GUARANTY TRUST COMPLEX, KANO

RESOLVING CONFLICTING FUNCTIONAL REQUIREMENTS IN MIXED — USE BUILDINGS

BY

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DEPARTMENT OF ARCHITECTURE FACULTY OF ENVIRONMENTAL DESIGN AHMADU BELLO UNIVERSITY MAIN CAMPUS, ZARIA

OCTOBER, 1998

DECLARATION

I, TIJJANI, Muhammad Musa hereby declare that this thesis has been conducted by myself and that it is the outcome and a record of my own research work under the supervision of Dr. W.B. Qurix. I also declare that it has not been partially or wholly accepted in any previous application for any Higher Degree. All quotations are distinguished by quotation marks and the sources of all information here-contained are specifically acknowledged via references.

....

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CERTIFICATION

This Thesis entitled "GUARANTY TRUST COMPLEX, KANO: Resolving Conflicting Functional Requirements In Mixed-Use Buildings" meets the regulations governing the award of the degree of Master of Science in Architecture of Ahmadu Bello University and is approved for its contribution to knowledge and literary presentation.

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DEDICATION

To ALLAH Subhanahu Wata'alah

Thank You For Everything

Most Especially My Family

And In Particular My Son

Ahmad Muhammad Qalb-Saleem.

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ABSTRACT

Mixed-Use in buildings is gaining more acceptance as evident in a number of Central Business Districts (CBD) in major cities across the globe. In Nigeria, purpose built mixed-use structures are rare and still at its infancy stage. This was initialy due to lack of awareness and improper information as to the advantages of designing and constructing such projects.

Fortunately, the awareness is now spreading and evidence can be seen amongst the private and corporate developers where existing structuresare now constantly being activities than the buildings were originally designed to. In consequence, users of such renovations are being faced with problems ranging from inadequate parking facilities, to inefficient circulation pattern, to structural defects.

The main focus of this thesis therefore is to investigate this resultant problems especially those involving conflicting functional requirements which manifest from the combination of wide ranging activities under the sarne roof i.e. inside one single building.

From the research findings, the author proposes through the design, a highly functional and efficient mixed-use structure that is free from such conflicts, which can then be used as a basis for reference by would-be mixed-use designers and developers in future.

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CHAPTER ONE

1.0 INTRODUCTION

1.1 Preambles

Corporate architecture is a relatively new phenomenum in Nigeria. This is due to the fact that corporate bodies in the country have not been in existence until recently. Unlike their counter parts in the developed countries that can boast of about two centuries of existence, Nigeria is just beginning to experience such developments especially in the banking and commercial sectors.

Banks generally engage in financial businesses and this has been on the increase since the discovery of oil in the early 1970s in Nigeria. This development has led to increased economic activities in terms of volume of trade, monetary matters, letters of credit, financial issues etc which are the pillars of banking and economic trade.

With success of these banking institutions comes the natural desires to expand and diversify which often leads to creation of new branches in new locations. However, due to lack of long term planning or future projections, most banks usually have no space or accommodation into which they can move in to commence their business in these new locations. So most of them choose to rent any available accommodation including residences or even shops especially if such facilities are located in the central business districts of these cities or towns. They renovate such spacesto their requirements where possible and occupy it for their business activities.

In some instances there could be certain function/s e.g. residence, supermarket, pharmaceutical store etc already existing in such a building before the commencement of the banking operations. Thus making the structure assume a mixed-use status without adequate provisions to cater for the latest additional activity i.e. banking operations.

With their corporate image that necessitate a well designed interior and exterior environments, it does not take long before the damage on their corporateness begins to manifest even though there could be high financial gains involved initially. And soon conflicts and problems such as inadequate parking facilities, lack of proper delivery bays, poor accessability, services overload, unpleasant aesthetics amongst others can seriously hamper the continous success of such an operation.

The main purpose of this work is to carry out a careful and thorough investigation into the existing situations, so as to find the major sources of these conflicts and problems and from such resultant information design a mixed-use proposal that will incorporate a bank as well as other facilities, so as to eliminate all the conflicts and solve all the problems. The study also hope to provide vital information to would-be developers and users about the negative and unproductive effects of unplanned mixed-use so that they can be avoided in future as a contribution to knowledge.

1.2 AIMS AND OBJECTIVES

The main aim and objectives of this research among other include the following:

i) To propose an efficient mixed-use structure, taking into consideration the problems that manifest as a result of combining several functions with different functional requirements, sometimes conflicting, in a single building and to outline the difficulties experienced in unplanned mixed-uses so as to englighten developers and users alike as to its disadvantages.

ii) To improve and contribute to the architecture of the Central Business District of Kano by using enriching symbolic structure that is a remisniscence of the past glory of a society.

iii) To create a strong corporate image for an organisation that has such interest as one of their top priorities using architectural design approach.

iv) To show how best to maximise the overall output of a valuable site and demonstrate its influence (in relation to its location) in determining what structure would be most profitable when erected on it.

1.3 MOTIVATION

The choice of this thesis came from the fact that demand for mixed-use in our society is on the increase where they are used not only for financial gains but also to provide employment

opportunities, promote social interactions, improve on the use factor, enrich the cityscape etc. With the current economic situation in the country, most mixed-uses unfortunately are in the form of renovated structures that only generate problems which can be quite taxing on the users instead of providing the above mentioned advantages. Resolving the problems and in particular that of the conflicting functional requirements of the various activities combined in such a structure is the main motivating factor for this research.

Another reason behind the choice of this topic has to do with the site. Located in the heart of Kano's Central Business District (CBD) and currently valued at about ₦12m - ₦15m, a single activity development would be wasting the per square meter value of the site. And so will be most advantageous for a mixed-use structure.

There is also the need to enlighten and provide information to would-be developers as to the benefits of mixed-use developments most especially the custom-built ones as against renovations.

1.4 SCOPE AND LIMITATION

This thesis is concerned mainly with investigating the conflicts that are likely to occur due to the combination of several functions in a single building. However emphasis would be laid on the manifesting problems as a result of the current practice of renovating existing structures to serve as a mixed-use facility. Case studies will be used to appraise the prevailing situations and survey of operational procedures will be concentrated on the bank.

1.5 USERS AND CLIENTS

The Client, Guaranty Trust Bank Plc intends to use the bank segment of the complex as their second branch office in Kano. And as a mixed-use aimed at generating financial returns amongst other benefits, with accommodations for various other activities e.g. Office Spaces To-let, Departmental Store, Post-Office and a Restaurant taken into its architectural planning, the client plans to let-out these segments to interested institutions, organisations and individuals.

1.6 RESEARCH METHODOLOGY

The topic under consideration for this research is just coming to light because it is only recent that users of mixed-uses are realising that even though there is financial gains involved, yet the stresses involved with occupying unplanned mixed-use structures can be quite detrimental to the overall output of the employees as well as the institution's image. So it is a relatively new field of research (conflicts and problems). To effectively formulate a design brief and present a suitable design proposal, the thesis would rely on the following methodology:

i) Library research: where relevant books, seminar and lecture papers, architectural journals and magazines, published and unpublished works of other researchers would be consulted with the aim of understanding the basic ideas regarding the design approach to such projects.

ii) Field Survey: where the author will visit existing structures and physically observe, take notes and snap photographs so as to be fully acquainted with the prevailing situations.

iii) Interveiws: a very important instrument for carrying out research of this nature where first hand information can be gathered directly about the effects of the problems on both the users and their businesses. This interveiw will focus on the occupants as well as the customers where necessary.

1.7 RESEARCH SIGNIFICANCE

The significance of this work and its possible contribution is to create a design proposal that will be highly conducive for business and recreation as well as become a commercial success by using the research tools adopted to:

i) carefully study the important steps to mixed-use planning

ii) outline the likely areas of conflicts and understand their causes.

iii) select the most appropriate activities for possible integration into a mix-use due to knowledge of the expectant conflicts and also the society's demands.

iv) the best location for such projects to gaurantee their success to satisfy the client's brief and projects requirements.

By so doing, it is hoped that the importance of such development in the society and overall future planning of the city would be better appreciated and also to generate possible leads into

further indepth research along this line and other areas not touched by this work for future researchers.

It is also the personal ambition of the author that this thesis would serve to influence in one way or another future trends in mix-use planning and developments.

1.8 ABOUT THE CLIENT

Guaranty Trust Bank Plc was incorporated on 20th July, 1990 and on 1st August, 1990, it received a licence to commence commercial banking operations in Nigeria. The Bank became a public liability company (plc) on 9th September, 1996 when 400 million ordinary shares of the Bank were listed by introduction for trading on the floor of the Exchange. Its authorised share capital which is N500 million has been fully paid. It is a public company that has been quoted on the Nigerian Stock Exchange. With their Head Office located at Plural House in Victoria Island and 12 other branches spread across the nation (two of which are located in Kano's CBD). Guaranty Trust Bank provides full range commercial banking services to a selected customers and are among the new generation banks that are synanymous with building excellence and superior financial performance in the country.

An organisation that cares very much for its corporate image, the bank has recently constructed its main branch in Kano, which is located along Murtala Mohammad Way and plans, to build another one with the intention of relocating its current and first branch in

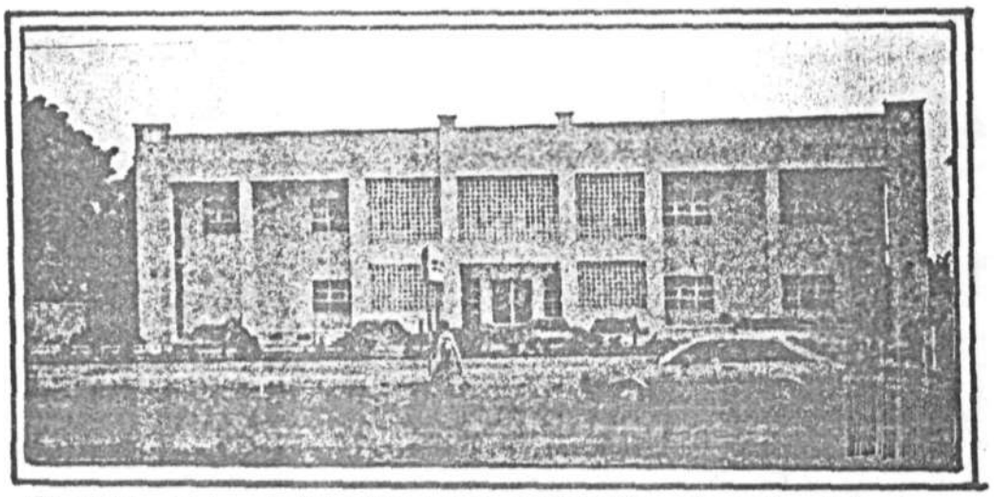


PLATE 5·1 GUARANTY TRUST BANK PLC
KANO MAIN BRANCH
MURTALA MUHAMMAD WAY KANO.

Kano (along Bello Road) which is becoming inadequate for their fast growing business due to its short-comings (it is a renovation mixed-use).

This research work is intended to fully investigate these short-comings among other problems and present a proposal that will not only be satisfactory to work in but become a land mark of prestige to the bank.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Preambles

In the process of conducting this research, works by various authors have shown the extent to which one way or another problems associated with mixed-use structures were addressed. It was also discovered that most dissertations were concerned with relating the psychology or sociology of society, environment and life to the need for multi-use or mixed-use of functional spaces.

"The function of society were infact the conflicts and the resolution of these conflicts" as asserted by Hertzberger (1980) in the Architectural Journal Review. It becomes obvious from the above that addressing the problems that result from mixed-use of activities or any other functions for that matter is part and parcel of a society's daily functions. This he clearly demonstrated by proposing a Music Centre in Utrecht, Holland a complex which has a theater, auditorium, in-door shopping mall, a cafe-restaurant among others, to blend the boundary between day and night activities.

In the August edition of Baumeister Journal (1978), it was reported that in Wintethur, a centre of mixed activities of residential, working and shopping was designed to reawake the dormant commercial life of the area and to retard the trend towards moving into the city. It can be seen that mixed-use when properly planned can be used as an effective instrument with which to promote a burst of activities in a slumbering community and also to

serve as an arresting measure in a rural-urban migration thus making living in a society worth while to the populace.

Barry G. Rowney (1989) in Architecture Australia states that, "It is a well known fact that buildings that continue in use last the longest. Disuse spells death to buildings"-a statement he made while reviewing a book titled "Adaptive Reuse-Issues and Case Studies in Building Preservation". It becomes apparent from his statement that for a building to last long functionally, it has to be in constant use and the only way to ensure this, is to employ mix use of activities which when problems associated with it is solved can be highly beneficial to the society.

In designing the Bridgeport Center in Bridgeport, Connecticut, Architect Richard Meier dismissed the idea of a singular emblem in favour of a clustered collage to plan a mixed-use development which he stated. "I wanted to indicate the possibilities for the future growth and scale of downtown Bridgeport through a conglomeration of buildings that responds to the city differently on every side." The centre is meant to set a high standard for the future buildings in the city which has only begun to revitalize its sluggish economy from an industrial base to financial services. (Architectural Record, August 1989).

In his article "The Right Mix", MacComac (1980) in Architects Journal of July edition pointed out that Venice, an European city was notable for offering a system of public, semi-public and private spaces in which a number of activities were intertwined and reconciled and that the experience of the city was not of buildings

as solid objects but of spaces enclosed by surfaces of the buildings. In the article it was also revealed that analysis of uses showed that offices, shops, workshops, housing and services such as banks co-exist in various combinations.

Safiyanu (1989) in his M.Sc thesis in Architecture also asserted that spaces should be flexible and adaptable for various functions in order to satisfy the needs of the society. This need which can come in different forms and shades should be accommodated in either a built form or an open space and whatever problems that is likely to manifest should be taken care of right from the drawing board before it goes to the site.

Cruick Shank (1989) in Architects Journal of October edition published an article titled "Market Options" in which he asserted that simplified mix of uses introducing some shopping spaces, office spaces, residential spaces and recreational spaces can be a way of increasing an architecturally acceptable piece of the city which reflects the social and economic aspirations of the established communities and also giving the developer a good profit.

In the Architectural Record (1980) March edition, it was stated that there was nothing new about mixing residential and retail spaces in buildings as neighbourhood merchants and their families have traditionally lived above stores and that developers have in recent years paid increasing attention to combining uses in single development for financial and social reasons. It was further stated that by including higher paying commercial tenants e.g. banks, offices in a development, the costs to other residents might to some

extent be eased and inclusion of some after chores function e.g restaurant, residence, cinema would not affect efficiency but rather add immensely to a neighbourhood social vitality and that mixed-use could encourage urban vitality of after working hours.

"₦100m Mixed-Use Development Seek Victoria Island Debut" the article of Okulola (1990) article, published in the Guardian of 12 February reported that Premier Property Development Company Limited picked the option of a mixed-use development in preference to other competing proposals so as to ensure a more marketable development. It was also reported that the choice of mixed-use development option was due to the need to maximise the potentials of the site, hence the proposal of a 10 storey office block development and the development of a 10 storey block of luxury flats with servants quarters on 4688.947 square metres site.

It is now clear from the above literature review that different authors have advanced statements, writings and proposals which directly or indirectly addressed the need for a well designed and well planned mixed-use due to the advantages likely to be gained as a result of such developments. It is only if a proper understanding of the problems likely to occur when a mixed-use is adopted, that solutions can be proposed which can lead to an efficient design, time saving and revenue generating structure which can then be constructed to the benefit of the whole society.

2.2 HISTORICAL BACKGROUND

Mixed-use in buildings started way back into time, infact one can comfortably say that it is as old as when man started inhabiting caves for shelter. Such primitive dwelling places of early man serve as the earliest forms of multiple-use space, for it was a space used for sleeping, cooking, storage, nursing the sick etc. However, mixed-use for commercial purposes was said to become common in the nineteenth century with the combination of residential and commercial activities in dense walk-up flats of city or urban centres. It became quite a common phenomen in Boston and New York cities where the working population would reside in upper floors of a storey building while the ground floor is occupied by a commercial out-fit.

Here in Nigeria, residences, open squares, markets etc have always been spaces that are often used for mixed activities. For example a "Zaure" (foyer) of a residence in Hausaland usually serve as a trading place or a school (Quranic) or even a storage area while still distributing human traffic. Spaces have always been adapted for different uses as every generation has found it necessary to use its buildings for functions and in various ways different from those for which they were originally designed and always all reasons and arguments have been for economies, considering the cost of getting a building designed and built, how it is used and the maintenance expenditures once the structure commences operation.



PLATE 2·1 BANK: ONE OF MANY IN KANO CBD



PLATE 2·2 OFFICE BLOCK A MAJOR FEATURE OF THE CBD

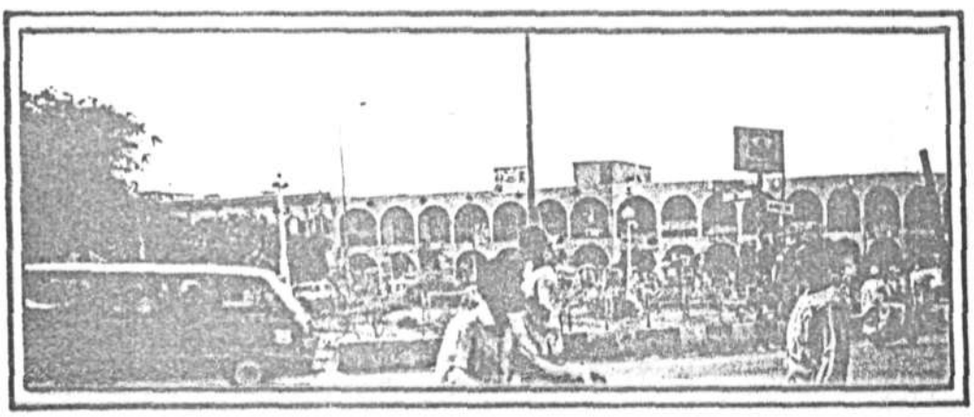


PLATE 2·3 THE FAMOUS BATA ROUNDABOUT WITH SABON GARI MARKET ON THE BACKGROUND

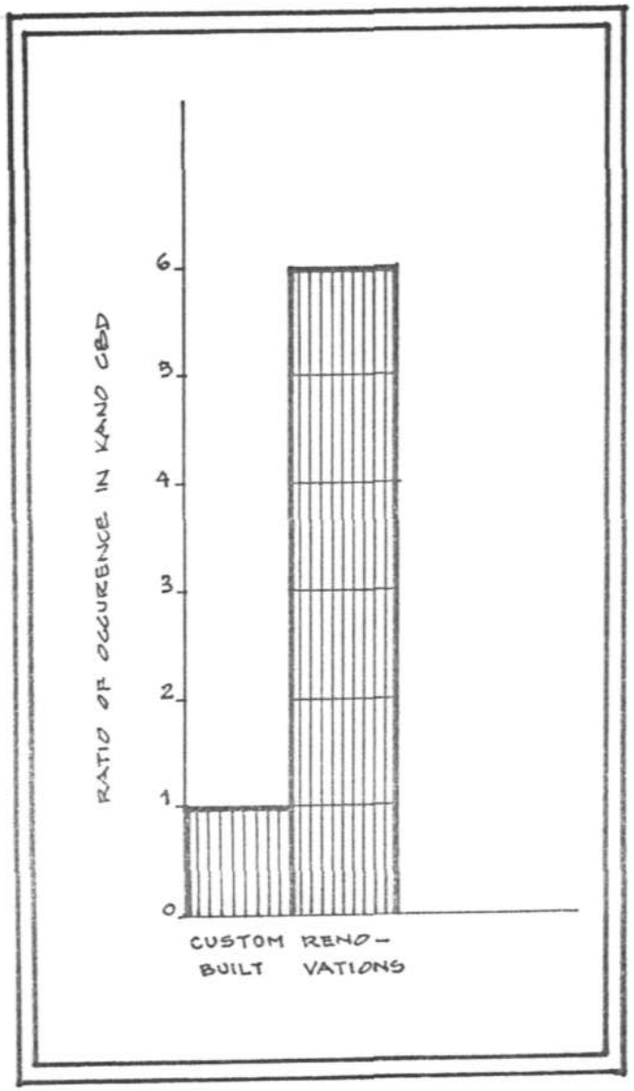
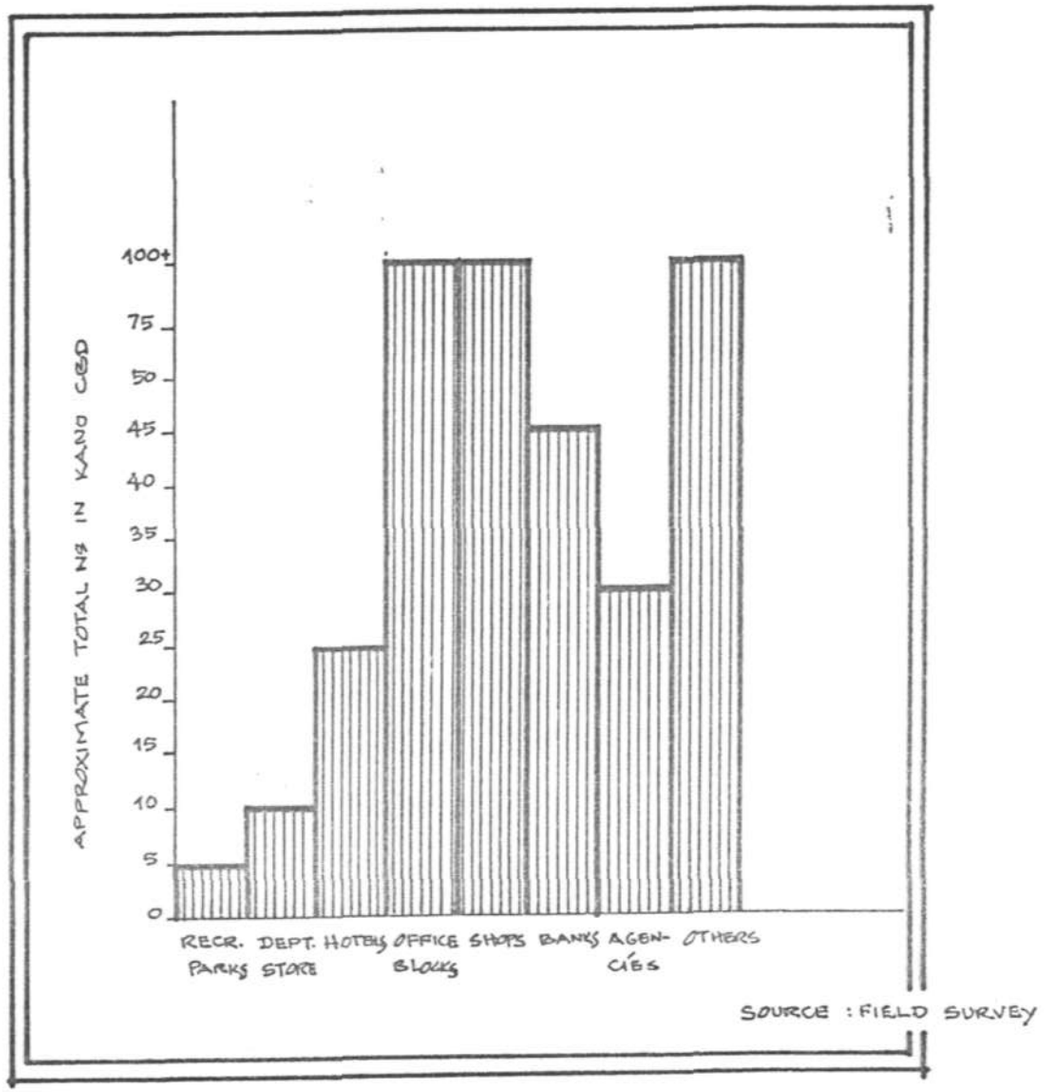
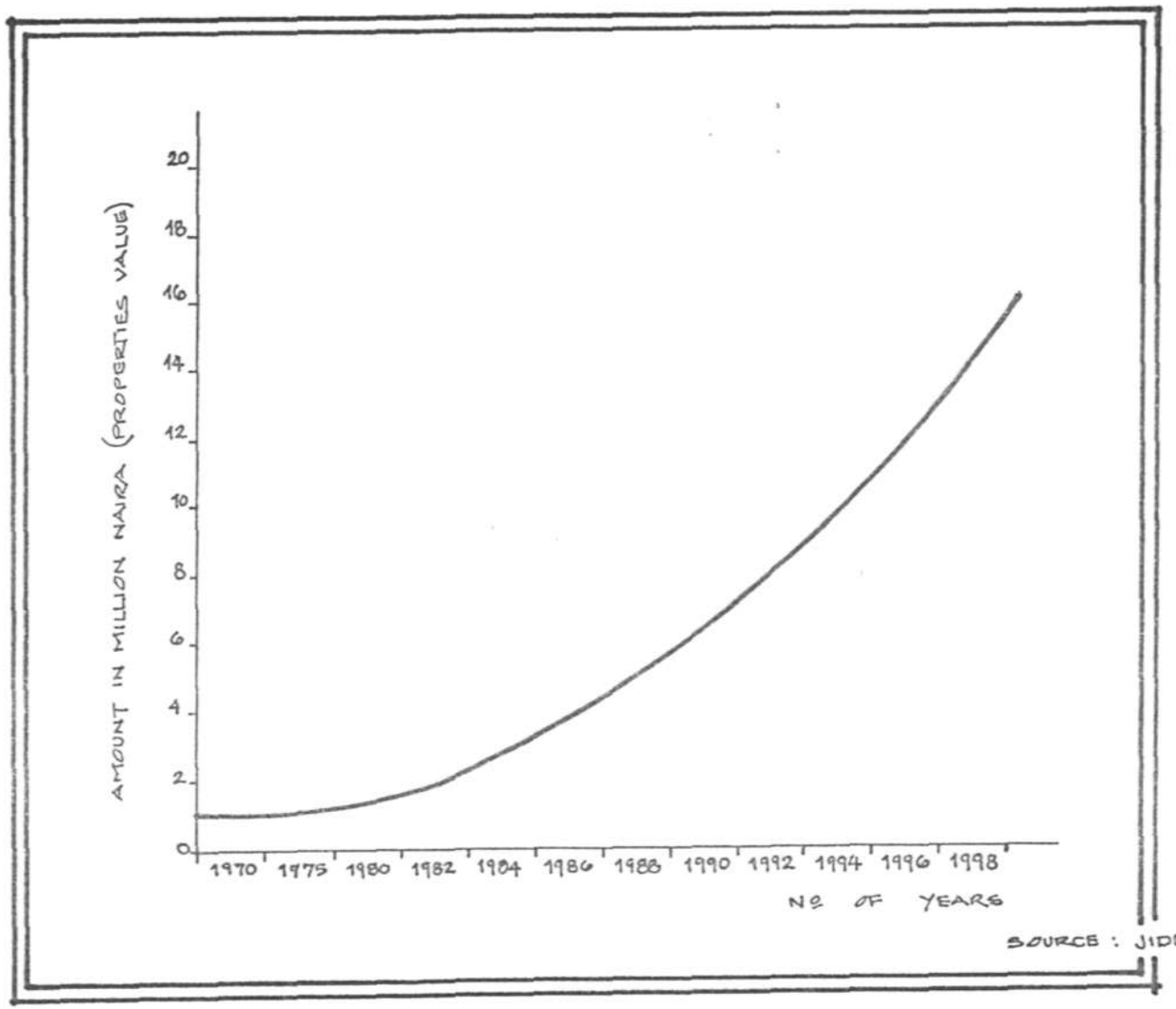


FIG. 2·2 GRAPH SHOWING COMPARISON BETWEEN CUSTOM-BUILT AND RENOVATION MIXED-USE



FIG·2·3 GRAPH SHOWING TYPES OF BUSINESS ACTIVITIES AND THEIR APPROXIMATE TOTAL IN KANO CBD



FIG·2·4 GRAPH OF PROPERTIES VALUE IN THE CENTRAL BUSINESS DISTRICT OF KANO FROM THE OIL BOOM ERA

Spaces as living organisms in every time span had to adapt to the requirement of the developer in order to survive or continue being used in an ever changing environment. It has also been discovered from biological evolution that man has been successful through time because he is the least specialised creature on earth and frankly the most adaptable. Based once more on the sociological or psychological history of adaptation, it has been revealed that societies which were once efficient due to specialization, collapse rapidly as soon as conditions change, as highly specialised system are rarely adaptable, and that latent potentials of human beings have a better chance to become real or put into full use when the social set-up is sufficiently diversified to provide a variety of stimulating experiences.

2.2.1 MIXED-USE DEFINED

Mixed-use development was defined by the Monde International in Architectural Record (1977) to be characterised by two or three more significant revenue producing uses like retail office, residential, hotel or motel and recreation which are mutually self-supporting in well-planned projects.

In the context of this thesis it is defined as a single structure or building that is designed to accommodate more than one activities in different parts of its enclosure. It is also understood to mean a group of buildings each accommodating a different function/s e.g. shopping, banking, recreation etc all located on the same site.

2.2.2 TYPES OF MIXED-USE

The author from the field survey, literary review and case studies conducted during the course of this research has discovered that basically Mixed-Use are of two types. These are:

i) "Mono" Mixed-Use

Where only one single building is used to accommodate several functions in different segments and/or levels of its interior. In this type, the structure is usually the only building located on the site except for services facilities e.g generator house, maintenance unit, gate house etc. This type is very common in CBDs where land is very scarce and expensive and is mostly used by corporate organisations and institutions who could afford such land. Sparse landscaping is found to be a common characteristic of this type of mixed-use development. Activities are usually carefully chosen to maximise the overall output of the site. Business, commercial as well as recreational activities are often mixed in this kind of development. This is the type that is adopted for this thesis work.

ii) "Cluster" Mixed-Use

Here two or more buildings are carefully located on the same site each accommodating different function/s which are often complementary. The means of communication between the buildings are covered walkways but can be just open air walkways with pocket of courtyards, refreshment post/s and

proper landscaped area serving communal spaces for social interaction. This type of mixed-use is often found in areas where land is available in abundance, so is rather cheap and also in projects of recreational nature e.g. sporting arenas, games etc.

2.3 MAJOR AREAS OF CONFLICTS

The main charateristics of the Kano CBD are a good network of roads, a vibrant commercial activities and banks and more banks and even more banks. In the CBD there is an average rate of influx of atleast one bank every three months. With the CBD already built up, the only other option is to renovate an existing structure to accommodate a bank which hitherto was never designed or intended to house one. As a result more and more of the buildings in the CBD are being turned into mixed-use structures.

In consequence to these renovations, there are problems unforeseen and unexpected that are now manifesting themselves rendering most of the building highly inefficient. Some of the major areas of conflict have been identified and are outline.

2.3.1 INADEQUATE PARKING FACILITIES

One of the major problems associated with mixed-use renovations because of the fact that such buildings are originally planned including the parking spaces to serve only one function. If an additional function is incorporated into the building, there tends to be more patronage, which means more cars vis-a-vis

additional parking spaces. Where this can not provided, there will result improper parking leading to congestion and blockade of the access roads. Of the ten (10) case studies conducted only three (3) were custom-made mixed-use. The rest were renovations most of which had the above mentioned parking problem.

2.3.2 CORPORATE IMAGE ABUSE

Corporate institutions, most especially banks value their image so much. They spend alot of money to maintain it and in some instances will not compromise it for anything. In certain cases some banks would prefer not to even share a building with any other activity preferring to occupy the building all alone to safe guard their public image. But where they have to open a new branch and the location is good for their business, they often compromise. Thus making good profit at the expense of their corporate image. This has been identified also as a major set back in mixed-use of institutional functions.

2.3.3 STRUCTURAL DEFECTS

In mixed-use renovations, structural defects are a common phenomenum A building that is subjected to additional load previously unprepared for i.e. by the introduction of another activity, can lead to inefficiency on the part of the foundations, beams, columns and load bearing walls which can then lead to cracks, buckling and eventually failure.

2.3.4 SERVICES OVERLOAD

Mechanical as well as electrical services lay out in a building which has just been converted into a mixed-use, if not adjusted to bear the additional burden (and in some cases it is virtually impossible) can seriously hamper the functioning of the entire building as there will be blockade in the mechanical lay-out and short-circuiting in the electrical services provided.

2.3.5 ACCESS INADEQUACY

In some cases, there is a need for multiple access into a site that is being occupied by more than one activities i.e. a mixed-use, most especially if the activities have glaring conflicting functional requirements e.g. a bank and a supermarket, where the bank requires no loitering or standing, the supermarket requires pedestrians or its customers to window-shop. So if the facilities are accessed from different point, they tend to operate better. In renovation mixed-uses this is not usually the case so there is frequent operational clashes.

