A STUDY OF MULTI -TENANTED OFFICE BUILDINGS

(Tropical Commercial Bank Head Office - Kano)

BY

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A thesis submitted to the Postgraduate School Ahmadu Bello University, Zaria in Partial Fulfillment of the Requirements for the Award of a Master of Science Degree (M.Sc.) Architecture.

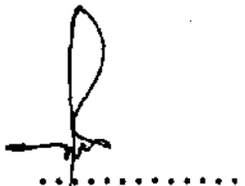
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AUGUST, 1991

DECLARATION

I hereby declare that the information contained here in is the result of the study undertaken by me and that it contains arecord of my research/site work and it has not been forwarded for publication in any medium (journal or Magazine).

All compiled information have been duly acknowledged by way of reference or otherwise. All sources of material for this study have been quoted and acknowledged.



.....
Signature

12/09/91
.....
Date

DEDICATION

This thesis is a dedication to the following:-

- My parents, the source of my being, the pivot around which my life revolves. May Allah bless you now and in the hereafter. and to
- Bunmi Ogundipe for your helpful patience nd understanding throughout the trying times-
- Also to my kid sisters and brothers - I hope this will serve as an inspiration to you to follow my foot steps.

CERTIFICATION

This thesis titled , A Study of Multi - Tenanted Office Buildings Tropical Commercial Bank Head Office Kano, meets the regulations governing the award of the degree of master of science of Ahmadu Bello University and is approved as contribution to knowledge and literary presentation.

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ACKNOWLEDGEMENT

'No man is an Island' is a common saying that rightly justify the fact that I could not have pulled through this thesis alone without the much needed assistance I got from all the people who have chipped in their contribution in seeing to the success of this programme, may Allah reward you abundantly for your innumerable help. I don't have to mention names you know your selves.

First and foremost praise be to the Almighty Allah for giving us life, and will to live and seek knowledge. I cannot escape acknowledging the efforts of my parents my supervisor Arc. W.B. Qurix y sisters and brothers especially Iyami Hafizu Lawal, the Head of Department of Architecture Dr. O. Solanke for his fatherly advise, and other staff of the Department of Architecture.

My gratitude also goes to the following colleagues in the 'game' of design, Enaholo Christopher 'Omons Oloja Godwin Idoko, Ezimako Arnold Nnamdi, Austin Pam, Mustapha Mr. Taiwo Adesanya and all *others who I cannot mention their names at various levels of their* study.

I will also like to acknowledge the authors of the books consulted during the course of research for this programme as major sources of information and all the architects whose design I used as case studies.

Also to follow in the acknowledgement are Osatuyi Olabode, Omotosho Abayami Cosmos, Mohammed Bello (Gambo) for your various *contributions in* kind or cash. Thank you all

ABSTRACT

Economic and wise planning and, proper sellection of site and building is most essential to a business or occupancy success of any tenant (large or small.) Proper location for the tenant is the first essential. Next comes the proper building that will speed up and give the tenant every advantage todays office technology offers.

Today with, office building construction in the increase (especially banks) in the country (an average of six per annum) supplying office space to satisfy our continuous growing economy along with new developments in business efficiency for office space planning, construction and maintenance is highly required, various parameters are to be studied in different offices and banks (which form tne focus of the design) by way of case studies and conclusion and recommendations suggested applied into office space planning in buildings. This is to establish the conditions which enable the occupant of the office space to take up occupancy in such office buildings as a result of the facilities provided there in.

Emphasis shall be given to, office planning to suit different requirements of different tenants by way rationalisation of functions and services in such an office.

TABLE OF CONTENTS

CONTENTS		Page
Title page		i
Declaration		ii
Certification		iii
Dedication		iv
Acknowledgement		v
Abstract		vi
Table of Contents		vii
List of Figures		xv
List of Plates		xvii
List of Appendices		135
Bibliography		133
CHAPTER ONE		
1.0	Introduction	1
1.2	Aims and Objectives	3
1.3	Research Methodology	4
1.3.1	Interview	4
1.3.2	Library Research	4
1.3.3	Study	5
1.4	Scope and Limitation	5
1.5	Users and clients	5
1.6	Motivation	5
1.7	Architectural Contribution	6
1.8	Tropical Commercial Bank Kano at a Glance	6
1.9	Forging Ahead	7
1.10	Organisational set-up	8
1.11	Managing Director's office	9

		Page
1.12	The Central System Operation (CSO)	9
1.13	Personnel Division	11
1.14	Recruitment Section	11
1.15	Industrial relations Department	11
1.16	Staff medical and Insurance Scheme Department	12
1.17	Finance Division	12
1.18	Foreign Exchange Department	13
1.19	Inspection Department	13
1.20	Investigations	13
1.21	The Audit Department	14
1.22	Administration	14
1.23	General Stationary Division and Archives	14
CHAPTER TWO		
2.0	An Insight into what a Bank is	15
2.1	History and Origin of Banking	16
2.2	Ancient and medical period	17
2.3	Banking in Nigeria - Historical survey	18
2.4	Types of Banks Operating in Nigeria	20
2.4.1	Savings Account	20
2.4.2	Fixed Deposit Account	21
2.4.3	Current Account	22
2.5	Functions of Commercial Banks	22
2.6	Central Bank of Nigeria	23
2.7	Development Banks	25
2.8	Nigerian Agricultural Cooperative Bank (NACB)	26
2.9	Nigerian Industrial Development Bank (NIDB)	26
2.10	Nigerian Bank for Commerce and Industry	27

		Page
2.11	Federal Mortage Bank of Nigeria	27
2.12	Merchant banks	27
2.13	Commercial Banks	28
2.14	Corporate Architectural in Nigeria	29
CHAPTER THREE		
3.0	General Philosophy of office (Building)	32
3.1	Types of office layout	32
3.2	Open Plan layout	33
3.2.1	Advantages	33
3.2.2	Disadvantages	34
3.3	Cellular plan layout	35
3.3.1	Group space layout	36
3.3.2	Corridor offices	36
3.4	Central corridor offices	36
3.5	Bank Architecture and Office Design	37
CHAPTER FOUR		
4.0	Analysis of study Areas and Case studies	44
4.1	Introduction	44
4.2	Study Areas	45
4.2.1	Architectural	46
4.2.2	Core Location	47
4.2.3	Advantages	47
4.2.4	Disadvantages	47
4.3	External core location (single zone)	47
4.3.1	Advantages	47
4,3.2	Disadvantages	48
4.4	External core location (double zone)	48

		Page
4.4.1	Advantages	48
4.4.2	Disadvantages	48
4.5	Central core	48
4.6	External core (single zone)	48
4.7	External core (Double zone)	48
4.8	Conclusion	51
4.9	Services layout	51
4.9.1	Types of layout	51
4.10	Traffic capacity	52
4.11	Corridor capacity	52
4.12	Means of Escape	52
4.13	Space standards	53
4.14	Space requirement and relationships	53
4.15	Depth of space	54
4.15.1	Very Deep space	54
4.15.2	Disadvantages	54
4.16	Deep space	54
4.17	Medium Depth space	54
4.17.1	Disadvantages	54
4.18	Shallow space	55
4.18.1	Advantages and Disadvantages	55
4.19	Circulation	55
4.20	Ancillary Facilities	55
4.21	Subjective	55
4.21.1	Internal Environment	56
4.21.2	Adaptability	56
4.21.3	Control	57
4.22	Finding from studies	57

Page

4.22.1 Core Location 57

4.22.2 Services layout 58

4.22.3 Traffic Capacity 58

4.22.4 Space Standards 58

4.22.5 Space Depth 59

4.22.6 Means of Escape 59

4.22.7 Adaptability 59

4.22.8 Control 59

4.23 Areas that require special consideration in office buildings 60

CASE STUDIES

4.24 Case Study

First Bank Head Office, Lagos 67

4.24.1 Planning and Appraisal 67

4.24.2 Design and Structure 68

4.24.B3 Shortfall of the Design 71

4.24.4 Conclusion 71

4.25 Case study Two 72

Bank of the North, Kano 72

4.25.1 Design Concept 76

4.25.2 Functions 76

4.25.3 Material and Finishes 76

4.25.4 Design Appraisal -Shortfall 77

CASE STUDY THREE 77

Continental Bank Port-Harcourt 77

4.26 Introduction 77

4.26.1 Design Concept 78

		Page
4.26.3	Services	78
4.26.4	Appraisal	78
	Case study Four	81
	West Deutche Landesbank münster	81
4.27	Brief	82
4.27.1	Fitting out and Installation	82
4.27.2	Spatial and Design Concept	82
	Case Study Five	83
	Liberty Owens Ford Glass Company Executive office	
4.28	Introduction	83
4.28.1	Concept	83
4.28.2	Construction	83
	Case study six	87
	American President Lines Building	
4.29	Introduction	87
4.30	Construction	87
	Case Study Seven	87
	First Miami National Bank	
4.31	Introduction	88
4.32	Finishes	88
CHAPTER FIVE		96
	Regional and site Analysis	96
5.0	Location	96
5.1	Historical Background	96
5.2	The People	98
5.3	Climatic	99
5.4	Temperature	99

		Page
5.5	Relative Humidity	99
5.6	Rainfall	100
5.7	Wind	100
5.8	Radiation	100
5.9	Site Analysis	105
5.9.1	Location	105
5,9,2	Topography	105
5.9.3	Vegetation	105
5.9,4.	Prevailing winds	105
5.9.5	Sun path	106
5,9,6	Services	106
5,9,7	Site Feasibility and Viability	106
5.9.8	Conclusion	107
CHAPTER SIX		111
6.0	Design Brief	111
6,1	Functional Requirements	111
6.1.1	The Brief	111
6.2	Facilities	112
CHAPTER SEVEN		115
7.0	Design Concepts and Criteria	115
7.1	Functional Organisation	115
7.1.1	Zoning	115
7.1.2	Zone Relations	115
7.1.3	Functional Relationship	117
7.2	Design Concepts	117
7.2.1	Planning Principles	117
7.2.2	Site Concepts	117

		Page
7.3	Site structure concept One	118
7.4	Site structure concept Two	119
7.5	Site structure concept Three	119
7.6	Adopted Concept	119
7.7	Form Concept	119
7.7.1	Iconic Forms	124
7.7.2	Symbolic Forms	124
7.7.3	Analogic Forms	124
7.7.4	Hybrid Forms	124
7.8	Floor Plans	124
7.9	Floor Storey	126
7.10	Elevations	126
7.11	Site Plan	126
7.12	Drainage	127
7.13	Services	127
7.14	Construction Methodology	129
7.15	Maintenance	129

CHAPTER EIGHT

8.0	Summary and Conclusion	130
8.1	Summary	130
8.2	Conclusion	131
	Bibliography	132

LIST OF FIGURES

		Page
1.	Central core location	49
2.	External core location	49
3.	External core Double zone	50
4.	Split core - Central location	50
5.	Double core - single zone, External Location	50
6.	Site Plan Bank of the North Headquarters Kano	73
7.	Typical floor plan of Tower Bank of the North Kano	73
8.	Ground floor Bank of the North Kano	74
9.	First Floor Plan Bank of the North Kano	74
10.	Ground floor plan Continental Merchant Bank Port-Harcourt	79
11.	First floor plan Continental Merchant Bank P/H.	84
12.	Ground floor plan Libbey Owens Ford Office building	84
13.	Plan and Section Libbey Owen's Ford office building	85
14.	Plan and section American President lines Builidng	89
15.	Section through Wall-American President Lines building	90
16	Ground floor plan first Miami National Bank	92
17	Pent House Plan - First Miami National Bank	93
18.	Map of Kano City	97
19.	Graph of mean Average Temperatures Maximum and Minimum	101
20.	Graph of Average Monthly Rainfall in Milimetres	103
21.	Map of Kano showing the two main Air currents	103
22.	Graph of Average monthly Relative humidity	104
23.	Site Location	109
24.	Site Analysis	109

		Page
25.	Functional Relationship Diagrams for Branch Bank and Head office	116
26.	Site structure concept - One	120
27.	Site structure concept - Two	121
28.	Site structure concept - Three	122
29.	Adopted site structure Concept	123

LIST OF PLATES

1.	Bank of the North Tower	75
2.	Entrance situation Bank of the North Kano	75
3.	Side View Continential Merchant Bank P/Harcourt	80
4.	Entrance Libbey Owens Ford Glass Company	86
5.	Model American President Lines Building	91
6.	Elevational View First Miami National Bank	95

CHAPTER ONE

1.0 INTRODUCTION

It is a common feature in the modern business and public world for individuals and or corporations in their attmept to diversity their businesses and to have effective control and coordination of their business concern to attempt at owning an office building or structure often called headquarters, central administration buildings or organization's house as the case may be. This they do by either going into tenancy agreement with other corporations who already have such office buildings and are willing to let it out, or they erect and own such office building which they too can let out to others, depending on the size of that organisation. More often than not, organisations especially those that have a very long term projections to stay in business (e.g. banks and financial institutions) prefer owning such office building for the fact that the longer they stay in the business the more they expand and grow and therefore the more space will they need for the accomodation of their administrative and management staff.

In a situation where such a corporation owns such a building, such corporations often enter into tenancy agreement with others by letting out their extra office space (often in the same building or some where around their premises). This can be done either by going into direct tenancy agreement or they employ the service of ptofessionals often Estate Managers or Estate valuers to act on their (owners) behalf.

But before any agreement is signed the would-be tenant must be allowed to inspect the facilities available in such an office building to certify that his requirements are met and he must be satisfied about, the suitability of the structure to suit his own purpose.

The objective of this thesis, therefore is to carry a thorough and careful study of existing office buildings and how they have been designed to satisfy many occupants each occupant having no interference with another occupant and to use a bank as the centre of focus - in this case tropical commercial bank Kano and the would-be tenants drawn mainly from the financial business community or institutions e.g. Insurance Companies, Investment Corporations and business with similar outfit and requirement in terms of managerial and administrative functions.

The sphere of the research will be conducted within such institutions to be able to come out with a design that will satisfy the owners and the occupants' average requirements.

As mentioned above the would-be owners - the Tropical Commercial bank - a commercial outfit will be given more emphasis especially its requirements as a commercial bank except that an attempt will be made to provide lettable office area (space) for the would-be tenants mostly drawn from similar business outfit.

The study will also taken into consideration though not infull but as a contribution to design the effect of different floor araes and sizes on output of workers in banking and allied institutions.

To be able to conduct this therefore, selected buildings that are multi-tenanted above 50% will be used as study cases this will be carried out in different States of the Country and abroad. So that a good inference and conclusion can be drawn. Since a study like this would have involved the whole building, specific study parameters will be used to limit the scope. These parameters are classified into two:-

- Architectural and
- Subjective

More emphasis will be placed on architectural facilities since the result obtained will be used in proposing a befitting design as envisaged.

1.2 AIMS AND OBJECTIVES

The aims and objectives of the study is:-

(a) First and foremost to undertake a careful study of office buildings that are multi-tenanted i.e. an office building that is occupied by different categories of tenants.

(b) In addition to the point mentioned above, the exercise will also attempt at proposing a building that will have lettable spaces to be occupied by allied businesses like Insurance Companies and Financial Corporations. The proposal is deemed therefore to harmoniously create a business atmosphere in the same building structure.

(c) Propose a complex that would be symbolic to serve as financial centre especially within a business inclined community like that of Kano.

(d) To contribute in improving the architecture of the CBD and kano city which is dominated by traditional buildings and to serve as a balance between the two.

1.3 RESEARCH METHODOLOGY

As this proposal involves a special study, the composition of which is not likely to vary much from existing situations. The thesis shall rely on case studies and office building in formulating a design brief and also consider the requirements of institutions in the finance business, since it is assumed that they will be co-tenants in the same building. Reference will however be made of relevant literature and an assessment of public opinion about the union being proposed.

The procedure for doing this will take the following form:-

1.3.1 Interview

This is an important instrument for carrying out a study (research) of this nature the interview will be centred particularly at the staff of existing corporate buildings (not limited to Banks alone) but also structures of similar architectural significance who satisfy the definition of business outfit mentioned above.

1.3.2 Library Research

Books papers(seminars) architectural journals, Journals of professional bodies e,g. Nigerian Institute of Bankers etc) and Magazines would be consulted with the aim of comprehending the ideas and views regarding the design principles of similar nature.

1.33 Study

As this exercise is entirely a study work, analysis of similar structures by way of case studies like the one being proposed will be taken into consideration (both within and outside Nigeria) with the sole aim of analysing problems conpounded and improvement will be made or new solution applied in its entirity.

1.4 SCOPE AND LIMITATION

In view of the nature of the research, emphasis will be greatly placed on aspects of Bank architecture as this would form the sketeton of the thesis. Appraisal of Corporate architecture within and without Nigeria will help form the brief, and the survey of operational procedures will be concentrated more on the bank. And areas that will come in the study will involve mostly the communual areas shared used by the different occupants.

1.5 USERS AND CLIENTS

The, bank will be used by the tropical commercial bank, Kano as headquarters and also by the would-be tenants, drawn from the business and financial organisation as mentioned earlier on, this is because of the fact that since their business.

Activities are sililar (differences only in mode of operation or services) this study and possible problems that may crop up during the study will be solved simultanously and shall be reflected in the proposed design.

1.6 MOTIVATION

Motivation to undertake such a study comes out of the mere fact that the business world of today comprising the various facets of banking, insurance, stock exchange etc are all interrelated in

one way or another, none of the various business outfits can stand on its two feet without having to do with the other, the Insurance Company would want money or loan from the bank to start its business and the bank too in return would want to Insure its securities in the form of cash or bills with the insurance company in case of unforseen circumstances and occurence of fire, theft, etc. It can be seen therefore that bringing all these together will make business transactions easier and faster - a necessity especially in a developing economy like that of Nigeria.

1.7 ARCHITECTURAL CONTRIBUTION

The possible contribution that is envisaged in this research work is to architecturally propose a design that will create a conducive business environment that will solve problems associated with multiple occupancy in office buildings, especially problems that have to do with used commercial areas either as a result of poor management or problems that were handicapped from initial design stage. It is also hoped that by the time the study is concluded some knowledge would have been acquired and areas not touched will serve as an inspiration for other scholars to undertake.

1.8 TROPICAL COMMERCIAL BANK KANO AT A CLANCE

The Tropical Commercial bank Limited was established in 1974 as a limited liability company under the name Kano Co-operative bank Limited. The bank started business on the 1st of April 1976 with one branch at No 10E Bello Road, Kano. This pioneer branch is presently the main branch of the bank.

The banks name was changed in 1988 to Tropical Commercial Bank Limited in order to give it a wider scope and image taking into consideration the increasing competition in the banking Industry. At the moment, the Bank has a staff strength of over 386.

Services Offered :

The Tropical Commercial Bank offers a wide range of services to its customers. These services include:-

i. Current Accounts
ii. Savings Accounts
iii. Foreign Exchange
iv. Letters of Credits
v. Bills for Collection
vi. Fixed Term Deposits
vii. Short term Deposits
viii. Agricultural Loans
ix. Equipment leasing
x. Loans and Advances
xi. Transfer of Funds
xii. NERFUND Facility
xiii. Offer of advice to customers on various projects.

1.9. FORGING AHEAD

In its effort to meet up with current trends in the Banking industry and its attempt to widen its customer base, the bank is committed to the development of a highly trained and efficient personnel and administrative team that would increase the efficiency of the state (this is the motivation for this project).

1.10 ORGANIZATIONAL SET-UP

Thr Tropical Commercial Bank, is still in the process of drawing up its Organisational structure, since its transition from co-operative to a Commercial Bank, since most of the functions found in the cooperative bank may not be reequired in the Commercial banking, but the basic departments, managerial and administrative functions is still the same.

Meanwhile there is no delegation of functions and there is a general categorisation of either Manager, Deputy Manager administration etc.of the service it offers.

In order to meet the challenge of training and developing their staff to man their growing operation the bank has embanked on training its staff a few years ago by the stablishment of a training centre.

To catch up with the trend of modern business services the bank has started the computerisation of its operations. By the end of the year, most of the banks operations would have been fully computerised.

The bank has also embarked on the opening of branches in most urban centres in different parts of the country an indication of success if one can say.

Among its projected expansion programmes is to build for itself a head office complex hopefully in the proposed central Business District. The existing departments include the

- managing Directors office, the central system operations (CSO)
- Finance Division,
- Personnel Division

- Administration
- Credit Division
- Audit Department
- Training Division
- Legal Department

1.11 MANAGING DIRECTOR OFFICE

The office of the Managing Director carries out the decisions of the board of directors of the bank. It is also empowered to ratify the proposal of different departments of the central office, that is the operational office.

1.12 THE CENTRAL SYSTEM OPERATION (CSO)

All decisions about the expansion programme of the bank are carried out by this department, after necessary approval from the Central Bank of Nigeria. They carry out feasibility studies and find out the most suitable sites for such projects. The value of any project is also decided by this department.

They also take charge of the board of directors' meetings by preparing the agneda for such meeting. They do so by finding out the problems confronting the bank at any particular time and forwarding such to the board of directors for deliberation.

The Central System Operation are also in charge of distribution of the share capital of the bank. The bank share holding structure has only been made open recently with the Kano State Government having 35% of the share capital, Local governments 25% Kano Cooperative foundation 5%, Private Individuals/ institution 25% Foreign Partners 5% and Bank Staff 5%.

Of all the sets of people allocated shares by the bank, it's only private individuals and institutions that are yet to subscribe to the shares in full as at the time of writing this report.

The Central System Operation is also in charge of all charitable affairs of the bank, that is giving of aids to those in need. The company's secretary is under this department who is a lawyer by ptofession and takes care of the minutes of the board meetings and other legal documents of the bank.

The office of the Bank's Public relations is under the department too. All advertisements of the bank are done here. In some banks the Public Relations Office is an independent section charged with the responsibility of ensuring that the Banks image good-will and reputation , remain undainted. In the course of dischraging this responsibility, the department deals with customers' complaints about the banks operations/policies, influential figures in government and industry, the mass media etc.

Considering the recent improvement in public awareness of Banking services and the level of competition within the industry of recent, the public relations department is supposed to be constantly on the alert to initiate appropriate measures for meeting the challenges. These measures include cordial rapports with the Mass Media, periodic publications/advertisements, handouts, the banks magazines, monitoring newspaper comments or publications for features bordering on the Bank or the banking industry and periodic "market" research for sampling public and even staff's opinion on the bank, its administration and operations. The bank's sponsorshi p of some public spirited discussions, events and projects are intiated by this department or part of its image making activities.

For example the Union bank Organise Competitive sporting activities, scholarship for a six year secondary Education for both male and female pupils with the best results in common Entrance Examination in Kano State, a whopping sum of Fire thousand Naira annual donation to the Torry Home for handicapped children Kano.

1.13 PERSONNEL DIVISION

This division takes care of the general affairs of the bank staff and are made up of the following sections:-

a. Recruitment section

b. Industrial Relations Department

c. Staff medicals and Insurance scheme

1.14 RECRUITMENT SECTION:- This section take care of the recruitment of staff in commensuration to individual skill.

1.15 INDUSTRIAL RELATIONS DEPARTMENT:- This unit is responsible for maintaining industrial peace and promoting communications, harmony and cordial relationship between the management and the employees totalling over 386.

In older banks like the Union Bank, the industrial Relations Unit is headed by the assistant to the senior general manager. In such banks Industrial Relations Unit addresses itself to the following, in order to effectively discharge their key tasks in a sensitive service organisations.

i. Correct interpretation and implementation of collective aggreements;

ii. Periodic consultations with Union representatives;

iii. Participation in meetings and or negotiations between Bank Employees Associations and the Staff Unions;

iv. Consider applications for sponsorship at secondary and post-secondary institutions by children of serving and retired staff.

v. Attention to requests for loans terminal benefits, the medical scheme, procurement of essential commodities and identification of staff members deserving the long service awards.

1.16 STAFF MEDICAL AND INSURANCE SCHEME DEPARTMENT

This is a seperate department under the personnel division. It takes care of staff medical and a twenty four hours Insurance scheme for staff members.

1.17 FINANCE DIVISION:-

This is made up of the following departments:-

i. Marketing

ii. Accounts

iii. Money market section

iv. Budget Division

v. SFEM Operation

vi. Central Foreign Exchange Division

vii. Investment and

viii. Computer Department.

1.18 FOREIGN EXCHANGE DEPARTMENT

This department undertakes the sensitive but challenging duty of processing controlling and monitoring all the foreign exchange business handled by the bank.

The department also maintains liason with the bank, overseas correspondents through whom foreign currency flows in or out.

An important part of the departments' operation is the handling of the Foreign Exchange Market transactions and deal with its intricacies and the recently introduced NERFUND facility.

1.19 INSPECTION DEPARTMENT

This department is headed by a chief Inspector who reports directly to the executive Director finance and planning. The departments' staff are drawn from branches and other departments and are broken up for effectiveness into sections such as:-

a. Field Audit

b. Fraud

c. Admin/Staff Welfare and Security.

1.20 INVESTIGATIONS

The department provides an excellent opportunity for the training and development of staff potential for future managerial positions in the bank.

The Inspection department works under laid down audit programme and visits all branches and offices of the bank to fulfill its functions and to enable it to report to the Directors General Management and External Auditors on the application of the banks' regulations and policies in branches and other departments, the quality and security of the banks Assets and records and the codition of the bank generally.

The departments' other function is to investigate unregularities and report its findings to the general management of the bank for action.

The department periodically visits all branches and offices of the bank to fulfill its function and reports are prepared which cover all aspects of the operations.

1.21 The Audit Department

This department audits the affairs of the bank. They are the internal auditors. The department is made up of audit and inspection. Irregularities and frauds in the bank are detected by this department.

1.22 ADMINISTRATION

This is made up of the following sections:-

i. Maintenance

ii. Property

iii. Protocol and Security

iv. Vehicle Insurance Scheme

v. Expenditure Control

1.23 GENERAL STATIONARY DIVISOON AND ARCHIVES

Technicians here carry out minor maintenance jobs and if the job is big the projects are given to firms. This section maintains the banks properties and estate matters. All cleaners are under this section. They also look after maintenance of properties including electricity, plumbing, furniture, lift, standby modifications of premises renovations of premises, minor construction and maintenance of all buildings (bank and residential).

CHAPTER TWO

2.0 AN INSIGHT INTO WHAT A BANK IS

Having discussed the aim and objectives of this thesis and outlining the areas of emphasis, it is now worthwhile to look at what really a bank is and how it can influence the main objectives of this study.

A Bank as defined by the Oxford Advanced Learners Dictionary is "an establishment for keeping money and valuables safely"[1], the money being paid out on the customers order,, Order here refers to an authorisation by the customer to the bank to pay him or his order by means of cheque, transfer or otherwise a certain amount of money.

This definition of a Bank as given by the Oxford dictionary applies to commercial Banks since there are other Banks carrying out different functions (specialist Banks) from the one stated above. A good example include, Development Banks (Agricultural or Industrial) Merchant bank, Cooperative Banks etc. These Banks are refered to as specialist Banks because they are to serve a particular purpose, e.g. Industrial Development Bank whose main aims is to increase the rate of investment in industries by advance loans to its customers in most instances at a reduced interest rate.

They may carry out normal Banking functions i.e. keeping money and vauables though, but in a very limited level. It must therefore be understood that even though an instituttion could bear the title 'Bank' it, may not carry out the normal functions of a commercial bank that is commonly known to everybody. An attempt will be made in the preceeding chapters and relevant Headings to analyse the function(s) of some of the Banks in the Banking business and their major areas of specialisation and to attempt a distinction of the different specialist Banks from the one in questrion which is a commercial Bank.

2.1 HISTORY AND ORIGIN OF BANKING

There exists vague historical evidence as to the nature of banking operations before the 13th Century. For the earlier period the distinction between Commercial Banks and other types of Banks is difficult to make with certainty. As A.D. Usher[2] points out, it is very difficult in this early period to differentiate between the activities of dealers in coin and in bullion from the activities of Banks. Money changers and Bankers were both often viewed as one and the same. Although there are very early records of loans and of deposits, it does not follow that they constitute evidence of banking activity in the sense in which it is defined today. Such early transaction may not have involve the creation of credit but may well have been limited to the acceptance of deposits and the making of loans. Thus what follows must be read and accepted in the light of these views and in the light of the commonly held opinion that Commercial Banking evolved only in the later medieval period from the much older functions of money lending and money changing.[3] Central banking is of comperatively recent origin.

2.2 ANCIENT AND MEDIEVAL PERIOD

There are records of loans by the temples of Babylon as early as 2000 BC. As temples were considered sacred place under the special protection of gods, they were not likely to be robbed and thus were considered safe depositories. Companies and traders also carried out banking functions connected with buying and selling of goods. A notable example in ancient Babylon was the Igibi Bank that flourished in the 6th century. In Greece by the 4th century B.C. financial activities were being performed by the temples, by public bodies and by private firms. The latter accepted deposits, made loans, tested and changed coins and arranged credit transaction between cities to avoid the movement of specie.

Records from Cenoan and other Italian cities go back to the 12th century but it is not until the 14th century that a large volume of evidence is available. By this time the trade of Europe had developed along two main lines.

i. The Italian cities and, later Bruges, Antwerp and the towns of the Hanseatic league became centres of warehouse trade and developed local Banking systems

ii. At certain centres of communications there grew up the great international fairs of which champagne (an ancient province of france) are the most famous, with their own system of finance through ambulatory bankers and also their functions as centres for international clearings. Distinct from these systems were the international financiers, who were concerned, among other things with the finance of the international wool trade, the collection and transmission of papal revenues and making loans to kings and princes.

Whatever the case may be, of how where and when, the Banking systems started, (at the different areas) from medieval to modern Europe, one fact remains clear that the word "Bank" itself comes from the portable benches or counters over which the money changers of medieval Italian cities transacted their business in the public squares. Heaps or mounds of coins were set out on display on these benches to attract customers hence the Latin word 'bano' (bench) came to symbolise the business, and was carried over into the Italian 'banca' (bank) and the French 'banque' (Bank). Many modern financial terms are derived from this source. Thus 'bankrupcy originally referred to the overthrowing of the benches of the money changers by dissatisfied customers. Similarly, many other terms used in financial transactions can be traced to the languages of early Italian, Greek, and oriental peoples who extended trade and commerce through Europe hundreds of years before the dawn of the christian era.

Even though financial institutions almost totally disappeared from Europe during the bank Ages, there is a surprising continuity in the history of Banking. Banking apparently started in Asia, it was extended into Europe, and thence to the Americas. Australia, African and the most remote countries.

2.3 BANKING IN NIGERIA - HISTORICAL SURVEY

The Business of modern banking was started in Nigeria in 1892 by the Bank of British West Africa to which the standard Bank of Nigeria LTD now First Bank of Nigeria, is a successor bank. There was no banking legislation of any kind then. There was neither a Central Bank nor a Ministry of Finance until 1950,[4] prior to 1952 there were all kinds of speculative investors who started mushroom banks which were usually operated for a while, and after collecting deposits from their customers would suddenly disappear with their funds, resulting in large sections of the banking community being swindled.

However this period also witnessed the existence of reputable banks like the Bank of British West Africa, which secured, monopolised such banking business as was prevalent then until about 1925 when Barclays Bank acquired the colonial Bank and opened a branch in Lagos. The National Bank of Nigeria Limited was established in 1933, while African Continental Bank Limited came into being in 1947. The United Bank for Africa Limited was established initially as the British and French Bank in 1947 soon after the second world war, and took on its present name in 1961. Most of the banks operating in Nigeria at this period were incorporated abroad, and only came to do business in Nigeria, and as such were basically foriegn companies, until the passing of the companies Act 1968, part 'X' of which made it obligatory for all foriegn companies to register in Nigeria.[5] All the other commercial and co-operative banks were established in the late sixties or early seventies, all of them being wholly owned by Nigerian institutions and individuals. Basically their activities centre on Commercial Banking relating to the financing of exports and imports and not much on industries.

On the other hand, the business of merchant banking did not come into being in any meaningful form until 1961 when an outpost was opened in Nigeria by Hill Samuel and Company, a United Kingdom Merchant Bank, under the name of Phillip Hill Limited. Also John Holt Limited operated a kind of the name of Nigerian acceptances the two companies later merged under the name - Nigerian Acceptances in 1969.

In August, 1973 United Dominions Corporation (Nig) Limited, a wholly owned subsidiary of UDT International which is in turn wholly owned by United Dominion Trust Limited, a hire purchase Company received approval to convert its hire purchase business into that of Merchant Banking in a bid to avert the contr vation of hire purchase regulation of 1968.

Later the First National City Bank of New York (Nig) Limited (City Bank) First National Bank of Chicago Limited and Chase Manhattan Bank Limited were established in Nigeria sometimes in 1975, the Nigerian Industrial Development Bank Ltd in Partnership with Morgan Guaranty Trust Company of New York, Baring Brothers of London and National Insurance Corporation of Nigeria transformed. (ICON Securities Limited wholly owned subsidiary of Nigerian Industrial Development Bank Limited) into ICON Limited (Merchant Bankers)

As a result of the Nigerian Enterprises promotion Act of 1977, the City Bank went into voluntary liquidation and since then there were five merchant Banks in Nigeria until recently when new ones were opened.

