DESIGN PROPOSAL

FOR

GULF BANK NIGERIA PLC,
WITH EMPHASIS ON EFECTIVE SECURITY SYSTEMS IN BANKS

M.TECH. THESIS (ARCHITECTURE)

BY

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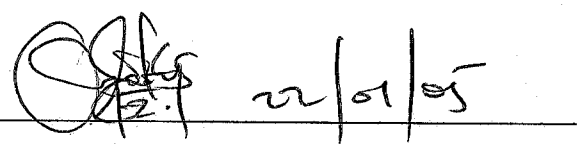
SEPTEMBER, 2004.

DECLARATION

I, OYAKHILOME, DAVID E. of the department of architecture, School of Environmental Technology, of the Federal University of Technology, Minna, hereby declare that this project thesis titled "GULF BANK NIGERIA PLC" with emphasis on "EFFECTIVE SECURITY SYSTEM" is a product of my research work under the supervision of ARC R.E OLAGUNJU.



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DEDICATION

This project is dedicated to GOD, who has stood by me all the way from the beginning of life to this very point in time and even more, forever, and to my parents for all the love and support they have shown to me even in the cause of this project, making me understand that education is not an asset to be joked with, and also for the financial support through my school years.

CERTIFICATION

This is to certify that this research project is an original work undertaken by Oyakhilome David Eromosele (M.TECH/SET/1048/2003/2004) under the supervision of Architect R.E Olagunju and has been prepared in accordance with regulations governing the preparation of projects For the award of Masters of Technology Degree in the Department of Architecture, Federal University of Technology, Minna. The project has approved by:

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Most importantly, I wish to express my deepest thanks to the members of my family. My most loved parent Engr. and Mrs. David E. Oyakhilome, to my sisters, brother (Itohan, Ehis, Eje) and cousins (Grace, Afi, Obehi) wishing them all the best in their daily endeavors in life. To my dearest sister and her husband (Mr. and Mrs. Uche) and to their new born baby. I say welcome to our world.

A special love goes to my dear friends who I am indebted to, and lastly but not the least Snuggle Bunny who has always been there at all times of need.

ABSTRACT

This thesis is titled "GULF BANK OF NIGERIA PLC" with Emphasis on EFFECTIVE SECURITY SYSTEMS IN BANKS.

Security measures at banks can play a critical, contributory role in preventing attacks on valuables, bankers, customers in the premises. These measures are of paramount importance when considering vulnerabilities and causation in civil litigation and banks must meet certain standards in order to ensure a safe and secure banking environment for their customers.

The growth of "GULF BANK OF NIGERIA PLC" as to other banks in this country is an integral part of the countries economic growth. Business transactions, among people flow properly because of the opportunity created in the Banking services such as loans, savings, deposits and foreign exchange. All these are a few that are mentioned for the bank need to be housed by an Architectural master piece that will befit the dignity, security, comfortability, adaptability and efficiency of banking services. The Gulf bank interior should be designed in such a way to provide adequate security with the use of latest modern technology. The interior should bear in mind effective space analysis, a functional architectural design which will aid the bankers to have a fast and quick response to customers, with the effective use of security systems and good material for finishes.

The main theme of this design is the allocation of functional spaces, with effective security systems to enhance banking activities and services. It is in this process of emphasizing this architectural imagery that the general appraisal of the bank complex is being projected.

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DEFINATION OF TERMS

SECURITY - precautions to maintain safety: precautions taken to keep somebody or something safe from crime, attack, or danger

BANKS - business offering financial services: a business that keeps money for individuals or companies, exchanges currencies, makes loans, and offers other financial services or organizations that carry out the business of banking, taking deposits and then using those deposits to make loans.

BANKING - work of banks: the work carried out by banks or bankers or the transactions carried on by any individual or firm engaged in providing financial services to consumers, businesses, or government enterprises

ORGANIZATIONS - group: a group of people identified by shared interests or purpose, for example a business

TRANSACTIONS - a business deal that is being negotiated or has been settled or Business act of negotiating: the act of negotiating something or carrying out a business deal

MERCHANTS - used for or relating to commerce, wholesalers, or retailers: somebody who buys and sells goods, especially as a wholesaler or on the international market

ACQUISITIONS - acquiring: act of acquiring something

SOPHISTICATED - advanced: complex, advanced, and very up-to-date

CONVIVIAL - pleasant: enjoyable because of its friendliness

BONDS - FINANCE certificate promising repayment of debt: a certificate issued by the government or a company promising to pay back borrowed money at a fixed rate of interest on a specified date

PASSIVE - FINANCE not producing interest: used to describe a form of investment that does not produce interest

ACTIVE - FINANCE involving frequent trading: used to describe a form of portfolio management in which the manager adds value to the portfolio by frequent trades

PROPRIETARY - used with exclusive legal right: used, manufactured, or sold by a person or company with an exclusive property right, for example a patent or trademark

SOPHISTICATED - knowledgeable and cultured: knowledgeable about the ways of the world, self-confident, and not easily deceived

VULNERABILITIES - without adequate protection: open to emotional or physical danger or harm

AUTOMATED - make something automatic: to convert a process or workplace to automation

DOSSIER - set of papers containing information: a collection of documents relating to a particular person or topic

PROGNOSIS - prediction: a prediction about how a given situation will develop

DISCOURSE - serious conversation: serious discussion about something between people or groups

LITIGATION - existence of lawsuit: the act or process of bringing or contesting a lawsuit

CHAPTER ONE

1.0 INTRODUCTION

1.1 PREAMBLE

Banks, business offering financial services: a business that keeps money for individuals or companies, exchanges currencies, makes loans, and offers other financial services or organizations that carry out the business of banking, taking deposits and then using those deposits to make loans.

Banking, work of banks: the work carried out by banks or bankers or the transactions carried on by any individual or firm engaged in providing financial services to consumers, businesses, or government enterprises.

Investment Banking, branch of finance concerned with the underwriting, distribution, and maintenance of markets in securities issued by business firms and public agencies. Investment bankers are primarily merchants of securities; they perform three basic economic functions:

(1) Providing capital for corporations and local governments by underwriting and distributing new issues of securities;

(2) Maintaining markets in securities by trading and executing orders in secondary market transactions;

(3) Providing advice on the issue, purchase, and sale of securities, and on other financial matters such as mergers and acquisitions. In contrast to commercial banks, whose chief functions are to accept deposits and grant short-term loans to businesses and consumers, investment bankers engage primarily in long-term financing.

The business of banking consists of borrowing and lending. As in other businesses, operations must be based on capital, but banks employ comparatively little of their own capital in relation to the total volume of their transactions. The purpose of capital and reserve accounts is primarily to provide an ultimate cover against losses on loans and investments.

The banking industry is one of the fastest growing sectors in Nigerian financial institution. It plays a vital role in the Nigerian economy. There is now a need for proper protection and improvement in bank designs to further improve the security status of the banking industry since of late they stand threatened by armed robbers who now see the industry as the fastest means of getting rich and also improvement of banking services is required to enhance their output and solidify the economy of the nation at large. However, banking services has really changed over time with the use of computers, ATMs and other sophisticated means / systems to ease transactions.

The growth of a bank in a nation is an integral part of the countries economic growth. Business transactions, among people flow properly because of the opportunity created in the Banking services such as loans, savings, deposits and foreign exchange. All these are a few that are mentioned for the bank need to be housed by an Architectural master piece that will befit the dignity, security, comfortability, adaptability and efficiency of banking services. The bank interior should be designed in such a way to provide adequate security with the use of latest modern technology. The interior should be suitable and functional to customers and bank workers with the use of space analysis, a

quick response to customers, with the effective use of security systems and good material for finishes. The exterior of the bank should be a befitting environment with landscape, safety and should stand as a role model to other financial institutions.

1.2 MOTIVATION

The movement of the Nigerian Capital from Lagos State to Abuja has influenced the movement of headquarters of all governmental parastatals and many private institutions to the seat of Government. This movement has also brought about the relocation of people and business from Lagos and also all parts of the country which has now rapidly increased the business rate and economic activities thereby influencing commercial banking services in Abuja. Gulf Bank Nigeria, Plc amongst other banking institutions should embrace the challenge that the new territory poses for it with its rapidly growing business ventures which can not be managed by just a branch office in the Territory by moving its headquarters.

Gulf Bank Nigeria, Plc is located at Ahaoda close, off Emeka Anyaoka street, Area 11, Abuja and also at the Federal Secretariat, Amadu Bello Way, Abuja and both are only branch offices which are not equipped with all the necessary facilities for the alarming increase of customers in Abuja and also having a level of security which is not strong enough for the Bank.

1.3 AIMS AND OBJECTIVES

- **AIMS OF STUDY**

(1) Reducing the built-up tension and stress gotten from the banking environment.

(2) To create an ideal environment for the banker and the customers alike.

(3) To give an architectural solution towards effective security system in the banking system.

(4) To give an architectural solution towards space analysis and functional design space allocation.

- **OBJECTIVES OF STUDY**

(1) Creating a functional design that will monitor customers' safety within the bank.

(2) Creating a design that will be security conscious in the allocation of spaces in the bank.

(3) Creating an architectural design that will provide maximum security to the strong room.

(4) Creating a well secured banking environment using special doors and magnetic installations.

1.4 RESEARCH METHODOLOGY

The research technique will be mainly based on both the physical observation which will entail making measurements on the field with or without operational use of the equipments. This will therefore involve:

- **Visitations:** Visits of some existing banks, in order to find out the state at which they are, bearing in mind the merits and demerits encountered and also noting the adequacies and inadequacies in the banks by oral interviews with the bankers and officials to know what exactly is regarded or needed in the banking sector that will help boost the security level of the sector.

- **Literature Review**: This will involve the use of data gotten from journals publications, textbooks, newspapers and the internet. These will bring about an easier understanding on the organizational pattern of the banking sector and also a well planned security layout in the system.

1.5 SCOPE AND LIMITATION OF STUDY

- **SCOPE OF STUDY**

The thesis shall focus on relevant areas concerned, so as to bring about a more productive use of ones architectural ideas which will in turn bring about an improved and more effective security system in the banking sector and also bearing in mind the convivial atmosphere the bank should depict. The

also bearing in mind the convivial atmosphere the bank should depict. The project will also integrate all functional components to achieve proper planning of the bank.

The scope will cover the Headquarter of the commercial bank with a branch office incorporated and there will be provisions of adequate facilities to accommodate the technological advancement of the banking industry in the country. The Administrative area which will house the managerial and administrative body comprising of bank offices, banking hall, public hall, boardroom, conveniences, library, Health Facilities (health centre, pharmacy), restaurant and many more.

- **LIMITATION OF STUDY**

The Limitations encountered in the research include physical harassment by bank securities when trying to obtain information, non-availability of research data due to the high risk involved in exposing the bank security systems and the inability to have a bank tour due to safety measures taken by the some of the banks visited. These limitations brought about a more strenuous approach to the bank design which made the project cost demanding.

These Limitations were countered by the visiting of more banks which some of the banks provided some of the required informations needed for the design and also through the help of the internet more necessary informations were gotten concerning the project.

CHAPTER TWO

2.1 LITERATURE REVIEW (BANKS)

Banks, organizations that carry out the business of banking, taking deposits and then using those deposits to make loans. An institution that deals in money and its substitutes and provides other financial services. Banks accept deposits and make loans and derive a profit from the difference in the interest rates paid and charged, respectively. Some banks also have the power to create money.

In essence, a bank aims to make a profit by paying depositors a lower rate of interest than the rate the bank charges borrowers. In accounting terms, deposits are considered liabilities (because they have to be repaid), and loans are considered assets, though some become bad debts. Banks in most countries are supervised by a central bank.

Banking, transactions carried on by any individual or firm engaged in providing financial services to consumers, businesses, or government enterprises. In the broadest sense, banking consists of safeguarding and transfer of funds, lending or facilitating loans, guaranteeing creditworthiness, and exchange of money. These services are provided by such institutions as commercial banks, savings banks, trust companies, finance companies, and merchant banks or other institutions engaged in investment banking. A narrower and more common definition of banking is the acceptance, transfer, and, most important, creation of deposits. This includes such depository institutions as commercial banks, savings and loan associations, building societies, and mutual savings banks. All countries subject banking to

government regulation and supervision, normally implemented by central banking authorities.

The principal types of banking in the modern industrial world are commercial banking and central banking. A commercial banker is a dealer in money and in substitutes for money, such as checks or bills of exchange. The banker also provides a variety of other financial services. The basis of the banking business is borrowing from individuals, firms, and occasionally governments—i.e., receiving "deposits" from them. With these resources and also with the bank's own capital, the banker makes loans or extends credit and also invests in securities. The banker makes profit by borrowing at one rate of interest and lending at a higher rate and by charging commissions for services rendered.

A bank must always have cash balances on hand in order to pay its depositors upon demand or when the amounts credited to them become due. It must also keep a proportion of its assets in forms that can readily be converted into cash. Only in this way can confidence in the banking system be maintained. Provided it honours its promises (e.g., to provide cash in exchange for deposit balances), a bank can create credit for use by its customers by issuing additional notes or by making new loans, which in their turn become new deposits. The amount of credit it extends may considerably exceed the sums available to it in cash. But a bank is able to do this only as long as the public believes the bank can and will honour its obligations, which are then accepted at face value and circulate as money. So long as they remain outstanding, these promises or obligations constitute claims against

that bank and can be transferred by means of checks or other negotiable instruments from one party to another. These are the essentials of deposit banking as practiced throughout the world today, with the partial exception of socialist-type institutions.

Another type of banking is carried on by central banks, bankers to governments and "lenders of last resort" to commercial banks and other financial institutions. They are often responsible for formulating and implementing monetary and credit policies, usually in cooperation with the government. In some cases—e.g., the U.S. Federal Reserve System—they have been established specifically to lead or regulate the banking system; in other cases—e.g., the Bank of England—they have come to perform these functions through a process of evolution.

Some institutions often called banks, such as finance companies, savings banks, investment banks, trust companies, and home-loan banks, do not perform the banking functions described above and are best classified as financial intermediaries. Their economic function is that of channelling savings from private individuals into the hands of those who will use them, in the form of loans for building purposes or for the purchase of capital assets. These financial intermediaries cannot, however, create money (i.e., credit) as the commercial banks do; they can lend no more than savers place with them.

This article describes the development of banking functions and institutions, the basic principles of modern banking practice, and the structure of a number of important national banking systems. Certain concepts not

addressed here that are nonetheless fundamental to banking are treated in the articles accounting and money.

2.2 ORIGINS OF MONEY AND BANKING

The use of money evolved out of deeply rooted customs as is shown by the study of primitive forms of money, e.g. cattle, cowrie shells, whales teeth and manillas (ornamental jewellery). The clumsiness of barter was merely one factor in the development of money, and not the most important one. Banking was invented before coins and reached a high level of sophistication in the Egypt of the Ptolomies. Military conquests, such as those of Alexander the Great, spread the use of coins which became the most convenient means of payment.

Many banking functions such as safeguarding funds, lending, guaranteeing loans, and exchanging money can be traced to the early days of recorded history. In medieval times the Knights Templar, an international military and religious order, not only stored valuables and granted loans but also arranged for the transfer of funds from one country to another. The great banking families of the Renaissance, such as the Medici in Florence, were involved in lending money and financing international trade. The first modern banks were established in the 17th century, notably the Riksbank in Sweden (1656) and the Bank of England (1694).

In the 17th century, English goldsmiths provided the model for contemporary banking. Banking seems to be the modification of Goldsmith store Lyoids Bank on Lumbard Street, London. In and around this street, men have

worked out by trial and error since this era when the problem came up with exchange, including people all over the world. The rapid growth of financial requirement in London in 1669 gave a working knowledge of this art, issuing a receipt for gold deposited to bring money together and borrow at high rates up to 20%.

Gold was stored with these artisans for safe keeping, and was expected to be returned to the owners on demand. The goldsmiths soon discovered that the amount of gold actually removed by owners was only a fraction of the total stored. Thus, they could temporarily lend out some of this gold to others, obtaining a promissory note for principal and interest. In time, paper certificates redeemable in gold coin were circulated instead of gold. Consequently, the total value of these banknotes in circulation exceeded the value of the gold that was exchangeable for the notes.

Two characteristics of this fractional-reserve banking remain the basis for present-day operations. First, the banking system's monetary liabilities exceed its reserves. This feature was responsible in part for Western industrialization, and it still remains important for economic expansion, though a risk of creating too much money is a rise in inflation. Second, liabilities of the banks (deposits and borrowed money) are more liquid—that is, more readily convertible to cash—than are the assets (loans and investments) included on the banks' balance sheets. This characteristic enables consumers, businesses, and governments to finance activities that otherwise would be deferred or cancelled; at the same time, it opens banks to the risk of a liquidity crisis. When depositors en masse request payment,

the inability of a bank to respond because it lacks sufficient liquidity means that it must either renege on its promises to pay or pay until it fails. A key role of the central bank in most countries is to regulate the commercial banking sector to minimize the likelihood of a run on a bank, which could undermine the entire banking system. The central bank will often stand prepared to act as lender of last resort to the banking system to provide the necessary liquidity in the event of a widespread withdrawal of funds. This does not equal a permanent safety net to save any bank from collapse, as was demonstrated by the Bank of England's refusal to rescue the failed investment bank Barings in 1995.

2.2.1 WHAT IS MONEY?

Money is anything that is widely used for making payments and accounting for debts and credits. Money is also any medium of exchange that is widely accepted in payment for goods and services and in settlement of debts. Money also serves as a standard of value for measuring the relative economic worth of different goods and services. The number of units of money required to buy a commodity is the price of the commodity. The monetary unit chosen as a measure of value need not, however, be used widely, or even at all, as a medium of exchange. During the colonial period in North America, for example, Spanish currency was an important medium of exchange, while the British pound sterling served as the standard of value.

All sorts of things have been used as money at different times in different places. These include rice (China), dogs' teeth (Papua New Guinea), small

tools (China), quartz pebbles (Ghana), gambling counters (Hong Kong), cowrie shells (India), metal discs (Tibet), and limestone discs (Yap Island). Amber, beads, drums, eggs, feathers, gongs, hoes, ivory, jade, kettles, leather, mats, nails, oxen, pigs, quartz, rice, salt, thimbles, umiacs, vodka, wampum, yarns, and zappozats (decorated axes).

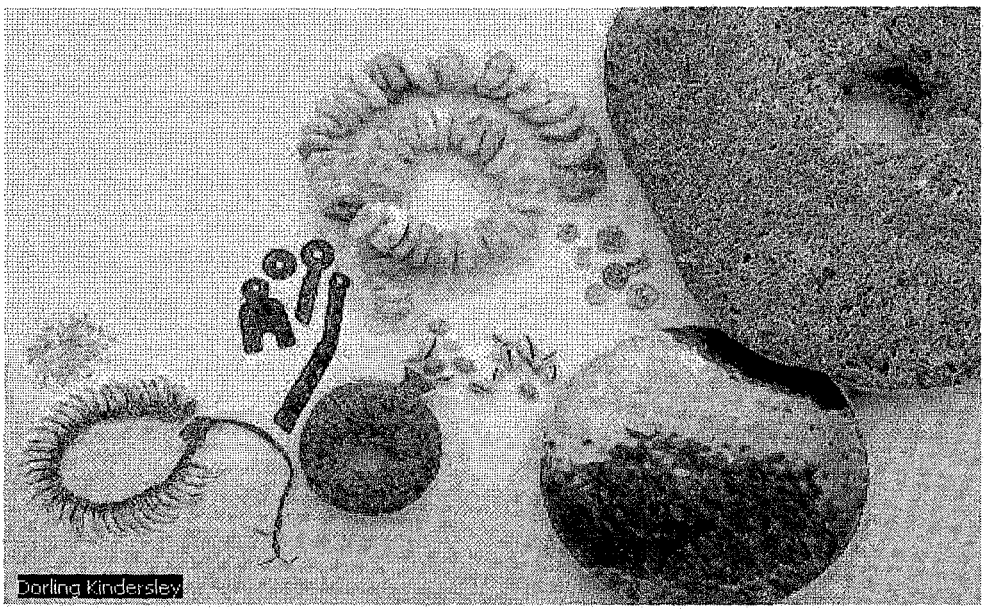

Fig.1 - The various types of money

It is almost impossible to define money in terms of its physical form or properties since these are so diverse. Therefore any definition must be based on its functions.

2.2.2 FUNCTIONS OF MONEY

Specific functions (mostly micro-economic)

- Unit of account (abstract)
- Common measure of value (abstract)
- Medium of exchange (concrete)

- Means of payment (concrete)
- Standard for deferred payments (abstract)
- Store of value (concrete)

General functions (mostly macro-economic and abstract)

- Liquid asset
- Framework of the market allocative system (prices)
- A causative factor in the economy
- Controller of the economy

Not everything used as money as all the functions listed above. Furthermore the functions of any particular form of money may change over time.

"What is now the prime or main function in a particular community or country may not have been the first or original function in time, while what may well have been a secondary or derived function in one place may have been in some other region the original which gave rise to a related secondary function... The logical listing of functions in the table therefore implies no priority in either time or importance, for those which may be both first and foremost reflect only their particular time and place." Glyn Davies (The History of Money)

2.2.3 CAUSES OF THE DEVELOPMENT OF MONEY

"Money originated very largely from non-economic causes: from tribute as well as from trade, from blood-money and bride-money as well as from

barter, from ceremonial and religious rites as well as from commerce, from ostentatious ornamentation as well as from acting as the common drudge between economic men." Glyn Davies (The History of Money)

One of the most important improvements over the simplest forms of early barter was the tendency to select one or two items in preference to others so that the preferred items became partly accepted because of their qualities in acting as media of exchange. Commodities were chosen as preferred barter items for a number of reasons - some because they were conveniently and easily stored, some because they had high value densities and were easily portable and some because they were durable. These commodities, being widely desired, would be easy to exchange for others and therefore they came to be accepted as money.

