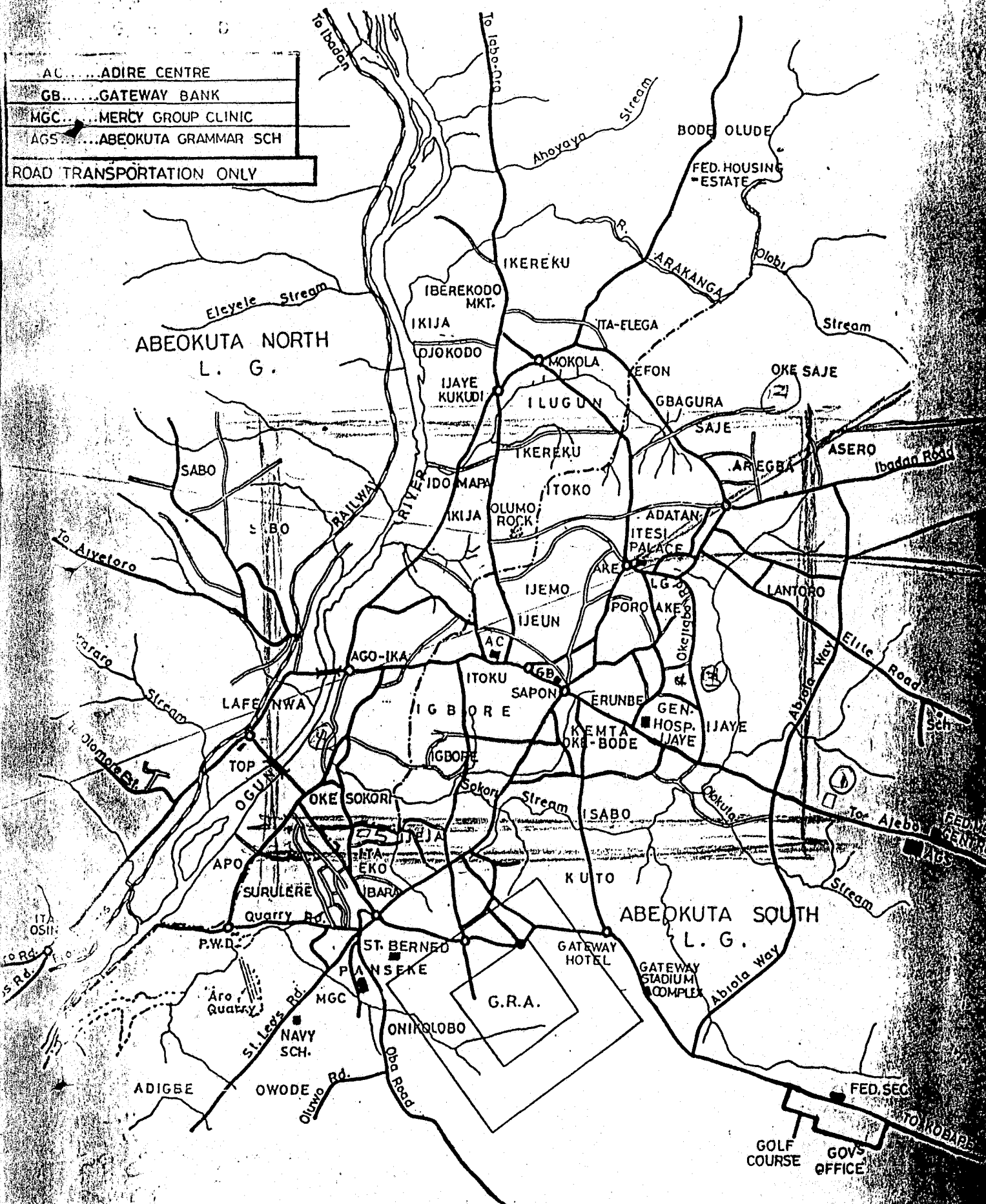
Obafemi/Owode

Ifo/Ota L.G.

Ota L.G.

ROAD MAP OF ABEOKUTA METROPOLIS

AC	ADIRE CENTRE
GB	GATEWAY BANK
MGC	MERCY GROUP CLINIC
AGS	ABEOKUTA GRAMMAR SCH
ROAD TRANSPORTATION ONLY	



6.6 DEDUCTION

The analysis of the site shows that the site has been developed to about 38%, though, structures on the site which form the percentage developed are either being over stretched, inadequate, outdated or down grading to the stature of the alake of Egba land as the Chairman of the royal council.

CHAPTER SEVEN

7.0 DESIGN REPORT

7.1 DESIGN BRIEF

The fundamental ideal of this proposal is to update and upgrade the standard of the palace being the official residence of the permanent head of the royal council according to the history and hierarchy of royalty in Egbaland. It aims to enhance and unearth indigenous solutions untouched by exterior or alien influences but considers the changing nature and evolution of the society as a whole.

The proposal not only entertains the innate principles in traditional architecture but a cross-fertilization and symbolic relationship of ideas from the different styles and relating to local colours.

The design programme is based on the improvement of the general standard of palace after the research carried out on some Yoruba palaces discussed earlier in the thesis and some earlier published and unpublished works which were studied.

7.2 DESIGN CONSIDERATION

The palace was without question regarded as the largest unit of building or family compound in the kingdom in which it was located. It was large and sprawling, generally higher than other buildings. In the community and surrounded by open spaces. The impression given was that the surrounding buildings were paying homage to the giant in their mist.

As a result of this certain structural and traditional elements were put into use in the buildings to actually bring the grandeur which a palace building desirous considered also, is

the functional qualities which manifests into the need for a hierarchical organization which symbolizes the significant role of the Oba in the palace and town in general.

COLUMNS AND ARCHWAYS

Columns were used in Greek and Roman era as a traditional element and tools, which undoubtedly depicts grandeur. Two types of columns were used in this design process.

1. The simple Doric columns which have no base and it's capital consisted of cushion like disc (the Echinus) surrounded by a square slab (the Abacus)
2. The Corinthian column which has a base, it's bit similar to ionic but the capital took the form of a wreath of acanthus leaves with rising volutes.

All the column types used were present in their simplest form but not as elaborate as the real Greek columns.

Archways were used to serve as structural linkage for the columns and as an uninterrupted barrier for view in between spaces,

DOMES

Dome as used from its Origin is to depict authority and power in building. This is also used due to the fact that the palace remain the house of authority and the residence of the most power indigene of the Kingdom with which it existed.

SCULPTURAL WORKS, CARVING AND ARCHITRAVE MOLDINGS

All these design element are repeatedly used on practically every building on site. Elaborate wooden and metal sculpture works are used on doors, walls etc. Depicting the historical events and significance of the people of Egba.

VERANDA/TERRACE AND COURTYARD

The provision of veranda defined as a secondary space is an integral feature of Yoruba architecture, in Yoruba palace design, projection of the veranda into the courtyard or open space, is to bring the Oba closer under a covered roof, to the people gathered. This shows the use or significant courtyard.

Veranda/terrace and courtyard used in the design to portray the traditional Yoruba architecture and introduction of artificial water body for cool effect in the palace environment in the case of courtyard.

The open-air theatre since its significance is to serve as a gather spot where the Oba can address his subjects.

7.3 SPATIAL CONFIGURATION

The organization is expressed in the framework of socio-political structure, tradition of the Yoruba people and palace ideals. Palace architecture and planning like housing and institutional complex design imposed restrictions on passage and general circulation. These imposed ideas are heightened by cultural, observances as obtained in such tradition palace setting.

The overall complex is broken down into zones depending on their particular functions. The zoning evolved from a study of what obtains generally in the traditional setting combined with what modern day exigencies spells out.

This does not exactly say that there are rigid lines drawn separating each zone but there is a flexibility in the planning, and this is manifested in the spill over and merging of the zones in certain areas.

Also, to be taken into consideration in terms of flexibility is the provision of large opens spaces for diversified uses, unifying elements which links the different parts in the form of walkways, in order to ensure a fluid circulation and easy access to any part of the palace.

The spatial organization is expressed in three basic zones:-

- (1) The public zone
- (2) The semi public zone
- (3) The private zone

1 **THE PUBLIC AREA:** - This constitutes the administrative block for Oba's official duties and some miscellaneous private duties, social amenities for his social duties and the judicial duties of the Ogbonis. Also there will be provision for an amphitheatre, which will be multi functional.

Other basic activities in this zone are administrative offices. The day to day running and coordination of palaces and the Obas activities are carried out in the zone.

The general requirements are a well landscape and extensive fore ground, office for administrative and a reception. Security would have to be provided for this area to keep things in check.

2 **THE SEMI PUBLIC ZONE:-** Only a selected group can penetrate into the core of this zone. The activities here are more specific and one must have a very tangible reason for being there. Some of the activities here also require open spaces in form of courtyards. The guest apartments are located such a way that there is easy access to the outside of the palace, and they are consciously separated from the inner core of the palace.

Other activities in this zone are the palace hall, the deities' block and the antiquity, consultation rooms with the chiefs and chief priest the shrine or sacred area in general.

3 **THE PRIVATE AREA:** This is for the Oba and his household excluding the public activities. This contains the Oba's residence separated from his wives, children residence and servants' residence and recreational amenities.

There is also a need to provide a private entry and exit for this area so that the residents do not have to always transcend the same route to reach the outside and the Oba also reserves the luxury of learning the palace without being seen or announced.

7.4 SPACE REQUIREMENT

The spatial allocation in the proposed design is based on the study made of the existing situation at the present Alake of Egba land palace as a case study, taking the needed facilities to be provided as an upgraded and befitting palace into consideration, as the palace plot is limited.

A RESIDENTIAL

Accommodation in the palace is of various functions vis-à-vis the occupant of the provided residence. There is need to provide accommodation for the Oba, his immediate family, servants for various functions guest (VIPS and others).

1. OBA'S APARTMENT

In the Yoruba palace architecture, the Oba stays away from his wives in his own apartment; this binding remains a focal point in terms of grandeur and splendor. It is also made to be as comfortable and convenient as possible as he spends the rest of his lifetime in the building.

The building constitute in it the following

Entrance hall

Main lounge

VIPS guest apartment

Dining

Family lounge

Main lounge

Oba's private lounge

Oba's self contain apartment

Laundry

Kitchen

Cold and dry store

The Oba's apartment is also provided with pools indoor and outdoor, which serves as escape and for swimming. It also keeps the environment cool as a result of breeze blowing over the pool of water. The building area is also given a royal garden on the outdoor.

2 OLORI'S APARTMENTS

Since the Olori's don't stay in the Oba's apartment, they are provided with accommodation with their respective children, close to Oba on the right side of the Oba's residence in the palace compound. The building has the following unit:-

Living room

Dining room

Bedrooms (self contain)

Kitchen and store

3 GUEST APARTMENT

The guest apartment is considered to be part of the public zone,, it is sited in the zone. It is a building design in suites to accommodate visitors ranging from entourage and some important guests.

Facilities in the guest lodge include:

Suites (self contain apartment)

Reception

Banquets hall

General store

Kitchen

4 PALACE SERVANTS

The palace servants are of various type ranging from the Gbegilere, the Onilu, Fabesona, labelua, Egungun Alase, Ode, Akigbe to the Elesho, and mostly unmarried therefore they

could share apartment. The apartment provided for them fall into different zone, depending on where their service is needed.

ALASE's apartment (chief)

Entrance porch/foyer

Living room

Bedroom

Toilet

Kitchennet

Others

Their apartment is added to the main palace building design, the constitute in them:-

Living room

Bedroom

Toilet

Kitchennet.

B ADMINISTRATIVE

The administration on the Alake of Egba land is of 2 part, which include the local administration and the royal council or council of Oba's administration.

The administration of the local palace is done in the main palace building with the exception of some functions that are transferred into the administrative block of the royal council.

THE MAIN PALACE

This has the following:-

The throne

Oba's office

Oba's secretary's office

Oba's personal Assistance office

Palace hall

Receptions

Archive

Chiefs' offices

Honorable & Ogboni chamber (court)

Honourables (town representatives) offices

Waiting rooms

Store

ADMINISTRATIVE BLOCK (COUNCIL OF OBAS)

This has the following:-

Reception

Chief press secretary

Press secretaries

Registrar

Public relation officer

Administrative secretary

Conference room

Library

The main palace also has the accommodation of some servants. In it since their service is needed there.

C SOCIAL

The palace entirely supposes to be social centers where people (indigenes) pay tribute to the kind attends to social functions traditional or others.

The present day palace architecture has function assigned to another unit of the palace which is the amphitheatre or open air theatre away from the court yards historically used.