2.4 TYPES OF BANKS OPERATING IN NIGERIA

There are five main types of operating banks in Nigeria and most developing countries these include:-

i. The Central Bank

ii. Commercial Banks

iii. Development banks

iv. Merchant Banks and

v. Saving Institutions.

Before describing each of the banks mentioned above and the functions they carry out, it is worthwhile if a brief description is made of some terms as they are applied in the Banking business especially those offered by Commercial Banks.

2.4.1 Savings Account

This is a bank deposit kept with a bank, for the purpose of earning an interest. There are usually differences between interest rates offered by Commercial Banks, hence interest paid is determined by individual banks' base rate.

However, such rates usually fluctuate within individual bank. Savings account deposit is operated by means of a 'Passbook'. A large proportion of savings account holders in Nigeria are low and middle income earners. No references are required to open savings account deposits since they are not operated with cheques. A depositor is required to notify the bank seven days prior to the day he intends to withdraw money from his account, however, this requirement is usually waived and the depositor can withdraw money from his account on demand. Though he has to forgo seven days interest on the sum with drawn.

Fixed deposits and savings account holders do not have the benefits of cheque book.

2.4.2 Fixed Deposit Account

This is also refered to as time deposit. It is a deposit of a fixed amount kept with a Bank by its customers for a specified period of time and which attracts an agreed rate of interest. Interest 'floor and Ceilings' are fixed by the Central Bank, and the actual rate of interest is arrived at after negotiations between the customer and the branch Manager, but it has to be within the limits fixed by the Central Bank. Fixed deposit accounts are not with drawn on demand and the amount can only be withdrawn either on the expiring of the time period for which the deposit was kept or by a notice of a certain number of days by the customers. Where a customer withdraws the amount deposited before the expiration of the period, he or she is not entitled to any interest on the fixed deposit. Hence a customer wishing to operate such an account has to approach bank officials for discussion and agreement. The Commercial Bank issues a deposit receipt for the fixed deposit account based on interest rate which will be at current rates.

Interest rates and time period for the fixed deposit is usually renegotiable.

2.4.3 Current Account

These are deposits which are for current money that is, not intended to be saved. It is the normal banking account that is operated or can be operated on a day-to-day basis. It is a demand deposit and the holder is allowed to withdraw money from his account.

2.5 *FUNCTIONS OF COMMERCIAL BANKS*

i. Accepting Deposits :-

This is one of the major prime functions of Commercial banks. Deposits are cash placed in banks by depositors or customers, claims of money, like cheques placed in depositors' accounts and or bank loans and investment which increase debtors bank deposit balances. These deposits are subject to payment on demand or after due choice.

There are two types of deposits that are accepted by most commercial banks. These are primary Deposits and derivative deposits.

Primary Deposits:- These are cash and claims to money placed in deposit account.

Derivative Deposits:- These are deposits from bank loans and investment operations. There are three types of deposits that are generally accepted by Commercial Banks. These are Savings, Current, and Fixed deposit.

ii. Advances:-

These are monies lent by a bank to his customers. Generally commercial banks make these types of advances - these are

iii. Overdrafts:-

This is a facility granted to trusted current account holders only. The customer is allowed to withdraw more money than he has in his/her account i.e , he can withdraw a sum of money over and

above the total amount of credit in his account. This is in return for an undertaking on the customers part, an undertaking usually reinforced by the handing over to the bank of some collateral which the bank may dispose or auction if the customer fails to pay the money he draws. The amount of money to be withdrawn by the customer is usually subject to a pre-arranged limit arrived at, by agreement between the customer and his bankers.

Interest is charged on such overdrafts. The rate varies with the method of granting the overdraft, the overworthiness of the customer and the length of time for which the funds are borrowed.

The bank manager must be satisfied that the customer is trustworthy and credit worthy.

iv. Loans:-

This is another function offered by Commercial Banks. The banks make profits by advancing loans. It is open secret that they lend out more than they receive as deposits. Only a small provision of the total money given out as advances is kept to meet the cash requirements of the clients. The more money they lend, the more profits they make. But lending is a risky operation. So Commercial Banks have to strike a healthy balance between liquidity and profitability.

Having carefully described some, of the terms associated with banking Commercial or otherwise a more comprehensive analysis of each of the banks will be made and some of the services, they offer.

2.6 CENTRAL BANK OF NIGERIA

Today the most important financial institution in any country is the Central Bank. According to Dr. Kock, 'a Central Bank constitutes the apex of the monetary and banking structure of the country and performs a number of important functions in the economic interest of the country

concerned.[6] A central bank is responsible for safe guarding the financial stability of the economy.

In 1952, an adviser to the bank of England, submitted to the Nigerian Government a report on the desirability and practicability of establishing a Central Bank in Nigeria and its history can be dated back to 1912, when the West African Currency Board (WACB) was established for the purpose of issuing currency notes and coins which were accepted as legal tender money throughout British West Africa.[7] Therefore in 1954 the international Bank mission's report on the Economic Development of Nigeria recommended the creation of a bank of issue with limited functions. These to provide all the necessary legal backing and guidance the Central Bank of Nigeria Ordinance was enacted.

The Ordinance states in general terms that the principal objective of the bank shall be to issue legal tender to maintain the country's external reserves in order to safegaurd the international value of the currency, to promote monetary stability and a sound financial advicer to the Federal Government.

The bank first opened for business formally on the 1st of July 1959 and has since been actively chanelling and mobilizing fund into production investment and promoting economic development.

The need to promote the growth of financial institutions was also speared in its ordinance as to subscribe to hold and sell shares of any corporation set up with the approval of, or under the authority of the Federal Government for the purpose of improving the financial machinery for the financing of economic development of a money market or securities market.

At the local level, the Central Bank has through the Rural Banking Scheme (RBS), the community Banks (CB) and the Peoples bank of Nigerian (PBN) contributed greatly to the development of trade and agriculture.

Under these programmes commercial banks were instructed to open their branches in the rural areas with the aim of mobilising rural savings as well as issuing credit to rural farmers. This scheme (RBS) was started in 1976 and by the end of the first phase of (1977 - 1981) nearly(200) tow hundred banks were established in rural areas.

Another scheme similar to the one above, the Agricultural Credit Guarrantee scheme (ACGS) started in 1978 for the sole aim of developing of agriculture by guaranteeing that 75% of all loans and advances granted by Commercial and Merchant banks were for Agricultural Development. Banks that fail to comply with this order were made to deposit the amount of the short fall with the Central Bank. In recent years such deposits have been remitted to the Nigerian Agricultural and Cooperative Bank (NACB) for lending to farmers.

In additions, the Central Bank in collaboration with the World Bank initiate, coordinate and execute various agricultural development projects e.g. the Agricultural Development Projects, erection and construction of irigation dams , storage facilities, livestock, breeding, establishment of Plantations etc.

2.7 DEVELOPMENT BANKS

Development Banks were established to hasten the development of non-oil sectors of the Nigerian economy by providing capital and managerial advise to stimulate and sustain rapid economic growth, there are basically for types:-

2.8 NIGERIAN AGRICULTURAL AND COOPERATIVE BANK (NACB)

This was established in 1973. Its objective as stated in the second National Development Plan is to ensure sound credit advancement to various subsectors of Agriculture. Since inception, the NACB, has not recorded much progress because of shortage of funds.

Fragmentary information suggests that the NACB bank portfolio is largely in favour of larges scale farmers and corperative organisations. From time of inception to this day it has issued out a loan of over 1 billion Naira.

The bank derive its capital from three major sources:-

i. From the Federal Government

ii. From the Capital Market

iii. From the Exchangers grants and loans.

2.9 NIGERIAN INDUSTRIAL DEVELOPMENT BANK (NIDB)

The bank was established on the 22nd of January 1964. Since its establishment the NIDB has played a very important role in Nigeria's drive towrads industrialisation. The bank is undoubtedly the most important single public sector vehicle through which finance and technical know-how are made available to entrepreneus who are interested in establishing manufacturing industries in Nigeria.

The NIDB provide both medium and long-term capital for public sector enterprises. It also provides capital for private sector undertakings up to a limited extent. In order to qualify for consideration for the supply of capital by the NIDB the project should be certified 'economically desirable', technically feasible and commercially viable by the minstry of trade. Another consideration for the provision of funds is the managerial competence at the disposal of intended industrial projects. The finance Supplied by the bank can be in the form of direct subscription underwriting of the equity preference stock and debenture, medium and long term loans.

Other functions the NIDB performs include assistance given to both indigenus and foreign entrepreneus in the preparation of projects, market surveys and procurement of domestic and foreign managerial assistance.

2.10 NIGERIAN BANK FOR COMMERCE AND INDUSTRY

The Nigerian bank for commerce and industry was established in 1973. It serves as the apex institution in the field of financing medium and small scale enterprises. It is geared especially to private sector financing. The finances of the bank are drawn from loans from the Federal Government refinancing by the CBN and Capital raised on the capital market.

Medium and small scale enterprises brought to it by state industrial Development Coperations are given financial accommodation by the bank. The bank places more emphasis on industrial enterprises in the private sector, and prepares feacibility studies for clients and 'hatches' innovative ideas for private industrialists.

2.11 FEDERAL MORTGAGE BANK OF NIGERIA

The rapid growth of urban population after the civil war led to acute shortage of housing in urban centres. To provide housing to the grooming population, the FMB was established in 1977 to provide long term credit to individuals and organisations for housing development. It also constructs and rent out houses to public workers at affordable rates.

2.12 MERCHANT BANKS

Merchant Banks are specialised banking institutions for assisting industry and commerce. They assist in the sale of shares, underwrite some of the shares issued, provide expertise regarding timing pricing of shares of companies provide funds for privately placed equities and give investment advice to clients. They also perform general banking functions like Commercial Banks.

Merchant Banking began in Nigeria in 1960 and there is a daily increase in number of merchant banks in the country today that one may loose count compared to about fifteen different types as at 1988 with about

thirty-two branches scattered through the length and breadth of the country. Among the fisrt fifteen merchant banks are:-

i. ABC Merchant Bank
ii. Continental Merchant Bank
iii. Financial Merchant Bank
iv. First City Merchant Bank
v. First Interest Merchant Bank
vi. First Interstate Merchant Bank
vii. ICON Merchant Bank
viii. Indo Nigeria Merchant Bank
ix. International Merchant Bank
x. Merchant Bank of Africa
xi. Merchant banking Cooperation
xii. NAL Merchant Bank
xiii. Nigbel Merchant Bank
xiv. Nigerian - American Merchant Bank
xv. Nigerian Merchant Bank

2.13 COMMERCIAL BANKS

They are also known as joint clock banks. They constitute the most important type of banking organisation in a modern economy. They carry out the ordinary banking business of receiving deposits advancing loans and discounting bills in addition to the part they, play in financing internal and in many cases external trade.

In a developing country like Nigeria, the lack of adequate financial institutions, to channel the excess and surplus funds into productive investment, seems to be a major problem affecting capital formation especially in the rural areas, this is the problem of channelling the flow of funds and transforming them into actual investment.

Commercial banking institutions developed under two different systems in different countries, there are the branch banking and the unit banking system, the unit banking system usually consists of single unit exterprises created by local individuals. A typical unit bank operate an office and is neither controlled nor owned by other banks.

The branch banking system is the type practiced in Nigeria . In this system, a typical commercial bank is a very large institution having a large number of branches scattered all over the country or over a large portion of it.

Bank branches in Nigeria are generally housed in free-standing structures, used only for the purpose of banking. A very few still operate in multi purpose buildings to provide limited services at a convenient location.

The big three commercial banks in Nigeria are:

i. The First Bank of Nigeria

ii. The Union Bank of Nigeria

iii. United Bank for Africa

These banks control over 50% of commercial banking business in Nigeria.

2.14 CORPORATE ARCHITECTURE IN NIGERIA

Nigeria having only recently, wittnessed a sudden rise in the number of corporate and financial institutions can be said not to have much of the 'Corporate architecture phenomenon as witnessed in developed countries of the West. Unlike most developed nations which had corporate bodies for more than two centuries, Nigeria has just started noticing this experience especially in the banking and commercial sectors. This is evident in the upsurge of the number of banks in the last few years.

Greater percentage of the banks today came into being in the last 10 years.

This trend has kept Nigeria with no traditional bank architecture as the whole phenomenon looks imported. The recent increase in the number of banks could be attributed to the discovery of oil and its subsequent effect on the other sectors of the economy. The increased economic activity in terms of volume of trade monetary matters, letters of credit financial issues etc, which are the pivot of banking and economic trade, engineered the need for well planned interior and exterior environments for these activities. However, as there was no long term planning or projection most of the banks had no space or accommodation in which to do business so most of them took up any available accommodation in residential bungalows and in open shops. They therefore ended up converting the rented buildings to suit their requirements.

Only few branches and Head offices of most of the new banks often referred to as 'newbreed' own their offices and the rest are tenants in other buildings.

The whole impetus and provision of bank building could be concluded as basically utilitarian and of recent expressionist. No definite trend had existed in building corporate architecture in Nigeria except recently when the bigger banks have their head offices in the different parts of the country especially in Lagos, e.g. First bank , Savannah Bank, Continental Merchant Bank, NAL Merchant Bank etc.

Conclusively, the trend of this latest adventure of corporate buildings in Nigeria particularly, is an interesting phenomenon for architects to dwell into more and more.

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CHAPTER THREE

3.0 GENERAL PHILOSOPHY OF OFFICE (BUILDING)

An Office is a place of work, the function of which is to provide a conducive environment in which work can be carried out comfortably. But how comfortable an office depends on the size and facilities in the office that are provided to raise the productivity of the workers in it (Office). Since one cannot do a satisfactory work in an uncomfortable offices most office buildings have been designed out of the careful combination of structural, technical and economic considerations for no reason other than increasing productivity. Based on this combinations therefore, different types of offices exists in different buildings. A short discussion of the different types of office layout is given below:-

3.1 TYPES OF OFFICE LAYOUT

To have a good grasp of the types of office layouts, it will be necessary to have a background knowledge of the elements of the building.

Generally speaking, there are four elements of an office building with each having a different life span.

(a) The Shell:- This is made up of the structure, core, and skin which are intended to last as long as the building is in use' perhaps for over forty years.

(b) The Scenery:- This is made up of partitions, furniture and furnishing related to the life of a tenancy or a particular stage of an organisations development, lasting perhaps five to seven years.

(c) The Set:- This refers to the constant arrangement of office 'Scenery' to meet changing short term needs with the time scale sometimes measured in weeks.

(d) The Service Core: This has to do with basic installations such as lifts or mechanical services which usually last twenty to twenty-five years.

Services at a small scale such as electrical fittings and lighting fittings will change with the scenery and must be capable of accommodating the shortest term requirements of the set.

Moreover, while considering the client brief, and how the requirements can be accommodated within the constraints of the site and relevant legislation, it (the brief) should not be seen as a rigid set of instructions, but as a guide which will develop with the design process. At this stage only sufficient statement of intent is required to establish the overall strategy and to decide quickly on basic structural elements.

The first step is to determine the type of business Organisation (in this case a bank) which can be described by the degree to which work places are distinguished by area, number of pieces of furniture and the arrangement of such.

Having discussed the elements that are combined to form an office layout, an attempt will now be made to describe the different types of office plans. There are basically two types of layout:-

- The Open Plan Layout and
- The Cellular Plan Layout.

3.2 OPEN PLAN LAYOUT

These are spaces provided for a large number of workers having a common role and task. The spaces have partitions, which implies that flexible partitions can be used at will to demarcate end of function. These types of offices are often large and in most cases artificial lighting and ventilation are required.

3.2.1 Advantages

It is easy to rent out such types of offices because of its flexibility in terms of space flow.

i. It saves space. Corridors are cut to a minimum and there are no wasted corners.

iii. Excellent supervision that, is it encourages promotion of work with adequate supervision.

iv. Repelitive tasks can be skillfully organised

v. Equipment in this type of office can be allocated anywhere although more ideal centrally, if the floors are free of columns,

vi. Ease of communications especially in the new trend of office design where partitioning is not required to facilitate easy communication,

vii. Good work flow, It reduces the pain of having to move from one room or enclosure to another,

viii. Changes can be made in the layout or arrangement of furniture (i.e. desks, seats etc) with ease,

ix. Transfer of documents or information is facilitated with ease because of the ease of movement of workers, in most cases no obstructions,

3.2.2 Disadvantages:

i. It can be an untidy or unbusiness like if not well planned or supervised;

ii. There could be distractions, especially if workers of different departments are made to work in one office,

iii. There is no private space for each office worker or individual since every worker occupies a given space in the same floor area,

iv. Over crowding, which may result in the poor ventilation of the office space.

This type of office plan is sometimes referred to as office landscaping which is achieved through:-

- Assymetrical layout of the furniture, usually in groups facing different directions. The installation of indoor plants in troughs at inter throughout the office.

- A total concept involving such thing sd filled concepts, soft lighting, air conditioning etc,
- The inclusion of manager's desk inside the open office, which may be with or without partition,
- It may have rest areas where workers can have drinks and refreshments whenever they want to,

The following points should be taken note of:-

1. In open work areas the supervisor should be located adjacent to the receptionist or secretary. Access to the secretary's work stations should not be through the work area;
2. Desks of employees having considerable visitor contact should be located near the office entrance. Conversely desks of employees doing classified work should be away from entrances;
3. Desks should face the same direction unless if there is a compelling functional reason to do otherwise. The use of this technique provides for straight work and patterns, facilities communications and creates a neat and attractive appearance;
4. In open area, consideration should be given to placing desks on rows of two this method will permit the use of demountable partitions as a divider for those activities which require visual privacy while still obtaining maximum utilisation

3.3 CELLULAR PLAN LAYOUT:

This is referred to as the technical office layout where a series of separate rooms usually occupied by one or two occupants are set against the external wall opening into a general corridor. There may be some large rooms and some communication doors and now there are examples of cellular layouts in internal spaces. The main problem in this type of layout is that it lacks supervision and continuous flow of work.

3.3.1 Group Space Layout:

The group space also fall under the cellular layout and it is room space that differentiates the group space from the cellular layout style.

The group space layout is made up of a one separate rooms of a size suitable for occupation by groups of people numbering 4 - 10. Such room with some sound absorption may be carpeted and furnished each individual work station seems to offer an appropriate form of accommodation for terms of groups of office workers of varying status.

3.3.2 Corridor Offices:

- Advantages:-

i It provides privacy as partitions prevent over looking and over hearing;

ii Single rooms are easily provided;

Disadvantages:

i - Space is wasted in the corridors and corners;

ii - The shape of the building makes it difficult to get more than a small of people together in one place either as a work group or for conferences, supervision is difficult;

iii - Partitions are expensive and cumbersome and inhibit future changes often despite growing inconveniences.

iv - Not everyone who need one will get a single office, so people have to share offices small shared offices provide the poorest conditions for mental concentration

3.4 CENTRAL CORRIDOR OFFICES

The Central Corridor type of offices are offices arranged in rows on both sides and connected to one another by means of corri dors leading to every door for easy communication.

The central corridor type is highly noted for its inability to provide adequate natural lighting and also poor natural cross ventilation.

There is also the single banked corridor type. These are offices arranged singlly in a row and are connected to one another by corridors. Some of the advantages of this type of country and system are as follows:-

i. It facilitates effective natural cross ventilation;
ii. There is availability of adequate natural light as rooms are not too wide;
iii. Single rooms are easily provided and this will enable the provision of many private offices;
iv. Privacy is ensured and this will encourage the mental concentration of individual staff
v. Signs of status are visible:
vi. Individual can control his surrounding which includes the micro climate of such;
vii. It facilitates effective working integration:

3.5 BANK ARCHITECTURE AND OFFICE DESIGN

Banks have often been refered to as instruments of material profit, social advancement and political power and that is one reason why banks have often been indistinguishable from palaces, and why banking today, despite its different roles continues to attach importance to the expression of its buildings. With this at the back of the mind therefore, banking architecture can be viewed as a wholesome if careful analysis is done on it.

The peculiarity of bank architecture as it transcends the economic structure of a country cannot be over emphasised, since the smooth financial management of a country is partly or wholly a function of where this financial management takes place which is of course in the buildings of

structures that house these institutions which may, not be limited to banks alone, but also to other institutions as well, for example insurance companies, securities market capital institutions etc.

The point here is that, banks and other financial institutions must not necessarily have a stereotype model of how their offices or structures must be, since there are different categories of them and offering different services from the normal banking we know, a bank whose services is purely commercial may not have a similar structure like another one that offers its services to a select few e.g. Merchant Banks.

What ever the case may be therefore, a bank is a bank inrespective of whether its services are over the counter or behind closed doors there must exist some similarities in planning and layout of the office.

In the past, the bank's main function was to hold cash and valuables, and they inturn lend out to their customers on a specified interest rate and so made a livehood. Thus the architecture truthfully exhibited an image fortress-like security and stability.

However, the role of banks as keepers of valuables has diminished and as more customers have cheques accounts the demand for cash business has declined comparatively and that for credit transfer, loans and general financial advice has grown.

Banks nowadays, are buildings in which financial transactions are conducted, though such buildings also serve as custodians for cash and valuables, they however still represent symbols of security, money and power hence their image in the public and private life is still held in high esteem.

But new bank merchandising systems have been followed by a new bank architecture which is more flexible. Stability and strength are still to be preserved in the image of the bank but not to extremes.

In view of the increased mobility of our time, the banks today, have arrived at a new expression and image for themselves. The banks today combine excitement and attraction with dignity and a modern feeling of solidity and power. They have been made more inviting, through the use of elements in the so-called modern architecture like glass colour concrete and art.

Flexibility, is therefore the watchword in bank design. The bank of today cannot operate under the old notion that a bank is just money keeping alone especially when its image is concerned with public activities along with regular banking activities.

The area in which the banks transactions take place must be conducive attractive and friendly a minimum obstruction should be maintained between the customers and the banks representative.

However, before any design requirement can be made, the building requirement (both personnel and departmental) must be firmly established and basic philosophy of banking operations and building design agreed upon.

Areas of special differences between bank architecture and any other architecture as the function specify are divided into various categories along 3 major division:-

(a) Public spaces

(b) Administrative spaces and

(c) Technical Areas.

a. Public Spaces:-

These include:-

i. Lounge - This serve many purposes depending on where it is applied. A lounge could be a waiting area for visitors or alternatively as an area, that serves a dual purpose where

light food can be eaten and also as a waiting area. The position of this in a bank is essential since it should be a kind of focus that is for visitors who may not necessarily be customers.

ii. Lobby - This should be accessible to the public though not all lobbies should have public access example, lobbies leading to security areas like the strong room should be devoid of the public. The lobby includes reception/enquiries, loan officers, tellers and cheque writers desks.

Tellers should be situated so that they are accessible and so that the spaces surrounding them allow easy circulation for the public.

So also, Loan officers should have lobbies that are accessible to their offices since they have contact with the customers.

iii. Banking Hall - This is where all banking transaction take place. The Banking Hall is to be filled with benches, seats, or chairs for the waiting public and sometimes may contain writing desks and various positions or cubicles for paying in drawing out security, savings etc. The banking hall records the highest number of customers especially when all services are done in the (Banking Hall). Adequate space must therefore be provided to occupy a sizeable number of customers at any particular period.

b. Administration

. Administrative Areas of a bank include Executive offices in hiearchical order. Normally from the top directors to those in the lowest levels. To be included in this category too are personnel division, Public Relations etc. The administrative chart of any bank will depi t the one shown below except for reasons of duplication changes are made.

The administrative structure of a bank like every Organisation is designed to direct and manage the activities of the workers in managing monetary resources, properties, machines and skills. The bigger the organisation the more formal, is its administrative structure because of greater control problems.

As it can be seen from below in the diagram, the administrative structure is usually depicted by various levels of interconnecting lines linking the administrative function. It has the shape of a pyramid from the lowest to the highest, it also show the vertical and horizontal relationship as well as communications and accountability, the head office normally formulate its plan and is handed down or communicate to other regional office for onward execution to the other branches below. It is part of the administrative structure of the bank to act as an effective monitoring and performance outfit on basis information derived from administrative control submitted at regular interval by branches through their respective offices.

c. Technical Areas

This include:-

i. Machine Room - This is where recording and calculations are done e.g. if a withdrawal is made from an account, the cheque is refered to the machine room where the amount is received in the account and all necessary debitting and crediting is done.

ii. Strong Room - This is where cash and security documents (bonds, certificates of occupancy, share certificates, trade bills, cheques) and any other valuables are kept. These are usually built of heavy steel doors, fireproof and has no windows. The walls are most of the time built of reinforced masonry walls.

Sometimes cash reserve for the bank are kept in the strong room with elaborate locking system and an alarm system which sounds at highest a vibration of the door.

iii. Archives - This is the bank department that ensures that the bank records are in safe custody, it serves as the library of the bank for references etc.

iv. Book Room - Like the archieves the book room perform similar function except that in the case of the Book room documents like Ledgers, files, registers are all stored in the book room after the office hours.

v. Computer Room - With the introduction of the computer, most of the functions carried out by the Archives and Book rooms are not of need anymore the computer room now serves the same function as the archives and book room, since most of the information are recorded and stored in computers, the need for special rooms is obsolate so to say the computer room in the present day banking system cannot be ignored . The design and position of such should be adequately considered.

vi. Information Room or Communication Room - This is where all messages are received from outside the building and from within the provision of this is important since it serves as the exchange room for the bank.

Other Ancillary facilities in bank architecture may include:-

i. Exhibition Hall - As part of its services to the public a provision of adequate interaction spaces stimulating circulation areas with art works, planting and clear labels, is to be provided. This is not only an efficiency raising measure, but also an expression of the banks recognition that its

success will be based on natural respect. The exhibition hall is therefore expected to serve this purpose.

ii. Restaurant - This is normally provided to greatly reduce the number of hours lost as a result of workers having to go outside the premises during tea break (time) or lunch break. The restuarant or snacks shop cannot be ignored if workers have to stay on their desks to works.

iii. Clinic - The provision of such facility is aimed at raising efficiency of the workers. This is normally free of charge or is highly subsidized by the bank depending on administrative policies.

CHAPTER FOUR

ANALYSIS OF STUDY AREAS AND CASE STUDIES

4.0 INTRODUCTION

As earlier mentioned in the proceding chapters of this thesis report. The motivation to undertake a study of this nature arose out of the fact that, in any situation where an architectural structure like the one in question (Office Buildings) is put to use not only by one person (either occupier or owner) put by many. problems are bound to arise either out of the user's ignorance on how to effectively use the facilities (building) which may result to its abuse or it could be misused. A building can be overutilised if for example the initial intention was for it to occupy a certain no of occupants say 10 and it ended up occupying two or three times than the number anticipated.

The point here is that the facilities provided cannot be rationed out anymore since the number it was intended for has been supercceded and it has to be used over and over again not by 10 people anymore but by 20 or 30 others. Without having to work on eyelid one definitely know that overutilisation will result and such a facility cannot sustain ot live up to its expected life span. Unless if the original or intended use is maintained as specified by the designer.

In office buildings though to measure the accurate number of users or say that only a certain number of people should use a particular facility cannot be easily measured because of the main reason that the number of visitors cannot be assertained easily.

But this is just a peculiar example if comprised to other facilities in the building that are standardised to operate at certain time interval or do a particular function or carry a specific quantity of something (people or good) and if that quantity is exceeded, it results to overutilisation or overuse. A good example that comes to mind here are elevators commonly refered to as lifts. The mere fact that there are categorised, results out of the main reason that different sizes of the car are designed to perform different functions, for example passenger lifts of different categories to convey people to different floors in multi-storey buildings and those for conveying goods etc.

It can be seen therefore that unless standards are strictly maintained in term of usage of certain facilities, a great damage or destruction might be done to such a facility unknowingly and only to put the blame on the wrong user or in some situations the designer. A case in hand could be where the Architect takes all the blame when the toilet in a building is not in good working condition or it stinks, because of one reason or the other. His fault wrong location of the toilets no ventilation etc while may be the architect was able to provide an alternative in his design. In case of any fault occurs in any of the designed spaces yet this could not be seen.

In essence therefore, in as much as buildings are designed or facilities are provided in a building, users must inbibe the culture to use such facility efficiently by following all directions and specifications on its usage. A passenger lift designed to convey a specific number of people in a trip should not be overutilsed or should not be overload.

Only then, therefore can we enjoy the purpose for which it was designed.

Problems envisaged as a result of the repetitive use of any facility by different occupants is requiring different services/ facilities to be provided when they are taking up occupancy of a space in an office and for such services/facilities to be removed when their tenancy is over and the problems that are also envisage when facilities are communually used or problems envisage out of wrongful usage of such facility, or its inadequacy in a particular building as compared to the number of users and effect of the immediate working environment on the occupiers taking into consideration Ancillary facilities provided in such a building.

4.2 STUDY AREAS

To be able to undertake a study of this nature specific study Areas were chosen as parameters and to serve as guide. These parameters are divided into two:-

(a) Architectural and

(b) Subjective

4.2.1 Architectural:-

This is given more consideration because the success or failure of all the other facilities provided in any building will largely depend on the judgement of the architect, his wrong decision in placing a function service in one particular area can be very expensive not only to the owner but also to the user and or the occupant. The justification therefore to provide a particular service or function in one area of the building must be stated.

Among the architectural areas studies are:-

4.2.2 Core Location:-

The position or location of the core is a measure factor in determining the shape an office space may take. Based on this three different categories of office layout can be identified.

Central Core Location - In this layout the core is centrally located with offices forming the perimeter.

4.2.3 Advantages:-

i. In a tower, the core helps to subdivided the shell into separate tenancies.

ii. All sides are open to direct sunlight.

iii. Distance from side of shell to core is uniform.

iv. Core helps in a lateral stability against wind load.

v. Centralisation of services is convenient for maintenance.

vi. It is suitable for large high rise building on small site.

4.2.4 Disadvantages:-

i. Reduction of floor area ratio

ii. There is rigidity

iii. Centralised services may result to serious repair problems

4.3 EXTERNAL CORE LOCATION (Single Zone)

This location is along one side of the building opposite the office spaces.

4.3.1 Advantages

i. Allows for effective cross ventilation

ii. All office are open to central corridor

iii. Allows elongated design

iv. More flexible is designed as open plan.

4.3.2 Disadvantages:

i. Long distances from one end to another

ii. Only two sides are open to daylights

iii. In highrise, it is inadequate to withstand high wind loads

4.4 EXTERNAL CORE LOCATION (Double Zone)

This is located on two opposite sides of the building with the circulation path in the centre.

4.4.1 Advantage

i. This arrangement is more economical and adaptable to wind loads.

4.4.2 Disadvantages

i. It inhibits cross ventilation

ii. Poor corridor highting

Modifications on the three types of location could create more efficient spaces.

4.5 CENTRAL CORE

Since this creates a mixture of office spaces, thus making the system more flexible, the core could either be square elongated or split in two for greater efficiency.

4.6 EXTERNAL CORE (Single Zone)

To minimise overloaded use of core there could be two cores placed at either side of building. These also helps in lateral stability forming shear walls.

4.7 EXTERNAL CORE (Double Zone)

A variety of office depths can be achieved by assymetrical placement of circulation corridor.