2.3.6 UNPLEASANT AESTHETICS

Institutions that have an architectural language which is often depicted on all their buildings tend to suffer the loss of such an expression which is often an identify synonymous with the organisation, when they are forced by circumstance to occupy a renovated building serving as a mixed-use. This has been a source of embarrassment to many a corporate organisation as they have to

manage whatever facade or what they can restructure of the existing facade which is often not satisfactory.

2.3.7 DELIVERIES PROBLEM

A bank requires a delivery bay to its bullion room. A shopping mall needs delivery access for its supplies. So also is a restaurant. For proper functionality of these activities, it is quite necessary to separate the delivery facilities. But in most cases this is found to impossible and can be quite embarrassing to the functions occupying the mixed-use.

2.3.8 WASTE DISPOSAL/MANAGEMENT

Another silent problem that seem to be under-estimated but which could have serious implications on the functioning of mixed-use occupants. Maintenance culture is very much lacking in the management of most organisations in the country, so in a situation where a building have no maintenance and management set-up, it can lead to uncorporation on the part of the occupants which can lead to a dirty environment. And ofcourse this can be bad for business. Alot of the case studies have been found to be victims of this bad phenomena.

From the above stated problems, it can be seen that if mixed-use development is not well planned most especially if it is an institutional mixed-use, it could seriously jeopardise the success of the functions that are to take place in it.

2.4 CONCEPT AND INTEGRATION

For any space to be functional, it must be able to share some particular traits or properties with its surrounding spaces. The main attributes of the concept of space are philosophical in meaning, one of which relates that man's interest in space has existential roots which stems from the need to grasp vital relationship in his environment to bring meaning and order into the world of event and actions. Man's action have spatial aspect as the objects of orientation which are distributed according to such relations as inside and outside far away and close by, separate and unified, continuous and stagnant, that man orients to objects or adapt physiologically and technologically to physical and technological things, interacts with other people and grasp the abstract realities or meanings. It is also attributed that man's orientation to different objects may be cognitive but aim at establishing equilibrium between it and environment hence to carry out man's intention, there is need for understanding spatial relationships.

2.4.1 SPACE TYPES

Five major space types have been identified and they are:-

i) Pragmatic space of Physical Action, which is concerned with organic environment.

ii) Perceptual space of Immediate Orientation which is concerned with the identity of man as a person.

iii) Existential space which forms man's stable image of his environment. This space makes man to belong to a social and cultural totality.

iv) Cognitive space of Physical World and the abstract space of pure logical relations. This is concerned with the awareness of space by man.

v) Logical space provides the tool to describe other spaces.

Space in architecture therefore has to adapt itself to the needs of organic actions as well as facilitating orientation through perception and its conception is firstly concerned with emanating power of volumes, their relations with one another and their interaction hence space is the product of an interaction between organism and environment.

2.4.2 ELEMENTS OF INTEGRATION

These elements are a means of unifying or joining together various spaces into one whole. They can also be points of orientation or reference as spaces can only be brought together if there is a point of focus to which all the spaces concerned can relate or orient. The elements of integration form the basis upon which space serving different functions are manipulated to exist together as one and such elements when carefully percieved and manipulated by man could produce a conducive set-up which could be highly satisfactory. The elements are:-

i) Centre and Space.

The notion of the home being the centre of man's world goes back to childhood and that centre is a point where man acquires position as a thinking being in space where he lives and lingers. It has been found that in terms of sudden or spontaneous perception man's space is subjectively centered, this is not only pointing to centre as established means of organisation but that some centres are points of reference in the environment.

Centres are places of activities where particular actions are energetically carried out or places of social intercourse which are usually supplemented by new ones during growth when actions of the individual are indifferentiated and multiplied. Centre is also said to be the creation of a place and may correspond to landmarks which denotes point of reference or indicates boundaries and directions and that the basic existential demands of centre are attention and radiation.

ii) Opening And Direction

Entry or exit into or from an enclose or exposed space is only via an opening which unites the inside with the outside by a direction. Direction has been attributed to allow entry into a close form. While for any space not to become a prison, there must be openings to it. Opening can open up a space to be experienced or close it, it can unite and separate it also make it to become alive with activities since the basis

of life is interaction with the environment and only through opening can interaction take place. Space is also influenced by direction.

iii) Path and Axis

Path is defined as the channel of movement while axis which is not intended for movement represents a symbolic direction which unifies a number of elements among themselves and also relates them to a larger totality. Path and axis are attributed to be identical. With path taken to be real and axis taken to be more abstract which may have both horizontal as well as vertical components and that the character of path determined by its relationship to space as a space is usually related to several directions by a system of paths which often form a star around the centre and are usually connected among themselves. Path which either leads towards a point, away from a point or forms a ring around the space, creates a basic dichotomy between centralization and longitudinality as centralisation symbolises the need for belonging to a place while longitudinal movement expresses the idea of openness.

iv) Architectural Field

Defined as integrated whole or totality formed by spaces and paths, it also consists of system of centres with one dominating, it can also be taken as system of interacting forces. Various fields have been identified with regards to the systems on which they are based, which may be a system of repeated simple geometrical units with strong wish for

rythmisation or a system of synthetic totalities where it is impossible to single out individual unit or systematic changes in density and direction but they all contain centres, directions and paths which work together to form a dynamic totality where any spatial expression is possible.

2.5 USE CONSTRAINTS

There are various kinds of constraints working against the use of facilities or patronage of activities and these constraints are of different degrees against different activities as some uses or activities have stronger attractive or pulling power for users than others. The extent to which any activity is constraint depends on the desirability of the activity and the degree to which the user has a choice. Hence where activities are not demanded out of necessity they tend to have use constraint more against them than others. The level of appeal of such activities whether to the generality of the population it is suppose to serve or just a part of the population can also have serious effect as far as constraint to it is concerned. For example a low level commercial activity or a native market is usually more utilized by the general populace as it involves the degree of commercial activity that is localised to the population while a high level commercial uses like banks, department stores, super-markets are less relatively utilised or less patronised as they mostly serve a subset of the general populace. Broadly, constraints can be grouped into structural and environmental.

2.5.1 Structural Constraints

This is also called personal constraints as it depends on the individual users' characteristics like time available, discretionary income, age, sex and the educational background. It is obvious from these listed elements that the extent of structural constraint against any activity depends on the level and degree of desirability of the activity. Time for an activity can depend on the amount, the user is willing to spend on such activity which depends on how much the person desires the activity. For income of a user to be against patronage of an activity would depend on the level of involvement and whether it is affordable within the spending power of the user. Age plays a prominent role as certain activities are best enjoyed by certain age groups. Sex is becoming less and less a barrier against the patronage of any activity these days but it still could constitute a constraint. Educational background as a barrier also depend on the level of the activity concerned as education either widens the scope of taste or change it completely.

2.5.2 Environmental Constraints

Environmental constraints can further be categorised into facility constraint and linkage constraint which are respectively concerned with the supply of the facilities in which the activities would take place and the accessibility to the facility of the activity and also awareness about the activities concerned. It is obvious that if there is no facility for the activity, there would not be any thought for users patronising such activity but in a case where

there is a facility which is not suitable or appropriate, it may be a factor against the patronage of the activity as some times users are conscious of the venue of the activity which may be connected with prestige.

2.5.3 Linkage Constraint

This type of constraint is concerned about the accessibility of the facility of the activity and awareness about the activity hence emphasise on the importance of spatial relationship between the supply of the facility or where the activity is taking place and the demand area of the users as there is always distance decay of interest from catchment area which depends on the degree of desirability of the activity. Other aspects of linkage constraint include the travel time and travel cost. Travel time may be weighted against the time available to the user and degree of desirability of the activity while travel cost may be weighed against the factor related to spending power or the income of the user. The relationship between the travel time and activity time is also important in determining the extent of the travel time constraint against the use or patronage of the activity in that if the travel time is considerable when compared with the activity time, the linkage constraint would be minimal, if the travel time is considerable when compared with the activity time, the linkage constraint would be much against the activity while the effect would be minimal, if the travel time is negligible when compared with the activity time.

2.5.4 Awareness

An intriguing linkage factor between demand and supply of activities in that all conditions being equal, block optional time available, the money, strong desire to pursue a particular activity may still be frustrated even if the appropriate facility for the activity exist just because users either are ignorant of the activity taking place or its period of operation and might even lack the means of getting to the activity. Awareness apart from depending on distance from the area of catchment or the spatial relationship between supply and demand of activity also depends on the availability of any form of advertisement. Awareness also reduce with increase in distance in an inverse relationship.

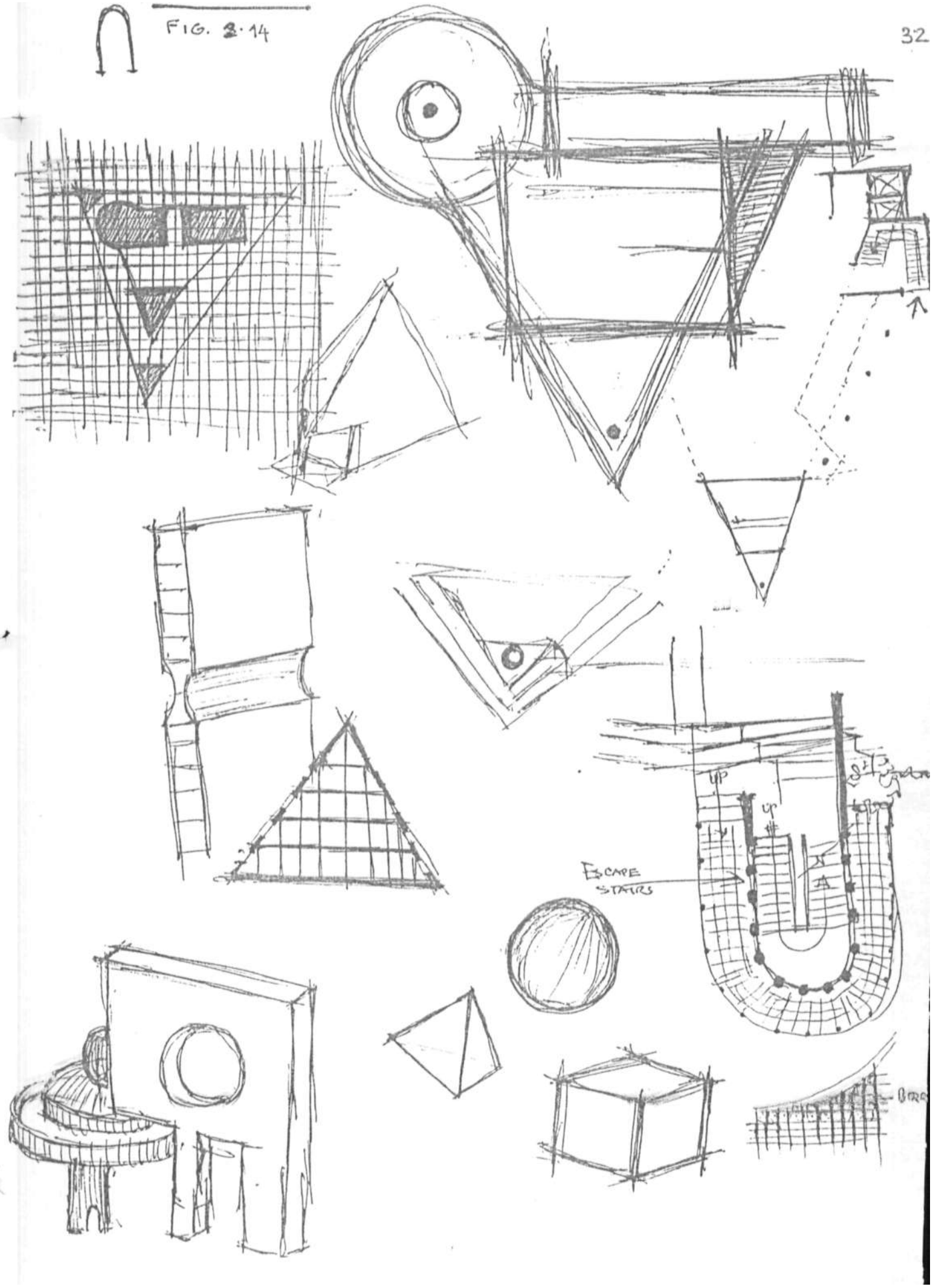
2.5.5. Attraction

Another aspect of linkage constraint which relies on the pulling power of the activity concerned and it has been found that each facility or activity becomes more attractive as other activities are available and close by the chosen. For instance the presence of a bar near a sport facility or a restaurant near a theatre may increase the relative attraction by virtue of the saving in the journey time and cost, this result in increase awareness.

2.6 CRITERIA FOR CHOICE OF ACTIVITIES

The selection/adaption of the activities which are to constitute the proposed complex is based on a number of factors, some of which are physical while others are social yet others are

FIG. 2·14



environmental. The most important of these factors are follows:- (i) Client, (ii) Site (iii) Location (iv) Viability (v) Societal demand (vi) Cityscape.

2.6.1 Client

The client who in this case is a bank (Guarantee Trust) is the financier and owner of the site and the proposed complex which will have a branch of the bank as part of the complex. So a bank designed to the brief of the client is part of the proposal. The research findings are going to play a prominent role in the design which will aim at satisfying the client fully as well as avoiding any conflict that is likely to occur due to incorporating a financial institution in a mixed-use complex of this nature.

2.6.2 Site

Site values are usually high in CBDs and in this particular case where the site alone is estimated for N15,000,000. any development which will not maximise the per square meter of the site will amount to a waste. So if a single activity is to take place on such a site, it will be a wasteful investment. But if revenue generating ventures could be proposed and erected, the yearly returns under careful management and maintenance could off set the initial capital cost involve in such a project. To-let office spaces which could be occupied by other corporate organisations and institutions is part of the proposed complex.

2.6.3 Location

The Bata Roundabout in the CBD of Kano is the commercial melting point of this commercial city. The site is located just about 70-80 metres from this very roundabout and so could be said to be centrally located in the heart of Kano. Bordering this very Bata roundabout is the Sabon Gari Market to the North. It is in this market that millions of naira change hands daily in what has come to be accepted as the commercial capital of Nigeria, North of the Niger. Competitive prices are offered for goods of all kinds and so high level commercial ventures like super-markets, department stores located near it (the market) are all closing down business due to the competition. They are relocating. Another reason for such closure by these super stores is lack of adequate access into their business premises due to the heavy traffic congestion which is prevalent at this highly concentrated centre and where accesses are possible there is the problem of inadequate parking facilities. So if these problems could be properly addressed, such department store could cater for middle and high class customers who would prefer to shop in a supermarket and not a local market no matter the price difference. So a department store is incorporated into the proposal with all the problems forcing them to close taken care of with the hope that, it will be a commercial success and revenue generating to the management of the complex when it is let-out.

2.6.4 Societal Demand

There is a post office selected to be part of the activities on the site due to the need for such a function by the society. The main post office in the municipal is located about 25-30 minutes walk from this Bata Roundabout, which is the nerve centre of all Kano Commuting. Getting a taxi to this post office can be quite exerting on the commuters who often pay about N30 to and from Bata. Buses do not follow the route to the post office which only compounds the problem. So most people do not bother to communicate with their relatives outside the state. There is the saying in Kano "if one can get to Bata, then one can get to anywhere else in Kano from Bata". All buses, taxis and motorcycle hire service pick people from Bata to various quarters of Kano Metropolis and vis-versa. So a post office located anywhere close to this junction could improve the communication reach of the population with other parts of the country. There is a constant clamour for a post office close to this place but only a postal agency is located in a conspicuous corner, most people do not even know about it. But with an attractive complex of this nature having a post office within its fold only about 2-3 minutes walk from Bata Roundabout, it will improve the lot of the society in reaching out constantly to their loved ones.

2.6.5 Viability

The viability of the project in such a location is assured and a high level of patronage is expected. The users of the complex would need a place to eat which should not be far from their

various post of duties. Also customers visiting could once in a while require an entertainment area where they can relax while they engage in their individual interests. So a restaurant is also part of the facilities intended for the complex to serve both the users and their customers as well as other interested individual who could come from the many corporate organisations in the neighbourhood. When such an eatery is let-out to an experienced restauranteur, it can be a source of revenue generation for the owner of the complex.

2.7 ACTIVITIES PERIODS

The activities chosen for the complex are a bank (branch for Guarantee Trust Bank Plc), a department store, a post office, a high rise office spaces to-let and a restaurant. Each has been carefully selected based on the advantages likely to be gained for the overall success of the complex. The activities will each function individually free from the other even though they might compliment each other as parts of a whole. Completely together as one, in harmony yet each operating separately with activities period varying according to their functional requirements.

The Bank operates its normal banking hours to its customers between 8.00am to 1.30pm after which it usually closes to the public but remain for its routine in-house banking operations. This can last into the evenings.

The Departmental Store operates from 8.00am to 5.00pm with a one hour break in the afternoon. Usually the staff go for the break

in shifts so that the store remains open through out the operating period.

The post office opens to the public for services between 8.00am to 3.30pm which is the normal operating hours of the Federal Government Parastatals.

The Office Block which is hoped will be occupied by other financial institutions, foreign agencies as well as private companies could operate from 8.00am to 5.00pm or 6.00pm or even more.

The Restaurant which caters for all the complex staff, customers, visitors etc could commence operation from about 9.00am offering breakfast through lunch to dinner which could last up to about 11.00pm.

So the complex would usually be open for business by 8.00am and close finally for the day by 11.00pm.

2.8 DESIGN PROBLEMS

There are quite a number of problems bound to pose a challenge in the design of the proposed complex due to the nature of the site which is triangular in shape. The location of the site which is the principal advantage of the site might ironically be one of the major set backs to the utilization of the site. The design problems range from the local building codes and regulations, to the choice of a suitable grid to adopt for a triangular plot. Here are some of the major problems.

2.8.1 Site Shape

The shape of the site (a triangle) poses the first challenge as there is likely to be a waste of land area at the angles thus reducing further an already tight any unyielding site.

2.8.2 Parking

Provision of adequate parking spaces for a complex of this nature an a very small site ($3174m^2$) located in the heart of a commercial city's CBD like Kano ranks high as this could be the key to the overall success of the whole project.

2.8.3 Access

Access into the site which could be from any of the bordering (3 sides) roads could prove to be another interesting challenge during the design. The client's Brief request for a complete and total isolation of the bank from the rest of the complex.

2.8.4 State Building Regulations

The Building codes and regulations require that only 1/3 of the site could be developed with 2/3 being parking and landscape at ground level if a high rise is proposed for the site. With an already tight site this building regulation is another constraint that could be interesting to satisfy.

2.8.5 Facing Facades

With as many as five different activities proposed for the site, the directions for each activity to face, to give it an added edge is yet another problem that will require some design considerations.

2.8.6 Grid

Choice of the most suitable grid type and size is another obstacle, since the triangle is not a form that allows for any grid to flow through it. And in this particular case a grid could become useless as the site is traversed from base to the apex.

2.8.7 Circulation

Circulation within the complex (both vehicular as well as pedestrian) has to be carefully considered as there could be high patronage to the complex.

2.8.8 Concept

The concept to adopt for the design tends to be another major constraint. A triangular concept could be the best to conform with the site but this could limit the flexibility of the design.

These are some of the design problems that need to be resolved as the complex is carefully planned to satisfy not only the client, but also the society, the environment and the architects ability and design conscience.

CHAPTER THREE

3.0 CASE STUDIES

3.1 Preambles:

Case studies are very important when a sound research of this nature is being conducted and in architecture it is a vital tool with which the Architect design a better and more efficient building than previously existing. Case studies of existing mixed-use buildings (both custom-made and renovations) are necessary in order to have a wider knowledge of the topic under consideration. A knowledge of the past and the present with the merits and demerits will surely serve as a guide to what the future, a better future should be.

Four case studies (3 indiginous and 1 foreign) are chosen for the study. Each has been selected from a number of others because of the contribution it will make to the design proposal after the brief has been developed. The case studies would be analysed in order to appraise the following:

- Planning
- Structure
- Services
- Areas of Conflicts in the functional requirements
- Clients/Users/Customers relationship

The three local case studies are:

i) Hafsatu House, Kano

ii) Eagle House Marina, Lagos

iii) Agbowo Shopping Complex, Ibadan

The fourth and last case study is foreign

iv) Bridgeport Center Connecticut, USA.

3.2 CASE STUDY 1

Eagle House Marina, Lagos

Project:	Office Building
Architect:	Design Group Nigeria
Client:	National Oil and Chemical Marketing Company
Contracttors:	Bouygues Nigeria Limited
Users:	Company Employees

3.2.1 Introduction

Eagle House is the striking office structure housing the National Oil and Chemical Marketing Company. Located in the CBD of Lagos Island i.e. Marina, the building sits elegantly behind an attractive well landscaped forecourt. With a total floor area of 12,500m^2, it is L-shaped on 2 floors and rise 22 storeys on its shorter side. The office space is restricted to this main vertical structure while the longer arm which houses the carpark on the basement, ground and first floors serve as a natural horizontal extension of the tower on podium high rise.

3.2.2 Facilities, Planning and Structure

On the ground and entrance levels as well as the basement as mentioned earlier is found the multi-storey carparks (2 floors). The first floor/mezzanine level is a hospitality unit with a theater for conferences, film shows, seminars etc. Second floor houses a restaurant and service lift. The 3rd floor accommodates the office services unit. All other floors are identical in plan. A typical office floor is rectangular in shape measuring 33.6m x 16.8m. It has a double banking office layout with the circulation space running centrally in the building. Services facilities are situated at the right corner of the floors. Structurally, the building is mainly composed of reinforced concrete columns arranged in a grid pattern of 4.8m centres thus forming a post and beam frame construction. It is an open plan design.

3.2.3 Services

The building is provided with a high level of services facilities and installations. In the core of the building is located 5 access lifts. 1 goods lift from basement to 3rd floor while an automated documents lift, first of its kind in Lagos at the time of commissionning trasverses 16 storeys. Two staircases (1 main and 1 escape) are also part of the services found in the core. They both rise from the basement to the highest floor. There is a central air conditioner and 5 stand-by generators in case of any power failure. There is also 2 UPS system for the computer floor. Adequate fire protection and fighting devices are available and an

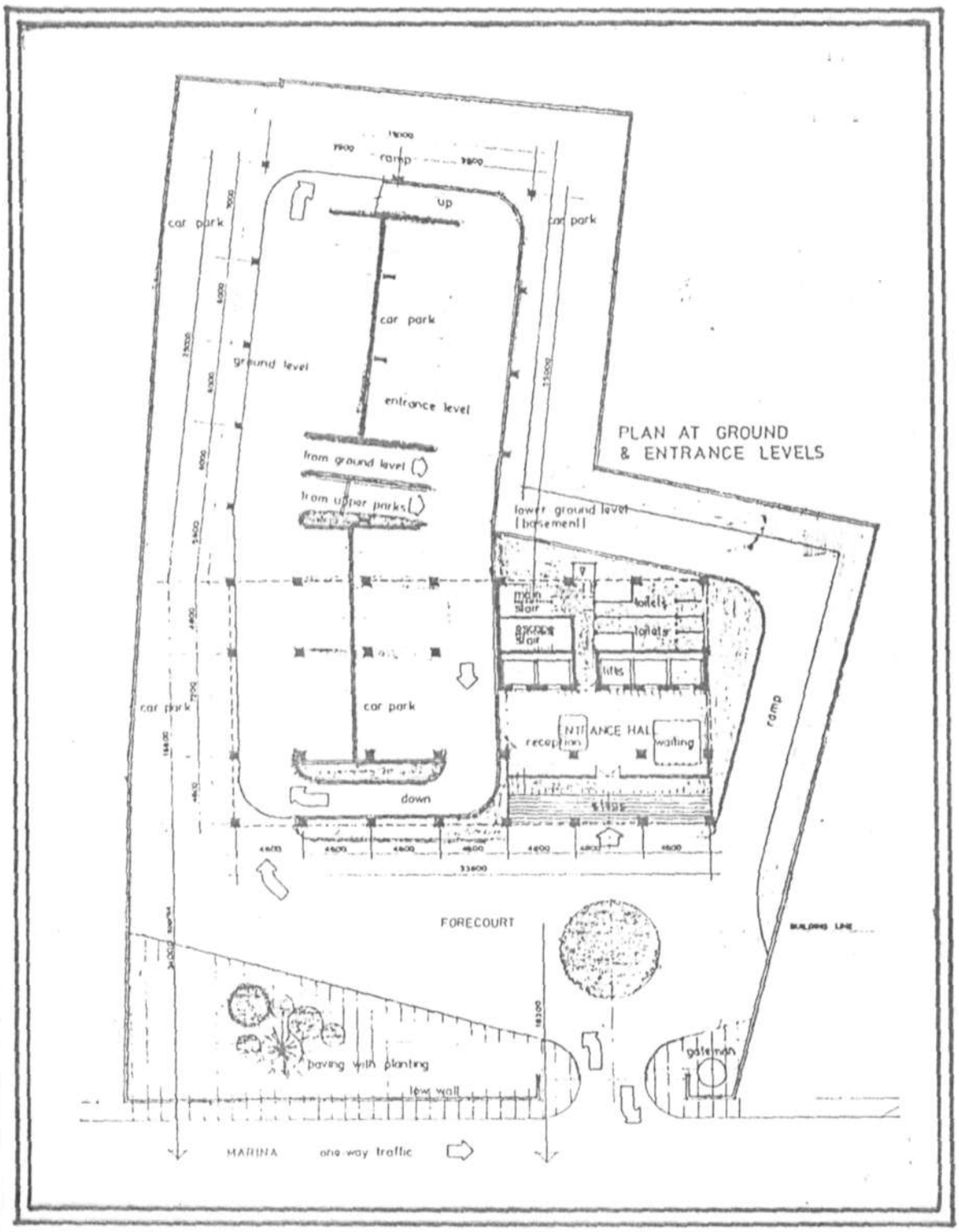


FIG. 3.1 GROUND FLOOR PLAN/BASEMENT PLAN, EAGLE HOUSE

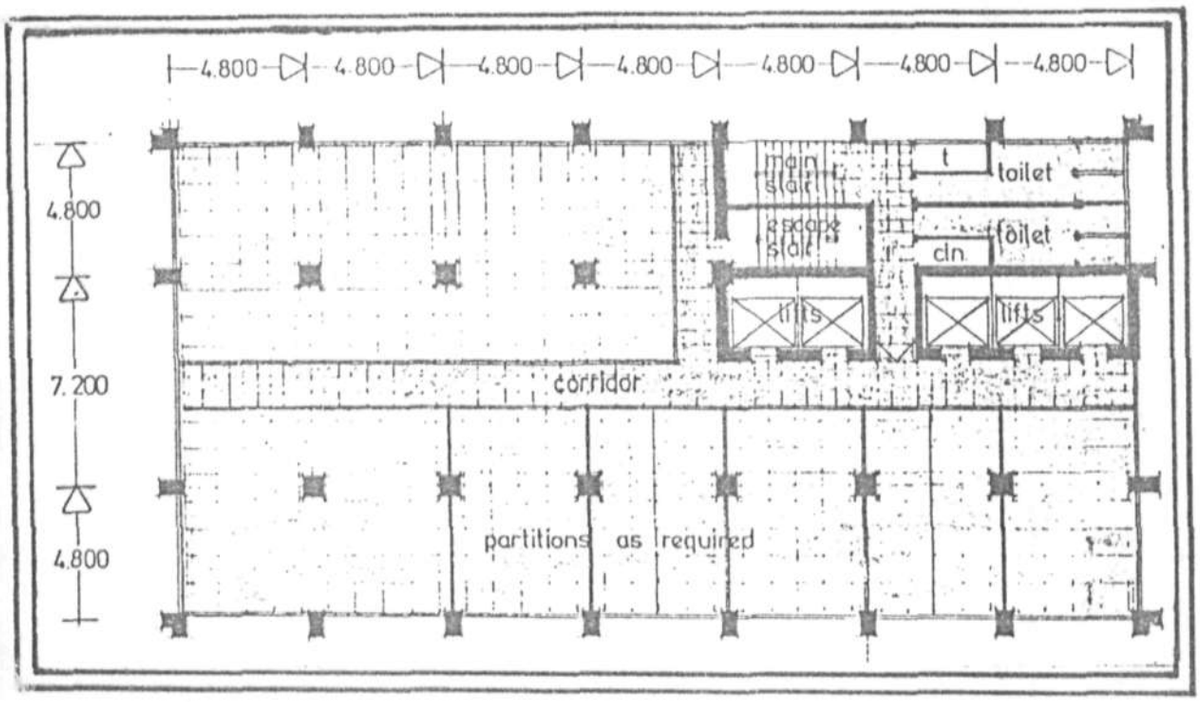


FIG. 3.2 TYPICAL UPPER FLOOR PLAN, EAGLE HOUSE

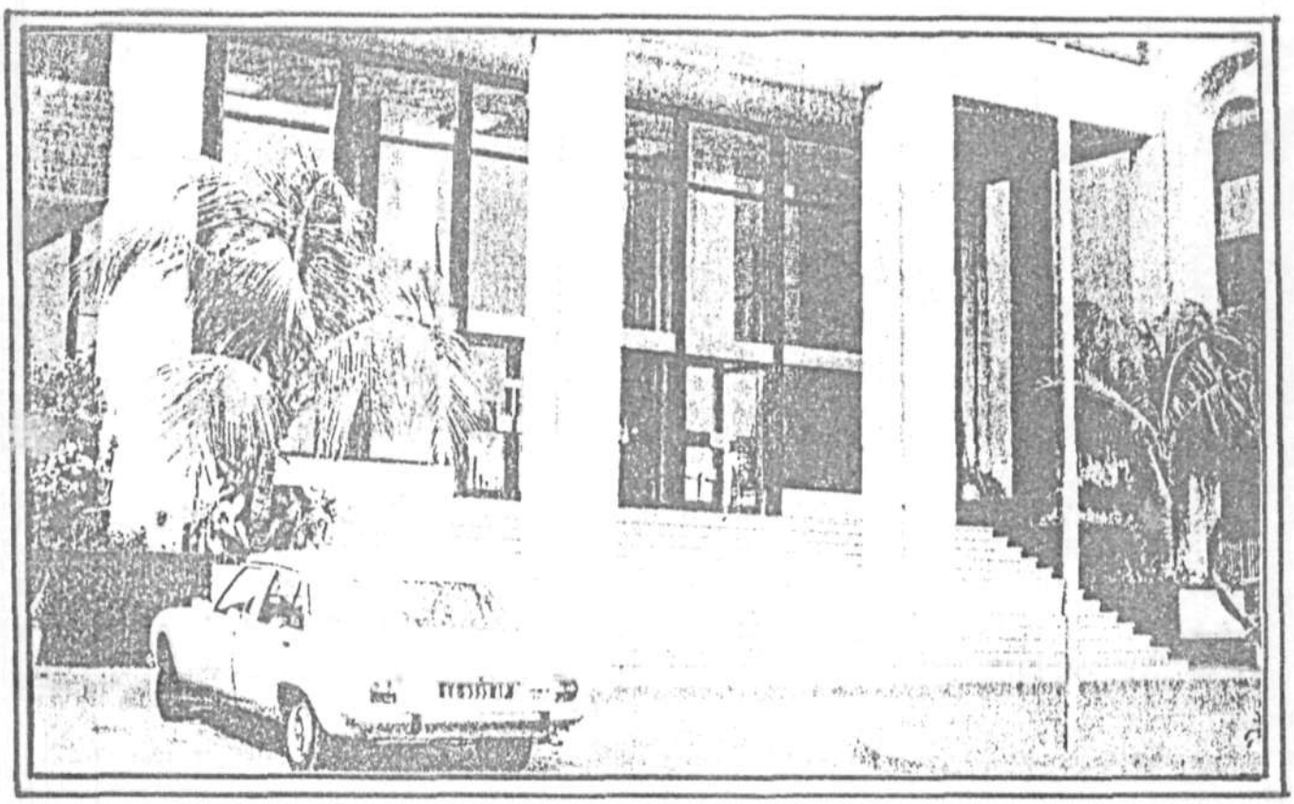


PLATE 3.1 ENTRANCE PORCH, EAGLE HOUSE

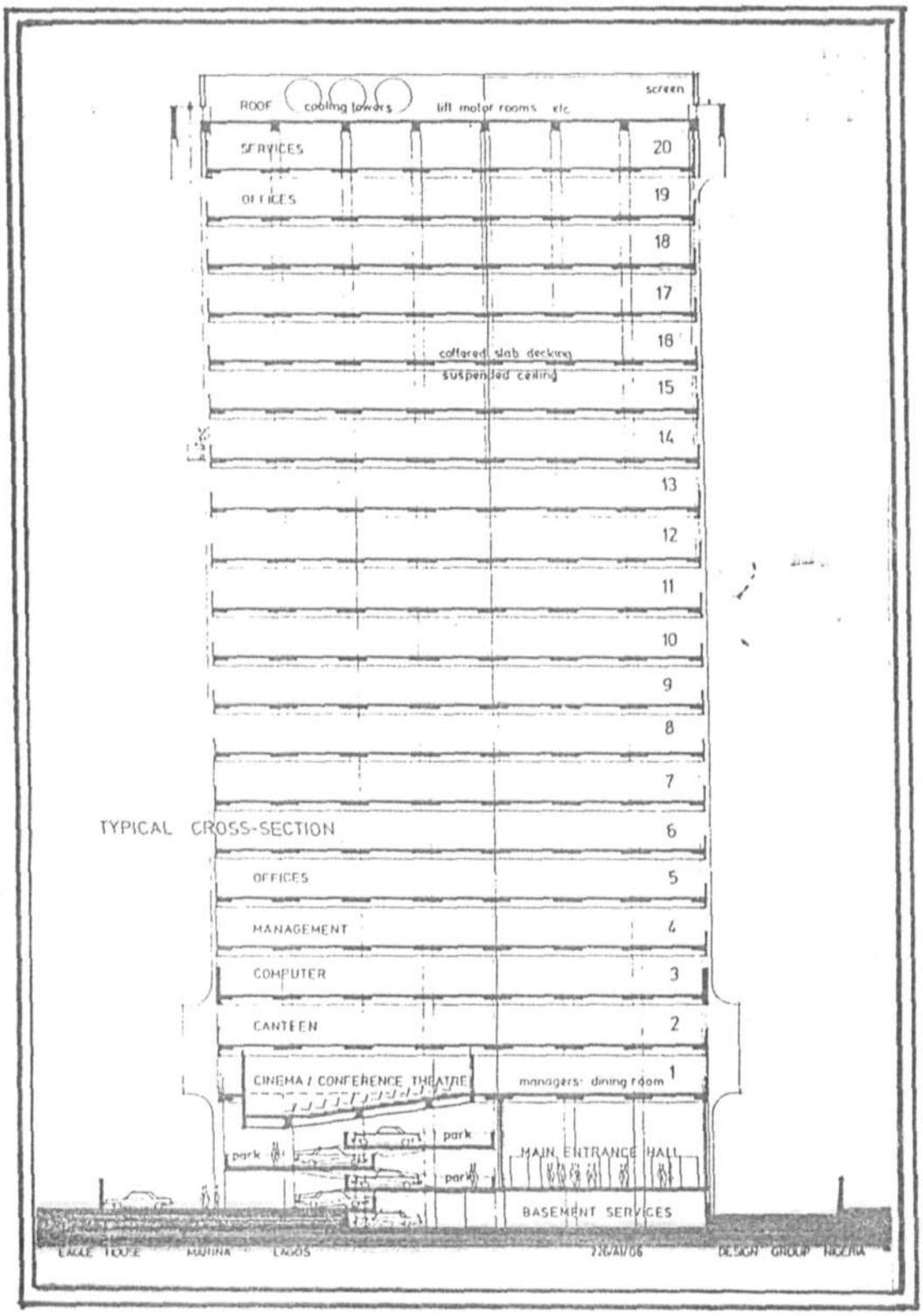


FIG. 3·3 SECTION, EAGLE HOUSE

integrated ceiling/lighting/ airconditioning services system is also to be found. Plumbing services include domestic water reservoir tank and pumps and also an efficient sewage treatment plant are located on the premises. The roof houses the lift room, water tanks and airconditioning chiller units.