The Open-air theatre

It include:

The pavilion

The Stage Raked public seats. (Gallery)

Changing room

Toilet

D RELIGIOUS

The palace, as it welcome every indigene make the head (the Oba) a multi-religious being, the palace has the following in it

i mosque

Chapel

Shrine

i. **MOSQUE:-** presently there exist a mosque in the present palace and it will be incorporated in the newly proposed design. It has in it the following:-

Male apartment

Female

Ablution area

Store

Minaret

ii **CHAPEL**

There also exist a chapel in the present palace but obstruct the zoning concept of residential building intruding into the private zone, while it is not suppose to be as outsider attends the chapel (public place). Therefore it is redesigned and relocated in the right (position) zone.

It has in it the following

Alter aisle

Congregation apartment

Store.

iii **SHRINE**

The shrine is the ritual and spiritual apartment in the palace. It has the Ipebi (a building were the elected Alake reside s for 3 months before being coroneted) and other ritual positions. The shrine in the present palace is also retained due to the historical, rituals and spiritual significant as there is no new building that can satisfy the same reason.

7.5 DESIGN CONCEPT

Concept Development

The concept development and architectural statement emanated from:-

- A. Functional qualities of Yoruba culture in general and Egba people in particular
- B. Physical qualities of Yoruba palace architecture
- C. Space programme

The functional qualities are manifested in the need for a hierarchical form of organization, which symbolizes the significant role of the Oba in the palace and the town in general.

Considering the functional zoning of the palace, we should not forget the activities that take place in the palace, thereby also considering in some forms. In the conceptual development. In line with this the "Talking Drum" which is a very important instrument in traditional music and entertainment, and it is also used significantly in the palace for waking the Oba and entertaining him and his guests.

The from (talking drum) depicts the function of the amphitheatre or open-air theater; a forum for communicating with the oba and in a way serves as the voice of the people in governance.

The face of the talking drum serve as a gather spot and communal facility for entertainment and cultural activities.

THE DRUM STICK

This remains the source of impact on the drum face producing the much-needed sound as it function as the channel of activities within the royal building. In line with this the choice of

CONCEPTUAL

STAGE 1

TALKING DRUM

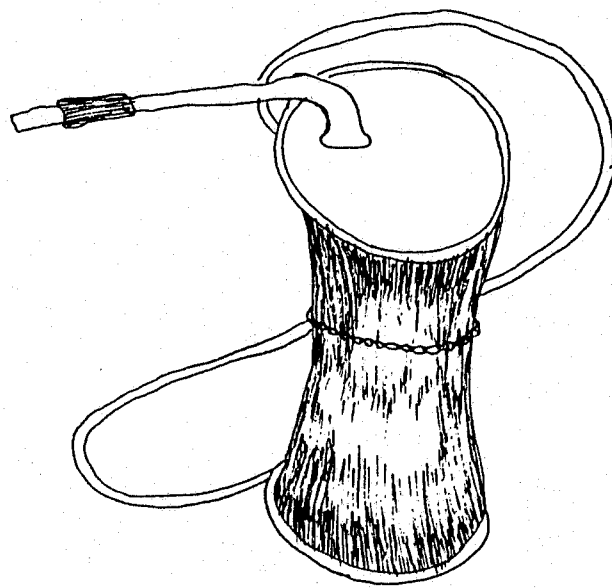
- * IMPORTANT INSTRUMENT IN TRADITIONAL MUSIC AND ENTERTAINMENT IN THE PALACE
- * CULTURAL TOOL USED FOR NON VERBAL COMMUNICATION IN THE YORUBA TRADITION

THE DRUM STICK

- * THIS PROVIDES THE MUSIC NEEDED, SOUND, AS A FUNCTION AS THE CHANNEL FOR ACTIVITIES WITHIN THE AMPHITHEATRE

THE FACE OF TALKING DRUM

- * AMPHITHEATRE, GATHER SPOT, COMMUNAL FACILITIES FOR ENTERTAINMENT AND CULTURAL ACTIVITIES
- * FUNCTIONING AMONG OTHER THINGS AS AN ENCLOSURE FOR POLITICAL RALLY AND RELIGIOUS CONGREGATION

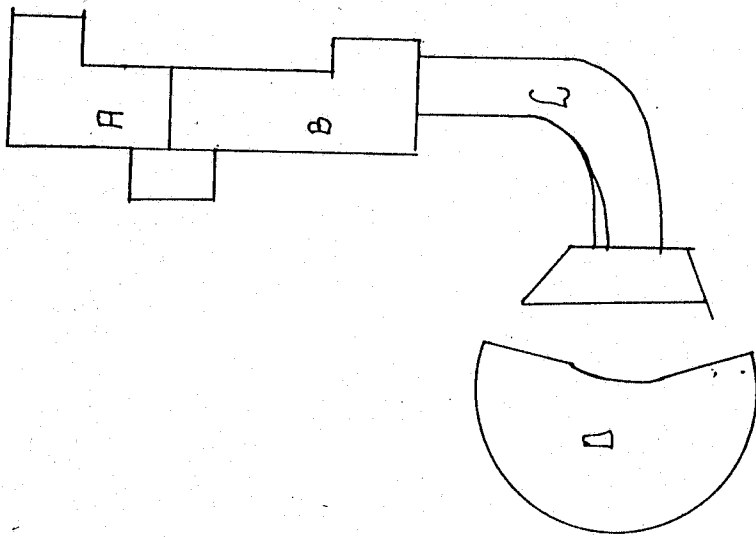


7 MINUTE PRESENT

AL ANALYSIS

STAGE 2 (FINAL STAGE)

- A - DRAGON'S AND REPRESENTATIVE OFFICES / CHAMBER (COURT)
- B - PALACE HALL AND CHIEF'S OFFICES
- C - WORKERS (SERVANTS) QUARTERS
- D - OPEN AIR THEATRE



DRAGON'S CHAMBER

SEMI-PALACE

PRIVATE

form for the enclosure serving the reception and administration in the proposed palace is the drumstick.

ANCILLARY OR SUPPORTING FACILITIES

Residential quarters dispersed towards the rear of the site as the informal or privilege areas of the complex, which is later, discussed in the zoning concept.

ZONING CONCEPT

The zoning concept dictates the general organization of the forms and spaces in the palace environment

The zoning is into 3 namely

The varying sizes of each zone are an indication of the traffic (people) that is allowed into the area.

The concept (i.e. Hierarchy) dictates the overall form. A strong axis in form of a datum is employed by its continuity and regularity to collect, gather and organize the pattern of form and spaces.

Hierarchy is the articulation of the important of a form or space by its size, shape or placements, relative to the other forms and spaces of the organization.

7.6 CONSTRUCTIONS TECHNIQUES

Construction of any building deals with the way and manner with which the building is erected each structure is divided into 2 party, namely the sub-structure and the super structure.

SUB-STRUCTURE

This aspect deals with the foundation types adopted in this construction of the building on site. Foundation is that part of the building which indirect contact with the ground and its function as that of transmitting to the soil all the loads. From the building in such a way that settlement is limited and failure of the underlying soil is avoided. Due t the solid and firm nature of the soil, strip foundation will be adopted for the construction of most of the building with the exception of the open air theatre where reinforced concrete pad roofing, spanning at an interval of 12m is used.

Reinforcement is placed at the bottom of the pad in both directions to resists the bending stresses set up by the double-cantilever action of the slab about the structural frame of the open air theatre.

However, in order to reduce excessive loads on the strip foundation, structural columns on grid not exceeding 6m center-to-center will employed.

SUPER STRUCTURE

This entails all the part of the building above the ground level. The wall constitutes part of the super structure. The wall type used is concrete block wall of 225mm thickness serving as load bearing wall, and 150mm as partition walls.

Retaining walls are employed for the basement level submerged in the ground to resist the lateral thrust of a mass of the retaining wall also support the vertical load from the structures above.

COLUMNS AND ARCHWAYS

Two major types of columns were put to use as traditional and structural elements: Doric and Corinthians

Archways were used to serve as structural support and linkage for the column and as an uninterrupted barrier for viewing in between spaces.

ROOF STRUCTURES

Wooden trusses are basically used and covered with long-span aluminum roofing sheet. Timber is known to be comparatively light material and the species used for normal structure purposes have weight used for normal structure purposes have weight approximately one sixteenth of that of steel, so far as single storey building, it is more economical to use wood rather than steel, and could be seasoned to withstand all condition as steel could.

7.7 MATERIALS, FINISHES AND FITTINGS

Materials in this context are referred to the construction materials for the proposed project. The construction materials use include the modern materials (i.e. concrete, long span

aluminum roofing sheet etc.) except for the roof members which is seasoned wood (timber) and the use of torch or grass for roofing sheets in the royal garden.

Finishes and fittings in palaces are of 2 types namely traditional and contemporary.

The contemporary finishes include the use of facing bricks and marble wall and floor finishes for their aesthetic value and durability cannot be over-emphasized.

Marble, terrazzo and cement sand screed are also used as floor finishes in both the interval and external floors.

Decorative and suspended ceiling types made of plaster of Paris were also employed for ceiling in the proposed design.

The traditional finishes include the stone wall finishes, carved artwork sculpture are also used mostly on the approach of the palace.

CHAPTER EIGHT

8.0 DESIGN SERVICES

The services in the proposed palace are as follows:

8.1 ELECTRICITY AND LIGHTING

Electricity being very important in a palace shall be supply by NEPA as the main generating supplying body of electricity by balancing the places, ensuring that there is adequate spread of load (power).

A electrical wiring shall be conduct as it is of better advantage in places such as palaces.

As the of concentration of this thesis is concern, the issue of natural lighting is very important so as to maximize the concentrative sense it suppose to highlight.

Palaces in Yoruba land are known for use of courtyard, which is a way of giving access to natural lighting into the interior. The use of courtyard in the proposed palace cannot be over emphasis as it is coupled with wired glass transparent material, while in other areas steel grillage is used. Long corridors are illuminated with use of screen wall and glass door are also put to used where necessary.

8.2 VENTILATION AND CONDITIONING

Maximum ventilation of the building is highly considered as most of the apartment in the palace shall be provided with enough cross ventilation (i.e rooms) steel have maximum cross ventilation] to reduce the use of energy.

The introduction of fountain, pool and swimming pool is as a result of air condition, to give cool breeze in the palace environment (i.e. the blowing of hot air or less density air over water pick up moisture, becomes cool and denser).

Orientation of building is also use to condition the inflow of air breeze.

8.3 DRAINAGE AND SEWAGE DISPOSAL

The sewage and drainage system of the site shall be underground with the use of surface water drainage system covered with concrete slabs. The drainage and sewage disposal system shall be constructed, making full reengage of the sites' topography as it slopes from the North to the south with a gradient of sun.

All rain water and surface water collected shall be directed to the surface drainage system covered with concrete slabs.

8.4 WATER SUPPLY

Supply of water in the palace shall be from both the state wares board and constructed boreholes on site, this is to supplement the direct supply from the board.

Overhead tank shall also be used to effect maximum distribution.

8.5 REFUGE DISPOSAL

Refuge as an important pollution material need to be taken care of, this will be done by providing incinerator extreme end of the site for final disposal after collection by the workers in concern.

Out break of fire being an un-foreseen situation need prior planning for in the case of its outbreak. The two main ways of fire safety in building will be used in the proposed design namely:-

- i fire prevention
- ii Fire protection

This is the use of precaution against the out brake of fire such as:

Use of material (or fire rating) which could resist fire for a considerable time, such material include, burnt bricks and use of both concrete slab and roof sheet in the roofing system.

Planning of site, and buildings such that fire fighting gadget could reach virtually all past of the site

Designing of means of escape to the outside buildings at a minimum time limit. Place of refuge (e.g. courtyard) with pool of water is also provided for use in this situation.

Signs and notices are also inscribe in the public zone and semi private zone for the use of the occupant.

FIRE PROTECTION

This is the use of fire fighting gadget after the outbreak

The use of fire extinguisher at strategic position of 24m maximum of reach in the buildings

Sprinkling system, which is at stand by, will also be used in case of overpowered outbreak.

Other means include Hose and stand pipe system, placing of fire alarm and alarm system in strategic points.

8.7 SECURITY

Security as a significant problem in residential building needs to be considered in the proposed palace.

This could be against life or property in the buildings in the palace.

Considering this is the use of zoning concepts to restrict the public to the zone demarcated for them and the private also as the palace is more or less a social center for the indigenous.

Check point placed by the gatehouse and also police post to caution the public after the main gate, a second gate, which restrict or screen people is also introduced.

Security escape route are also design for the king within the building units and to the outside.

8.8 MAINTENANCE

The maintenance of the building will be done by the workers in the palace, therefore, materials that are easily maintain are used for the construction and finishes of the buildings.

This materials include terrazzo, marble, floor tiles, etc which are easily maintained.