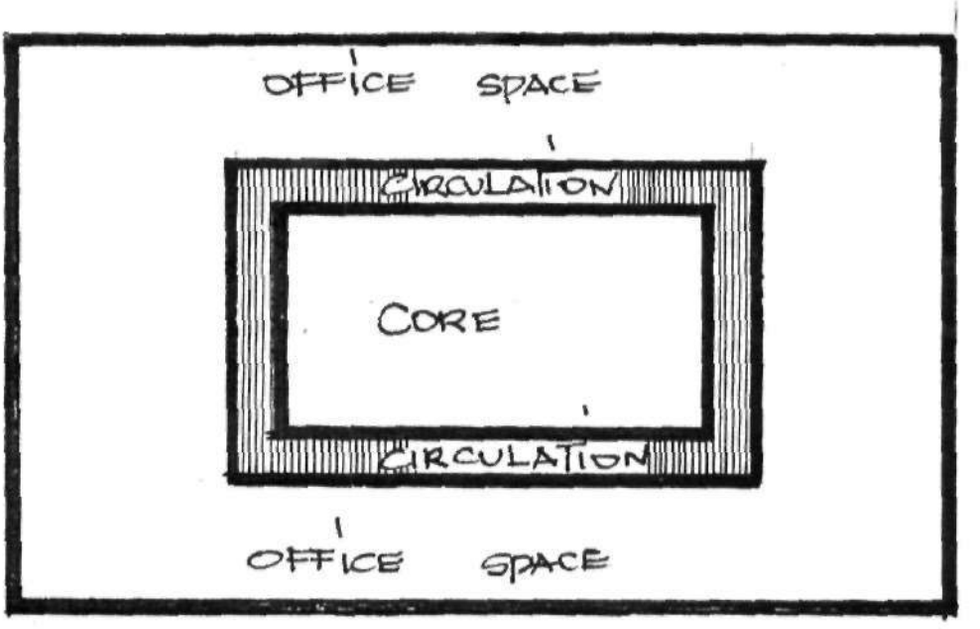


FIG. 1 CENTRAL CORE LOCATION

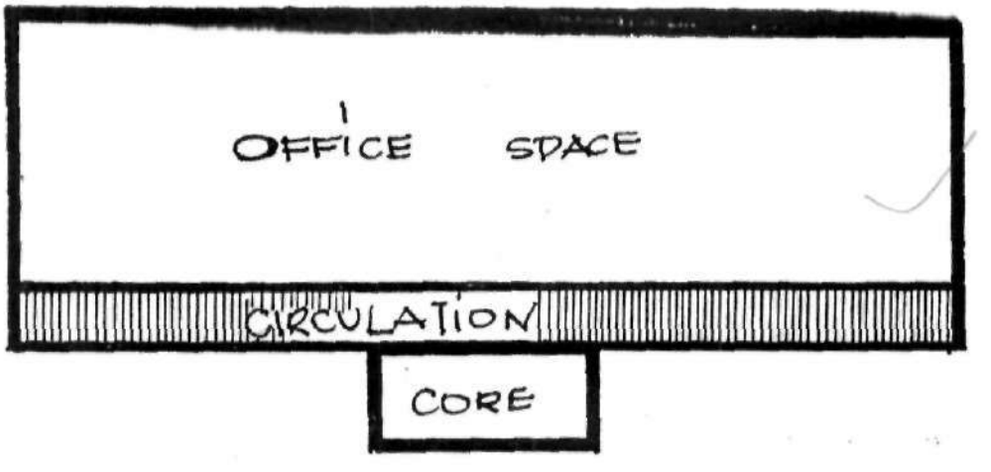


FIG. 2 EXTERNAL CORE LOCATION – (SINGLE ZONE)

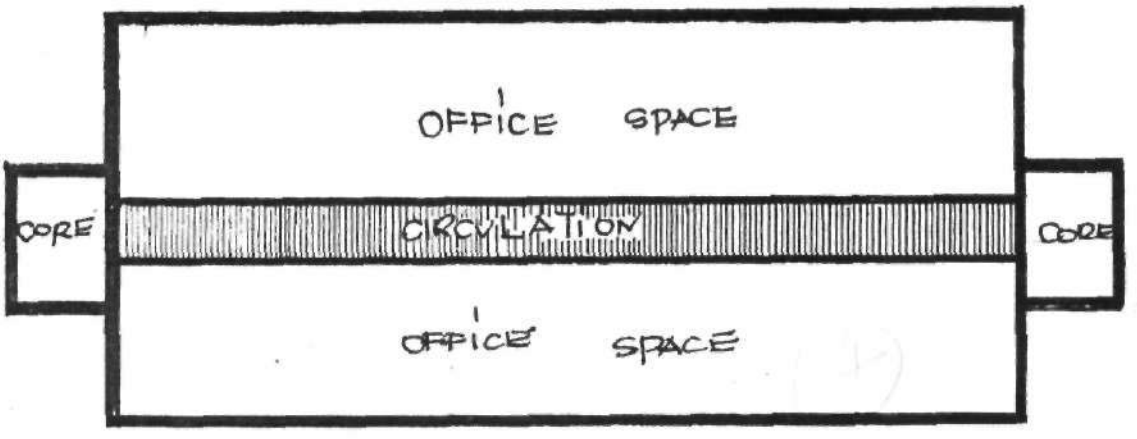


FIG. 3 EXTERNAL CORE - DOUBLE ZONE.

MODIFICATIONS

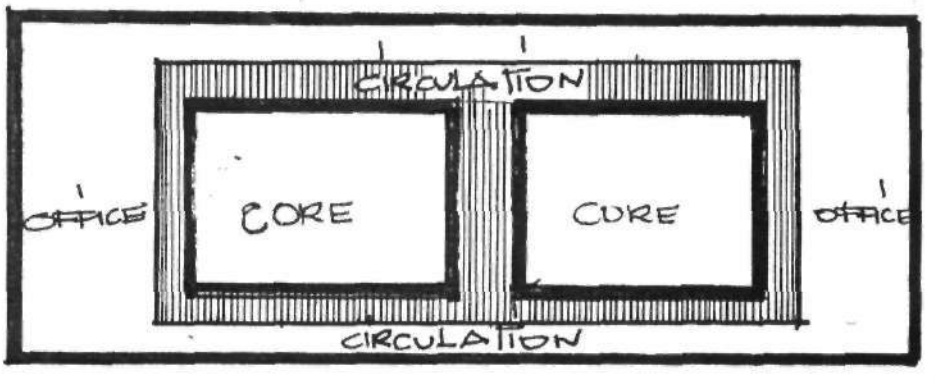


FIG-4 SPLIT CORE CENTRAL LOCATION

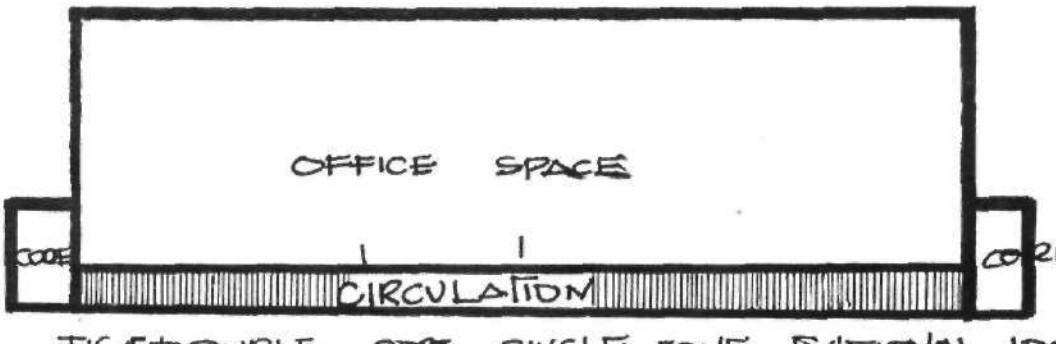


FIG 5 DOUBLE CORE SINGLE ZONE EXTERNAL LOCATION

4.8 CONCLUSION

Generally all the layout can be modified by changing the shapes. It is also possible to combine two or more of the general layouts to meet different needs in the same sturcture.

4.9 SERVICES LAYOUT

This needs careful planning to ensure that the system is economical in both builders and specialist works. System starts at point of entry of services to the building. Points of entry of services and plant room should be determined at early stage of design.

In multi-storey building distribution pattern may be:-

(a) Primarily Horizontal with secondary distribution up or down through floors. This is more common especially for low building or those with dissimilar floor plans.

(b) Primarily vertical with secondary distribution along floors. This is more suitable for high building with repetitive floors

4.9.1 Types of Layout

i. Perimeter servicing - This is an economical system of distribution along perimeter or external enclosure or sometimes along partition walls.

ii. Through Fin Walls - This is ideal for the distribution of communication cables in an office. This fin walls could be partitions. Points are normally at desk top height.

iii. False Ceiling Distribution - This is a more expensive method of distribution by the construction of ceiling.

iv. Through Floor Grid - This is distribution through the floor grid which is usually at 1800 - 2000 centres.

v. False Floor Distribution - This too is an expensive method because two floor have to be constructed and it can be applied to any space.

4.10 TRAFFIC CAPACITY

With intensive traffic detailed analysis of flow pattern system is required. The installation and control system may require specialist advice design and choice of elevaors can be made with the following example.

In a multi-storey building in several tenancies of similar office with 600 people occupying 10 storeys above ground level. No of people arriving in peak 5 mink period =

$$600 \times 15\% = 90$$

Rate of flow $90/5 = 18_p/\text{min}$

Therefore it can be seen that the rationalisation of the elevator to number of people transported must be equated to have an efficient transportation of people.

4.11 CORRIDOR CAPACITY

The width of corridors determine the rate of which people can move freely. At greater densities individuals may not be able to walk at their natural speeds commonly - adopted maximum density for design of circulation areas is $1:4p/m^2$. At this ratio, most people will walk at less their natural speed and be aware of some discomfort.

Approximate mean walking speeds on level walkways and approximate capacities is given below:-

4.12 MEANS OF ESCAPE

Is an important determinant of office building shell. In any building over 2 storeys, travel distance from any point to escape stair must strictly be regular at 30m.

Alternative means of escape on each floor usually demanded.

4.13 SPACE STANDARDS

Office sizes are determined by space standards which allocated area and enclosure to different levels of staff. Variation occurs because of:-

i. Number of levels of staff

ii. Level which enclosure is required

iii. Allocation of space to levels

These factors and even greater degree of variation in ancillary facilities needs, make extremely difficult to predict. Amount of space/head which should be used to calculate, roughly the amount of space needed to accomodate given number of staff certainly $10m^2$ usuable area/head seem very low and $25m^2$ very high. Any figure between could be relevant to a given organisation.

4.14 SPACE REQUIREMENT

Office Area requirement are calculated in 2 parallel ways:-

(a) People space (i.e. individual space x Number + Allowance for immediate ancillary + factor usually 15% for primary circulation.

(b) None People Space e.g. Machine Room, Libraries which depend more on equipment than on staff numbers for their area, it should be calculated by informed estimate based on existing good practice or comparable examples circulation should also be added.

4.14.1 RELATIONSHIPS

Office building can be designed to provide the best relationship between parts of organisation.

Travel distance both vertical and horizontal can be reduced

Visual links between component parts can magnify sense of close relationship.

4.15 DEPTH OF SPACE

The depth of any work place area is measured between perimeter of core and primary circulation. Based on the space depth four types of space can be identified.

4.15.1 Very Deep Space:- This is a space of depth exceeding 20m. Some of the advantage of this include:-

i. It afford many choices for locating circulation

ii. It is suitable for people working in large groups

iii. If opnely planned it achieves greater efficiency and flexibility.

4.15.2 Disadvantages

i. Poor daylight penetration

ii. Space difficult to ventilate because of space depth.

4.16 DEEP SPACE

This has similar characteristics to that of very deep space. Advantages and disadvantages are similar to that of very deep space with better through insufficient daylight penetration and natural ventilation, space depth 11 - 19m.

4.17 MEDIUM DEPT SPACE

This has a range of between 6 - 10m.

(a) Better daylight and natural ventilation conditions

(b) Could take people working in small groups as well as serve executive purposes.

4.17.1 Disadvantages

i. Lesser choices for selection of circulation.

4.18 SHALLOW SPACE

This is a space of between 4 - 5m.

4.18.1 Advantages

i. It has good light penetration and natural ventilation

ii. Suitable for isolated offices and managerial functions.

Disadvantages

i. Not suitable for group working

4.19 CIRCULATION

This is another important determinant of office layout. Circulation areas constitute about 10 - 10% of all designs especially in multi-storey buildings. Wrong choice of circulation space may lead to wasteful allocation of office spaces or inadequate width of corridor. A good choice of design grid or module must be made to effectively make provision for circulation space.

4.20 ANCILLARY FACILITIES

These are facilities that are envisaged to help in making the office building self contained and are provided in order that time is not wasted by having to leave the premises to acquire anything. Such facilities include, Restaurants, Clinics, and Snack shops.

It is understood that when a worker leaves his seat to go to either a restaurant or clinic a good number of man working hours is lost, therefore the provision of such will increase efficiency if everything is provided within the building.

4.21. SUBJECTIVE

This is not easily determined because of the nature of what is to be measured.

Just as it is difficult to measure the effect of space on a worker working in an office. So is it also difficult to measure how a worker will respond to working in an office building that is multiply tenanted, and most of the time having to share communually some of the facilities in the building (lift, toilets etc).

An attempt was however made by issuing out questionnaires and covering to different occupants in different office buildings and an estimation was computed in the different subjects asked. Among these are:-

4.21.1 Internal Environment

The quality of the internal environment is a major consideration because of the enormous costs of power - therefore leading to careful design of the following:-

a. Ventilation by natural means or by mechanical means through air conditions.

b. Lighting either high general levels or low general level depending on the task to be performed in that environment .

c. Heating - this is not common in the tropics though during winter low temperatures are observed, nevertheless most building don't have provisions for this.

4.21.2 Adaptability;-

Since most of the buildings are multiply - tenanted with each tenant requiring different office arrangement the servicing system must be expected to be adaptable to varying degrees of cellularisation as occupant changes and due to changing expectations and standard requirements each space must be able to adapt to different requirements.

4.21.3 Control:-

Individuals may be able to control immediate environment according to the nature of the work done there. Control should be able to be carried over lighting and ventilation. Acceptable level of lighting and ventilation in one location must not create glare or draughts in another solution that will be provided must not recognise that two people are equally comfortable in single environment.

4.22 FINDING FROM STUDIES

The point mentioned below sumarise the result of the studies carried out. In writing this result, averages were considered. While some of the specific cases were considered in individual buildings, in some generalisation was done especially where the problem is peculiar to majority of them. Though no measurement of some sort was done during the study, every point analysed was based on observation of the different study areas and each case was compared to known standards as obtained in most architectural books of specifications and standards except where verbal discussion was applied.

4.22.1 Core Location

Most of the building studied do not have clearly defined cores. Classification of the offices therefore became difficult. Though this may be attributed to design constraints yet either of the core location (i.e. central or external) would have been considered . It is only Bank of the North Tower that an attempt was made to have the central core location probably because of the tower position in respect to other facilities.

4.22.2 Services Layout

This was found out to deoend on the type of service in question. Most of the buildings studied had its own service layout different from the formed to other especially in the layout of Air conditioning systems and perimeter servicing was favoured in the distribution of communications services - maintenance of this seem difficult though.

4.22.3 Traffic Capacity

The traffic capacity evaluation of most of the buildings studied indicate that vertical measures of transportation is an important component of the building especially the office building in which large number of people will have to be transported daily to and from different levels of the building in good time, but this is not obtained time is lost by most people waiting for lifts because the traffic capacity is not equated to the number of passengers the reason known only to the owners of the building. Though an assumption could be because of cost factor of the lifts.

4.22.4 Space Standards

This was found out to largely depend on the function. In open plan offices, Standards were easy to compute and standards arrived at, will be divided by partitions which may be temporary. But in cellular offices it was discovered to favoured for privacy and used by executives. Most office building had little of this except where the office building is owned by the corporate organisation where there are permanent executive officers.

4.22.5 Space Depth

This was found out to depend on the planning grid and column spacing and sometimes in circulation path. The choice of grid and services is the major determinant of the space dept in most offices.

4.22.6 Means of Escape

The ability of occupant to be equated from the building is an important design factor in multi storey buildings. The standard distance to the means of escape either a stair case or elevator has not been strictly taken care of in most of the structures or in some is non existent, This should be noted in design.

4.22.7 Adaptability

Spaces in offices should be able to be changed to suit different functions. In this case open office planning is favoured to enclosed offices as was discussed though this too has limitations as shown in the preceding pages - Most buildings studied indicate the provision of the two for different functions.

4.22.8 Control

This was found out to be a controversial area. The control an occupant has of his office area was found out to be dependent on the following points:-

i. The type of Air Conditioning in the building

ii. The type of office, cellular or open office

iii. The location of the air conditioning system.

4.23 AREAS THAT REQUIRE SPECIAL CONSIDERATION IN OFFICE BUILDINGS

A. FIRE SAFETY AND SECURITY

This is an important area that proper attention must be given to. It has been the subject of increasing pressure from tenants who want sophisticated and re-assuring systems in both suppression and prevention. Office buildings are more vulnerable to these influences. In the past, fire safety procedures were centred around the task of evacuating the building in the fastest time. As this is mostly impossible to achieve in most buildings(e.g. a tower of more than 100 floors) technology has to be employed to identify the source. Some of the system employed include.

i. A network of Infra-red beams in the floor, which if interrupted by smoke will trigger an alarm.

ii. Systems that automatically activate sprinklers

iii. Smoke exhaust system that sets off an alarm at the city fire brigade.

In terms of security, building managers need to offer a complex and complete system with the flexibility to cope with the individual needs of the tenants. In most cases, anyway, central security provided for the building at night while individuals may provide their security needs during their working hours, whatever security system is applied, the aim must be to provide adequate security for the tenants.

Recent security alternatives include

i. Proximity access cards (Numbered) to monitor number of visitors etc.

ii. Visual monitoring by cameras of public areas and

iii. The use of electric striker plates in the fire stairs to report any movement outside predetermined areas.

B. POWER SUPPLY

- This too plays a very important role in the determination of tenants response to a building. Constant and uniterrupted power supply is required to support services (e.g. hitech communication equipment within the building·computers, transportation etc) For example in development such as sydney's No.1 Oconnell street allow a standard 75 watts while in Sydney's Bond building, a supply of 170 watts per square metre is allowed for trading places and to support technology. In Nigeria, no standard is set for the supply of power to buildings, except that, most building development use power relative to the requirements of the facilities in such a building and in the office complexes; provision is always made for an alternative power source due primarily to the unreliability of the Nations main power source - NEPA. In situations where the alternative power source is within the structure, then a whole floor or some square metres may be used for cabling and to contain the noise and vibration by such power source.

The importance of power supply in multi-storey office building development cannot be over emphasized, especially when it comes to transportation (vertical or horizontal) of people. The nausea caused by sudden disruption of power supply in most of these buildings has made occupants prefer moving up or coming down through the stair case - Simply because of the fear of being trapped in lifts, that are in most cases not ventilated which may therefore lead to suffocation and death.

C. FLEXIBLE OFFICE SPACE

Since the sole aim of most multi tenanted office building is to have as many occupants as possible to be able to have 100% occupancy flexibility of the rentable office space is vital. Flexibility can be in ceiling height, to allow for diverse use but most importantly is the floor spaces so that each occupant will have the priviledge of planning his own floor space to suit his own purpose.

Most buildings have addressed this by incorporating sufficient eletrical and telephone cabling in each level to allow for subdivision as required by the tenants. The necessity for flexibility naturally extends to floors walls and heights to allow for changing needs such as sub division of space or for installation of new technology.

D. AIR CONDITIONING

Tenants demand air-conditioning that suits their personal requirements such as after hours use and this can be achieved through the use of series of zones and units.

Problems with the running costs of air-conditioning can be considerably lowered by departing from the traditional insistence that the temperature be retained within a very tight tolerance of about 1 or 2 degrees cobines to a range say five degrees cetcums. However, there still needs to be a means of personal control over temperature. The location of these and all other services within office buildings is crusial to ensure that tenant, investor and owner/ occupier demands can be met as easily and as cost efficiently as possible.

Services located in the inner core of the building means vacating the building if they have to be replaced. This leads to extensive rent loss and tenant inconvenience which would not be tolerated by tenants.

Where plant facilities and lifts are located on the perimeter of the building, all the services can be repaired, added to or changed from the outside of the building with no looses. However, basically the use of perimeter servicing solution comes down not to architectural considerations but to simple market reality, the more lettable area the better.

E. MOVEMENT (TRANSPORTATION)

Transport in buildings of such magnitude (10 storeys and above) requires specialist treatment in terms of efficiency and acceptbility Tenants do not want to wait for lifts nor experience any sense of travel nausea.

Solutions to this distructively tall building problem include the use of sky lobbies, double decker lifts, and in some cases the combined employment of lifts and escalators.

The placing of sub-receptions in the escalator zones has also been remarkably effective, particularly in terms of social interactions.

However, the application of this system to multi-tenanted towers would require extensive turning.

Transport design is also related to the economics of floor spaces. If all the lift banks to a tower were based on the ground floor, the area devoted to lift services would be unreasonably high.

F. LIGHTING

The use of natural light is restricted by the height of the buildings as large window in higher floors tend to make some tenants uneasy unless some form of 'barrier' is erected. Problems of insufficient lighting to tall buildings has to be resolved using innovative techniques.

CONCLUSION AND RECOMMENDATIONS

Though some of the buildings studied are purpose built i.e. to serve a specific function e.g. as Headquarters or head office for the Corporation concerned, the idea to have lettable spaces might have been as a result of the owner not able to take up full occupancy (as is the case with most banks) and must therefore have to let out some spaces or it could be that aside from serving the primary purpose, tenancy is a secondary purpose. Most of the multiply tenanted Corporate buildings have shortfalls either in design or in following regulated standards set by the designer or problems that have resulted out of the ignorance of the users of the facilities in the building concerned, a great disparity exists between most of the buildings studied here in Nigeria and the ones in most western countries while over there Corporate buildings are given every consideration to achieve a near perfect working condition and satisfy diverse tenants demands, (if they are built for tenancy) the story is different for offices are designed with no particular tenant in mind nor the different requirement of the tenants.

To achieve a perfect and an impeccable corporate office buildings the following common design decisions must be adequately considered prior to the commencement of the design.

(a) Decisive Solutions should be taken in terms of all design factors, their location and serviceability. This is done to avoid wrong placement of functions or services e.g. the location of the core.

(b) Design objective must be outlined and purpose or intended use of the facility should be foremost, only then will the aim be achieved successfully in the design,

(c) Standards must be strictly followed. Regulatory standards, dimensions etc must be followed according to specifications of the designer, only then overuse can be avoided e.g. over use of lifts and other services in the building.

(d) Design of office buildings should recognise the changing trends in technology. Offices should be designed to serve the present day and projected future requirements.

The introduction of computer and communication facilities and equipment has changed the design of most offices and relationship between parts of different office have greatly been improved.

(e) In a situation where offices are designed to be multiply tenanted categorisation must be done. It is assumed that a corporate office building housing financial institutions should not have provision for say a construction company because of difference in requirements of space and organisation,

(f) Offices should be designed to be flexible. A good choice of grid must be made in order that wasteful spaces will be avoided. Design module should be reflected in ceiling and window sizes.

(g) Individuals should be able to exercise some control over their own immediate office environment. They should be able to control the lighting heating and ventilation requirement of their environment without causing discomfort to others Central heating or cooling systems are not in most cases the best solutions.

(h) In as much as a building will be occupied by many occupants proper rationalisation must be made between facilities and the occupants on each floor.

Number of toilet for example must be equated to expected number of users. Mathematical analyses must be resolved prior to design.

(i) Office buildings are preferably situated in CBD which in most cases are divided into plot sizes that are inadequate to serve the parking requirement of such buildings, where this occurs, multi - storey parking should be introduced either in basements or above ground. Careful structural details must be resolved if the latter is adopted.

(j) Corporate buildings are fast dominating the skyline of most urban townscape with banks topping the list with their office towers, this is an indication of a growing or developing economy - this is a pointer to the fact that the importance of office facilities in such an economy cannot be waived and therefore tenant satisfaction (banks financial institutions etc) is an important area in the development of the Nigerian economy since most of the financial system are run in their offices.

4.24 CASE STUDIES

In order to have a wider knowledge of structures similar to the one proposed (Bank) the case studies will take into consideration buildings that have similar functions i.e office buildings which may not necessarily be banks, even though the study will also consider banks and allied businesses. This is in order to appraise the following:-

- Aesthetics of such structures
- Planning
- Structure of the building etc
- Services
- Clients
- Engineer

CASE STUDY ONE

Building - First Bank Head Office

Location - Marina, Lagos

Storey Height -

Materials of Construction

Architects - Ronald Ward Associates,
Ikoyi, Lagos.

4.24.1 PLANNING AND APPRAISAL

The building is located on a very tight sight in the Marina area of Lagos State. The architect made an attempt at utilising the tightness of the site to come out with a design that has satisfied his clients.

The building is made up of seventeen floors with the branches bank occupying the ground mezzanine and first floors, while the second

third, fourth and fifth floors are used for car parking. The sixth to thirteenth floors are offices with open plan layout. The fourteenth to seventeenth floors accomodate plants.

According to the architects, the challenges posed by the design were many.

- The ignorance of the clients in giving adequate brief and requirements the architect had to improve on it.
- There was office layout problems as each manager wanted to have an independent office with lock to himself instead of the open office layout. This affected planning problems.
- Ignorance again of the client to the cost of building materials. Since this too was a factor on the design, the directors wanted finishes like curtain walling but completely forget about their cost and the fact that some must have to be imported (especially air-conditioners and electrical fittings) and any mechanical fault means breakdown and spares imported.
- There was no proper coordination between the parties involved there was delayance in the endorsement of documents and agreeing on many issues.
- Besauce the computer floor is a specialist floor a floating floor was provided most of the materials for the floating floor were imported, but as they weren't adequate the architect had to make do with what the banks have.

4.24.2 DESIGN AND STRUCTURE

The services in the first bank headquarters building can be grouped under six headings which are:-

- Air Conditioning
- Sewage

- Water supply
- Electricity supply and Utilization
- The lift
- Telephone services

1. Air-Conditioning:- There are (2) two types of air-conditions used in the building. There are the window type and chillers. The chillers do the same work with the conventional air-condition fixed on windows.

In the window type, gas is the refugerant and it does the cooling while in the chillers, water does the cooling that is recirculed through the building where they are famed into the building.

The chiller is made up of 3 parts viz:

- A Condenser, this disposes the heat on the 15th floor;
- The evaporator, which does the cooling
- The Compressor - this produces the cooling effect. The mechanical engineer placed the Air-Condition as specified in the design. Hot air has to be released , the best place is on the top floor which is what the architect did. The chillers for the A/C is on the 15th floor, this provides excellent flow of air through it.

2. Sewage:-

a) Drainage - this includes the drainage of water from the topmost floor to the ground floor. The beauty of a building can be destroyed by poor drainage facility this is where the advice of mechanical engineer is very important.

3 Refuse Disposal

i. Solid Waste:- There are no septic tanks and soakaways at the first bank head office. Instead a sewage treatment plant on the basement is used. This plant collect all faces treat them and get them corrected to water. The sewage treatment plant has to be in a well ventilated area to take care of the stuffy air.

4 . Water Treatment

There are two sources of water supply:-

i. From the mains, that is from water works;

ii. They generate their own water.

Water from water works (its mains) goes to the basement where it is pumped to the 16th floor tank and supplied to the floors by gravity. They generate their own water by means of a borehole, and a water treatment plant. The water treatment plant is located on the third floor because of lack of space on the ground floor.

5 Electricity:-

There are two sources of power supply:

i. Direct from NEPA and

ii. from power plants. The plants are located on the 3rd and 14th floors. Those on the 3rd floor serve the building while those on the 14th floor serve the computer floor since there must be an uninterroppted power supply in the computer room.

There are batteries on the 14th floor that can also do the work of generators these are on standby.

6 Lift:-

1. There are four passenger lifts which are distributed in odd and even numbers 2 odds and 2 evens. They travel from the ground floor to the 13th floor.

ii. There is a separate lift for the directors too. This moves from the 5th floor to the 12th floor.

iii. Goods lift - this lift carries chairs and other equipment from the ground to the first floor.

7 Telephone Services:- Telephone room is located on the 8th floor while the branch bank also has its own telephone control room on the mezzanine floor because they operate a seperate telephone service from the one in the head office.

4.24.3 SHORTFALL OF THE DESIGN

- Noticeable among all the problems that are compounded in this design is the total absence of natural ventilation. It can even be asserted that the design does not fit into the tropical region of the globe.
- Maintenance is another noteable point in this building. Since most of the materials and finishes are imported, damage to any one will mean importation. And if such material or component is an important one it means operation of the building may lead to a stop until such a part is made available since there is no local alternative.
- The structure does not portray a typical Nigerian set up, which invariably means that any failure by the power plant will mean destroying or breaking down parts of the building became most of the services are sand intche between floors e.g. the power generating set in the 14th floor.

4.24.4 Conclusion

For effective flow of functions, in a bank Headquarters that also houses a branch bank, emphasis should be made in order different entrances are provided so that each will be on its own even though

security may be the main reason for having only one attempt should be made during design to solve such a situation.

- Attempt should also be made at making sure that natural character or local character should be represented in design of edifices like the one in question. A good look at the first Bank Headquarters does not show this at all.
- Since the business world is more or less becoming a tinier and tiner by means of fast and efficient communication businesses of similar nature (financial) should be house in one structure

though it is not a rule par se, but is an area where architects should explore to many the financial business together.

- On - block parking spaces should also be recommended in office building this is for the sole reason that most office buildings are located in CBD where land is small and expensive a provision of such facility will help solve such problem - that leaves the option of vertical expansion instead of horizontal.

4.25 CASE STUDY TWO

Building - Bank of the North Headquarters

Location - Kano, Nigeria

Storey Height -

Materials of Construction -

Architects - Ella-Waziri Associates - Kano

Clients - II Northern States of Nigeria

Introduction:- In 1976 Bank of the North (BON) realising the need to have an expanded accomodation for its operations Commissioned Messrs Ella-Waziri for the new head office in Kano.

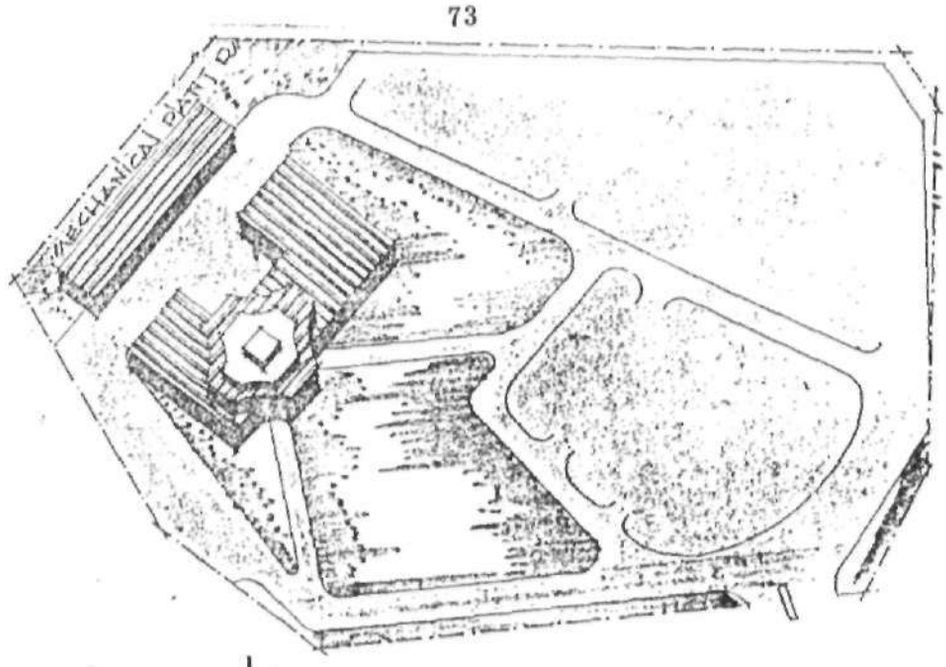


FIG. 6 SITE PLAN BANK OF THE NORTH
KAND

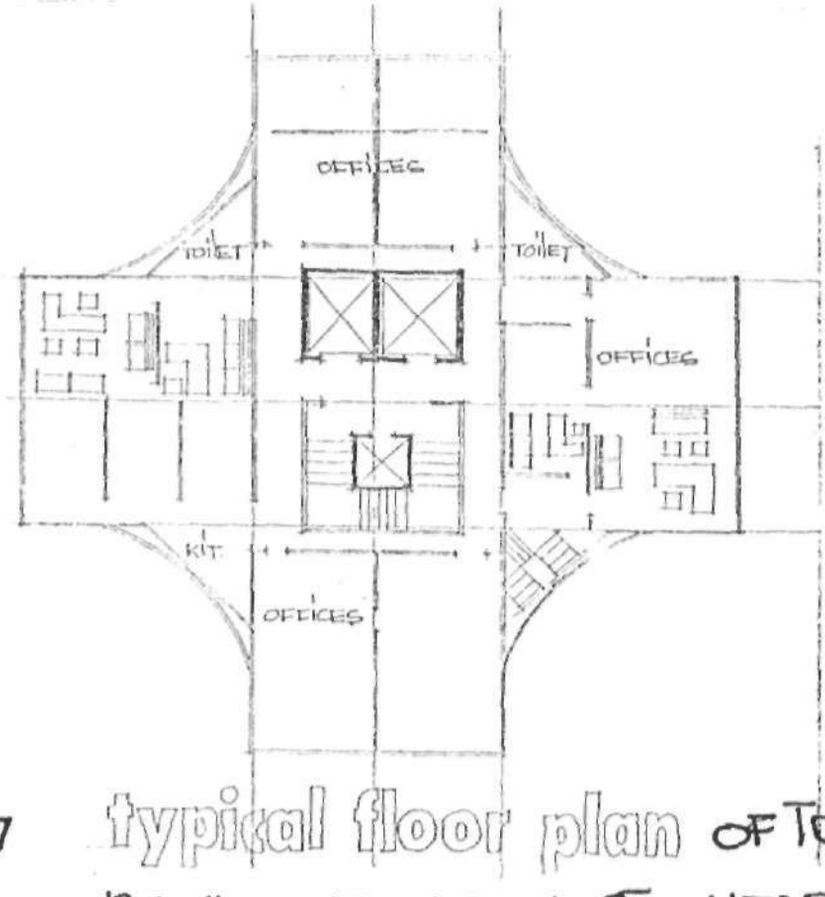


FIG. 7 typical floor plan OF TOWER
BANK OF THE NORTH HEADQUATERS
KAND

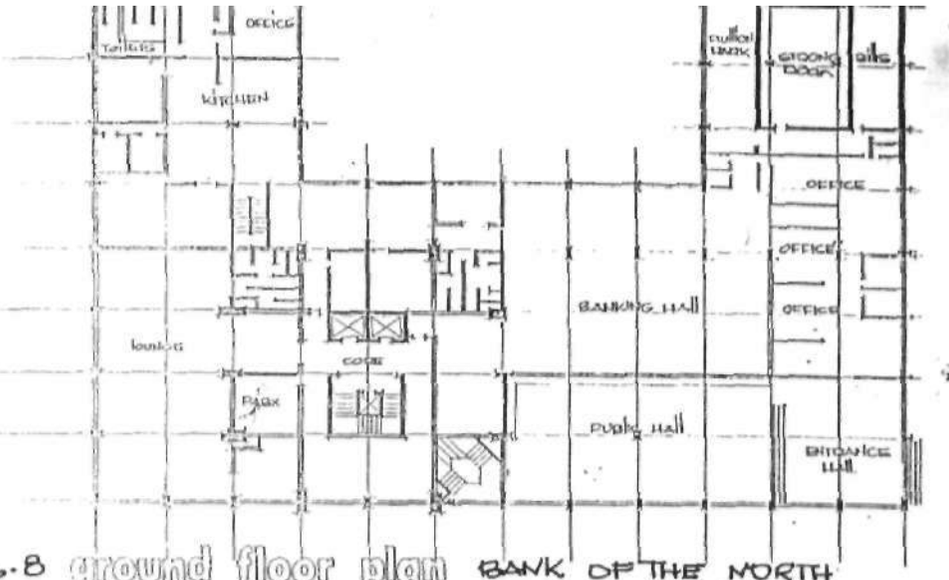


FIG. 8 ground floor plan BANK OF THE NORTH HEADQUARTERS KANO

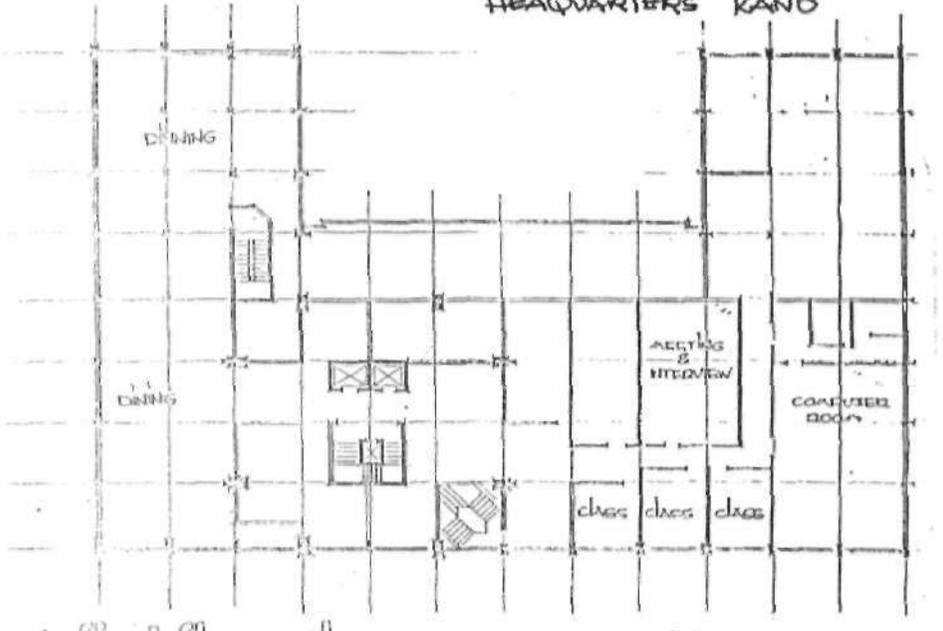


FIG. 9 first floor plan BANK OF THE NORTH KANO



PLATE. 1 BANK OF THE NORTH TOWER KANO

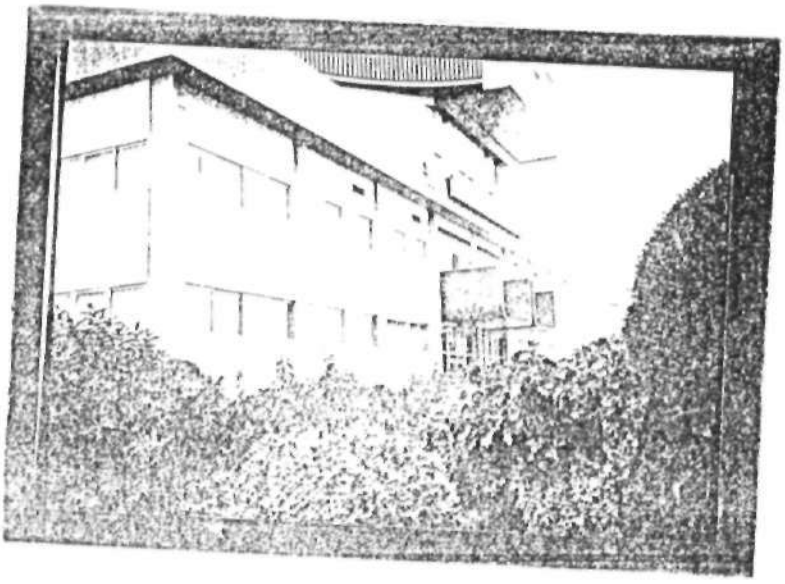


PLATE 2 ENTRANCE situation BANK OF THE NORTH KANO.