3.2.4 Client/Users/Customers relationship

The client are quite satisfied with the edifice and have been using it for quite a while now (about 10 to 12 years) without much problem. Customers are also at ease with the parking facilities which has been beautifully incorporated into such a tight and small site by the architects.

3.2.5 Areas of Conflicts as Mixed-Use

This case study is not a mixed-use but a single use building. It has been chosen for its parking space provision. For on such a tight site located in the bustling Marina, a central business district of Lagos Island, 100 cars can comfortably be accommodated without any problem while the National Oil Headquarters sits magnificiently above. This is the area of concentration of this case study.

3.2.6 Merits

i) Multi-level carparks for larger number of cars on a very small site

ii) A well elevated and celebrated entrance

iii) Open plan and a highly comprehensive and compact design

iv) A high level service facilities provision

v) Use of durable materials as finishes

3.2.7 Demerits

i) Main and escape staircases are too close together

ii) Monotonous facade at the high rise level

iii) Landscape is minimum and virtually absent at upper levels

iv) No defined circulation space for lifts and reception area.

v) Day light penetration is poor due to depth of office space.

3.2.8 Conclusions

For an effective parking on a tight and small site, mixed-use complex that has a bank branch should be able to cater for parking of not just the bank customers and staff seperately but also for staff and customers of the other functions incorporated into it. So there might be a need to use multi-storey parking for the proposal. As inadequate parking facilities is a major problem found in most renovation mixed-uses, taking adequate measure to provide enough parking in a purpose-design mixed-use will go along way in making the structure serve the users and customers better besides the propose site is small and tight (triangular in shape).

3.3 CASE STUDY 2

Hafsatu House, Bompai Road, Kano

Project: Mixed-Use

Architect: Environmental Design Company (EDC)

Client: Alhaji Baballe Ila

Contractor:

Users: Societe Generale Bank, Al-Amin Supermarket, Libyan Consulate and other corporate bodies (2 No)

3.3.1 Introduction

Designed by Environmental Development Company (EDC) for one Alhaji Baballe Ila, Hafsatu House is located along Bompai road in the central business district of Kano city. Clad in ash color marble finish, the building is a two storey purpose-built to serve as a mixed-use way back in 1986. A two half staggard rectangle divided by a central services core, it is a beautiful structure to behold. It has been designed on a grid pattern with some curved storage protrusions which has added to the general aesthetics of the building. With a careful consideration for the interior temperature, the architects took the trouble to incorporate a comprehensive sunshading devices in concrete on the facade of the building which has also added to the elevation, some beauty. The entrance porch has a big and wide canopy which not only celebrate the entrance of the building but also shield it from the fierce Kano sun.

IG. 3.6 PERSPECTIVE VIEW, HAFSATU HOUSE

BULLION PARK
GEN. HOUSE
CARPARKS

FIG. 3.4 GROUND FLOOR PLAN, HAFSATU HOUSE

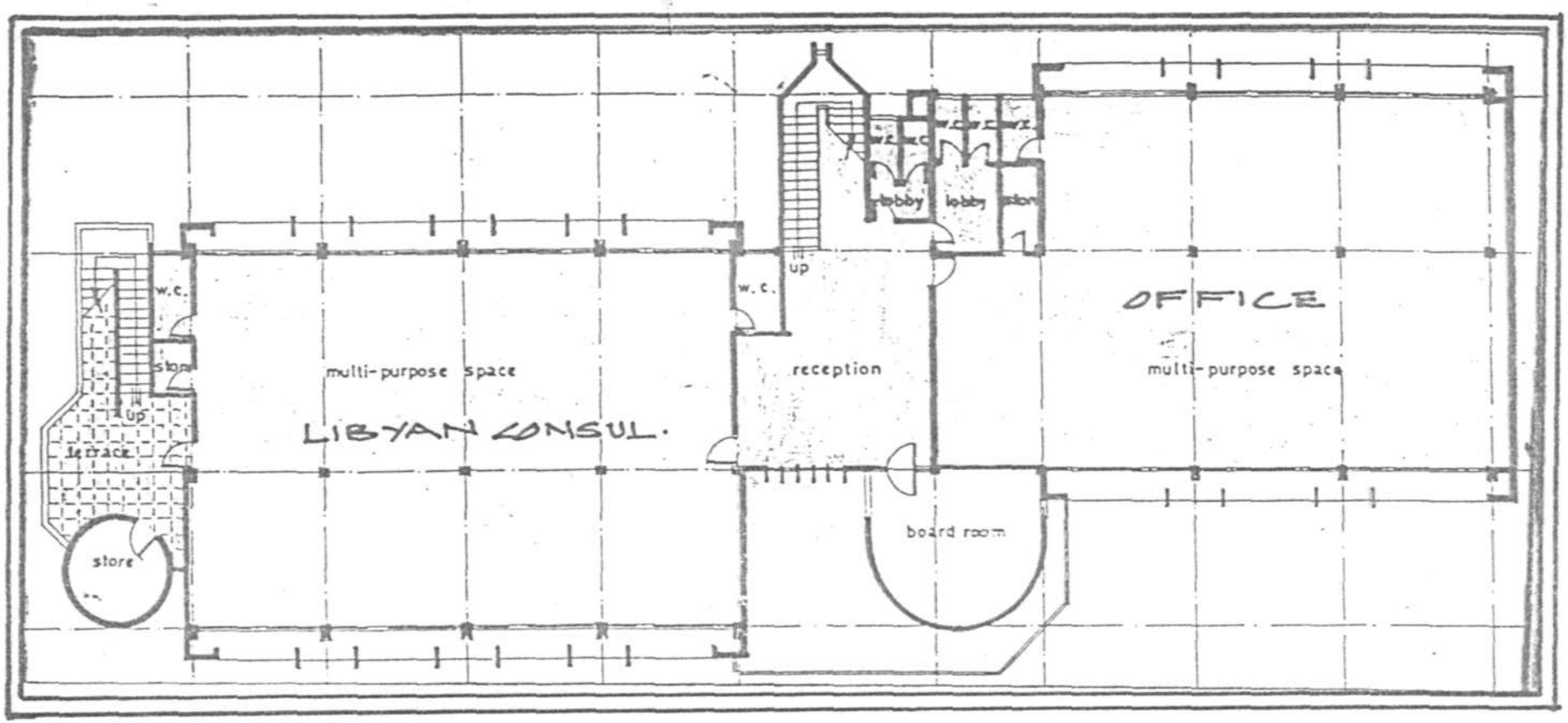


FIG. 3.5 TYPICAL FIRST AND SECOND FLOOR PLAN, HAFSATU HOUSE

3.3.2 Facilities, Planning and Structure

The ground and first floors of the west wing of the staggard rectangular building was recently restructured to accommodate a branch office for Societe General Bank Nigeria Plc. All the necessary facilities required for a smooth banking operation has been provided. The banking hall, strong room, computer room, note counting, cashiers cubicles and accountant's office are located on the ground floor while a staff canteen, manager's office, a general board room and officers work stations are located on the first floor. Also to be found are rest rooms and storage spaces on both floors. The last floor (2nd) on this left wing is occupied by the Libyan Consulate, which has partitioned the open space of the floor to their functional requirements.

A big reception hall/lobby centrally located between the two wings has the main staircase of the building and rest rooms accessible from it. The second (escape) staircase which is located on the left (west) end of the building has become a part of the bank's internal circulation system. The right side (east wing) has a supermarket at the ground floor level. With the first and second floor of this wing being office space to-let.

Parking spaces for only 12 cars at a 45^0 angle has been provided against the low fence of the site facing the road. There is also 4 additional parking spaces directly facing the supermarket. Also found on the site are a gate house, a generator house each located at corners of the small site.

3.3.4 Client/Users/Customers relationship

The client is satisfied with the building which was well designed and constructed. And has been yeilding steady revenue since commencement of usage.

Users of the mixed-use are not so happy with the structure except for the fact that it is strategically located and so very good for business. Infact before the bank's movement on to the premises, a photographic studio and developing outfit just moved out.

Customers to the site are of the opinion that the parking is not enough at peak activities hours. Some even park off the road.

3.3.5 Areas of Conflicts as Mixed-Use

i) Loitering or even waiting are mostly disallowed in front of banks where signs are displayed warning passer-by to keep on moving yet with the supermarket sharing a common entry point with the bank in this mixed-use, shoppers not only loiter or wait, they even stand to discuss. Often the foreign shopper who make the bulk of the shopping customers leave their driver waiting while they go into the supermarket.

ii) When supplies or delivery is made to the supermarket, often it is not ideal to the bank operations. The bank would prefer to have a separated entry point from the other facilities.

iii) Entrance into the premises is not favourable for bullion delivery into the bank as the bullion van will have to drive across the entire parking area before entering into the bullion bay.

UNIVERSITY

Structurally, it has been constructed as a post and beam structure with reinforced concrete columns arranged in a grid pattern which is not consistently the same size through out the building. The architects found it necessary to change the grid size wherever they found it necessary as a design strategy. The orientation of the building is also excellent.

3.3.3 Services

Electricity supply is connected to the building from the power lines running just off the site along the Bompai road, while a powerful generator serve as a stand-by in addition to natural lighting which is adequately catered for in the design. The building which is only two storey high has two staircases one used as main circulation stairs which is centrally located in the services core and the other which is suppose to serve as the escape stairs is located appropriately about 24 meters away from the main stairs. Mechanical services can be found installed next to each of the two staircases with most in the central core. Airconditioning is by split units and/or window units which complement natural ventilation in the building. Fire fighting apparatus are appropriately located throughout the structure. Externally, surface water is encouraged off the site which slopes toward the covered drainage gutter in front of the site.

iv) All users have to content themselves with the facade of the building which does not allow for any form of architectural expression of individual organisations image or logo.

v) The soak-away and septic tank is subjected to more wastes than originally designed to contain.

vi) Often the Libyan Consulate Office receive some dignitaries who due to certain protocol might stand in front of the building which can be unnerving to other users and their customers.

vii) The Libyan Consulate on top of the banking floors use the terrace attached to its floor. This is not ideal to the bank for security reasons. Also the Consulate can not use the escape staircase even though it is accessible to their office as it has been sealed off by the bank with burglar proofing iron rods.

3.3.6 Merits

i) Compact yet flexible design due to use of grids and open plan

ii) Use of durable materials for finishes

iii) Escape staircase is well located though not useable

iv) Minimal yet efficient circulation flow

v) Beautiful facade due to its purpose built nature

3.3.7 Demerits

i) Inadequate parking facilities

ii) Limited landscaping

iii) No in-built bullion park for bank

iv) Escape stairs not accessible to all users

v) Inefficient airconditioning due to inability to seal office because of the storage protrusion

vi) Boardroom not well ventilated (natural)

3.3.8 Conclusions

A typical problematic mixed-use where the occupying activities are suffering due to conflicts in their functional requirements. To avoid such a reoccurence, the proposed bank will have to be provided with a separate entrance foyer, also a separate access staircase, so as to make the escape stairs available to all in time of any hazard. An architectural style used by all occupants can be incorporated if purpose-built mixed-use is to be designed. And so many other considerations would be taken when planning the proposed complex.

3.4 CASE STUDY 3

Agbowo Shopping Complex, Ibadan

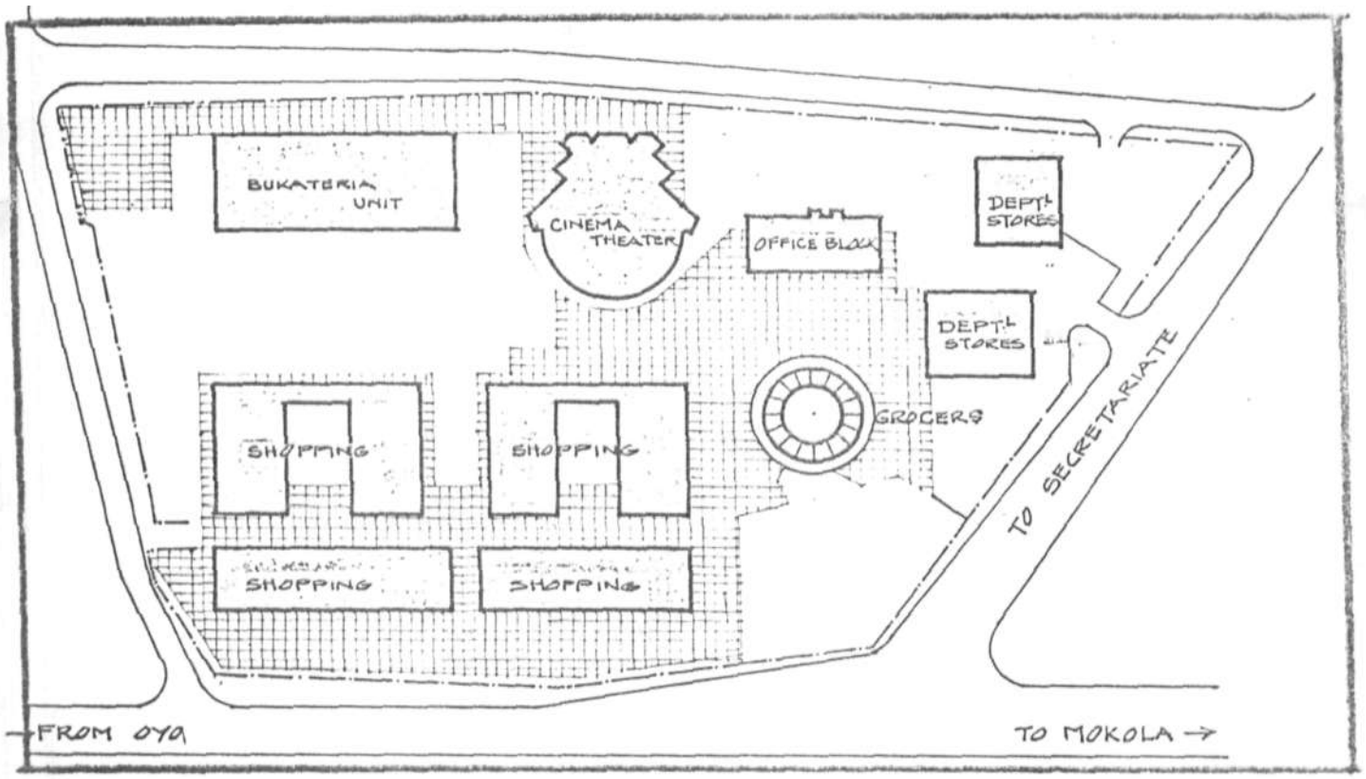
Project:	Shopping Complex
Architect:	Rational Architects
Client:	Property Development Corporation
Contractors:	
Users:	Agbowo Residents, University of Ibadan Community and Immediate Environs.

3.4.1 Introduction

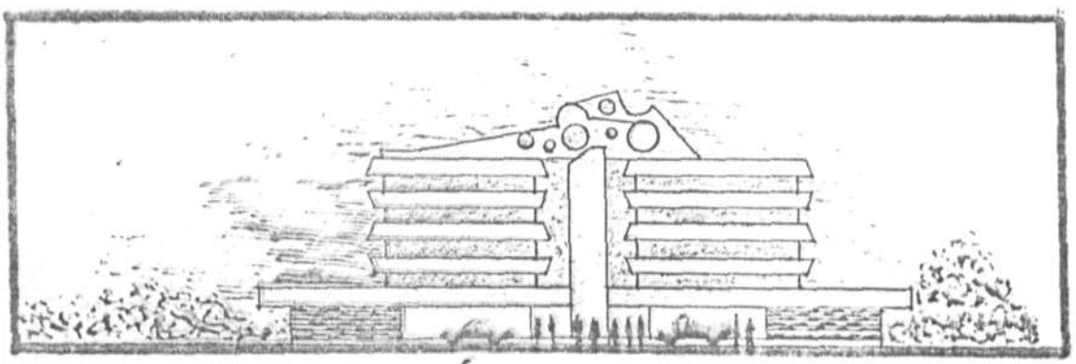
Owned and managed by Property Development Corporation of Oyo State, Agbowo Shopping Complex is directly opposite the main entrance of the University of Ibadan. The complex is located towards the northern end of Ibadan city, the capital of Oyo State. It is bounded on the north-western side by a regional road, on the eastern side by Bodija-Secretariate road, while it is bounded on the north-eastern side and directly at the back by minor roads. It was designed to cater for Agbowo residential area, the university community and the immediate surroundings. A complete mix of uses or facilities, Agbowo Shopping Complex comprises of commercial, business and recreational or entertainment facilities. Thus it's use for these activities. it is a mixed-use of what the author calls "Cluster" type different from "Mono" type. Upon observation of the lay out it was discovered that different functions on the complex were each housed in a building and the individual buildings spread to cover the whole site. So that one has to walk from one building to another if one's needs can not be found in that building. This encourages social contact and interaction.

3.4.2 Facilities, Planning and Structure

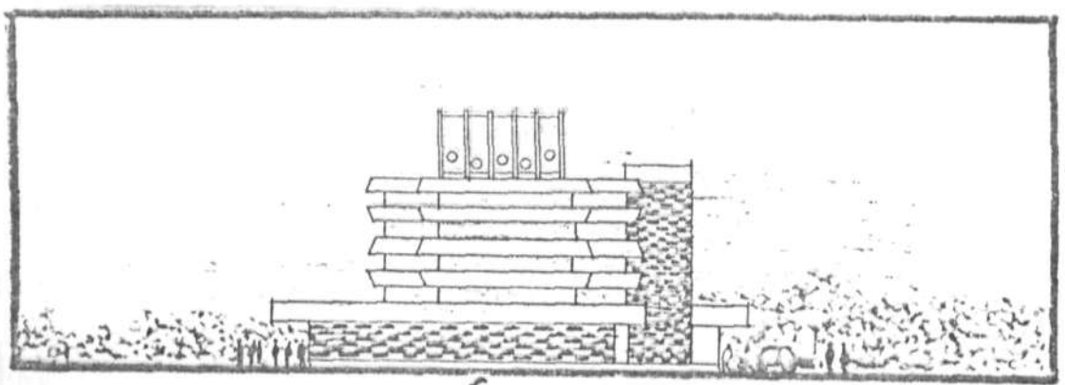
There are 9 blocks spread in a cluster in the complex site. The facilities include a cinema or theater that accommodate a large crowd, a ten storey office block, 2 departmental stores, 2 supermarkets, 2 floors of bukateria units and a grocers' shops. Also to be found are open terraces, plazas and communal spaces for all



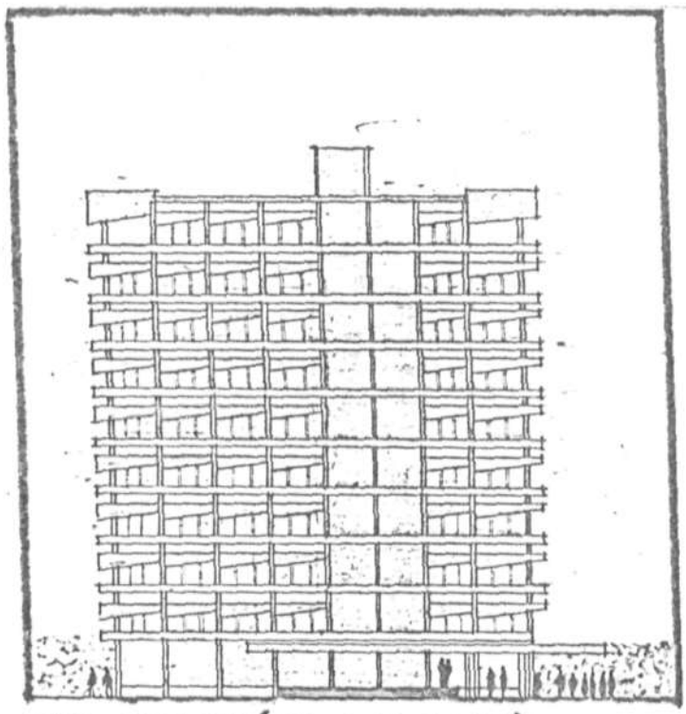
SITE PLAN



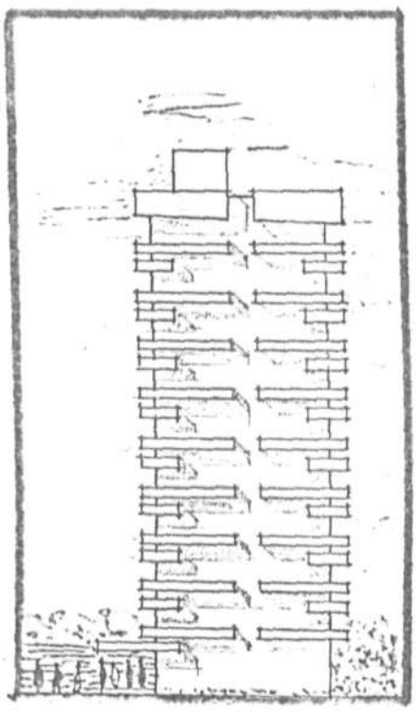
REAR ELEVATION (TO SEC^{t}. ROAD)



SIDE ELEVATION (TO OYO ROAD)



ELEVATION (TO OYO ROAD)



ELEVATION (TO SECR. ROAD)

ELEVATION : GROCER'S UNIT

forms of socializing. Parking spaces are located in the basement level. A generator house as well as security house are also appropriately located. Even though the units are separated, yet they are connected via covered walkways. There is a portion of the site that seemed to be carved out to accommodate a petrol station which is facing the Oyo to Mokola road, just at the corner to Secretariate.

3.4.3 Services

Electricity supply, telecommunication as well as mechanical services are all available to the structures. Drainage of surface water is through well laid channels that take the waste water away toward the minor roads. There are two lifts provided in the core of the ten storey office block, with both a main staircase and an escape staircase both provide too. Other units have their staircases as well e.g the bukateria unit, departmental stores, etc. There are also 3 stand-by generators in case of power failure.

3.4.4 Clients/Users/Customers relationship

The clients wanted a complex based on a concept that would cluster different uses or facilities together, so that one use would complement the other and also to provide not only a commercial centre but also a social forum for the community through the evolution of diverse uses or facilities and open spaces. This they believe has been accomplished with the complex and are quite satisfied with its performance.

Users of the complex are also happy with the facilities and patronise the complex regularly. it is essentially more of a commercial success most especially that the users lay more emphasis on this segment of the complex than the business or entertainment part. There are more commercial units.

Customers on their part are also quite at home in the complex which serves as another social centre for the university students who come for one reason or another. It is essentially a favourite with its customers.

3.4.5 Areas of Conflicts As A Mixed-Use

Cluster type of mixed-Use are less problematic as they are mostly purpose-built to serve as such.

3.4.6 Merits

i) Integration of different uses or facilities on the site

ii) A busy and attractive centre to many users who patronise it regularly for various purposes.

iii) Terraces and plazas provide areas for social interaction

iv) Natural lighting and ventilation is enhanced due to segregation of units with pocket of open spaces in between.

v) Basement parking separates pedestrian from vehicular traffic.

3.4.7 Demerits

i) Too many units on site gives a chaotic impression

ii) Poor landscape design with too much hard surface

iii) Single use of cinema hall instead of multi-purpose

iv) Land waste as "Mono" type mixed-use could have serve same purpose

v) Waste of materials (construction) due to separation of units.

3.4.8 Conclusions

From the concept, it can be deduced that Agbowo Shopping Complex has successfully been used to integrate different uses or facilities into a complex as a way of enhancing the complimentary role of uses to each other.

Also such integration is a sure way of creating social forum for interaction as more and more users or customers tend to be attracted to such centres.

However, it must be noted that it is only where there is available land and mostly recreational activities are to be encouraged that such kind of mixed-use can be planned. Unlike in CBDs where land is scarce and highly expensive, such a development could be a luxury that can not be affordable.

3.5 CASE STUDY 4

Bridgeport Center Connecticut, USA

Project: Office Building/Mixed-Use

Architect: Richard Meiers and Partners

Client: People's Bank

Contractor: Turner Construction Company

Users: People's Bank, Connecticut National Bank, Barnum Museum, Office Space To-let, Restaurant, Parking Garage

3.5.1 Introduction

Richard Meier's first ever completed high rise, Bridgeport Center is a 528,000 square foot headquarters for People's Bank in Bridgeport Connecticut. Sheathed in panels of metal and granite, the highly expressive, variegated volumes of the structure is the tallest building in the city although only 16 storeys in height. It sits comfortably on a prominent downtown triangular site bordered by the Interstate 95, a heavily traffiked connector between New York and Boston. In designing such a highly visible symbol on the city's skyline, Meier dismissed the idea of a singular emblem in favour of a clustered collage.

"I wanted to indicate the possibilities for the future growth and scale of downtown Bridgeport through a conglomeration of buildings that responds to the city differently on every side, "the architect says, explaining that he carefully avoided the type of

monolithic tower-on-podium aesthetic of Stamford, 15 miles to the South. The architect rationalise the design as a sympathetic response to the building's four-acre urban site. "We've attempted to relate materials and forms to an existing context, as opposed to the earlier projects which were free standing objects in pastoral settings", he says.

3.5.2 Facilities, Planning and Structure

Bridgeport Center is more experimental in its bold, somewhat awkward juxtaposition of materials and forms. The architect based his subdivision of the high rise on the parameters of the triangular site, organising the offices of the bank into blocks fronting Main Street, placing a parking garage at the edge nearest I-95 as a buffer, and linking the activities with a shared services core at the heart of the complex.

On Main Street he define a public plaza with the concave wall of the central tower, a low granite-covered wing on the corner nearest a public square. The Barnum Museum, an 1891 structure renovated by the architect to its original Romanesque Revival splendour. To the South of the museum, he terminated the tip of the site with a sculpted wing containing additional exhibition space for the museum, and an employee cafeteria and training facility for the bank. Each portion of the building is further activated by a variation in cladding. The straight planes of the office blocks are panelled in gray metal and horizontal strip windows, the corner towers covered with granite to harmonise with the brick and

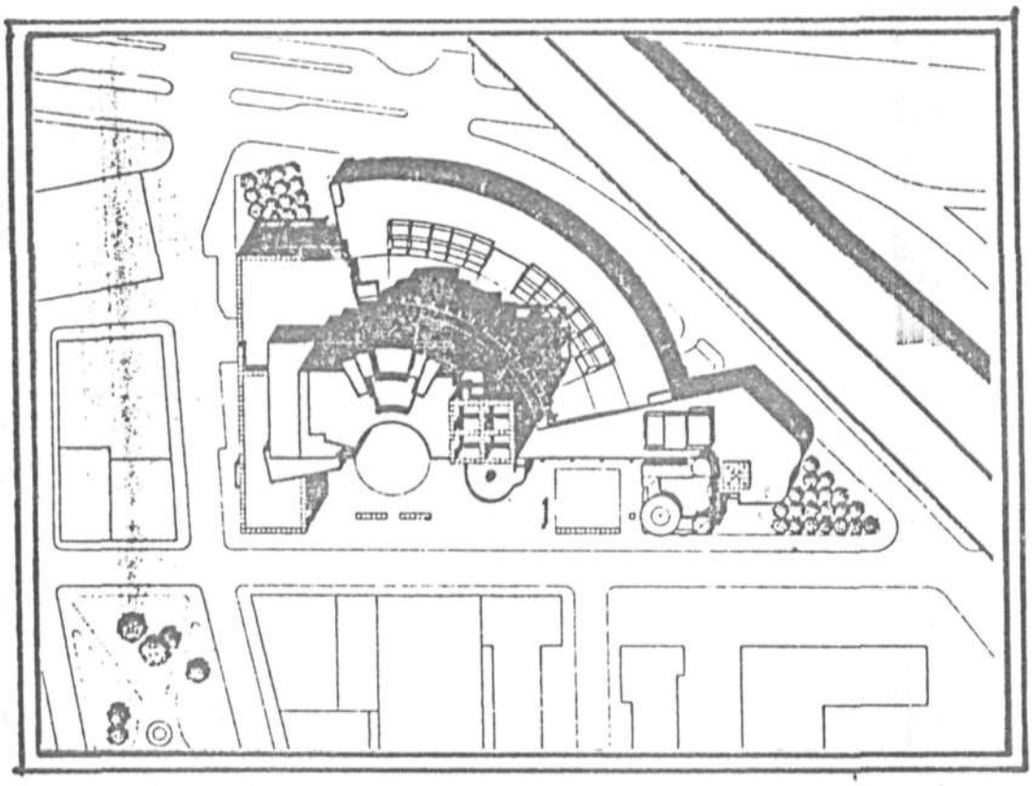


FIG. 3·12 SITE PLAN OF BRIDGEPORT CENTER

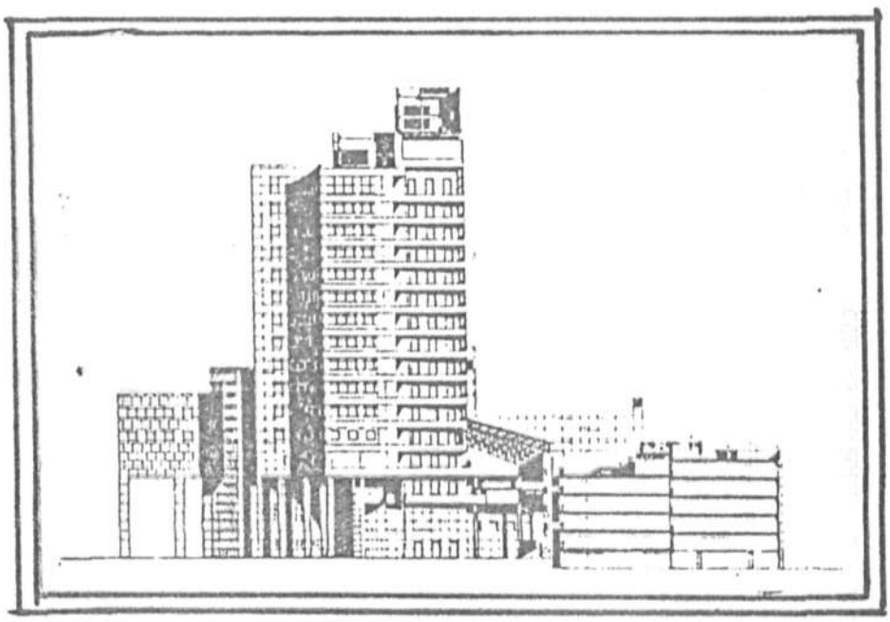


FIG. 3·13 ELEVATIONAL SECTION : BRIDGEPORT C.