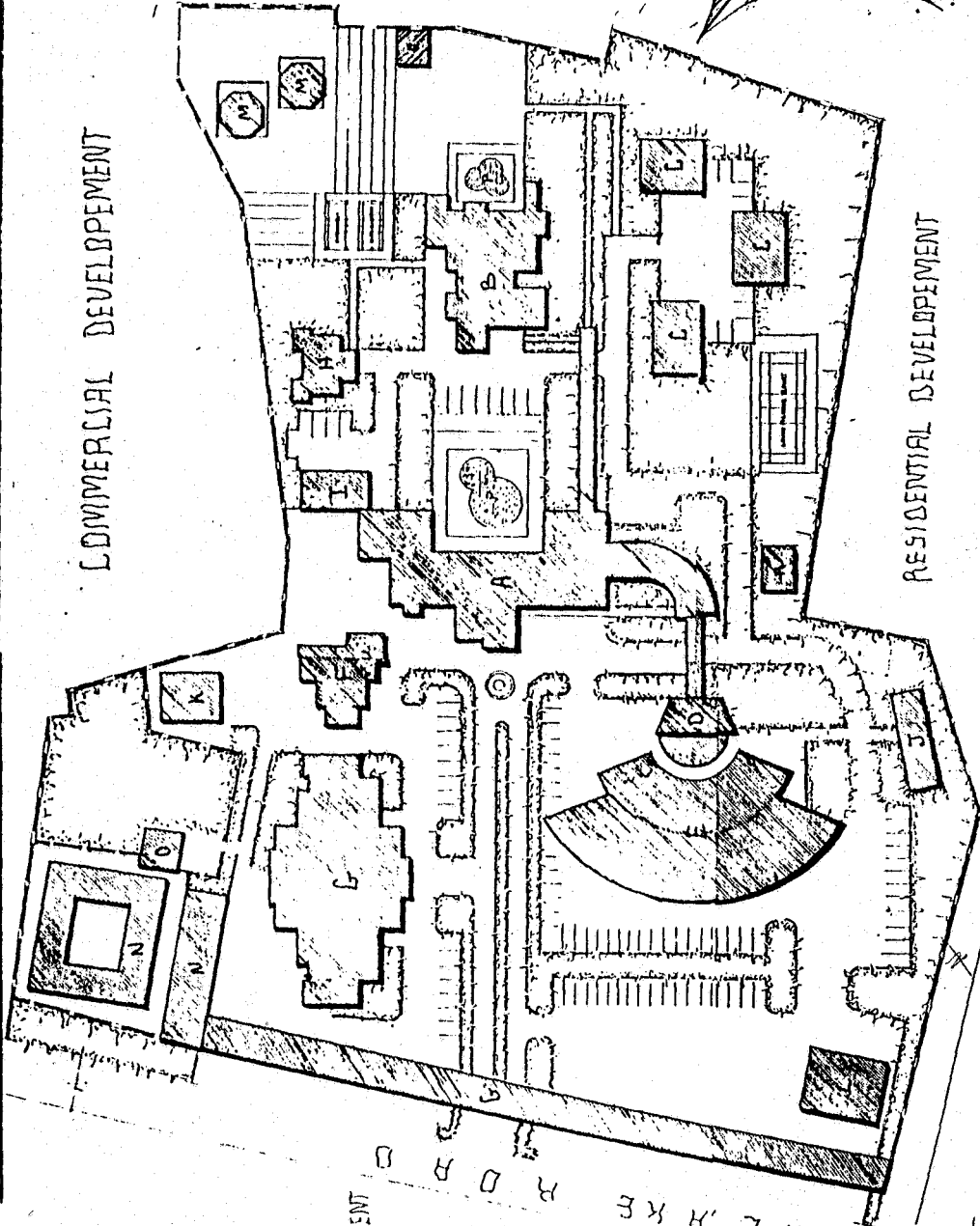
CONCLUSION

Housing carefully analyzed the subject matter THE ALAKE OF EGBALAND'S PALACE- in which allowable function space so far limits the Oba's influence socially as it restricts other forms of Oba/ subject relationship and interaction. It is now obvious that the position of the Oba be locally elated architecturally to the modernized status of society in terms of relationship and interaction, and also to the hierarchical post of the Alake of Egba land as the permanent chairman of the Egba council of Oba's, thereby removing such stand and monumentally relegated nations about the palace.

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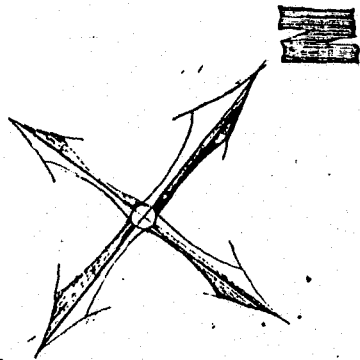
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SITE PLAN



LEGEND

A	PARK PRULE
B	DBA'S RESIDENCE
C	DLOAD RESIDENCE
D	PVILLION
E	OPEN AIR THEATRE (GROUP THEATRE)
F	ADMINISTRATIVE BLDG
G	GUEST LODGE
H	CHEF'S LODGE
I	CAR GARAGE
J	TOILET
K	MOSQUE
L	CARPEL
M	RECREATION GARDEN
N	OBSON'S HOUSE
O	IPABI
P	SWIMMING POOL
Q	PUMP HOUSE
R	GENERATOR HOUSE
S	GRIE HOUSE AND TOWER