To the extent that the disadvantages of barter provided an impetus for the development of money that impetus was purely economic but archaeological, literary and linguistic evidence of the ancient world and the tangible evidence of actual types of primitive money from many countries demonstrate that barter was not the main factor in the origins and earliest development of money.

Many societies had laws requiring compensation in some form for crimes of violence, instead of the Old Testament approach of "an eye for an eye". The author notes that the word to *"pay"* is derived from the Latin *"pacare"* meaning originally to pacify, appease, or make peace with - through the appropriate unit of value customarily acceptable to both sides. A similarly widespread custom was payment for brides in order to compensate the head

of the family for the loss of a daughter's services. Rulers have since very ancient times imposed taxes on or exacted tribute from their subjects. Religious obligations might also entail payment of tribute or sacrifices of some kind. Thus in many societies there was a requirement for a means of payment for blood-money, bride-money, tax or tribute and this gave a great impetus to the spread of money.

Objects originally accepted for one purpose were often found to be useful for other non-economic purposes and, because of their growing acceptability began to be used for general trading also, supplementing or replacing barter. Thus the use of money evolved out of deeply rooted customs; the clumsiness of barter provided an economic impulse but that was not the primary factor. It evolved independently in different parts of the world. About the only civilization that functioned without money was that of the Incas.

2.3 THE INVENTION OF BANKING

Banking originated in Ancient Mesopotamia where the royal palaces and temples provided secure places for the safe-keeping of grain and other commodities. Receipts came to be used for transfers not only to the original depositors but also to third parties. Eventually private houses in Mesopotamia also got involved in these banking operations and laws regulating them were included in the code of Hammurabi.

In Egypt too the centralization of harvests in state warehouses also led to the development of a system of banking. Written orders for the withdrawal of separate lots of grain by owners whose crops had been deposited there for

safety and convenience, or which had been compulsorily deposited to the credit of the king, soon became used as a more general method of payment of debts to other persons including tax gatherers, priests and traders. Even after the introduction of coinage these Egyptian grain banks served to reduce the need for precious metals which tended to be reserved for foreign purchases, particularly in connection with military activities.

2.4 THE DEVELOPMENT OF BANKING SYSTEMS

Banking is of ancient origin, though little is known about it prior to the 13th century. Many of the early "banks" dealt primarily in coin and bullion, much of their business being money changing and the supplying of foreign and domestic coin of the correct weight and fineness. Another important early group of banking institutions was the merchant bankers, who dealt both in goods and in bills of exchange, providing for the remittance of money and payment of accounts at a distance but without shipping actual coin. Their business arose from the fact that many of these merchants traded internationally and held assets at different points along trade routes. For a certain consideration, a merchant stood prepared to accept instructions to pay money to a named party through one of his agents elsewhere; the amount of the bill of exchange would be debited by his agent to the account of the merchant banker, who would also hope to make an additional profit from exchanging one currency against another. Because there was a possibility of loss, any profit or gain was not subject to the medieval ban on usury. There were, moreover, techniques for concealing a loan by making

foreign exchange available at a distance but deferring payment for it so that the interest charge could be camouflaged as a fluctuation in the exchange rate.

Another form of early banking activity was the acceptance of deposits. These might derive from the deposit of money or valuables for safekeeping or for purposes of transfer to another party; or, more straightforwardly, they might represent the deposit of money in a current account. A balance in a current account could also represent the proceeds of a loan that had been granted by the banker, perhaps based on an oral agreement between the parties (recorded in the banker's journal) whereby the customer would be allowed to overdraw his account.

English bankers in particular had by the 17th century begun to develop a deposit banking business, and the techniques they evolved were to prove influential elsewhere. The London goldsmiths kept money and valuables in safe custody for their customers. In addition, they dealt in bullion and foreign exchange, acquiring and sorting coin for profit. As a means of attracting coin for sorting, they were prepared to pay a rate of interest, and it was largely in this way that they began to supplant as deposit bankers their great rivals, the "money scriveners." The latter were notaries who had come to specialize in bringing together borrowers and lenders; they also accepted deposits.

It was found that when money was deposited by a number of people with a goldsmith or a scrivener a fund of deposits came to be maintained at a fairly steady level; over a period of time, deposits and withdrawals tended to balance. In any event, customers preferred to leave their surplus money with

the goldsmith, keeping only enough for their everyday needs. The result was a fund of idle cash that could be lent out at interest to other parties.

About the same time, a practice grew up whereby a customer could arrange for the transfer of part of his credit balance to another party by addressing an order to the banker. This was the origin of the modern check. It was only a short step from making a loan in specie or coin to allowing customers to borrow by check: the amount borrowed would be debited to a loan account and credited to a current account against which checks could be drawn; or the customer would be allowed to overdraw his account up to a specified limit. In the first case, interest was charged on the full amount of the debit, and in the second the customer paid interest only on the amount actually borrowed. A check was a claim against the bank, which had a corresponding claim against its customer.

Another way in which a bank could create claims against itself was by issuing bank notes. The amount actually issued depended on the banker's judgment of the possible demand for specie, and this depended in large part on public confidence in the bank itself. In London, goldsmith bankers were probably developing the use of the bank note about the same time as that of the check. (The first bank notes issued in Europe were by the Bank of Stockholm in 1661.) Some commercial banks are still permitted to issue their own notes, but in most countries this has become a prerogative of the central bank.

In Britain the check soon proved to be such a convenient means of payment that the public began to use checks for the larger part of their monetary

transactions, reserving coin (and, later, notes) for small payments. As a result, banks began to grant their borrowers the right to draw checks much in excess of the amounts of cash actually held, in this way "creating money"—i.e., claims that were generally accepted as means of payment. Such money came to be known as "bank money" or "credit." Excluding bank notes, this money consisted of no more than figures in bank ledgers; it was acceptable because of the public's confidence in the ability of the bank to honour its liabilities when called upon to do so.

When a check is drawn and passes into the hands of another party in payment for goods or services, it is usually paid into another bank account. Assuming that the overdraft technique is employed, if the check has been drawn by a borrower, the mere act of drawing and passing the check will create a loan as soon as the check is paid by the borrower's banker. Since every loan so made tends to return to the banking system as a deposit, deposits will tend to increase for the system as a whole to about the same extent as loans. On the other hand, if the money lent has been debited to a loan account and the amount of the loan has been credited to the customer's current account, a deposit will have been created immediately.

One of the most important factors in the development of banking in England was the early legal recognition of the negotiability of credit instruments or bills of exchange. The check was expressly defined as a bill of exchange. In continental Europe, on the other hand, limitations on the negotiability of an order of payment prevented the extension of deposit banking based on the check. Continental countries developed their own system, known as giro

payments, whereby transfers were effected on the basis of written instructions to debit the account of the payer and to credit that of the payee.

2.4.1 BANKING IN DEVELOPING COUNTRIES

The type of national economic system that characterizes developing countries plays a crucial role in determining the nature of the banking system. In capitalist countries a system of private enterprise in banking prevails; in a number of socialist countries (for example, Egypt and Sudan) all banks have been nationalized. Other countries have patterned themselves after the liberal socialism of Europe; in Peru and Kenya, for instance, government-owned and privately owned banks coexist. In many countries the banking system developed under colonialism, with banks owned by institutions in the parent country. In some, such as Zambia and Cameroon, this heritage continued, although modified, after decolonization. In other nations, such as Nigeria and Saudi Arabia, the rise of nationalism led to mandates for majority ownership by the indigenous population.

Banks in developing countries are similar to their counterparts in developed nations. Commercial banks accept and transfer deposits and are active lenders, especially for short-term purposes. Other financial intermediaries, particularly government-owned development banks, arrange long-term loans. Banks are often used to finance government expenditures. The banking system may also play a major role in financing exports.

In the poorer countries an extensive but primitive non-monetary sector usually continues to exist. It is the special task of the banking community to

encourage the use of money and instil banking habits among the population.

2.5 BANKING DEVELOPMENT IN NIGERIA

Banking operation can be traced to the AFRICAN BANKING OPERATION, established in 1892. The bank of British West Africa now First Bank of Nigeria took over the banking activities of the Elder Dempster. It had monopoly of business in banking industry until the establishment of the commercial bank in 1914. In 1925, the bank changed its name to BARCLAY BANK, which later turned to UNION BANK in 1979.

However, indigenous participation in the banking industry started in 1929 with the establishment of industrial and commercial banks by Nigerian and Ghanaian entrepreneurs. The bank failed in 1930 due to inadequate capital, poor management, hostile and unfair competition from the alien banks.

Moreover, another group of Nigerians among who were Dr. A. Maja, Chief T. A. Doherty and Late H. A. Subair established the National Bank of Nigeria in 1931. The bank became successful for a while compared to the predecessor but fail in 1936. This National Banks title stand encouraged some establishment of Agbomagbe Bank. It survived a while and folded up in 1969. Then, the effort by Nigerians Industrial Development (UNDC) to reinstate the banks brought about Wema Bank Limited. In 1946, Dr Nnamdi Azikiwe established Tinubu Bank, which later changed to African Continental Bank in 1947. Also, the British and French Bank established changed to united Bank for Africa.

However, the instability of Banks during this period brought a need for

Legislative Control Banking in Nigeria. The first banking legislation was enacted in 1952 and the banking ordinance of 1952 was amended in 1979 remain the current principal banking law and legislation in Nigeria.

According to S. B. Ajayi (1989), the growth of banking industry in Nigeria has risen to about 107 licensed banks operating in Nigeria.

Nigerians Federal Government's interest in banking in the early 1950s was evident in 1952 with the adoption of a private member motion in the House of Representative which eventually led to the establishment of Central Bank of Nigeria (C.B.N) in 1959.

2.5.1 TYPES OF BANKS IN NIGERIA

1. Central Bank of Nigeria
2. Development Banks
3. Saving Type Institution
4. Commercial Banks
5. Other Banks

2.5.2 CENTRAL BANK OF NIGERIA

The principles of central banking grew up in response to the recurrent British financial crises of the 19th century and were later adopted in other countries. Modern market economies are subject to frequent fluctuations in output and employment. Although the causes of these fluctuations are various, there is general agreement that the ability of banks to create new money may exacerbate them. Although an individual bank may be cautious enough in

maintaining its own liquidity position, the expansion or contraction of the money supply to which it contributes may be excessive. This raises the need for a disinterested outside authority able to view economic and financial developments objectively and to exert some measure of control over the activities of the banks. A central bank should also be capable of acting to offset forces originating outside the economy, although this is much more difficult.

The first concern of a central bank is the maintenance of a soundly based commercial banking structure. While this concern has grown to comprehend the operations of all financial institutions, including the several groups of non-bank financial intermediaries, the commercial banks remain the core of the banking system. A central bank must also cooperate closely with the national government. Indeed, most governments and central banks have become intimately associated in the formulation of policy.

The growth and development of international trade along the west coast played a major role in exceeding the medium of exchange before trade by barter in the 19th century. The native currency system, which relied on items such as cowries, manilla, brass, copper rod accommodates foreign currencies, dollar and British silver coins. There was a fixed parity between the local currency and the British pound, while the currency had a 100% sterling coverage. The reserves where invested in Britain and this facilitated Nigeria's international payments.

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last resort, central banks often insist that banks abide by certain conditions: for example, requiring that banks deposit a certain proportion of their deposits with the central bank.

(5) They issue the currency, with responsibility for keeping it at any level agreed with government, through intervention in the currency markets and/or adjustment of interest rates.

Their operation can be reduced to their macroeconomic function and their microeconomic function. The macroeconomic function is to preserve the value of the currency, that is, maintain price stability. The microeconomic function is to maintain stability in the banking system. The maintenance of price stability has almost always been achieved with the same instrument: the central bank's discount rate. When the gold standard was used, the value of central bank notes was expressed in terms of their metal (usually gold) content, which the central banks attempted to maintain at stated levels over time.

The gradual replacement of the gold standard with pure fiat standards in the twentieth century recast the objective of central bank policy as maintaining price stability. Comparisons between the gold standard, classical gold standard theories, and subsequent monetary regimes showed that while none fully stabilized prices, the gold standard outperformed the others in this respect.

Central banks are also needed because of the unique nature of the banking business. Banks hold deposits that are redeemable for money on a first-come, first-serve basis. In a fractional reserve banking system there can

productive investment and promoting economic development. In addition the Central Bank and collaboration with World Bank initiated and executed various agricultural projects, which include construction of dams, storage facilities, livestock breeding and establishment of plantation.

2.5.3 CENTRAL BANK OPERATIONS

Different central banks have different powers and responsibilities, but in general, central banks operate in some or all of the following five main ways.

(1) They are the government's banker. Government revenues are deposited with, and government expenditure is paid via, the central bank, which also holds the government's reserves of gold and foreign exchange. When a government needs to borrow money, it may be the central bank that arranges it by, for example, organizing the issue of government bonds, known in the United Kingdom as gilt-edged securities or "gilts".

(2) They supervise the banking system, using legal powers and informal influence.

(3) They are the banker for the country's various private banks, taking deposits from and lending to them.

(4) They function as a lender of last resort, to provide loans to banks that find themselves in financial difficulty or without sufficient money to pay depositors who want to withdraw their deposits. This is not the same as acting as guarantor to all those who deposit money with a bank, as customers of the failed Bank of Credit and Commerce International (BCCI) discovered. To reduce the chance that they will be asked to act as lender of

never be a run on deposits, which could produce a collapse in the money stock. To prevent a run the bank assets should be marked to market. But it is impossible, because of the nature of the assets, to mark them to market. Thus central banks, the provider of the ultimate means of settlement, are essential for maintaining the stability of the financial system.

Throughout the history of central banking there has been tension between their function of maintaining the value of the currency and their function as bankers to the government. Central banks have almost invariably been established by legislative charter and have been designated as bankers to the government. Governments have a natural preference for cheap finance from their own bank, particularly when there is a threat such as war. The government has both the power and the incentive to force the central bank to give priority to their immediate needs. Another tension arises in functioning as the lender of last resort, which may necessitate seeking agreement or help from the government.

2.6 CENTRAL BANKS RELATIONSHIPS WITH COMMERCIAL BANKS

One source of economic instability is the supply of money. Even in relatively well-controlled banking systems, banks have sometimes expanded credit to such an extent that inflationary pressures developed. Such an overexpansion in bank lending would be followed almost inevitably by a period of undue caution in the making of loans. Frequently the turning point was associated with a financial crisis, and bank failures were not uncommon. Even today, failures occur from time to time. Such crises in the past often threatened the

existence of financial institutions that were essentially sound, and the authorities sometimes intervened to prevent complete collapse.

The willingness of a central bank to offer support to the commercial banks and other financial institutions in time of crisis was greatly encouraged by the gradual disappearance of weaker institutions and a general improvement in bank management. The dangers of excessive lending came to be more fully appreciated, and the banks also became more experienced in the evaluation of risks. In some cases, the central bank itself has gone out of its way to educate commercial banks in the canons of sound finance. In the United States the Federal Reserve System examines the books of the commercial banks and carries on a range of frankly educational activities. In other countries, such as India and Pakistan, central banks have also set up departments to maintain a regular scrutiny of commercial bank operations.

The most obvious danger to the banks is a sudden and overwhelming run on their cash resources in consequence of their liability to depositors to pay on demand. In the ordinary course of business, the demand for cash is fairly constant or subject to seasonal fluctuations that can be foreseen. It has become the responsibility of the central bank to protect banks that have been honestly and competently managed from the consequences of a sudden and unexpected demand for cash. In other words, the central bank came to act as the "lender of last resort." To do this effectively, it was necessary that the central bank be permitted either to buy the assets of commercial banks or to make advances against them. It was also necessary that the central bank have the power to issue money acceptable to bank depositors. But if a

central bank was to play this role with respect to commercial banks, it was only reasonable that it or some related authority be allowed to exercise a degree of control over the way in which the banks conducted their business. The evolution of those working relations among banks implies a community of outlook that in some countries is relatively recent. The whole concept of a central bank as responsible for the stability of the banking system presupposes mutual confidence and cooperation. For this reason, contact between the central bank and the commercial banks must be close and continuous. The latter must be encouraged to feel that the central bank will give careful consideration to their views on matters of common concern. Once the central bank has formulated its policy after a full consideration of the facts and of the views expressed, however, the commercial banks must be prepared to accept its leadership. Otherwise, the whole basis of central banking would be undermined.

2.7 COMMERCIAL BANKS

Bank with the power to make loans that, at least in part, eventually become new demand deposits. Because a commercial bank is required to hold only a fraction of its deposits as reserves, it can use some of the money on deposit to extend loans. When a borrower receives a loan, his checking account is credited with the amount of the loan; total demand deposits are thus increased until the loan is repaid. As a group, then, commercial banks are able to expand or contract the money supply by creating new demand deposits.

The name commercial bank was first used to indicate that the loans extended were short-term loans to businesses, though loans later were extended to consumers, governments, and other non-business institutions as well. In general, the assets of commercial banks tend to be more liquid and carry less risk than the assets held by other financial intermediaries. The modern commercial bank also offers a wide variety of additional services to its customers, including savings deposits, safe-deposit boxes, and trust services. The banks look upon their business as primarily attracting deposits by offering financial services and paying interest. The manager's chief concern is making profit. They are closely regulated by lay and supervisory just like every other bank. Nevertheless, banks profit or the loans charged on loans and investment are strictly subjected to government regulation because they are largely determined by economic forces operating in the credit markets.

2.7.1 FUNCTIONS OF COMMERCIAL BANKS

(a) **Advances:** These are money lent out to customers by a bank for example, loan, overdraft, deposits, current account, savings account, fixed account, credit card, bank draft.

(b) **Loans:** These are the most important outlet for bank finds. Short term business loans have formed the core for commercial bank lending activities. Banks officials spend a major proportion of their time soliciting, negotiating and servicing commercial loans. The amount of loan agreed upon between the customer and the bank officials is transferred from the bank's loan account to the customer's current

account. The loan is paid back at intervals by installmental deduction from the current account of the customer. Interest on outstanding loan is charged quarterly or half yearly. Other forms of loan granted by commercial banks include real estate loan to finance institution.

(c) **Overdraft:** This is a situation where the trusted customer of the bank is allowed to withdraw a sum of money over and above the total amount of credit in his account. Interest charged on overdraft differs with the method granting overdraft.

(d) **Accepting Deposit:** Commercial banks maintain demand on deposit account for their customers and convert deposited money into currency. They periodically transmit statement of account to customers showing all transactions. However, banks generally accept three types of deposits:

i. Current Account Deposit

ii. Fixed Deposit Account

iii. Savings Account

i. **Current Account Deposit**

These are deposits not intended to be saved. The holder of the account is allowed to withdraw money from his account. The bank deducts a commission from the accounts of the depositor depending on how frequently the account is operated. No interest is paid on a current account deposit.

ii. **Fixed Deposit Account**

The owner deposits a certain amount of money to be withdrawn

either partially or wholly in a specific time as agreed by the bank. The money deposited will attract an interest depending on the value of the money and the duration it shall spend in savings. However, such deposit of money is not withdrawable on demand until the period for which the deposit was kept expires. An account holder is not entitled to any interest as earlier agreed.

iii. **Savings Account Deposit**

This is a deposit kept in a bank for the purpose of earning interest. The interest rate varies from bank to bank. They do not operate through passbooks. Moreover, fixed deposit and savings holder do not have benefits of a chequebook but some banks have started issuing booklets to their customers. One of the withdrawal and the other of deposit, which is like chequebook.

OTHER BANKS

These banks are classified into some major types which include:

i. Nigerian Agricultural and Cooperative Bank (NACB)
ii. Nigerian Industrial Development Bank (NIDB)
iii. Nigerian Bank of Commerce and Industry (NBCI)
iv. Nigerian Export – Import Bank (NEXIM)
v. Peoples Bank of Nigeria (PBN)
vi. Community Banks (CB)
vii. Merchant Banks (MB)

2.8 ORGANISATION IN BANKING SYSTEM

The organizational structure of Bank is designed to direct activities of the bank effectively. The larger, the more complex organization structure. The typical size and form of banking organization is in a pyramid form, it begins from the highest to the lowest management stratum. It shows inter connected functions of communication and accountability.

However, Headquarter of a bank serve as the focus off its operation where formulated policies are passed to their area offices then to branches. Headquarter also monitors the affairs of the branches through information from the Area offices.

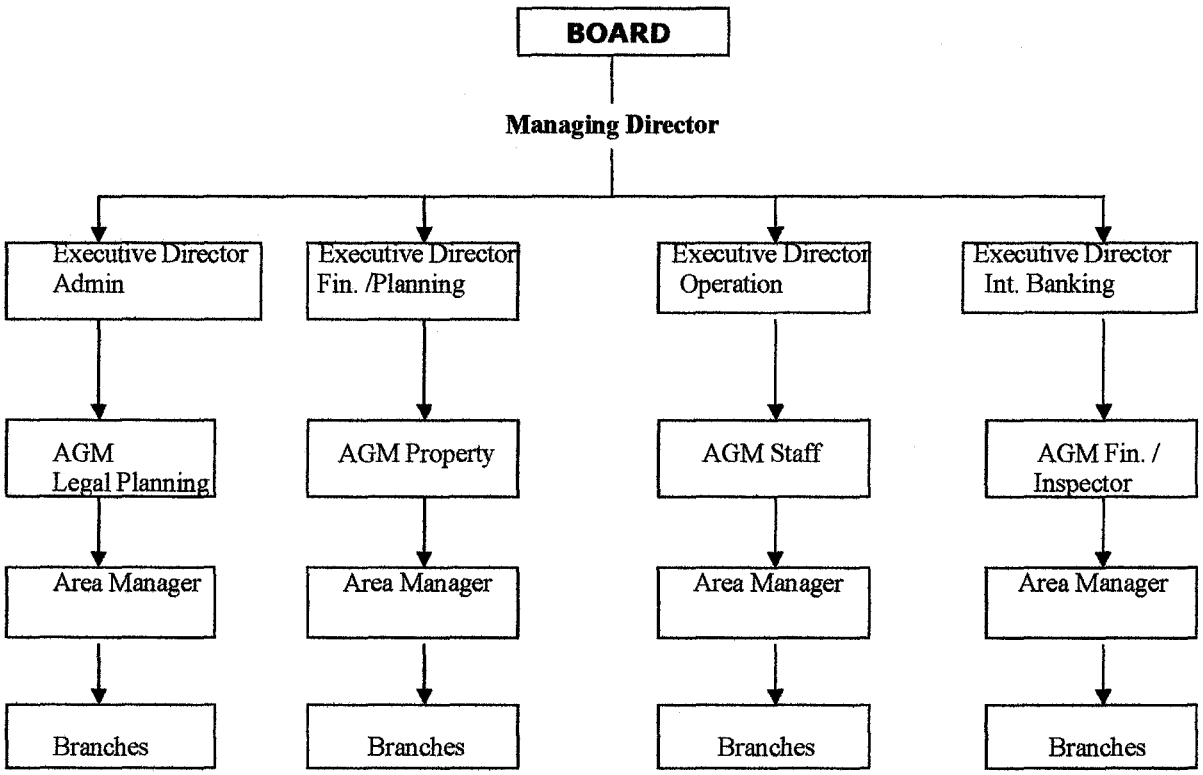


Fig. 2 – organization chart in the banking industry

computer online banking, and other services provided by banks extend their usefulness by offering customers additional ways of gaining access to and using their funds. Automated clearing houses perform similar services for business customers by handling regular payments, such as wages, for a company banking with the bank. Longer-term schemes for providing regular income on savings are often offered through trust funds or other investment schemes.