To house all its administrative functions in one building.

However, no brief was issued by the client which left the architect to take all decisions in preparing the brief.

4.25.1 DESIGN CONCEPT:-

There was no general definition of the concept of the design judging from the rapid podium. However, the architects had extracted the famous northern (Star) knot and used it on plan as the concept for the tower where as the podium is basically a U shaped cuboid, structure with no special visible concept.

4.25.2 FUNCTIONS:-

The functions are distributed in various parts of the building

BASEMENT:- This houses some offices, staff dining area.

MEZZANINE FLOOR:- Used for stationery storage and other storage need.

TOWER:- Accomodates offices for the administrative staff. The floors are distributed amongst the various departments and sections of the bank.

PENT HOUSE:- Used as guest accomodation for the bank officials.

4.25.3 MATERIAL AND FINISHES:

Podium:- This is a square grid reinforced concrete shell (Column Beam) and Hollow sandcrete blocks.

Floors and Interiors:- Marble finishes, Glass, Mosaic tiles with brown parapet walls.

Lift Core:- Concrete construction and marble finishing

Computer Area:- Double ceiling and floor finished in Emulsion

Power;- Based on the central core system of construction. The core consists of a lift bounded by the staircase with two others opposite it.

Services:- Air conditioning system of the tower is the single split system that of the podium is central air-conditioning system. The Entire building is serviced by 3No 750KV and 2No 250KV generators.

4.25.4 DESIGN APPRAISAL - SHORTFALL

i Complete separation of customers, counter desks and duty clerks achieved in banking hall.

ii Good orientation and dimatic control techniques.

iii Visual division between the base shaft, and the cap which is classical in style. The podium is out of tone with the tower exhibiting no harmony. A lot of dead spaces on the tower as a result of northern knot concept adopted.

iv Fire escape not properly tackled could pose danger in the event of fire outbreak.

CASE STUDY THREE

BUILDING - Continental Merchant Bank P/Harcourt

LOCATION - Portharcourt - River State

MATERIALS OF CONSTRUCTION

ARCHITECTS

4.25.5 INTRODUCTION

This project was initiated on July 17th 1987. Architects were invited to submit proposal for an office development in Portharcourt on Isaac Boro Street.

The plot has an area of 2319m². The bank directed that the number of floors should not be more than 6-7 floors.

SCOPE - As directed by the bank the number of floors was restricted to seven floors. The banking facilities are located on the first and second floors while office spaces are located on the other floors.

4.26.1 DESIGN CONCEPT

The design is conceived as a modern office complex beside banking. Hence its flexible nature. The scheme sets to provide an imposing dignified structure to represent the banks image and status within the banking industry. The cost implications of the design solutions were borne in mind in the course of the designing the office block, therefore adequate consideration was given to the choice and use of materials.

4.26.2 SECURITY:

Alarm systems are located at strategic areas to alert staff and security personnel. There are armed policemen with dogs always on duty.

4.26.3 SERVICES:

Services are provided within the building to facilitate easy vertical circulations there are two lifts and two staircases, Toilet facilities are evenly distributed on each floor. Adequate consideration is given to the problems and parking facilities were also taken care of.

4.26.4 APPRAISAL :

- Adequate consideration was given to the choice of materials and its use in response to the budget.
- Consideration too was given to the parking facilities. There is a provision for 29 parking spaces with addition outside the premises.

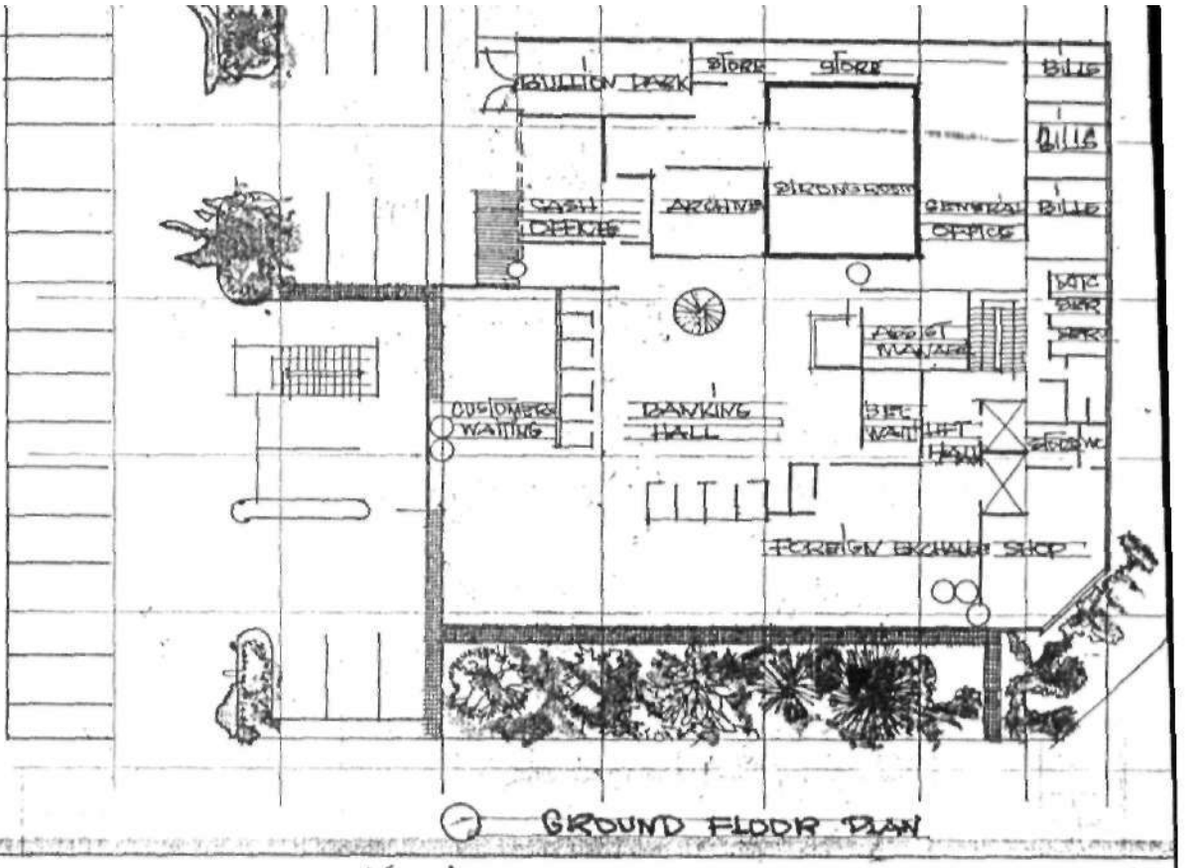


FIG 10 GROUND FLOOR PLAN CONTINENTAL MERCHANT BANK PORT HARCOURT

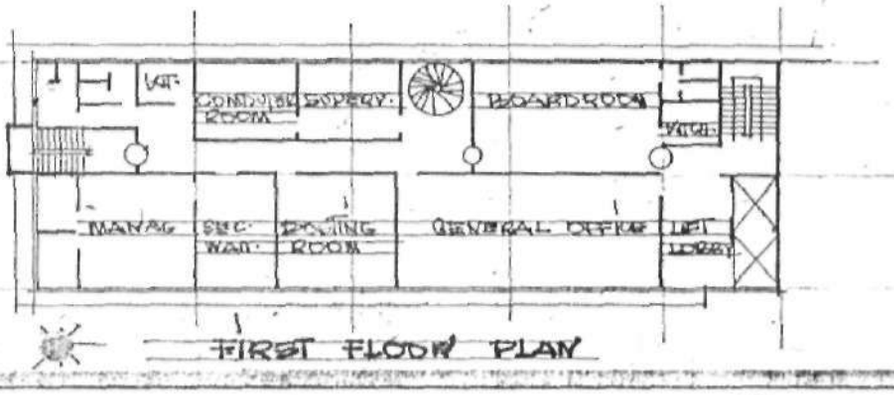


FIG 11 FIRST FLOOR PLAN, CONTINENTAL MERCHANT BANK PORT-HARCOURT.

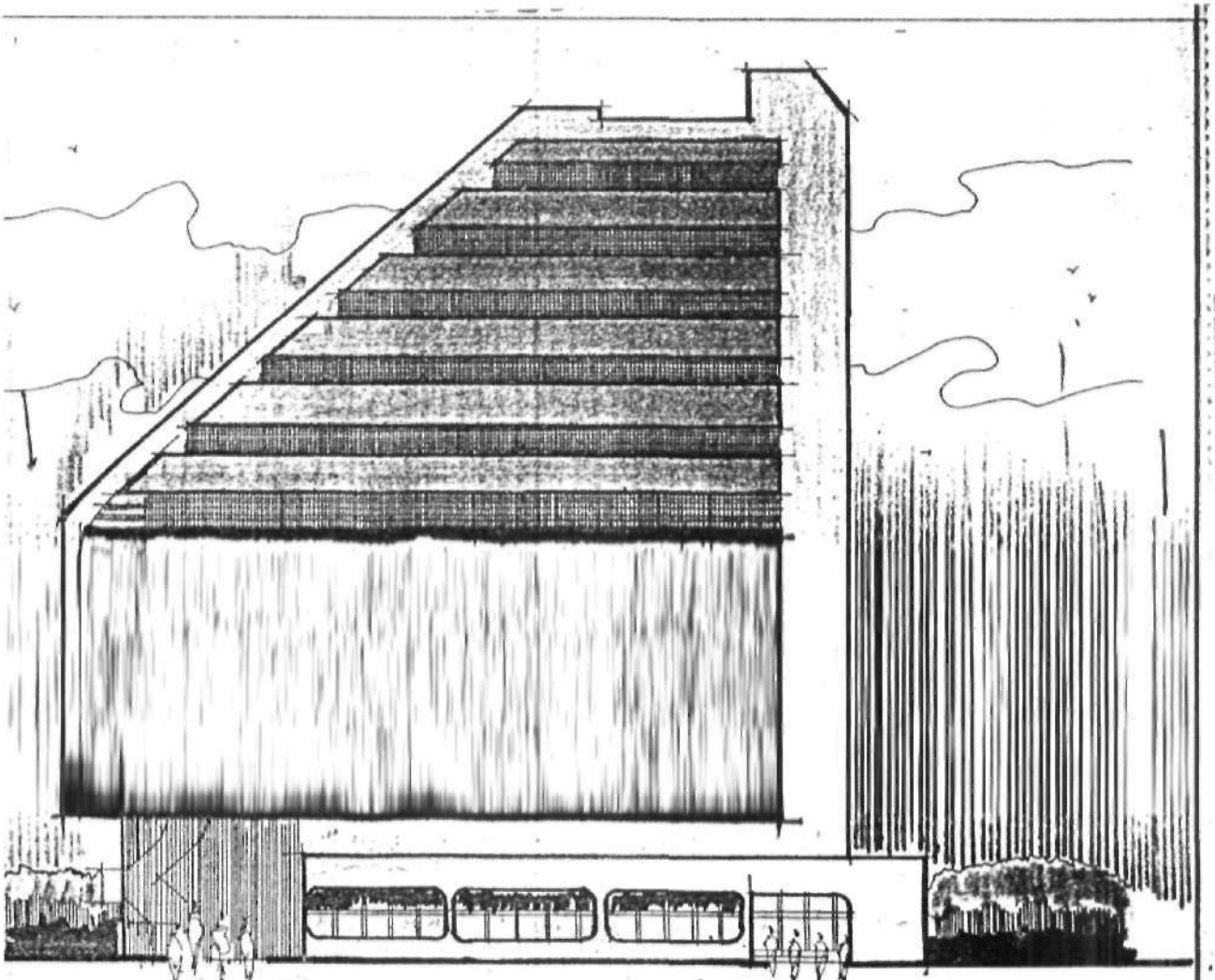


PLATE 3 ELEVATION - CONTINENTAL MERCHANT BANK
PORT - HARCOURT

- However, there is no separation of parking for staff customers and office workers.

There is separation of the banking from other office areas since some office spaces are let out to other firms and companies.

CASE STUDY FOUR

BUILDING	-	Westdeutsche Landesbank, Munster
ARCHITECTS	-	Harald Deilmann, Munster
LOCATION	-	Himmelreichallee, Munster
CLIENT	-	Westdentsche Landesbank

4.27 BRIEF:-

Site Situation

Flat situation in western part of former zorlogical gardens, surrounded by open residential development and green space.

Requirements

Open plan layout of office space. To be built in 2 stages.

- (Provincial) building (Iran) society with approximately 1000 assistants.
- Banking centre of approx. 2200m^2 super

Construction

Reinforced concrete skeleton grid of 8m x 8m clear room-height 3m, storey height 4.32m. Horizontal loads, absorbed by internal core and storey - high - wall — Slabs because of differing technical installation thickness of ceiling, varies according to load from 30-44cm. Internal supports are designed as quadriple stanch on (4x0.34x0.34m) with a facade supports as twin stanchions, on an inner side as triple stanchions at an external angle as a single stanchion.

4.27.1 FITTING-OUT AND INSTALLATION

Basic grid 1.6 x 1.6m, services grid 1.6 x3.2m facade of corten-steel sections with 90cm high steel spandrel elements incorporating heat insulation thermopane "stopray-gold" insulated glazing panels above. Spaced in front of the corten steel facade are precast concrete (parapet) elements. Full air-conditioning. In standard office floors high-pressure equipment in window-zone, internally, low-pressure equipment by heat extraction. Electrical (night) storage heating combined with heat recovery from waste air and lighting warmth. Integrated ceiling (floor) system with lighting acoustic and ventilation ducts.

4.27.2 SPATIAL AND DESIGN ASPECTS

The aim in designing the open plan office area was to achieve a working atmosphere which, responded to psychological considerations of the worker. To the boldly sculptural sub-divisions of the terraced architecture there correspond areas, differing in individual floors, which simplify the identification of the particular activities taking place there

The total architectonic expression of the building reflects the clients request for an uncomplicated architectural image.

CASE STUDY FIVE

Building - Libbey Owens' Ford Glass Co. Executive Office

Architect - Skidmore, Mevill and Owings

Location - Toledo Ohio

Client - Libbey Owens - Ford Glass Co.

Structural Engineers - Severud Elsfaad- Krueger Associates

Mechanical Engineers - Guy B. Panero Engineers.

4.28 INTRODUCTION

This office building has a lot of attributes functions that set it apart from many others. Its functions superbly for the needs of its occupants. Relationships between the building, its size and its surrounding have been planned with considerable care.

4.28.1 Concept- The building is designed from the overall concept to the smallest retail. The individual elements of the building and its furnishings are all integrated into a system. This not only makes for successful design but it becomes possible to systematize procurement and maintenance of the building parts and furnishings,

4.28.2 Construction:- The construction is typical of the application of the modern construction of, structural frame in concrete and glass cladding (curtain wall) office areas throughout are equipped with movable partitions and rough rolled plate glass. Ceilings are luminous with incandescent down lights.

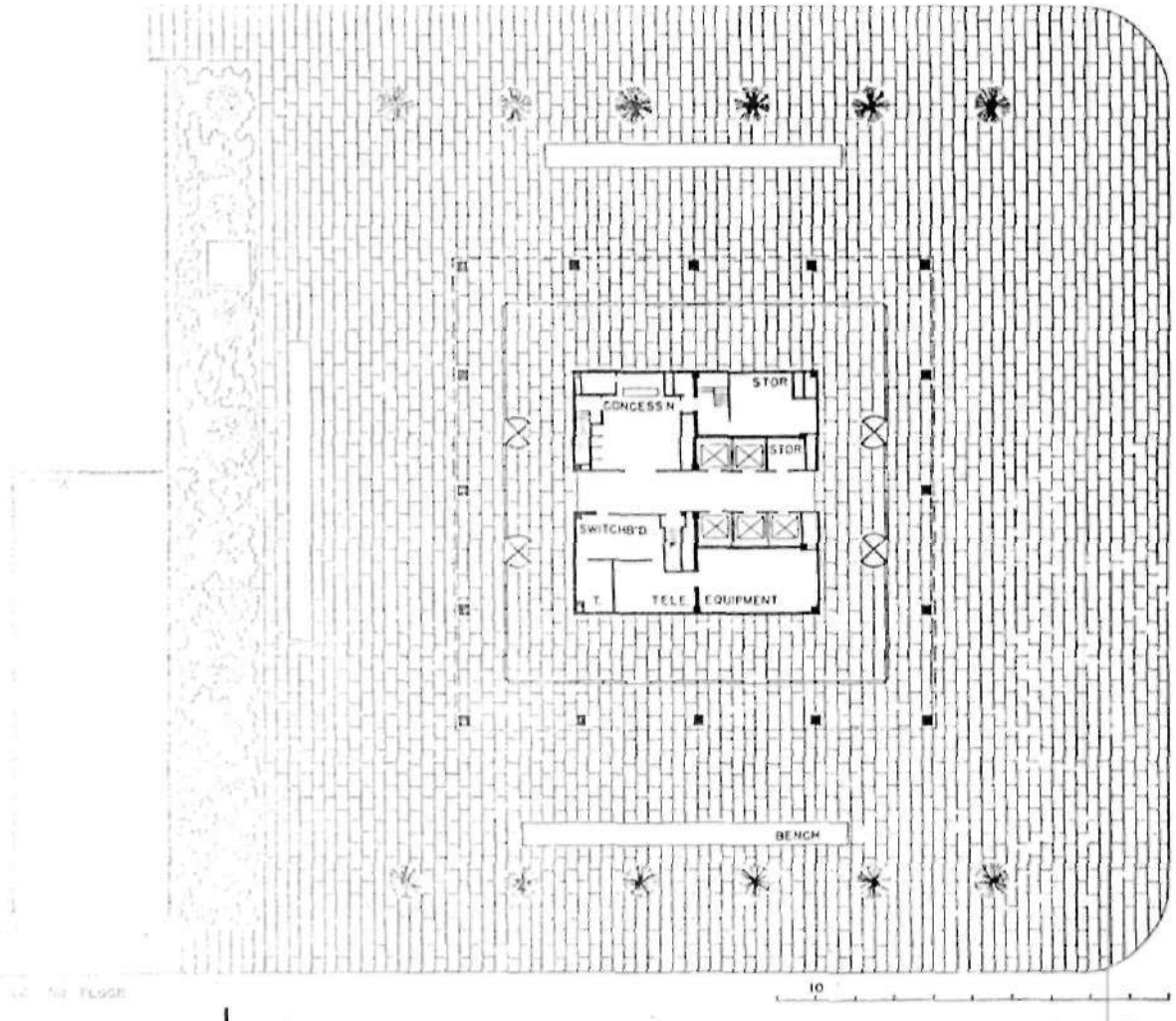
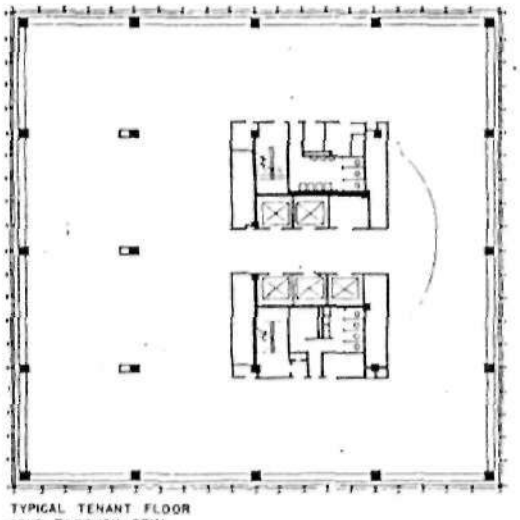


FIG. 12 GROUND FLOOR PLAN - LIBBEY OWENS FORD OFFICE BUILDING.



TYPICAL TENANT FLOOR
(2ND THROUGH 6TH)

FIG. 13 PLANS SECTION
LIBBEY OWENS OFFICE
BUILDING

Hedrich-Blessing

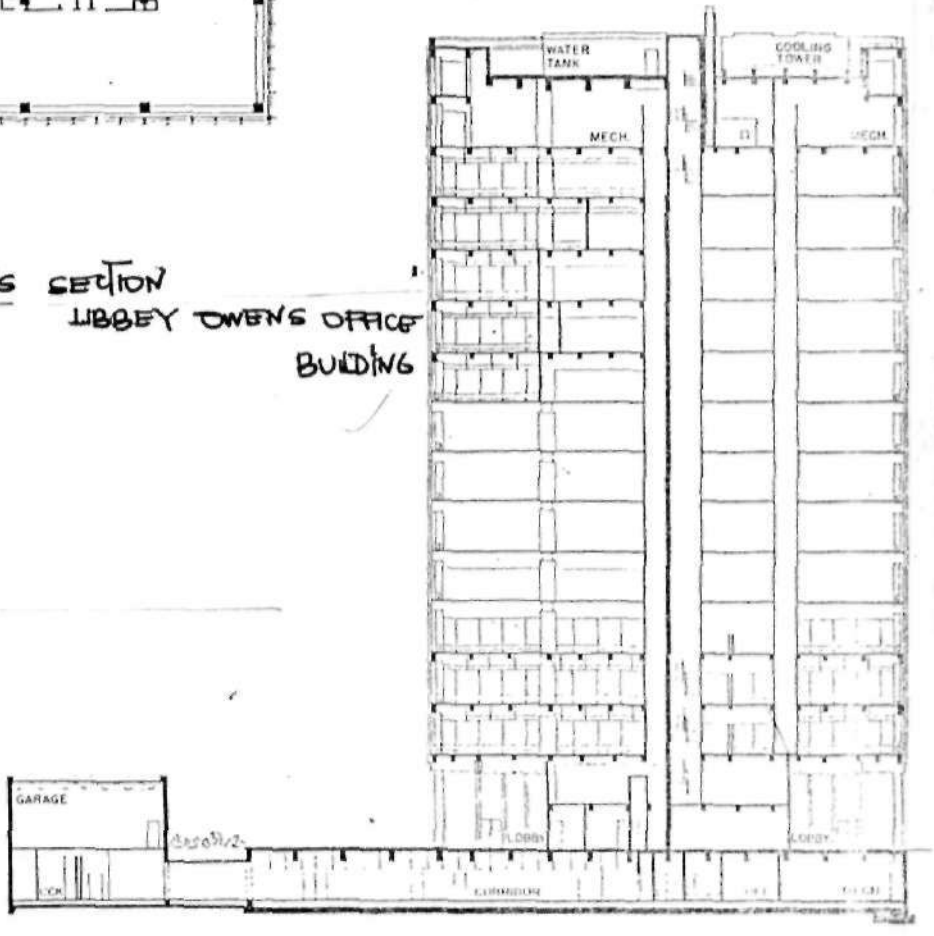




PLATE 4. LIBBEY OWENS FORD GLASS COMPANY.

CASE STUDY SIX

Building - American President Lines Building

Architect - Ansehen and Allen

Location - San Francisco

Client - American President Lines

Structural Engineers - Engleson Engineers

4.29 Introduction

Key to the design of this 22 storey building for downtown San Francisco is the ownership of the space that surround it. This makes it possible to cantilever the upper floors beyond the building lines, considerably increating the rentable floor area to 85% and allowing air and light on all sides.

Behind the economic feasibility inherent in the design. The building as planned reflects a relationship between it and on the city as a whole.

4.30 Construction

The building is proposed up above the ground by 16 columns, the walls are not typical curtain walls although they carry no loads the building walls the operable sach act as a filler between spandrel panels which are fixed at their centres to floor slabs. The chosen module gives a unique flexibility in office arrangement.

CASE STUDY SEVEN

Building - First Miami National bank

Architects - Weed Johnson Associate

Location - Miami Florida

Client - First Miami National Bank

Engineers - Norman J Dignom and Associates.

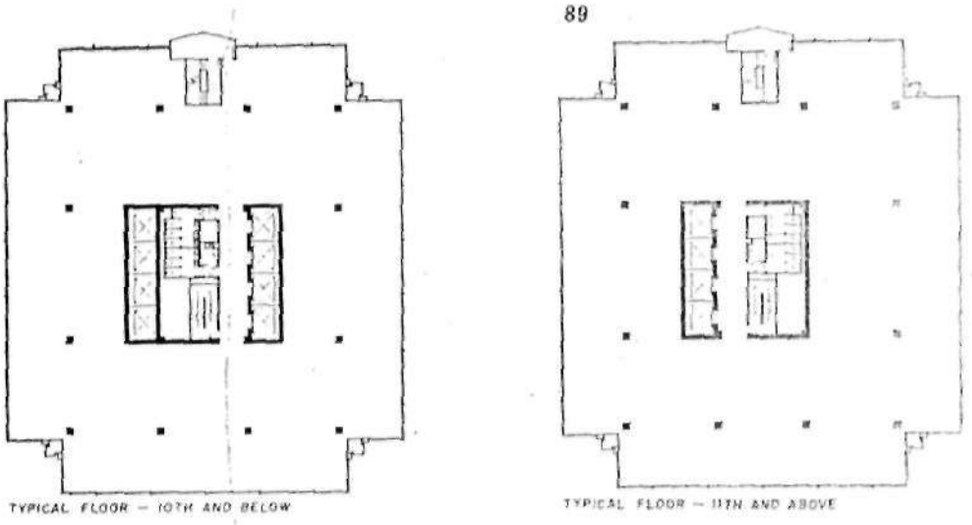
4.31 Introduction

This building occupies an 18 storey office building and Bank Architecturally the design consists of two elements - A broad three storey bank and parking building - And a 15 storey tower of offices. The ground floor area is occupied by the main Banking room, 12 drive-on teller booths - arranged so one may drive through from street to street - A group of retail shops for rental. Income and the entrance to the parking decks the self parking type garage occupies four levels above and below grade, and will handle 600 cars. The structural frame of the bank element is reinforced concrete. The office tower has a steel cage frame.

The mechanical equipment for the entire building is located on the fourth floor, a lounge, terraces, and dining rooms for bank officers and executives occupy the 18th floor penthouse.

4.32 Finishes

The bank portion of the building is sheathed in polished gray granite, the remainder of the exterior is clad in buff-colored ceramic tile, which is cast integrally as facing for the precast surfacing panels. The sash and venetian blinds are anodized aluminium in natural tone.