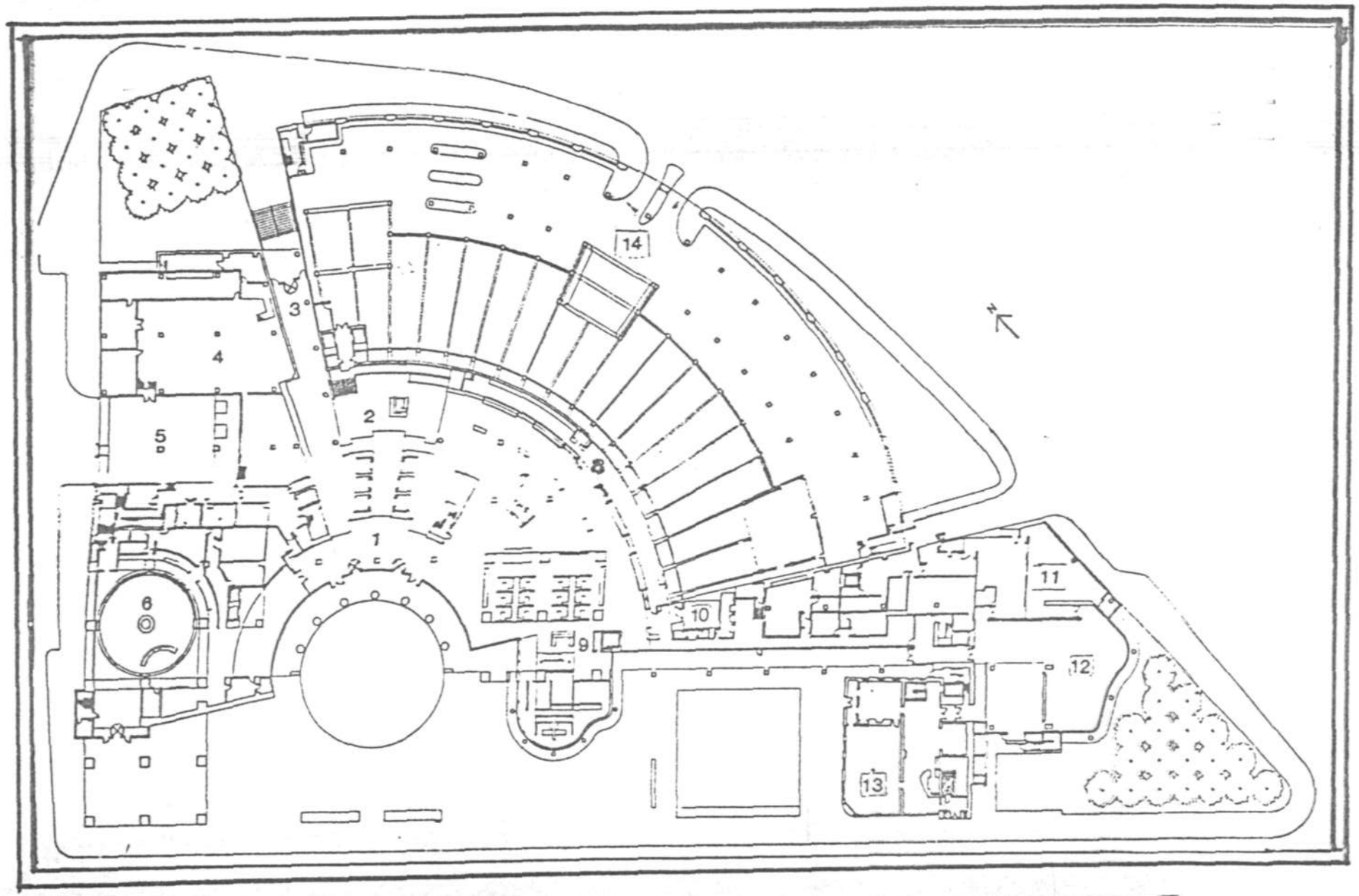


FIG. 3.10 GROUND FLOOR PLAN OF BRIDGEPORT CENTER, CONNECTICUT

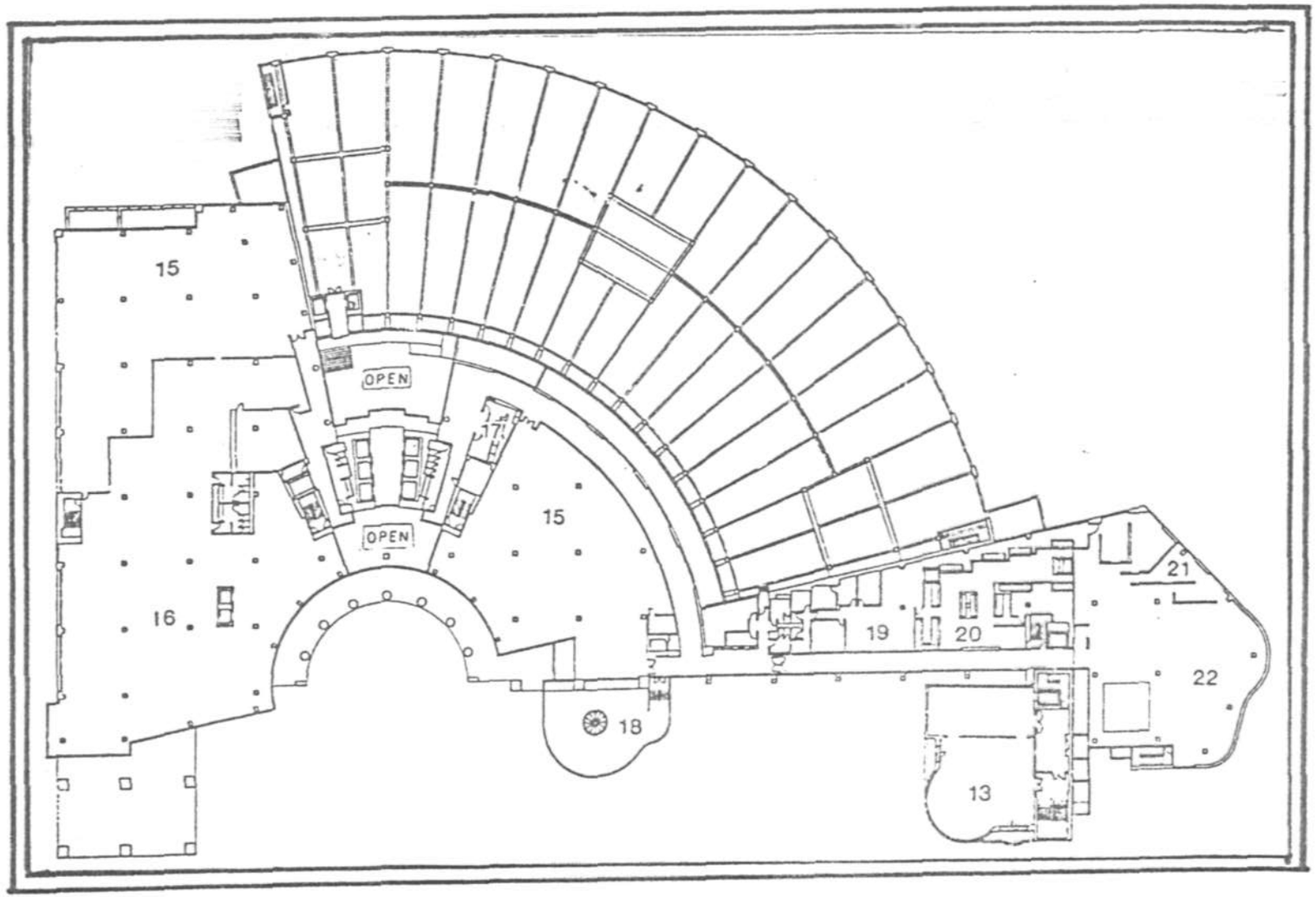


FIG. 3-11 FIRST FLOOR PLAN OF BRIDGEPORT CENTER, CONNECTICUT

sandstone of the Barnum Museum, and the more plastic segments rendered in white porcelain-enameled panels.

3.5.3 Services

A shared services core is located at the heart of the complex as mentioned earlier. There are 15 lifts servicing various areas of the complex. 6 lifts are immediate found upon entry in the main entrance lobby, 1 lift is located near the private banking area. The Connecticut National has 2 lifts which trasverse the 3 floors leased to it. 1 more is used for the loading dock area. There two lifts used by the parking garage, one at the Barnum Museum, one at the cafeteria section and the last at the vault area. Also several staircases are strategically located for effective and efficient circulation between various floors of the center. Lighting and ventilation is by artificial means even though it is taken care of in the design to an extent. Mechanical services are also located where necessary at strategic points.

3.5.4 Client/Users/Customers Relationship

The clients are quite satisfied with the complex and must be given commendation for choosing this kind of project which has brought a renewal stature to the city. In championing a mixed-use high-rise design they are not only recipient of this monumental structure but catalysts for positive change in their New England city.

Users too are proud to be part of an architect's aspiration to reawaking an other wise dormant town as well as pointing the way for the future projects likely to stand in the city's skyline.

3.5.5 Areas of Conflict As A Mixed-Use

As a custom-built mixed-use all possible areas of conflicts must have been tackled and resolved by the world renowned architect.

3.5.6 Merits

i) Exposure of main facilities to the Main Street

ii) Elegant manipulation of natural lighting and geometries

iii) Good control of scale through combination of materials and masses

iv) Open office space design

v) Efficient mastery of site-derived advantages despite the difficulties associated with such a site.

3.5.7 Demerits

i) Too many staircases for economy

ii) No defined parking for customers or users

iii) Minimum landscaping elements

iv) No proper natural ventilation

v) Poor or no vistas for some spaces.

3.5.8 Conclusions

A carefully designed mixed-use which was succeed in achieving its purpose of revitalising an other wise dormant community by presenting a different facade to different direction of the city. Also the manipulation of the site, despite its contraints (a triangular site) to derive certain advantage is highly commendable. The preservation of the Barnum Museum and the subsequently incorporating the old into the new is something to be emulated wherever possible.

3.6 GENERAL CONCLUSION FROM CASE STUDIES

- Adequate parking facility must be provided if the proposal is to succeed.
- A comprehensive and compact design is necessary to maximise the potentials of the small, tight triangular site.
- Adequate and efficient services both mechanical, electrical and otherwise must be provided for the complex to function efficiently.
- Circulation and accesses must be be carefully planned and located as patronage to the complex could be high.
- Aesthetic appealing facades and well celebrate entrances will be encouraged to give identity to the individual facilities proposed for the complex.
- Use of durable finishing materials is important to reduce on maintenance cost and also to bear the high level of wear and tear that could result from the high patronage.

CHAPTER FOUR

4.0 THE SITE

4.1 Preambles

Guaranty Trust Complex, Kano is to be located in the Kano state capital on a site situated in the very heart of the CBD of the metropolis. Urban Kano with a commercial oriented history is an ideal place for business because it occupies a central position in the Northern parts of Nigeria and is the most important and most prosperous centre in terms of population and commerce.

Kano and commerce are synanymous with each other, so much so that when ever one is mentioned, the other automatically comes to mind. The relationship started many centuries ago and has flourished ever since to give the old ancient city the prestigious position it occupies today.

4.2 THT ₦15M SITE IN BRIEF

The site is the property of Church and School Services (CSS) Bookshop Limited which is a limited liability company that engages in supply of stationeries to chruches and schools across the country. An organisation that has been in business since pre-independence days with its head office located at Bookshop House on Broad Street Lagos. It has about 15 branches spread across various commercial centres in state capitals of the country that serve as outlet for their services to primary, post primary and tertiary institutions as well as churches in all corners of the nation.

With the prevailing economic recession in the country coupled with some other factors, CSS Bookshop has been struggling to keep their head above water due to the running cost for maintaining their 15 branches. The Board of Directors in an effort to keep the company afloat decided to cut down on the number of branches from 15 to a moderate and reasonable 5 and so set up the necessary machinery to identify the branches that should be sold off. Kano branch was among the 10 branches offices marked for sale. For obvious reasons amongst which is the location of the branch, a very strategic area the nerve centre of Kano central commercial zone. Surrounded by banks and corporate organisation as well as high rise buildings, CSS Bookshop believed and rightly so too that the branch is a very valuable property.

The branch office is a small rectangular structure, rectangular in shape measuring about 10m x 15m and placed at the northern angle of the site where it point to Murtala Mohammad Way obviously to attract attention. The rest of the site is virtually vacant except for some dilapidated structure (colonial legacy type). So it is essentially the site that is being offered for sale and not the developments on it. CSS Bookshop Ltd is requesting for ₦15,000,000 for this piece of property.

The company has already been offered the sum of ₦5m by a Kano based business tycoon but it rejected the offer. Another offer of ₦8m was made by one corporate organisation and is still awaiting a response. This is the site choosen for this thesis.

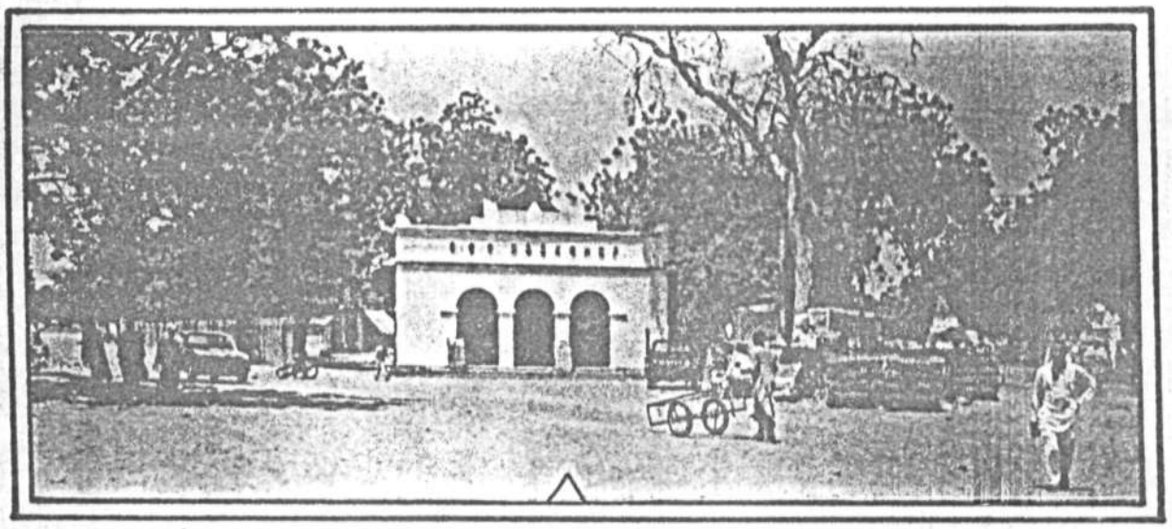


PLATE 4·1 VEIW OF C.S.S. BOOKSHOP FACADE AT APEX OF THE TRIANGULAR SITE.

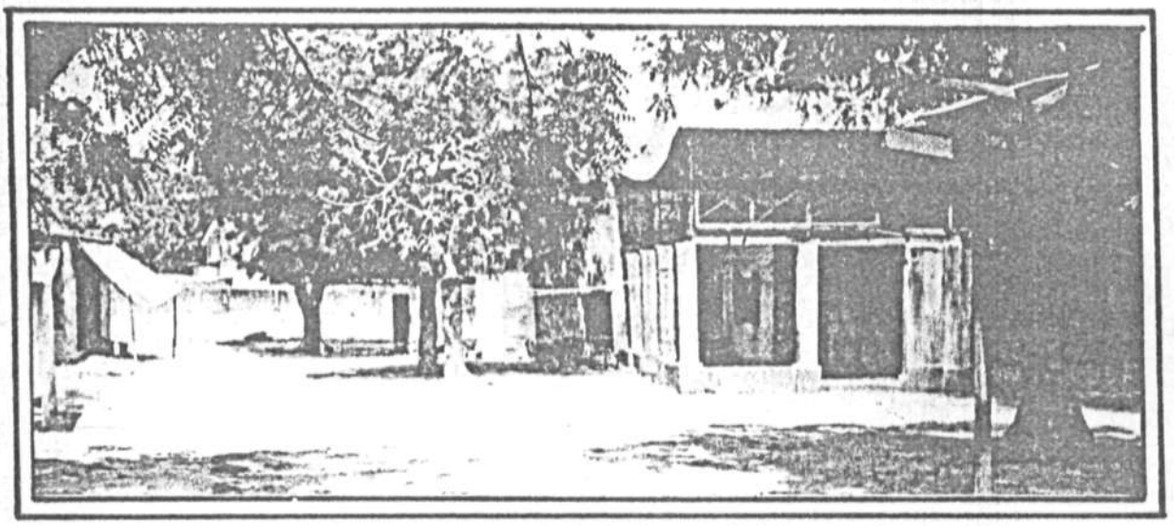


PLATE 4·2 INSIDE THE ₦15,000,000 SITE

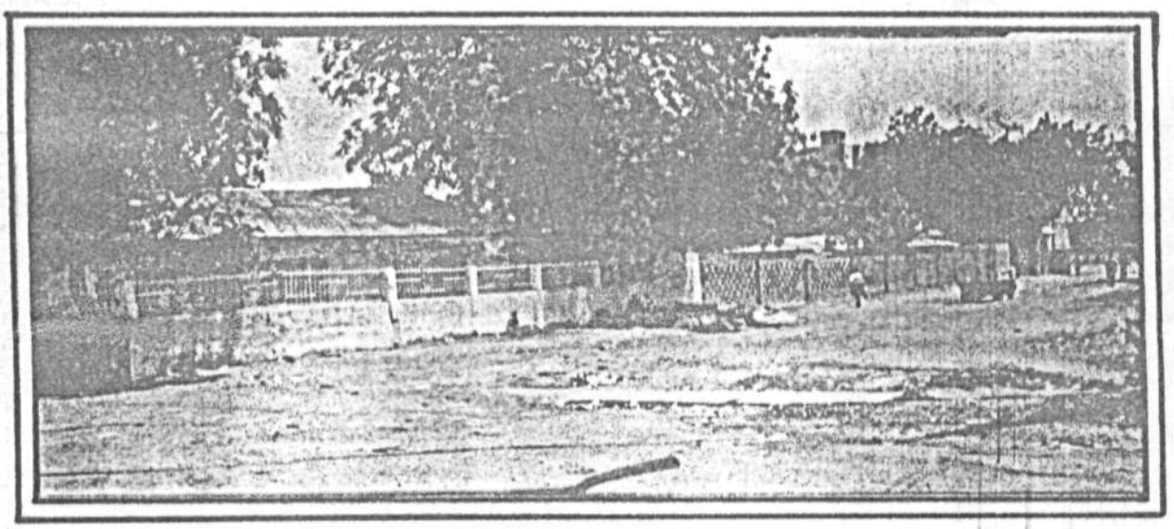


PLATE 4·3 VIEW ALONG MINOR ROAD TO EAST OF THE SITE

For such a highly priced and valuable site, any form of development that will come short of off-setting the initial cost of acquiring the site and developing it is a total failure. And so the site would be most appropriate for a revenue generating project which is the reason for the proposal. A Mixed-Use. Guaranty Trust Complex, Kano.

4.3 REGIONAL ANALYSIS

4.3.1 Location

Kano State is geographically located between latitude $10^0 3'$ to $13^0 0'$ North and longitude $7^0 40'$ to $10^0 35'$ East. it is surrounded by four neighbouring states. To the North East it is bordered by the Jigawa. To the North West by Katsina. To the South West by Kaduna and to the South East by Bauchi State. The State metropolitan encompass the old walled ancient city, the administrative government and the central business district.

4.3.2 Climate

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

i) The Harmattan Season

Caused by the annual North East Trade Winds which originates from the Sahara desert blowing dry, dusty and highly undesirable wind with a drastic temperature drop during the

months. It usually last between November and March. Its source is the Tropical Continental Air Mass, one of the two main air currents experienced by the state.

ii) The Hot and Dry Season

Usually short-lived between March to May. it is a transition period between the two air masses that blows across the state. There usually is virtually no rain or harmattan. The climate is very hot at this time.

iii) The Rainy Season

Caused by the annual South West Trade Winds which originates from the Atlantic Ocean blowing cool, moisture laden and highly desirable wind. It usually comes with the rain and last from April to September. Its source is the other main air mass that sweep across the state the Maritime Continental Air Mass.

4.3.3 Temperature

Recorded average maximum temperature for the period 1951-1975 ranges from a maximum of 38.4^{0}C in April to a minimum of 29.79^{0}C in January. Minimum temperature for the same period are highest in May at 24.1^{0}C, with the lowest in January at 12.7^{0}C. While the highest mean maximum temperature for this period is 38.4^{0}C and the lowest mean monthly temperature is 12.7^{0}C.

The annual mean temperature is 25.55^{0}C and the range is 25.7^{0}C.

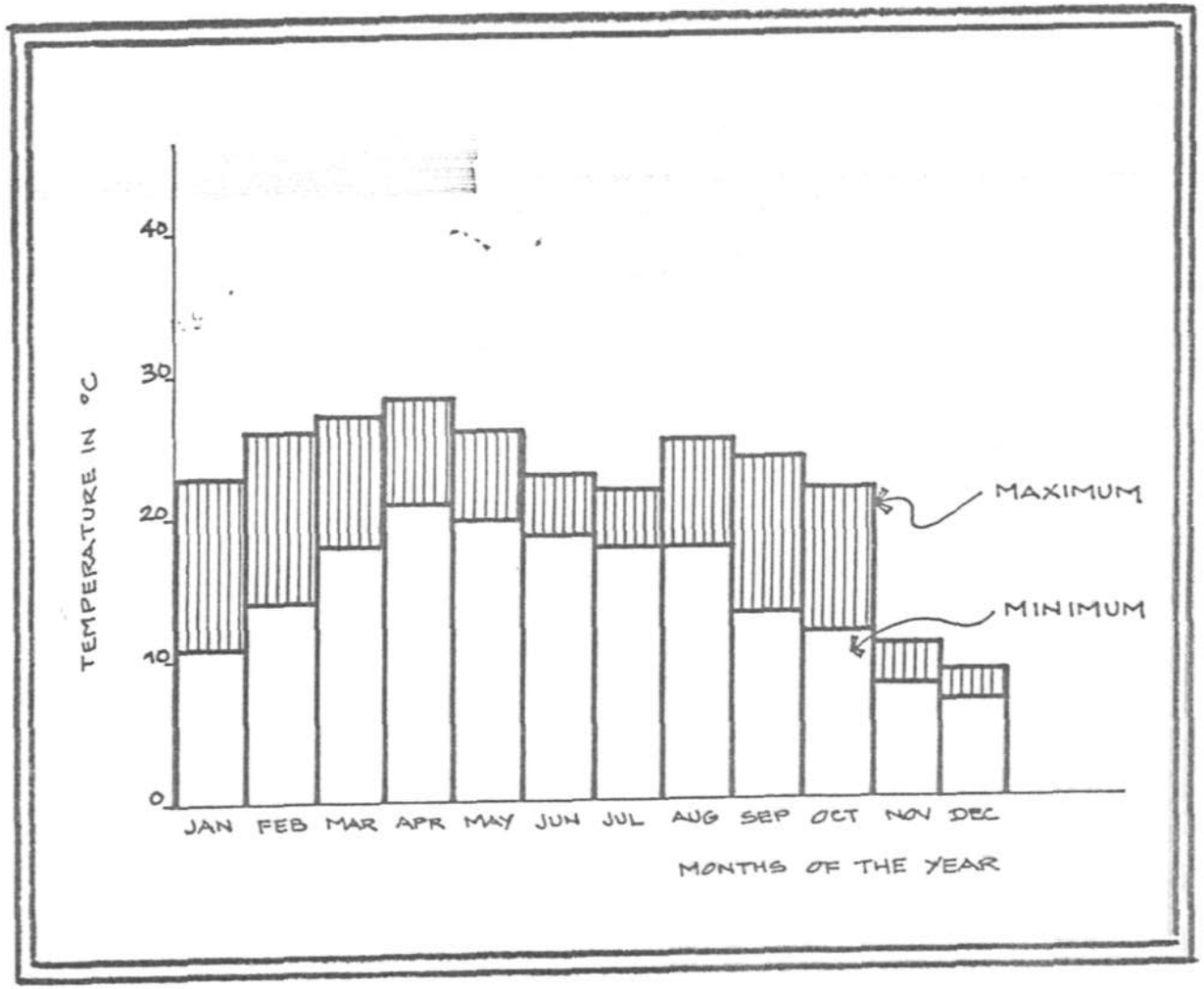


FIG 4·1 GRAPH OF MEAN AVERAGE TEMP. IN °C (MAX. & MIN.)

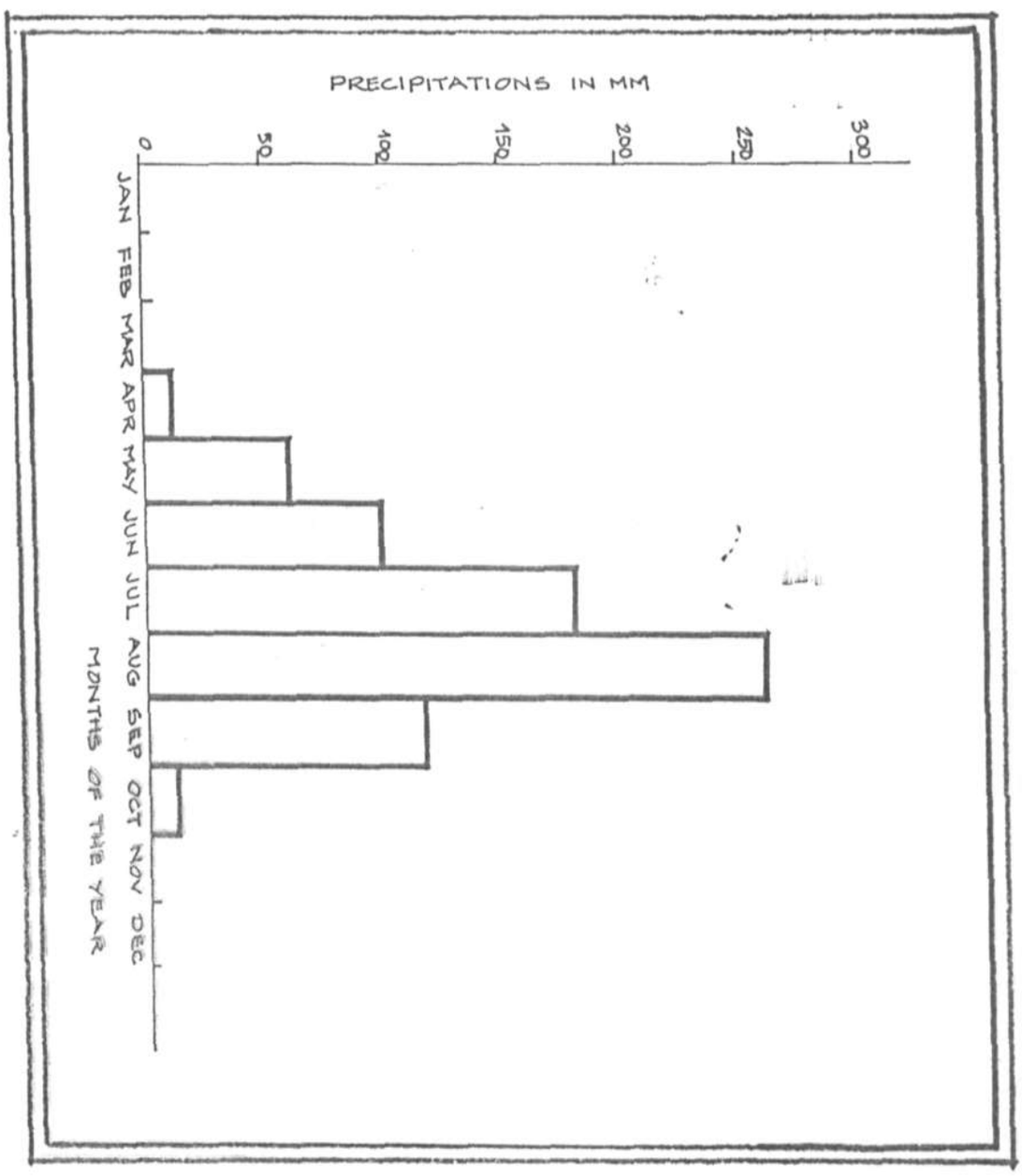


FIG. 4·2 GRAPH OF AVERAGE MONTHLY RAINFALL IN MM

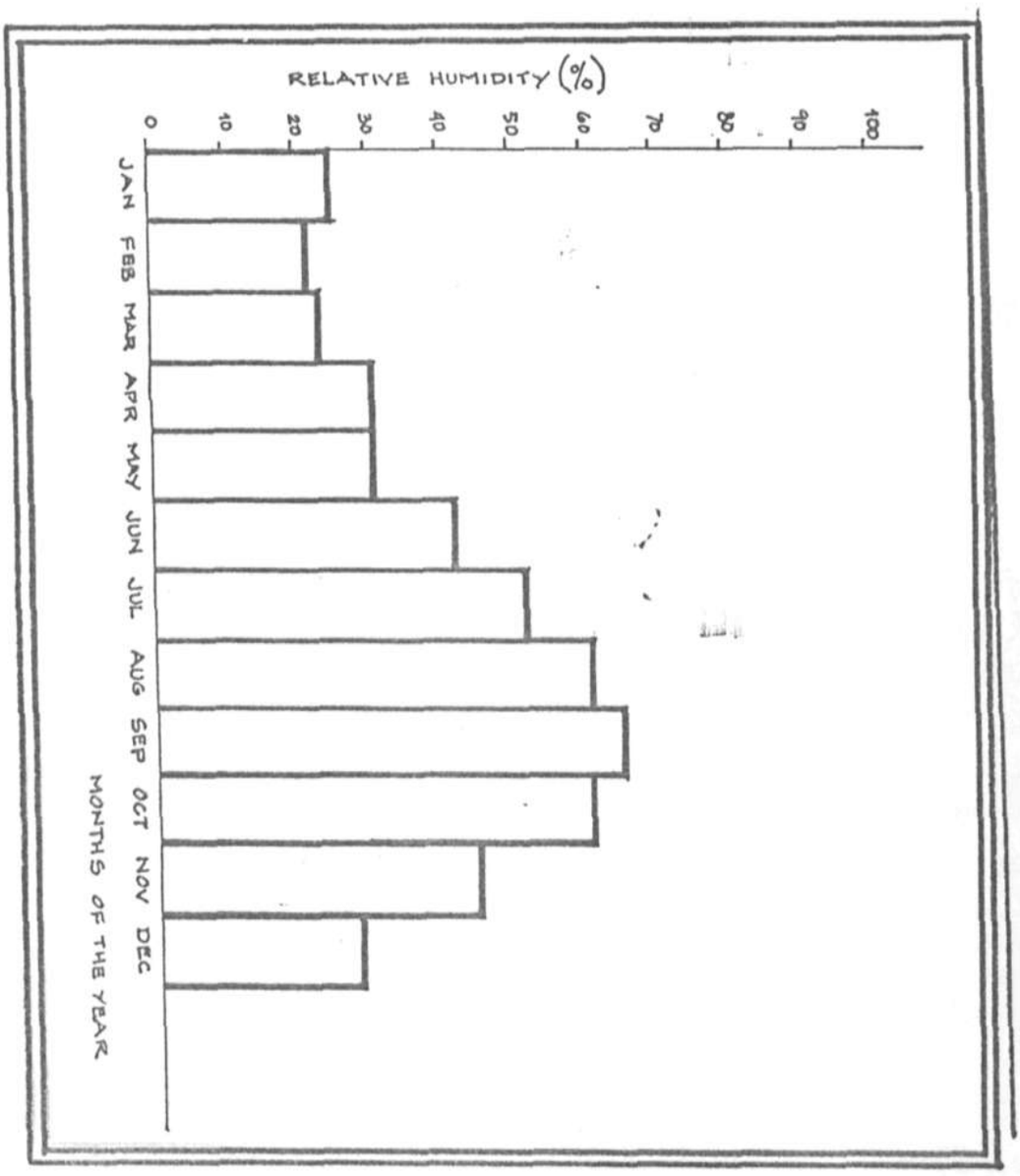


FIG.4.3 GRAPH OF AVERAGE MONTHLY RELATIVE HUMIDITY (%)

4.3.4 Radiation

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

4.3.5 Rainfall

The rainy season usually falls between May and September. Most of this period is characterised by violent dust storms which usually precedes the rain. Maximum rainfall is usually recorded in August. The mean maximum rainfall recorded over 3 period of 72 years is 298mm in August with a mean minimum of 0 between the months of November and February. Total annual rainfall over this period is 843mm

4.3.6 Relative Humidity

Relative humidity varies from 60-80% 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.