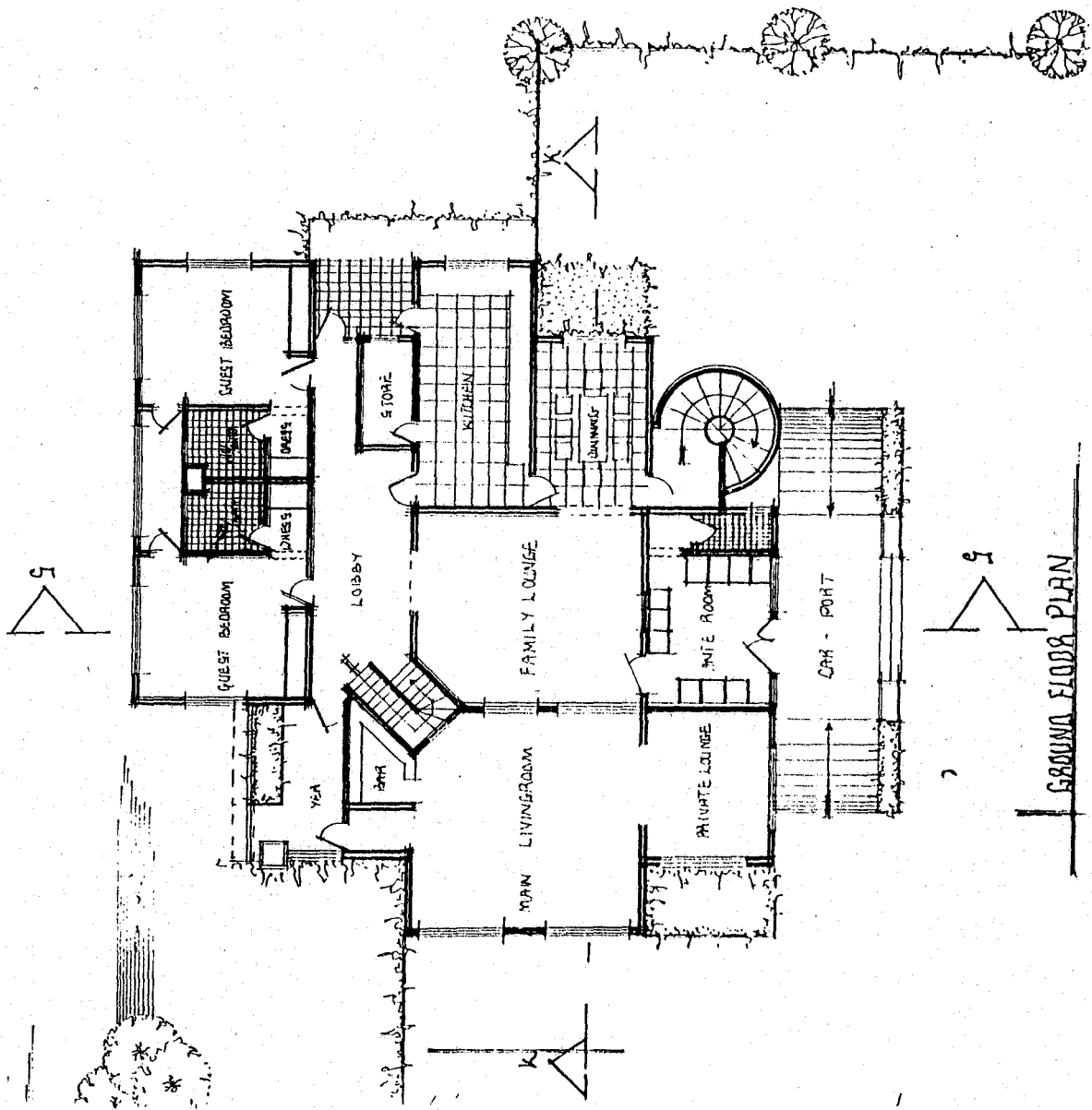
COMMERCIAL DEVELOPMENT

RESIDENTIAL DEVELOPMENT

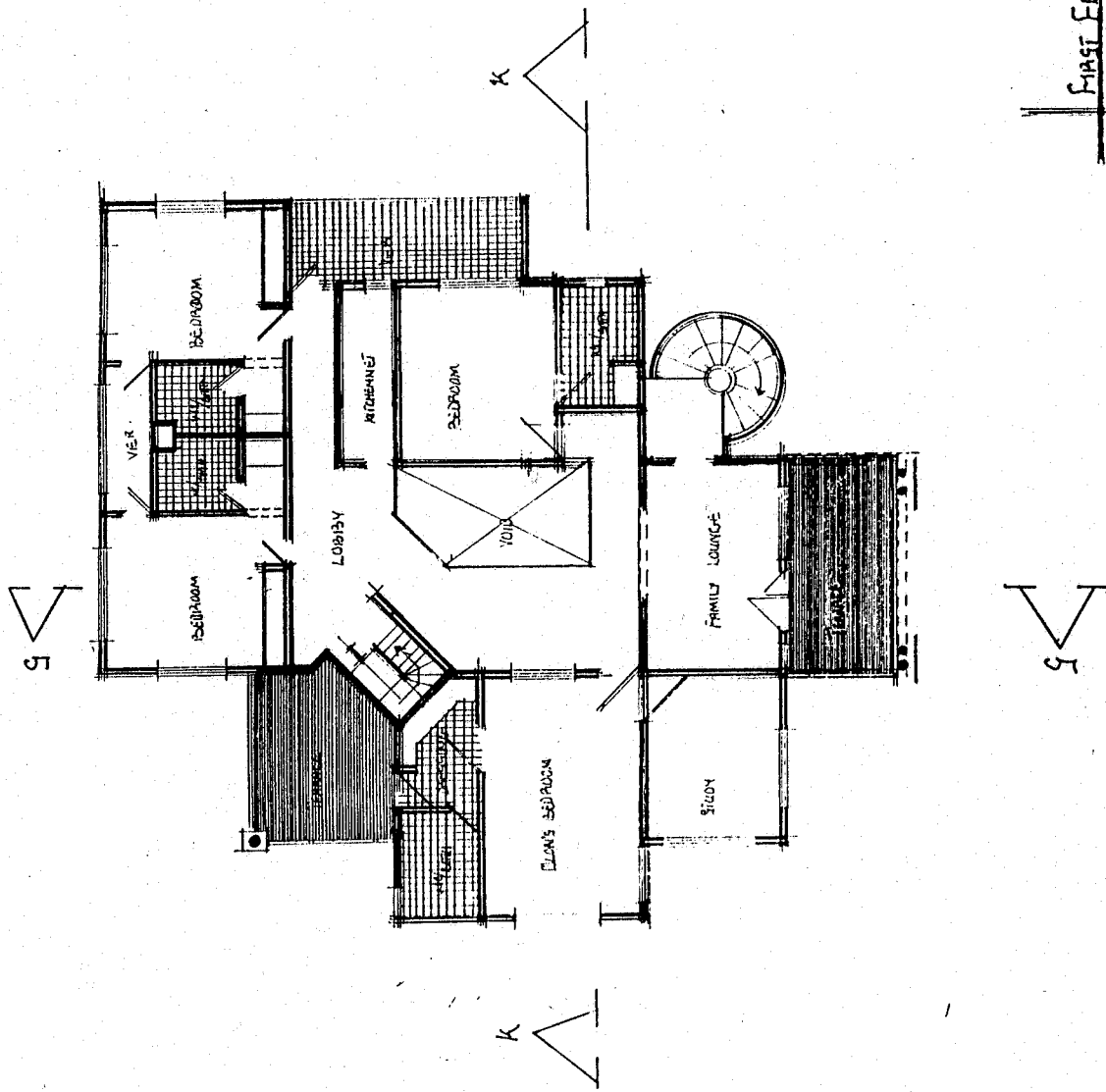
RESIDENTIAL DEV
DEVELOPMENT

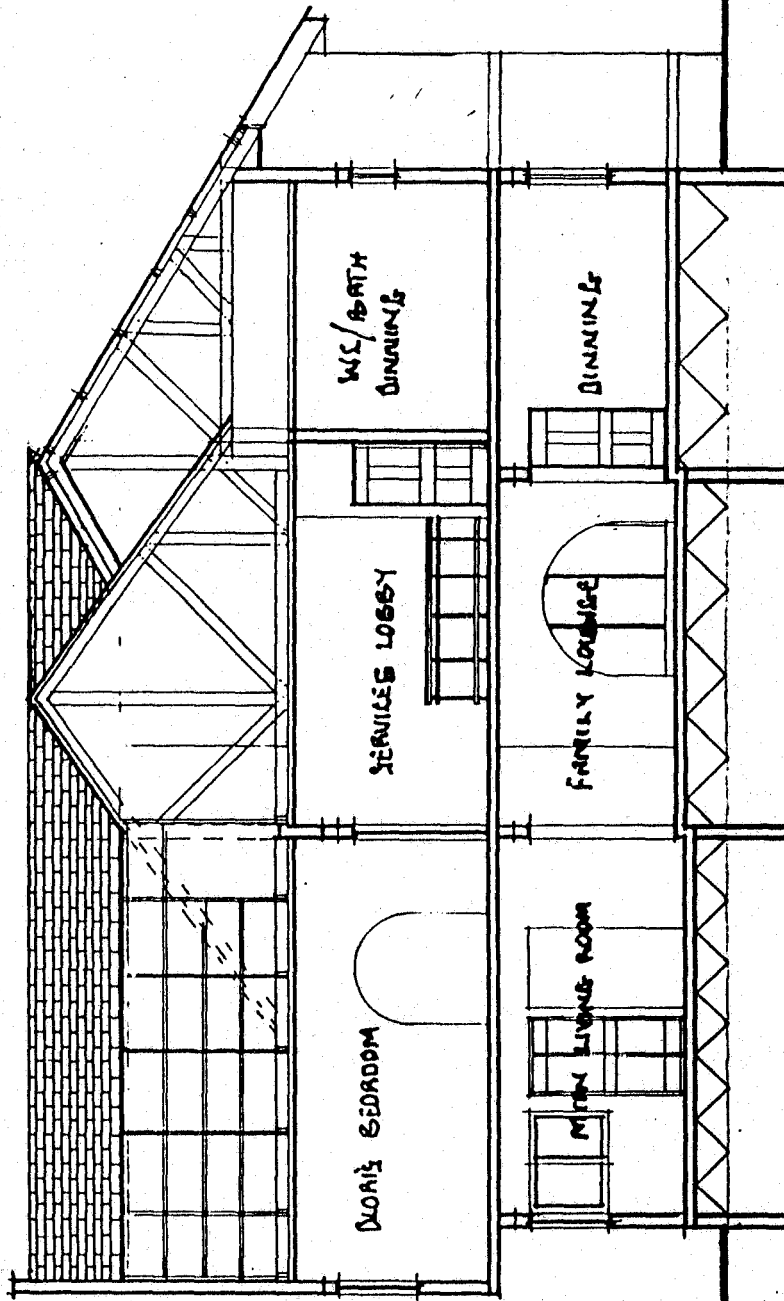
R. L. R. K. E. R. D. R. D.

NAME: DR. J. B. R. ADDRESS: 600 (METER) ROAD SCALE: 1:500
 DESIGNED BY: AKAKE OF EGHALA PALACE DATE: DEC 2001
 DRAWN BY: AKAKE OF EGHALA PALACE PROJECT: MEMORIAL ARCH CONSTRUCTION



GROUND FLOOR PLAN





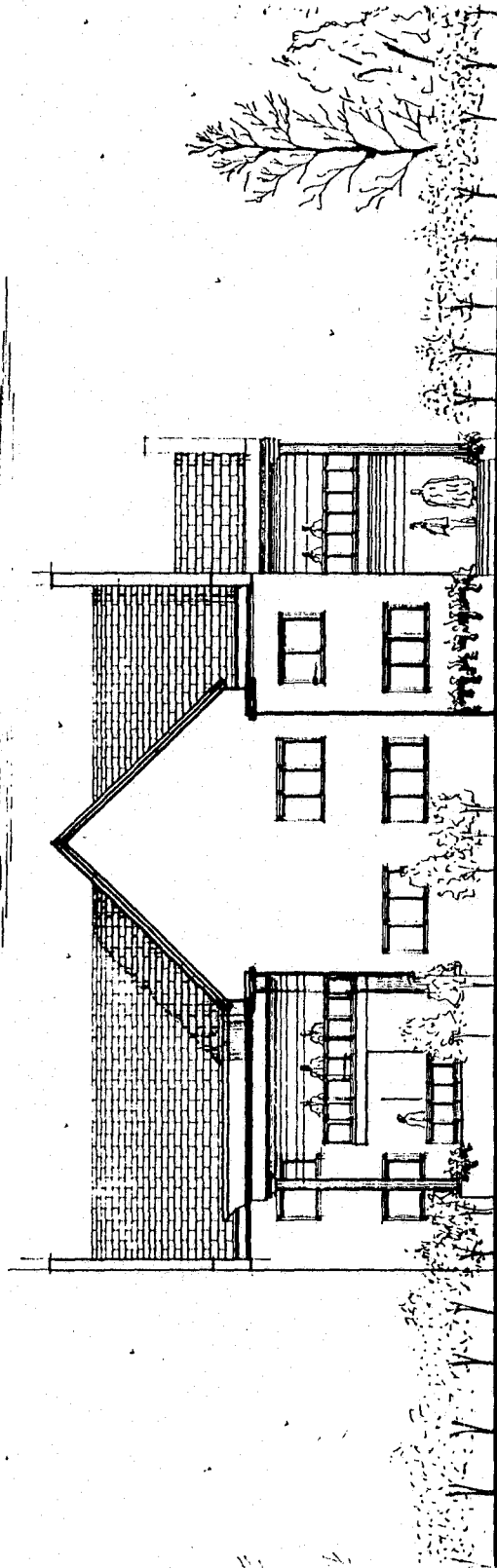
SECTION K-K

ALDRIS (



APPROX. ELEVATION

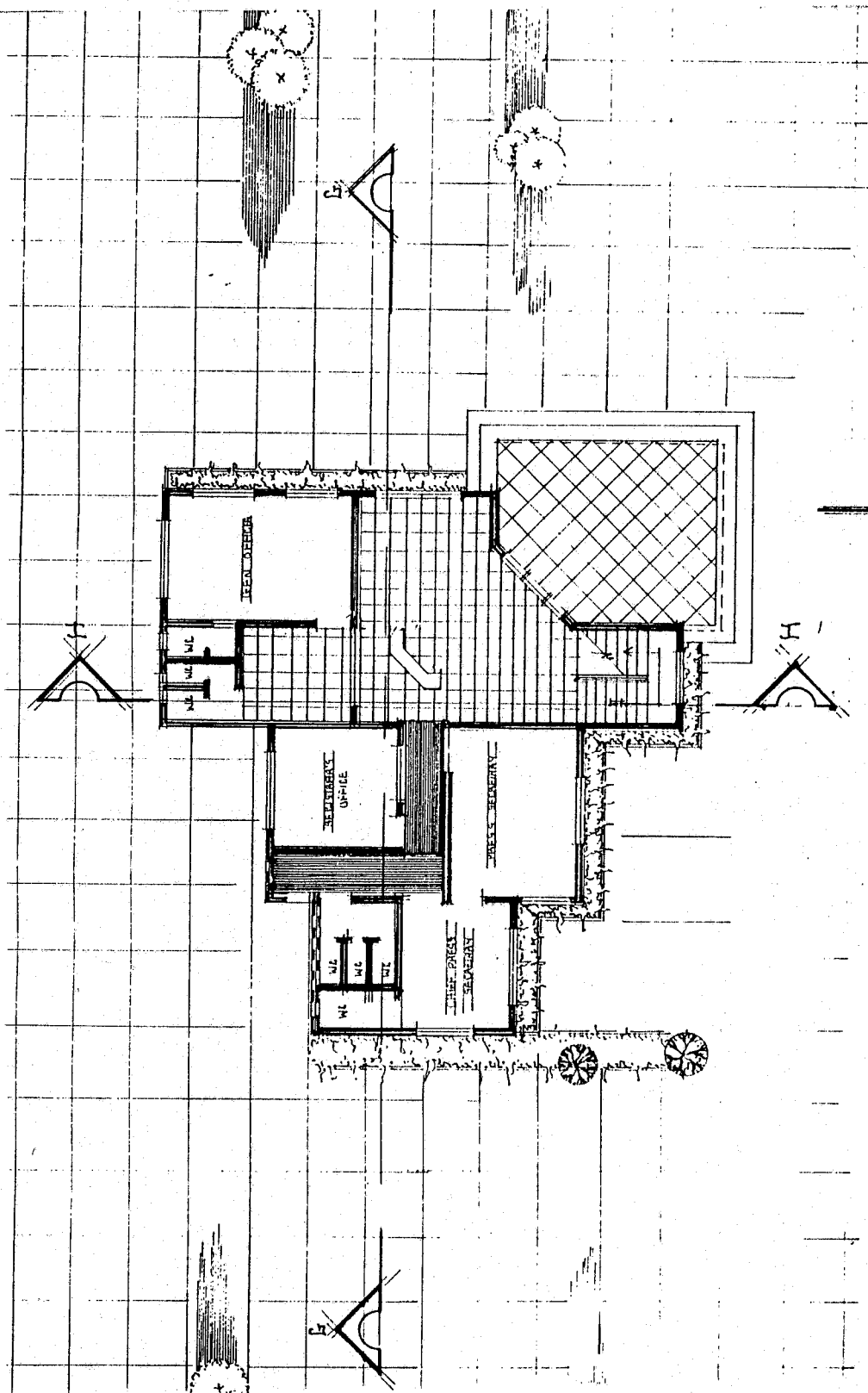
APPROACH ELEVATION



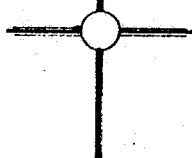
LEFT SIDE ELEVATION

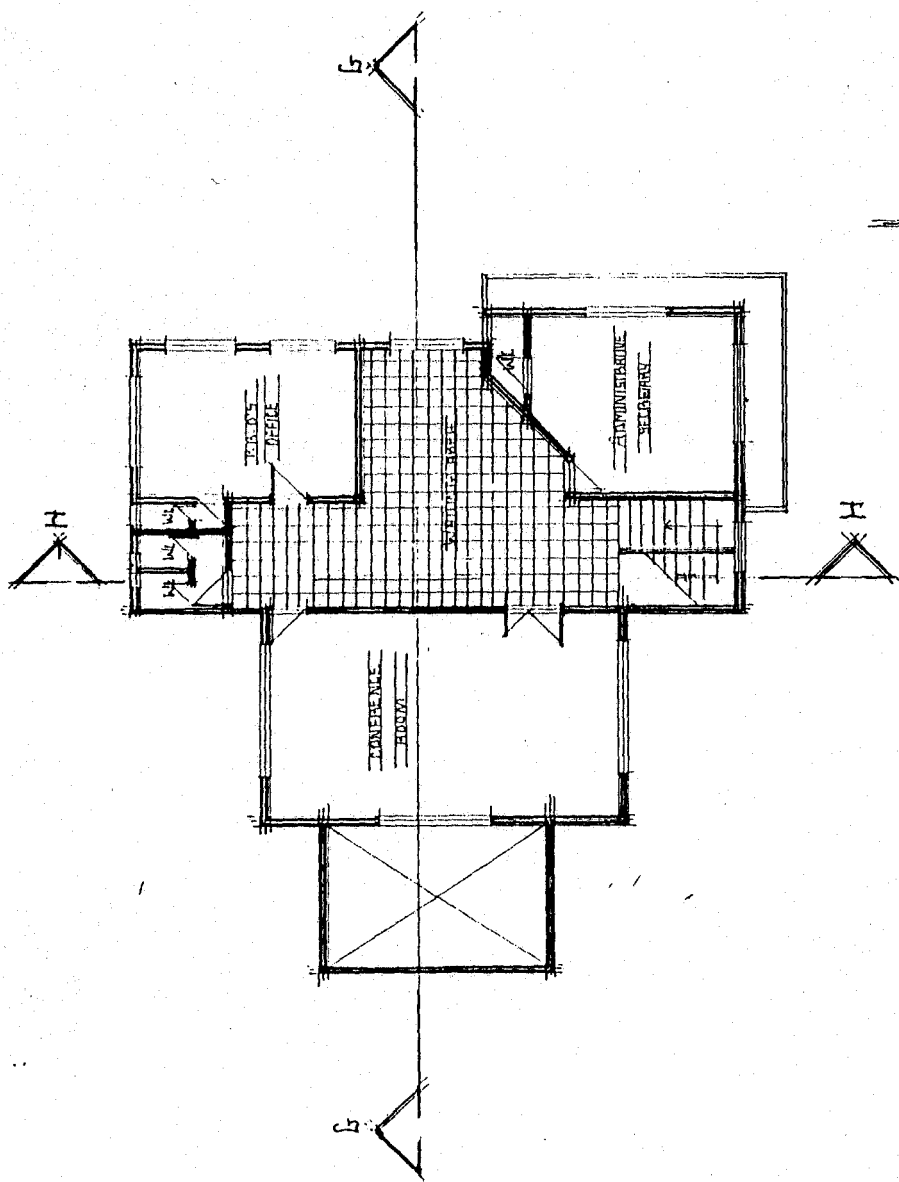
PROPOSED DESIGN FOR
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ORUBA OGUNSTATE