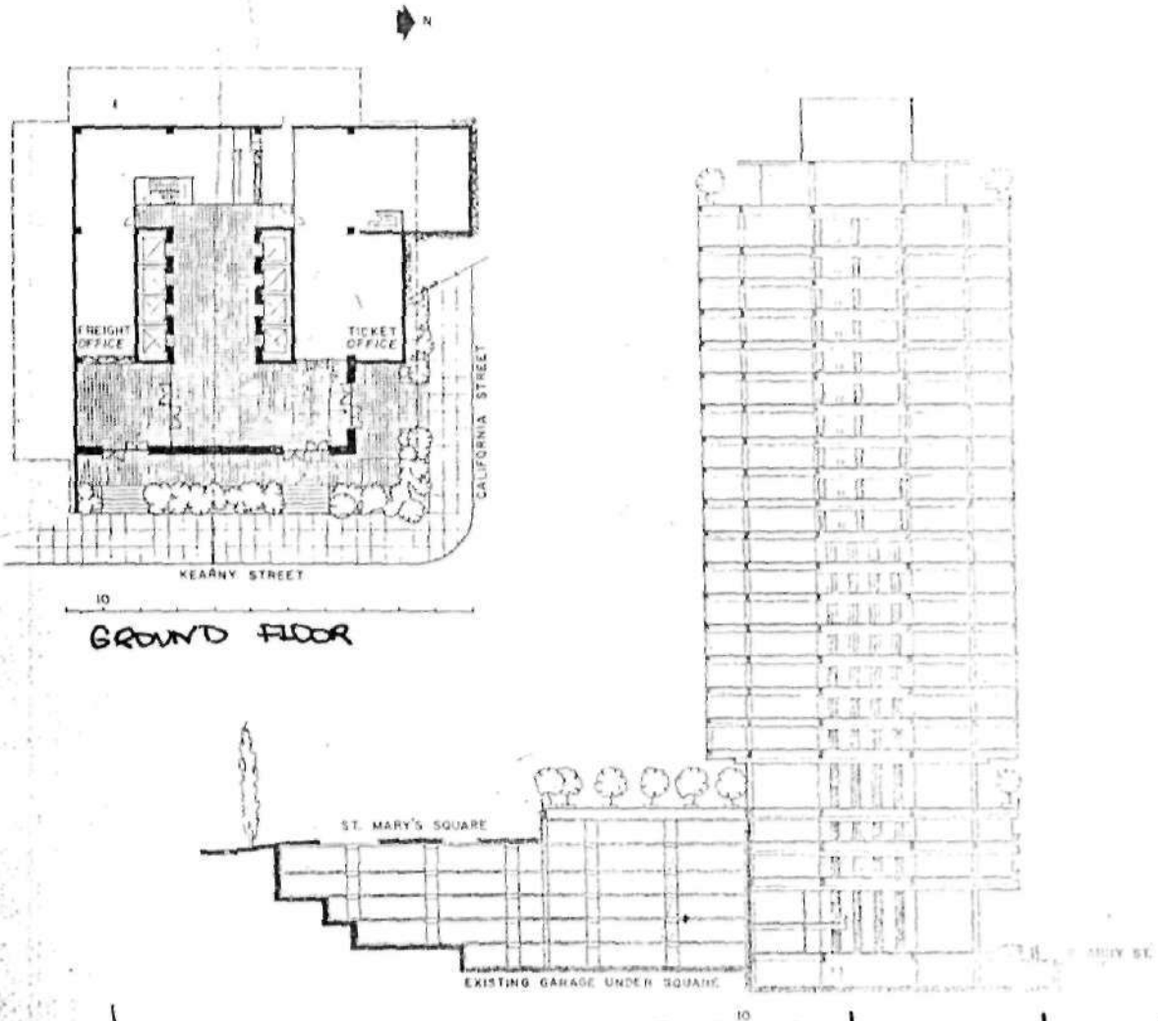
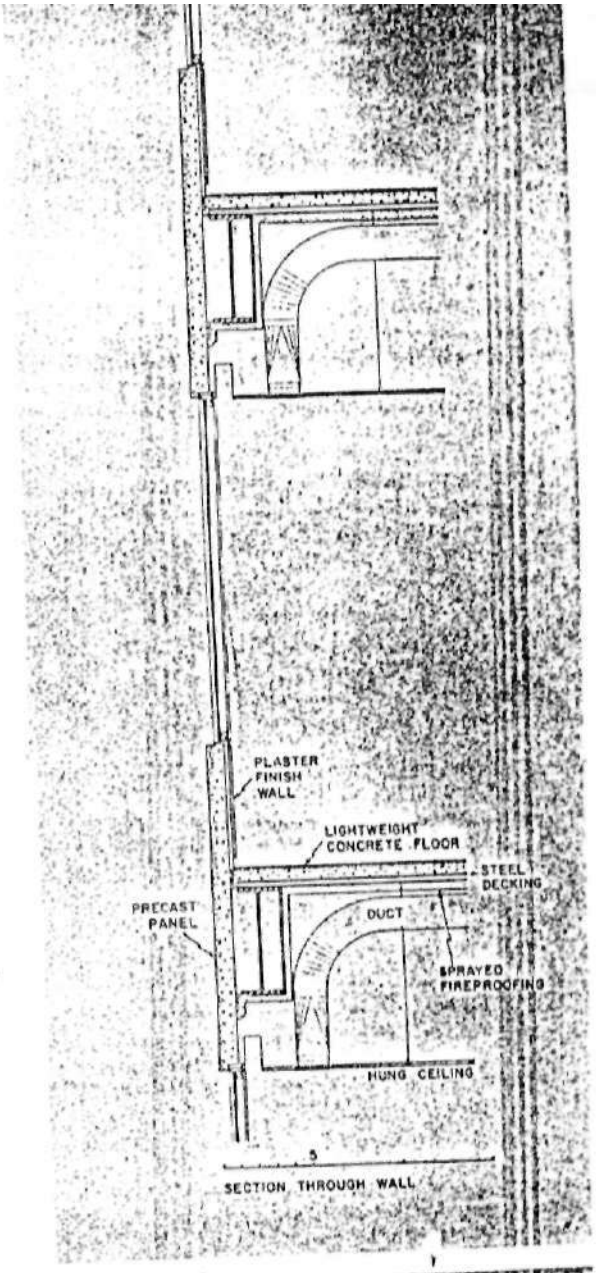


FIG. 14 PLANS AND SECTION - AMERICAN PRESIDENT LINES BUILDING



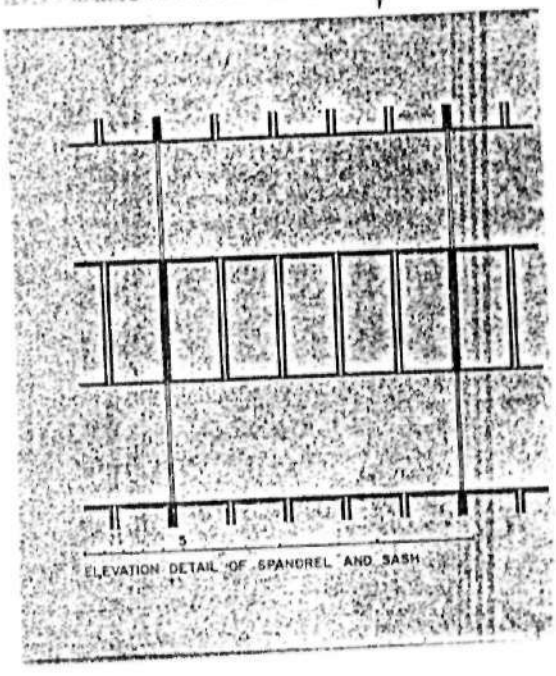
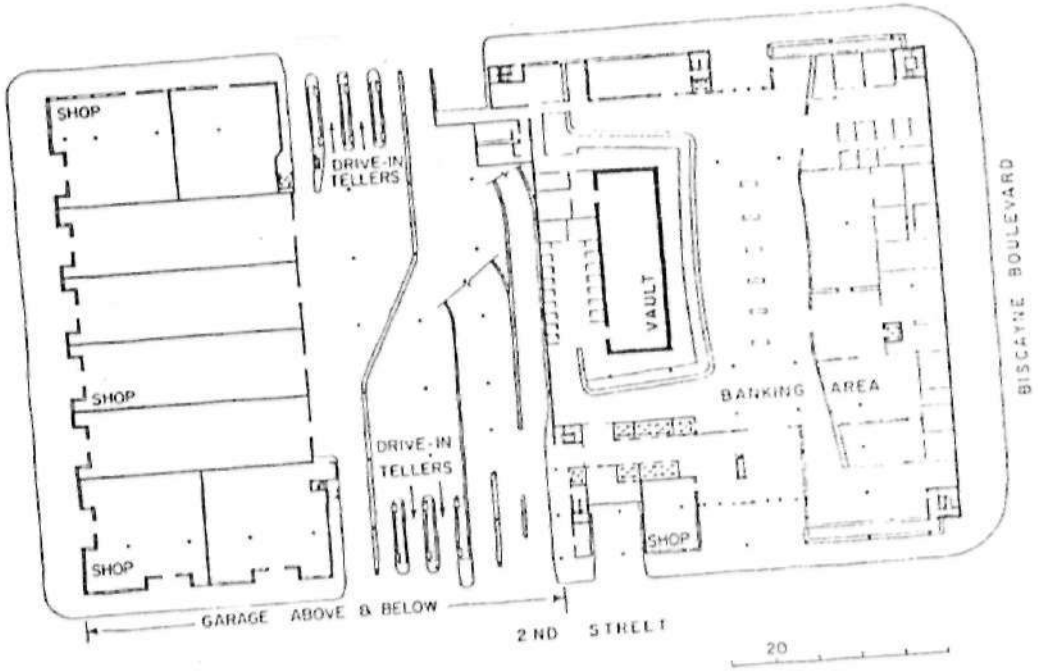


FIG.15 SECTION THROUGH WALL

AMERICAN PRESIDENT LINES BUILDING



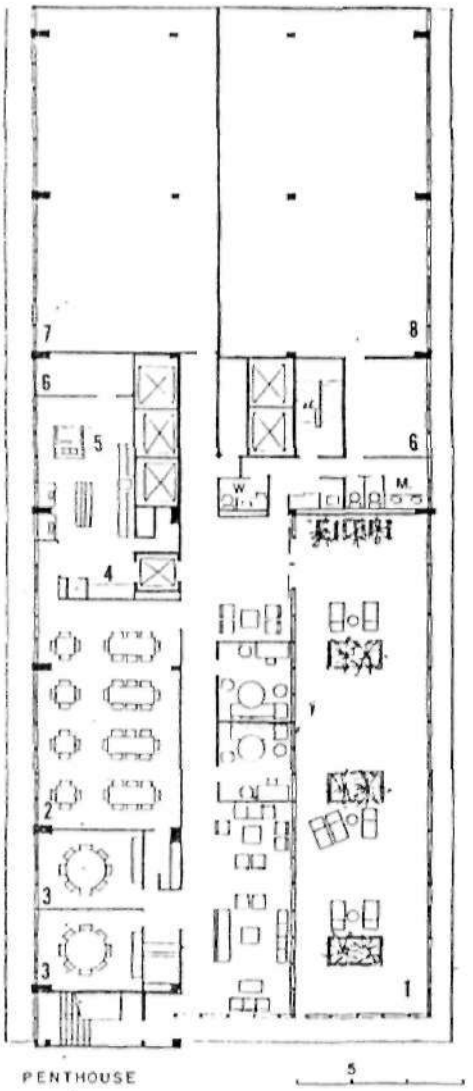
PLATE 5 MODEL OF AMERICAN PRESIDENT LINES BUILDING



FIRST FLOOR

Miami Fir

FIG. 16 GROUND FLOOR PLAN, FIRST MIAMI NATIONAL BANK



1. Roof Terrace
2. Dining Room
3. Private Dining
4. Linen Storage
5. Kitchen
6. Storage
7. Expansion Area
8. Cooling Tower

FIG. 17 PENTHOUSE PLAN - FIRST
MIAMI NATIONAL BANK

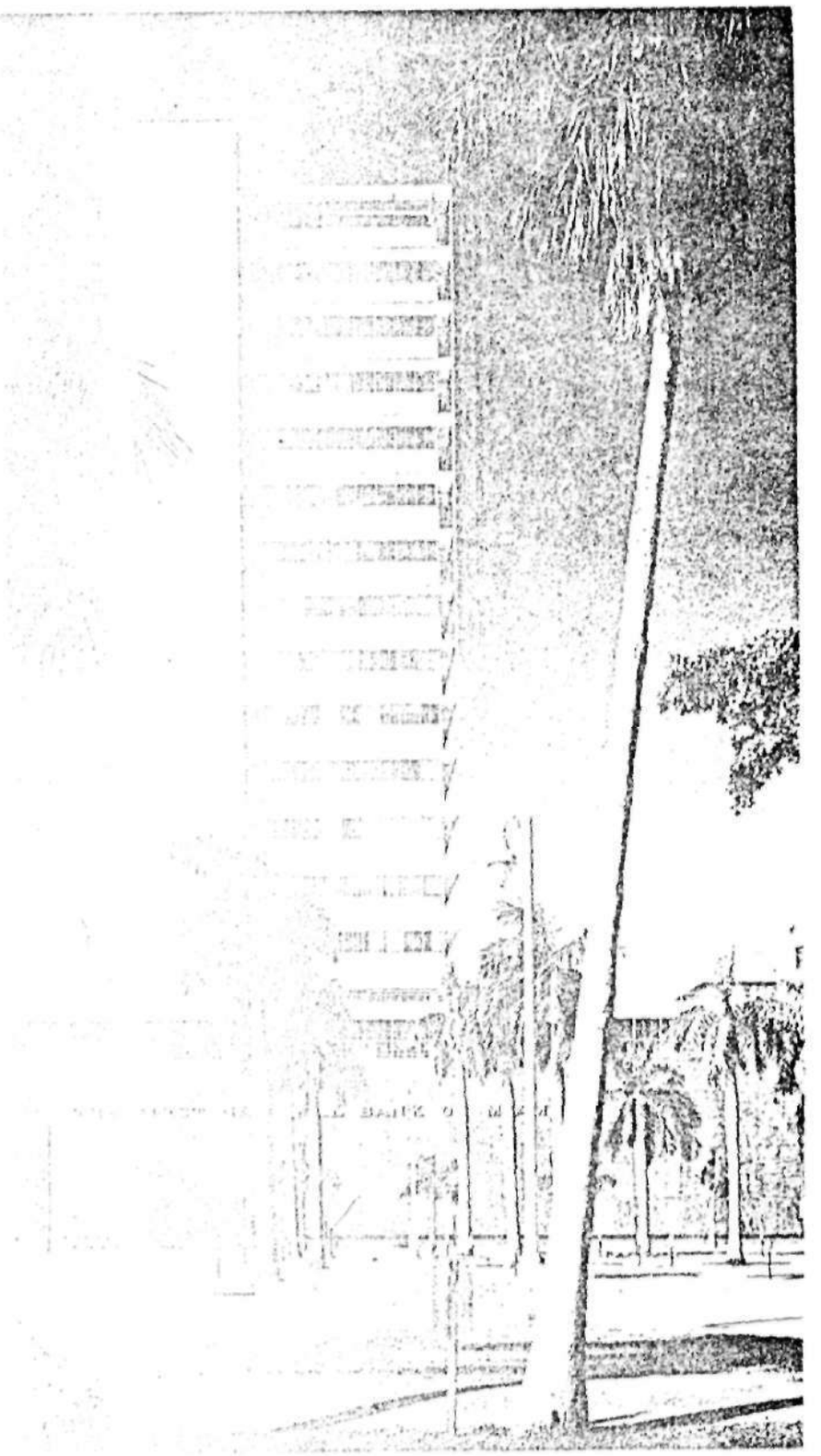


PLATE 7 SIDE VIEW—FIRST MIAMI NATIONAL BANK

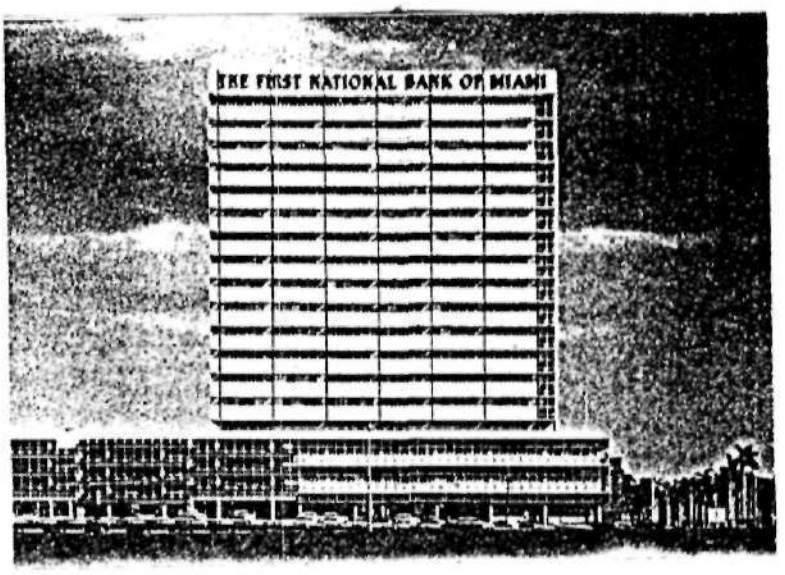


PLATE 6 ELEVATIONAL VIEW FIRST MIAMI NATIONAL BANK

CHAPTER FIVE

REGIONAL AND SITE ANALYSIS

5.0 LOCATION

Kano City is the Capital of Kano State which occupies a Central position in the Northern parts of Nigeria and is the most important and most prosperious city in terms of population and business perspectives.

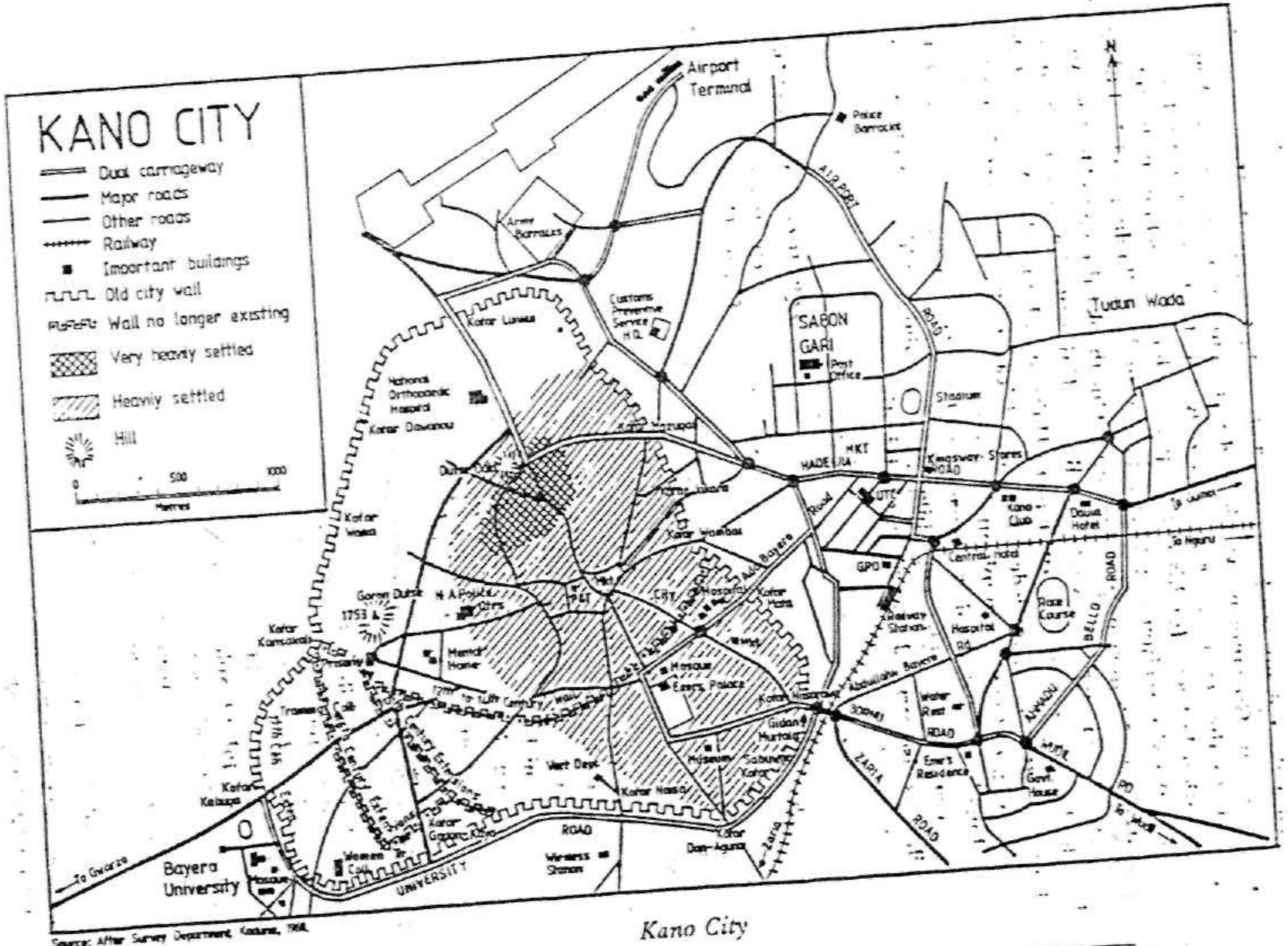
It lies between latitude $10^{o}3'N$ and $13^{o}N$ and between $7^{o}40'E$ and $10^{o}35'E$.[1]

5.1 HISTORICAL BACKGROUND

It was during the end of the 9th century A.D. that a group of hunters whose origins is not well known, hut were said to come from the North of Africa came to settle on the foothills of Dala, Goron-Dutse, Magwan and Fadisar. Their chief priest. Barbushe and his followers worshipped at the foothills of Dala hill. They were noted for their immence physical strength and were said to be blacksmiths. It is said that Barbushe was a strong giant who can kill an elephant and walk nine miles with it on its back.[2]

Barbushe descends from the Dala anually to deliver messages and offer sacrifices to the Tsumburbura' (Sharms). In one of his annual messages to the people he was said to have fore told his people of the coming of strangers at a latter time that would invade the land and take over the general administration of the city.[3]

Later in the 10th century, Bagauda, the son of Bawo and the grandson of the legendary Bayajidd of Daura was sent to Kano by his father to administer the state which was not seem to live in.



Kano City

FIG. 18 MAP OF KANO CITY

On this nobble assignment, Bagauda and a large number of his entourage set out from Daura to Kano which he found more fertile tha Daura and immediately dislodged the inhabitants (early settlers) and established a long lineage of Bagauda, dynasty after long years conflict. Thus Birnin Kano originally known as the town of Dala grew up in the shadow of Dala hill.

5.2 THE PEOPLE

Kano is the second largest city in Nigeria in terms of population and economic development. It has an estimated population of about 5 million people with a land area of about 43,000km^2 and a population density of about 326 people per square kilometer[4].

Kano is predominantly inhabited by Hausa and Fulani ethnic groups. The Hausa (Habe) are mainly concentrated in the Northern part of the city while the fulanis are mostly concentrated in the south. Today however, the ethnic difference between Hausa and Fulani are virtually indistinguishable, due to cultural infiltration of one another and inter marriages. The people of Kano therefore refer to themselves as the Hausa-Fulani, and the Hausa culture of the past has today been almost replaced completely by Islamic traditions.[5]

Apart from the majority (Hausa-Fulani) there are also other ethnic migrants to Kano. These include the Igbos, Yorubas, Kanuri, Shuwa-Arabs and the Nupes. Accurate demographic data the exact number of these settlers is not known but it is estimated that the Igbos are more than any other ethnic migrants to Kano simply because of the fact that Kano also is the next only to Lagos in terms of trade and Commerce.

There is also a small Arab population which is made up of scholars and teachers and others merged into the community as well as a few Lebanese and Europeans mostly expatriate workers.

5.3 CLIMATIC

The climate of Kano consists of three seasons and falls within the tropical continental climate. These seasons are:-

i. The Harmattan season, subject to dry and sound of winds blowing from the sahara (North-East trades) and temperatures drop during the months (from December to February).

ii. The hot and dry season from march to May

iii. The rainy season from May to September.

5.4 TEMPERATURE

Recorded average maximum temperatures for the period 1951 - 1975 range from a maximum of 38.4°Cm April to a minimum of 29.79°C in January. Minimum temperatures for the same period are highest in May at 24.1°C, with the lowest in January at 12.7°C. While the highest mean maximum temperature for this period is 38.4°C and the lowest mean monthly temperature is 12.7°C.

The annual mean temperature is 25.55°C and the range is 25.7°C (Fig...19...).

5.5 RELATIVE HUMIDITY

Relative Humidity varies from 60-80 percent in the wet season to 30% in the dry season. The highest relative humidity throughout the year is recorded at about 0700 hours and the lowest is at about 16000 hours. (Fig...22...).

5.6 RAINFALL

The rainy season usually falls between May and September Most of this period is characterised by violent dust storms which usually follows the rains - Maximum rainfall is usually recorded in August. The mean maximum rainfall recorded over a period of 72 years is 298mm in August with a mean minimum of 0 between the months November and February. Total anual rainfall over this period is 843mm (Fig .20.....).

5.7 WIND

Two dominant prevailing winds blows over the region depending on the seasons. In the dry season, between October to April the Harmattan winds (North East winds) blows from the Sahara and brings about a dry, dusty and uncomfortable atmosphere; In the rainy season however, the south west monsoon winds blows from the Coast carrying warm humid air which brings a conforting effect after the long dry season. (See Fig. 21 .)

5.8 RADIATION

About 80 - 84 percent of net energy is used as latent heat of evaporation during the rainy season, this day-time temperatures are fairly constant. Night temperatures are fairly low due to cloud cover and the absence of back radiation.

During the dry season when there is little water available for evaporation and transpiration, the bulk of the net energy is used in heating. This causes a rise in air and soil temperatures.

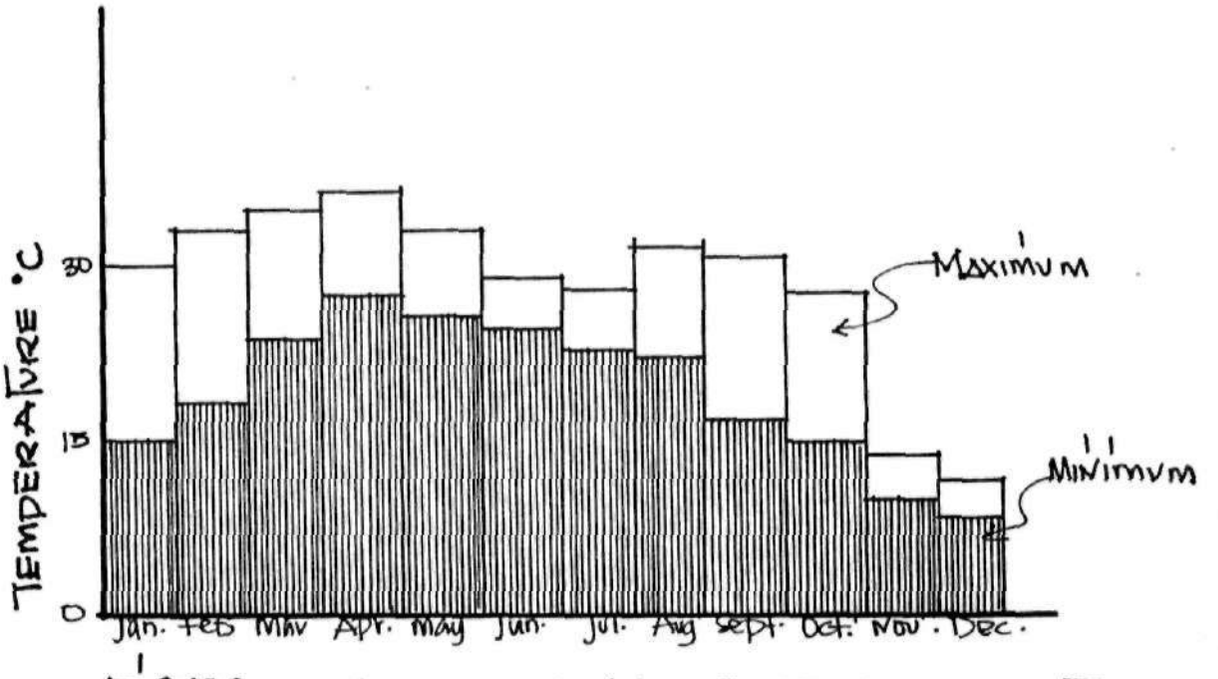


FIG.1.9 GRAPH OF MEAN AVERAGE TEMPERATURES MAXIMUM AND MINIMUM.

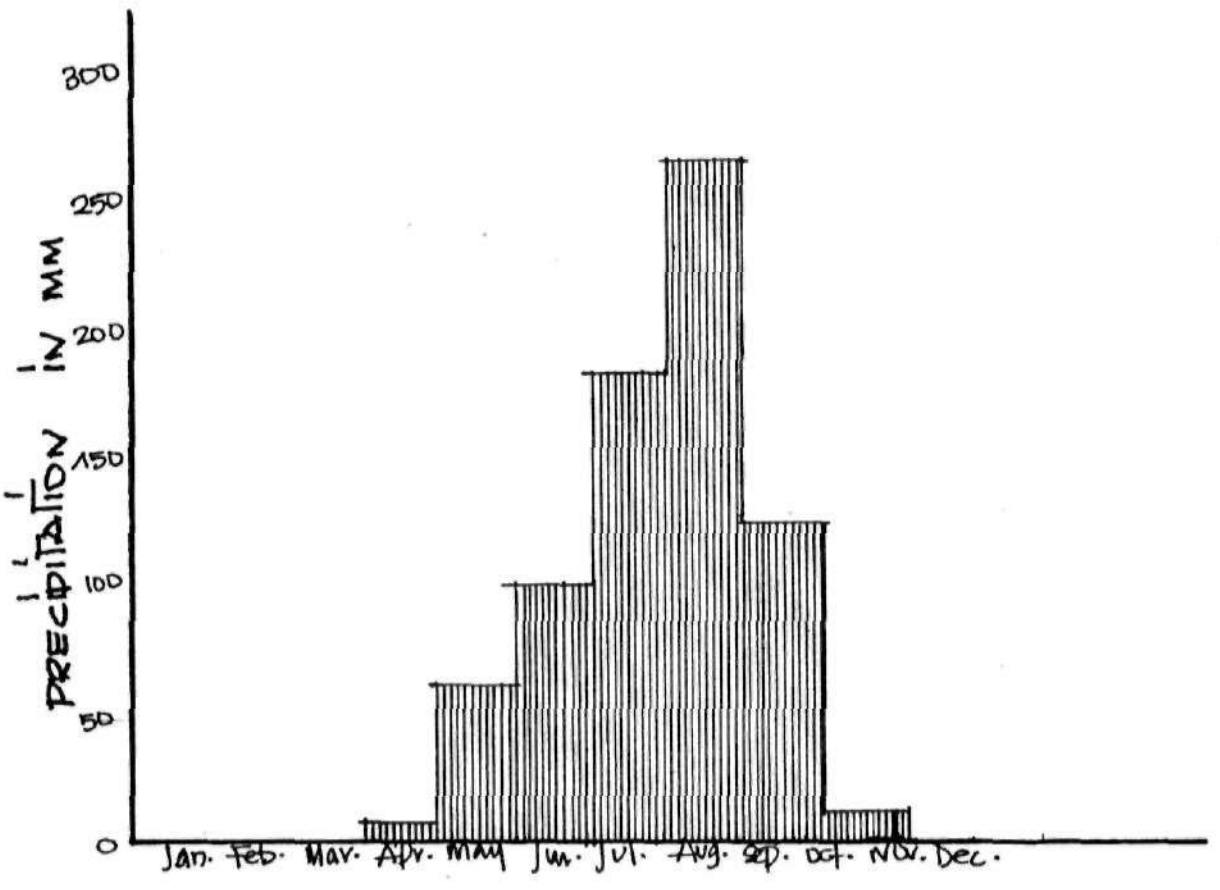


FIG 2D GRAPH OF AVERAGE MONTHLY RAINFALL IN MM.

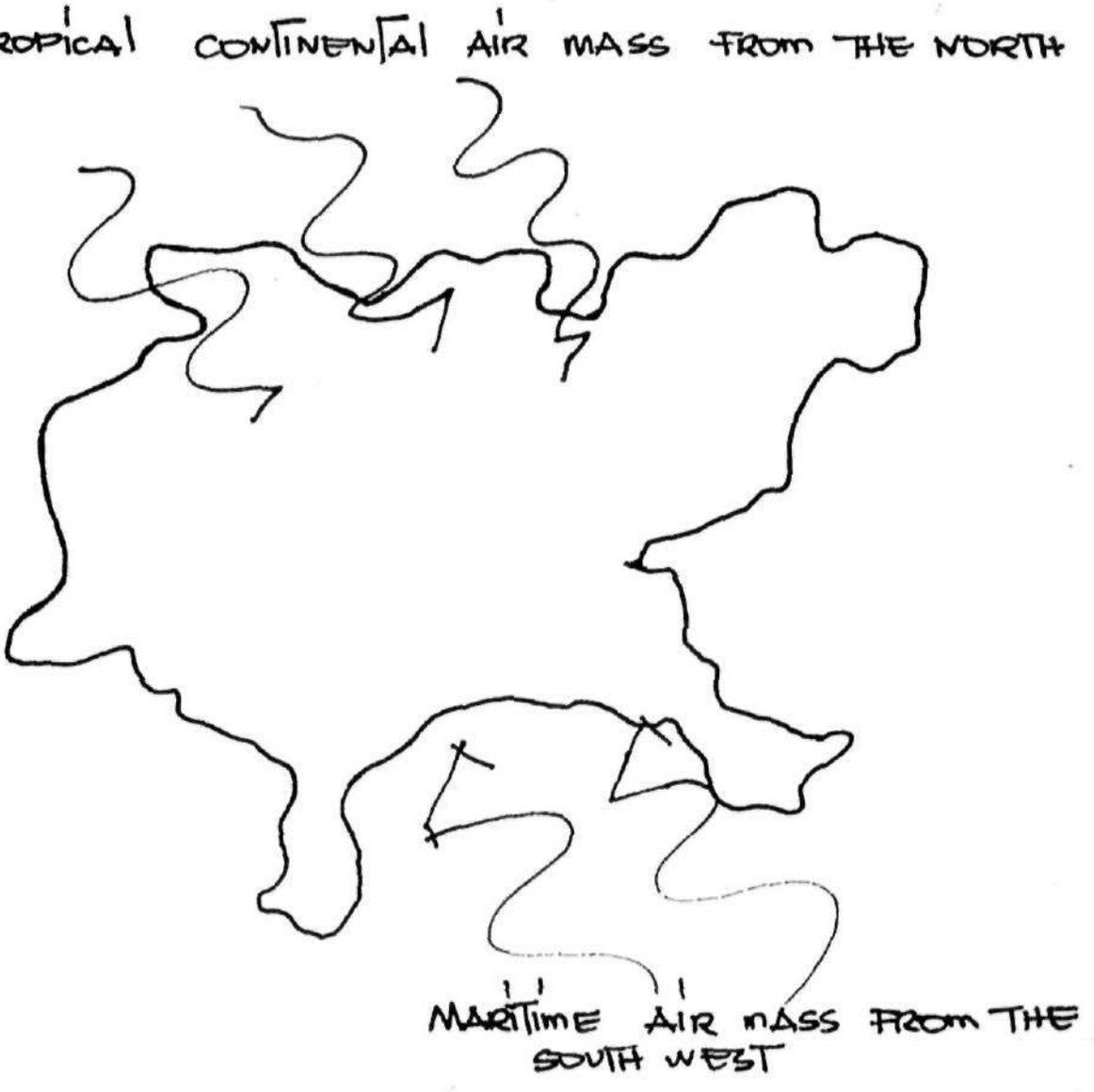


FIG.21 MAP OF KANO SHOWING THE TWO MAIN AIR CURRENTS THAT BLOW ACROSS IT.