Loans to bank customers are drawn on the funds deposited with the bank and yield interest which provides the profits for the banking industry and the interest on savings accounts. Banks also provide foreign exchange facilities for individual customers, as well as handling large international money transfers. Investment banks engage chiefly in financing businesses and trading in securities.

2.10 DEDUCTIONS

This article describes the development of banking functions and institutions, the basic principles of modern banking practice, types, aspects of banking and the structure of a number of important banking systems. The growth of a bank in a nation is an integral part of the countries economic growth. Business transactions, among people flow properly because of the opportunity created in the Banking services such as loans, savings, deposits and foreign exchange.

CHAPTER THREE

3.0 EFFECTIVE SECURITY SYSTEMS IN BANKS

INTRODUCTION

Banks serve as a place where money and valuables are kept. Banks have portrayed a standard in the past; hence their images have been imposing in terms of design.

Banks presently carry new images in terms of the new advancements in technology. The introduction of modern techniques in banking systems has encouraged the use of more flexible means behind the counter services. Money in cask is still the major base of financial transactions in all banks and this poses a major security problem to the banks since they are the principal organs of transaction.

Armed robbery and the increasing sophistication of crime is on the increase in Nigeria, hence the design of banks require more careful considerations to be able to curtail the activities of men of the underworld and at the same time aesthetic considerations are also needed to give the bank its prestigious appearance, also for customers to be assured of a successful transaction in the bank.

It is obvious that the major objective of a bank is to provide security for customers investments, this is why in recent times technological advancements has really consolidated or strengthen the security in banking services with the use of special doors, alarms, special wall finishes that serve as detectors to any dubious move within the bank. However, there have been cases of armed robbery in the banks despite the security provided within the

bank setting. This has led to the use of modern mechanisms (known as quiet measures). They are either fixed on floors, tiles, and walls or attached to a door to blow alarm if the radiation of any obstacle is felt within the safe area of the banking system. Architectural design also has to contribute to the safety of the bank buildings considering the objectives of the banks as well the aesthetics, so as to further enhance the security level through a properly planned functional design.

3.1 SECURITY AND PROTECTION SYSTEM

Any of various means or devices designed to guard persons and property against a broad range of hazards, including crime, fire, accidents, espionage, sabotage, subversion, and attack.

Most security and protection systems emphasize certain hazards more than others. A typical set of categories to be protected in the bank includes the personal safety of people in the bank and organization, such as employees and customers; tangible property, such as the bank bonds, cash, and securities; and intangible property, such as highly classified bank-security information or other personal information of the organizations. An important distinction between a security and protection system and public services such as police and fire departments is that the former employs means that emphasize passive and preventive measures.

3.2 DEVELOPMENT OF SECURITY SYSTEMS

The origins of security systems are obscure, but techniques for protecting the bank, such as the use of locks and barred windows, are very ancient. As civilizations developed, the distinction between passive and active security was recognized, and responsibility for active security measures was vested in police and fire-fighting agencies.

By the mid-19th century, private organizations such as those of Philip Sorensen in Sweden and Allan Pinkerton in the United States had also begun to build efficient large-scale security services. Pinkerton's organization offered intelligence, counterintelligence, internal security, investigative, and law enforcement services to private business and government. Until the advent of collective bargaining in the United States, strikebreaking was also a prime concern. The Sorensen organization, in contrast, moved toward a loss-control service for industry. It provided personnel trained to prevent and deal with losses from crime, fire, accident, and flood and established the pattern for security services in the United Kingdom and elsewhere in Western Europe.

The development and diffusion of security systems and hardware in various parts of the world has been an uneven process. In relatively underdeveloped countries, or the underdeveloped parts of recently industrializing countries, security technology generally exists in rudimentary form, such as barred windows, locks, heavy metal / steel door for safes and elementary personnel security measures. In many such regions, however, facilities of large banking organisation employ sophisticated equipment and techniques.

Since the 1960s, crime-related security systems have grown especially rapidly in most countries. Among contributing factors have been the increase in number of security-sensitive businesses; development of new security functions, such as protection of proprietary information; increasing computerization of sensitive information subject to unique vulnerabilities; improved reporting of crime and consequent wider awareness.

Security systems are becoming increasingly automated, particularly in sensing and communicating hazards and vulnerabilities. This situation is true in both crime-related applications, such as intrusion-detection devices, and fire-protection alarm and response (extinguishing) systems. Advances in miniaturization and electronics are reflected in security equipment that is smaller, more reliable, and more easily installed and maintained.

3.3 TYPES OF SECURITY SYSTEMS

Security systems can be classified by type of production enterprise, such as industrial, commercial, governmental, government contractor, or hospital; by type of organization, such as contract security or proprietary; by type of security process, such as personnel or physical security; or by type of security function or emphasis, such as plant protection (variously defined), theft control, fire protection, accident prevention, protection of sensitive (national security or business proprietary) information. Some of these categories obviously overlap.

3.3.1 PHYSICAL SECURITY

Some of the most effective advances in security technologies during the past few decades have been in the area of physical security—i.e., protection by tangible means. Physical security has two main components: building architecture and appurtenances; equipment and devices.

A building can be designed for security by such means as planning and limiting the number and location of entrances and by careful attention to exits, traffic patterns, and loading docks.

Equipment and devices may be classified in various categories depending on the criteria used. If the criterion is purpose, some of the principal categories are record containers, including safes and files; communications, such as two-way radios and scrambler telephones; identification, including badges and automatic access-control systems requiring the use of a code; investigation and detection (e.g., lie detectors) and intrusion-detection devices, such as photoelectric cells and ultrasonic-wave-propagating equipment; observation and surveillance, including listening and recording devices, cameras, closed-circuit television, and one-way mirrors; countermeasures for observation and surveillance, such as equipment designed to detect electronic surveillance devices; and fire protection. A classification system based on process results in another set of categories. Examples include perimeter barriers (e.g., fences, walls) and locks to prevent or control access, as well as lighting systems to aid surveillance and to deter illegal entry.

Advances in security equipment technology have been numerous. Some of the more noteworthy examples include sensor devices that report unauthorized removal of items; personal-identification and access-control systems that directly "read" unique personal characteristics such as voice quality and hand geometry; surveillance devices that can scan premises at night; and devices that permit surveillance at considerable distances, making entry to the premises unnecessary.

A major part of security programs consists of measures designed to recruit and effectively use trustworthy personnel. "Personnel security" is a term often used to include measures designed to select only those people for whom there is a good prognosis for trustworthiness, on the premise losses from employee untrustworthiness are more frequent and usually larger than losses from outside the system (e.g., burglary, robbery, espionage) and that one of the best predictors of future behaviour is past behaviour.

Common synonyms are "screening" and "vetting." The most common technique is the background investigation, which involves obtaining all relevant available data about a person's past education, employment, and personal behaviour and making judgments concerning the individual's likely future loyalty and honesty. Thus, the dossier and computerized national data banks exemplify a response by a society in which great geographic mobility necessitates record keeping as a basis for judgments. Another technique is the polygraph, or lie-detector, examination. Research has also been directed to the possible capabilities and limitations of pencil-and-paper psychological tests and stress interviews. In addition to selection techniques there are

other measures designed to keep personnel trustworthy after they have been brought into the system—for example, employee indoctrination programs and vulnerability testing.

Systems and procedures constitute another area of the personnel-administration approach to security. It is possible to devise work methods and management controls in such a way that security is one of the values sought along with maximizing productivity and minimizing cost. Examples include the use of automated record-keeping systems, the use of forms and reports periodically checked against physical inventories, and the application of the principle of dual responsibility, whereby work is so subdivided that the work of one employee checks the accuracy of the work of another.

Because control systems are not self-administering, they must be periodically tested and policed. A typical procedure is the vulnerability test, or "created-error" check, in which an error or breach, such as an erroneous invoice, is deliberately planted in the system to see if it is detected and reported.

Guard-force training, supervision, and motivation are other important aspects of the personnel-administration approach to security. The use of operational personnel to attain security objectives is still another. Examples include engineers, production workers, and clerical staff applying government security regulations for the safeguarding of classified information. The cooperation of operational personnel to attain security objectives along with production objectives demands an interplay between knowledgeable training and communication programs, supervision, employee motivation, and management example.

The personnel-relations approach implicit in much of the above recognizes that the attitudes of rank-and-file employees and the social climate that they create can either be conducive to security or constitute its greatest enemy. Therefore, if security programs are to be successful, they must be carried out in a context of considerable understanding and cooperation of virtually the entire work force. The security program is apt to be only as good as the overall pattern and climate of social relations and loyalties of workers and executives of all ranks.

3.4 PROBLEMS FACED BY BANKS

The problems faced by banks are mainly classified into 3 major forms and they are as follows:

3.4.1 EXTERIOR PROBLEMS

The exterior problems faced by most banks has being observed from studies range from the inability to control visitors, customers and staff during working hours to the use of pubic services such as bullion routes, passages, entrances and conveniences. This shall be the basis of discourse under the exterior problems.

1. **Bullion Van Entrance**: When the in and out route taken be bullion vans into the bank premises is too busy and winding, there is the tendency for delay due to traffic congestion and this could result in robbery of the van. The bullion van requires separate, uninterrupted and fast route direct into the strong room to avoid any attack by robbers.

2. **External Opening**: Entry through openings in one of the likely areas which could serve as a point of intrusion to the bank. Also walls of very important parts of the bank can be broken through if not adequately taken of during construction. External openings such as windows and doors should be avoided as much as possible and where they are inevitable, they should have such physical and quiet precautionary measures like burglary proof, electric systems and bullet proofing.

3. **Entrances to the premises**: This involves the problem of not creating a separate entrance for the bank officials from that of the customers and visitors that patronize the various functions carried out in the building.

4. **Parking lots**: The basic problem here involves the provision of parking spaces for staff of the bank, customers and visitors. Where there is a separation in parking, the movements of customers and visitors can be obviously monitored by stand guards and suspicious moves can be easily detected.

5. **Gate House**: The gate house has almost the same problem with the fencing. The major problem with the gate house is controlling customers, visitors, bank staff and other private staff occupying various allocated spaces where they are provided to a bank like any other gate house of a residential building with less emphasis on security sensors which is not supposed to be. The gate house is supposed to be considered the security heart of the entire bank externally, so if this house is provided with sensors, it helps in detecting and unveiling any suspicious moves within and some 50 meters around the premises.

3.4.2 INTERIOR PROBLEMS

The problems of the interior is how to save guard the premises during or after working hours from unwanted intrusion, intrusion into the bank is more frequent these days during daytime (that is working hours), therefore, adequate security measures are needed to secure every body as soon as they are within the bank premises. While the intrusion into the bank premises after working hours can be curbed by the provision of strong doors, window and avoidance of unnecessary openings.

The following shall be discussed in relation to the interior problems of the bank.

(a) Vaults

(b) Note Counting Rooms

(c) Cashiers

(d) Circulations

(e) Lobby

(a) **Vaults**: this is the heart of a bank where all valuables are kept for safe keeping. This strong room needs adequate security controls but in most cases in Nigeria little security are attached to it. The location of the vault does not require an obvious view, impressive view and should be located if possible at the basement, ground floor of tower of the bank but in some banks in Nigeria this is not done. Accessibility

should be by restricted staff only. Special doors and alarms systems should be installed with special lightening and ventilation system.

(b) **Note counting room**: this area too is always prompted for an attack during any operation; hence proper security is also required to be provided.

(c) **Cashiers counter**: the counters in the banking halls are given little or no protection because in most cases the counters are left alone without cubicles and in cases where cubicles are provided, the cubicles are not fitted with bullet proof glassed.

(d) **Circulation**: the problem of circulation between staff and customers are common within the banking hall. Banks with a single hall current, savings and foreign exchange transactions are likely to suffer from congestion within that area thereby creating confusion, rowdiness, distraction and improper security and privacy when they transact in this kind of atmosphere.

(e) **Lobby**: in most banks, there is this direct access into the banking hall. An adequate controlled entrance lobby with security provisions is necessary to direct public movement.

3.4.3 OTHER PROBLEMS

1. **Communicating system**: Adequate provision for communication systems to alert security personnel or police station during and after intrusion has been a serious problem in Nigerian bank. Also, no adequate communication system to alert the fire station in case of any

3.5 SECURITY MEASURES

Before a designer can recommend security measures for a facility, he or she must understand the assets (people and valuables) that need to be protected. Usually, the assessment is quite straight forward, but the task gets complicated when trying to predict where treats may come. This knowledge has a direct bearing on what kind of damage the designer must attempt to mitigate.

In the case of the banking industry, the vault is considered the heart of the banks and it is always vulnerable to attack by intruders. Therefore, security should be tightened at this point more than any other place.

Security measures for banks can be classified into three different classes namely:-

(a) the quiet measures (security systems)

(b) Physical measures

(c) Human measures

Although no protective measure will deter the must determined criminals, and some are actually motivated by the challenge of attacking something that is well guarded (Charles Linn, AR), but security measures may make it difficult for the crime to succeed, or they can increase the likelihood that the perpetrator will be recognized and apprehended on the spot or can be identified later.

3.5.1 QUIET MEASURES

The quiet measures are by the use of electronic security systems which have improved over the recent years in their effectiveness in surveillance of banks. Gadgets to detect and give warning when intrusions occur include sensors, contacts and detectors for perimeter protection: others are infrared motion detectors, ultrasonic motion detections, radar detectors and multiple barriers (for open area protection). Alarm sound products such as minitron, two minimites, maxitron, super M siren and security alarm bells are used in some banks. While in some banks, closed circuit TV cameras are visibly present and this could prevent people from thinking criminal acts can be committed unobserved. Other security measures are:-

1. Central Control Panel: These are the brain of the most modern electronic security systems. Control panels can monitor and check continuously for intrusion with detectors. If required, their electronic actions can immediately trigger an alarm. They are efficiently and reliable
2. Optical Signalling Devices: With the help of optical signalling devices, banks are enabled to control alarms internally or externally. This gives one the chance of switching on or off wherever one may be.
3. Silent Signalling Devices: They generate acoustic alarms of any required intensity. Effective systems such as anti-burglar-alarm have been incorporated in designs to enhance security

arrangements, Prevent burglaries, vandalism and other criminal acts. The following measures can be used to prevent intrusion into buildings.

(a) Warning Devices: Photo electric cells, contact, proximity of radar are warning device systems in detecting and warning of intrusion to occupants.

(i) Photo electric cells: They set off alarms and indicate that they are being touched when a light beam on a receiver is interrupted indicating that they are being tampered with.

(ii) Contact systems: They give off warning when they are touched. It consists of wires, pads, metallic tape, magnetic switches and other devices.

(iii) Proximity devices: They are used to safeguard items like files or safes. They trigger off alarm, warning that some one has come close to it.

(iv) Radar systems: They send signals, which give off alarms when there is motion in their path. Some give warning such as those that use the ultrasonic signals or magnetic fields. For detection and warning of intrusion a close circuit can be used.

TESTING AND MAINTENANCE

To ensure that all these systems operate efficiently and reliably, there needs to be testing and maintenance regime in place, both for the equipment

involved and for the way it is in all other building services, e.g. the electrical distribution system, maintenance of security equipment fixed to a building is managed by the Estate Management office.

3.5.2 PHYSICAL MEASURES

This involves measures taken to protect certain areas physically either by different building materials or by visible security facilities. They are actually barriers that safe guard valuables after intrusion and they include bullet proof glass barriers on counters, burglar proofs, strong vault doors, windows and walls.

Controlling devices such as actuators, locks, and coding systems could be used.

1. Protectors:

They are guardians, which include doors, windows and walls.

Perimeter protection: they monitor the internal part of rooms and other spaces with a view to detecting intruders. These are provided independently, but can be designed to complement perimeter protection against random intrusion into buildings. The type and extent to which these systems could be used depends on the value of the property to be protected.

2. Doors

Vault door: this offers secured and convenient, fully-featured performance. This door is an excellent solution for vault security when installed in either a modular vault system or a poured-on-site vault. The door is designed with automatic anti-lock-in device that prevents bank employees from being

locked in the vault in an attempted hold up. Various handle options are available including a round hand wheel, a horizontal handle or a spoke handle with electronic digital reading time locks.

Diebold Vault walls: the vault wall can be constructed of unique material, using steel fibre technology and reinforcing rods, the panels are carefully fabricated to an exacting standard according to a banks specification. Because the material used in these panels are resistant to environmental elements, they provide a significant advantage over laminated panel system constructed of organic material that can deteriorate over time.

These types of Diebold vault walls are constructed of high density, fibre reinforced chemically bound concrete and achieve a mi9nimum compressive strength of 2003.7 kb/cm2.

Concrete Modular Vault System

Diebold concrete modular UL listed vault panels are considerable lighter and thinner than site-poured wall, giving almost unlimited flexibility when signing or locating the vault. This type of vault can be expanded and/or relocated as needed.

3. Site Planning

Building setbacks, or standoff distances, create protective building perimeters by restricting vehicular access. Distances between and undercover or a spy to snap and observe his target allows the possibility to be distorted. Stand off distances vary by facilities, location, risk and threat. They may be reduced in some situations if the site perimeter can be secured in other ways. Clear

zones free of traffic, are also desirable to optimize surveillance capability. Typically, a site analysis and threat assessment will determine how to maximize standoff distances. In suburban areas, 30m is considered a desirable standoff distance, although, this is often unrealistic in urban settings. The stand off zone can also be combined with other devices such as bollard; and as a measure of integrating decorative yet protective, an obelists can be used instead of bollards, landscaping, trees and boulders to restrict vehicular access.

"Hardened street furniture, such as benches, lights and large trees, can protect building parameters while potentially reducing the need for deep setbacks". David Dixon, (an architect with Goody, Clancy and Associates, Boston.)

(a) **Trees**

Trees can improve protection by obscuring assets and people, but they also screen perpetrators form view. Cameras for instance, can be discreetly located in landscaping and are not compatible with trees. "We see many creative security design opportunities for innovative public are, sculpture, security screens and vehicular barriers." Says Frances Halsband, a partner at R.M. Kilment and Frances Halsband Architects, New York City.