OUR
ENERGY CONSERVATION
IN BUILDINGS
MEND



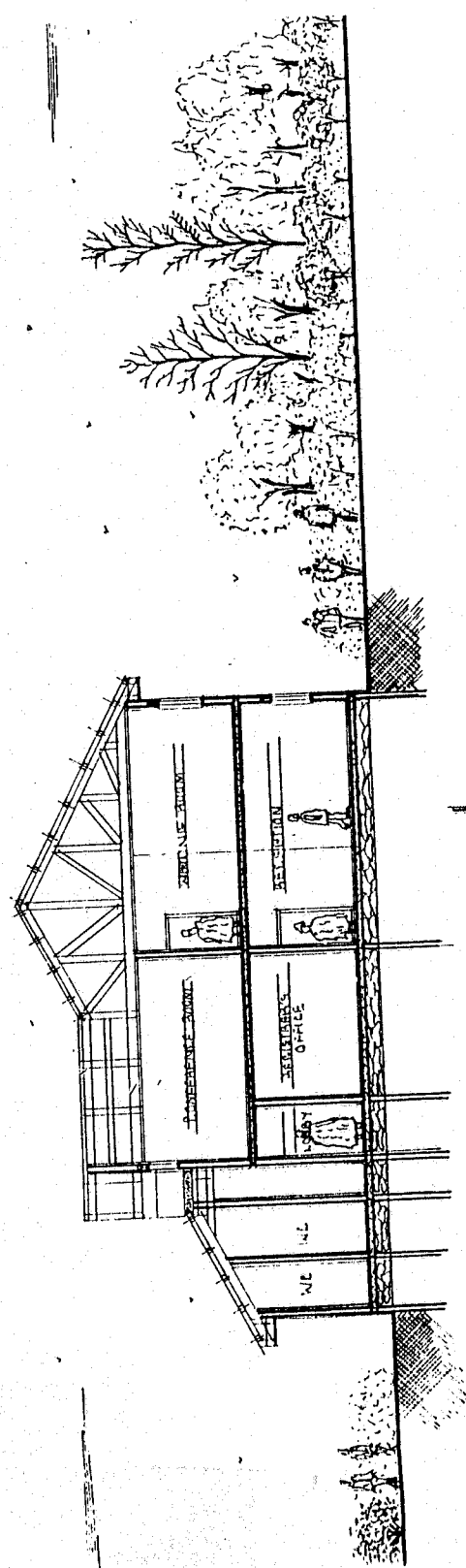
FLOORING FLOOR PLAN



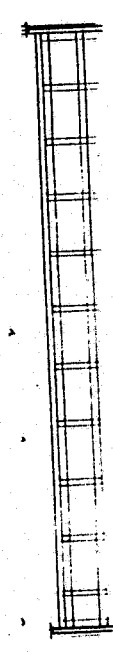
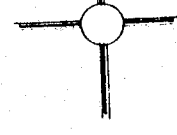


FIRST FLOOR PLAN

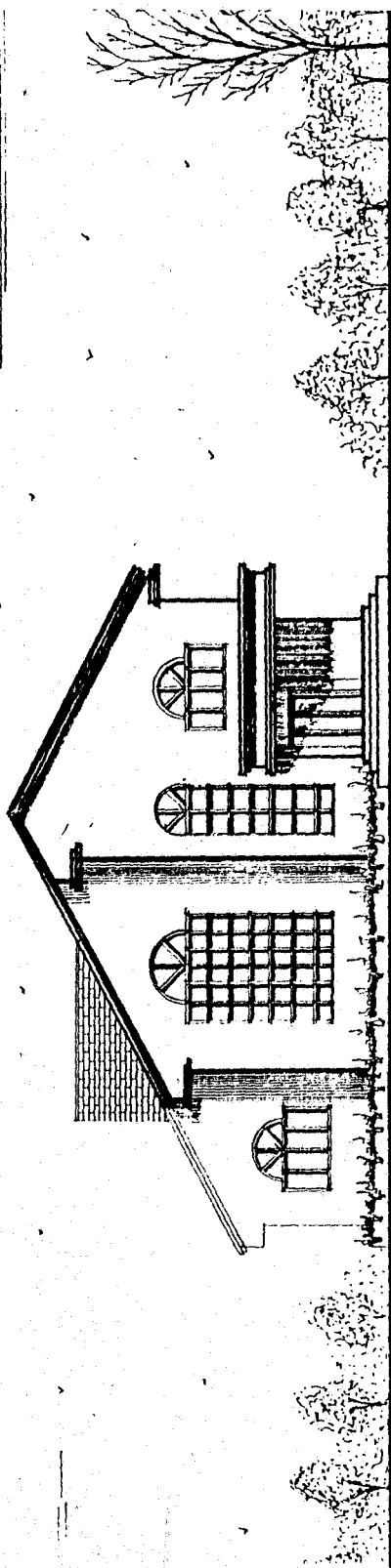
ADMIN



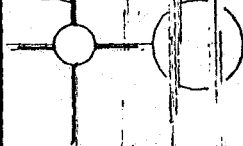
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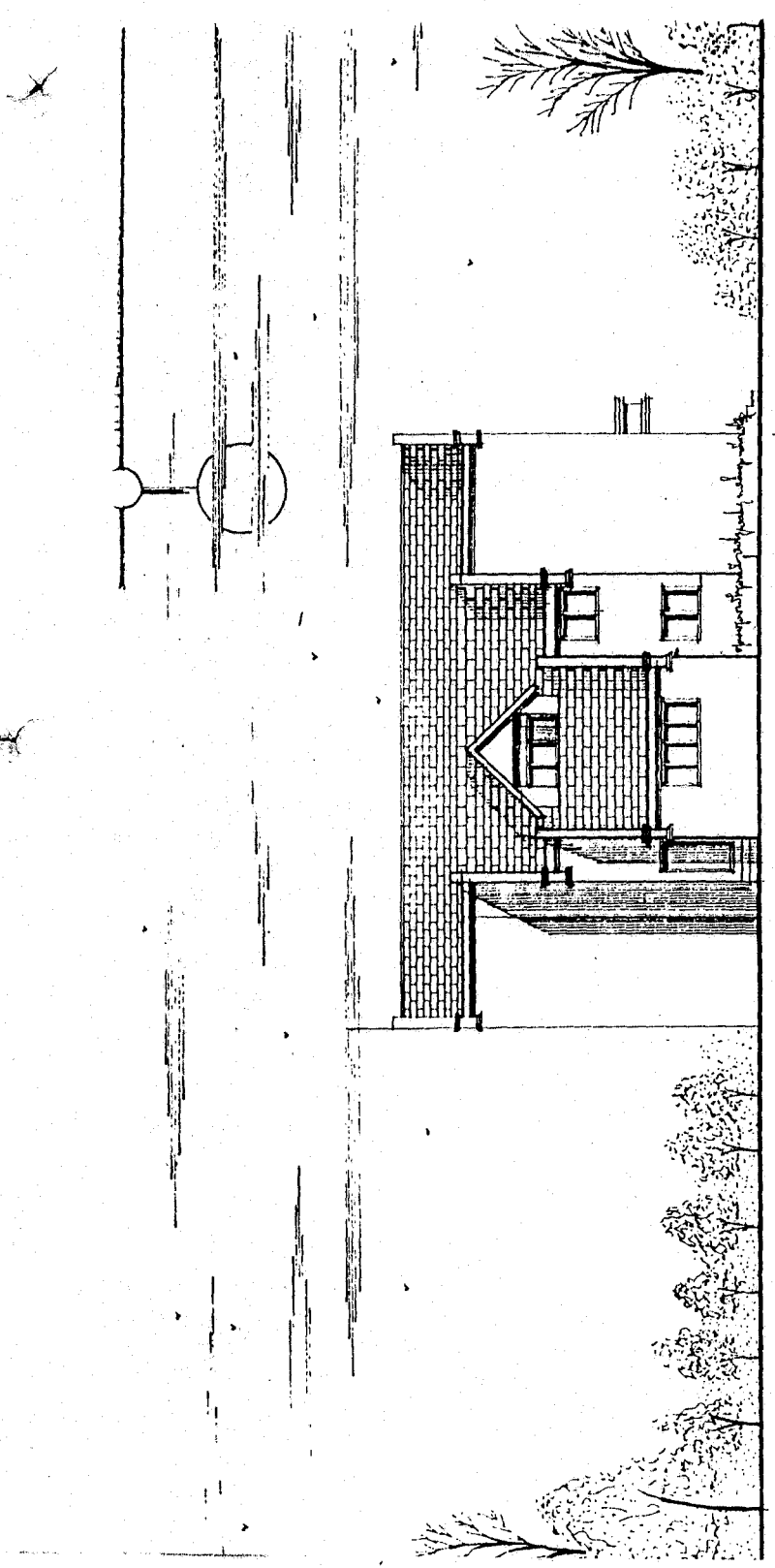


ADMIN



APPROACH ELEVATION

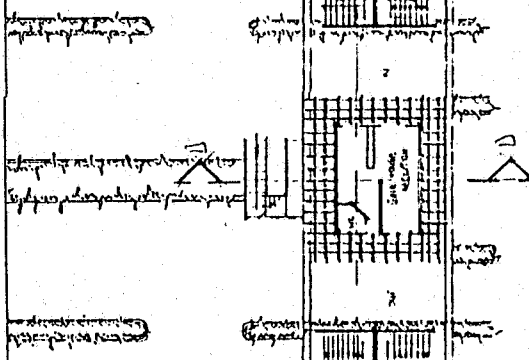




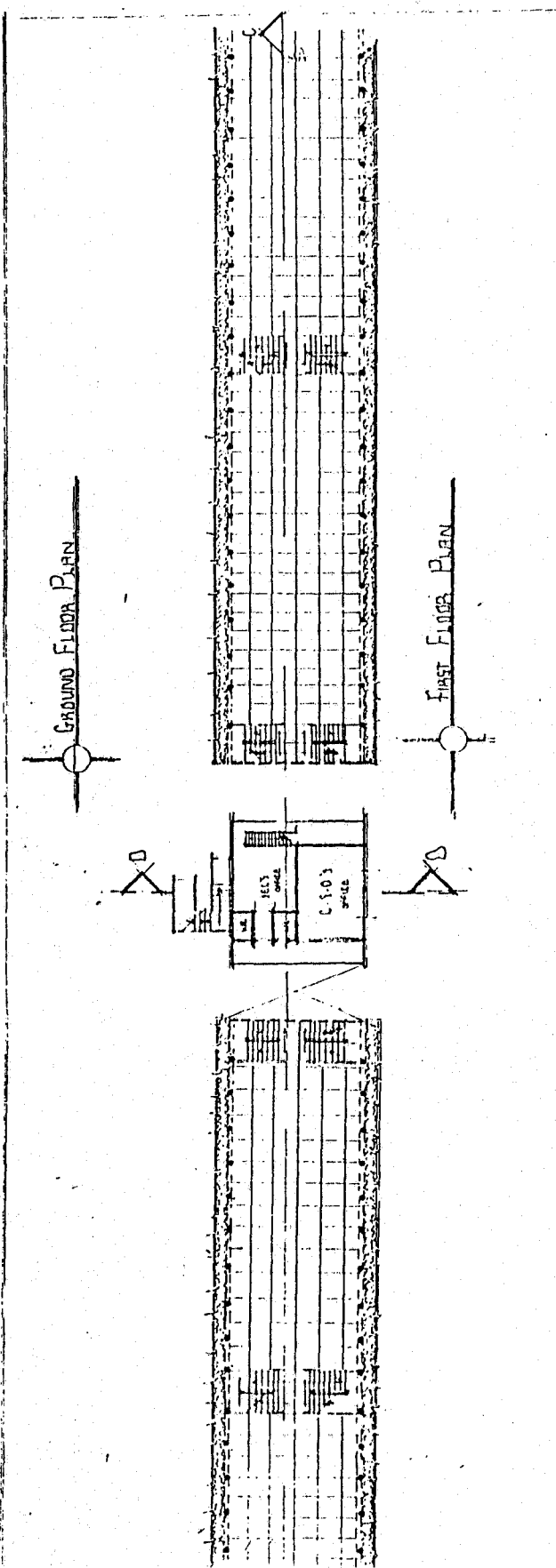
LEFT SIDE ELEVATION

LECTURE DESIGN HOUSE
ALAKE OF EGALANOPALACE
 ABEOKUTA OOGUN STATE
INTELL ARCH

GATE HOUSE / ALAKE TOWER

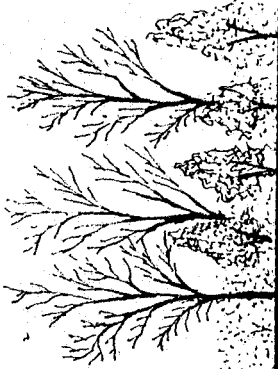
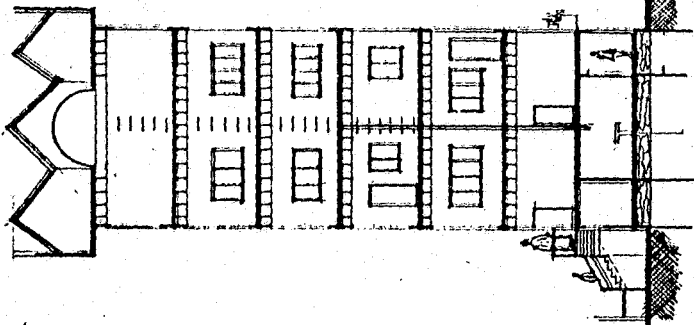