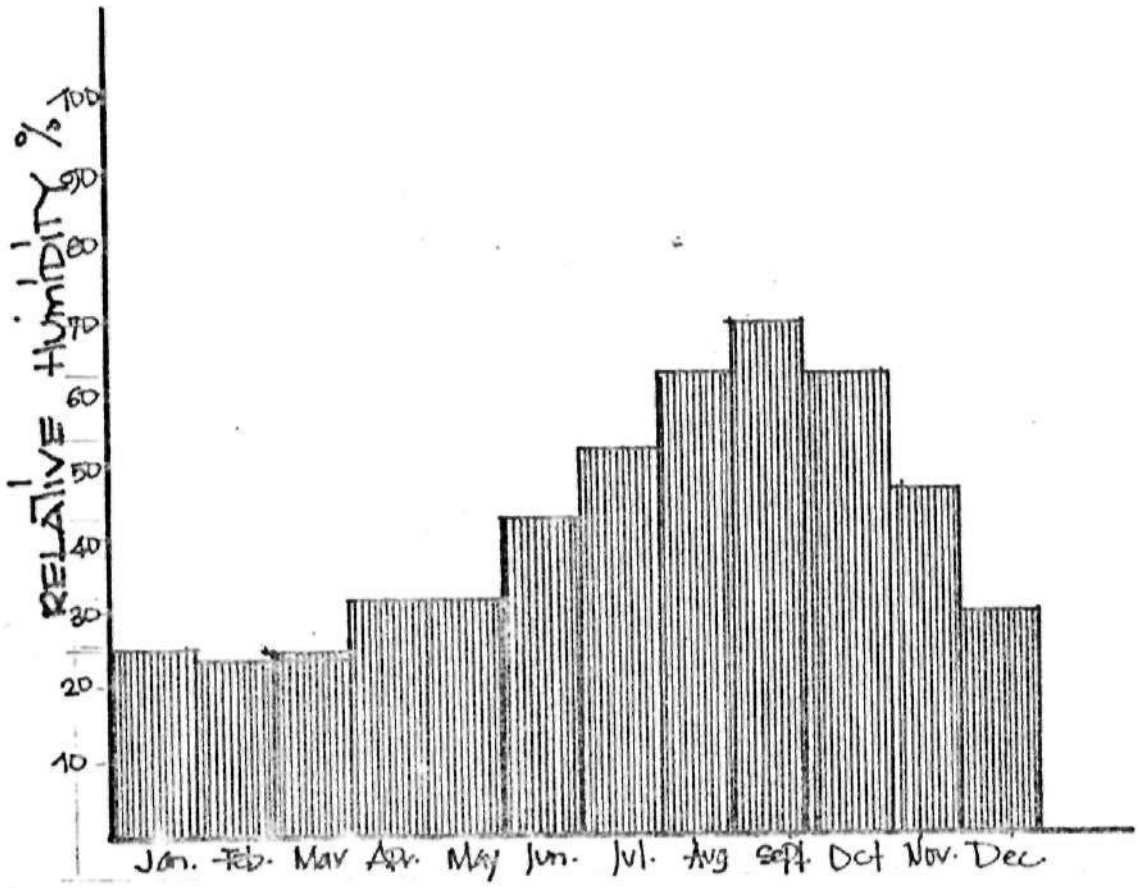


FIG. 22 GRAPH OF AVERAGE MONTHLY RELATIVE HUMIDITY IN %

5.9 SITE ANALYSIS

5.9.1 Location :-

The site is located within the proposed city centre or the so-called central business district C.B.D. The proposed C.B.D. serves the same function as in any other city centre - mainly as the centre or focus of the city for business, exhibitions etc. Already allocation of plot have been done and a good road layout and other supportive services have been completed. This therefore gives the chosen site added advantages (along Maiduguri road) with an area of about 16 plots or 8 if combined for structures like banks etc. Each plot has an area of about 2250m^2.

The choice of this particular part of the Central Business District marked 'D' also has other advantages which include its closeness to the Kano - Maiduguri road and Kano-Zaria, thereby improving the visual impact as one approaches the city from either Zaria or Maiduguri.

5.9.2 Topography

The site is relatively flat with a very gentle slope of about 1%. This results into a near natural slope eventhough drainage channels have already been dug in the layout and coupled with the drainage the soil type is good.

5.9.3 Vegetation

The vegetation cover is not of any particular significance and no plant cover exists except for few beauty shrubs and grasses which will pose no onstruction to construction.

5.9.4 Prevailing Winds

The two prevailing winds predominant in Kano blow at varrying periods. The North-East-Trade winds which is dry and dusty blows from October to April, the wind is not onstructed by any existing

culture and hence should be checked through well planned and proper landscaping. The South-West Monsoon wind on the other hand is relatively cool, moist and comfortable and therefore preferred for ventilation. It blows from May to September and is not obstructed too by any structure, as such it gives an opportunity for proper utilisation.

5.9.5 Sun Path

During the harmattan period the sun path moves along the east-west direction facing the south. This makes the northern plane warmer than the southern plane. During the hut season however, the movement is along the East-West, facing north, and the south facing plane becomes warmer than the northern plane. Nevertheless Kano being in the Northern hemisphere., the period of heating on the Northern plane is considerably less than in the southern plane, hence the northern plane has greater advantage in term's of cooling.

5.9.6 Services

As already mentioned, the site for the location of this project is the Central Business District which has already been planned and zoned for different functions and different services requirements already in place laid out in grids. Therefore power, electricity, water, telephone and sewage will not pose any problem to the project.

5.9.7 Site Feasibility And Viability

A survey of thesite from different locations within the city reveals that an interesting dimension with respect to its viability and exposure on the urban township,the site . presents a curiously interes ting position that is virtually vsible from many parts of the town despite the fact that the town dotted with highrise office blocks .

5.9.8 Conclusion

The above listed factors have strongly suggested the viablility and feasibility of the site for this project. In fact there is no other site that could have been more suitable for a project like this. This has therefore made it the most desired for siting the bank.

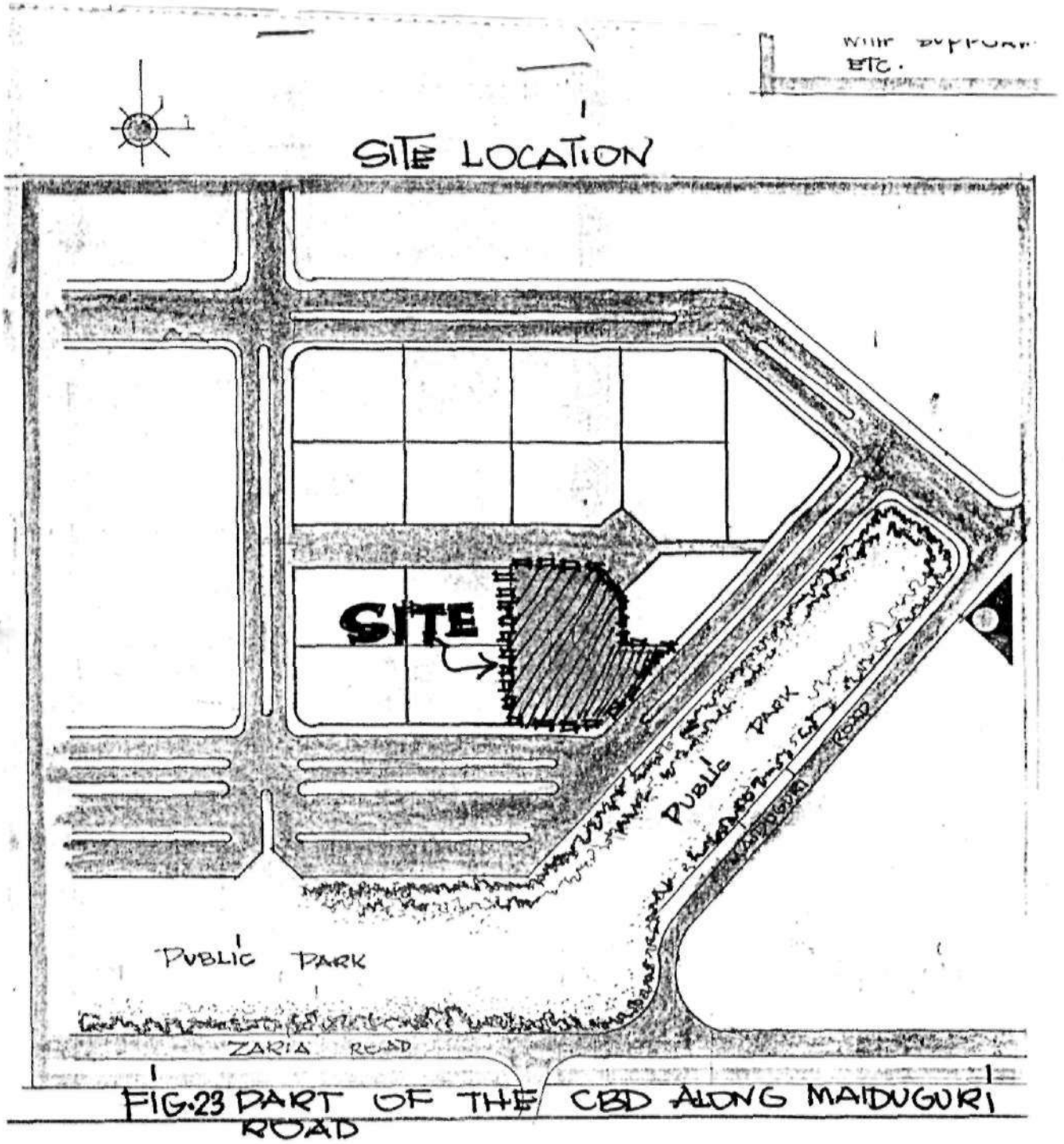
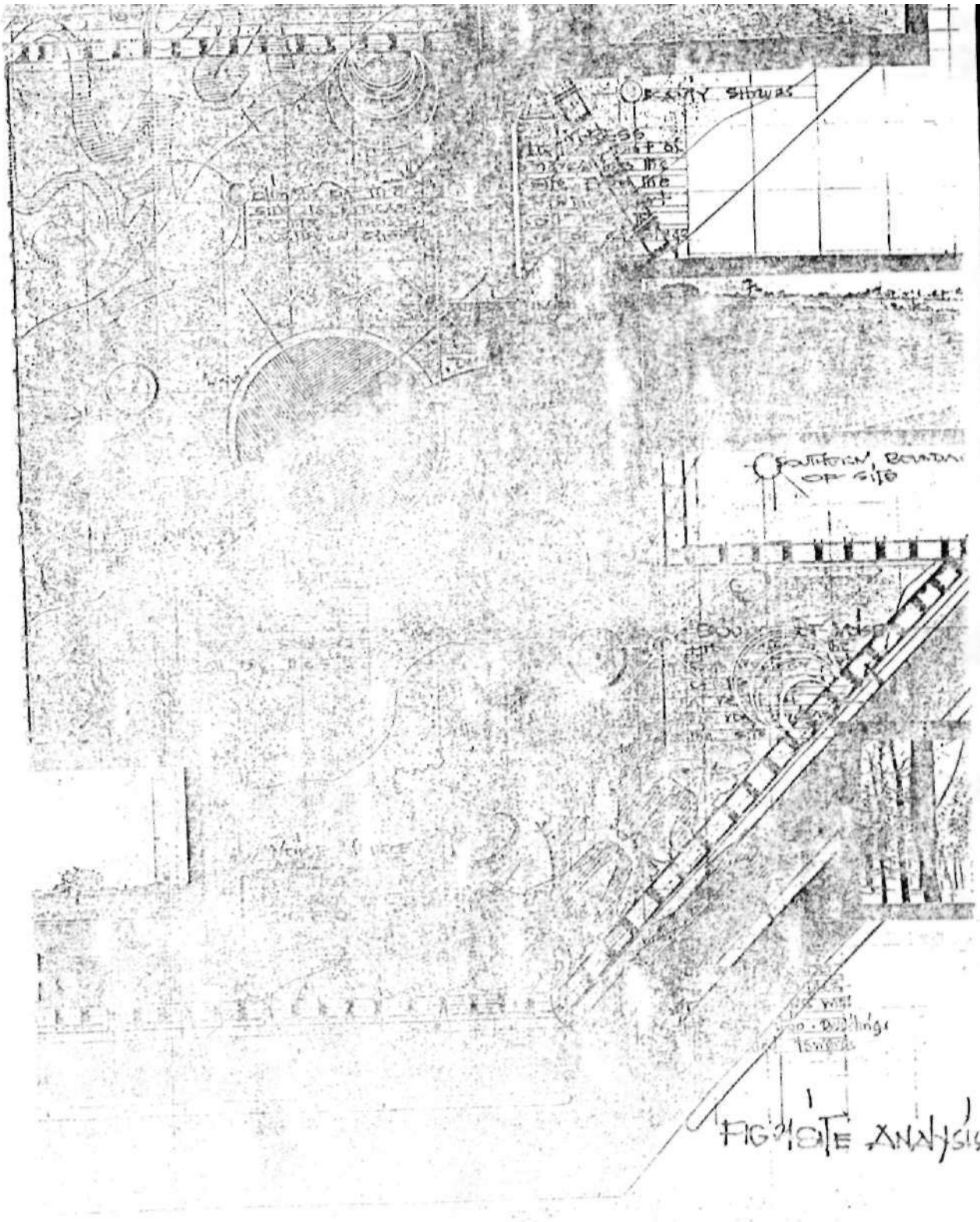


FIG.23 PART OF THE CBD ALONG MAIDUGURI ROAD


EXISTING STAIRS
SOUTHERN BOUNDARY OF SITE
FIGURE GROUND ANALYSIS

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CHAPTER SIX

6.0 DESIGN BRIEF

6.1 FUNCTIONAL REQUIREMENTS

The formulation of the design brief in any building development is always a tedious part of any design (architectural) especially if the client is a layman on the subject of design or in situations where not only an individual is concerned with the formulation of the brief but bymany (e.g. directors of a bank) the architects judgement and instruction is always sought for. A case in hand is the one in question where a transition has been made by the bank as a cooperative outfit to a fully commercialised one.

In formulating the brief therefore, the basic requirements of the bank are considered first and foremost and the rest are aduced from existing cases from studies carried out of similar projects and its likely future requirements at full growth.

6.1.1 The Brief

The brief for this project is formulated from two areas:-

- The Bank as an independent Building and
- The Bank as an office building

(a) The Bank as an Independent Building:- merely dictates the requirements of the basic facilities of a bank e.g. the banking hall if it is a commercial bank. Unlike in Merchant banks, the strong room, the Bills offices, cashiers' Cubicles etc these and other special facilities are the only features that differentiate it from other architectural designs of offices

(b) The Bank as an Office Building:- on the other hand is merely talking about office provision in a bank like on any other office with partitioning or without partitioning, the partitioning normally done by the occupant.

The brief therefore is based on these two requirements to achieve a functional and economic design that could take care of the client future needs of office accomodation at full growth.

6.2 Facilities

The facilties provided for this project stems out of the fact that there is continuous advancement in technology and different requirements of occupants in an office building like this. It was realised out of case studies of existing office building here in Nigeria and abroad, except where it is deemed that the technology if applied here may be a source of problems in the proper functioning of the building.

- Offices- These are provided mostly as a result of the administrative requirements of the branch bank. Executive and non executive offiice are recommended for the branch bank, difference in the two only in sizes or floor areas.

- Banking Hall. The banking hall is the technical part of the bank where cash is paid or recieved. Open planning office layout is recommended and adopted for this.

Public Hall:- This is the waiting area for the public to either deposit or withdraw. Area to be provided must be able to take care of peak attendance of customers.

- Restaurant:- Having recognised the power of public services in corporate buildings in addition to other services the restaurant can serve both personnel of the bank and its executives are proposed. The shop provided is about .....m^2 whereas the restaurant is .....m^2 and can accomodate about..... persons at atime.

225

150

- General Office:-

In coordinating general office works functional offices which facilitate modern office practice technique is proposed for the day-day running of business activities. The offices are expected to serve as efficiency increasing elements, the office space constituted about .....80%.. of the total area provided.

- Training Centre

A centre for training of the various cadre of the banks personnel is proposed, this centre shall serve as the educational outfit of the bank, comprising of a library, classroom workshop room newspaper room and other spaces as required.

- Medical Services:-

As part of staff welfare services the bank required a clinic that offer primary health care to its personnel and their families. The clinic provided is about .....39.....m^2.

- ParkingSpace:-

Parking facilities for car, lorries, truck, bullion car, motor-cycles bicycles is proposed to serve both the staff, customers and visitors of the bank, provided parking area for visitors and for staff. 44

- Technical Rooms

A room for a generator, water supply, and workshop is proposed for the head office to take care of its mechanical requirements. Other technical rooms required are the PA BX computer Fax and other services. (telephone Room, Air Handling Unit e.t.c).

- Gate House:-

For maintaining vigil on movements, gate houses are proposed The gate houses may also serve as the control points for the sites lighting and other gadgets.

- Conference Room :-

Conference room can be handled in many different ways depending on the primary purpose for which the room will be used. Such rooms may have as their main function the hosuing of work conferences between individual executive representating various departments of the bank . They may be placed next to general office areas for meeting between personnel who do not have private offices, they may also be designed primarily for top-level meetings between officers of the company top bank officials and customers or for meetings of the board of directors

- Storage Facilities:-

The word 'Storage' means a variety of things in any discussion of office layout. Storage is provided for office supplies, old records and equipment, and maintenance materials. Storage of records and equipment is the one that is least important in terms of location near the active working area of the office.

- Auxillary Facilities:-

Any other facility that will help in the running of the building will be incorporated under this heading.

CHAPTER SEVEN

7.0 DESIGN CONCEPTS AND CRITERIA

7.1 FUNCTIONAL ORGANIZATION

The importance of a coherent functional organisation would lead to a well co-ordinated and controlled route of a visitor. considering time and factor as a criteria component of design programme, the functional organisation of this proposal is therefore directed towards finding an arrangement that will not only allow free flow but also incorporates time factor in design.

7.1.1 Zoning

The design programme when analysed revealed a pattern of zoning for the different functions that can best suit the requirements. The analysis aimed at basic units for zoning pattern posible. They are:-

(a) The Corporate head office: Accomodating and serving the management structure of the banks headquarters.

(b) The branch bank serving as a local branch of the bank and

(c) Office spaces to be occupied by tenants.

The three zones can be summed up to suit the requirements of the design.

7.1.2 Zone Relations

The relationships of the different zones mentioned above are mutually inclusive. Each zone functions in part of the whole. From a single point of entry each of the three units can be reached exclusively as well as the inter linkage between and among the units.

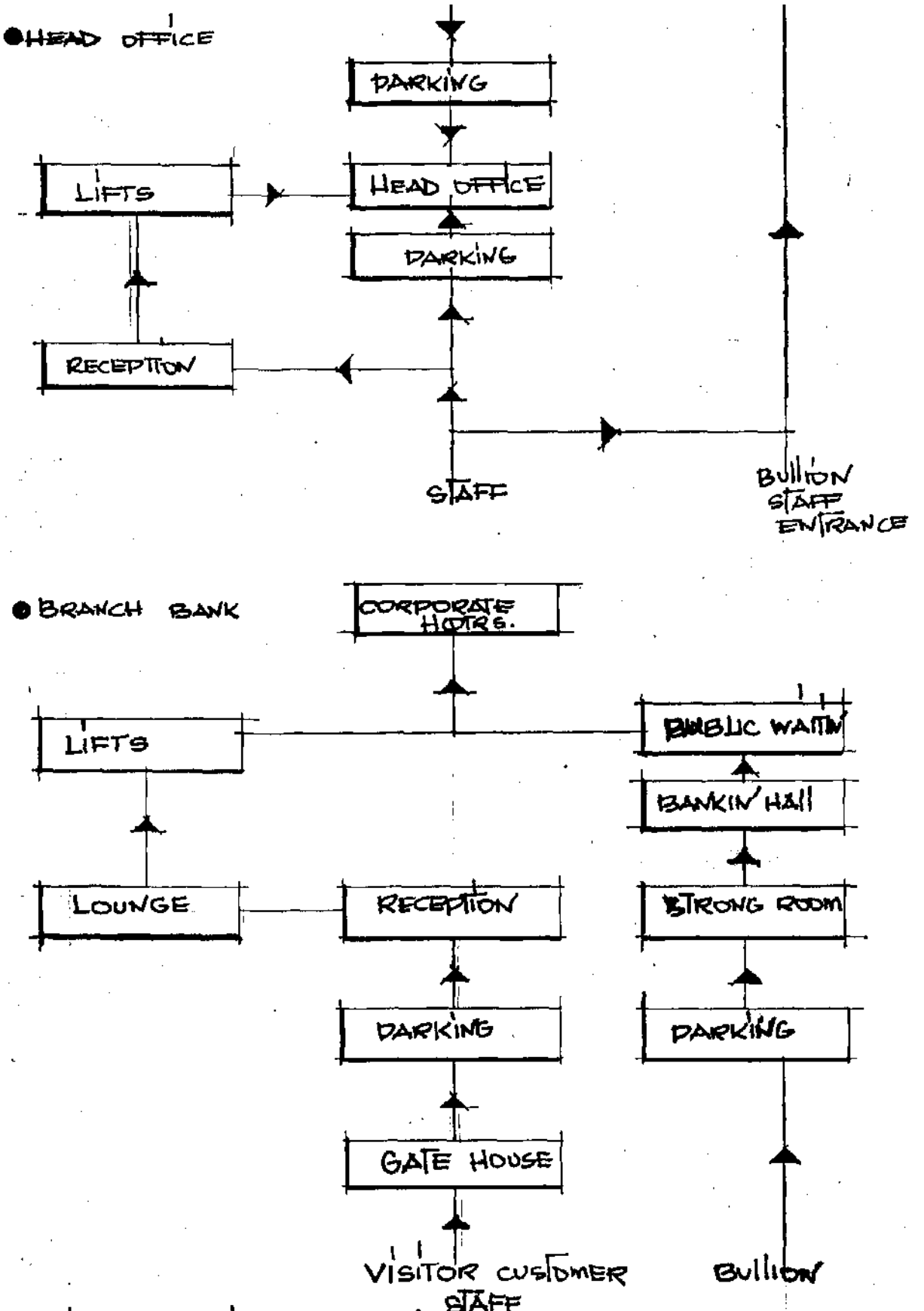


FIG. 24 FUNCTIONAL RELATION SHIP DIAG. FOR BRANCH BANK AND HEAD OFFICE

7.1.3 Functional Relationship

The different functions of each unit could be related in such a way that their operations could be independent of other units unless where it cannot be avoided especially in the sharing of some functions like staircase or lifts e.t.c.

The functions within the branch bank can operate independently without much interference from the head office, but services like the Canteen is strictly for the use of the bank and should be accessible too to other staff of the head office.

7.2 DESIGN CONCEPTS

7.2.1 Planning Principles

The purpose for which designs are made is for the satisfactory use of the client (Users) Visitors and occupants. With the clients vision of a lofty and prestigious building the proposal aims at creating an environment which can be absorbed through the maximum number of senses. This creates he deepest, most significant and lasting impact through taste, feeling, smell hearing movement etc. These are going to be applied in the design of the office, the bank and along the traffic route or circulation paths. The traffic flow itself is to incorporate control and impact elements.

7.2.2 Site Concepts

The site concept which is the bedrock of the overall design is based on the principle of organising part of a whole to produce a dramatic view by composing and reflecting the buildings function and personality.

Considering the fact that the site for this project is in the CBD with a fixed allocation of plots into standard size , some design parameters were given upper hand (e.g. parking) and major design decisions were taken.

The design concept for this project is basically a summation of the following:-

a. Parking spaces for cars (Visitors and Staff)

b. Accessibility - (Staff, visitors or Customers and tenants)

c. The office tower Headquarters and

d. Bullion parking (cash delivery)

7.3 SITE STRUCTURE CONCEPT ONE

Because of the irregular nature of the site and the fact that the site is bounded by motorable roads (access roads) no clear definition of the site (either square rectangular otherwise is made) but general layout shows how the different parts have been integrated

Two accesses are provided in this concept from the North - Eastern part of the site. One for visitors and customers to the bank which is at the right end of the site and the other is at the left - for Bullion entrance.

The tower at the centre, consists of the branch bank at the podium level while the office tower at the central position, consists of the head office and lettable floors.

This concept is rigid because of the fact that the staff parking number has not satisfied the ratio of 10:1 as proposed for this design i.e. 10 people in the building to 1 car parking for staff.

7.4 SITE STRUCTURE CONCEPT TWO

This is composed of a near square form at the podium level and the office tower, a perfect square at the centre. Vehicular accessibility is at different sides of the site, for visitors/customers Bullion and staff. This concept may pose a limitation as a result of circulation.

7.5 SITE STRUCTURE CONCEPT THREE

This has a rectangular shape, if the branch bank and the office tower are juxtapositioned. Parking is at two opposite ends for visitors and staff.

7.6 ADOPTED CONCEPT

The adopted concept for this project is a summation of all the features of the three concepts except that a new addition of parking space for staff is made and that is achieved by supporting part of the first floor level on columns. There are therefore 3 parking areas - visitors/customers and for staff of the bank and tenants. Accessibility into the building tower and branch bank is on the ground floor through a reception area. Bullion parking too is on the ground floor though this is seperated from the staff parking.

7.7 FORM CONCEPT

The concept of forms in architecture had hitherto been tied to utility, construction techniques and materials and not based on any philosophy. However in 1980's this trend has changed and is now geared towards finding forms that express the purpose of architecture.