(b) **Fence**

"Perimeter fencing is assessed as an anti climb and anti ram, depending on the nature of the threats". Says Halsband. She once advised the U.S. State department and the Federal Reserve Bank on security. Issues

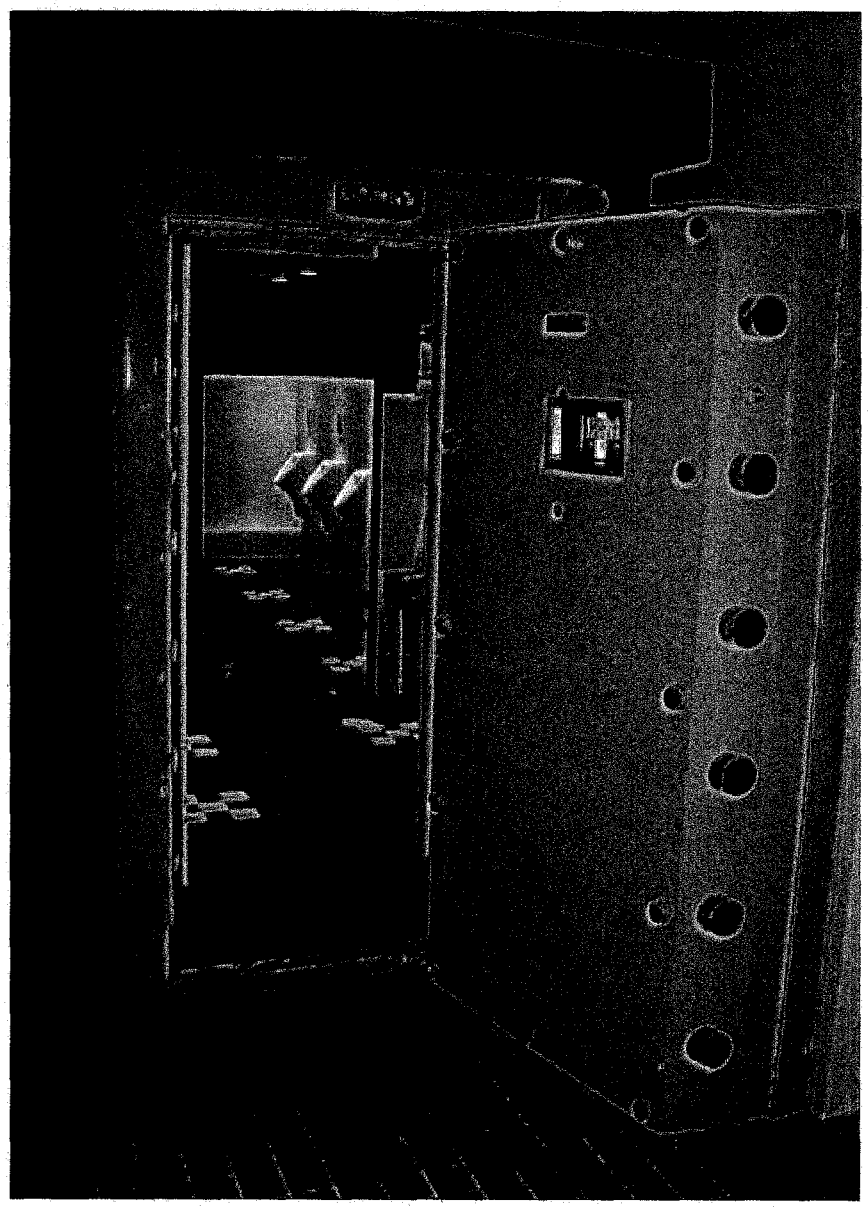


PLATE 1. SECURITY DOOR

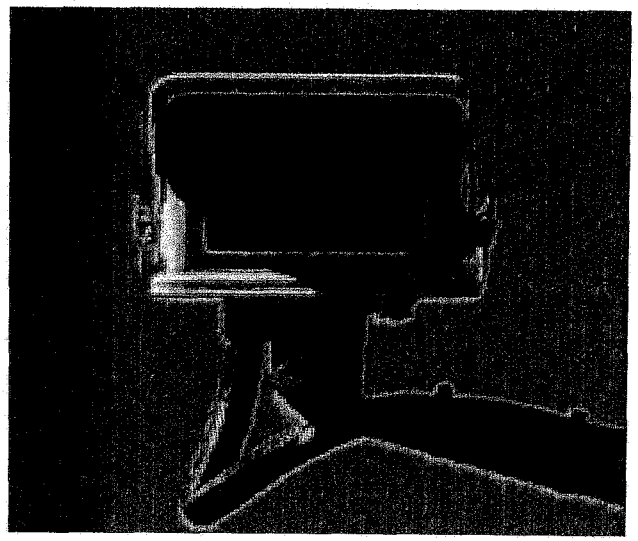


PLATE 2. SURVEILLANCE CAMERA

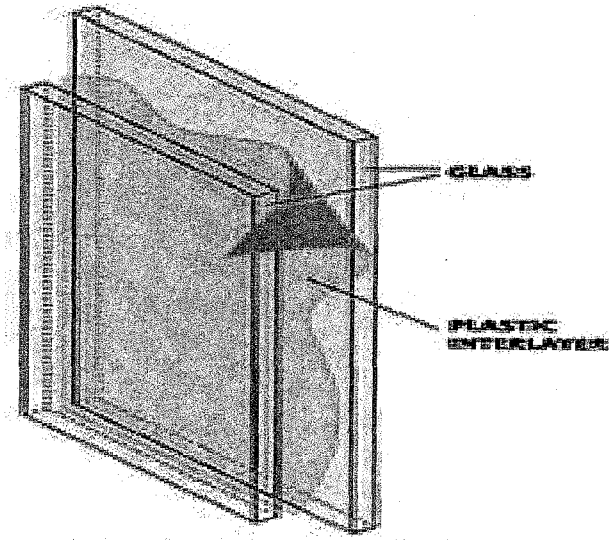


PLATE 3. PVB LAMINATED GLASS

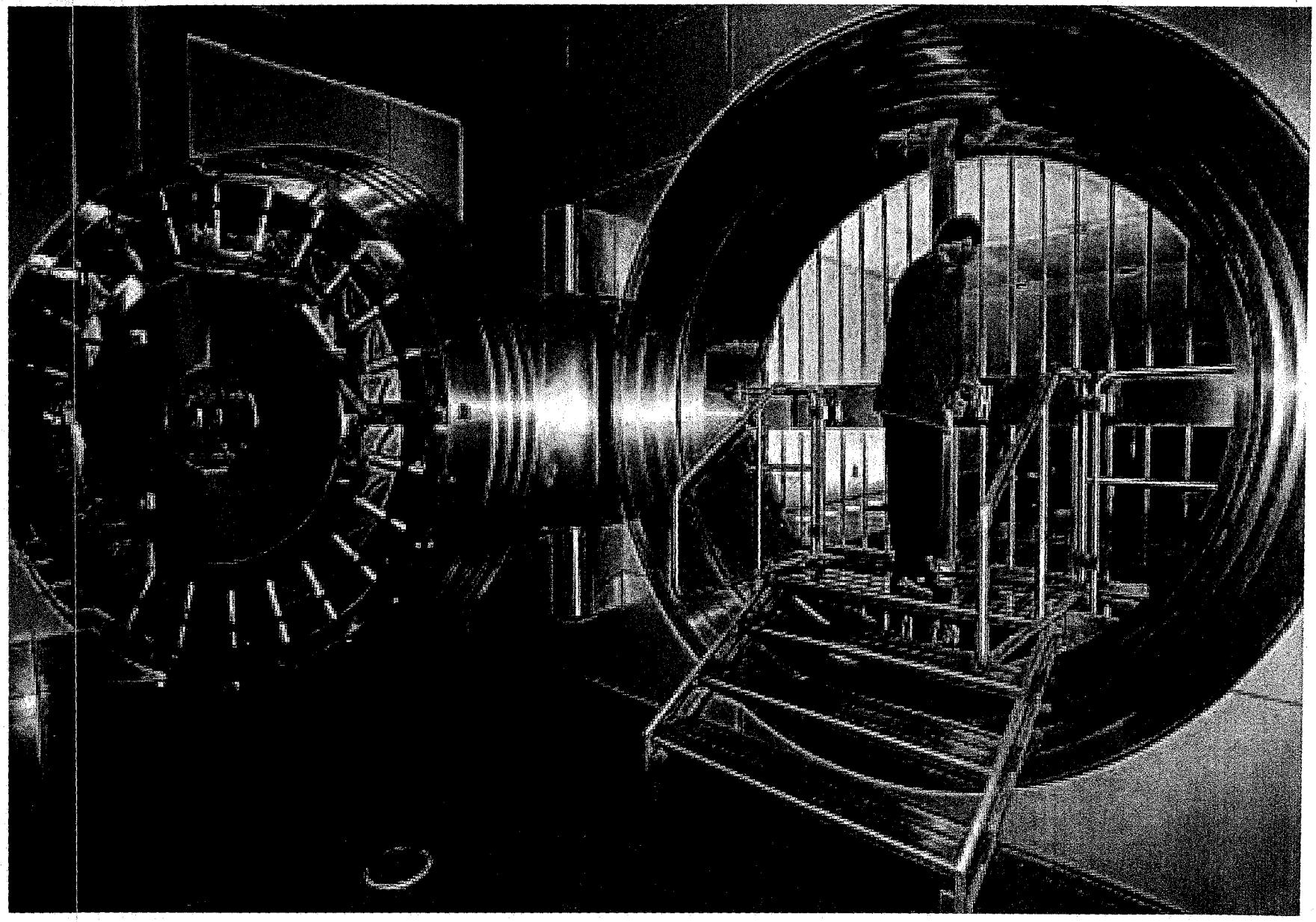


PLATE 4. BANK VAULT

attack. The standard two-ply construction provides resistance to penetration when subjected to attempted force entry. In multi-ply configurations, laminated glass can even resist bullets, heavy objects, or small explosions.

3.5.3 HUMAN MEASURES

The human measures involve the provision of security observers, well trained armed personnel to security observation room and security control areas respectively. The use of watchdogs and having banks connected to the crime prevention or area police private security is also necessary.

3.5.4 ROLE OF THE ARCHITECT IN CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

Crime has become, unfortunately, a fact of life. Discussions on the subject have traditionally focused much less on prevention than on arrest and punishment; measures that cannot be taken until after a crime has been committed. CPTED bring about a design that eliminates or reduces criminal behavior and at the same time encourages people to "keep an eye out" for each other.

Only in the last 20 years have designers and architects begun to see the need to plan and build with more than just the traditional threats of nature --- fire, glare and natural disaster --- in mind. They must now consider the threat of crime.

Enter a new approach to crime prevention - Crime Prevention Through Environmental Design - or CPTED. Much more far-reaching than dead bolts

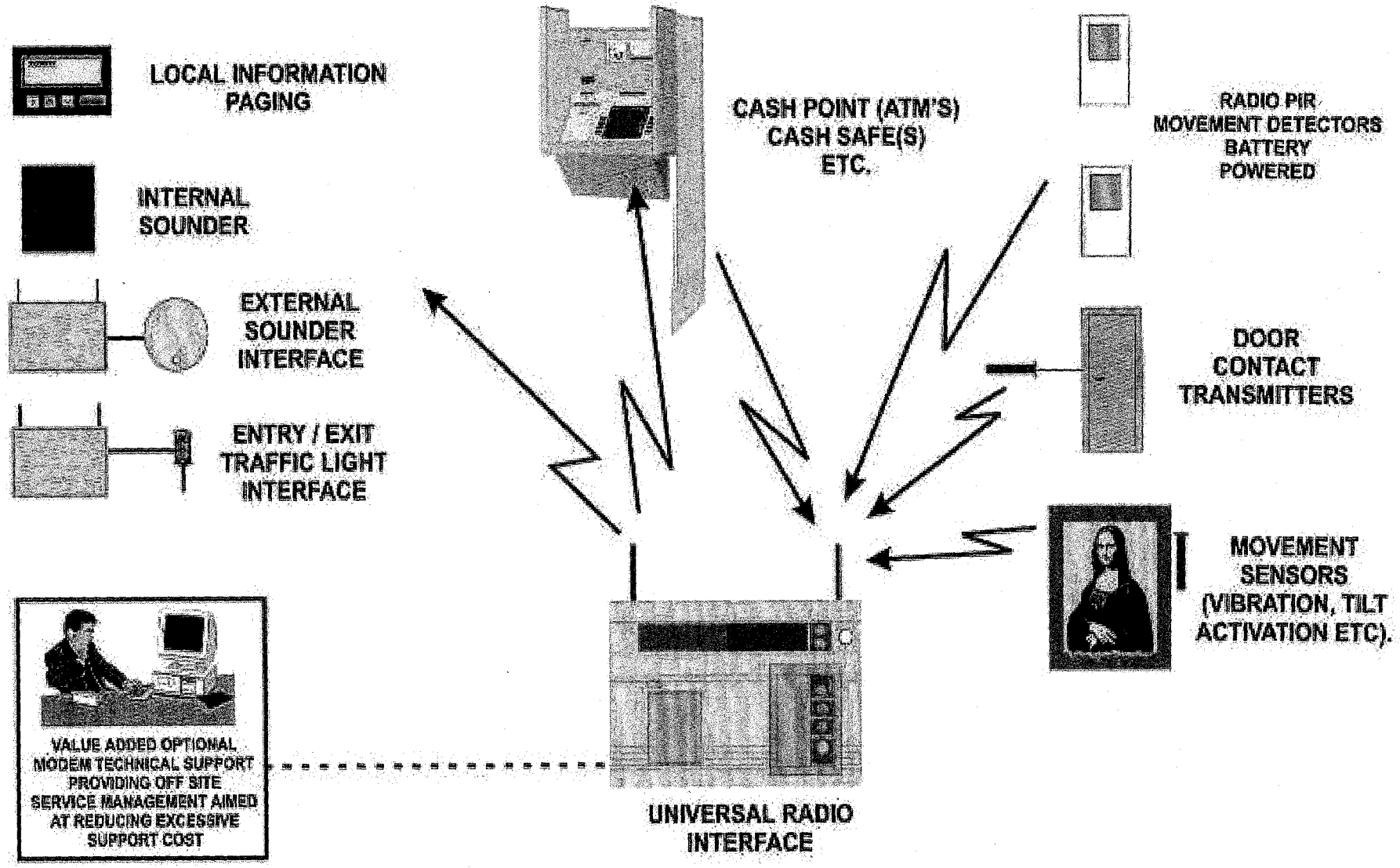


PLATE 6. SECURITY MEASURES

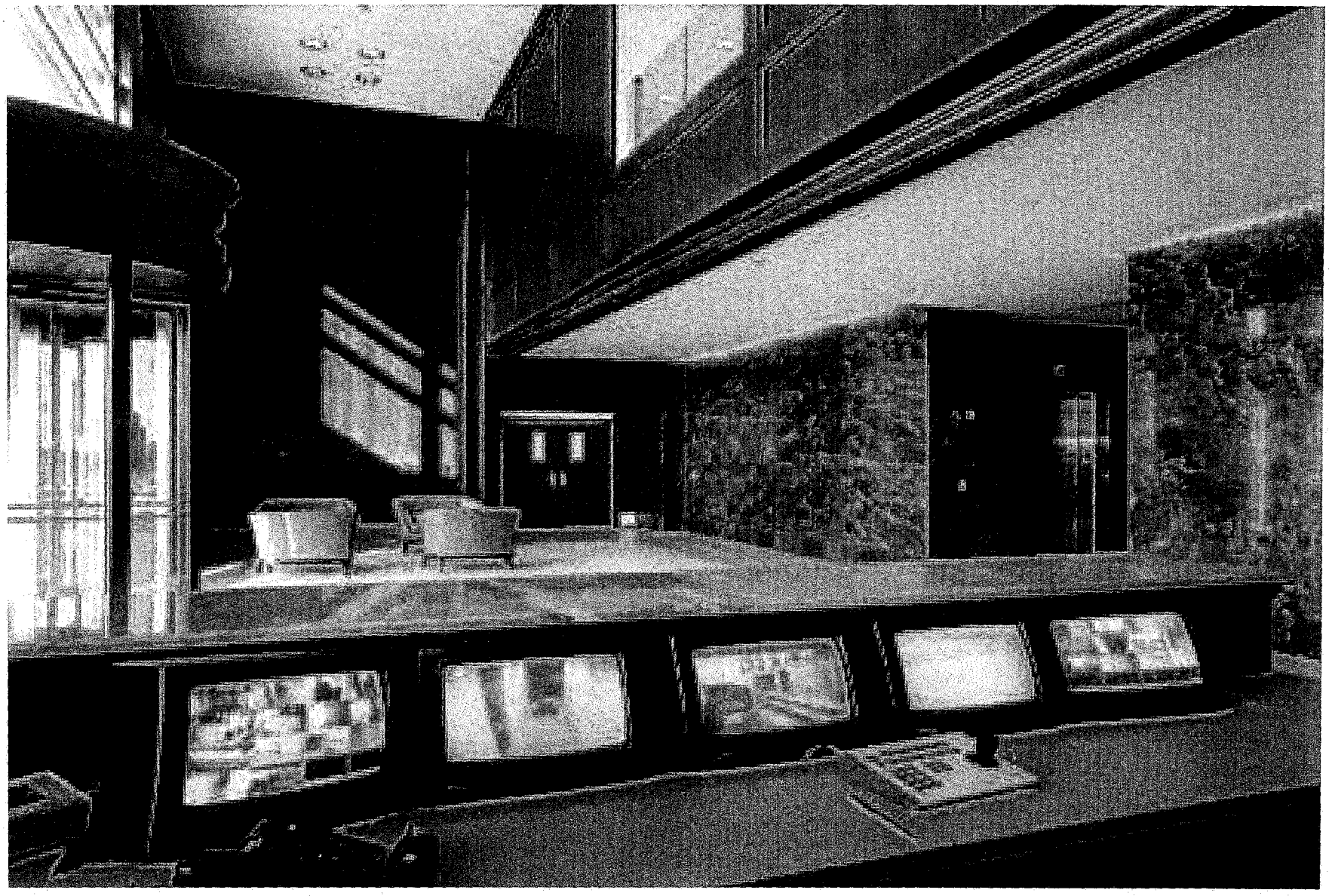


PLATE 5. BANK LOBBY

on doors and locks on windows, CPTED principles can be applied easily and inexpensively to building or remodeling, and have been implemented in communities across the world. The results have been impressive; in some CPTED communities, criminal activity has decreased by as much as 40 percent.

"The proper design and effective use of the built environment can lead to a reduction in the fear and incidence of crime, and an improvement of the quality of life." **CPTED** *as defined by the National Crime Prevention Institute*

CPTED STRATEGIES (Crime Prevention Through Environmental Design)

There are four overlapping CPTED strategies.

1. Natural Surveillance

A design concept directed primarily at keeping intruders easily observable. Promoted by features that maximize visibility of people, parking areas and building entrances: doors and windows that look out on to streets and parking areas; pedestrian-friendly sidewalks and streets; front porches; adequate nighttime lighting.

2. Territorial Reinforcement

Physical design can create or extend a sphere of influence. Users then develop a sense of territorial control while potential offenders, perceiving this control, are discouraged. Promoted by features that define property lines and distinguish private spaces from public spaces using landscape plantings, pavement designs, gateway treatments, and 'CPTED" fences.

3. Natural Access Control

A design concept directed primarily at decreasing crime opportunity by denying access to crime targets and creating in offenders a perception of risk. Gained by designing streets, sidewalks, building entrances and neighborhood gateways to clearly indicate public routes and discouraging access to private areas with structural elements.

4. Target Hardening

Accomplished by features that prohibit entry or access: window locks, dead bolts for doors, interior door hinges.

Presented along with each of these CPTED strategies are guidelines which, as a homeowner, builder or remodeler, you can apply to reduce the fear and incidence of crime and improve the quality of life.

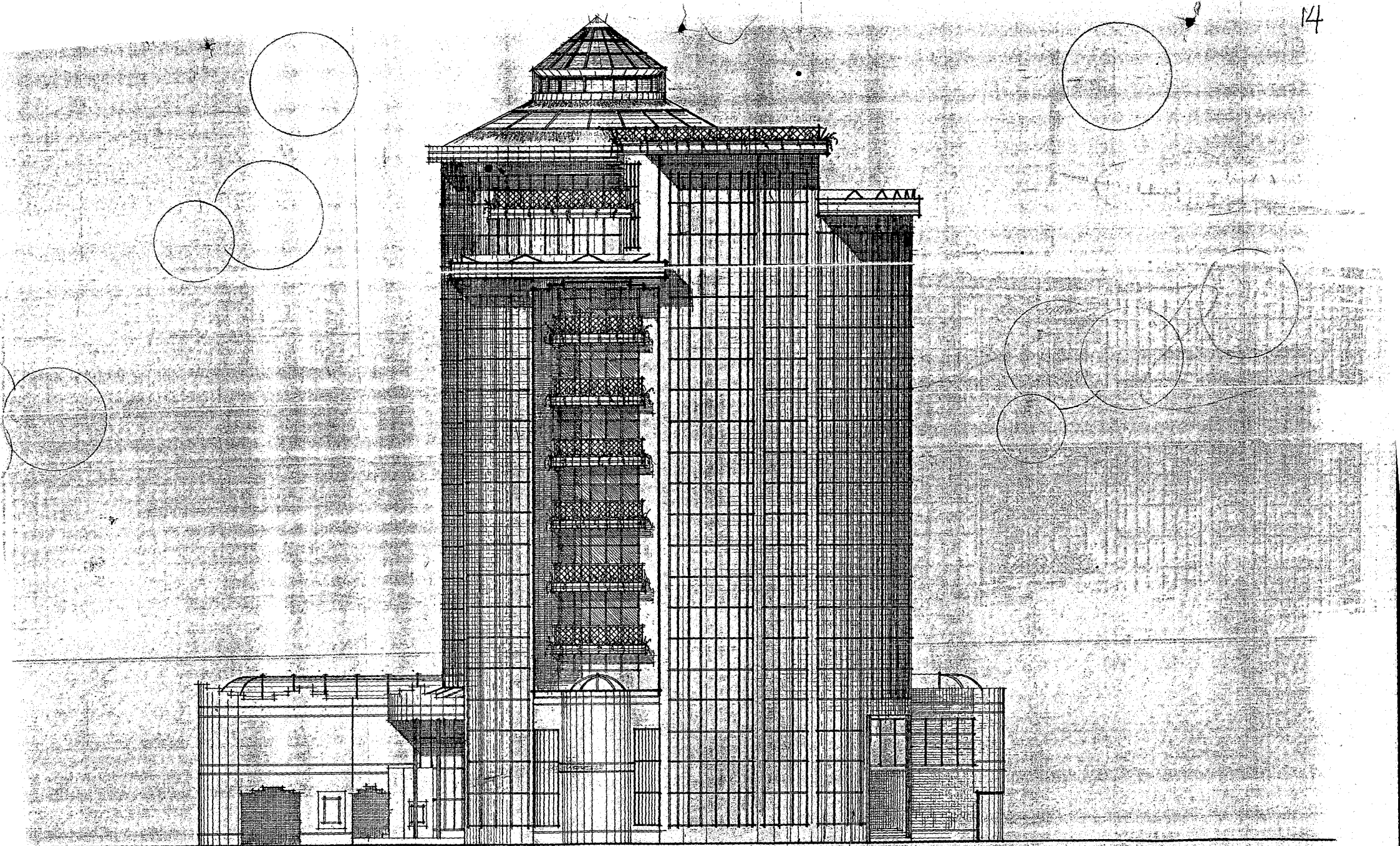
CPTED GUIDELINES

1. <u>Natural Access Control</u>

- Public entrances should be clearly defined by walkways and signage
- Building entrances should be accentuated through architectural elements, lighting, landscaping and/or paving stones

2. <u>Natural Surveillance</u>

- restrooms should be observable from nearby offices
- all exterior doors should be well lit
- hallways should be well lit
- dumpsters should not create blind spots or hiding areas



DESIGN PROPOSAL FOR

CORPORATE HEAD QUARTERS OF

- windows and exterior doors should be visible from the street or by neighbors
- all four facades should have windows
- parking spaces should be assigned to each employee and visitor
- parking areas should be visible from windows, side parking areas should be visible from the street
- parking and entrances should be observable by as many people as possible
- parking area and walkways should be well lit
- dumpster should be clearly visible
- shrubbery should be kept under two feet in height for visibility
- the lower branches of existing trees should be kept at least ten feet off the ground
- windows should not be obstructed with signs
- windows and doors should have views into hallways
- locate ATM's in front of banks facing main roads or as a drive through in the drive-in teller lanes

3. <u>Territorial Reinforcement</u>

- perimeters should be defined by landscaping or fencing
- fences should be designed to maintain visibility from street
- exterior private areas should be easily distinguishable from public areas
- security and/or reception area should be positioned to screen all entrances

4. Target Hardening

- exterior door knobs should be a minimum of 40 inches from adjacent windows
- case hardened dead bolt locks should be installed on all exterior doors with a minimum of one-inch throw
- door hinges should be installed on the interior side of the door or tamper proof hinges used

3.6 COMPUTER SECURITY

The protection of computer systems and information from harm, theft, and unauthorized use. Computer hardware is typically protected by the same means used to protect other valuable or sensitive equipment, namely, serial numbers, doors and locks, and alarms. The protection of information and system access, on the other hand, is achieved through other tactics, some of them quite complex.