4.3.7 Wind

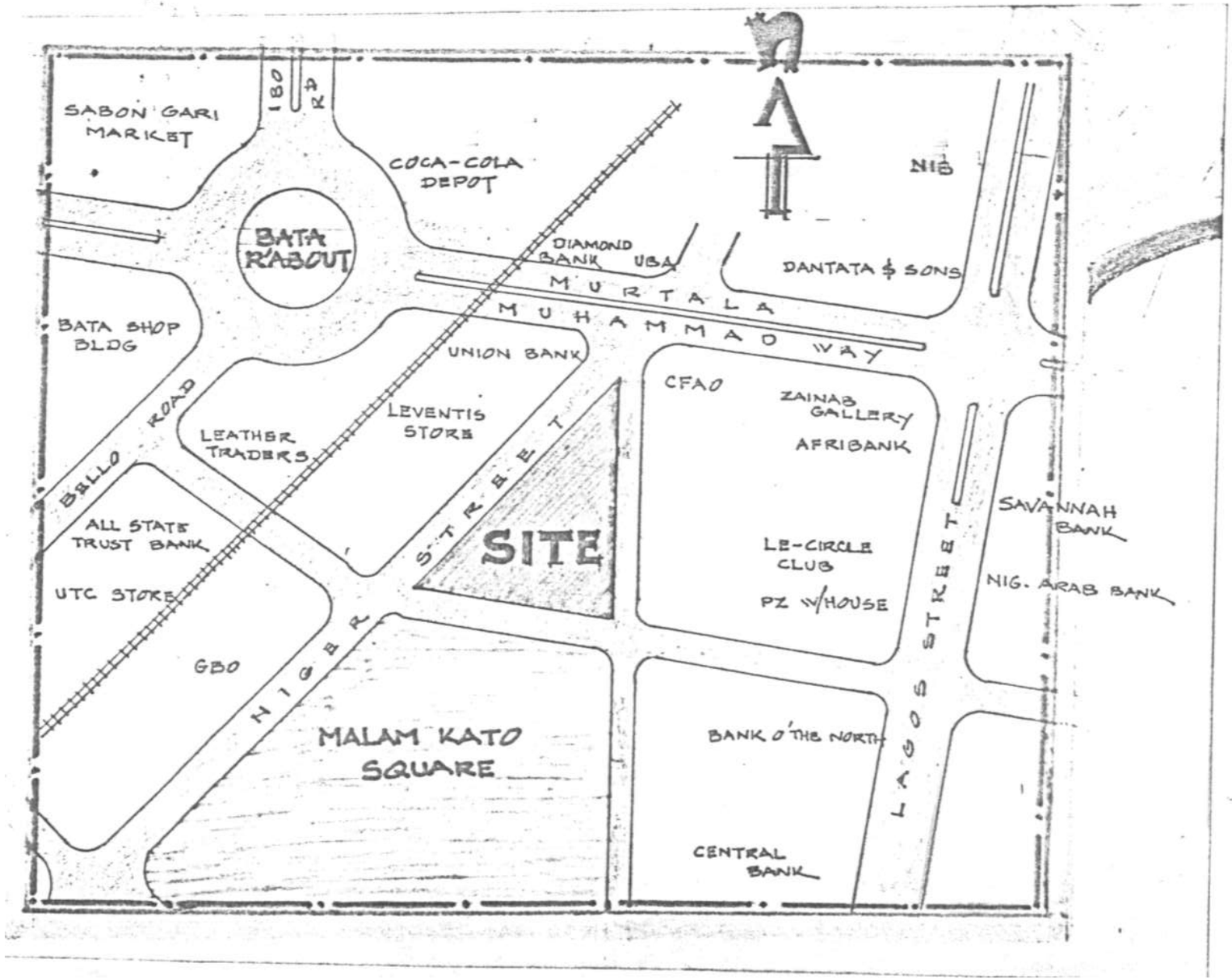
Two dorminant prevailing winds blow over the region depending on the seasons. In the dry season, between October to April. The Tropical Continental Air Mass prevail over the area, while in the wet season the maritime Continental Air Mass dorminate over the region.

South West Monsoon Wind on the other hand is relatively cool, moisture laden, fresh and highly desirable. It originates from the atlantic ocean. It last between April to October. It announces and sustain the rainy season. Careful considerations must be given to ensure that the wind flows into interiors of the building as it can be very comfortable. Large fenestrations, little wind cover or obstruction should be encouraged on facing facades.

4.4 SITE ANALYSIS

4.4.1 Site Location

The site is located about 80 meters South East of Bata Roundabout and Sabon Gari Market. It is the first piece of property one encounters upon turning right at the first corner off Murtala Muhammad Way from Bata Roundabout into Niger Street. A triangular site measuring 104.56m (hypothenus) along Niger Street which borders it to the West separating it from GBO Warehouses, 74.08m (opposite) along a minor road which separates it from Malam Kato Square to the South and 86.43m (adjacent) along another minor road which borders it to the East and separates it from PZ Warehouses


SABON GARI MARKET
180 RD
COCA-COLA DEPOT
NIB
BATA R'ABOUT
DIAMOND BANK
UBA
DANTATA & SONS
MURTALA MUHAMMAD WAY
BATA SHOP BLDG
UNION BANK
CFAO
ZAINAB GALLERY
AFRIBANK
BELLO ROAD
LEATHER TRADERS
LEVENTIS STORE
STREET
SITE
SAVANNAH BANK
ALL STATE TRUST BANK
LE-CIRCLE CLUB
NIG. ARAB BANK
UTC STORE
PZ W/HOUSE
GBO
NIGER
LAGOS STREET
MALAM KATO SQUARE
BANK O'THE NORTH
CENTRAL BANK

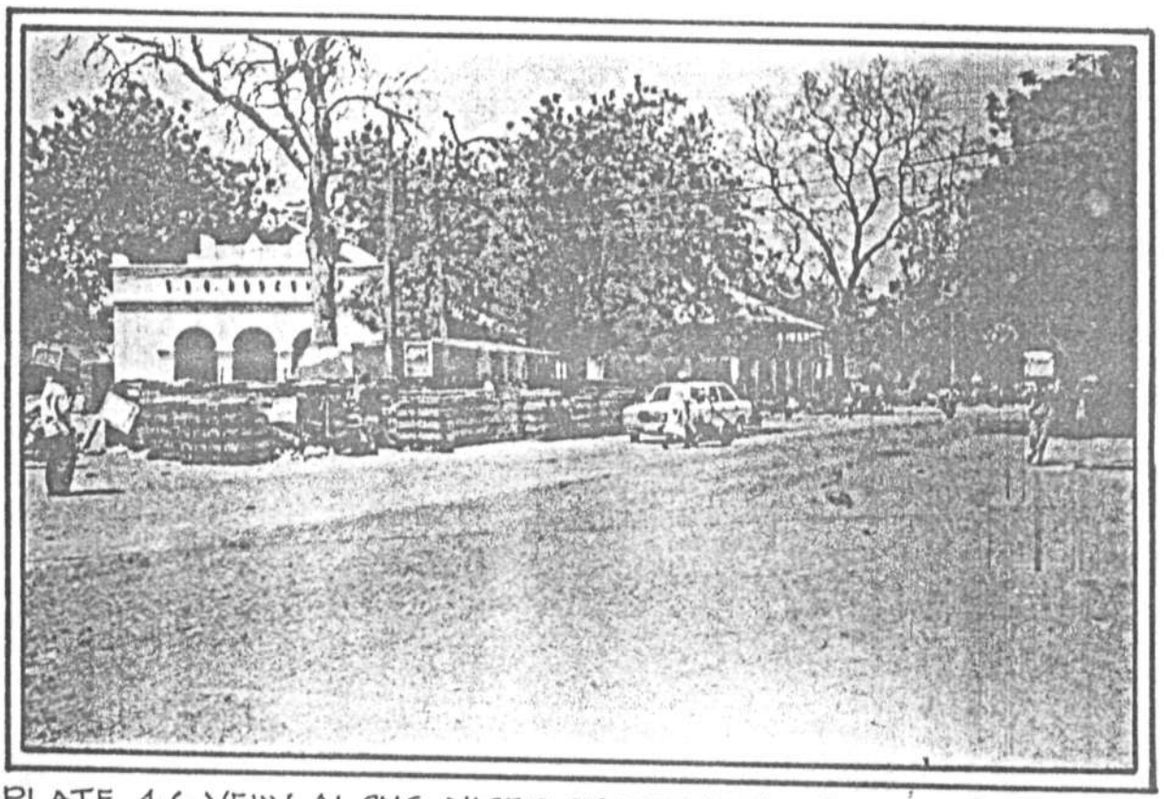


PLATE 4.6 VEIW ALONG NIGER STREET. NOTE C.S.S. BOOKSHOP



PLATE 4.7 VEIW OF SITE FROM INSIDE MALAM KATO SQUARE

and Afri-Bank properties completing the triangle. The Northern side is an angle directly pointing to a T junction at Murtala Mohammad Way.

Surrounded by access roads on all its three side, ingress and egress point could be from any of the road depending on which facilities would require what. Infact access into the site could be multiple as this can be of added advantage since the proposal is a mixed-use. Interesting views from the site include the Union Bank House and NIB House both to the North, Afri-Bank to the East and Malam Kato Square to the South.

4.4.2 Topography

The site is relatively flat, typical of most sites in Kano. It has a relatively very gentle slope towards the West to Niger Street, this could aid drainage of surface water. There are no rock formation or any geological obstacle on the site. The soil is sandy loam at the surface but has gravels at lower surface. It is a good soil type with good load bearing capacity.

4.4.3 Vegetation

Trees, predorminantly of the "Darbejiya" type are scattered across the site. Other Savannah region shrubs and grass cover (weeds) are also present. For landscaping, the site could be very accommodating, as vegetation cover could easily be managed.

4.4.4 Sun Path

The cold harmattan period witness on a very rare occassion the sun moving along the East to West direction slightly overhead through the Northern hemisphere making the North facing plane warmer than the South facing plane. The Hot rainy season however witness, the sun movement through its predorminant path sweeping the Southern hemisphere from East to West. Making the South facing plane warmer than the North facing plane. This is the situation for most of the year even in the cold season. Kano being in the Northern hemisphere experience most heat on the Southern plane and rarely on the Northern plane. In Kano the sun rises between 6.15 am to 6.40am and sets usually between 6.28pm to 6.58 pm. Building orientation should take advantages mentioned above as well as other factors.

4.4.5 Previaling Winds

The two prevailing winds that blow through the site are also the same that blow across Kano State. The North East Trade Winds which originate from the desert is dry, dusty, cold and highly uncomfortable. it blows from October to march. This is when the Harmattan season is experienced. There should be conciouse planning to shield the building interiors from this wind by using wind breakers like trees, small penestrations on facing facades, landscaping or other structures as cover etc.

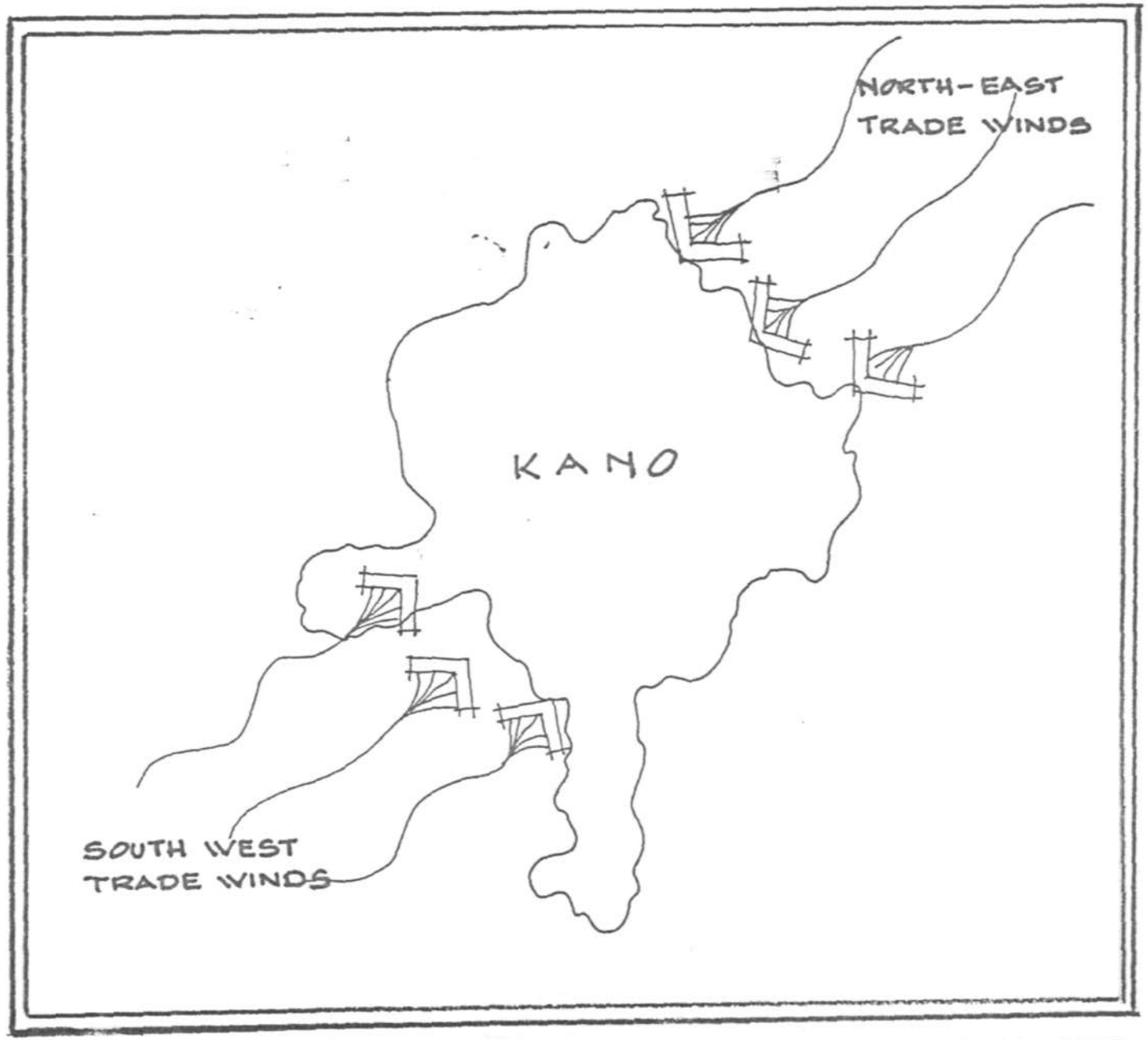


FIG. 4·4 MAP OF KANO SHOWING TWO DORMINANT AIR MASS THAT BLOWS ACROSS IT

4.4.6 Services

Distribution network of water and foul sewage drainage are not readily available to the site, so adequate provisions will have to be made when planning the site. Also with the corporate image of the client in mind efforts will have to be made to establish a good drainage/sewage disposal for the complex.

Electricity supply is connected into the site from the good network of power lines that run through the length and breadth of the CBD.

Telecommunication lines are already connected to the site as the existing situation has shown. Also more lines can be connected when the need should arise.

4.4.7 Site Feasibility and Viability

The site is surrounded by corporate buildings and also well located for revenue oriented services. A ready market exist, infact just waiting. For a complex of this nature. The economic feacibility of the site is quite high and should be a welcome addition to the growing number of corporate structures in the CBD.

4.4.8 Expansion

Most site in CBD of cities are hardly large enough to accommodate horizontal expansion. The site is one such and being triangular in shape, it will require a consciousness of space planning to maximise its output. The only possible means of expansion will have to be vertical. If and when there is a need for it.

CHAPTER FIVE

5.0 THE DESIGN BRIEF

5.1 Preambles

The design brief of any project development is usually the backbone upon which the design evolves. Thus the formulation of a brief is always an important aspect of any architectural proposal. This brief, is usually provided by the client or his representative. But in a situation where the client is not the only user of a project as in this case the brief can not come from the client alone since the client might be an expert in his particular profession but a complete layman in the others. So in developing a sound brief for the project users who are experienced in the different activities of the proposed complex need to be consulted so that a fairly good brief can be formulated.

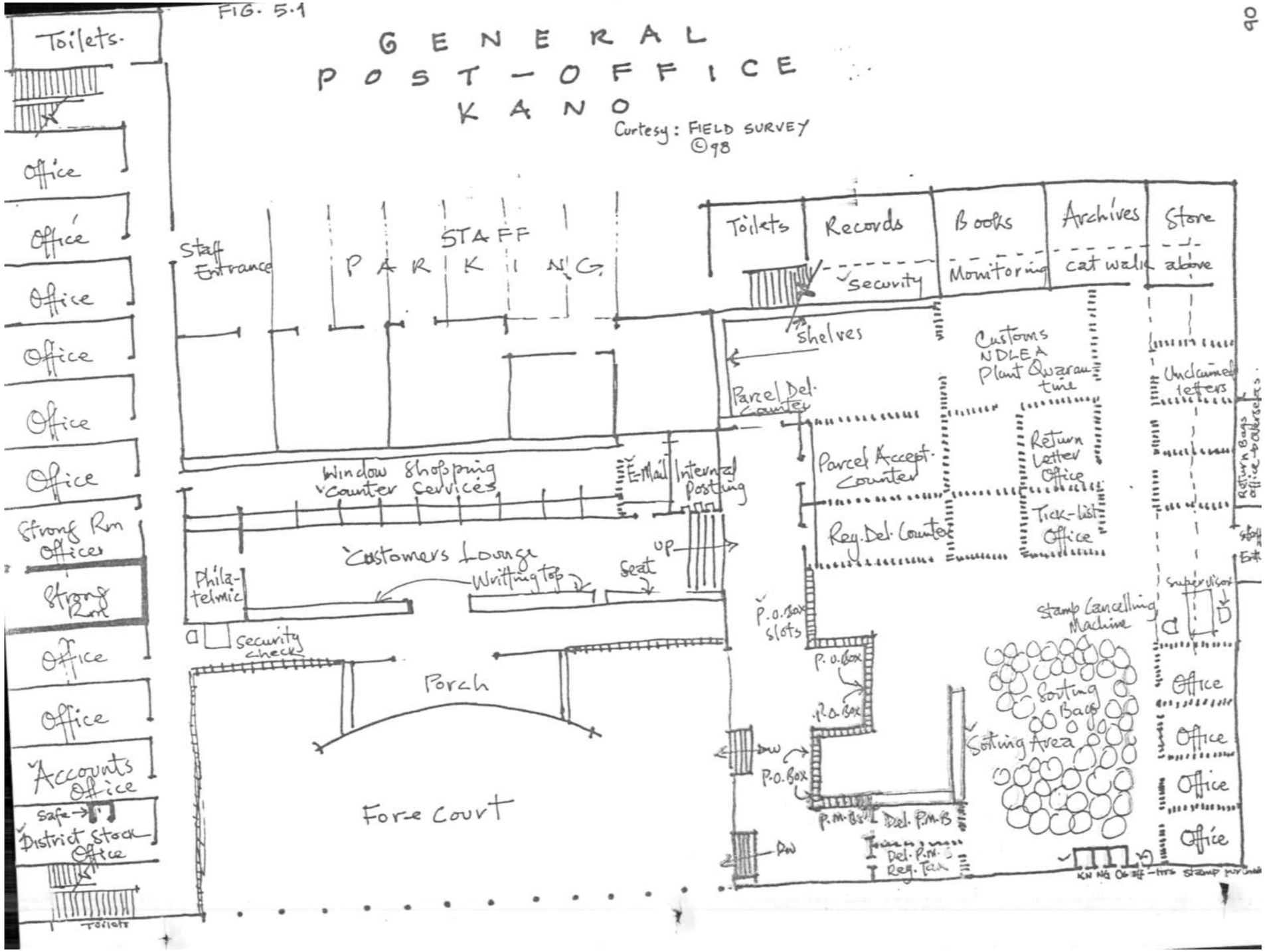
a) In arriving at an acceptable brief therefore, the client (Guaranty Trust Bank Plc) was considered first and foremost to provide the brief for the bank branch. It is only after acquiring this brief and its thorough comprehension that other briefs (department store, post office, office block and restaurant) were gathered.

b) The post office brief was provided by the Kano Main Post Office after the author has conducted a case study of the existing facilities on the premises and the modus operandi of the organisation.

FIG. 5.1

GENERAL POST-OFFICE KANO

Courtesy: FIELD SURVEY ©98



c) The office block brief was based on the research conducted on the existing office building in the CBD.

d) The brief for the department store was provided by the Manager of one of the department stores located in the CBD which has recently closed down for business due to certain problems mentioned earlier in chapter 2.

e) The restaurant has been incorporated into this complex to complement the various other facilities which might each require a cafeteria to cater for its staff. So instead of each facility having a separate cafeteria, a common eating and relaxing place is propose which is capable of accommodating about 90-100 persons at a time.

5.2 FACILITIES AND USERS REQUIREMENT

The facilities provided for this project stems out of the fact that to have the right mix of uses in an integrated complex or centre of this nature business, commercial and entertainment or recreational activities must all form part of the composition if any meaningful success is to be achieved most especially where there is a demand for such facilities by the populace as clearly explained in chapter 2 under the heading criteria for choice of facilities.

a) Business development

- Bank
- Professional Offices
- Post Office

b) Commercial development

- Department Store

c) Entertainment development

- Restaurant/Suya spot

5.2.1 Bank

- Parking Space:

Parking facilities for staff and customers as well as visitors is proposed and separated. The customers and visitors are to park outside the premises while the staff parking is within the bank premises. There are 10 parking space each for customers and staff. Parking space is also proposed for bullion escorts (Police van)

- Entrance Porch:

Large enough to accommodate a large number of people, it is accessed directly from the parking space. It has a canopy that shield it from rain or direct sunlight.

- Customers Area or Public Hall:

The waiting area directly opposite the banking hall and immediately from the porch, where customers either deposit or withdraw money. It should be large enough to accommodate customers at peak period of business.

- Banking Hall:

An area facing the public hall which serve as the technical part of the bank where customer services is rendered via cubicles which are manned by the bank cashiers. They pay or receive cash deposits.

- Cash Office:

A space where huge amount are removed from the strong room and accounted for before being issued out into the banking hall or paid to a very important depositor. All incoming or out going cash is recorded in this office.

- Strong Room:

A room which has a very heavy custom-made door with no window whatsoever, that is used as a place for keeping cash safe from any unauthorized persons. It is usually specially constructed to a standard specification.

- Bullion Park:

A garage like space where vehicles used to convey cash from the Central Bank can park before the cash is off-loaded into the strong room.

- Offices

Out of administrative requirements of the branch bank, these are provided to cater for both senior officers and executives. The

offices are located on the first floor for senior officers. They are open plan design to facilitate easier communication. The Manager is also provided with a comfortable office which is preceded by a secretary/waiting office.

- Computer Room

An office that is used to accommodate computers which are used for running the administrative data processing, dissemination or collection. An office that is always locked and air conditioned. Usually requires no window.

- Conference Room

A room provided for meetings between personnel of the bank. Such meetings could be between officers, top bank officials and customers or for board of direct meetings.

- Storage facilities

These rooms are provided at strategic positions to cater for different segments of the bank, which are used to keep stationeries, old records and equipments as well as maintenance materials.

- Gate House

For the security person to maintain vigil on movements of both persons and vehicles. The room may also serve as the control point for the site lighting and other security gadgets.

- Generator House

This is a space where a stand-by generator is located which supplies electric power, in case of power failure from NEPA. It also often have space to accommodate drum of fuel used for the generator set.

- Auxilliary facilities

All other facilities necessary for the smooth running of the building falls under this heading.

- Mosque

This has become a common feature in public buildings most especially in muslim populated areas.

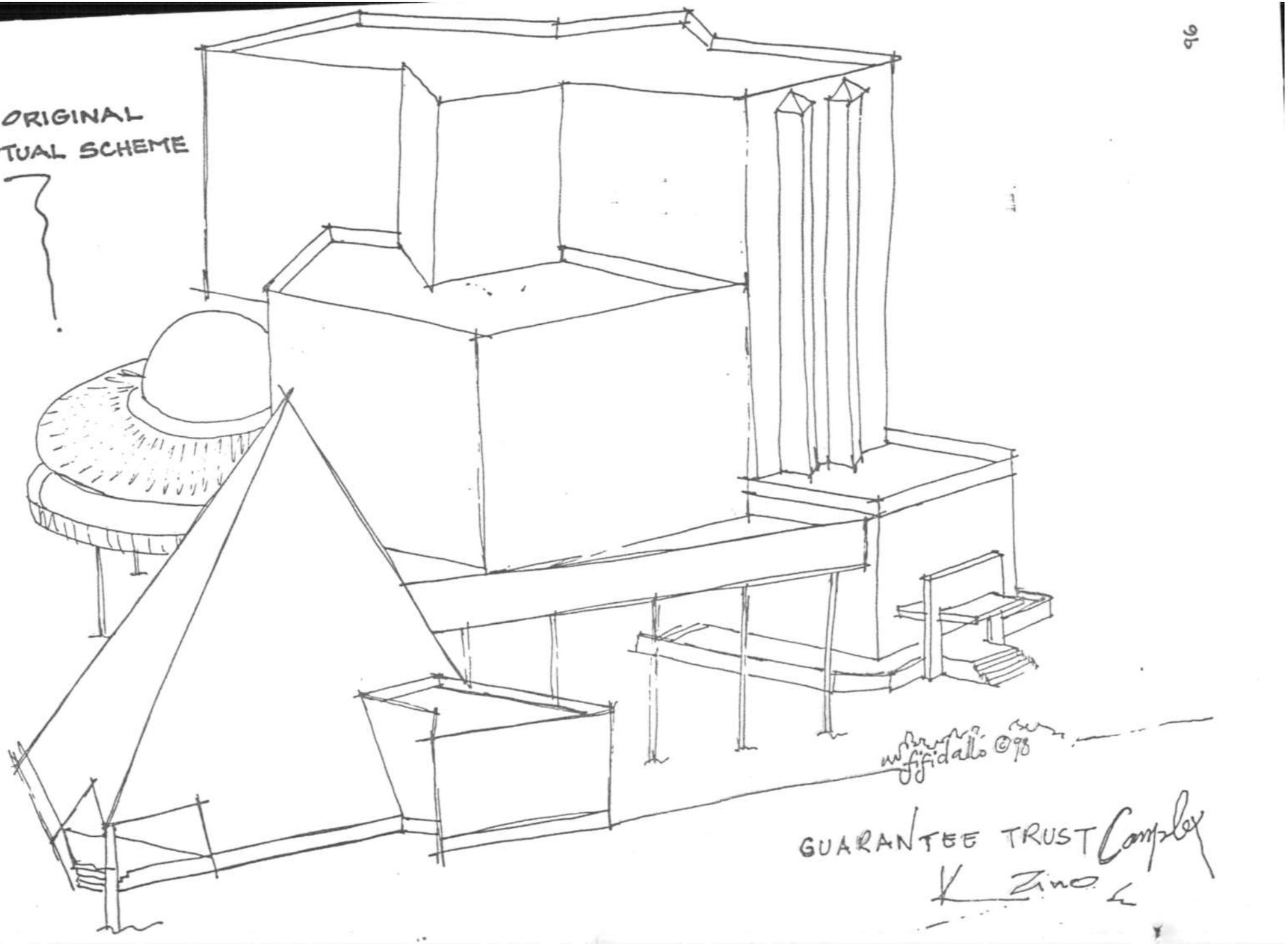
- Rest Rooms

Toilet facilities strategical located to serve the entire staff strength, with males and females having separate units.

5.2.2 Post Office

- Parking
- Entrance Porch
- Customers Area/Seating/Writing Top
- Counter Section
- E-Mail
- District stock office/safe
- Slots - State, National, Overseas

THE ORIGINAL
NCEPTUAL SCHEME



- Clustered Boxes
- Accounts office
- Computer Room
- Sorting Area
- Manager's Office
- Security
- Rest Rooms

5.2.3 Department Store

i. Sales Department

- Parking
- Foyer/Bags
- Security check point
- Cash registers
- Exhibition/display space
- Mezzanine level

ii. Ancillary Facilities - administration, storage & workers facilities.

- Manager
- Secretary/Waiting
- Accounts
- Computer Room
- Storage
- Deliveries access
- Rest Rooms

5.2.4 Office Block

- Parking
- Entrance Porch
- Reception Hall
- Lifts Lobby
- Office Space (Partitionable)
- Storage facilities
- Rest Rooms

5.2.5 Restaurant

- Parking
- Entrance Porch
- Reception Hall
- Phone Nook
- Office
- Diners Area
- Sit-Out Dining
- Kitchen
- Servery
- Changing room
- Storage
- Suya Spot
- Rest Rooms.

CHAPTER SIX

6.0 DESIGN CRITERIA AND CONCEPT

6.1 Preambles

The design concept evolution is based on the thorough analysis of the site conditions and the uses of the different facilities to be provided for the proposed complex. In order to evolve a design concept for the proposal, the analysis carried out about the site apart from the conventional site analysis, of sun-path, prevailing wind direction, the site section revealing the topography, possible ingress and egress, noise sources etc must include site concept analysis. This analysis entails visual impact analysis, development potential and development concept analysis of the site together with site zoning.

6.1.1 Visual Impact Analysis

The visual impact analysis involves finding out the areas of the site that are well exposed to the major road or which area of the site is clearly visible from the road. Based on this the site can be categorized into high, medium and low visual impact areas depending on the analysis, so as to know which facility to be placed in a particular zone of the site, which direction the facility should face.