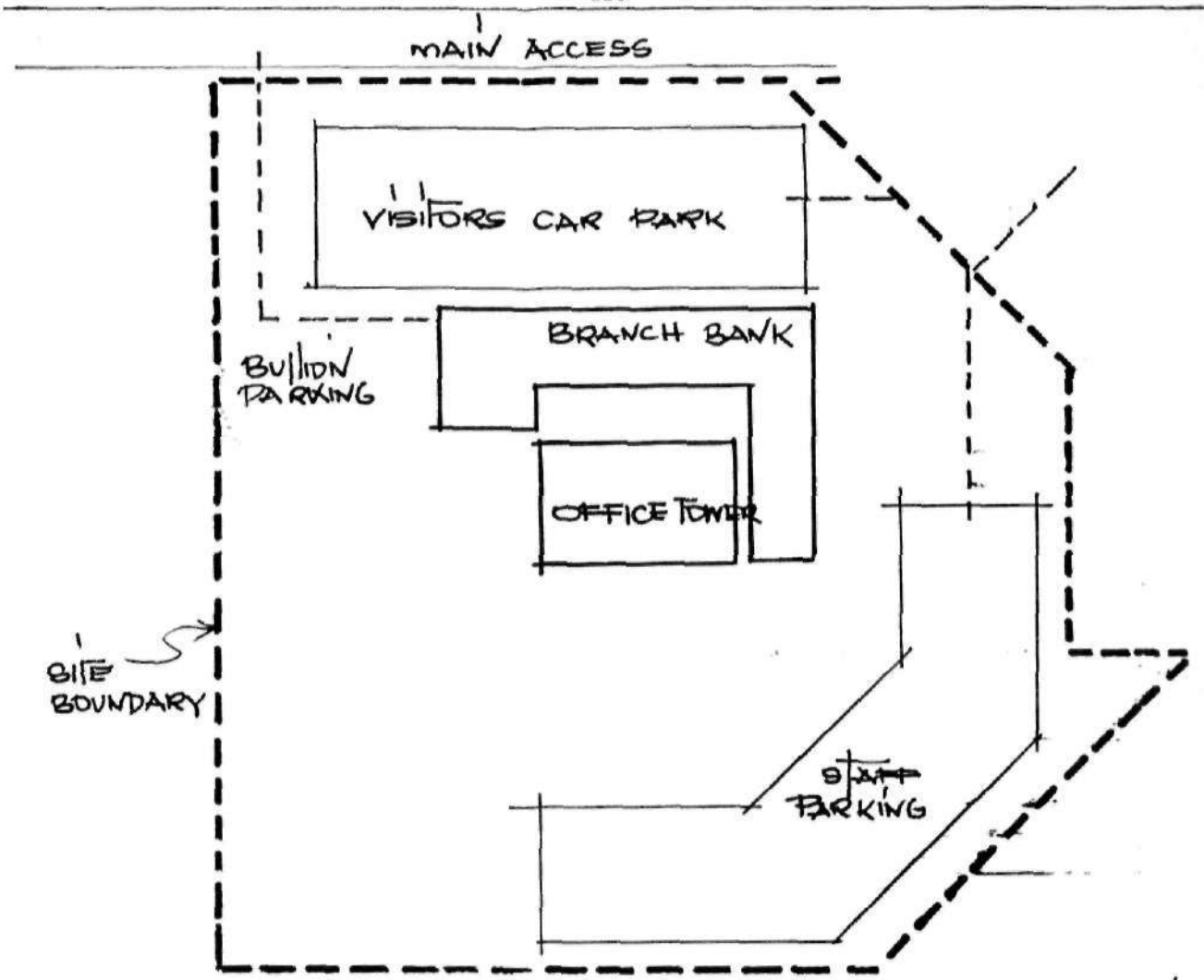


FIG.25 SITE STRUCTURE CONCEPT ONE

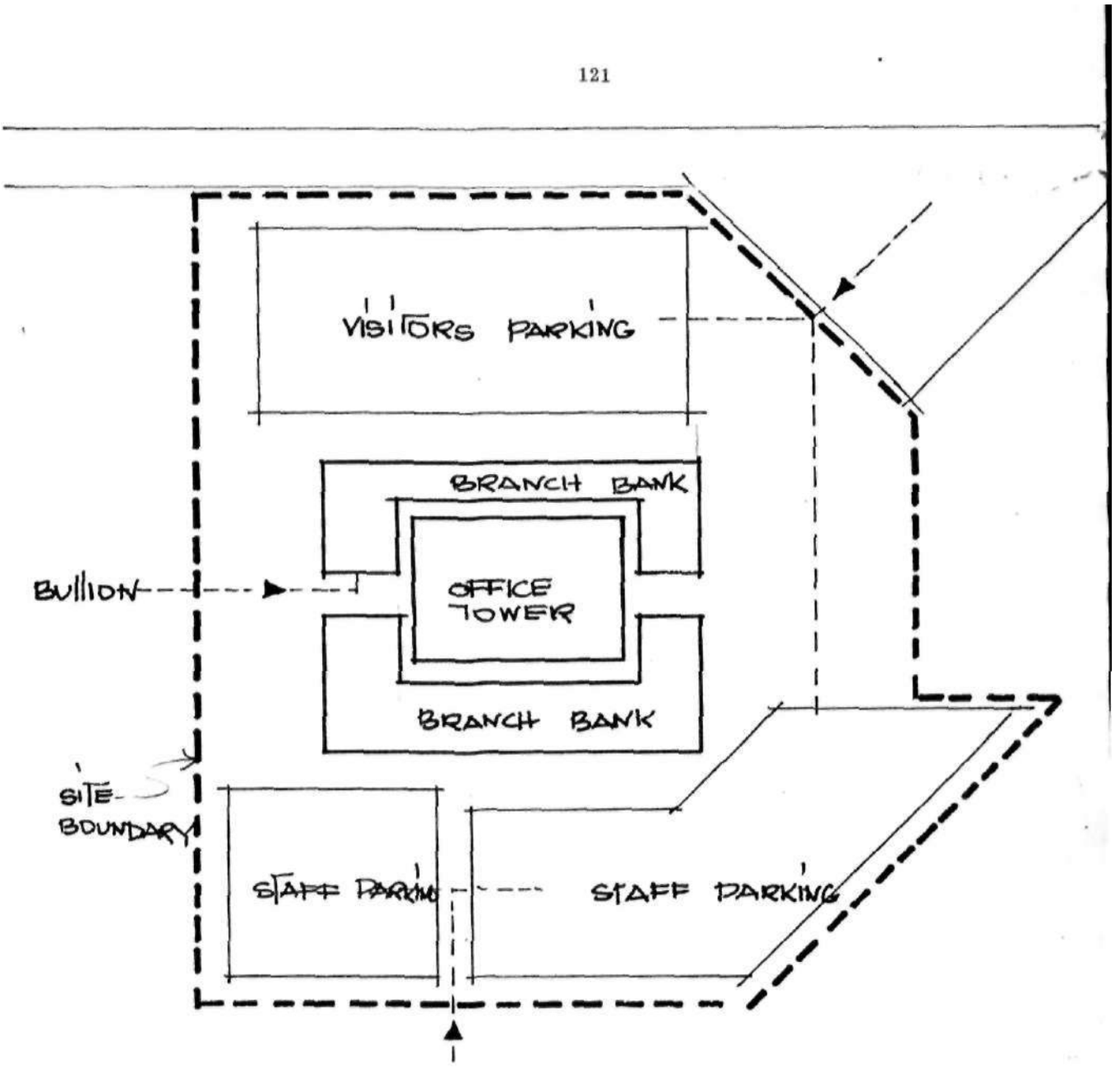


FIG.26 SITE CONCEPT STRUCTURE TWO

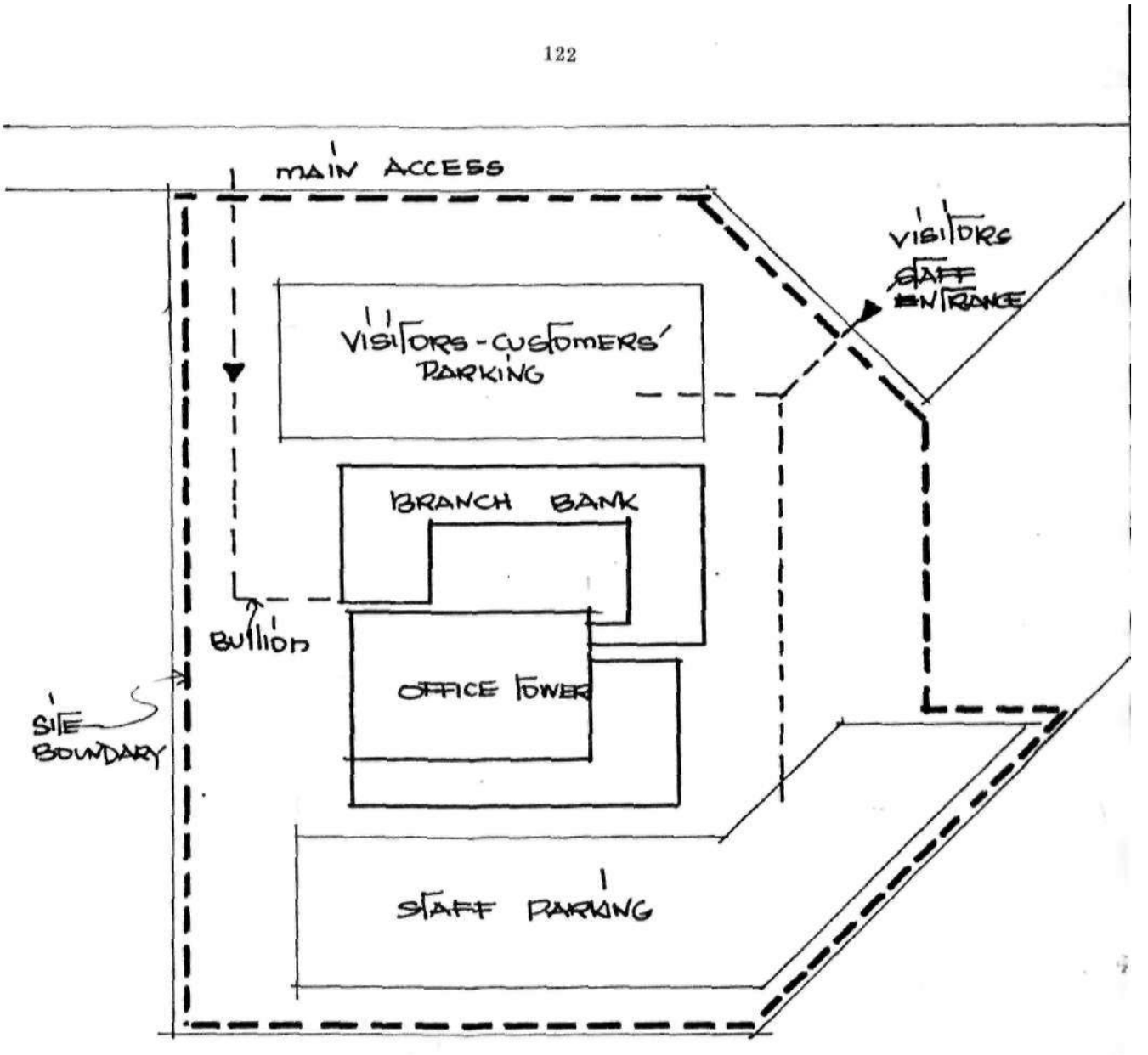


FIG 27 SITE STRUCTURE CONCEPT THREE

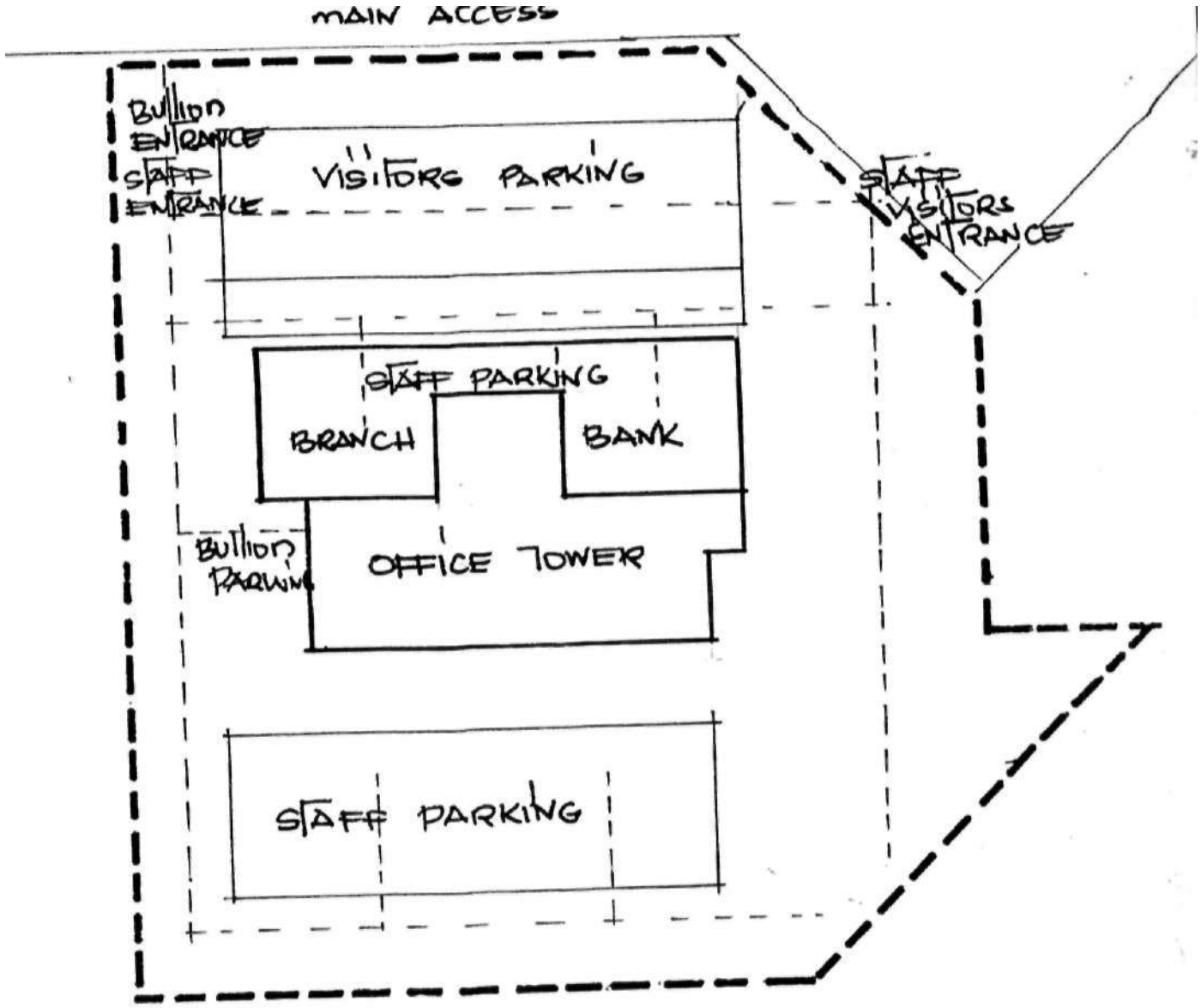


FIG. 28 ADOPTED SITE STRUCTURE CONCEPT
A SUMMATION OF 1, 2, AND 3 ABOVE.

Towards this end different approaches to form concept have been developed these are:-

7.7.1 Iconic Forms

Forms attached with particular meaning and identity in society e.g. Minarets in mosques.

7.7.2 Symbolic Forms

Expressing forms with the use of materials or finishes based on the visual and psychological impact attached to these materials.

7.7.3 Analogic Forms

Expressing a form in an analogy to another object. It has high expressive value but usually leads to dullness and wastage in the use of materials.

7.7.4 Hybrid Forms

Sometimes expression is achieved through the composition of the above outlined forms. This is usually employed when complex diverse functions is involved.

7.8 FLOOR PLANS

In assessing the vision. This will then be presented as a work with meaning and can then be understood as a whole. It forms the guiding principle in the organisation of the plan layout.

(a) The Basement Floor

Because of the limitation of the site, a basement floor is proposed for the bank. Services like water storage, stationery store, maintenance department etc are all housed on the basement level. It is accessed via the fire escape staircase with the steps going down in opposite directions to the main steps. The lift pit too reaches the basement floor for deliveries.to the basement floor

b. Ground Floor Plan

The ground floor plan is an extension of the outside into the inside by way of locating the following functions - parking for staff and visitors. reception hall lounge and most importantly services i.e. goods lifts, cash delivery, male and female toilets etc.

The two main facets of the building are approached by way of a walkway into one reception hall and enquiry. The tower is accessed by 3 passenger lifts and 1 main staircase. It is proposed that only two lifts will be effectively put to use while the third is on standby in case of mechanical failure or any shortcoming that may occur. There is also a goods lift located at the service end of the ground floor. This is used for the transportation of cash delivered to the bank and also goods, like (stationary furniture etc). There is a fire control room too on the ground floor. Here all sensors and fire control gadgets are monitored and a standby fire hydrant room is readily available in case of fire outbreak.

To take care of the cables and fittings (electrical and water) a service duct is provided which also serve as the metre control room.

For refuse disposal, a waste disposal chute is provided which runs through the whole building height to be evacuated on ground floor and disposed off.

c. First And second Floors

The first and second floors of the office serve the function of being the branch bank where normal banking functions are carried out. This can be said to be an independent unit and is run independent of the main office with a branch manager cashiers, typists e.t.c.

The first floor houses the banking hall, the public waiting, strong room Bills rooms etc. and also the branch managers office, while the second floor has the canteen (senior and junior staff) interview room clinic and offices.

d. The Typical Floor

The 3rd floor is a typical floor and is repeated to the last floor. This is partitioned in different ways as the need requires as long as the basic circulation areas are clearly defined and obsrtuction is not made of air passage for cross ventilation.

7.9 FLOOR STOREY

The office tower is basically an office structure consisting of two wings made up the branch bank on the podium level and the office tower. The branch bank is 2 storey high with a void on the second floor.

7.10 ELEVATIONS

The elevational composition of the office tower is simply the integration of basic shapes seen in everyday life. The appreciation of straight edges has been fully implored and it cuts accross the sky to give an appreciative visual impact. The choice of material finish for the elevations, consist of glass curtain wall (specifically coloured and sun reflective to reduce heat absorption) and exposed concrete and marble used in different proportions and colours to give a distinct appearance to the building.

7.11 SITE PLAN

From the site concept adopted, the building is approached from the main access road on the Kano-Maiduguri road.

Visitors enter through the gate on the manoeuvering area provided and park in the visitors parking spaces provided at the front. The second entrance is for staff and Bullion, the parking space on the western side of the site and the parking underneath the first floor is for staff.

7.12 DRAINAGE

The slope of the site is towards the North-western direction which is flanked by an already mapped out drainage system, storm water on the site is proposed to be channelled towards the North-Western direction via the storm water drains on the periphery of the building and anywhere necessary. Drainage from roofs is through drain pipes from the various roofs to storm drains on the ground.

7.13 SERVICES

As shown in the site analysis, the CBD has already been planned and all services are in place electricity water, telephone, sewage and drainage channels.

Fresh Water;- Supply is proposed to be through the following:-

i. A bore hole in the basement and stored in an underground tank and

ii. Water from the mains to be stored in underground tanks for onward transmission by means of a pumping machine to other floors.

Electricity is another important aspect of this building. A continuous and uninterrupted power supply is essential.

Electricity is to be supplied to the building via a step down transformer. provision for an alternative power supply is also necessary.

A switch room is provided on the ground floor for all electrical control and exchange.

Sewage Disposal:- The generation of this type of waste is not much and so its disposal can be by the normal way through pipes of different sizes to inspection chambers septic tanks and finally soakage pits. The grouping of the WCs in one zone of the building makes sewage disposal as simplified as possible.

Airconditioning The requirement for a conditioned environment is necessary to cool down the heat load generated by occupants, machines and radiation. Two types of air conditioning systems are recommended:-

(a) In the large halls e.g. banking hall, public waiting lounge canteen the large unit systems of air conditioning system located in one place and distributed by means of ducts is

(b) recommended. In individual offices the window type unit systems is favoured. Depending on the recommendation of the engineer concerned centrally located airconditioning systems is also proposed to be located on the roof top - this is to serve the tower.

Fire Control:- The suppression of fire and its detection are to be done by the following systems.

a. provision of a fire hydrant by the placement of water hoses at strategic locations on all floors to be accessible by fire experts.

b. Smoke detectors in fire sensitive areas e.g. the electricity switch room.

c. Fire control room on the ground floor

d. Fire hydrants or points are also to be provided on the site at 20m interval.

Burglary Control And Security

A security post at the gate for all night vigil and electronic security control system (closed circuit monitor, burglary alarms are some of the method proposed to be provided depending on the consideration of security experts especially in corporate buildings. All nooks and corners of the building to be properly lighted at night and burglary alarms provided in such areas as the strong room, archives and vaults.

7.14 Construction Methodology

The structure of the head office is the normal concrete skeleton construction columns and beams with cast in situ reinforced concrete waffle grid floor system. A 6m x 6.5m grid is chosen to allow the effective division of the spaces into offices, conference rooms circulation areas etc. Unless where it is unavoidable because of space size, columns should be avoided on circulation routes or in offices and where they occur, they should be finished with soft material to avoid accidents. See schedule of finishes.

7.15 Maintenance

A periodical maintenance of the building is to be organised by the maintenance department and specification are to be followed strictly to avoid construction failures which may result due to lack of care or poor workmanship

CHAPTER EIGHT

8.0 SUMMARY AND CONCLUSION

8.1 SUMMARY

In formulating the objectives of this, thesis the importance of individuals or corporation to aim at owning their own office building was stressed especially in a developing economy like that of Nigeria where banks are at the forefront in steering the economy either upward or downward, and the importance of these banks to own their administrative offices for easy administration and coordination.

The roles banks generally play was examined in chapter two and their (irrespective of the type of bank) place in the economy was analysed, The functions of banks can be generally classified as advance to loans for the growth ofthe economy.

Since this proposal is aimed at designing a head office for a bank which also doubles as an office, office architecture was analysed and different types of office layout were considered. Bank architecture was also analysed and major differences between an office and a bank drawn.

Preceeding the analysis in chapter three, chapter four considered the major areas of study of office buildings and studies of how the study areas were applied in real life situations were noted. A conclusion was drawn and recommendation were made.

A proposal was then made bearing in mind the conclusion drawn from the preceeding chapters and the clients requirements. This led to the formulation of functional and space requirements and formulation of proposal.

A design to interprete the requirement of the client was made bearing in mind the climatic, environmental and other design parameters.

8.2 CONCLUSION

The emphasis of the thesis had been focused on Bank architecture which is a subset of corporate architecture which are dominant features of all city skylines and urban skapes. Most of the banks considered in this thesis were multi-storey buildings it can then be deduced that the quest for honour and prestige among corporate bodies breed competition who have found solace in high ise buildings especially in present day Nigeria with banks at the forefront in the ownership of most of the elegant office buildings in major cities.

Since the thesis mainly studied multiply tenanted office buildings the following can be deduced.

1. At the onset of the design, the objective of such design must be outlined and purpose or intention of the use of such design must be foremost if it is a purpose built office it must be known.
2. Decisive solution in terms of all design factors their location and serviceability must be considered. This should be done to avoid the wrong placement of functions or services.
3. Office spaces should be designed to be flexible. A good and workable choice of grid must be made in order that wasteful spaces can be avoided. Design module should be reflected n ceiling and window sizes.

4. Unless otherwise, security conscious designs like banks should be designed to be owner/occupier to avoid burglary and theft by other occupants taking up tenancy in such buildings unless if its a temporary measure.

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APPENDIX I

SCHEDULE OF ACCOMMODATION

OOFICE/RANK	STANDARD	FROM CASESTUDIES	ADOPTED
1. Executive Office	25m²	30m²	45m²
2. Others	10-25m²	20m²	30m²
3. General Office	2.2m²	2.5m²	2.5m²
4. Kitchen Store	—	—	—
5. Circulation/Services	15% Useable Area		—
6. Storage	20% of Space provided		—
7 Class Room	0.4m²	-	0.6m²

FUNCTION	AREA PROVIDED INCLUDING CIRCULATION
Branch Bank	552.0m²
Banking Hall	552.0m²
Public waiting	204.0m²
Strong room	26.0m²
5No Bill room	88.5m²
Notes Counting	22.5m²
Toilets (3 males & 3 Females)	23.25m²
Reception Area	8.75m²
General Office	
Bullion Parking	72m²
3No Stores	43.5m²
3No Air Handling Unit Room	41.25
Managing Directors Office	356m² (TOTAL AREA)
Managing Director	—
Reception	—
Secretaries	—
Personal/Confidential Secretary	—

Messengers office —

Conference room —

Tea Room —

INTERNATIONAL BANKING SECTOR - (2 FLOORS) 712m² TOTAL AREA

Executive Director

Reception Secretary

Messengers

Deputy General Manager International Special Duties

Secretary Reception

4No Office

Deputy General Manager Foreign Trade

Secretary Reception

Currency Officer

4No Officers

International Banking Sector (4 Floors) 1424m² TOTAL AREA

Executive Director

Deputy General Manager Interior

Secretary Reception

Manager Agric.

Manager Housing and Maintenance

Manager Foreign Exchange

Chief Inspector

6No Offices

Manager Branch Network

Manager Control

Reception/Secretray

Manager Inspection

Manager Lending Policy

4No Officers

Manager Finance and Planning

Manager Finance

Manager Corporate Development

Secretary/Reception

4No Officers

AREA MANAGEMENT (3 FLOORS) 1068m² DA1 AREA

Area Manager

Accountant

Inspectors 4Nos

4No Assistants Inspectors

Reception/Secretary

Committee Room

2No Class Room

5No Offices

Library

Coffee Room

Newspaper Room

Seminar Room

RENT HOUSE

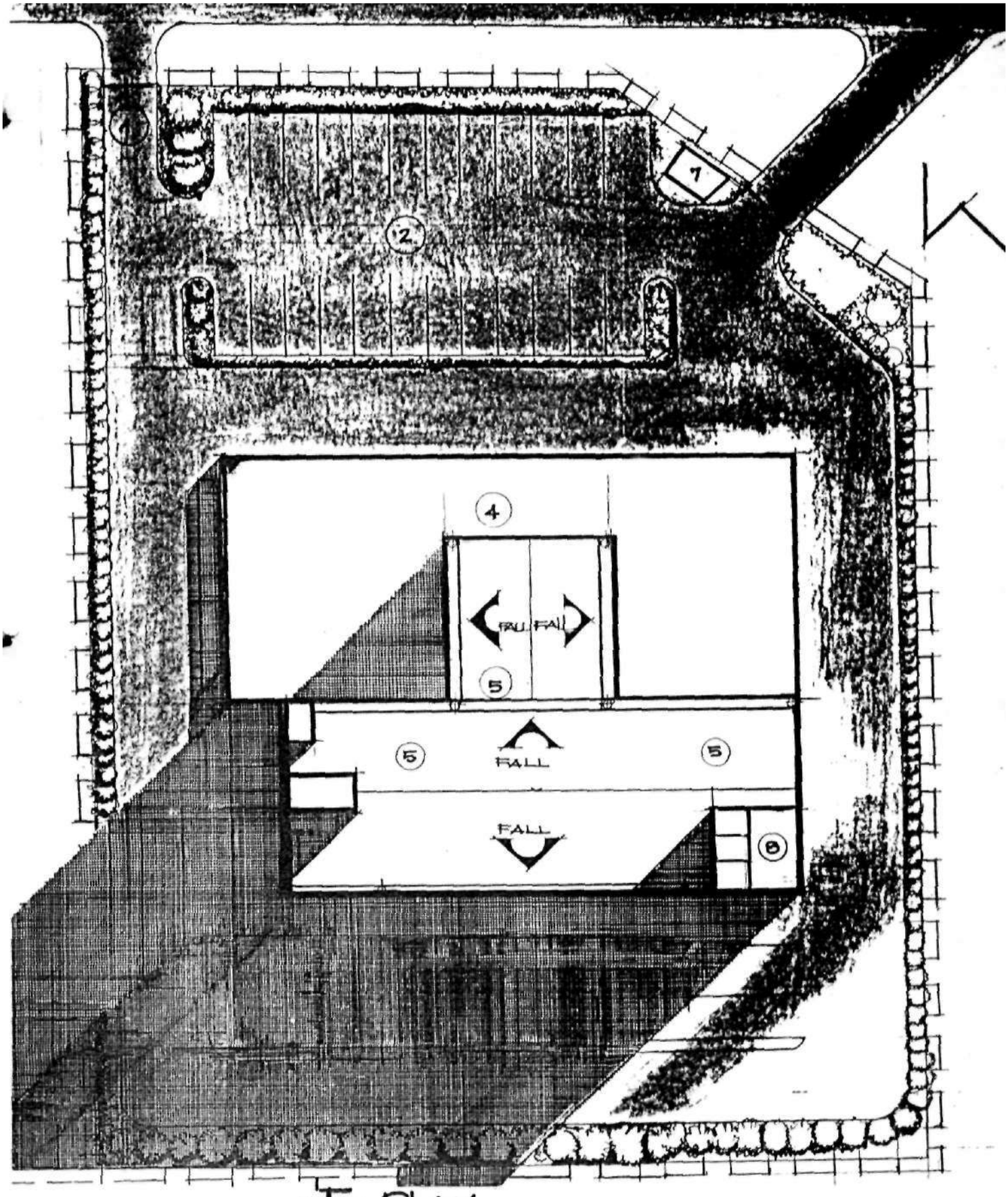
2No Bed room	52m²
Store	15m²
Kitchenette	42m²
Executive Dining	54m²

CLINIC 2ND FLOOR

1No Consulting Room	18m²
Pharmacy	10.5m²
Dispensary	24m²
Cards Room	11.25m²

SERVICES

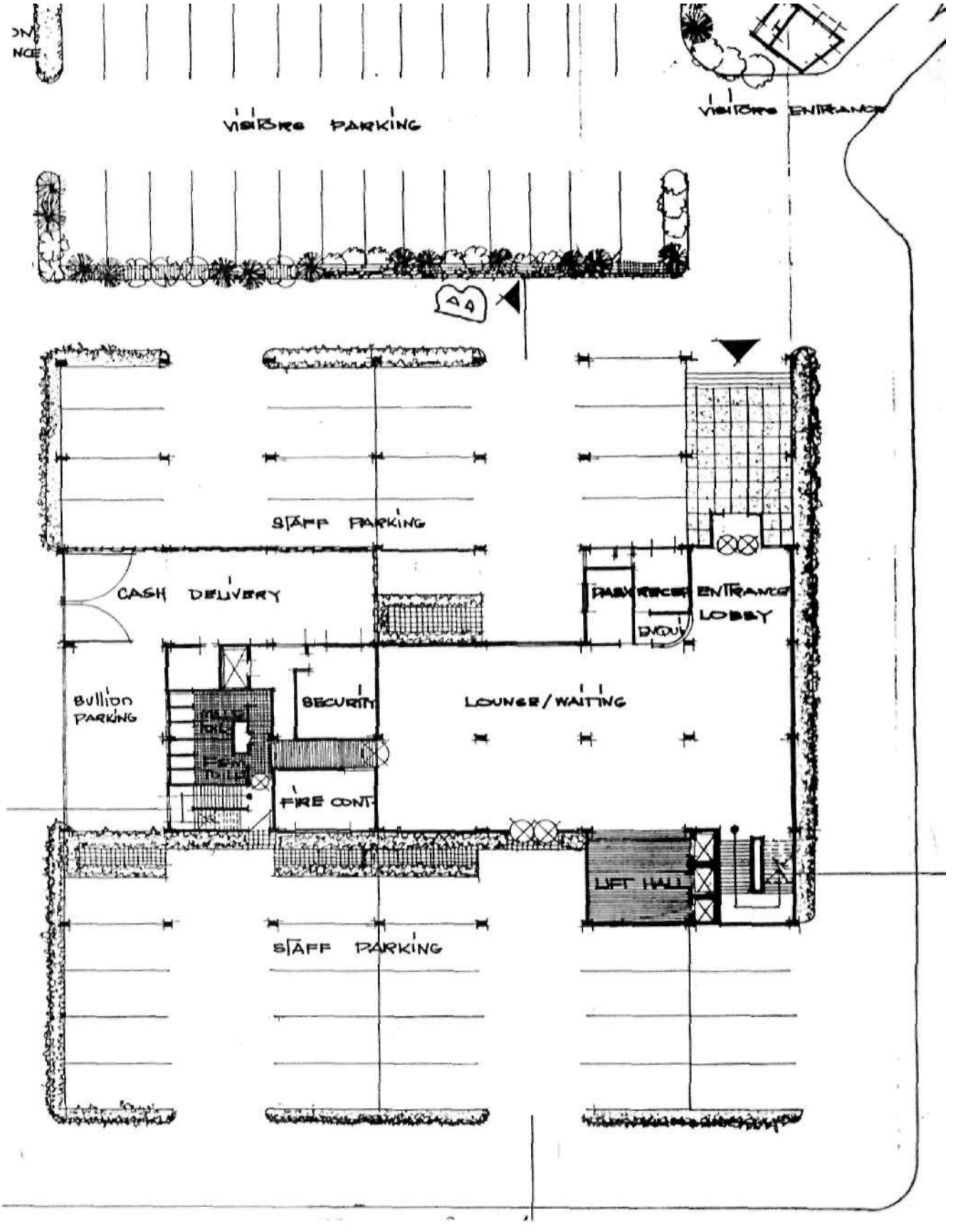
4No Lifts (1 Service 3 Passenger)	19.6m²
6No Toilet on each floor 3 males 3 females	23.25m²
Refuse Disposal Chote (Each floor)	2.5m²
Switch Room on each floor	15m²
Air Handling Unit Room each floor	15m²
P A B X	13.5m²
Fire Control Room	24m²