The security precautions related to computer information and access address four major threats:

(1) Theft of data, such as that of bank secrets from government computers;

(2) Vandalism, including the destruction of data by a computer virus;

(3) Fraud, such as employees at a bank channelling funds into their own accounts;

(4) Invasion of privacy, such as the illegal accessing of protected personal financial data from a large database.

The most basic means of protecting a computer system against theft, vandalism, invasion of privacy, and other irresponsible behaviours is to electronically track and record the access to, and activities of, the various users of a computer system. This is commonly done by assigning an individual password to each person who has access to a system. The computer system itself can then automatically track the use of these passwords, recording such data as which files were accessed under particular passwords and so on. Another security measure is to store a system's data on a separate device, or medium, such as magnetic tape or disks, that is normally inaccessible through the computer system. Finally, data is often encrypted so that it can be deciphered only by holders of a singular encryption key.

Computer security has become increasingly important since the late 1960s, when modems (devices that allow computers to communicate over telephone lines) were introduced. The proliferation of personal computers in the 1980s compounded the problem because they enabled hackers (irresponsible computer philes) to illegally access major computer systems from the privacy of their homes. The development of advanced security techniques continues to diminish such threats, though concurrent refinements in the methods of computer crime (q.v.) pose ongoing hazards.

3.7 COMPUTERIZED BANKING

Few financial institutions in Nigeria have developed an internal security policy that specifies the measures to be taken when a suspicious activity on the institution's computer systems is detected. This is due to the slow rate of active computerization and online banking in the country. Compared to a number of criminals who could rob a bank in person, a significant number of swindlers are now capable of committing fraud through the Internet. And numerous break-in software programs and guidelines are available on the Internet.

PRIVATE BANKS: These are obviously the most advanced in technology. For the purpose of security, most multinationals follow the same practices all over the world. The concept of anywhere banking and flow of data for internal and external transactions have created a need for use of network security solutions. Encryption technology and digital signatures are used for exchange of data, especially during online banking transactions. Most of these banks use solutions customized according to their specified environments.

PUBLIC SECTOR BANKS: These are still struggling to safeguard their recently automated environments. The level of security is mainly restricted to employee passwords, and there are no proper security guidelines or policies in most of these banks. Security risks are higher in organizations that have online transactions. The Banks that hardly makes use of the Internet, experiences a lesser case of data manipulation except in the case of a bank robbery.

3.8 SECURITY SOLUTIONS FOR ATM'S (Automated Teller Machines)

Banks have been robbery targets as long as they have been in existence. With bank management comes specific crime prevention standards and most bank managers are well-versed with these standards.

Crime at ATM's has become a nationwide issue that faces not only customers, but also bank operators. Security measures at banks can play a critical, contributory role in preventing attacks on customers. These measures are of paramount importance when considering vulnerabilities and causation in civil litigation and banks must meet certain standards in order to ensure a safe and secure banking environment for their customers. In an article published in a prominent banking industry journal, the following list of recommendations was contributed by industry experts to improve customer safety while utilizing ATM devices:

- Determining the crime risk in the geographical surroundings
- Locating new ATM's in highly visible areas
- Providing sufficient lighting at and around the ATM's
- Educate customers periodically by mailing a notice advising of risks associated with using the ATM and how to avoid these risks
- Maintaining shrubbery and other environmental features at a height at which they cannot be used for concealment
- Conducting and documenting periodic security surveys at the ATM location, and sharing that information with local law enforcement officials
- Providing a direct-line phone to a bank department so that customers can call for assistance around the clock

- Educating bank personnel to be responsive and sensitive to customer claims and to communicate such claims immediately to bank security.

3.9 CONCLUSION

It is important that customers feel secure when banking in Nigerian, and if it takes the government to ensure that, then there is the need for the application of security measures discussed in chapter three of this report.

Although, security design extends well beyond the front door and the property line of a facility, as many protection threats can cover entire neighbourhoods, but the four measures discussed could help reduce possibilities of attack to the barest minimum.

Providing a secure appearance can cause attackers to look for an easier target. Looking man-hole covers, and monitoring tunnels and area ways regularly will protect exterior utilities which are crucial when communications systems are among protected assets. All building penetrations are possible points for security breaches, so high bank buildings lacking site planning, stand off distances and other physical protective measures prose unique design challenges.

We need to know that, all these security measures, especially these physical measures do not in any way deter the beauty of the bank buildings, instead they form decorative measures to the building. This is an integration of decoration with protection to a balance blend.

Protection building services is a big problem too. As a general rule, life safety services, such as gas, fuel, power and water supply should be remote

from high risk zones or encased in blast-resistant coverings to maintain services. Electrical transformers are also vulnerable, sidewalk mounted transformers may be damaged by vehicles, disrupting services. These transformers call be located inside the building, eliminating the possibilities that they will be accessed by those who are unauthorized.

(All these measures can be planned and put in place, but without the maintenance people being part of it, the security measures will not be workable or effective). This means for these measures to be effective maintenance should be at optimum priority.

3.10 DEDUCTIONS

Knowing what crimes do occur will aid the bank design in knowing the specific crime problem, to what degree it exists, and indirectly what specific prevention measures should be implemented. It can also tell us what particular asset is being targeted and the resulting loss or damage to that particular target and the implications of that loss or damage. Crime analysis tells us when the risks are high and helps us efficiently allocate our security resources when threats are more likely. The necessity to develop and maintain a well-balanced security program is elementary and essential to the protection of banking customers and other assets. Crucial to such a program are the balanced applications of crime analysis, security selection & implementation, and monitoring.

CHAPTER FOUR

4.0 CASE STUDIES

PREAMBLE

Architecturally, case studies serves as reference point for influencing a mode of thought or design aspect based on that study, the inferences are not only limited to architecture but also to a wide variety of aspects such as philosophical approach, composition, criticism, public opinion and a host of others. The major criterium for selecting the case studies was based on similarity in character. The selected case studies were therefore originally intended to serve a purpose similar to a solution to the problem in question.

Bank building planning is an intensive process that requires a satisfactory arrangement and setting to fulfil the quest of the bankers and customers.

The aim of carrying out case studies are for purpose of research and data collection, also to give the student better understanding of the project being handled by learning from examples of such existing facilities as it is being designed. The demerits observed in the course of the case studies shall be taken into consideration when designing or proposing the Corporate Headquarters of Gulf Bank of Nigeria Plc.

4.1 CASE STUDY ONE

NIGERIAN INTERCONTINENTAL MERCHANT BANK CORPORATE HEADQUARTERS, LAGOS STATE.

Location: Victoria Island, Lagos

Architect: Adeniyi Coker Architects Ltd

Client: Intercontinental Merchant Bank

Date: April, 1992 – June, 1995

4.1.1 INTRODUCTION

The construction of the Intercontinental Bank Corporate Headquarters, Lagos began in April, 1992 and was completed in June, 1995. With the political and economic problems that have plagued Nigeria during that period, it is noteworthy that the building was completed in this period without compromising of any of the high standard set by the architects from the inception of the design. Adeniyi Coker Architects say Intercontinental Plaza has been designed to give the clients exactly what they wanted with a little bit more. There is no doubt that the building in responding to all aspects of its environment has finally become a landmark within it.

4.1.2 DESIGN AND PLANNING

The Intercontinental Plaza rises 12 levels from the basement level to the lower and upper ground floor, mezzanine floor, typical floors from the 3rd floor to the 8th floor, a 9th floor that houses the executive level, a mansard roof level that incorporates an attic and the 9th mezzanine with dormer

windows which have been designed to give a corporate look. The building is crowned by a helicopter pad that has a dual purpose of being able to airlift executives to and from the building also for emergency evacuations.

4.2.3 MATERIAL AND FINISHES

The building sits on piles and its made up of a structural grid with 900mm square columns that reduce in size to 450mm square as you move up the building. A diaphragm wall was also adopted around the basement to stop water ingress. The construction is of in situ cast, normal reinforced concrete with a waffle system used for the suspended floors. The finishes involve the use of emulsion paint for exterior walls, the interior walls are finished with decorated marble and granite floors.

2.6 APPRAISALS

Merits

1) Site is easily accessible
2) Adequate security network
3) The structure approach is well defined
4) Good functional organization of the open office

Demerits

1) No fire escape routes
2) The direct entrance into the banking hall, makes it easily prone to robbery.

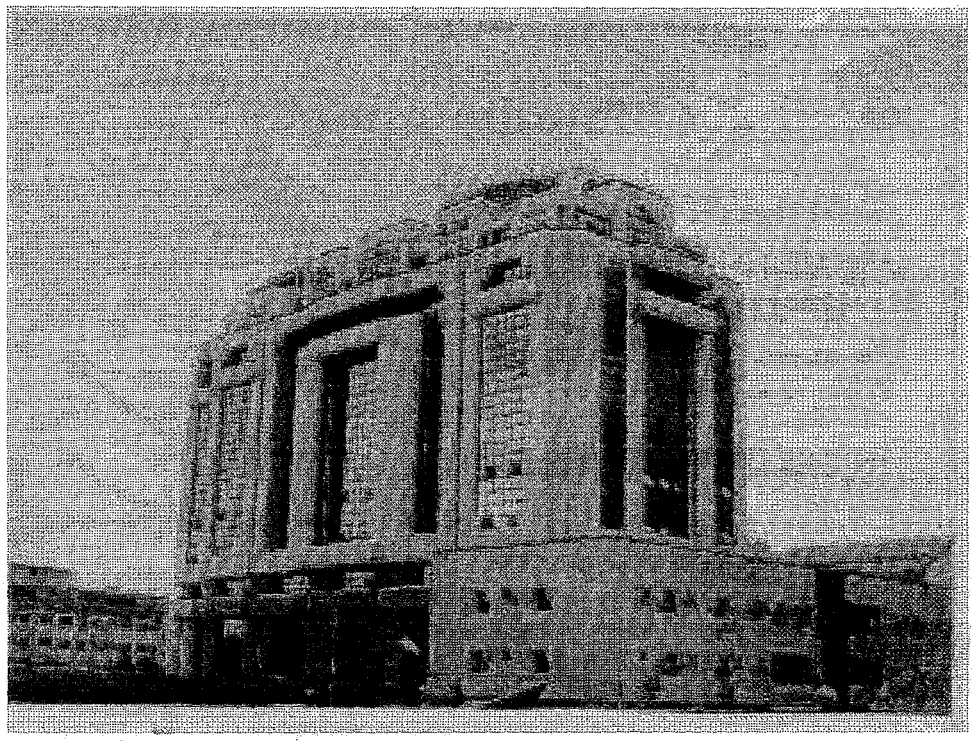


Plate 7. Rear View

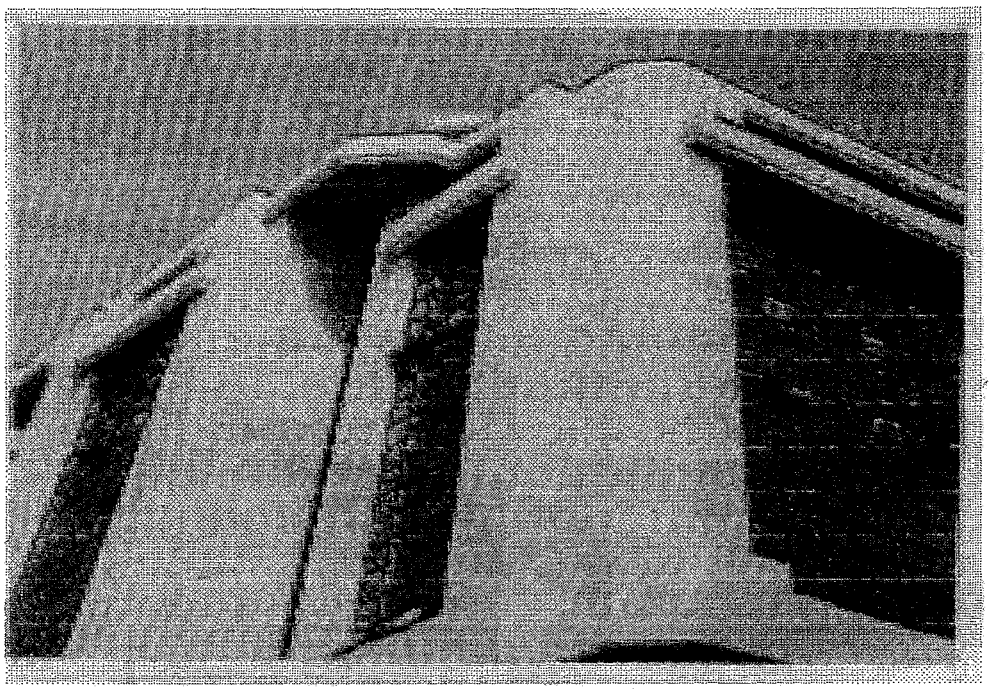


Plate 8. Side view

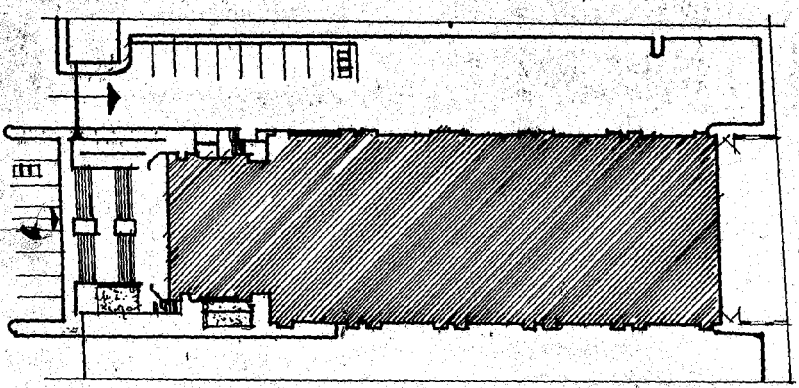
CASE STUDY 1 ~ CORPORATE

INTRODUCTION

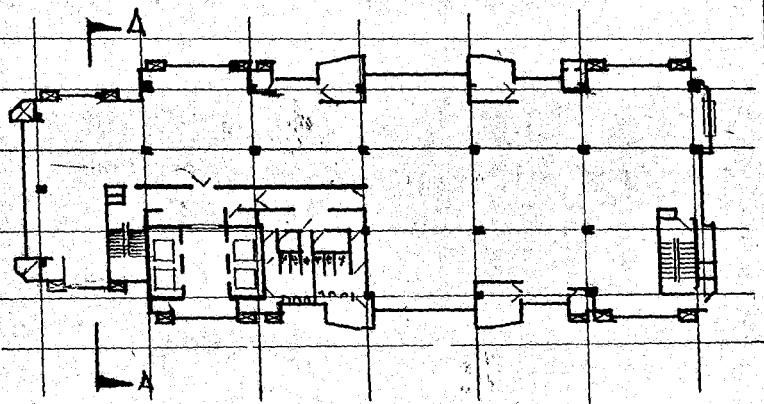
The Corporate Head office of Nigerian Intercontinental Merchant Bank plc is located on No 3, Danmole street, Plot 1621, Victoria Island, Lagos state.

The building has been designed with rapid growth in mind as well as also to express confidence and corporate decisiveness.

The bank plaza rises 12 levels from the basement level to the crown helipad level for executives & emergencies.



Sketch Site plan



Sketch prototype floor plan

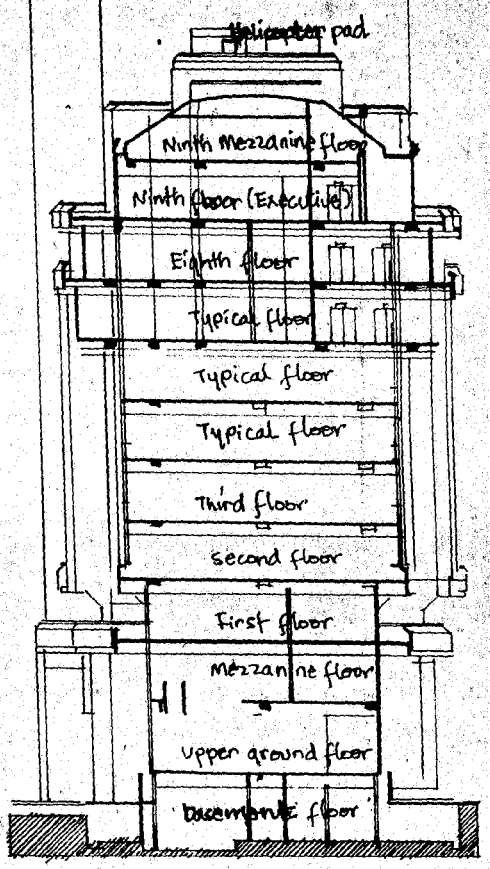


FIG 4. Design of Intercontinental Bank (sketch)

DESIGN PROPOSAL FOR

CORPO

GULF

3) The vault floor is busy, due to the additional facilities provided in the basement

4) Poor landscaping

5) Inadequate parking spaces

6) Customers parking is outside the banking premises

4.2 CASE STUDY TWO

LION BANK OF NIGERIA CORPORATE HEADQUARTERS, JOS, PLATEAU STATE

Location: No 34, Ahmadu Bello Way, Jos, Plateau State

Client: Lion Bank of Nigeria PLC

Date: 1987

4.2.1 INTRODUCTION

Lion Bank Of Nigeria Limited Corporate Headquarters is a 2 – storey building with the banking hall on the ground floor. It shares boundary with a fuel filling station on its eastern side. The bank has 2 banking halls, one for depositing and the other for withdrawing.

4.1.2 DESIGN AND PLANNING

The Lion Bank Plaza rises 3 levels from the ground level. It involves the use of horizontals and verticals with little curvilinear in the design of the elevation and placement of windows.

4.2.3 MATERIAL AND FINISHES

The construction is of in situ cast, normal reinforced concrete with sandcrete blocks. The finishes involve the use of emulsion paint for exterior walls, texcote for the interior walls, the windows are natural anodized aluminium sliding and projected windows complete with clear glass.

4.2.4 APPRAISALS

Merits

1) Separation of depositing hall from withdrawal hall which brings about a faster transaction
2) Spacious office spaces

Demerits

1) No fire escape routes
2) There are no proper security measures at the bank entrance
3) Poor landscaping
4) Inadequate parking spaces
5) The bank stands a risk of fire, since it shares boundary with a filling station

Plate 9. Rear View

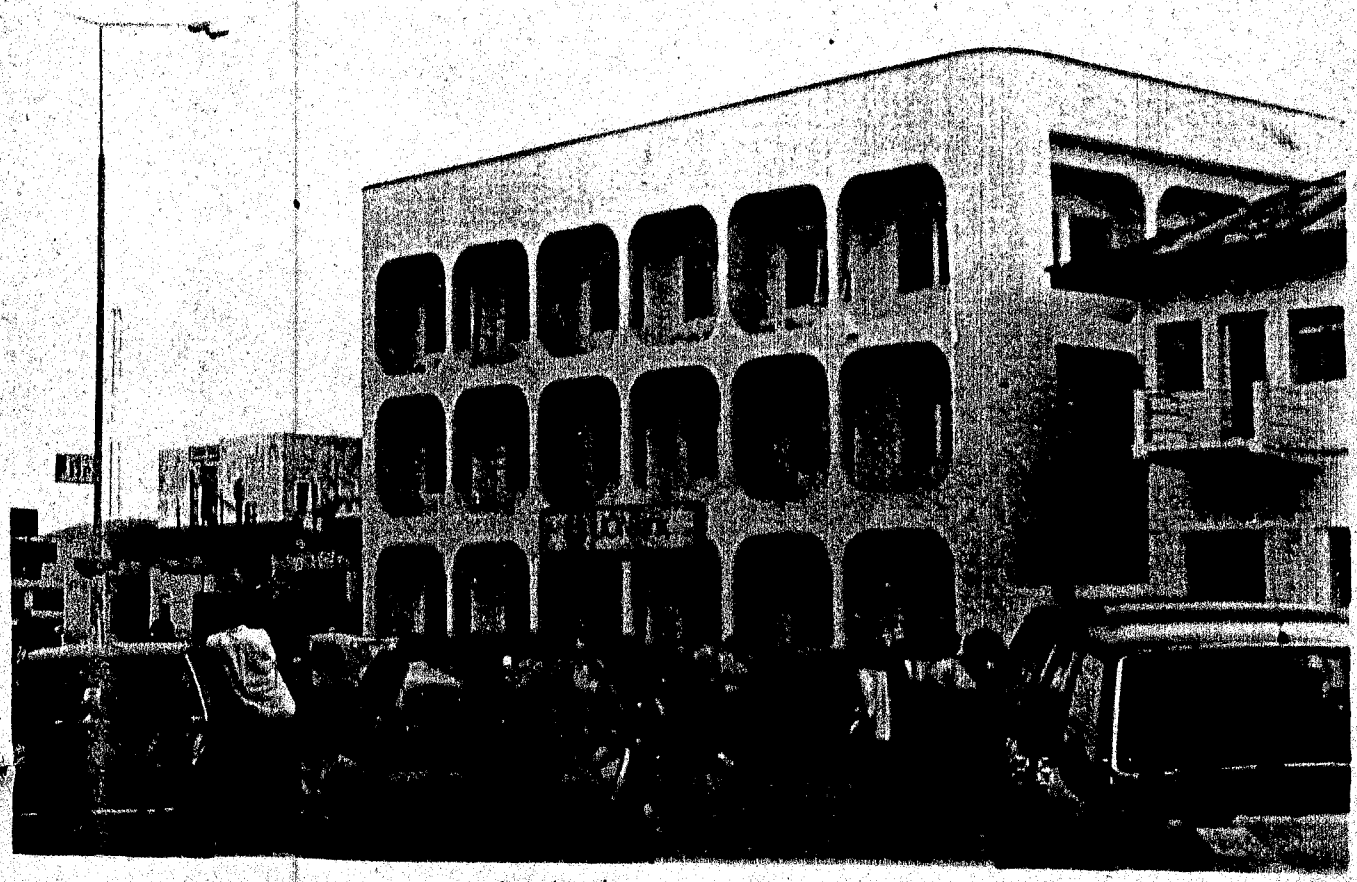


Plate 10. Front View

CASE STUDY 2 - CORPORATE

INTRODUCTION

Lion Bank of Nigeria Plc Corporate Head-quaters is Located on No 34, Ahmadu Bello Way, Jos, Plateau state.
It is a 2 storey building with the banking hall on the ground floor. It shares boundary with a fuel filling station on its eastern side. The bank has 2 banking halls, one for depositing and the other for withdrawals.