GROUND FLOOR PLAN



PROJECT: PALACE OF THE SULTANS
 ARCHITECT: ALI K. ALI
 SCALE: 1/8" = 1'-0"
 DATE: 1960
 DRAWING NO.: 001
 SHEET NO.: 1 OF 1

TECHNICAL DRAWING



SECTION 1-1

COURSE
 ENERGY CONSERVATION
 IN BUILDINGS
 MENTOR
 FAC

COURSE
 ENERGY CONSERVATION
 IN BUILDINGS
 MENTOR
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COURSE
 ENERGY CONSERVATION
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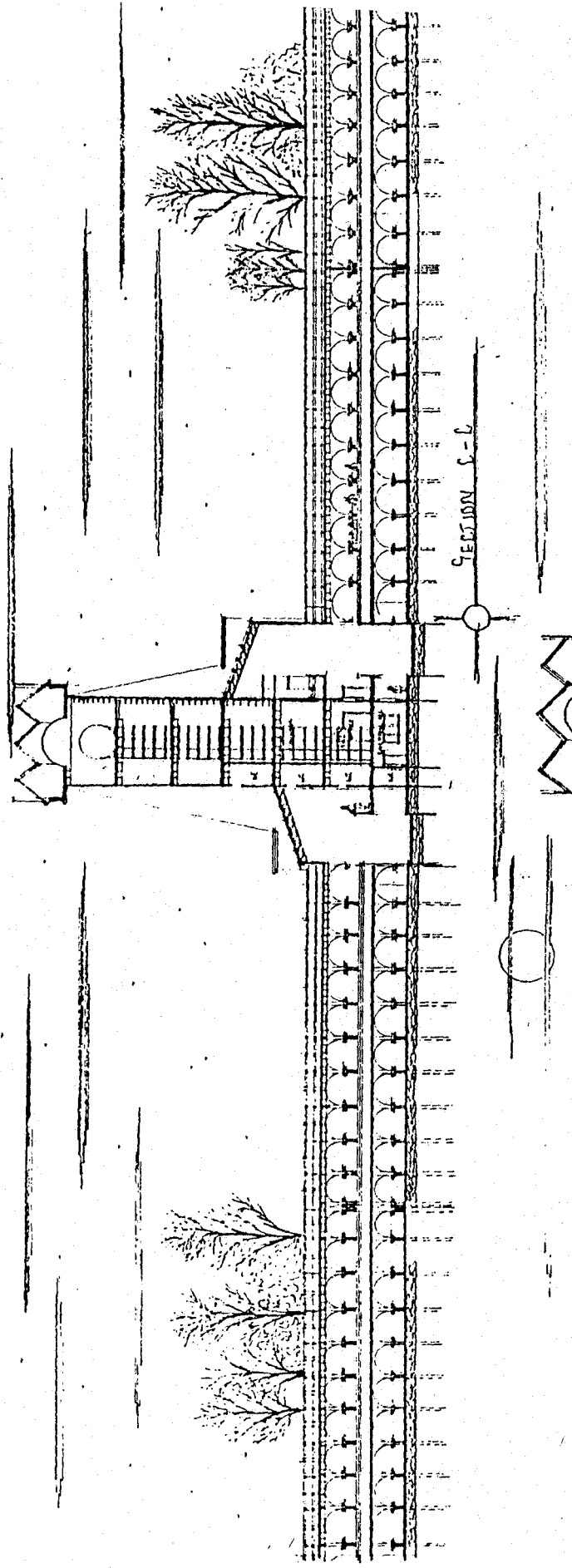
STATE OF OREGON