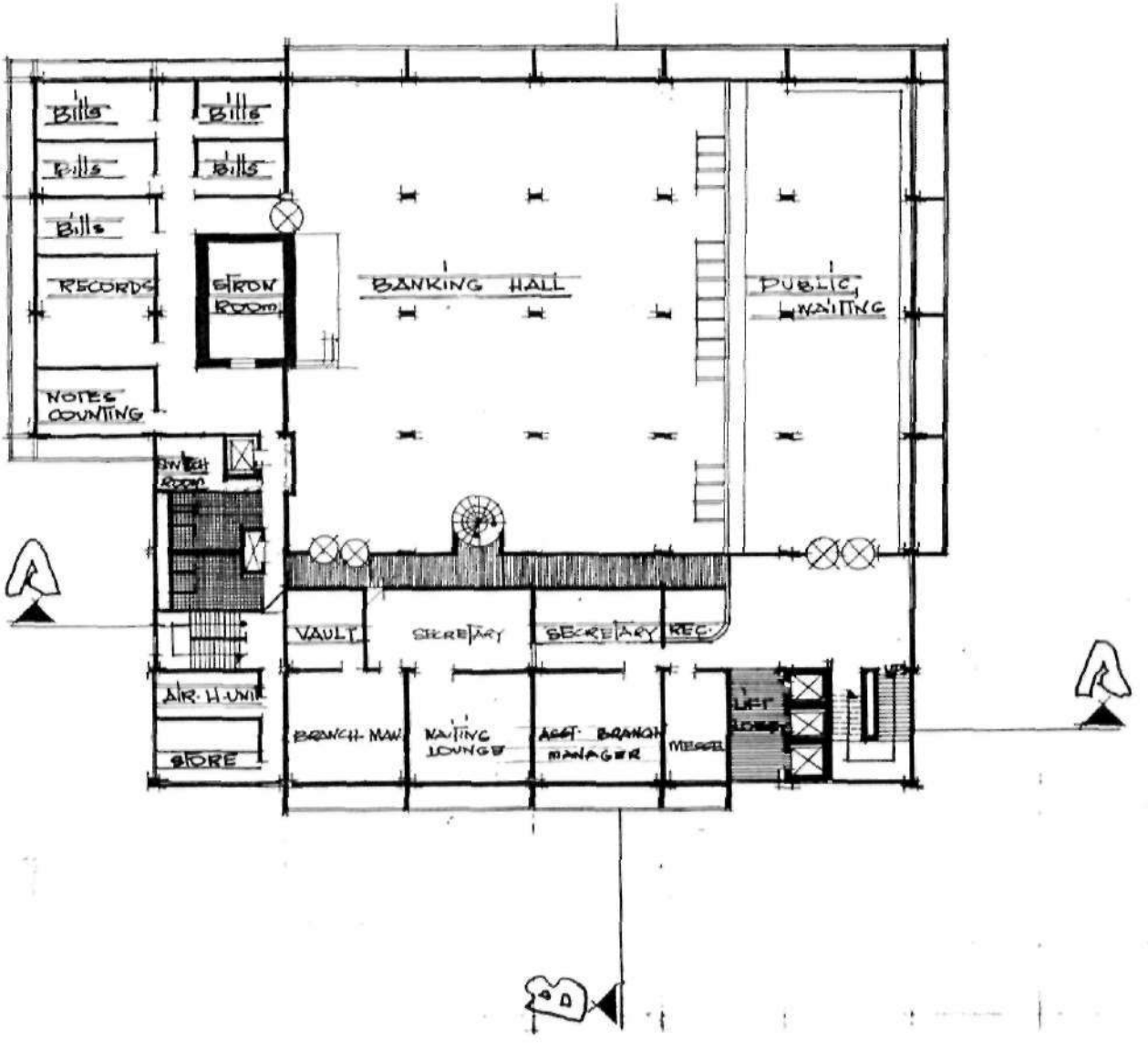
SITE PLAN

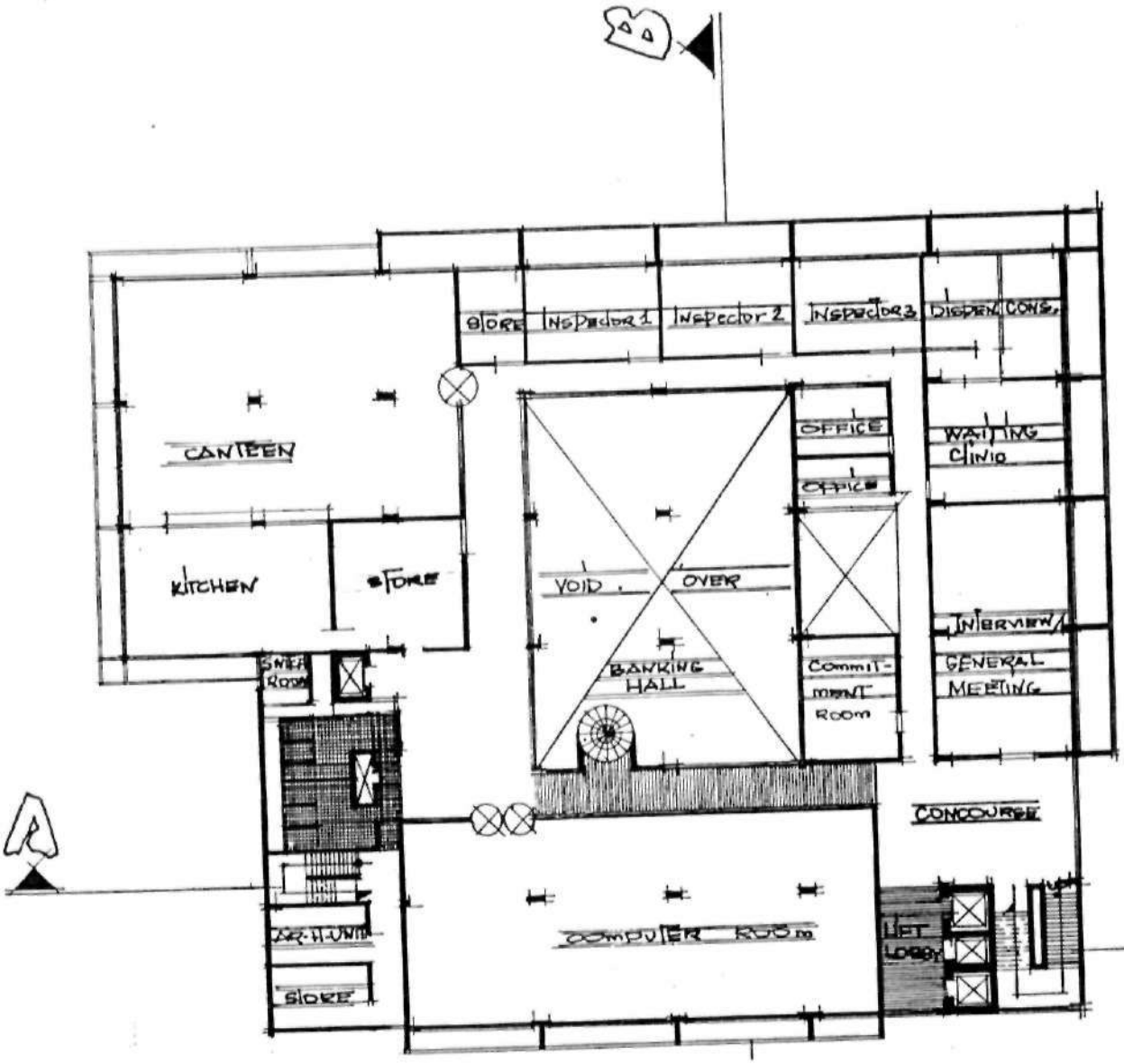
Legend

1. BULLION ENTRANCE

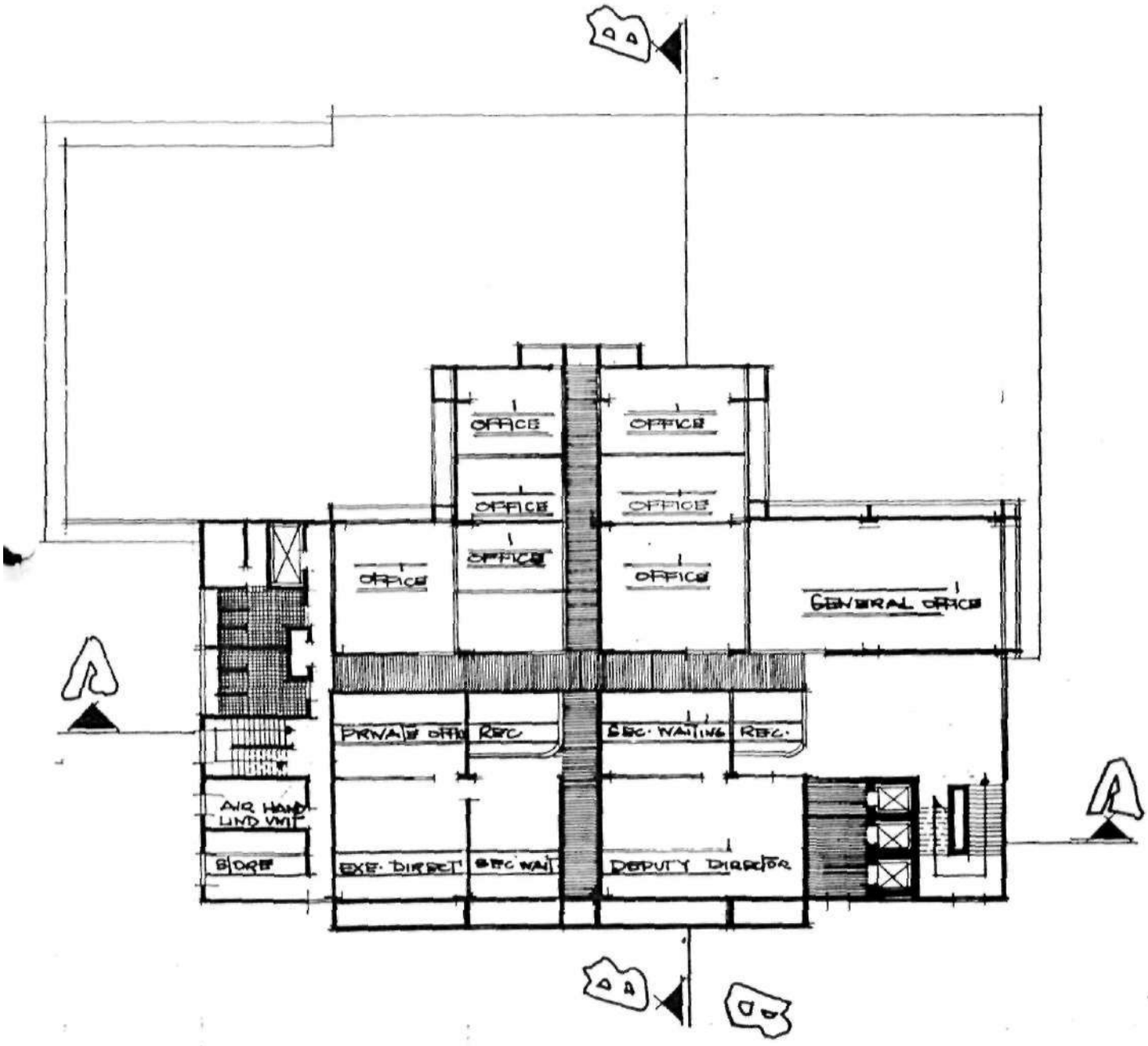


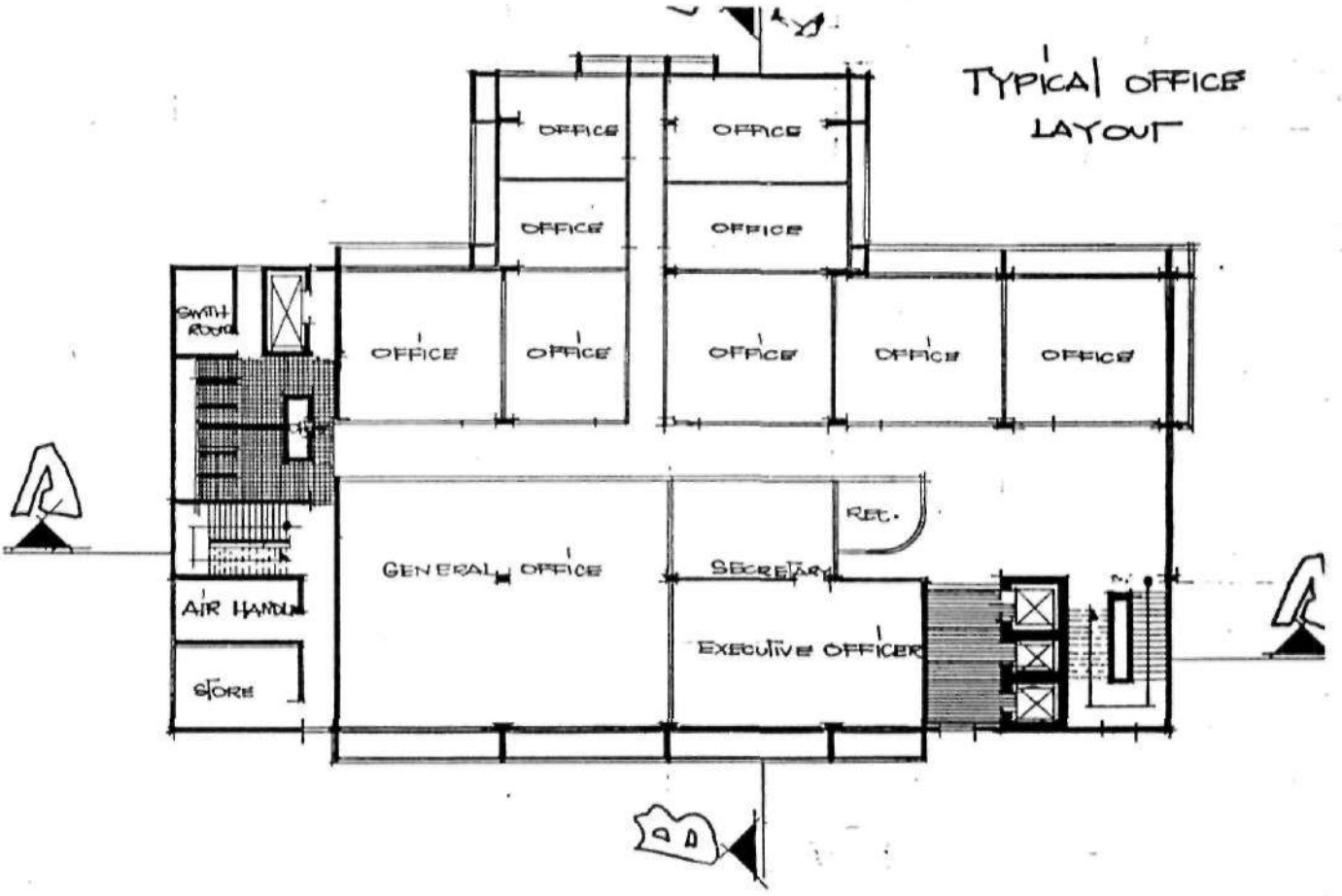
GROUND FLOOR PLAN


Bills
Bills
Bills
Bills
Bills
Bills
RECORDS
IRON ROOM
BANKING HALL
PUBLIC WAITING
NOTES COUNTING
SWEET ROOM
VAULT
SECRETARY
SECRETARY
REC.
AIR. H. UNIT
STORE
BRANCH MAN
WAITING LOUNGE
ASST. BRANCH MANAGER
MESS
LIFT
A
A
D

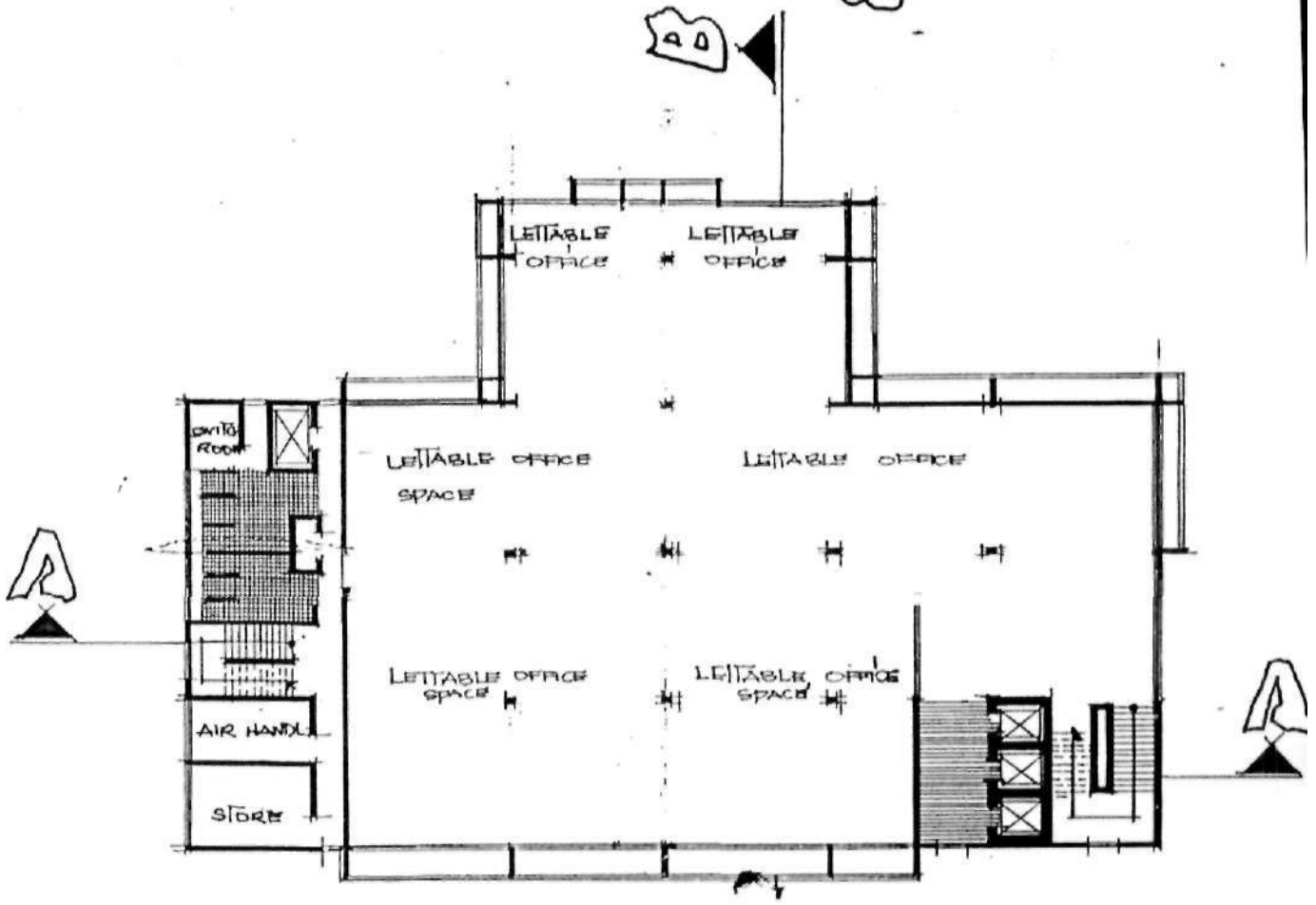

B
STORE
INSPECTOR 1
INSPECTOR 2
INSPECTOR 3
DISPEN. CONS.
CANTEEN
OFFICE
OFFICE
WAITING
CLINIC
KITCHEN
STORE
VOID OVER
INTERVIEW
SNEK ROOM
BANKING HALL
COMMIT-MENT ROOM
GENERAL MEETING
CONCOURSE
A
A
AIR-H-UNIT
COMPUTER ROOM
LIFT LOBBY
STORE

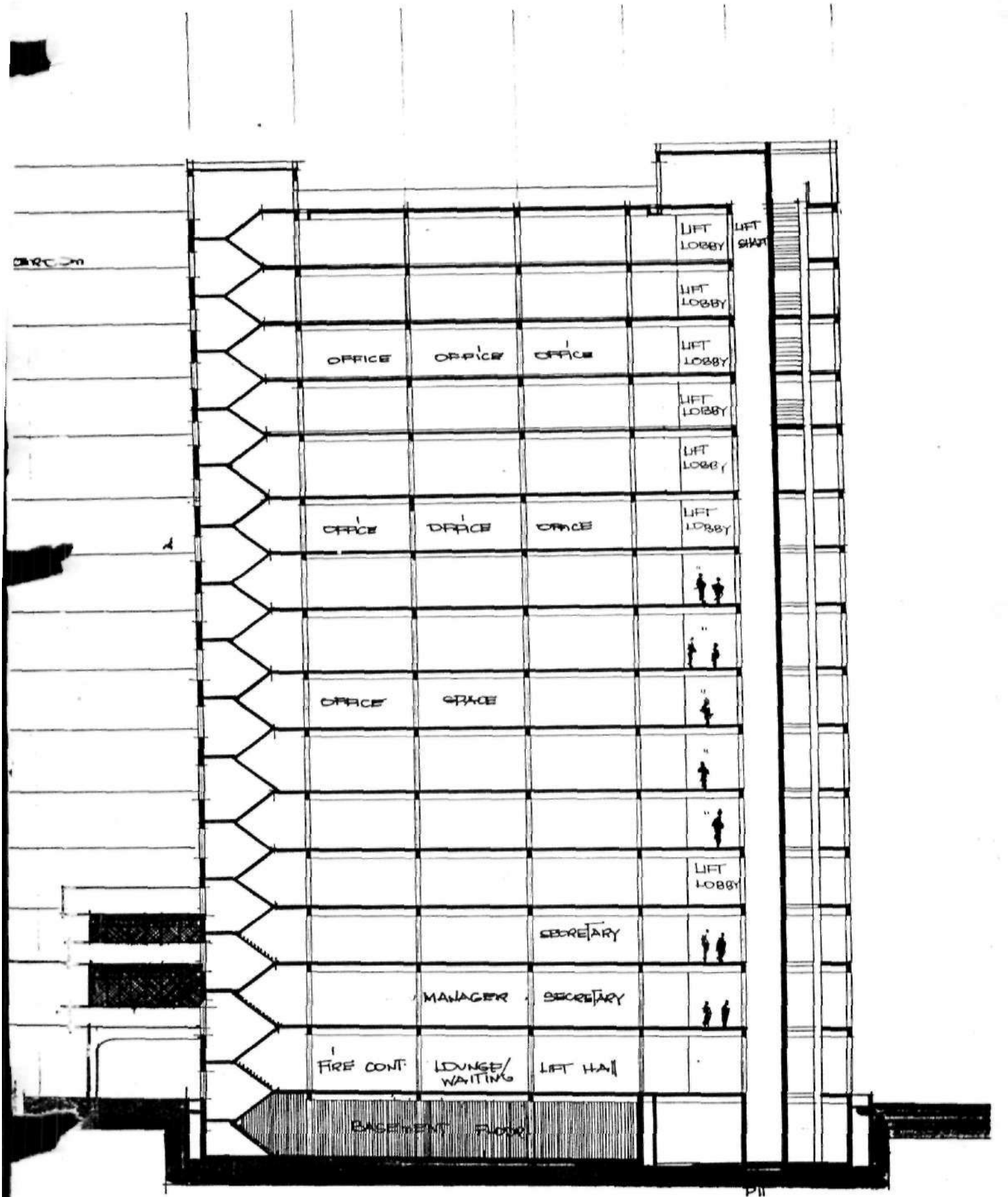
THIRD FLOOR


B
OFFICE
OFFICE
OFFICE
OFFICE
OFFICE
OFFICE
GENERAL OFFICE
A
PRIVATE OFFICE REC.
SEC. WAITING REC.
AIR HAND UNIT VENT
STORE
EXE. DIRECT
SEC. WAIT
DEPUTY DIRECTOR
A
B
B

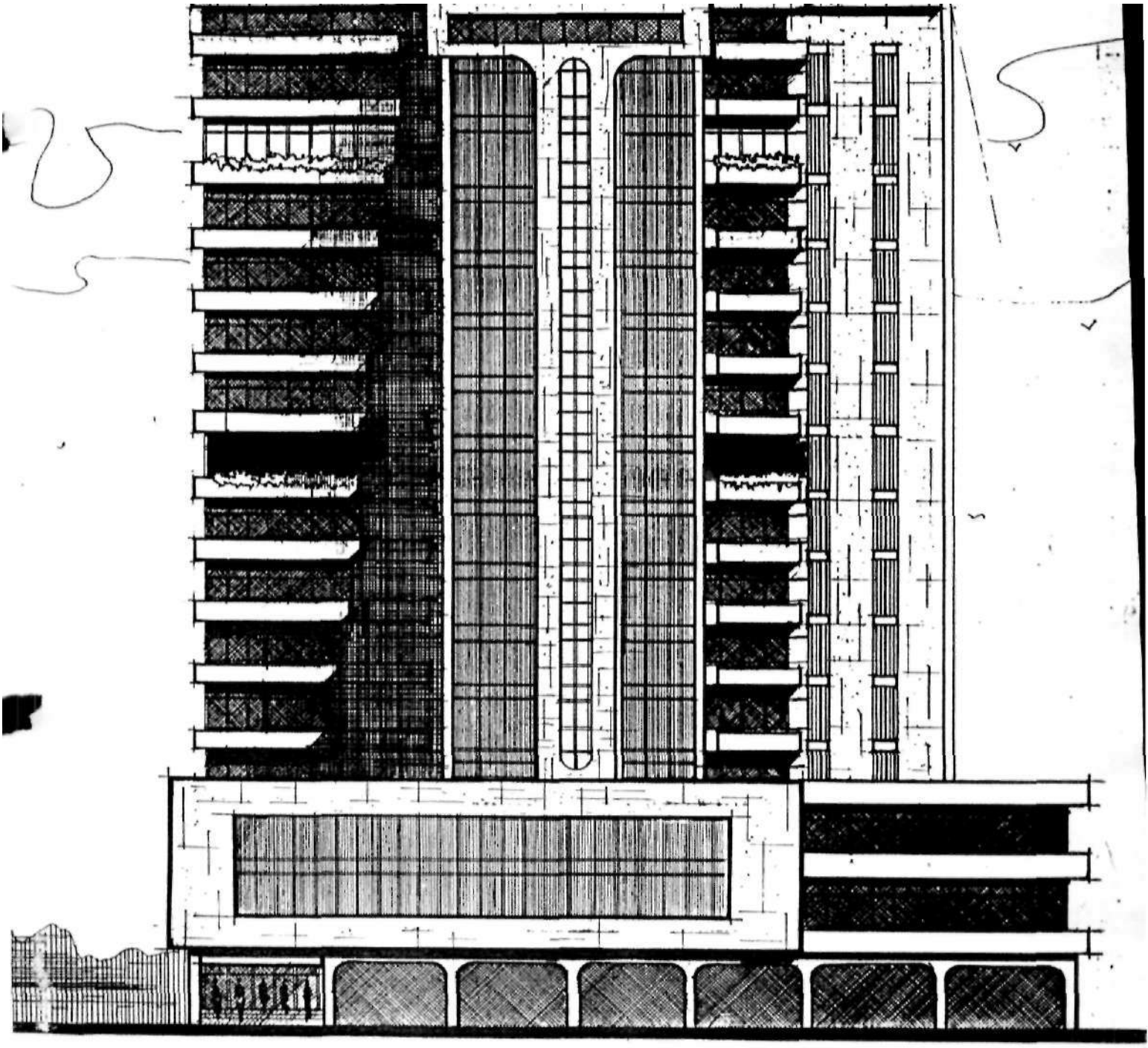

TYPICAL OFFICE LAYOUT
OFFICE
OFFICE
OFFICE
OFFICE
SMITH ROOM
OFFICE
OFFICE
OFFICE
OFFICE
OFFICE
REC.
GENERAL OFFICE
SECRETARY
AIR HANDLING
EXECUTIVE OFFICER
STORE
A
A
B
B

LETTABLE FLOOR

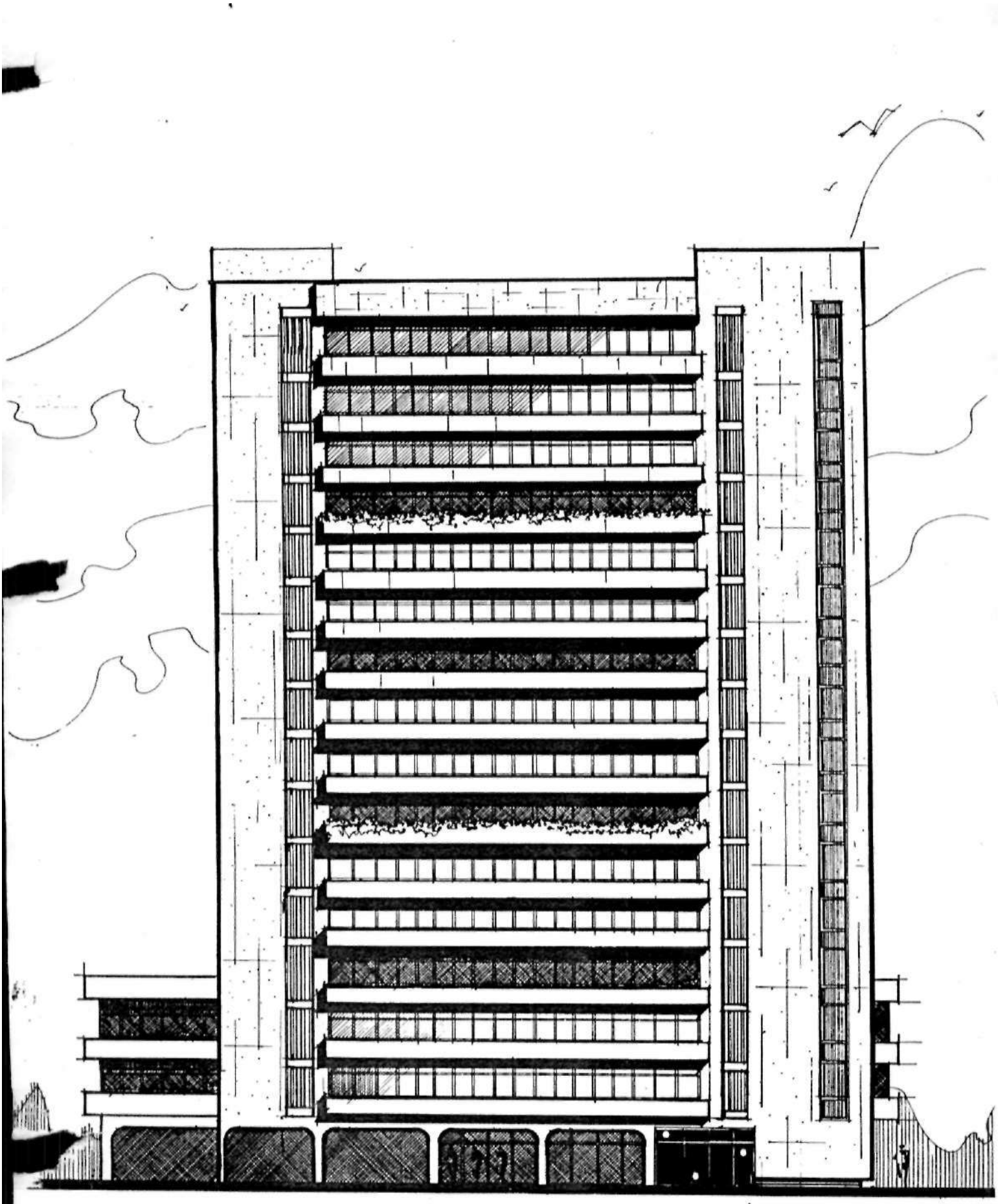



LIFT LOBBY
LIFT SHAFT
OFFICE
SECRETARY
MANAGER
SECRETARY
FIRE CONT.
LOUNGE/ WAITING
LIFT HALL
BASEMENT FLOOR

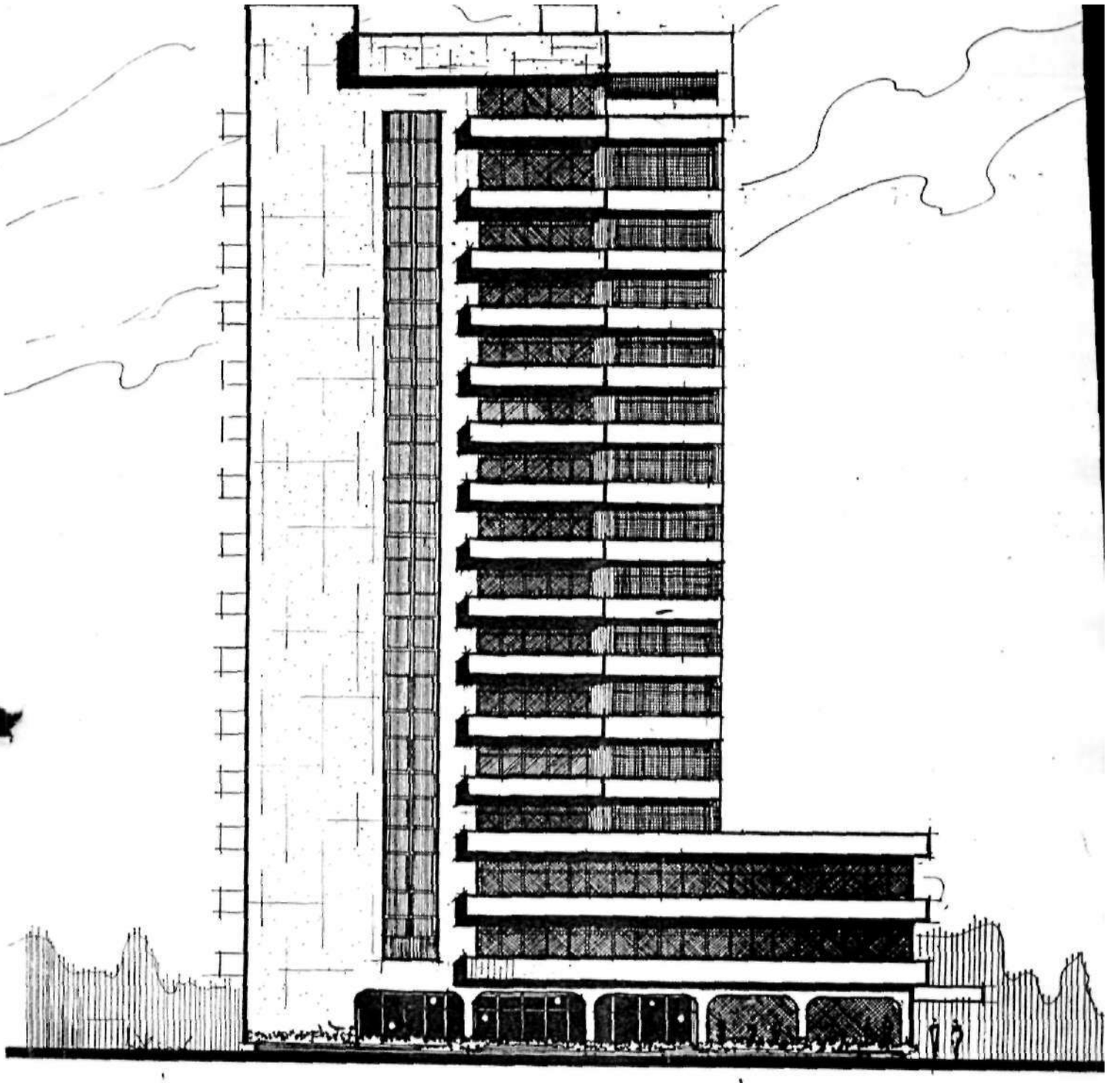
A - A



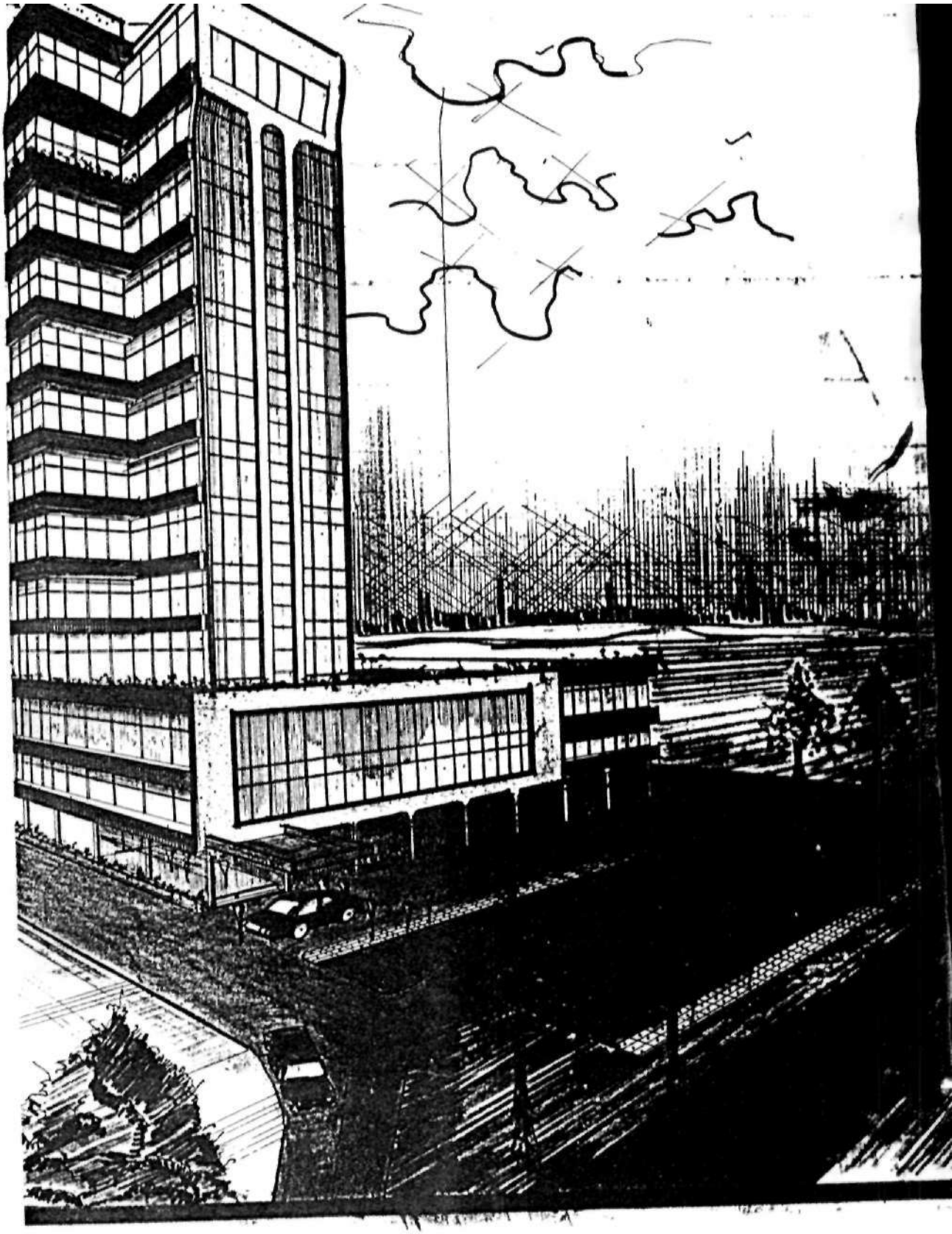
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NORTH SOUTH ELEVATION



NORTH WEST ELEVATION



3-DIMENSIONAL REPRESENTATION.