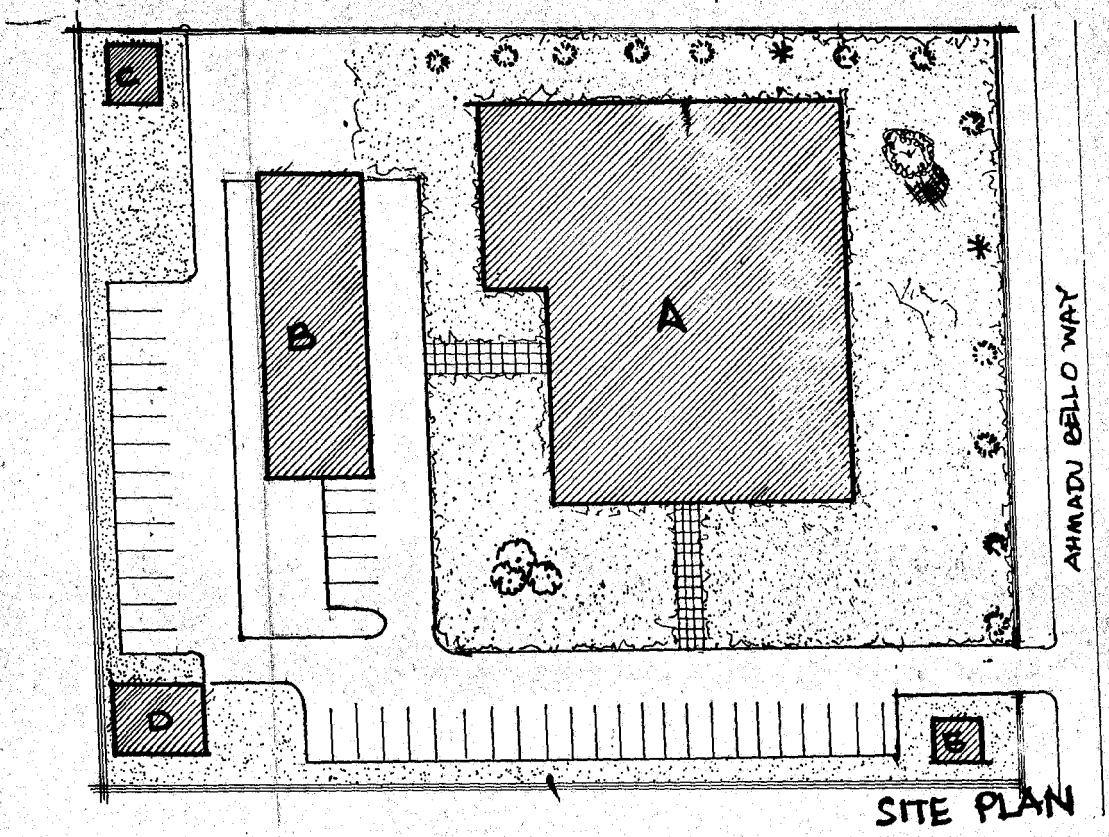


Fig 5. Site Plan of Lion Bank (sketch)

KEY

A	Main building	B	Gate House
C	covered parking lot	D	Power house
E	security House		

DESIGN PROPOSAL FOR
CORPO
GULF

4.3 CASE STUDY THREE

BANK OF THE NORTH LIMITED, MINNA BRANCH, NIGER STATE

Location: Paiko Road, Minna, Niger State

Client: Bank of the North Limited

4.3.1 INTRODUCTION

Bank Of The North Limited is a 1– storey building with the banking hall on the ground floor. It shares boundary with Central bank and Union bank of Nigeria. The bank has a banking hall, for both depositing and withdrawing.

4.3.2 DESIGN AND PLANNING

The Bank of the North rises 2 levels from the ground level. It involves the use of form to achieve aesthetic balance; it also involves the use elements of design which includes rhythm, harmony, punctuations, contrast, asymmetry and emphasis. Planning is done in a way such that there is separation in the approach to circulation in terms of staff and visitors parking and there is room for future expansion as part of planning.

4.3.3 MATERIAL AND FINISHES

The construction is of pre-cast, in-situ cast and normal reinforced concrete with sandcrete blocks. The finishes involve the use of emulsion paint for exterior walls and for the interior walls, the windows are natural

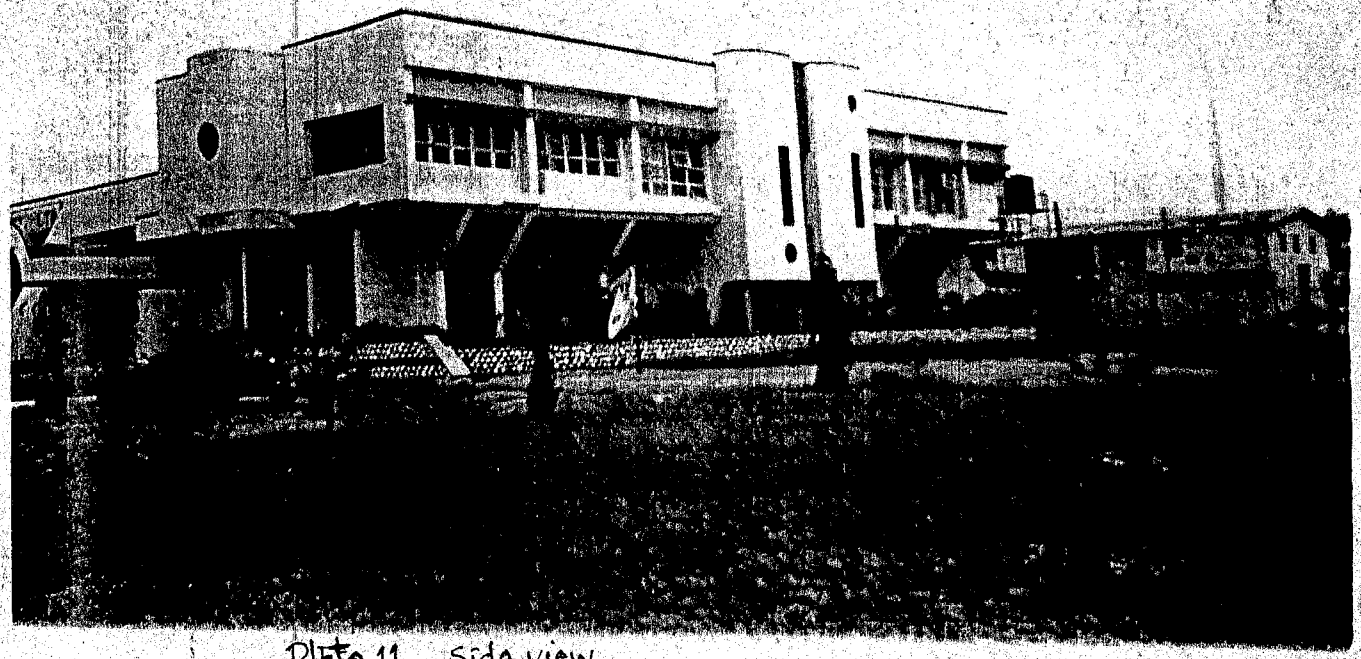


Plate 11. Side view

Plate 12. Front view

CASE STUDY 5 ~ BANK OF

INTRODUCTION

Bank of the North Nigeria Limited, Minna branch is Located along Paiko road, minna, Niger state.

It is bounded on its southern side by central bank of Nigeria, on its North by Union Bank of Nigeria Plc, Minna branch and opposite it by UBA branch office.

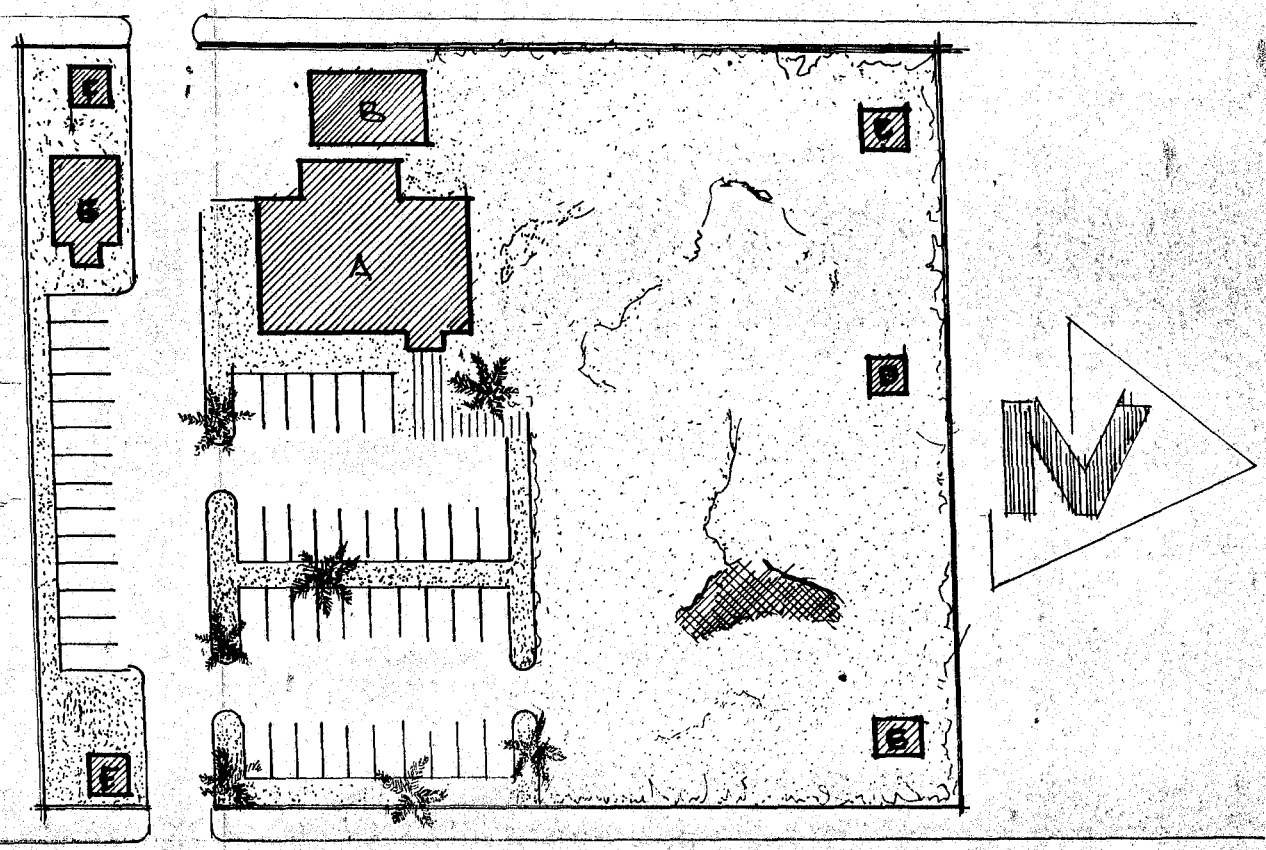


Fig 6. Site Plan of Bank of the North (Sketch)

KEY

A	Main building	E	Incinerator
B	Covered Parking	F	Gate House
C	Power House	G	Mosque
D	Storage		

DESIGN PROPOSAL FOR

CORPO

GULF

anodized aluminium sliding and projected windows complete with clear glass, with the use of concrete decking for roofing.

4.3.4 APPRAISALS

Merits

1) There is sufficient parking spaces
2) The structure is aesthetically balanced
3) There is separation between the public entrance and bullion van entrance

Demerits

1) The building is poorly oriented
2) There are no proper security measures at the bank entrance
3) Poor landscaping
4) There are no surveillance cameras in the premises
5) The banking hall is not large enough

4.4 DEDUCTIONS

Few financial institutions in Nigeria have developed an internal security policy that specifies the measures to be taken to adequately monitor and secure the banking premises. In this study it was seen that the attention given to security in the banks were not up to standard which makes them vulnerable to theft.

CHAPTER FIVE

5.0 DATA COLLECTION

5.1 HISTORICAL BACKGROUND

Abuja, Nigeria's new capital city was created as a result of the need to establish for Nigerians an ethnically neutral, climatically comfortable and centrally accessible territory to all parts of the Federation. An enabling Decree (Decree No. 6 of 1976) was promulgated to effect the creation of the Federal Capital Territory. Thereafter, the Federal Development Authority was entrusted with the responsibility to design, build and manage the new Capital Territory.

The seat of the Federal Government was moved from Lagos to Abuja on December 12th, 1991. As a result, many ministries and parastatals have since moved into the Federal Capital Territory. The seat of the Federal Government was moved when it became clear that the city of Lagos was incapable of functioning as both a Federal capital and a state capital, due to the problems of mad-equate space for development in commensuration with its status as the capital of Nigeria due to the lagoons and creeks. Lagos apart from being overpopulated, it identified with predominately one ethnic group, with a poor topography, inadequate housing, environmental pollution and it is not centrally located.

In August 1975, a panel of experts headed by Hon. Mr. Justice .A.T. Aguda was convened and the term of reference was to recommend a suitable or alternative location for a new Federal Capital of Nigeria outside, Lagos. A new capital that would be secure, ethnically, neutral, centrally accessible,

comfortable and possess adequate land both natural resources to provide a promising base for urban development. After deliberation, the panel recommends the setting up of a new Federal Capital City at Abuja. The recommendation was accepted and new Federal Capital City, Abuja was born.

5.2 GEOGRAPHICAL LOCATION

The beauty of Abuja is in its landscape profiled by rolling hills, isolated highlands and gaps with low dissected plains. It's south-west area has the lowest elevation, where flood plain of Guarara River is at an elevation of about 70m above sea level.

The land rises irregularly from there, eastwards. The Bwari-Aso range in the North-East, the Gurara Range, South-West of Suleja and the Idon Kasa Range, North-West of Gwagwalada. There are other isolated inselbergs dotting of many parts of the Federal Capital Territory. The area is thus, touristically condusive for eco and recreation tourism.

Abuja is located in the middle-belt between 60 45'W and 730'E of the Greewich meridian. It occupies an area of about 8,000sq kilometers and is bounded in the North by Kaduna State in the East by Nasarawa State (former Plateau State) in the South-West by Kogi State and in the West by Niger State.

The centrality of Abuja ensures that it is easily accessible from all parts of the country, whether by air or road. Abuja is today, without any doubt, one of the fastest growing cities with immense tourism potentials,

with an estimated population of about 0.5 million people currently and an expected population of about 3.2 million at full development.

5.3. CLIMATIC CONDITIONS

Abuja climate is characterized by 2 major seasons. The dry season which begins in November perpetuating through February is ruled by warm sunshine and the hazy harmattan in the months of December and January. The rainy season begins in mid-March and terminates in November. Abuja falls within the semi-dry sub-humid zone while the relief features that surrounded Abuja may slightly alter its climatic characterize, the differences does not call for diverse architectural requirements, but for satisfying the micro climatic conditions which may vary from on location to another.

In the Federal Capital Territory, the duration of sunshine ranges from 6 to 8 hours per day in the south and 8 to 10 hours in the north from January to April/May. There is usually a steep drop to a mean of about 4 hours per day in the month of July/August due largely to increase in cloud cover. It starts to rise again in September as a result of decrease in cloud cover.

5.3.1 RAINFALL

The rainy season spans for about 9 month in the southern parts from March to November and about 7 months in the southern territory which ranges from April to October in the extreme south. Because of the location of the territory on the windward side of the Jos Plateau, there is a general increase in the total amount of rainfall from the North to the south, rather

than the usual decrease which is characteristic of the entire country. The duration of the rainy season varies, therefore, from 240days in the southern parts to 290days in the Northern parts with an annual rainfall of 1632mm.

5.3.2 VEGETATION

Generally the vegetation of the city is characterized by park savanna, guinea savanna, wood savanna and Riverine depressions which are typically skirted by fringes of thickets and high trees. There are occasional patches of forest or heavily wooded areas. This reflects the true transitional nature of the area as between the southern forest and the Northern grassland vegetation belt.

5.3.3 TEMPERATURE

Abuja records its highest temperatures during the dry season when there are few, if any clouds. Variations in temperature is as much as 17oc which have been recorded between the highest and lowest temperature in a single day maximum temperature during the rainy season in lower due to the dense cloud cover decimal annual range is also much lower, sometimes not more than 7oc in July and August.

5.3.4 HUMIDITY

Humidity in the sites varies according to seasonal variation as obtained in Abuja and sometimes could be as low as 20% during the dry season in the afternoon at higher duration in the northern parts, sometimes about 30% is records in the extreme south of the territory especially in the area close to

Niger-Benue through and as high as 95% in the morning hours during the rainy season.

5.3.5 WIND PATTERN

Abuja has two major air masses that dominate the climate. These are the: tropical maritime air mass formed over the Atlantic Ocean to the south of the country. It is usually warm and moist, and it moves inland generally in a south-west to North –East direction.

The tropical continental air mass is developed over the Sahara desert and therefore is warm and dry and blows in the opposite direction, North-East to South-West. It is associated with the dry season and occurs between the months of November and March.

5.3.6 SUNSHINE

Abuja is exposed to 2,500 sunshine hours annually. During the dry season, the Northern radiation in the amount of sunshine follows the general trend of movement in cloudiness. The amount of insulation gives room for the use of materials, which can reflect or absorb solar radiation in or from buildings. The sunshine hours range from about 5.1 hours in July to about 8.9 hours in November. October to February usually records the longest sunshine hours in the state.

5.4 GEOLOGY AND TOPOGRAPHY

Abuja major rock-underlay is sedimentary rock which is located in streambeds and consists of sand, gravel and local deposits of clay. The rock is of medium to high strengths, thus creating minimum engineering problems

during construction. These rocks are normally quarried and used for construction work on site. Other rocks in the FCT are the Igneous rocks which include Biotite granite, which comes in two forms such as coarse prophylactic rock and fine medium grain and also the metamorphic rocks which include the Biotite-muscovite schist. This rock has not created any major constraint to structures proposed in the FCT.

Topographically, the FCT has gentle undulating terrains. The variation is between two heights, which vary 50m or more, it produces the immediate surrounding short vines of less than one kilometer, which are further shortened by the characteristic of park savannah vegetation. Isenberg and other granite clusters occupying about 80% of the total plain areas, and are generally rocky and occurring as isolated masses or in groups of raising plains. It has been noted that no earthquake or landside has been recorded.

5.5 SOCIO-CULTURAL LIFE

The Abagyi (Gwara), Gade, Koro nd Gwandara speaking people of Nigeria first inhabited the land now known as Abuja. The Gbagyi or the Gwaris as popularly known to have a very ancient culture which is comparable in age and beauty to the famed Nork culture in Kaduna state. They are expert potters, craftsmen and farmers who have remained unaffected by the enticement of modernity.

Abuja is a city whose creation was achieved by a people who longed for unity, a people from across the country. It is city owned not by one

individual, group of persons, ethnic groups or state (s) but by all citizens of Nigeria, it is therefore referred to as a 'no mans land'.

The manifestation of various activities and those participating in them, point to the fact that it is a socio-cultural melting pot devoid of one distinct custom or tradition. It is obvious that apart from English which is the official language and Hausa, Ibo and Yoruba-the main Nigeria language, several other distinct dialects are spoken in various communities in the territory. Abuja cannot be said to be dominated by one or more ethnic group and the vision that it becomes a symbol of unity is seen to be on its way to accomplishment.

5.6 ECONOMY AND COMMERCE

In the first instance, Abuja is centrally located, and its easy access to neighbouring large consumptions town like Kaduna, Keffi, Jos and Makurdi with other close by towns, this will create significant demand on industrial products and ensure that raw materials can be assembled from all parts of the country and finished products distributed at minimum cost.

Commercial and industrial ventures established in the FCT enjoy a package of incentives offered by both the Federal and state governments and the returns on investments cannot be competed with by any other town/state in the country. This is especially true of investments in business ventures, industries and housing where very high returns may be expected. Unlike in other several Nigerian towns where infrastructural facilities are inadequate to the requirements of such ventures, Abuja boasts of a whole range of

services. Apart from the provisions of water and power supplies, there are good access roads and effective communication facilities.

Abuja also poses in addition of the mineral and agricultural resources, the potential market size. Mineral resources includes, marble, mica, lead, sand, ceramic clay, iron-wolframite, tine etc are all found in different parts of the FCT, while the Agricultural resources includes yams, legumes (groundnuts and cowpeas), grains (maize, sorghum and rice), seeds and nuts (melon seeds and beni-seed), animal products (Goats, Cattle, Sheep) fruits and vegetables with forest product which includes sawn timber, wood and firewood.

5.7 DEMOGRAPHIC DATA

Extrapolating from available statistics, determines the demographic characterizes of Abuja and its subsequent influence on the project at hand. These characterizes are age/sex distribution, the numbers of households and the anticipated income distribution by the year 2003 population.