DEPARTMENT OF EDUCATION

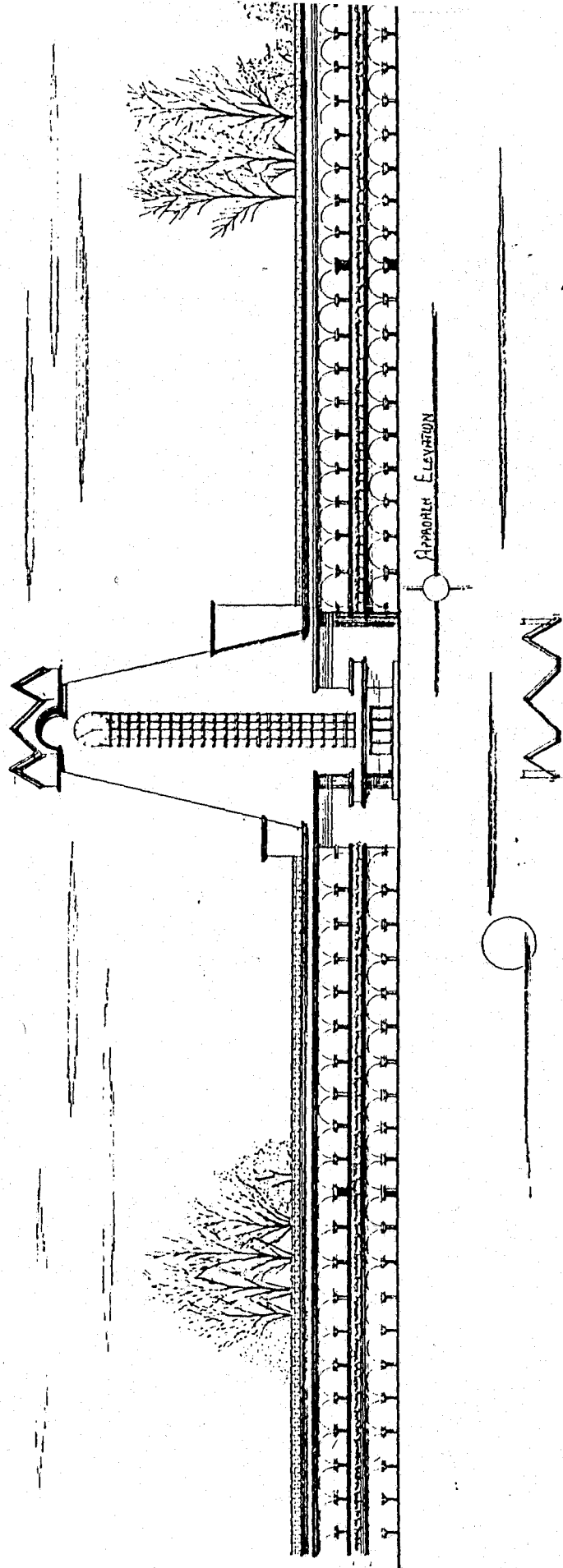
1000 NE Oregon Street

Salem, Oregon 97331

GATE HOUSE / ALAKE TOY

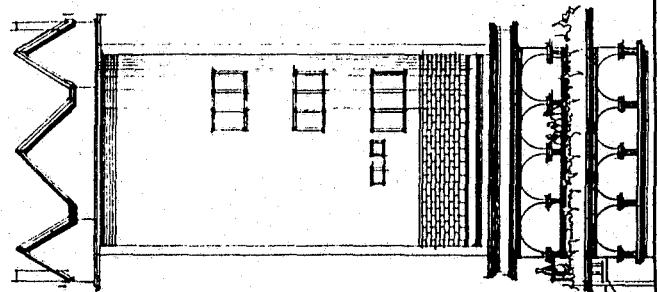


GATE HOUSE / ALAKE TOW



APPROXIMATE ELEVATION

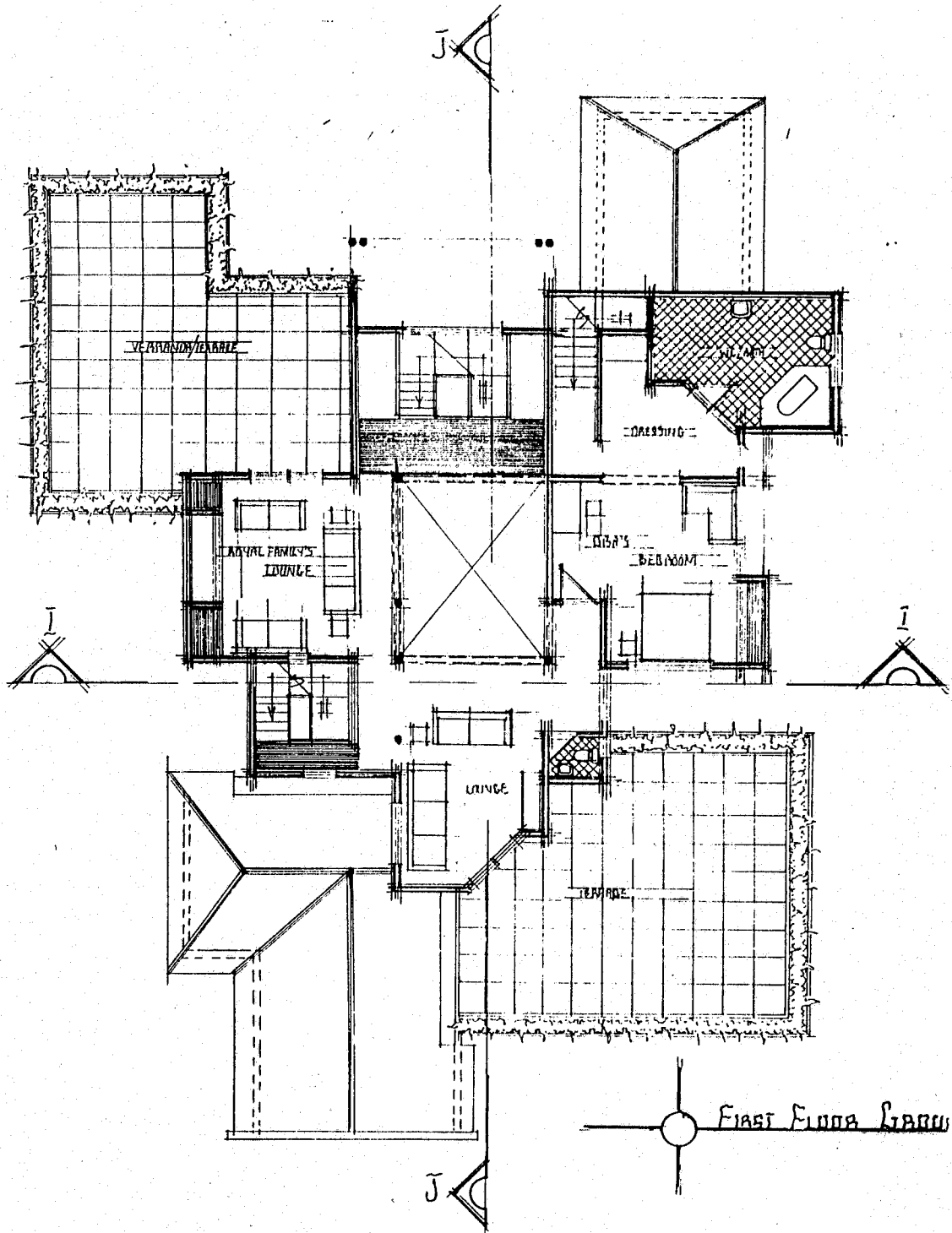
APPROACH ELEVATION



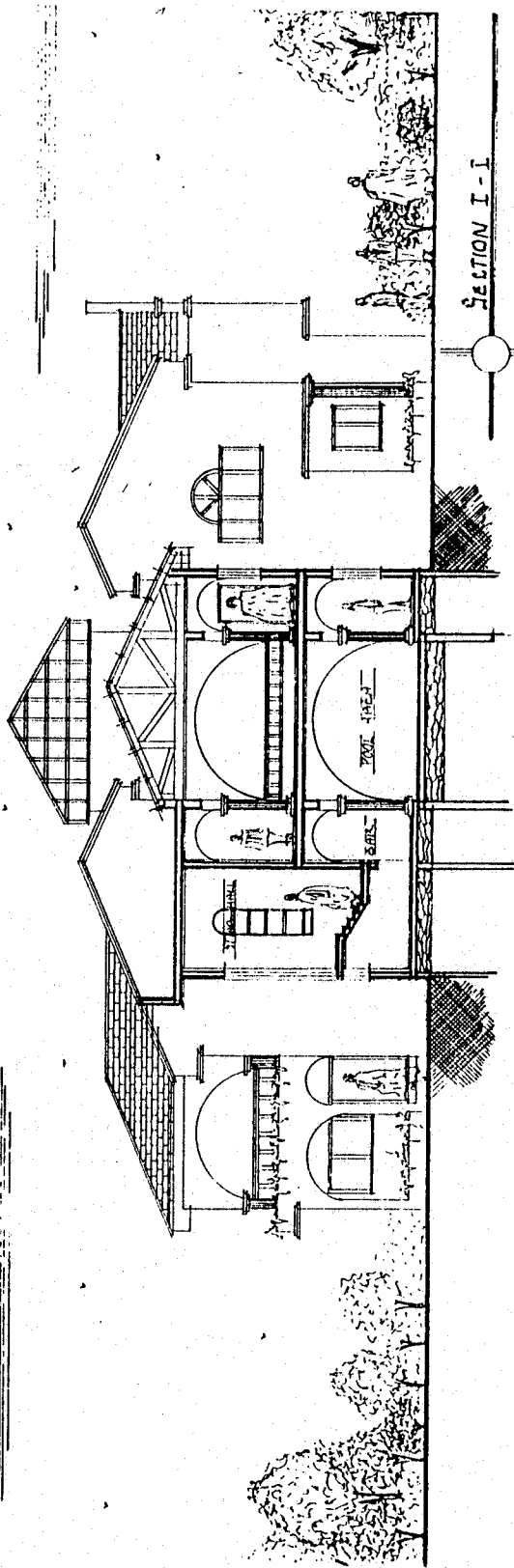
LEFT SIDE ELEVATION

PROPOSED DESIGN FOR
ALAKE OF EBALANOPALAGE
ENERGY CONSERVATION
IN BUILDINGS
SPECIALTY DESIGN STATE
MEAN

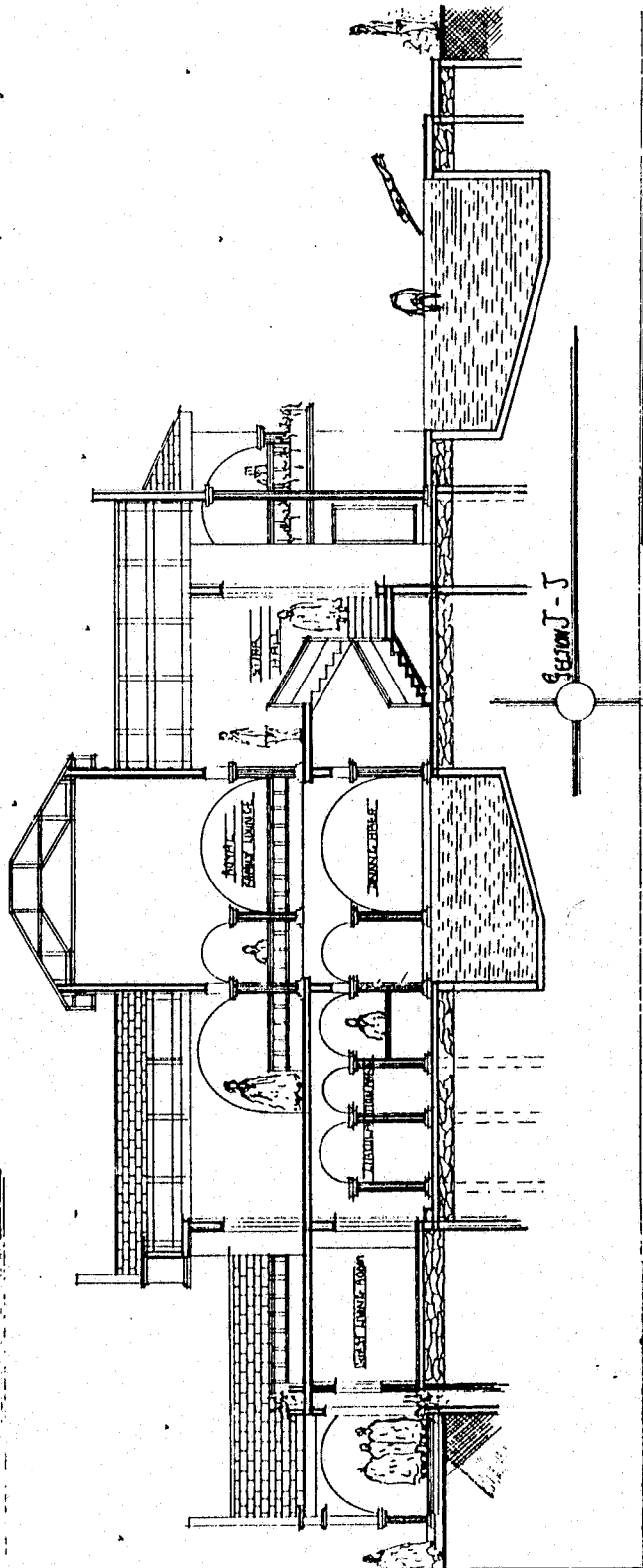
OBAY RESIDENCE



OBAS

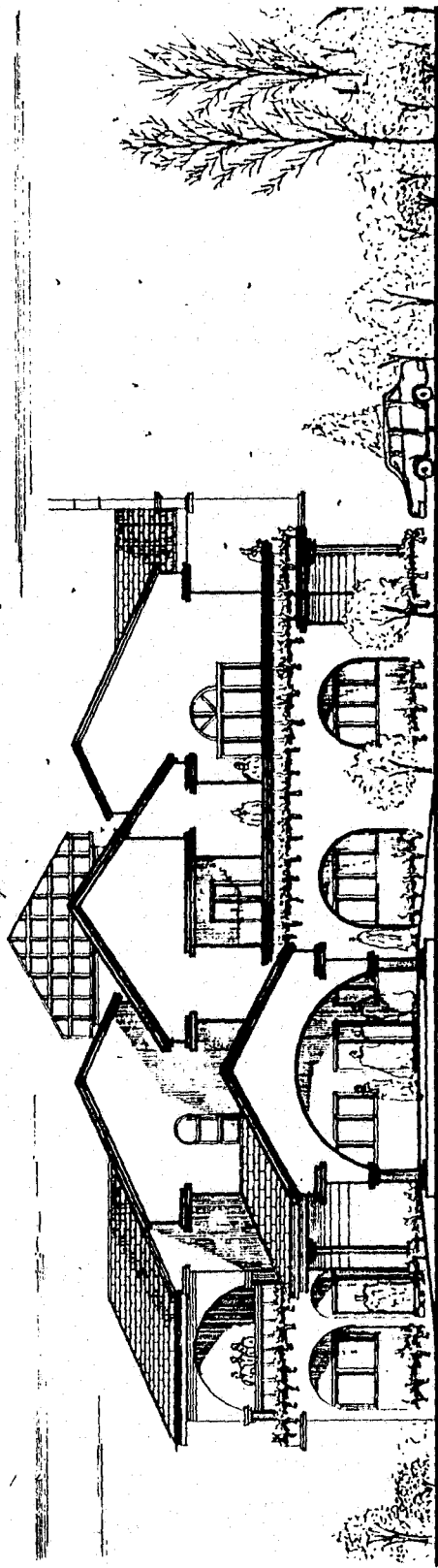


SECTION I-I



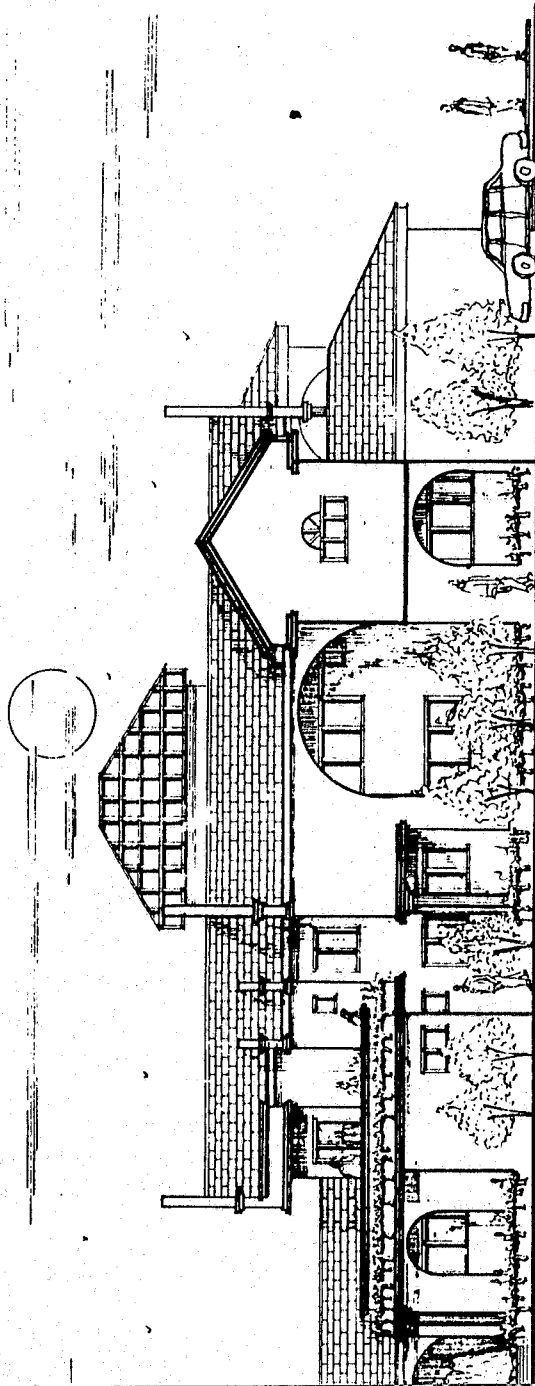
FAKESOPERA DESIGN
LAKESIDE PALACE
ENERGY CONSERVATION
IN BUILDINGS
ABEOKUTA OGBUN STATE
FAL OGBUNTI

OBBA'S RESID



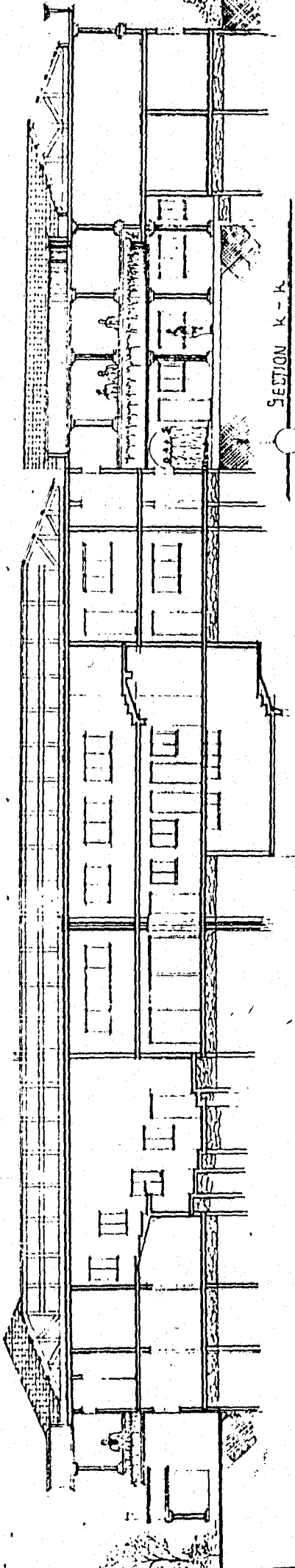
APPARACH ELEVATION

APPROACH ELEVATION



RIGHT SIDE ELEVATION

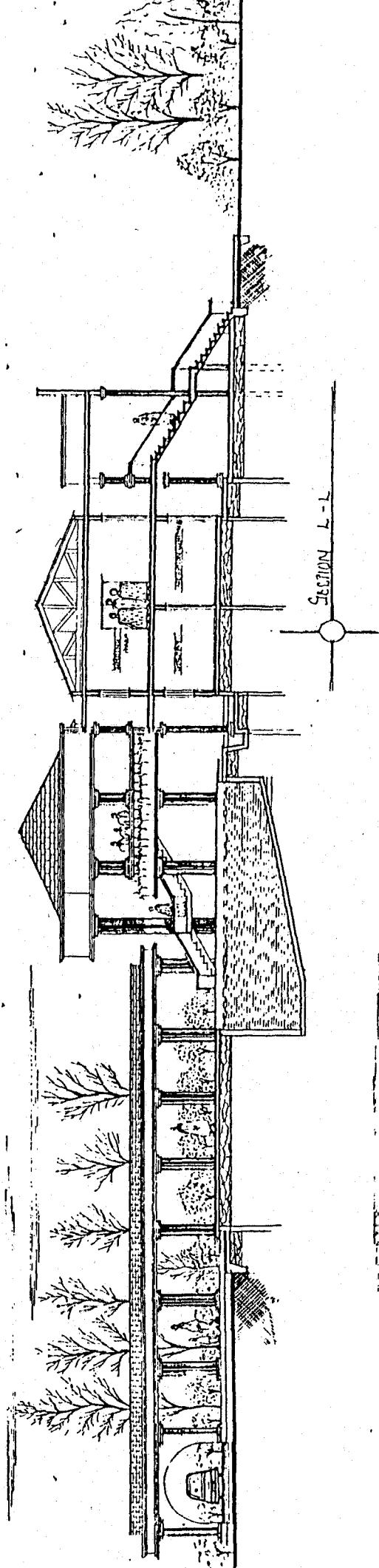
DESIGNED BY
W. OF EGAN AND PALMER
ARCHITECTS
1001 J. A. O'CONNOR STREET
NEW YORK, N. Y.
ENERGY LOW
IN BUILD
RBL