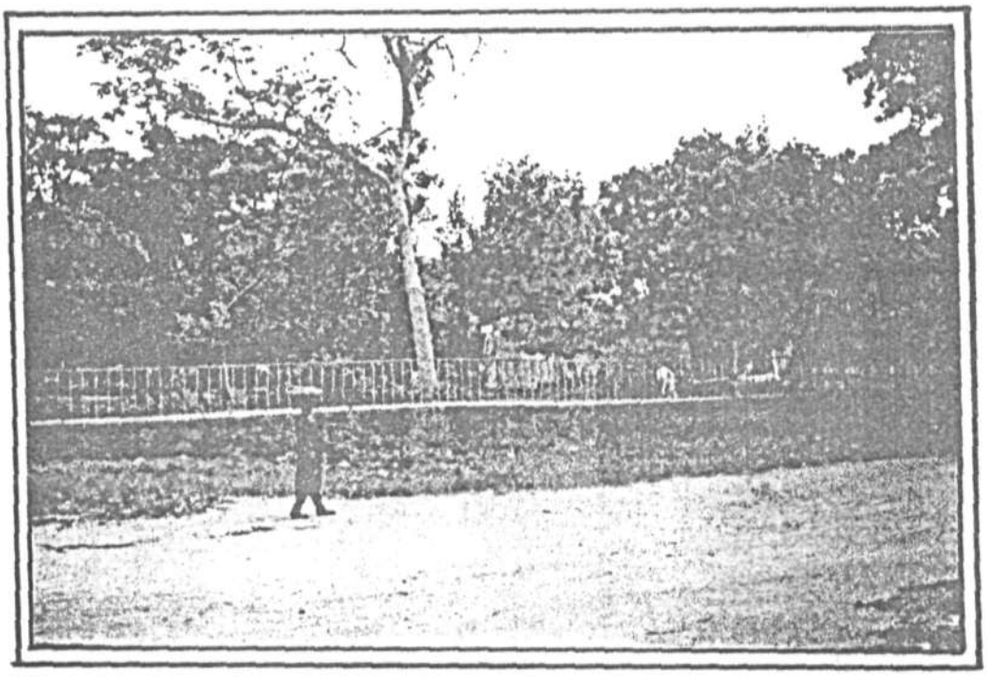


PLATE 4.8 VEIW OF MALAM KATO SQUARE FROM SOUTH-EAST ANGLE OF THE SITE

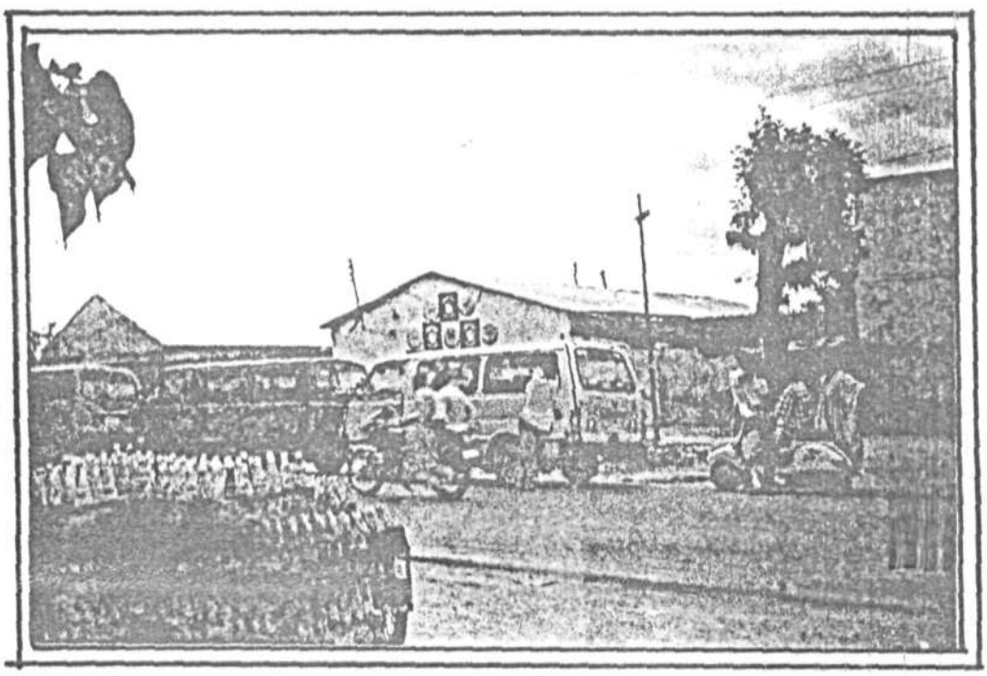
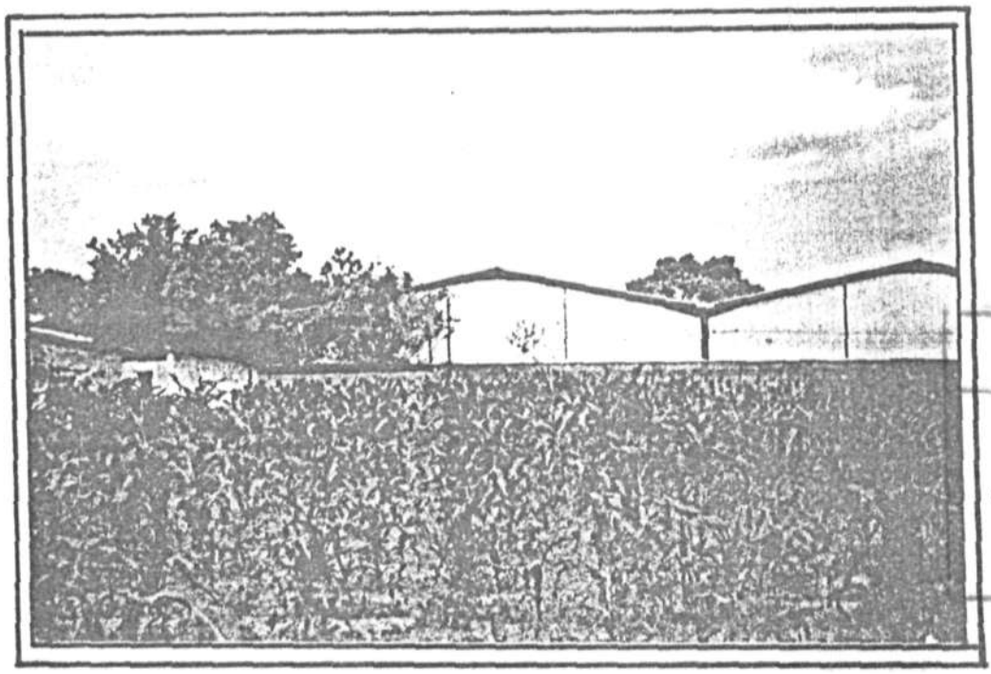


PLATE 4.9 VEIW OF NIGER STREET FROM THE SITE. GBO WARE HOUSES ARE SEEN ON THE BACKGROUND



46572
NA
437
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PLATE 4.4 VIEW OF PZ WARE HOUSES FROM WITHIN THE SITE



RECEIVED

PLATE 4.5 VEIW OF VEHICLES ON QUEUE FOR FUEL ON ROAD LEADING TO BATA FROM CROSS JUNCTION AT SOUTH WEST OF THE SITE

6.1.2 Development Potential Analysis

The development potential analysis of the site involves investigating the areas of the site that have constraints towards or against development which may be as a result of the particular portion being close to a major highway or due to existing structure or even due to the shape of the site. The site can further be zoned into high, medium and how development potential areas in order to identify areas on the site that can accommodate the most developments.

6.1.3 Development Concept Analysis

This development concept analysis is based on the potential analysis and is concerned with dividing the site into various or different levels of development. The development so located can either be high level or active, medium and low level or passive development.

6.2 FUNCTIONAL ORGANISATION

From the foregoing discussion, the best approach towards location of different facilities on the site would be according to the functional requirements of each. With a good knowledge of the design problems and constraints posed by the site, the importance of a coherent functional organisation would lead to a well coordinated and comprehensive design.

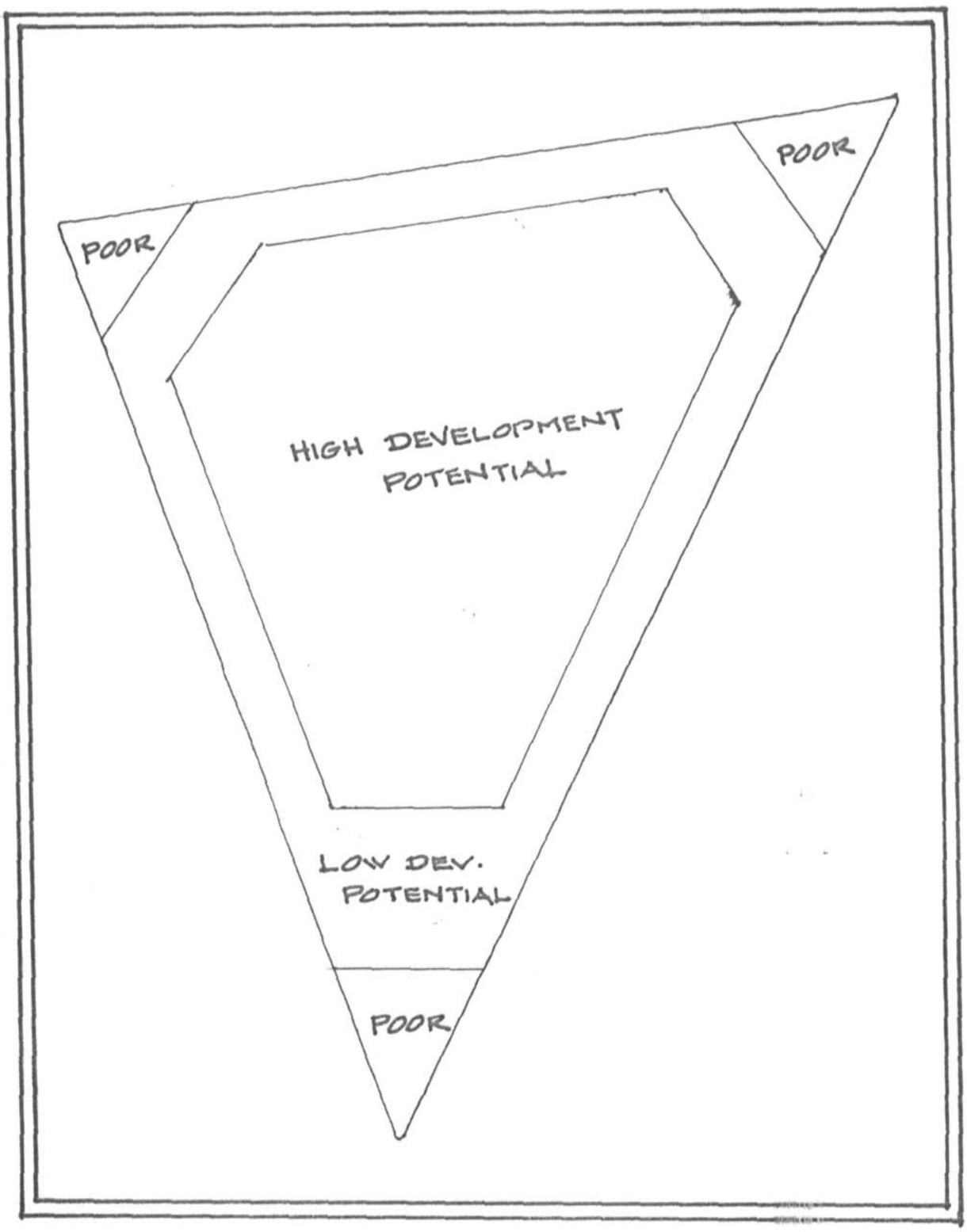


FIG. 6.2 SITE DEVELOPMENT POTENTIAL

6.2.1 Zoning

This is the next step towards the evolution of a design concept after all the analyses and is essentially the grouping of the facilities which may be on the basis of function or noise level. Since functional requirements is the criteria adopted for this proposal, the business development which involves the bank, office block and post office would have been located together. But the client's brief requested for complete segregation of the bank from the rest of the complex due to security reasons and also to preserve their corporate intergrity(?). So while the bank is located towards the apex of the triangular site, the other two business activities i.e. office block and post office are located together at the South-West angle and the base of the triangle.

The commercial development i.e. department store is located above the parking facilities which occupies most of the high development area of the site. The store is planned on two levels.

The restaurant and suya spot that is the entertainment development is located at the South-East angle of the base of the triangular site. This is so as to provide it with the much needed privacy as well as good vista towards the opposite park. Also because it is the longest activity that would be taken place on the site, the location will facilitate its smooth operation without disruption even when the complex parking is closed to the public.

6.2.2 Functional relations of the facilities

The bank is located towards the apex at the Northern part of the site. This will give it prominence over the rest of the complex since there are many other banks in the immediate vicinity. Exposure to the general public could add much to its customer relations. It is completely segregated as required from the rest of the complex, yet it is unmistakably a part of the complex which has a common architectural language (a flat roof covered by a parapet with the bank's identify square motif) running all through the undulating roof levels. It is well exposed to the major road (Niger street) bordering the site to the most. *Along this same road is located the department store, even though at first floor level the access staircase is directly approached just off the shoppers terrace located along the length of the site on this same Niger street. From the parking facility located within the site, this same staircase can be directly approached. *At the end of the site along this major road (Niger street) is located the post office which can be approached directly from the parking space in front of it. There is tucked in the angle of the site at this point an escape staircase which is exposed to the sky. It has the post-office cluster boxes (P.O. Boxes) located on its side which is accessible to the public.

The office block entrance is located along the minor road that separate the complex from Malam Kato Square (Park). It is elevated and celebrated using classical columns which are monumental and carry an entrance canopy.

Immediately after the office block is a gate house which controls in-flow and out-flow of vehicles into the site parking facilities which is located under the department store, the office block and the restaurant.

The restaurant has its entrance directly connected to this some minor road thus it is also facing the park. It has parking spaces for customers in front. The entrance is also mildly celebrated, so it can not be missed. At this same end of the triangular site is tucked the suya spot with an access staircase to the diners above, which could be used to supply suya orders as well as escape stairs in terms of danger.

At the apex of the triangle facing the bank is the gate house, generator house and mosque with its ablution area.

6.3 DESIGN CONCEPTS

A collage concept has been adopted for the design. This is because it is only by combining various forms that the various activities chosen for the complex can be fully expressed and experienced. Any single design concept will amount to a lot of constraints because of the site. So a triangle, square and circle have all been combined in the proposal.

6.3.1 Planning Principles

The purpose for which designs are made is to satisfy the client, users and visitors (customers). With the clients consciousness of its corporate status, a lofty and prestigious

building is proposed which will aim at creating an environment that will not only be conducive to work in but also be a pleasure to visit either to shop, to eat or to transact business in. This will create a most significant and lasting impact on the individual memory and the community in general.

6.4 SITE CONCEPTS

The site concept which is the bedrock of the overall design is based on the principle of organizing part of a whole to produce a dramatic effect and create an impact on the populace and society. This is achieved through the composition and reflection of the complex's function and personality.

With the fact that the site is so strategically located in the CBD, the design parameters given prominence has to do with what will yield the most return. So whatever will lead to the success of the whole complex e.g adequate parking facilities are given upper hand.

6.4.1 Site Concept Structure (Alternative I)

The first site concept has the parking facilities located in the centre with the activities surrounding it. The bank is located towards the apex, with the department store located above this parking facilities. The post office is located at the South-West angle while the bank occupies the other angle (South-East) of the triangular site. The office block is sandwitched between the two angles.

Two accesses are provided in this concept. From the Western side i.e the major road (Niger street) for entry into the site and from the Eastern side for exit from the site.

This concept does not satisfy the clients' brief which request for complete segregation and the parking facilities has to be shared with the rest of the complex. Also the accesses are not appropriately located to serve the complex better.

6.4.2 Site Concept Structure (Alternative II)

This concept still has the arrangement of alternative I with some changes in the parking facility. The bank has a separate parking located at the apex of the site with its separate entrance and exit. The centrally located parking still prevails but access to it is now from the road bordering the site to the South which lies between the site and the square. The access into the site cuts through the office block while exit is located on Niger street.

This concept is workable if it can be modified tuned, since the segregation is achieved for the bank with the two separate parking spaces independent of one another.

6.4.3 Site Concept Structure (Alternative III)

In this case, the post office and restaurant change positions with the office block still in their middle. The access into the central parking facilities which pass through the office block has been relocated to the eastern side. Apart from this alteration everything else is as in alternative II.

This concept is also problematic. The restaurant is too exposed and so would find it difficult to have the much needed conducive atmosphere necessary for it smooth operation and customers relaxation. Since there would be alot of traffic noise and circulation problems. The post office on the hand becomes hidden from the public who are meant to benefit most from its location.

6.5 ADOPTED CONCEPT

The concept adopted for this proposal is the site concept structure (alternative II). This satisfies the requirements of the client as well as the aspiration of the architect who aims to maximise the potential of such a small site by carefully manipulating all avenues possible to design a complex that will befit the environment. Accessibility to the bank will be from Niger street while the rest of the complex will be accessed from the Mallam Kato Square road to the south of the site. This is to avoid any traffic conflict likely to result if located on Niger street as well. Additional parking will be arranged outside along the roads. This is the prevailing practice on all road in the CBD due to lack of proper packing spaces. So instead of allowing the haphazard parking to continue, the architect will make proper parking arrangement around the site to improve and bring orderliness to an other wise chaotic situation.

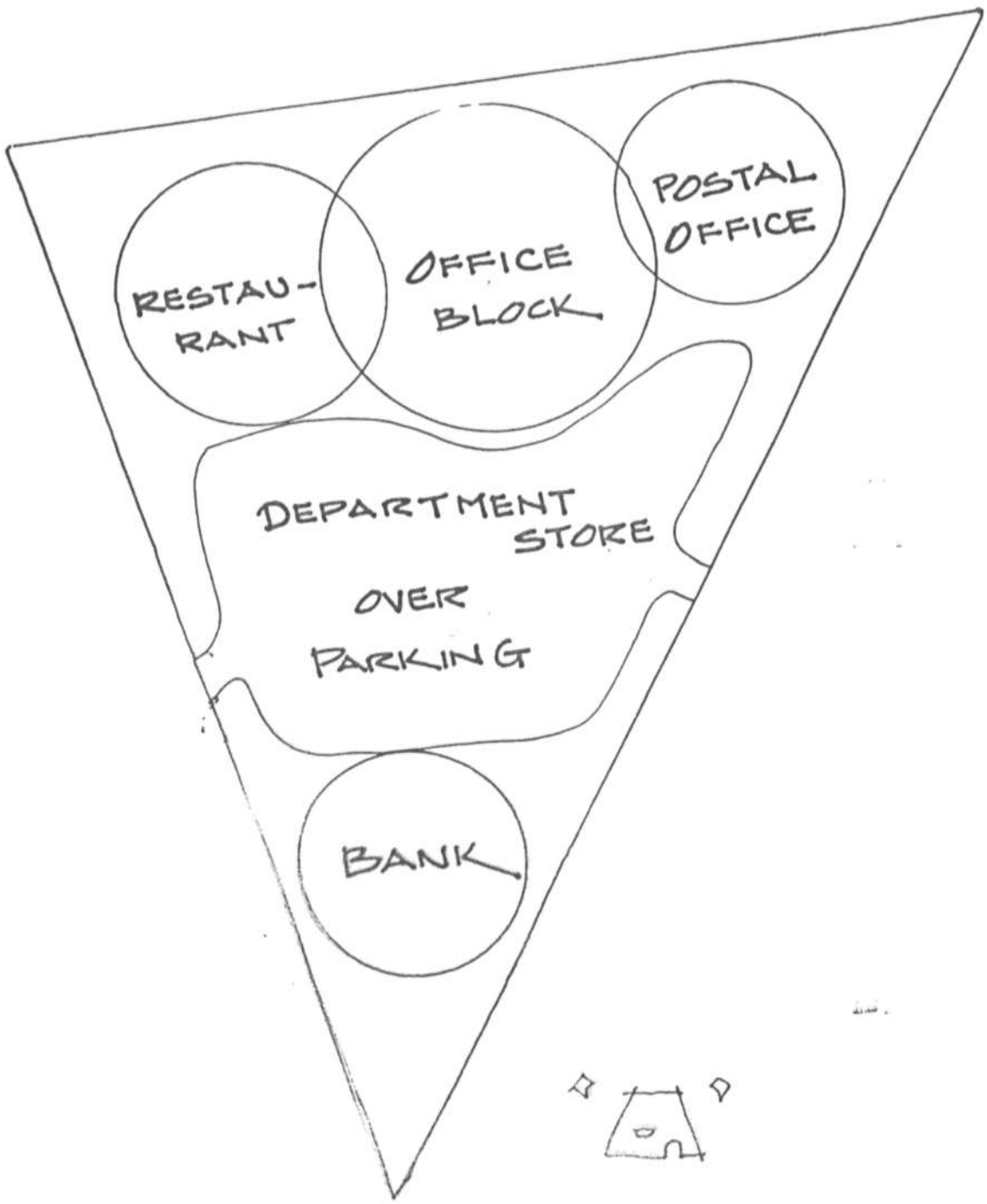


FIG. 6.3 SITE STRUCTURE CONCEPT (ALTERNATIVE I)

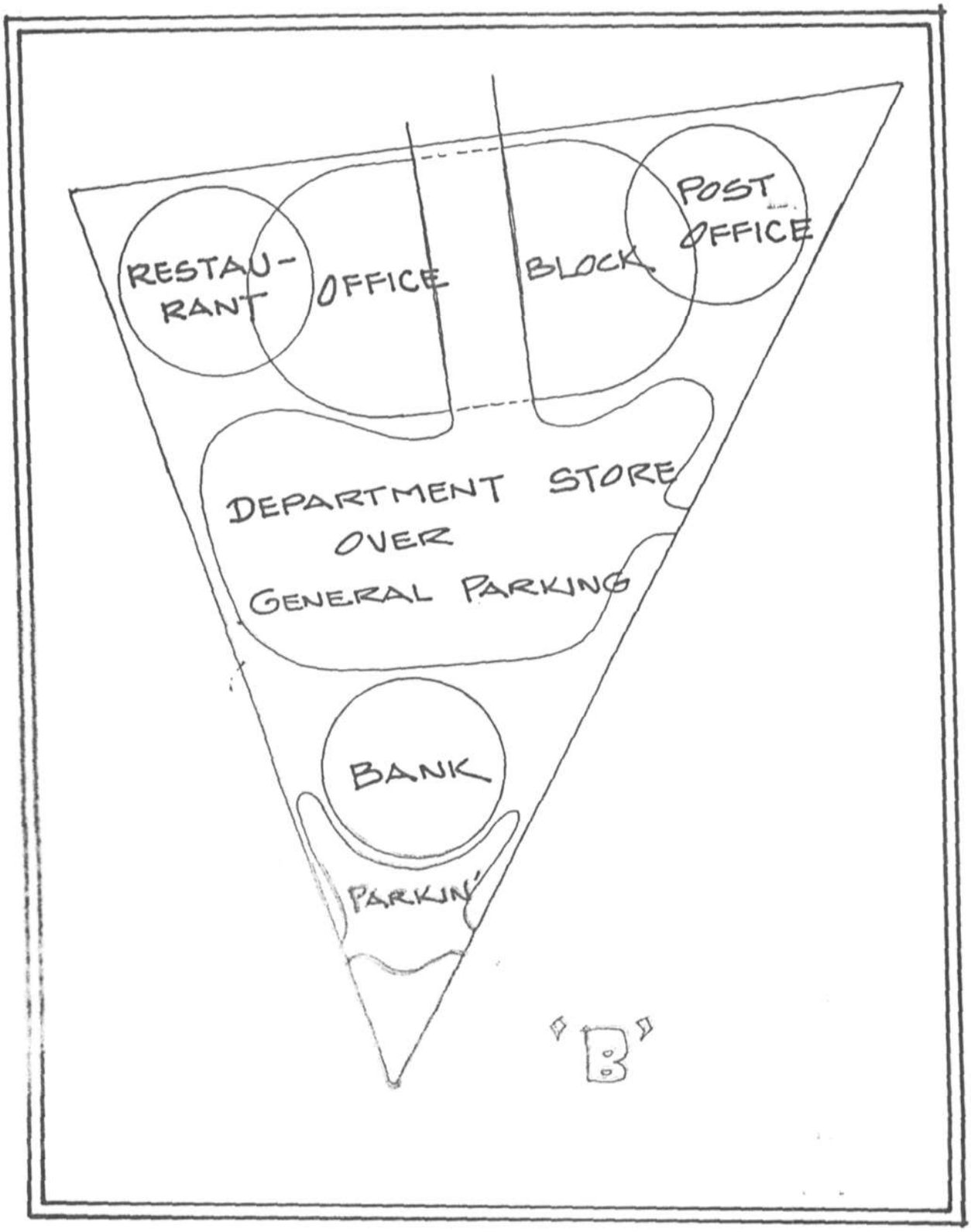


FIG. 6·4 SITE STRUCTURE CONCEPT (ALTERNATIVE II)

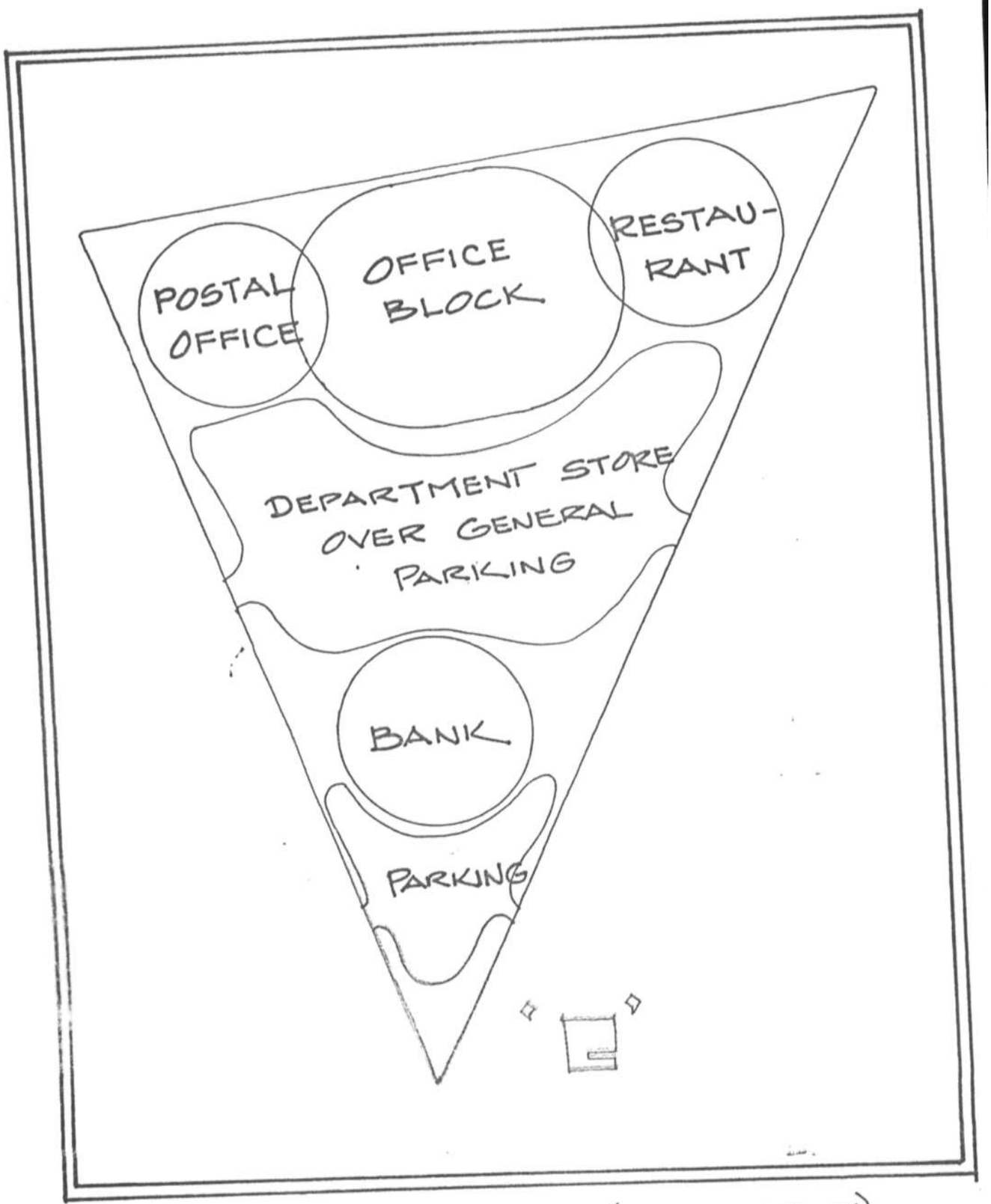


FIG. 6.5 SITE STRUCTURE CONCEPT (ALTERNATIVE III)

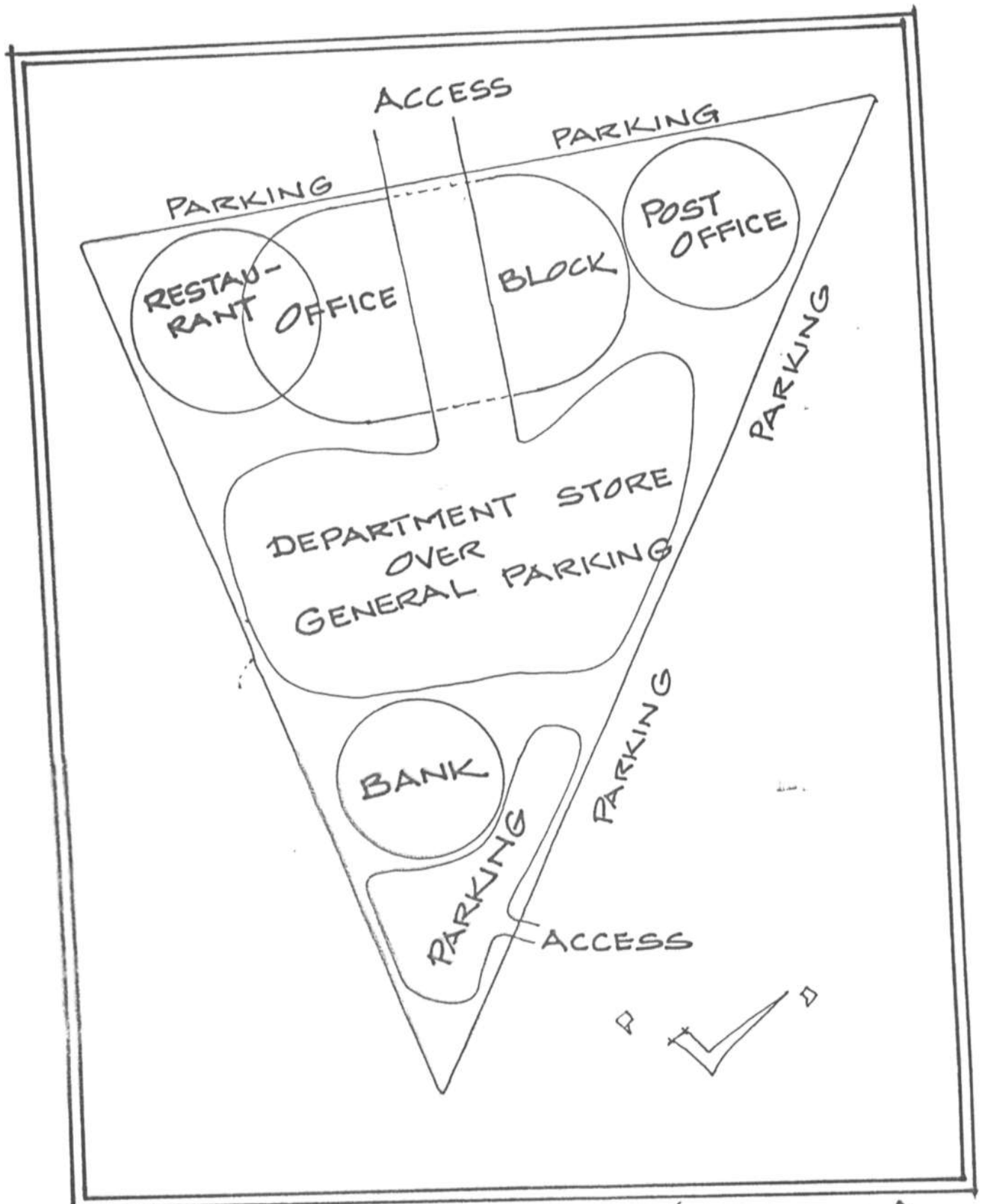


FIG. 6.6 SITE STRUCTURE CONCEPT (ALTERNATIVE ADOPTED)

6.6. FORM CONCEPT

The concept of forms in architecture had previously been tied to the function, construction possibilities and ability to manipulate the building materials and not base on any philosophy. However this is fast changing. Forms in architecture is now geared towards expression of purpose and identity as well aesthetic.

To this end different form concepts have been developed.

6.6.1 Iconic Forms

Forms attached with particular meaning and identity in society e.g minarets in mosque architecture.

6.6.2 Symbolic forms

Form expressed through the use of materials or finishes based on the psychological and visual impact attached to this materials

6.6.3 Analogic forms

This has high expressive value as it expresses a form in an analogy to another object. Dullness and wastage are the usual problems

6.6.4 Hybrid Forms

As the name implies it is achieved through a combination of the above three kinds of forms usually adopted when complex diverse functions are involved.

6.7 PLANS

Plans for this project have been carefully designed to give each activity autonomy, yet be part of a whole. Like a jigsaw puzzle each activity is a piece that has been grafted to form an integral part of the whole complex. In assessing the plans therefore a presentable and meaningful work with a purpose of design starts to manifest. it is only when each unit is assessed in relation to the rest that the whole complex is fully appreciated.

6.7.1 Site Plan

The site concept adopted for the proposal dictates which pattern the site planning has to follow. The site is unintentionally divided into two halves out of the need to provide the bank with its much need security and corporate outlook projection. The bank occupies the Northern half together with its gate house, generator house and mosque which are grouped together in a single block tucked into the apex of the site. Access into the Bank premises is via a gate located on Niger Street. Staff parking for 10 cars is located within the site while customers parking also for 10 cars (facing the staff parking) is located outside the premises just off a dwarf fence.