According to the 1973 census, which was rejected by Nigerians, but was in line with the 1963 census, as far as Abuja was concerned, the population was 170,575. This figure was not actually accepted, this then grew to about 378,671 which was the provisional figure of the 1991 population census.

Population growth rate in Abuja is now becoming alarming and this is as a result of other factors besides the movement of the seat of power from Lagos to Abuja which brought along with it, Ministries, Parastatals, business

ventures etc. In recent times, the growth has doubled due to the instability faced by the country.

5.8 TRANSPORTATION AND TRAFFIC FLOW

Abuja has a well organized transport system. The Abuja international Airport meets all the requirements of a modern Airport. It is about 30 minutes drive from the central area of the Abuja-city-several domestic Airlines per Abuja daily. The green taxis with white horizontal stripes are abundant for intra-city services. The use of linear spine feeder system makes possible a series of entrance and units to allow the taxis and buses to loop off the spine and to provide direct service to a distance and then to return to the spine. The direct pattern allows maximum flexibility in transit service between sectors via the transit spine. This is not a fixed feeder crop thus additional access roads to the transit spine have been developed to accommodate projected transit demand.

Traffic lights are placed on all traffic routes in the city, this aids a better and functional circulation flow of vehicles in and around the city in an orderly and organized manner.

5.9 EXISTING LAND USE AND FUTURE TRENDS

The FCT takes the shape of the alphabet U.H and covers an area of about 8,000 square kilometers. The city is crescent shaped in the North Eastern quadrant of the territory in a position easily identified by Aso Rock. Abuja now occupies 256 square kilometers, a mere 3% of the territory which

includes "unusable land" such as rock outcropping or steep slops not other wise programmed for open spaces.

The planning and implementation purpose makes the development of the FCT in stages imperative. Special attention was give to standard for residential and local public facilities as major landscaping elements in the city with phase one of the FCT comprising of five districts-Garki, Wuse, Maitama, Asokoro and Central Area, with exception of the Central Area, the other four districts are mainly residential areas for both civil servants and private individuals. The Central Area which is the city centre, comprises of four zones, they are: the three arm zone, the Ministerial zone, the cultural zone, and the central business district.

The tour and country planning covers development of urban infrastructure, provision of parks, and gardens, preparation of layouts and plans for residential, commercial and industrial areas, land surveying and development control services. The implementation of the programme is being done simultaneously in both the city and other major towns in the territory.

In compliance with the provision of the master plan, all plots of land in the FCT phase one have been demarcated and mostly allocated for various purposes as contained in the approved land use plans. Similarly, the preliminary general land use and site development plan for central area phase two has been completed.

CHAPTER SIX

SITE ANALYSIS

6.1 CRITERIA FOR SITE SELECTION

The selection of the site to accommodate the proposed design "Gulf Bank Nigeria Plc" is dependant on some particular criterias which has effects on the functional and maximum utilization of the bank.

The site is favorable for banking activities due to some factors which are:

- It is sited at the Central Business District of the town.
- It is not sited in a residential area.
- The area is a security conscious area with the Police Station and Fire Service Station adjacent the site.
- The site provides easy access to both pedestrians and vehicles.
- The site can be easily accessed by offices, stores, business, markets, hotels and others which are all around the site.

6.2 LOCATION OF SITE

The proposed site selected for the proposed design "Gulf Bank Nigeria Plc" is located at the Central District, in the F.C.T. The adjoining properties are the LION BANK HOUSE by the opposite side and the NSITF by the left and also the along the roads are other properties like the POLICE STATION, FIRE SERVICE STATION, NICON PLAZA, FIRST BANK NIGERIA Plc, NIGERIAN STOCK EXCHANGE, CHELSEA HOTEL, NACRDB, METRO PLAZA, BOND BANK, GRAND SQUARE PLAZA and others.

6.3 SITE CHARACTERISTICS

a. *Climate* (Rainfall, temperature, Humidity): The climate of the area is characterized with a total annual rainfall of approximately 1,650mm with the rainfall duration spanning from 240days to about 290 days in the months of April to November.

High temperatures occur in the dry season with temperatures varying from 29.5oc in July and August to 37.8oc in March and April at an average daily temperature range. The minimum temperature (daily) from about 14.5oc in December and January to about 25.2oc in May and June with sunshine hours recording longest in the months of October to February. The sunshine hours ranges from 5.7 hours in July to about 9.2 hours in November in the territory.

The humidity ranges from 14% to about 71% in the month of August in the territory.

b. *Vegetation*: vegetation can be classified as park savannah with both tall and short trees all surrounded with short grasses. The vegetation is annual with only a far species of trees found among the grasses.

c. *Topography*: it has a slightly sloping terrain which slopes downwards towards the express way and thereby draining the site towards the road which has a drainage system.

d. *Geology*: The area is almost predominantly underlain by granite and of the crystalline basement complex. This area is ideal for any

building and setting up of required facilities for the bank and it's also free from geological hazards.

6.4 IMPLICATIONS

In designing, landscaping will require different kind of trees, shrubs and grass. The trees used will be those trees that will not lose their leaves in dry season, the deciduous trees will serve as an advantaged type which will also be used as shades and also wind break to reduce the wind speed and other shading devices will be put in place to reduce glare from the sun.

Drainage systems capable of withstanding heavy rainfalls will be put in place and also means of control of water bodies around the site will be put in place to avoid over flooding.

6.5 ACCESS AND CIRCULATION

The site of the proposed design "Gulf Bank Nigeria Plc" can be accessed through 2 different routes which are the Mohammed Buhari Way and the Mai-Maiari street.

The circulation planning on site will take into consideration all elements and requirements needed for planning to bring about a smooth flow of traffic like Access for guest and visitors, Access for goods and services and staffs, and proper circulation around the site. The topography of the site is relatively gentle in slope and would be quiet easy for the construction of traffic routes around the site.

6.6 UTILITIES

The site is accessible to all the essential infrastructural utilities and services needed for full operation. Services like pipe-borne water which flows from the Lower Usuma dam, telephone services, electricity supply through the National Electrical Power Authority (NEPA), and public sewage line which is to ensure that waste water is properly disposed of without polluting the environment and the drainage systems which are around the site for proper site draining.

6.7 EXISTING FEATURES

The existing features and facilities that contribute to the conditional choice of the site are the Business ventures, Hotels, Shopping Plazas, market and other arising business ventures. The close proximity to all the necessary infrastructural facilities contributes to the conditional choice that makes the site viable for a bank.

6.8 GENERAL APPRAISAL OF SITE

The terrain, geology, vegetation and also location of the site make it suitable for the purpose of locating the bank in the area.

6.9 DEDUCTIONS.

Through studies made on the nature and general requirements of a bank, the following deductions were made concerning the site in reference to the above collected data on the proposed site, the existing features, facilities and location of the proposed design for the bank is considered appropriate and the site is favorable for banking activities.

CHAPTER SEVEN

DESIGN, CONCEPT AND CONSTRUCTION

7.0 THE DESIGN

For a design scheme to be proper, some design consideration have to be thoroughly analyzed and the most suitable chosen. An analysis of these elements gives one a clear idea on how to go about synthesizing the design. The elements under study include:

- Office layout type
- Planning the office

OFFICE LAYOUT TYPE

Generally, office layout types are based on either of the two principles:

- Accessibility to various rooms, through corridors, in which case single, double and triple zone layouts may be distinguished.
- Alternatively, access to the various parts of the layout is gained directly from the service core (utility core) and corridors are dispensed with.

The single and double or triple zone layouts are based on the provision of corridors, giving access to the various parts of the layout. The economy of such system is determined not only by the ratio of office space to circulation space, but also by the ratio of utilized space to the available space within the office itself.

The flexibility of an individual room system based on grid-layout which makes it possible to provide rooms for varying lengths, hence privacy and comfort is afforded by this system. This system, however has a disadvantage of relatively high cost of construction and due to its continuous corridor; the room depth can not be varied.

THE OPEN LAYOUT TYPE

The layout type without corridors, this system permits rational utilization of the entire floor space available for offices. The absence of partition makes for a substantial form of construction than the individual room system. The system also cuts out the considerable cost of installing and rearranging movable partition, facilities, supervision and interaction of the entire staff. Noise and lack of privacy is a possible disadvantage of the open layout. The scheme provides large open layout office area and for this reason the vertical circulation elements are being centrally located. In open layout type an efficient air-artificial lighting as a paramount adjunct to natural lighting.

7.1 CONCEPT AND DESIGN

A concept is a thought or an idea in philosophical terms of a thing being conceived, a general notion or way of categorizing items and demonstrating which items are related to one another involving ideas existing in human imagination that integrate element into the whole unit. Any imagination being visualized by the human memory that is portrayed in

whatever form. it also a means of expressing ones' in-depth feeling of an abstract existence.

This thesis, however brings about a concept that is brought about by ideas, notions, thoughts and observations that is portrayed in drawings. In this design thesis the understanding of significant relationships between form and function, open spaces, natural features and landscape of the area is eminent in determining the character to be used in the design and the layout.

7.2 DESIGN CONCEPT

The aim of the site design concept is to gear towards a functional, well circulated flow in the bank, and also putting into consideration the safety of the bankers and customers in the bank.

The design concept is based on an analogical design approach which is functional approach that brings about analogies which have been drawn from field outside architecture; in addition a canonic approach is also being adopted in other to put the functions into a well organized format. In this design there is a similarity between relationships and the substitution of its parts, these parts may be items, behaviors activities or ideas. It employs the form of a design from other forms. The form emphasized on is the "SYMBOLS IN THE NAIRA BILLS" which stands as a prominent entity in each of the bills. These symbols are analyzed and reshaped in metamorphosis to bring about the final form. However, grid system is adopted to bring about a structurally stable and functional form used in the design.

7.3 FUNCTIONAL AND SPACE ANALYSIS

This deals with the relationship between one functional space and another and the relationship between one facility and another. This plays a major role in planning the plan and site layout of the bank.

The space analysis deals with the empirical calculation of the space required for each function so as to eliminate the problems of inadequate space as this defeat the whole aim of the design which is geared towards a practical functionality.

7.4 MATERIALS AND CONSTRUCTION

Construction Materials, almost everything is used in building construction, from aggregates, cement, bricks, roofing materials, steelwork, and glass, to an array of products such as nails and screws, through to services equipments and toilet fittings. Some materials are further processed: cement, sand, and gravel and other aggregates, for instance, are used in the production of concrete. Modern building materials should ideally contribute to making constructions energy efficient, comfortable, and healthy to work in. The most widely used rock in the world is limestone, of which chalk is a variety. It has numerous applications: as a building and ornamental stone; as an ingredient in cement and concrete; and as an aggregate for road building, where its drainage and load-spreading properties are a particular advantage.

7.4.1 MATERIALS

The materials that where used in this design varies in strength, stiffness, elasticity, resistance, density, and thermal conductivity. The materials used

vary in types, shapes and sizes, putting into consideration the life span, economic value, mechanical properties, and also the aesthetic value. These materials includes: sandcrete blocks, concrete, cement, bricks, limestone, glass, timber, cables, steel and aluminium. Some of these materials are being elaborated on below:

- **BRICKS**

Bricks are produced from clay, concrete, or some other similar substance. They possess good fire and thermal insulation properties. The most suitable clays contain calcium carbonate, fine sand, and sufficient water so that they can be pressed easily into shape. The most common brick size is 225 by 112.5 by 75 mm (9 by 4 by 3 in). Different categories of bricks are used for load-bearing walls, for structures carrying exceptional loads. It is used for aesthetics in varies buildings in this design.

- **CEMENT**

Cement is made of an artificial mineral substance. It is made by heating clay and powdered limestone or chalk to form a clinker, which is then ground to a fine powder that must have the correct proportions of calcium, aluminium, silicon, and iron. Addition of water produces a soft, malleable material which sets hard and it is used as mortar as a binding material for bricks, blocks and stones and as a plaster. Glass-reinforced cement composites consist of ordinary Portland cement and sand combined with an alkali-resistant glass fibre, which is light and has a high tensile strength. These have many applications in cladding for buildings

and in reinforcing concrete. Glass-reinforced panels and pipes are also commonly used in construction.

- **GLASS**

Glass is made by melting together sand, limestone, and salt. These constituents need to be very pure for the glass to be clear. Glass is used in curtain walls, windows, doors, and cladding. It can be laminated with plastics or toughened, or a wire mesh can be sandwiched into glass sheets to provide strength or fire-resistant properties.

- **CONCRETE**

Concrete is made from three components: an aggregate material such as sand or gravel, water, and the binding agent, cement. It is weak in compression but strong in tension. In this design, concrete is used in the construction of foundation footings, floor slabs, sun-shading devices and roofs. The cement, gravel and sand are in a ratio of 1:2:4 or 1:3:6 respectively.

- **STEEL**

The physical properties of various types of steel and of any given steel alloy at varying temperatures depend primarily on the amount of carbon present and on how it is distributed in the iron. Steel is extensively used in this design as most of the park facilities are mainly of steel, it is also used as railings and roof trusses in the buildings structures provided and reinforcement bars in concrete.

- **ALUMINIUM**

A given volume of aluminium weighs less than one-third as much as the same volume of steel, the metal is becoming increasingly important architecturally, for both structural and ornamental purposes. Aluminium is used for window sills, sliding doors/doors frames, storm windows, and foil make excellent insulators. Aluminium becomes stronger and retains its toughness as it gets colder and is therefore used at cryogenic temperatures.

Long span aluminium roofing sheet covers long spans, provides aesthetic beauty to the building structures and is used as a roof covering in most of the buildings.

7.4.2 CONSTRUCTION

Building Construction procedures involved in the erection of various parts in the bank varies. The major trend in present-day construction continues away from handcrafting at the building site and towards on-site assembly of ever larger, more integrated components manufactured away from the site. Another characteristic of contemporary building, related to the latter trend, is the greater amount of dimensional coordination; that is, buildings are designed and components manufactured in multiples of a standard module, which drastically reduces the amount of cutting and fitting required on the building site. The major elements of a building include the following:

(1) The foundations, which support the building and provide stability;

(2) The structure, which supports all the imposed loads and transmits them to the foundations;

(3) The exterior walls, which may or may not be part of the primary supporting structure; the exterior walls are mainly comprised of curtain walls. Curtain wall has come a long way especially in the last decades. The behavior of certain walls in warding of the effect of the weather is highly complex. They may look simple but are far from it. Rather, involve assembling of structure, metal and glass working, with much interrelationship and interdependence of elements.

(4) The interior partitions, which also may or may not be part of the primary structure;

(5) The environmental-control systems, including the heating, ventilating, air-conditioning, lighting, and acoustical systems.

CHAPTER EIGHT

8.0 DESIGN SERVICES

8.1 ELECTRICITY AND LIGHTING

The bank shall be supplied with electricity by N.E.P.A (National Electric Power Authority) with a back-up supply from a plant house within the bank premises and also considerations are also been made for the use of solar transformer. This is to supplement the power been supplied by N.E.P.A.

Information regarding the total estimation of electric load required should be passed on to N.E.P.A during the planning stage, to confirm services availability and co-ordinate the location of the services required. A transformation should be used for in the plant house to switch from the supply of voltage to services in order to reduce cost, maintenance, and noise. Transformers are normally located outside vicinity.

Services connected maybe:

1. Underground connection – more expensive, well protected during extreme weather conditions. Used in high density area.
2. Overhead connection – less expensive, carries high voltage over long areas.

Electricity provides power for light, powering electrical devices and for banking facilities. The electric system has a central in the bank that distributes power to the various floors. Circuits protected by a time delay tripping mechanism are used- when a fault is corrected, current is restored by simply replacing the switch controlling the affected circuit. Basic

components of the electric systems are: - main switch boards, panel boards, services outlet, switches and controlling wire conduct.

Lighting on the other hand is an important factor in creating illumination. It is also necessary as an aid to security, public safety.

8.2 HEATING, COOLING AND VENTILATION

Heating, cooling systems and ventilation of the interior spaces of the buildings is for the environmental comfort of the occupants. Internal environmental services may be planned as central or unitary systems:

- *Central systems* allow more convenient location of plant, more sophisticated control and higher efficiencies and are more suitable for public areas, space heating generally and air conditioning.
- *Unitary systems* provide individual choice and, often, more instant local response. Unitary air-conditioning is more widely used in accommodating facilities.

The location of central plant must take into account the need for vehicle access, methods of distribution of air and water and possible nuisance from noise and air pollution (chimneys, exhaust outlets). Most air-conditioning and heating systems including domestic hot water supplies are arranged to supply zones within the properties for easier control, less transmission loss and energy savings. Fans and air conditions are also provided to help with the cooling.

Heat distribution is usually by means of hot water circulation; heat may be generated in boilers or heat exchangers (combined with power

generation) and transferred to other supplies (domestic hot water, recreational uses) in calorifiers.

8.3 WATER SUPPLY

An adequate and reliable supply of pure and wholesome drinking water most be provided for the bank development to meet all the requirements for domestic and related purposes. The mains supply of water is the Lower Usuma dam. The transmission from treatment plants is facilitated by gravity through trunk pipelines and may also serve in emergency for fire-fighting as well as filling and supplementing the water recycling in swimming pools and other circulatory systems.

Irrigation water used for gardening and other related purposes may be gotten from the recycling of treated sewage effluent or by alternative sources.

Where mains supplies are inadequate, supplementary sources may be used such as desalination of sea water, underground bore-holes and stored rainwater. It is essential that the mains supply are kept separate from other circulations and, in some cases, a separate system of pipes for drinking water may be installed. In addition overhead tanks could be placed in different strategic positions to aid water supply and storage.

8.4 DRAINAGE AND SEWAGE DISPOSAL

The size of surface water drains is determined by the highest intensity of rainfall (including 'flash floods') determined from records for the area and the

relative impermeability of the planned zone of development. The outfall is toward the main drain on the high-way with sufficient capacity.

The quantities of foul water and size of the drains are related to the pattern of water consumption. Sewers in the bank are normally laid at a gradient to ensure a self-cleansing velocity of 0.75m/sec with pumping system installed where it is necessary to discharge to a higher level.

8.5 REFUSE DISPOSAL

Three areas of planning are involved in devising arrangements for refuse disposal: *Collection* of the refuse through the use of returnable containers or disposable sacks strategically placed in different positions in the bank and then the refuse is being transferred to another system.

Storage requirements for the storing of the refuse on site should be provided in order to prevent problems of nuisance, flies, rodents and other unattractive appearances on site.

Disposal of the refuse is done by the local authority, the Abuja Environmental Protection Board (AEPB), but sometimes private contractual arrangement should be necessary, in other for effective refuse disposal.

8.6 ACOUSTICS

Acoustics (sound) term is sometimes used for the science of sound in general. It is more commonly used for the special branch of science, architectural acoustics deals with the construction of enclosed areas so as to enhance the hearing of speech or music. To modify the reverberations the

architect has two types of materials, sound-absorbent and sound-reflecting, to coat the surfaces of ceilings, walls, and floors. Soft materials such as cork and felt absorb most of the sound that strikes them, although they may reflect some of the low-frequency sounds. Hard materials such as stone and metals reflect most of the sound that strikes them. The acoustics of large halls may be very different when it is full from when it is empty; empty seats reflect sound, whereas an audience absorbs sound.

In most cases, the acoustics of a room will be satisfactory if a proper balance between sound-absorbing and sound-reflecting materials is created. Troublesome echoes may frequently occur in a room that otherwise has a proper overall reverberation time if the ceiling or a wall is concave in shape and is highly reflecting; in such cases, sound may be focused at a particular point, making the acoustics bad there. Similarly, a narrow corridor between parallel reflecting walls may trap sound by repeated reflection and cause troublesome echoes, even though the overall absorption is sufficient. Attention must also be given to the elimination of interference. Such interference arises from the difference in the distances traversed by the direct and the reflected sound and produces so-called dead spots, in which certain ranges of frequency are cancelled out. The treatment of noise reduction through acoustical means is being put into play in designing the theatres present in this design. Double walling treatment and double glazing of the glass curtain walls were also being introduced.

8.7 FIRE SAFETY

Modern buildings require not only means of escape access, for fire brigade and structural protection but also fire precaution to safeguard life and property and this is achieved by:

1) Reducing fire incidence
2) Controlling fire propagation and speed
3) Providing adequate means of escape for occupants of the building.

Techniques used to extinguish fires and limit the damage caused by them are of various types. Fire-fighting consists of removing one or more of the three elements essential to combustion—fuel, heat, and oxygen—or of interrupting the combustion chain reaction. Sprinkler Systems, Fire alarms and smoke detectors are placed in strategic places in the building. Temporary fire fighting gadgets should be provided for use before the arrival of the fire brigade. Such gadgets include portable fire extinguishers, water hydrants, Fire hoses and sprinklers.

8.8 SECURITY

The security is aided by different measures which are the quiet, physical and human measures and also with the use of a crime strategy known as "CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN". The use of street light and other security lights are also being used to enhance security watch in the bank premises.

8.9 COMMUNITY

The bank is located at the central district of F.C.T with the LION BANK HOUSE by the opposite side and the NSITF by the left and also the along the roads are other properties like the POLICE STATION, FIRE SERVICE STATION, NICON PLAZA, FIRST BANK NIGERIA Plc, NIGERIAN STOCK EXCHANGE, CHELSEA HOTEL, NACRDB, METRO PLAZA, BOND BANK, GRAND SQUARE PLAZA and others as its adjoining properties. The location is to promote the use of the banks, since it is close to proximity.

8.10 MAINTENANCE

Maintenance plays a vital role in the bank administration, as all the facilities have to be closely monitored in other for safety, to increase its life span, ensure a smooth flow of usage by the users. This will therefore promote the safety, since it is being noticed that one of the problems faced by the country is lack of maintenance. A maintenance agency should be employed to see that preventive and corrective maintenance programmes are mapped out and diligently followed to ensure effective maintenance.