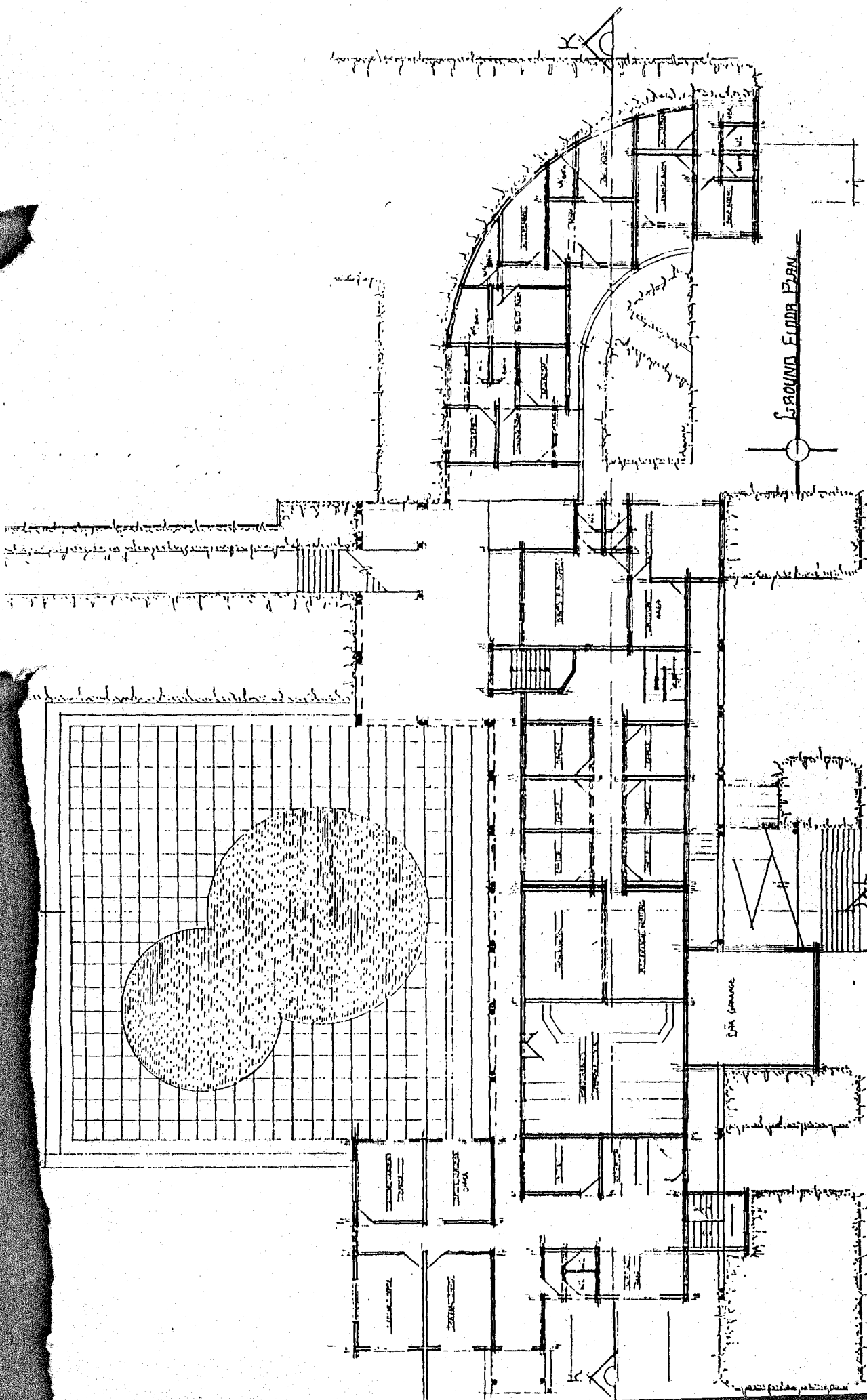


SECTION K-K

Dept. ARCHITECTURE 600 UNIVERSITY AVENUE ANN ARBOR, MICHIGAN
 PROJECT DESIGN FOR ALAKE OF EGALAN PALACE ABOCHUIS OGUN STATE
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 DRAWN BY AR 621 MEMORANDUM ABOCHUIS OGUN STATE
 DATE ABOCHUIS OGUN STATE

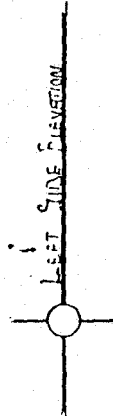
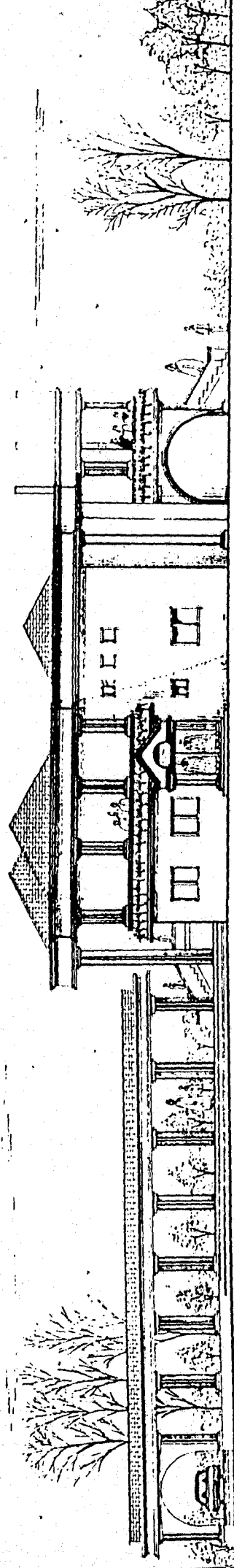
MAIN PALA





GROUND FLOOR PLAN

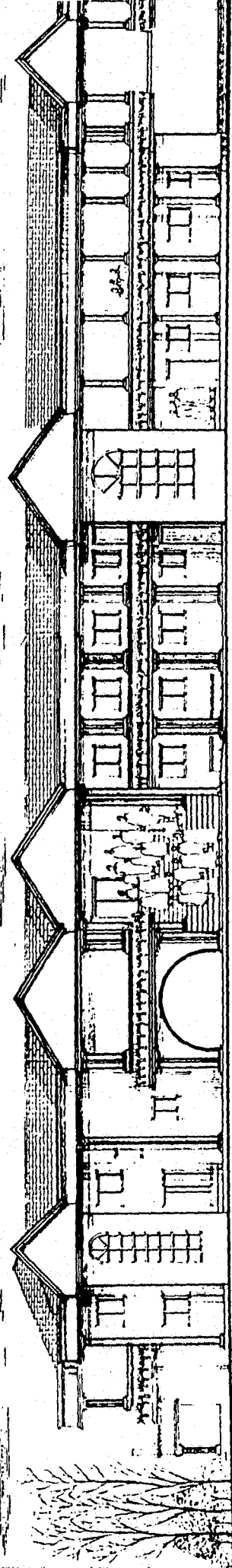
SCALE 1/100
 DATE
 DEPT. ARCHITECTURE DEPT.
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 DESIGNER
 ENERGY CONSERVATION IN BUILDINGS
 A CORN STATE



Name _____ Date _____ Scale _____
 Project No. _____ Drawing No. _____
 Drawing Title _____
 Author _____
 Checked by _____
 Date _____

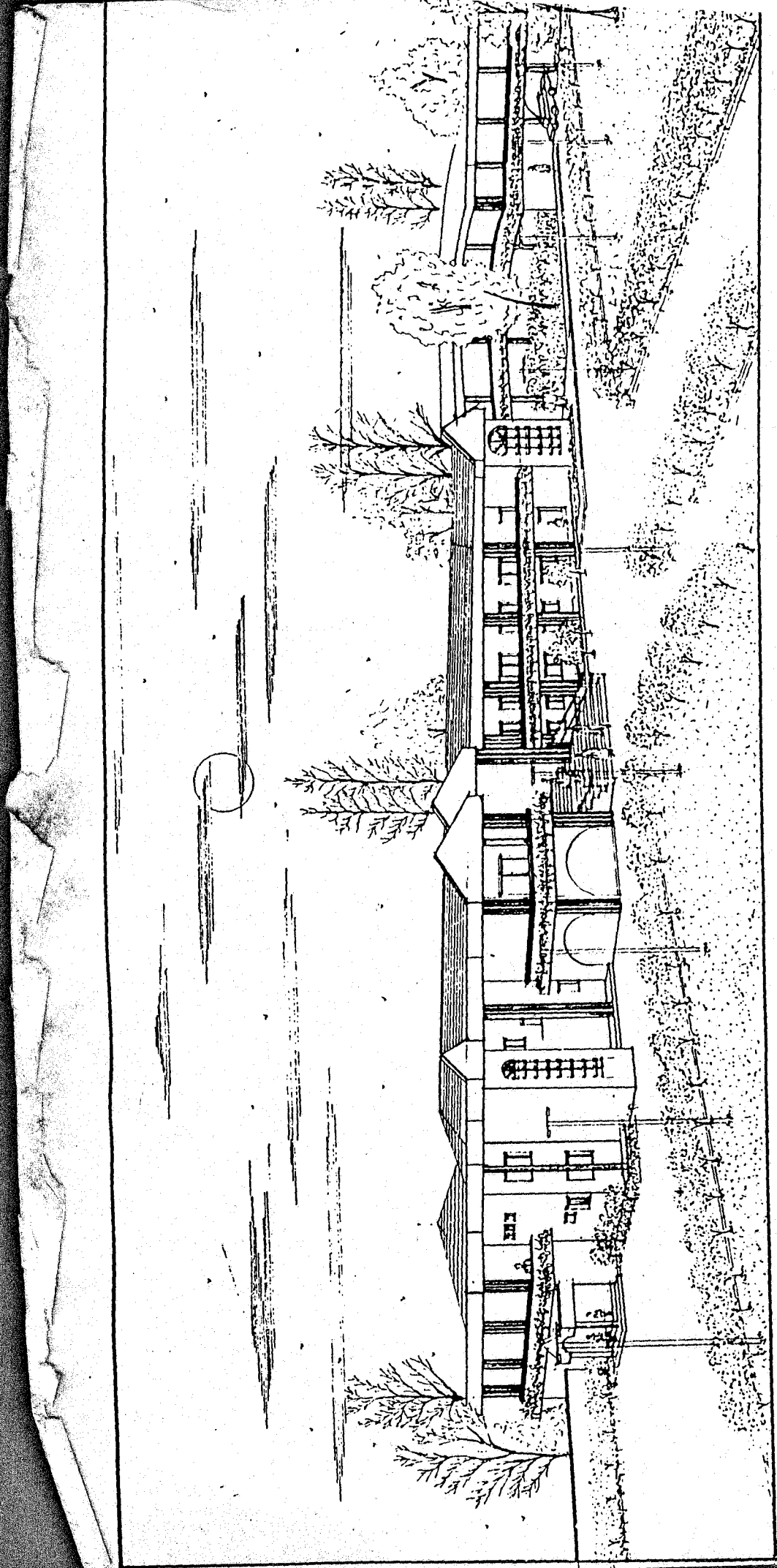
ALAKA OLEO PALM STATION
 ENERGY CONSERVATION
 IN BUILDINGS
 MEMPHIS
 TENNESSEE
 DATE: 10/11/2001

MAIN PALACE



REAR ELEVATION





PERSPECTIVE