Access to the Department Store located a floor above the ground level is via a staircase which is approached from a shoppers terrace that is located off a fast-shoppers parking space also along the same Niger Street. The staircase can also be approached from the parking area within the site. Further along this same road is

additional external parking space for 9 cars which is for customers of the Post Office located at the South West angle of the triangular site. The Office Block is adjoined to the Post Office and is approached from the minor street on which the other main access into the site is located. This access allows cars into the parking lot situated on the site which is used by staff and customers who are likely to stay for a long time in the complex. The restaurant has parking facilities for services which is located in the parking lot within the site. The road bordering the site to the east is left vacant for future parking needs.

6.7.2 Ground Floor Plan

(i) Bank

The bank ground floor plan starts with a terrace that has a massive column which goes double volume to carry the roof projection from the bank. The terrace leads to wide steps that take a customer up to the entrance porch. The porch has 3 columns which are used functionally to carry an entrance canopy and aesthetically to celebrate the entrance into the bank. Through automatic sliding doors, access is gained into the public area of the bank, where a counter top divides the customer area from the banking hall located directly opposite. At the counter are located 4 work stations for the bank cashiers. An enquiry nook is also found at the right end of the counter.

The cash office forms a check zone, through which access is gained to the bills area, the strong room, the archives and store as well as to the bullion park.

Two stair cases are each located at opposite ends of the bank to the East and West. The Eastern staircase serves as the main stair case linking the ground with the first floor. Opposite this staircase are located rest rooms for females and males. The staff entrance is also located here too. The staircase on the West end serves as the escape stairs and also as private access stairs for the manager. It also leads up to the second floor where the conference room is located.

(ii) Post Office

Ground floor of the post office is approach from the street via a number of steps through an entrance canopy which covers an entrance porch that extends round as a terrace to the Northern side of the building where the staff entrance is located next to the posting slots for State, National and Overseas letters. A series of steps link the terrace with the parking lot within the premises. From the porch, the customers area can be accessed through a swinging door (double). Here writing tops are provided for addressing letters and stamp sticking. A counter separates the customers area from the staff counter area. From this section the E-Mail unit can be accessed and just behind this unit is located the district stock office which has a safe, custom-built to safeguard original stocks of stamps and other valuable materials e.g Jamb

forms, G.C.E. forms, Money Order etc. The services are located in a central core, where one male and one female toilet is provided facing a staircase that links the ground with the first floor.

iii) Office Block

The approach is located off the street accessible from the parking spaces in front of it. A series of steps help to raise it about a meter above ground level thus celebrating its entrance which has 4 columns, two each on either side. The reception is situated in one corner of the hall from where the whole hall can be veiwed. The lift lobby is centrally located and provide access to two lifts which transverse the entire eight floors of the block. To the right of this lifts is positioned the staircase which also goes all the way to the roof top.

A maintenance office is located to the left side of the lift lobby near the entrance.

(iv) Restaurant

From the parking spaces in front of this facility steps brings one to the porch over which is a canopy. This circular structure has a reception and a lounge for customers. There is also a phone nook located just next to an office used for managing the affairs of the restaurant. Rest rooms for customers are located off the lounge. Winding stairs connects the ground with the first floor. A staff toilet can be found under this stairs.

(v) Others

There is a gate house located between the office block entrance and the restaurant. This is the security point for the parking facilities situated within the site.

Also there is a suya spot with a terraced sit-out where persons can sit and relax with some suya and drinks.

The Bank gate house, generator house and mosque with ablution area are also found at the apex of the triangle. There is also a rest room for the Gate house.

Note that there is no ground floor plan for the department store.

6.7.3 First Floor Plans

(i) Bank

At this level, the staircase and rest rooms (both male and female) are repeated. From the stairs one can wait at the waiting lounge which has a comfortable settee and a cable television. The officers are each in an open plan office which is demarcated with a dwarf wall of about 1.2m. There are 8 such offices facing each other with their entrances alternated to avoid any clash.

There is a void over the customers area creating a double volume effect and visual contact between the ground and first floor. A computer room is located immediately after a tea nook and store which separate the open offices from the enclosed ones. The Secretary's office is large enough to serve as a waiting area for

customers and visitors of the Manager. The Manager's Office is the last office. It has a rest room. A door allows the Manager to slip out through the service/escape staircase located next to the office.

(ii) Post Office

At first floor level is located the accounts office, the computer room the Manager's Office and the sorting area. There is an emergency exit located to the South which can provide access to the terrace that runs the length of this level. Flower pots are also situated to bring the landscape from the ground to the upper levels. The terrace leads to escape stairs which can evacuate people from this level to the ground directly.

(iii) Office Block

The services facilities continues from the ground level.

(iv) The Restaurant

The winding stairs bring one into the diners area at this level. A waiters entrance is located adjacent to the stairs. This entrance leads to the servery which is wrapped around a central column. The kitchen is also located here with changing rooms one each for male and female. From the kitchen the diners area can be accessed through another door and from this area, the sit-out (eating area) exposed to the sky invites. A glaze circular structure with columns located along a spiral grid. It can accommodate 90-100 people including the sit-out.

(v) Department Store

At this level (first floor) is where the store starts instead of the ground level which accommodates the parking facilities. From the stairs, the foyer is encountered. Here bags and other containing items are left. The security check point is located next and from here, a way-in. The display area spreads all through to the first floor level of the office block and is dotted along the grid with structural columns, square in shape of two difference sizes (200 x 200 where the ..... is just of the above floor and roof and 400 x 400 where it occupies the underneath of the office space high rise. An escalator provides vertical circulation between this floor and the upper mezzanine floor. The ancillary facilities are located at the east end of the department store. Here the Secretary/Waiting is located which precedes the Manager's office that has a rest room. The accounts office is also located here. There are also rest rooms (one male, one female) next to a staircase which is used as a service/delivery stairs from the ground level parking area.

The gate house roof plant is seen at this level including the water tanks.

6.7.4 Second Floor Plans

(i) Bank

The roof plan over the banking hall is seen at this level. A double pitch flat roof (less than 10^0 slope) with a parapet gutter for collecting rain water. The roof over the staircase is a flat concrete

deck which has water tanks (2 No) situated to serve the rest rooms below. However the conference room is located at this level. It has a kitchenette, a storage room and also a rest room. Access is from the staircase (escape) located on the West side of the bank.

(ii) Post Office

The roof plan is also seen at this level.

(iii) Office Block

This is a repetition of what is at first floor level. The lifts are also expose to the view around the complex through glazed projections as it glides up over the roof of the Post Office.

(iv) Restaurant

The roof plan is seen at this level. Translucent roofing sheet can be seen which allow natural day light into the kitchen below. The water tower (6m in diameter) plan can be seen with ventilation duct from the wind scoop above strategically located around it to ventilate the kitchen below

(v) Department Store

The mezzanine level with the escalator centrally located. The same space is made available for display as found below. An emergency exit is located above the security and foyer area below. The door opens to a balcony which connects with the main staircase.

The smaller columns continue up to carry the roof over the store while the larger ones continue up the rest of the high rise.

The rest of the ancillary facilities computer room, general store and a rest room are found at this level.

6.7.5 Third Floor Plans

(i) Bank

Roof plan of conference room is seen at this level. It is connected with roof over departmental store.

(ii) Office Block

Here the office space to-let manifest which can be accessed from the lift hall. It is planned along a 5m grid which has been adopted to accommodate the parking constraint at the ground level. 6m grid would have been better but in this circumstance it is a luxury. On the East wall of the store next to the restaurant is located the escape stairs for the office space. Also the door from this stair hall opens out to the sit-out of the restaurant from where escape stairs to ground floor can be reached.

(iii) Restaurant

Water tower roof plan is seen at this level. The wind scoop is seen also at this level.

(iv) Department Store

Roof plan with water tanks is visible here.

6.7.6 Fourth Floor Plan

(i) Office Block

The grid used (5m) for the office block at the 3rd floor of the parking grid used at ground level, which was adopted to maximise the site output, since as mentioned earlier 6m grid would be too wasteful of the available space on such a small and tight site. But once clear of all obstructing, the floor plan can be expanded and is thus expanded by 600mm at each 5m grid along the length of the office block from the East and West walls towards the middle. This gives additional space to the interior of the office. ($3.6m^2$) At the centre of the office space, a 70^0 angle projection is introduced to give the building a corporate character. This is glazed all the way from the fourth floor to the last floor (8th floor). The additional space created makes it possible for a store to be created at the Eastern services core between the rest rooms and the staircase.

6.7.7 Fifth to Eighth Floor Plan (Typical)

(i) Office Block

This typical floor plan is almost the same with that of the fourth floor plan. Except from the fifth floor there is an extension of $100m^2$ of office space on the other side of the internal services (east) core. And on the east facing wall there is a 45^0 glazed angle projection of the floor introduced to give the building an addition corporate outlook. This extension is supported by columns which

gather the load imposed and transfer it down to the ground level via the restaurant's structural systems.

6.7.8 Roof Level

The roof is a flat concrete deck with the main staircase and escape staircase each located appropriately. The lift machine room is also situated next to the main staircase. There are cooling tower for the airconditioning system in the building. Also found are more water tanks. There is a pad for a helicopter to land in case of a fire hazard.

6.8 ELEVATIONS

In composing the elevations of this complex, a simple approach was taken. Classical columns are employed around the complex to celebrate entrances of the corporate activities (e.g bank, office block) while the other activities are mildly celebrated at their entrances, so as not to create a chaotic composition. Parapet walls are used to screen the roof from view and simple straight vertical and horizontal lines are used to present simple facades to a complex setting. With the natural undulating roof lines cutting across the sky, a rhythmic visual impact is created. The bank's square motif is used to tie the whole complex together with a common identity.

6.9 FINISHES

Choice of finishes for the facade include durable and appealing materials like glass and granite with hard wearing ones at areas

where a high human traffic flow is expected. Colours are chosen to complement the neighbouring structures, so as to blend the complex well with the surroundings.

6.10 DRAINAGE

The slope of the site is gently towards the South-West direction. The drainage channels around the site are all blocked due to the dormant state the site has been for quite a while. These drainage are to be dug out and properly covered. Storm water on the surface is proposed to be channelled into these covered gutters at the periphery of the site. Drainage of rain water from the roofs is through drain pipes from the parapet gutters to the ground drains through pipes located in the columns of the structure.

6.11 SERVICES

As mentioned earlier the CBD has all services in place electricity, water, drainage channels, telephones, good roads etc.

6.11.1 Electricity

This is to be supplied to the complex via a step down transformer. Electricity is a very important aspect of a smooth running organisation, an uninterrupted and continuous power supply is essential. So apart from the mains/alternative power supply is very necessary and is proposed for the complex. A generator house which is to house a very large generator set capable of supply the whole complex with automatic power whenever the need arises is proposed.

6.11.2 Fresh Water

Water from the mains is a bit on the scarce side in the municipal but all the same when available it will be stored in an underground water tank as well as the water tower located above the restaurant. From these tower and tanks it will be pumped to storage tanks located on roof tops and to other floors.

A borehole is also proposed for the complex. The water of which will be stored as explained above.

6.11.3 Air Conditioning

Occupants, machines, and solar radiation all generate heat which needs to be cooled down for a conducive conditioned environment. Each activity will have its air conditioning according to its requirements. Most especially the department store that relies on artificial lighting and cooling system. Large air conditioning unit systems will be required and the conditioned air distributed through ducts especially into the bank and department store. Split unit systems might be required in other area like the restaurant and post office. The office block might require centrally located air condition system on the roof top and serve the offices via ducts.

6.11.4 Fire Control

Control of fire and its detection are to be done in the following ways.

i) Fire hydrants are to be located 2.0m apart and at each of the three corners of the site for the Fire Brigade to facilitate better fire fighting services.

ii) Smoke detectors in fire sensitive area will be part of the services installed.

iii) Provision of fire fighting gadgets and apparatus at each floor accessible to the occupants.

6.11.5 Sewage Disposal

Waste control and management has been made much more easier through the grouping of rest rooms, so disposal can be through pipes of adequate sizes into inspection chamber, septic tank and finally into soak- away pits located at strategic point to serve the activities of the complex.

6.11.6 Security and Burglary Control

Apart from the two gate houses on the site and the personnel who will maintain all day and all night vigil in shifts, security control systems e.g. closed circuit monitor, burglar alarms, infra red detector system are some methods proposed for the complex. There will be security lights for all nooks and corners of the complex special attention will be focus on securing the bank strong room, archives and vaults as well as the safe in the district stock office of the post office.

6.12 CONSTRUCTION METHODOLOGY

The bank structure will be built with the conventional concrete and sandcrete construction technique. No specific grid type was used to design the bank because of the triangular nature

of the half it occupies. However, the post and beams construction method with cast-in-situ reinforced concrete waffle grid floor system is proposed for the department store. A 5m x 5m grid is used for this half of the site, which was adopted to maximise the available space for parking on the site. The grid is transferred upward along the columns to define spaces of the store. Same method is adopted for the office block construction. The columns at the ground level are circular in shape to avoid sharp edges against cars, but the columns are square at upper floor level to facilitate better connection and attachment of partitions. The columns also become smaller as the floors rise higher to reduce the imposed load on the lower parts of these columns. The restaurant too is cast-in-situ construction method. The water tower is also in-situ but will require a lot of engineering attention.

6.13 MAINTENANCE

A monthly maintenance operation for the complex is recommended which should be arranged by a specially created maintenance department. Specifications for the maintenance should be strictly implemented to achieve best results, as this will improve the life span of the structure and prevent construction failure.

CHAPTER SEVEN

7.0 SUMMARY AND CONCLUSION

7.1 SUMMARY

In formulating the objectives of this research work, the important advantages and trends of mixed-use developments was stressed especially in Central Business Districts and in a developing economy like our own where such developments are clearly needed but are lacking due to financial constraints. Instead of constructing custom design mixed-uses, renovations of existing structure is what is practiced. Understanding the resultant conflicts and problems from such practice could go along way in improving the whole set-up.

Theories of mixed-use and integration of space and general constraints associated with such developments was examined in Chapter 2. Activities proposed for the complex were chosen at this point base on the possibilities of mixing them without any conflict.

Chapter 3 deals with case studies, so as to appreciate the topic under consideration from what is existing currently both in Nigeria and Overseas. Conclusions were drawn.

The site is analysed base on its location and potentials in Chapter 4, so as to have a fairly good direction in approaching the planning and designing of the entire complex in relation to its neighbourhood.

The Brief was formulated from the client's and possible users of the complex based on the functional requirements of the facilities chosen to be part of the complex. This is in chapter 5.

The Sixth Chapter deals with the design proposal bearing in mind all the information from the preceding Chapters and the clients brief. This led to functional and space requirements for the proposal which were then carefully laid out at various levels.

7.2 CONCLUSION

GUARANTY TRUST COMPLEX, KANO: "Resolving Conflicting Functional Requirements In Mixed-Use Buildings" is a speculation project which the author uses to investigate and identify the conflicts associated with having a number of activities taking place in a single building or on a single site. With quite a number of building in central business districts of cities across the country converted into mixed-use structures, certain problems and conflicts are beginning to emerge which were hitherto unforeseen. Conflicts between the activities due to operational differences and problems associated with the renovated buildings become so apparent that the purpose for which such projects are executed (financial returns) are marred by psychological traumer and health hazards. Rather than allow such practice to continue which is mostly due to ignorance, the author finds it necessary to conduct a research and bring to light the causes of such conflicts and problems and then use the research findings to propose a custom-made mixed-use complex, so that architects, developers, users and the society as a whole can be

enlightened on the topic, thus avoid the prevailing practice of renovations and where it becomes inevitable to renovate, the kind of activities to mix and how to mix them should be based on knowledge. This knowledge is what the author has tried to provide. In achieving the main aim of the thesis, the author has used some research tools e.g. field surveys, case studies, interviews, literature review and study works by other authors. It is from this effort that the author has been able to identify the two basic types of mixed-use developments. "Mono" and "Cluster" and also to know the areas where they are used. To this end, this research work is only a scratch on the surface, as the field of mixed-use is vast with alot of unfamiliar terrains. Only more research by other authors can bring forth the immense potentials that is associated with such projects and so benefit the society.

THE AUTHOR

Born to Malam Tijjani Musa and Hajia Amina Hassan on a Thursday 26th September 1966 in the old ancient city of Kano, Muhammad Tajhdeen started his academic career at Gwagwarwa Primary School Kano in 1971 to 1978. He attended Government Secondary School, Kawaji Dakata, Kano from 1978 to 1983. His A-Level education was at School of Basic Studies Ahmadu Bello University (ABU), Zaria (1986-1987). Offered a course different from his choice Architecture, he left for Kano where he joined Kano Broadcasting Corporation to work as Presenter/Announcer and eventually became a Producer in the Radio Kano II FM Station (1987-1993).

It was while at the station in 1989 that he gained admission into Bayero University Kano (BUK) to read Mass communication and also into Kano State Polytechnic to read Architecture. He opted for the latter and upon graduation with a diploma in 1991, the author proceeded directly to ABU Zaria for a Bachelor of Science Degree in Architecture which he acquired in 1995. He was attached to Savannah Consultants, Kano as a Student Architect during his first degree years. He later joined Design + Plus Consultants in Kano as a Journey Man from 1995 to 1996.

Muhammad Tijjani returned to ABU in 1996 for a Master degree in the same Profession. During the course, he was elected the President of Society of Architecture Students (SAS) ABU Zaria (1997/1998). As President his tenure witnessed the Publishing of a

Maiden Departmental Journal "ARCHIVISION: Nigerian Architecture In The Next Millennium" the first after 22 years which realised more than N500,000.00 (½ Million) at the launching.

In 1998, he presented this thesis titled "GUARANTY TRUST COMPLEX, KANO: Resolving Conflicting Functional Requirements In Mixed-Use Buildings" with which he was awarded the Master of Science degree in Architecture, thus achieving his childhood ambition and dream of becoming an Architect.

Married to Bilkiss Abubakar Usman in 1994 and blessed with two beautiful children Tasnim Tajhdeen Tijjani (Miss) and Ahmad Qalb Saleem Tijjani, the author who hails from Gwaram Local Government of Jigawa State is immensely grateful to his Lord and Creator ALLAH Azza Wa Jallah for all this blessings. Without His guidance, life would surely have been an unfortunate waste.

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PROBLEMS THAT MAY ARISE AS A RESULT OF MIX-USE OF INSTITUTIONAL BUILDINGS

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PROBLEMS THAT MAY ARISE AS A RESULT OF MIX-USE OF INSTITUTIONAL BUILDINGS

INTRODUCTION

PREAMBLES

Society as defined by Chambers English Dictionary is a "system whereby people live together in organised communities" or a "social way of living; customs of a civilised community". Man is a social creature and being intelligent he interacts freely within his environment engaging in social and commercial activities in order to satisfy his basic needs for survival. Researchers during the 50th year consultations of American Institute of Planners in 1967 related the psychology or sociology of society to the need for multi-variable nature of space.

Space and its need becomes crucial to man because of the interrelationship of basic functions of the society which include home, work, school, shopping, commuting, leisure, recreation etc. The type of use for a space could dictate whether it should be a built-up or an open planned space. In abundance, space could be subjected to wastage, but where scarce, it is often seen to be carefully planned and utilized to maximise its output.

Scarcity of space or land, a situation where demand exceeds its supply (availability) usually gives it added value. So that it becomes more expensive to acquire. Where land is valuable for example in Central Business Districts (CBDs), it tends to be used to its utmostyield. It is this quest for maximum utilization of scarce space that often lead to the creation of a multi-use or

mixed-use development.

Mixed-use, in the context of this write-up is defined as a single building or structure that is designed to accommodate various activities in different parts of its enclosure. Mixed-use development was also defined by the Monde International in Architectural Record (1977) to be characterised by three more significant revenue producing uses, like retail, office, residential, hotel or motel and recreation which are mutually self-supporting in well planned projects and that functional and physical integration of project components could be a way of making highly intensive use of land.

Mixed-use in buildings is gaining more and more acceptance with quite an impressive percentage of CBDs in major cities across the globe being occupied by such developments. In Nigeria for example and Kano in particular, the CDB which has Bata Round-about as its nerve centre is constantly witnessing mixed-use de-velopment in form of new constructions, but mostly renovations of existing structures at the rate of one per week by corporate organisations such as banks, investment houses, foreign consulate etc.

In consequence, users of such renovations are being faced with unforeseen problems ranging from inadequate parking, poor circulation, over loading of service facilities structural defects amongst others.

This paper is intended strictly to outline the problems that usually manifest out of the mix-use of institutional functions in the same building. By so doing, a better understanding of the

functional requirements of a mixed-use especially that involving institutions as well as offices can be acquired, which will result in a much more efficient design and development by architects and developers respectively.

The main aim of this write-up is to provide vital knowledge on which mixed-use design and constructions can be based as well as to discourage the prevailing practice of forcing buildings to accommodate more functions than they were originally design to, which can be detrimental to their functional capabilities. By so doing the author hopes to show the accruable advantages that can be gained from purpose made mixed-use in contrast to renovations.

Information about mixed-use developments most especially the subject under consideration is not readily available, so that the bulk of the data was acquired from the field research conducted by the author. Users of some purpose-made as well as renovations were interviewed. Also existing lay outs of the mixed-used were physically studied, notes taken from which inferences were drawn.

Some architectural journals, published and unpublished works of authors were also studied to provide a measure of appreciation of the problems at hand.

In the process of conducting this research, works by various authors have shown the extent to which in one way or another problems accosiated with mixed-use of institutional buildings were addressed. It was also discovered that most dissertations were concerned with relating the psychology or sociology of society, environment and life to the need for multi-use or mixed-

use of functional spaces.

The functions of society were infact the conflicts and the resolution of these conflicts as asserted by Hertzberger (1980) in the Architectural Review journal. It becomes obvious from the above that addressing the problems that result from mix-use of institutional activities or any other activities for that matter is part and parcel of a society's daily functions. This he clearly demonstrated by proposing a music centre in Utrecht, Holland, a complex which has a theatre, auditorium, in door shopping mall, a cafe-restaurant among others, to blend the boundary between day and night activities.

In the August edition of Baumeister journal (1978), it was reported that in Wintethur, a centre of mixed facilities for residential, working and shopping was designed to reawake the dor-mant commercial life of the area and to retard the trend towards moving out into the city. It can be seen that mixed-use when pro-perly planned can be used as an effective instrument with which to promote a burst of activities in a slumbering community and also to serve as an arresting measure in a rural urban migra-tion thus making living in the environment worth while to the populace.

Barry G. Rowney (1989) in Architecture Australia states that it is a well known fact that buildings that continue in use last the longest. Disuse spells death to buildings, a statement he made while reviewing a book titled "Adaptive Reuse - Issues and Case Studies in Building Preservation". It becomes apparent from

his statement that for a building to last long functionally, it has to be in constant use and the only way to ensure this, is to employ mixed-use of activities which when problems associated with it is properly addressed, can be highly beneficial to the society.

In his article, "The Right Mix", MacComac (1980), in Architects Journal of July edition pointed out that Venice an European city was notable for offering a system of public, semi-public and private spaces in which a number of activities were intertwined and reconciled, and that the experience of the city was not of buildings as solid objects but of spaces enclosed by surfaces of the buildings. In the article it was also revealed that analysis of uses showed that offices, shops, workshops, housing and services such as banks co-exist in various combinations.

Safiyanu (1989) in his M.Sc. Thesis in Architecture also asserted that spaces should be flexible and adaptable for various functions in order to satisfy the needs of the society. This needs which can come in various forms and shades should be accommodate in either a built form or an open space and whatever problems that is likely to manifest should be taken care of right from the drawing board before it goes on to the site.

Cruick Shank (1989) in Architects journal of October edition published an article titled "Market Options" in which he asserted that simplified mix of uses introducing some shopping spaces office spaces, residential spaces and recreational spaces could

be a way of creating an architecturally acceptable piece of the city which reflects the social and economic aspirations of the established community and also giving the developers a good profit.

=N=100m Mixed-Use Development Seek Victoria Island Debut", the title of Okulola (1990) article, published in the Guardian of 12 February reported that Premier Property Development Company Limited picked the option of a mixed-use development in preference to other competing proposals so as to ensure a more marketable development. It was also reported that the choice of mixed-use development option was due to the need to maximise the poten-tials of the site, hence the proposal of a 10 storey office block development and the development of a 10 storey block of luxury flats with servants quarters on 4688.947 square metres site.

It is now clear from the above literature review that different authors have advanced statements, writings and proposals which directly or indirectly addresses the need for a well designed and well planned mixed-used due to the advantages likely to be gained as a result of such developments. It is only if a proper understanding of the problems likely to occur when a mixed-use is adopted, that solutions can be proposed which can lead to an efficient design, time saving and revenue generating structure which then can be constructed to the benefit of the whole society.

Mixed-use of buildings was said to be common in the nineteenth century with the combination of residential and commercial activities in dense walk up flats usually in the city centres or urban centres. Boston and New York are cities with common examples where working population were housed on upper floors and the ground floors were usually left for commercial activities. Spaces have always been adapted to different uses as every age has used its building for functions in ways different from those for which they were originally designed.

It is now the norm to find mixed-uses in most cities of the world both traditional and modern. Kano city is a traditional city within a modern city. This so because the old ancient city with its mud houses and unplanned cityscape is still very much in existence surrounded by a wall beyond which lies the modern lay out of the city. The CBD of Kano is located outside the old city. The bustle and hustle of life is very much evident in the commercial activities in this CBD.

The main characteristics of the Kano CBD are a good network of roads, a vibrant commercial activities and banks, and more banks and even more banks. In the CBD there is an average rate of at least one every three months. With the CBD already built up, the only other option is to renovate an existing structure to accommodate a bank which hitherto was never designed or intended to house one. As a result more and more of the buildings in the CBD are being turned into mixed-use structures.

In consequence to these renovations, there are problems unforseen and unexpected that are now manifesting themselves rendering most of the building highly inefficient. Some of the most serious problems include the following:

Inadequate Parking Space

One of the major problems associated with mixed-use renovations most especially. As the original building was planned, including its parking spaces to serve only one function. If an additional function is incorporated into the building there tends to be more patronage, which means more cars. On the premises , which means additional parking spaces. Where it can not be provided, there will result improper parking leading to congestion and blockade of the access roads. Of the 10 case studies conducted only 3 were custom made mixed uses, the rest were renovations, most of which had the above mentioned parking problem.

Structural Problems

In mixed-use renovations, structural defects are a common occurrence. A building that is subjected to additional load previously unprepared for i.e by the introduction of another activity into it can lead to inefficiency on the part of the foundations, beams, columns and load bearing walls, which can then lead to cracks, buckling and eventually failure.

Services Over Load

Mechanical as well as electrical services lay out in a building which has just been converted into a mixed-use, if not

adjusted to bear the additional burden can seriously hamper the functioning of the entire building as there will be blockade in the mechanical lay-out, and short-circulating in the electrical.

Accessibility

In some cases, there is a need for multiple access into a site that is being occupied by a mixed-use most especially if there is constant deliveries to the building e.g. a bank, a shopping centre or a restaurant. It not, there will be the risk of security in some cases among others.

Corporate Image Damage

Some institutions value their image so much they spend alot of money to maintain it. In some instances they would prefer not to even share a building with any other activity, preferring to occupy the building alone. But where they have to rent and the location is good for their business, they compromise. Thus making good business at the expense of their corporate image. This has been identified also a major set back in mixed-use of institutional functions.

Waste Disposal/Management

This can be quite a problem in a situation where building has no maintenance and management set-up, it can lead to uncooperation on the part of the occupants which can lead to a dirty environment. And ofcourse this can be bad for business. With the problem of maintenance culture lacking in Nigeria, alot of the case studies are victims of this bad phenomena.

Deliveries.

A bank requires a delivery bay to its bullion room. A shopping mall also need deliveries. So also is a restaurant. For proper functionality of these activities, it is quite necessary to separate their delivery accesses. But in most of the case studies, this is found not to be so. This has been identified by the users as a source of embarrassment sometimes.

From the above stated problems, it can be seen that if mixed-use is not planned most especially if it is an institutional mixed-use, it could seriously jeopardise the success of the functions that are to take place in it. As earlier stated the aim of this paper is to create the awareness among developers and architects as to the consequences involved in mix-use of institutional functions, so as to facilitate a more efficient set-up. It is hoped that, this has been achieved to a degree by this work. Ofcourse this paper can not and is not an end in itself but just a stretch on the surface. Alot more can be done to understand these problems and their causes, so that solutions can be recommended. For despite all these problems, more developers are still engaging more architects to create these mixed-uses. This is all because of the financial benefits involved. If the success is to last, a rethink must be considered. It is only We architects as professionals that can analyse te situation factually and propose solutions which in the long run can sustain te environment and its proper functioning as a civilised community.