8.11 SOLAR CONTROL

The buildings are oriented in such a way to minimize glare and also with the provision of shading devices like trees and window tints

8.12 COMMUNICATION SERVICES

The site will be provided with phones by the Nigerian Telecommunication Limited (N.I.T.E.L) and other telecommunication networks will also be used within the bank perimeters for office use.

CONCLUSION

Banking, transactions carried on by any individual or firm engaged in providing financial services to consumers, businesses, or government enterprises. In the broadest sense, banking consists of safeguarding and transfer of funds, lending or facilitating loans, guaranteeing creditworthiness, and exchange of money. The banking industry is one of the fastest growing sectors in Nigerian financial institution. It plays a vital role in the Nigerian economy. There has now arouse need for proper protection and improvement in bank designs to further improve the security status of the banking industry since of late they stand threatened by armed robbers who now see the industry as the fastest means of getting rich and also improvement of banking services is required to enhance their output and solidify the economy of the nation at large.

The main theme of this design is the allocation of functional spaces, with effective security systems to enhance banking activities and services. It is in this process of emphasizing this architectural imagery that the general appraisal of the bank complex is being projected. Architectural design also has to contribute to the safety of the bank buildings considering the objectives of the banks as well the aesthetics, so as to further enhance the security level through a properly planned functional design.

All these are a few that are mentioned for the bank need to be housed by an Architectural master piece that will befit the dignity, security, comfortability, adaptability and efficiency of banking services.

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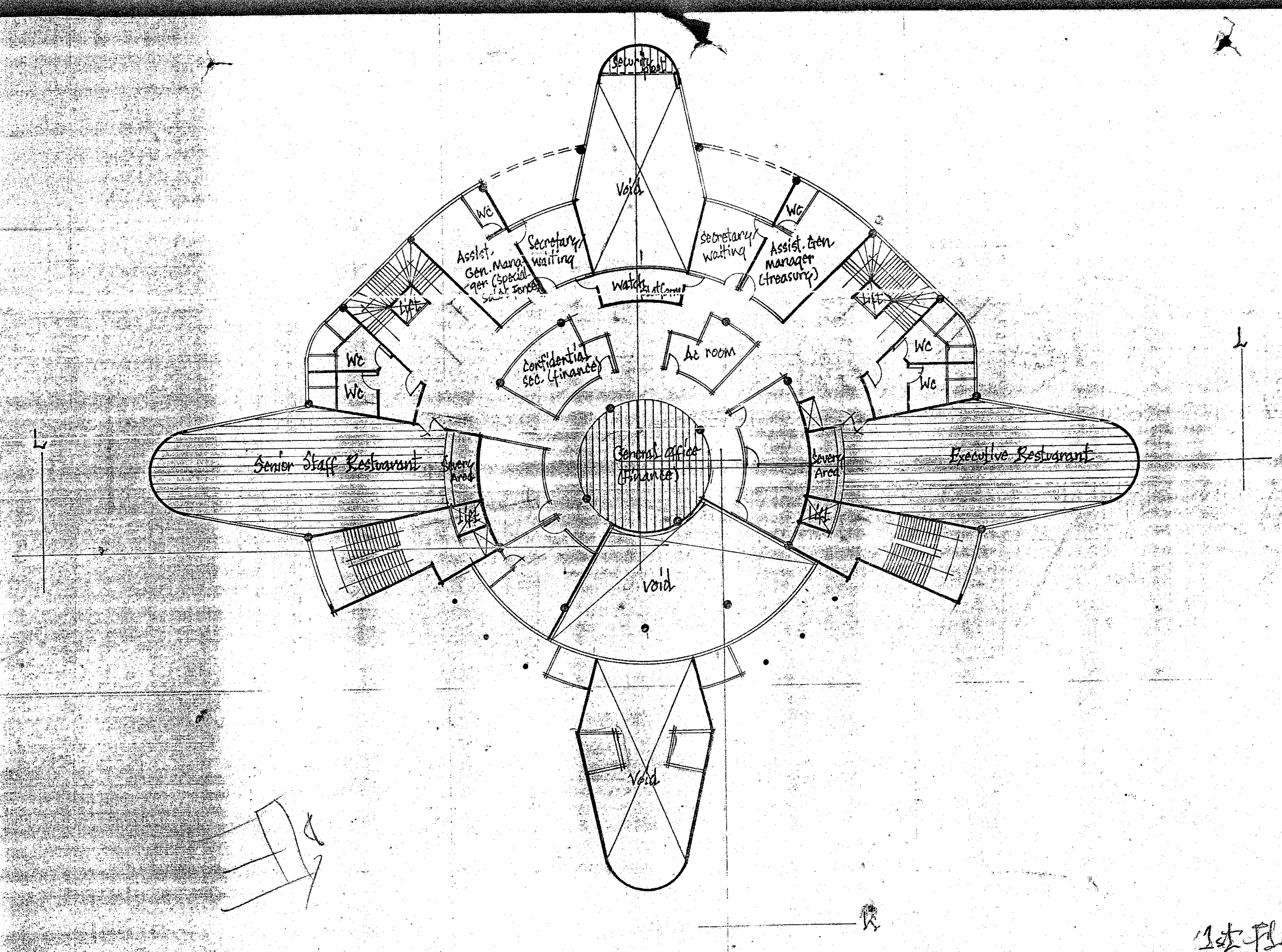
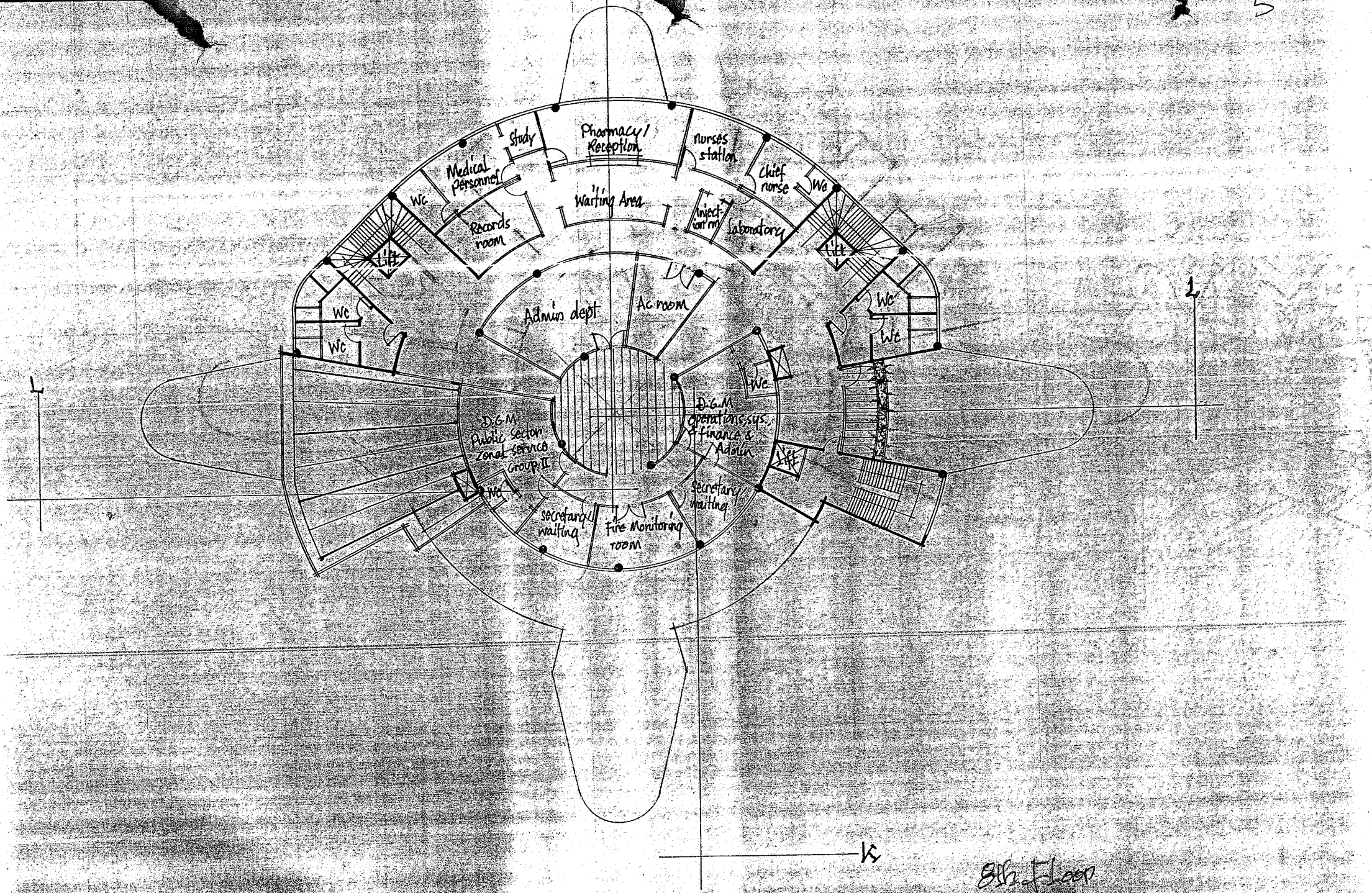
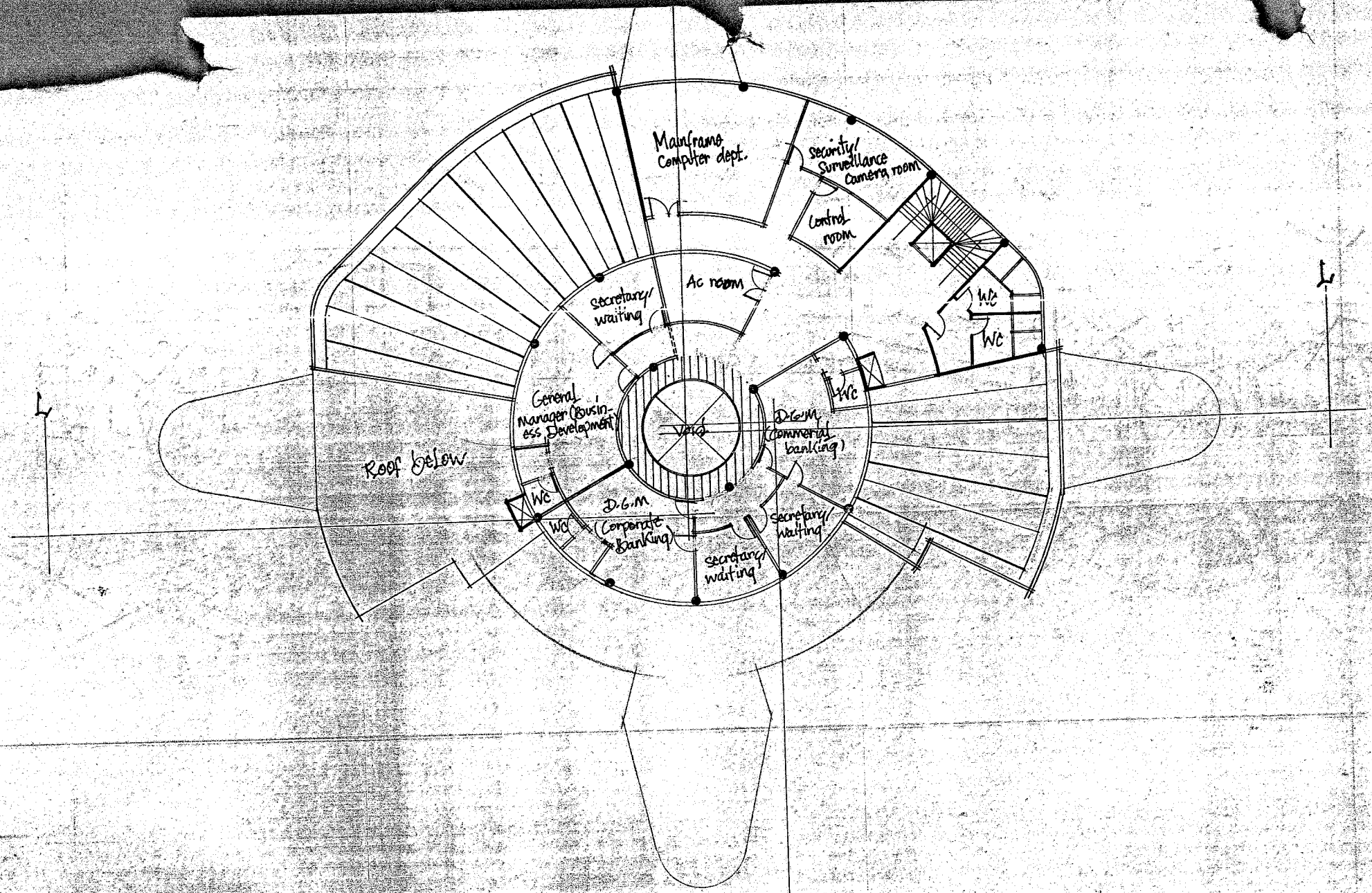

Security Post
Void
Wc
Wc
Assist. Gen. Manager (Special ...)
Secretary/ waiting
Secretary/ waiting
Assist. Gen manager (treasury)
Watch
Lift
Lift
Wc
Wc
Wc
Wc
Confidential sec. (finance)
Ac room
Senior Staff Restaurant
Severy Area
General office (finance)
Severy Area
Executive Restaurant
Lift
Lift
Void
Void

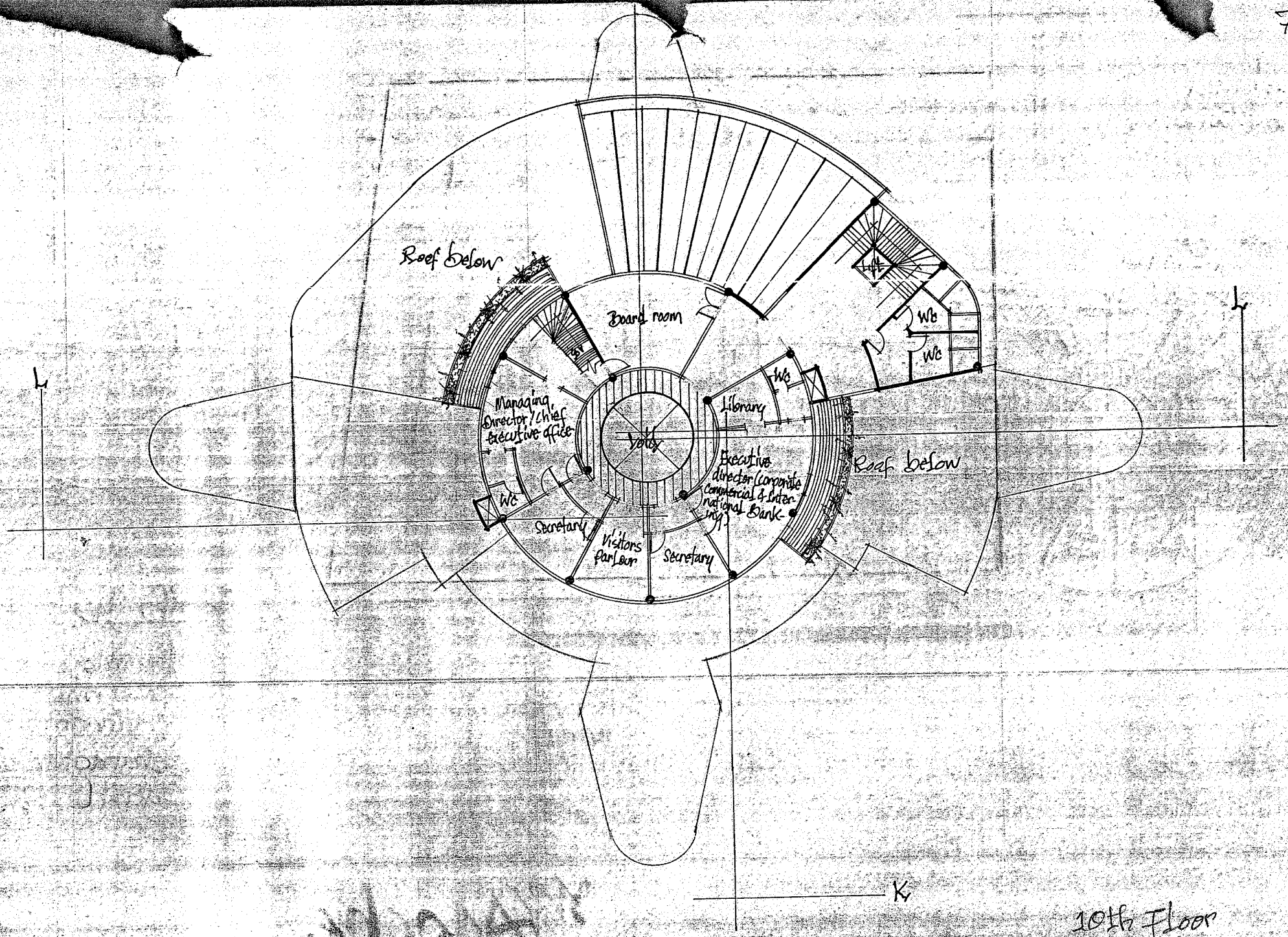
1st Floor


Study
Pharmacy / Reception
nurses station
Medical personnel
Chief nurse
Wc
Wc
Waiting Area
Records room
injection rm
Laboratory
Lift
Lift
Admin dept
Ac room
Wc
Wc
Wc
Wc
D.G.M Public Sector Zonal service Group II
D.G.M operations, sys, finance & Admin
Lift
Wc
Secretary waiting
Secretary waiting
fire Monitoring room
L
1
K

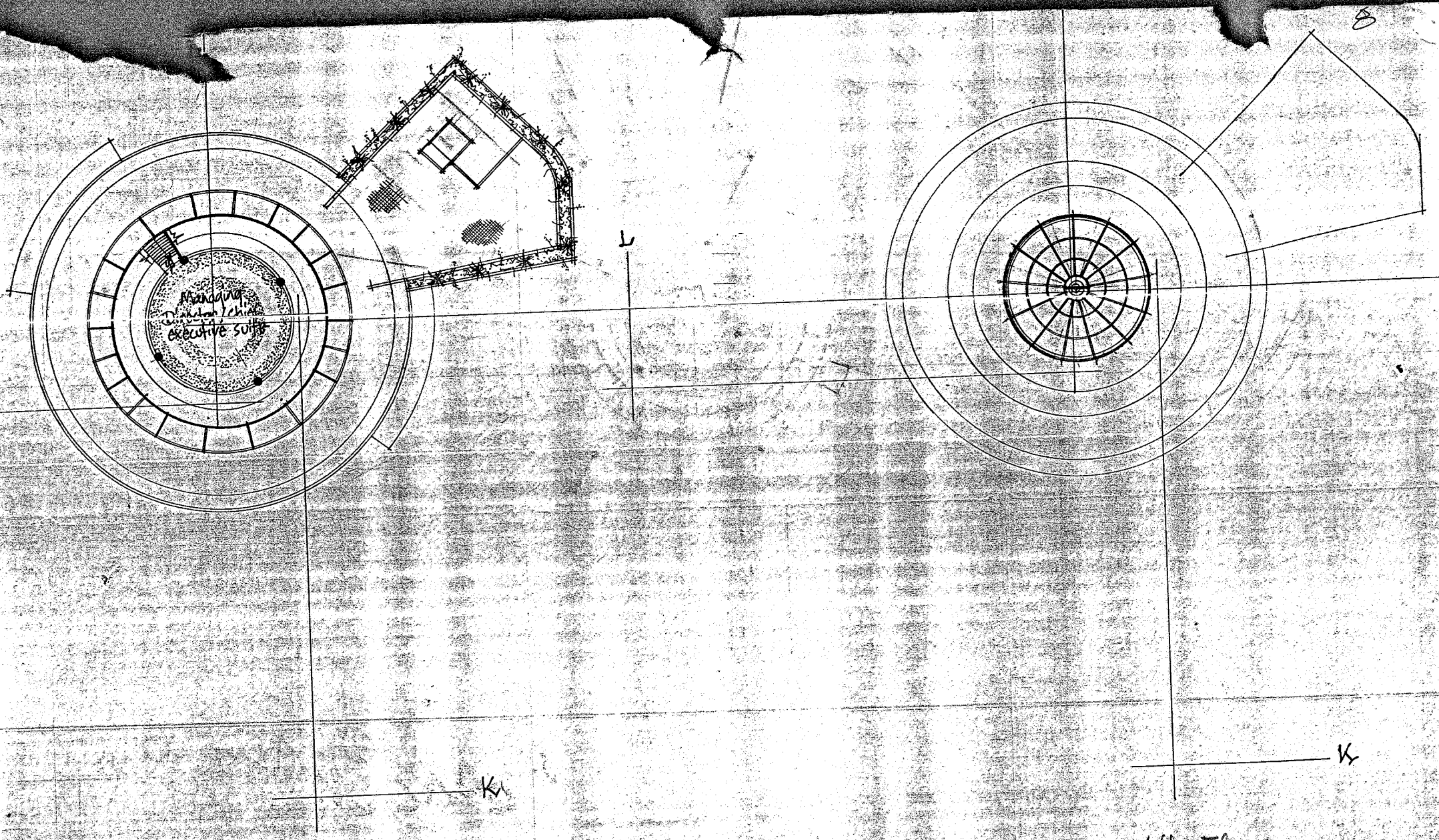
8th floor


Mainframe Computer dept.
security/ Surveillance Camera room
control room
Ac room
secretary/ waiting
WC
WC
WC
General Manager (Business Development)
Void
D.G.M (Commercial banking)
Roof below
WC
WC
D.G.M (Corporate Banking)
secretary/ waiting
secretary/ waiting
L
L
K

9th Floor


Roof below
Board room
Lift
W/c
W/c
W/c
Library
Managing Director / Chief Executive office
Voids
Executive director (Corporate Commercial & International Banking)
Roof below
W/c
Secretary
Visitors parlour
Secretary
K
L
L

10th Floor



11th Floor

DESIGN PROPOSAL FOR

CORPORATE HEADQUARTERS OF GULF BANK OF NIGERIA

scale 1:200

Mentor; Arc. R.E. Ol