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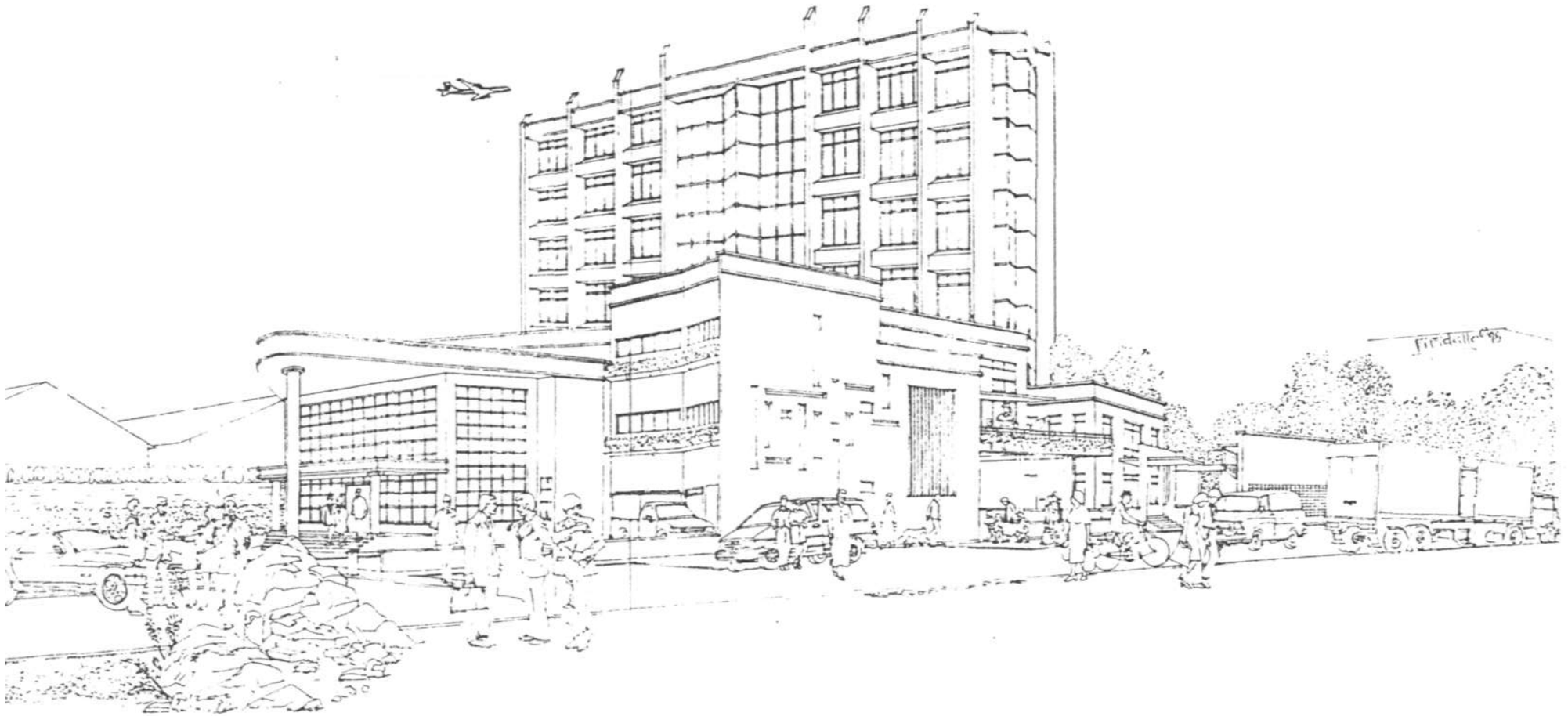
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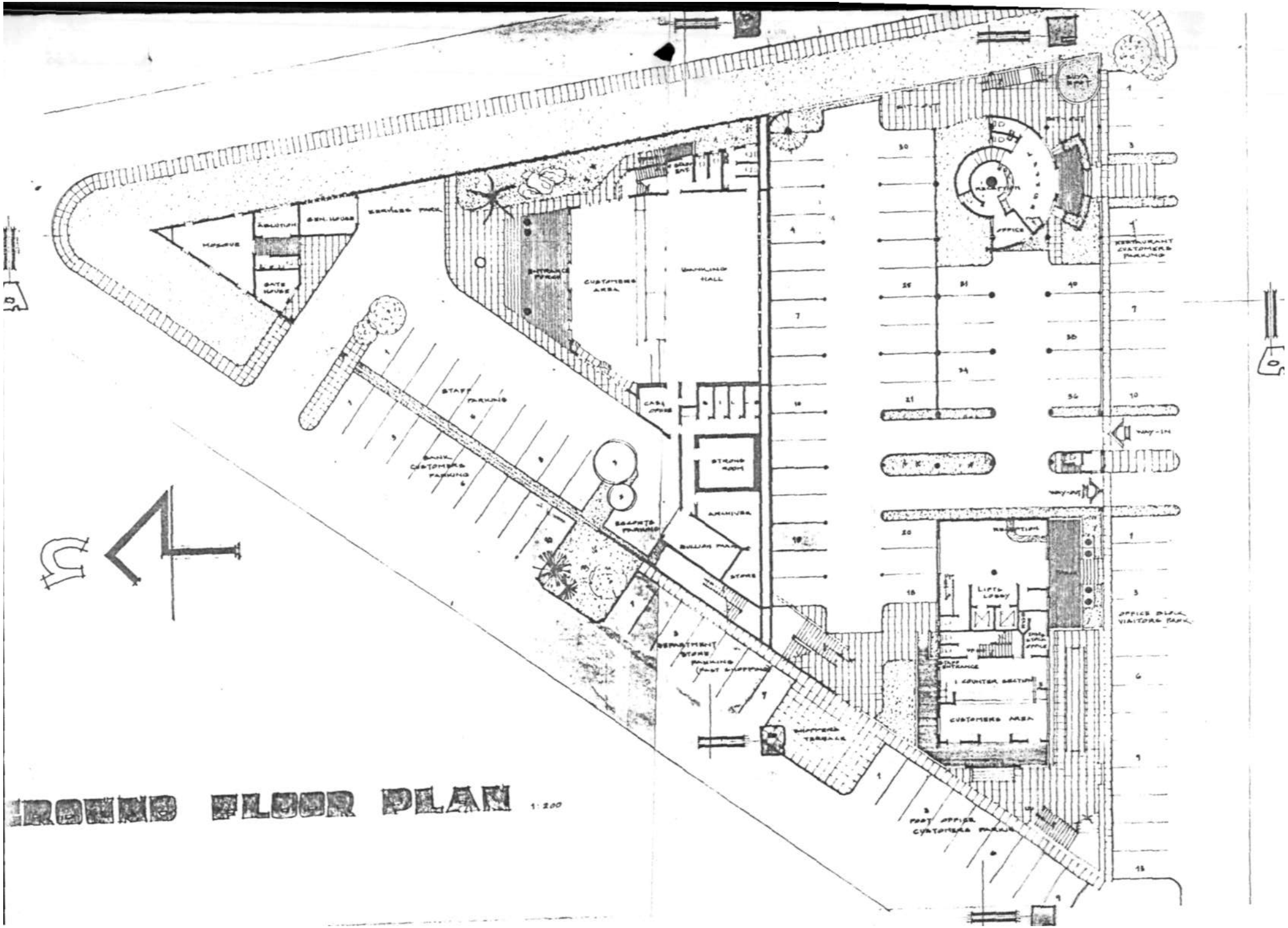
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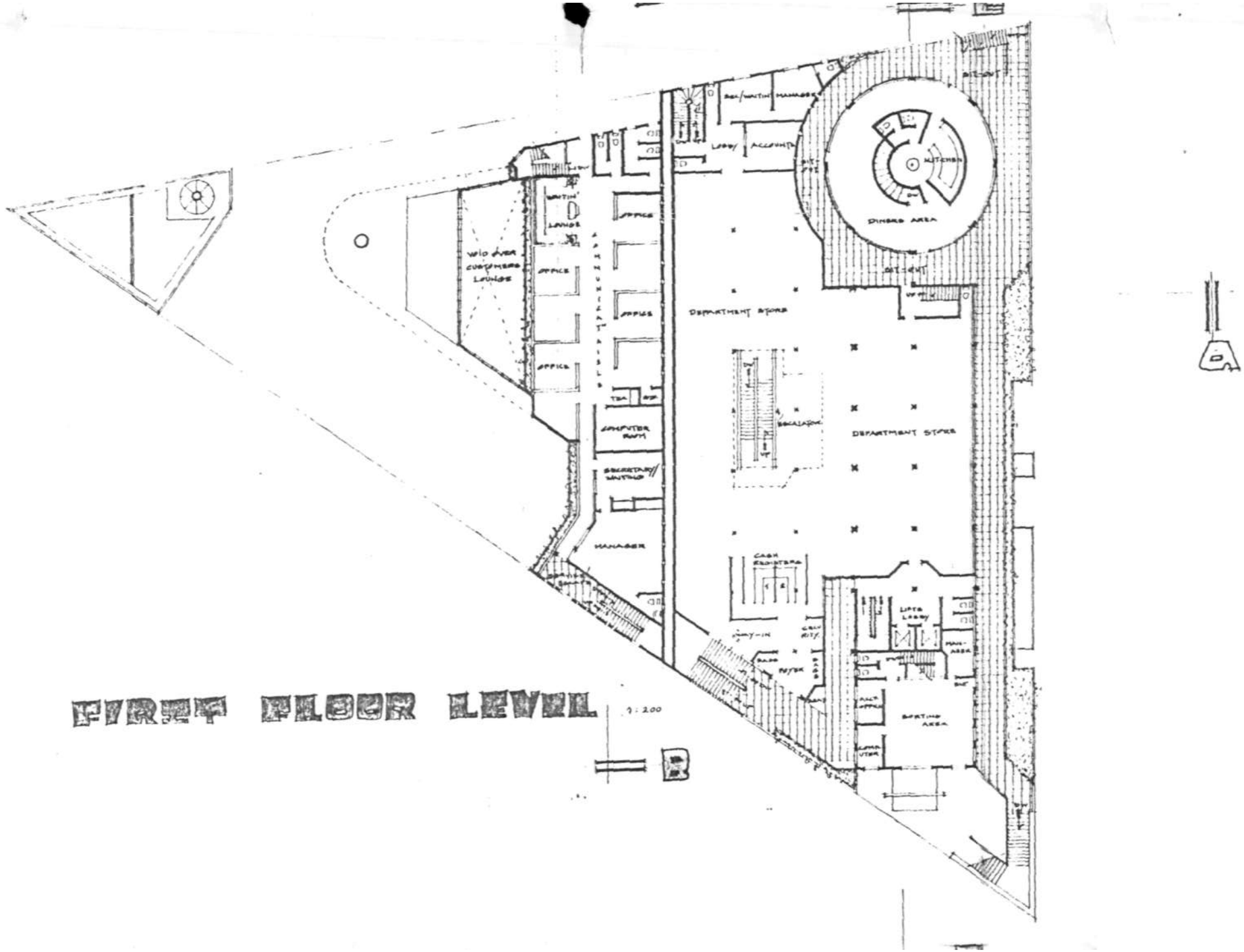
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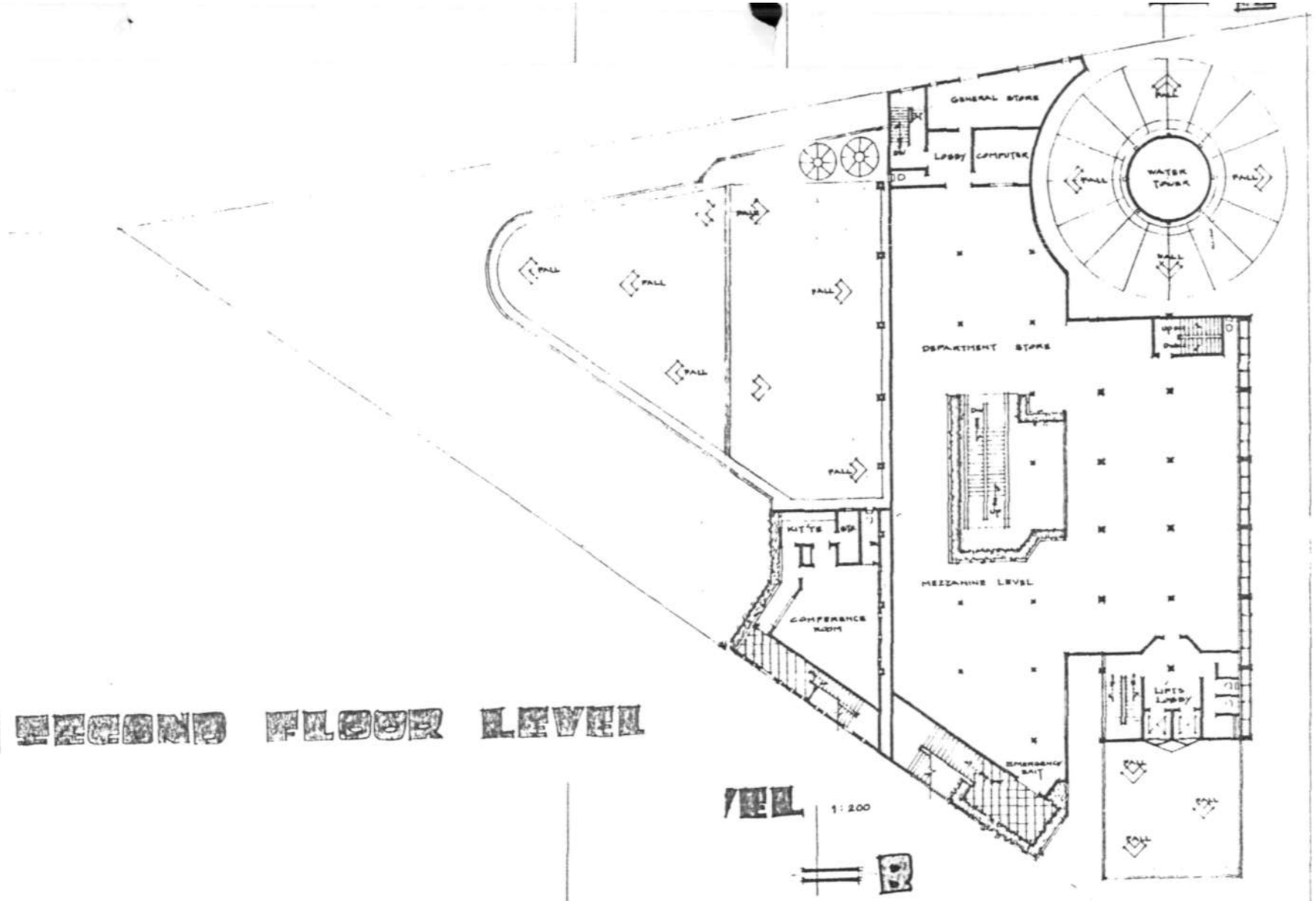




GROUND FLOOR PLAN 1:200

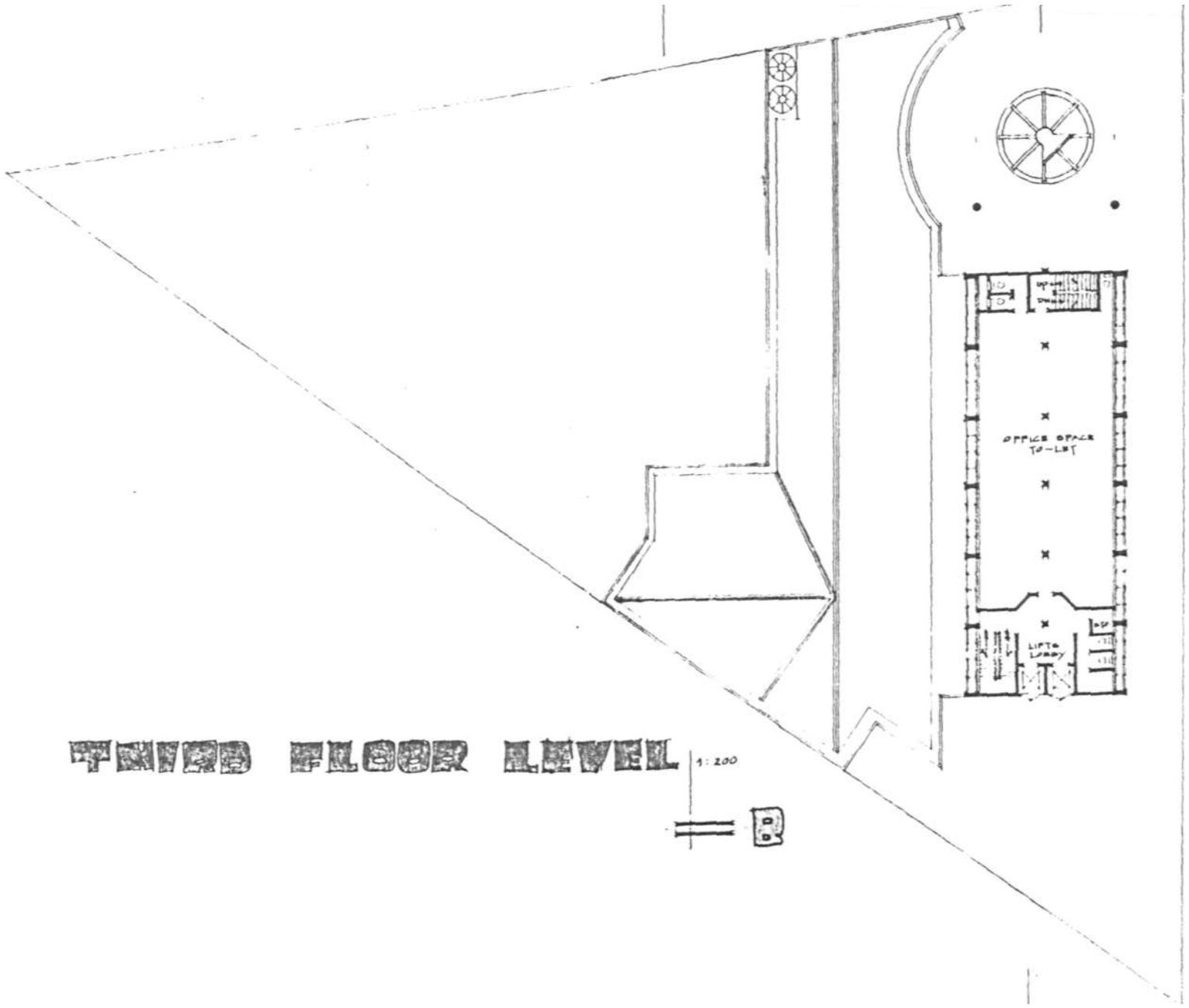


FIRST FLOOR LEVEL 1:200



SECOND FLOOR LEVEL

1:200

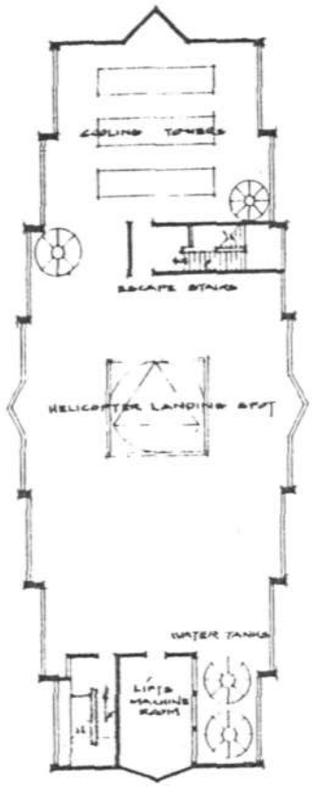


THIRD FLOOR LEVEL 1:200

PROPOSED MEDICAL CENTRE

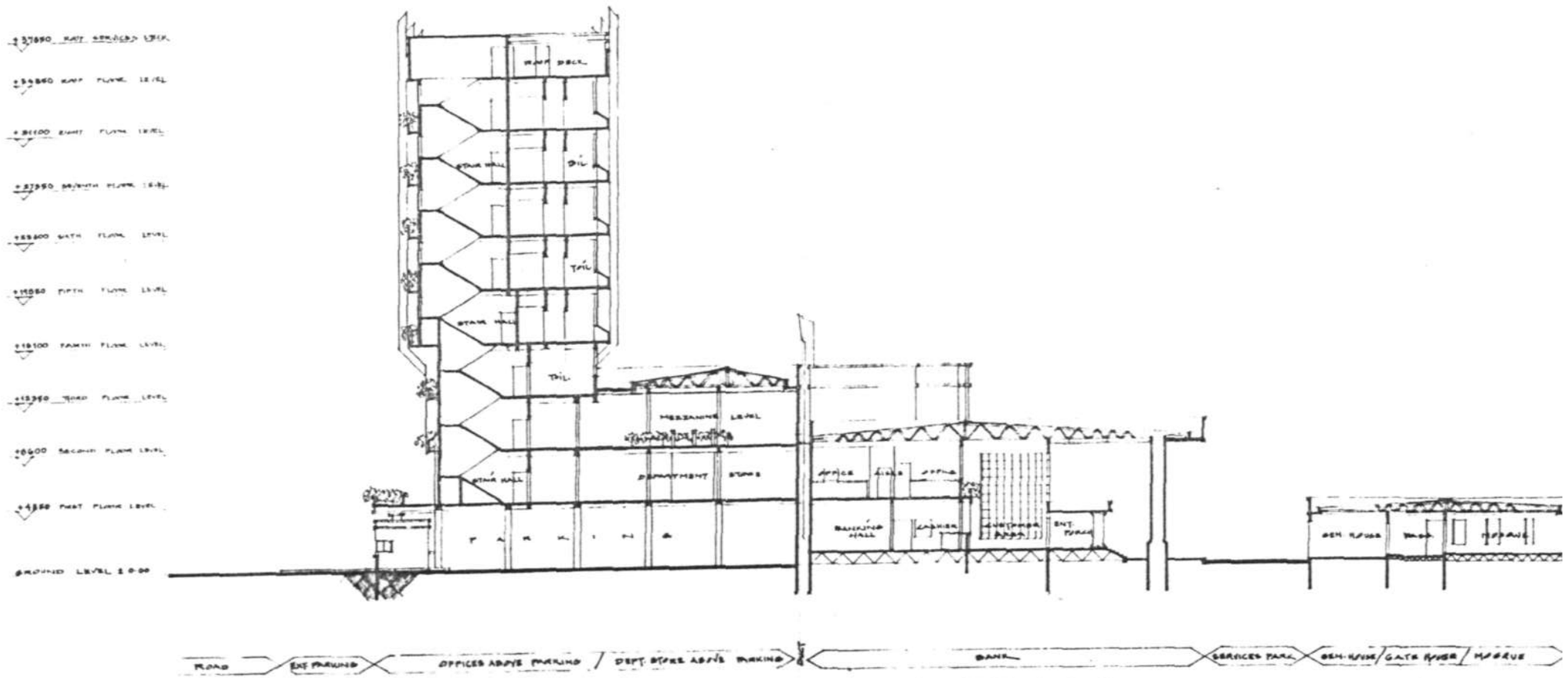
EIGHTH FLOOR PLAN

1:200



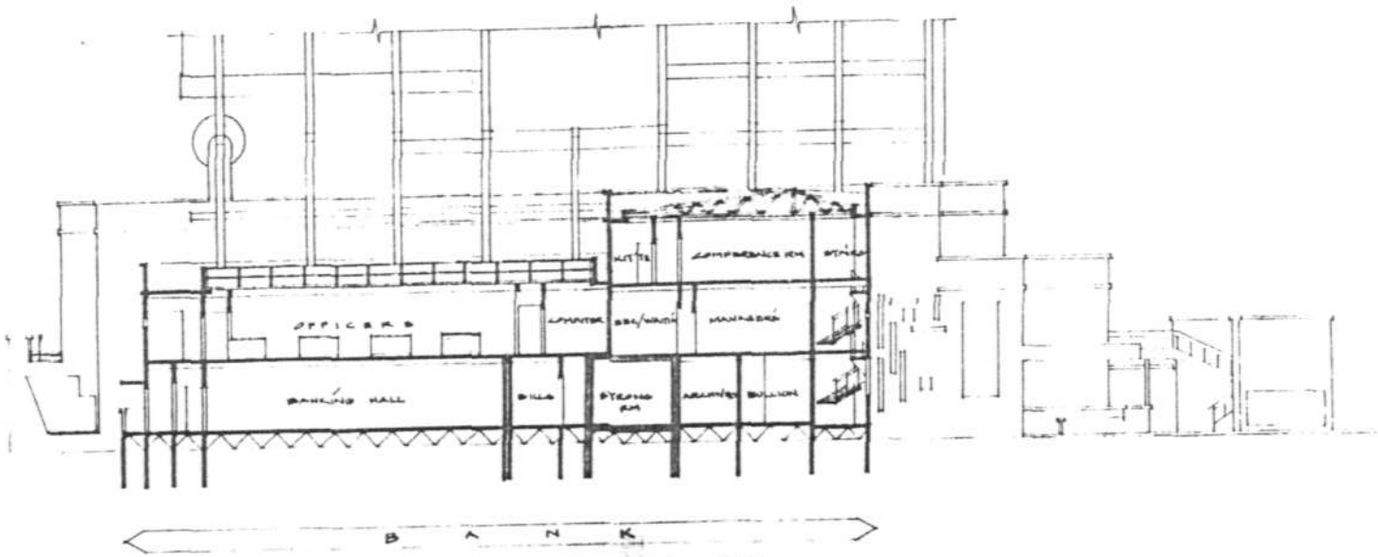
ROOF LEVEL

1: 200

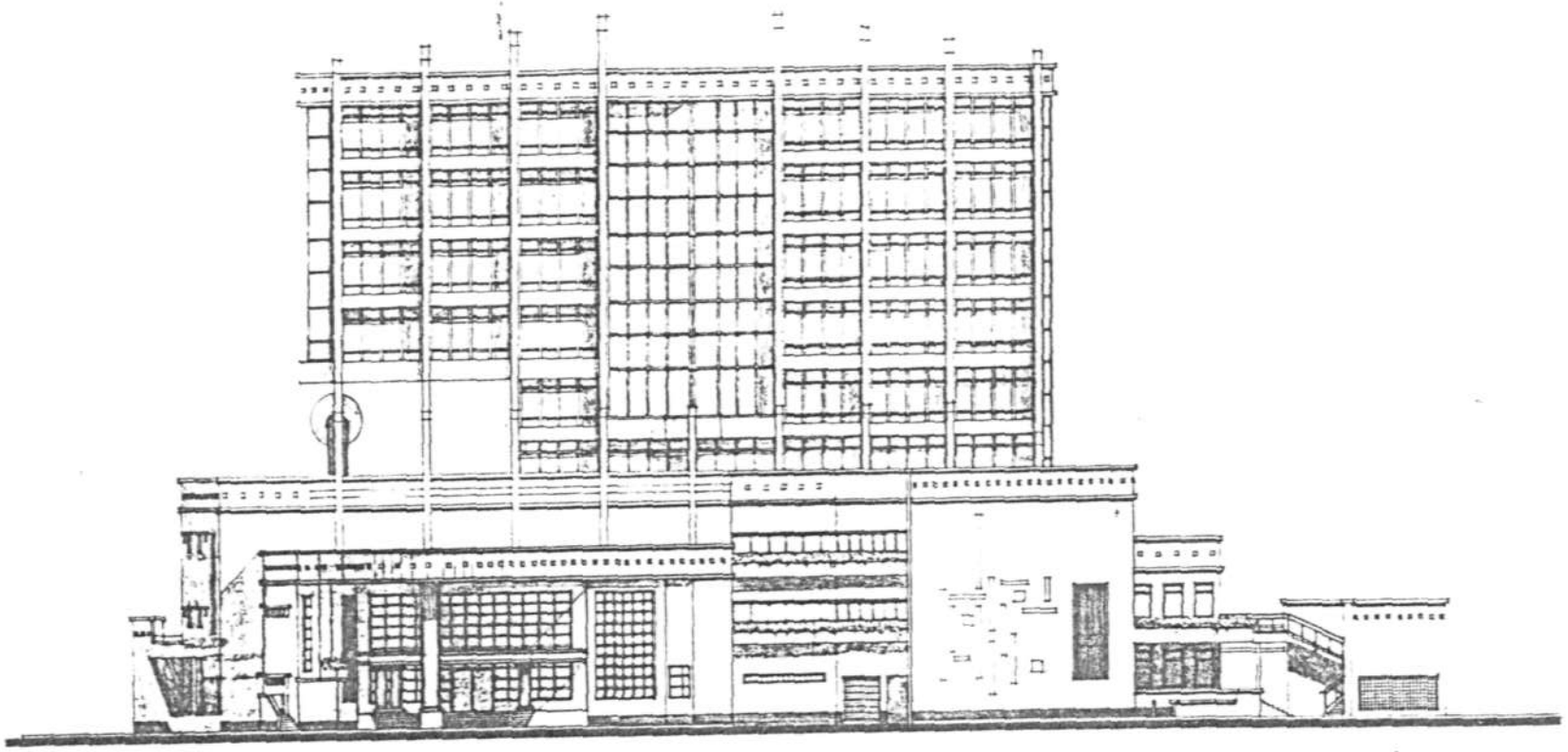


SECTION A-A

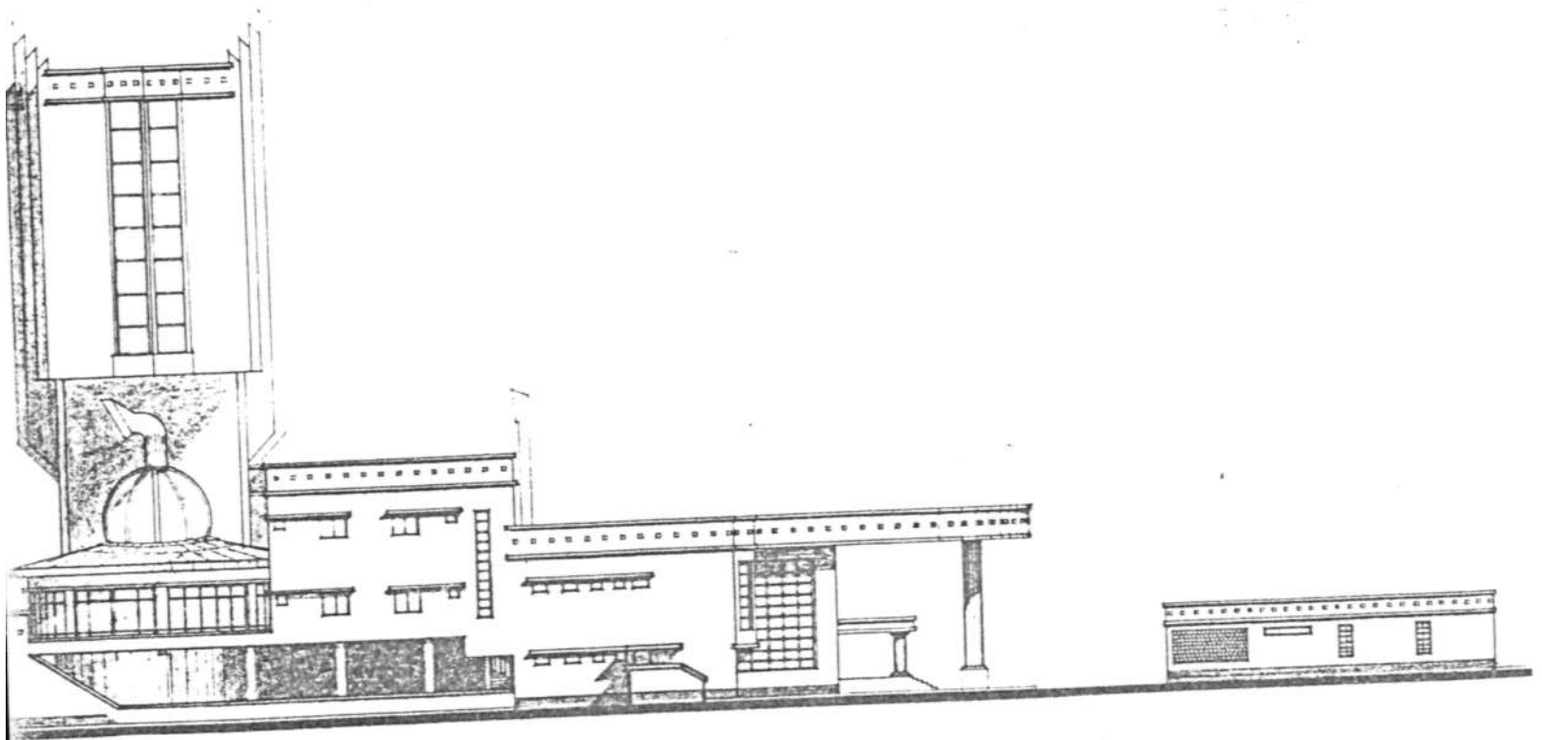
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SECTION B : B 1:200

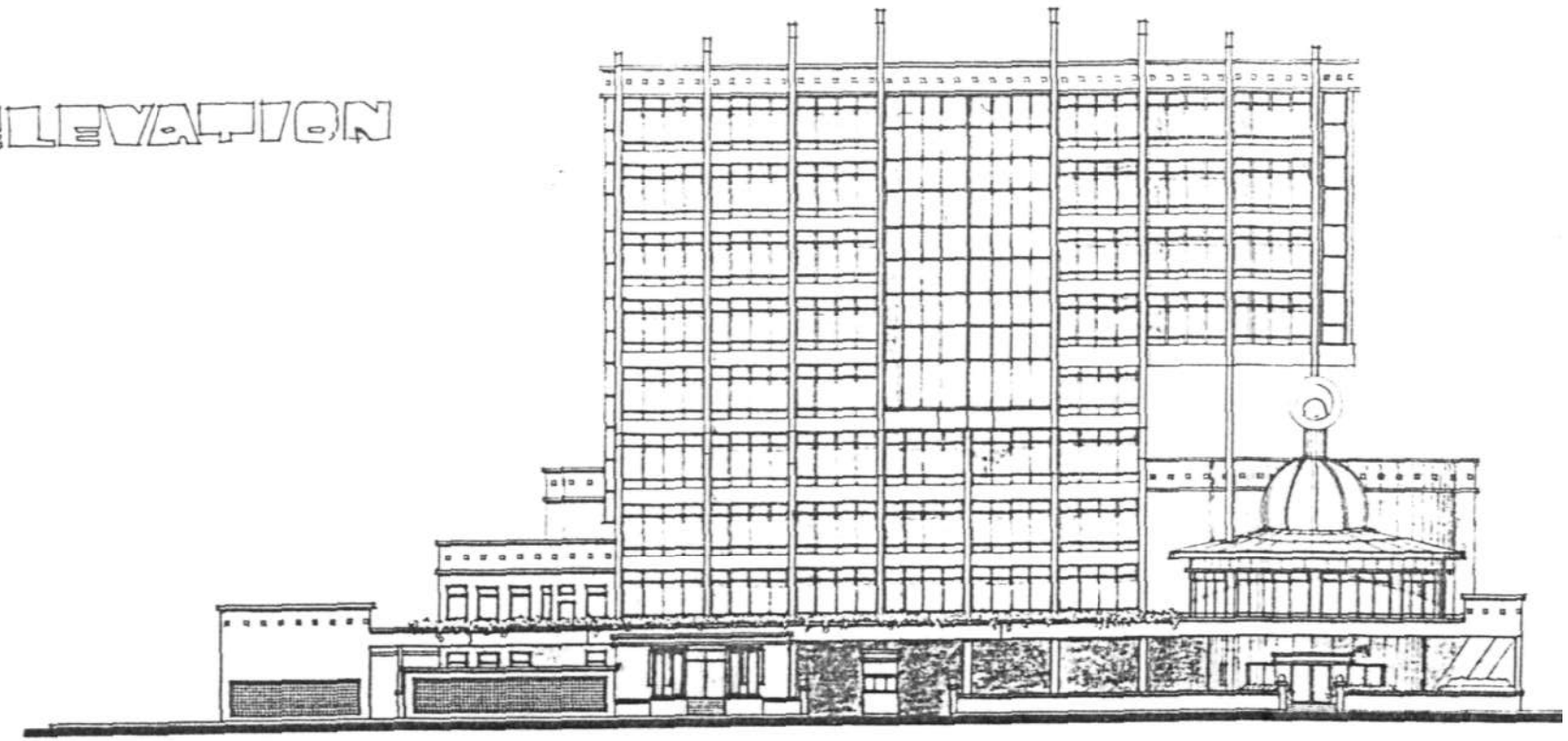


NORTH ELEVATION



EAST ELEVATION

SOUTH ELEVATION



WEST ELEVATION