PROPOSED SHOPPING MALL, MILLENIUM CITY,KADUNA.

INTEGRATING SHOPPING AND RECREATION FACILITIES

BY

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AHMADU BELLO UNIVERSITY, ZARIA
NIGERIA

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AUGUST, 2011.

DECLARATION

I declare that the thesis entitled 'PROPOSED SHOPPING MALL, MILLENIUM CITY KADUNA.
THE INTERGRATION OF SHOPPING AND RECREATION FACILITIES' is done by me in the Department of Architecture under the supervision of Dr. M.D. Ahmed and Arc. Henry Umeh.

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CERTIFICATION

This dissertation entitle PROPOSED SHOPPING MALL, MILLENIUM CITY KADUNA. INTERGRATING OF SHOPPING AND RECREATION FACILITIES by ILIYASU, Adamu Dogo meets the regulations governing the award of the degree of Master of Science of Ahmadu Bello University, Zaria, and is approved for its contribution to knowledge and literary presentation.

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DEDICATION

I dedicate this entire thesis to Almighty God, my Mother Mrs Hauwa Iliyasu D. and all the rest of my family.

ABSTRACT

Shopping facilities are characterized with circulation conflict which obstructs the free flow of different movement patterns within the facility.

The main cause of these conflicts that results in congestion are the movement patterns of the pedestrians, Vehicles and goods around the functional units within and outside of the facility.

With the new trends of shopping coupled with increase in population, income, exposure distribution of trade techniques and recreation, has increased patronage in shopping mall. Circulation is a major factor that needs to be addressed in order to have a smooth and convenient shopping and recreation atmosphere.

The scope of this research work is to integrate both shopping and recreational facilities to enhance a good circulation network in shopping malls.

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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF STUDY

The Urban residents of Kaduna State comprises of people from different backgrounds, businesses, activities, professions and ideologies that have a vested interest in shopping, selling, learning, relating, recreation and general business transactions.

A shopping mall is an enclosed collection of a variety of independent retail units, services and parking spaces, which is built and maintained by a separate management. ("Shopping mall", 2008). Shopping mall also consist of facilities such as food courts, cinemas and cash points among others. All these activities are integrated under one roof, with interconnecting walkways to enable people to easily move from one unit to another. Shopping malls do not only cater for the shopping demands of people, they also provide an atmosphere for the people to socialise.

Shopping malls are modern representation of traditional markets such as the agoras of the ancient Greek cities and the medieval piazzas of European cities. They started as a collection of open-air shops arranged along pedestrian walkways. The concept of fully-enclosed shopping mall was pioneered by Austrian-born architect Victor Gruen in the 1950s. This idea was born in the United States and subsequently it spread to other parts of the world. The shopping malls of today are greatly influenced by technology. The use of new building materials gives shopping malls new forms and overall looks.

Shopping malls are now becoming tourist spots due to the new facilities introduced. These facilities such as cinemas, restaurants, car parks, retail units ,play ground, skating among others, tend to integrate shopping and entertainment.

1.2 PROBLEM STATEMENT

Shopping and recreation activities are two distinct activities. Bringing them together will certainly create conflict that needs to be resolved. This research will be mainly to have a work around the obvious problem with the hope of arriving at an available solution.

The design of shopping malls takes into consideration the culture of the people, their location, level of affluence and available technology for constructing malls. These factors allow for the development of various design approaches for shopping malls. This thesis explores the integration of shopping and recreation activities in shopping malls, in order to create a smooth and convenient shopping.

1.3 AIM

The main aim of this research is to design a shopping mall that depicts the current trends of shopping convenience by integrating shopping and recreation.

OBJECTIVES

To integrate shopping and recreation facilities.

To ensure a smooth circulation network.

Understand and highlight the people's culture of shopping in terms of their preferences of goods and services in shopping malls.

To create an atmosphere where residents can relax and shop.

1.4 JUSTIFICATION OF STUDY

Shopping is very necessary because it allows one to acquire the needed goods and services. Shopping malls of today offer a lot of other services apart from shopping. These other services are playground, swimming pool, cinema barbeque, bar among others.

The researcher here will create a proposal for these modern facility in view of the above, it can be concluded that there would be a high demand for a well organized and serviced urban component that will accommodate shopping and relaxing convenience.

1.5 RESEARCH METHODOLOGY

The success of this research depends on the data collected from different sources. The methods of collecting such data are categorized into two, they are:

The primary data which includes:

interview of individuals concerned

personal observations

The secondary data which includes:

Literature review from text books, published/unpublished texts, past thesis works or researches, journals/magazines and any available reading materials

The internet.

These tools have been carefully selected to suit such research.

1.6 SCOPE AND LIMITATIONS

This research is conducted by studying existing shopping malls in Nigeria and also abroad, so as to solve the research problem at hand. The major factor that is likely to hinder the progress of this research is the fact that the study area is very wide and it will be very difficult to cover the whole area.

1.7 ARCHITECTURAL SIGNIFICANCE

Architecture here will produce a coherent functional master piece that will solve congestion problems which we have in most shopping centres. Integrating these facilities will bring a neat and well organized environment for a modern world.

The architectural significance of this research is that it has to serve as a basis for further research in this area, and to create a unique structure that highlights the essence of incorporating the principles of integrating shopping and recreation facilities in shopping mall design. As technology advances so does architecture. These advancements in architecture are important because more complex ideas are being born. A country like Nigeria should not be left behind and these technological advancements should also be depicted in Nigerian architecture.

CHAPTER TWO

LITERATURE REVIEW: CHANGING TRENDS OF SHOPPING CENTRES

2.1 INTRODUCTION

Market and bazaars are the earliest and still surviving concentrated shopping centers which developed into, sophisticated arcades, malls and later into today's street mall which still operates worldwide.

A shopping street which was an organic development as seen in our major highways was the next alternative to the open market. Under this arrangement, ground floors of domestic buildings are gradually being transformed into shops.

Series of social and shopping activities started since the beginning of the 19th century, eventually transformed into retailing. The trend today is to look at shopping as an economic function only and to ignore the basic sociological conditions.

According to Opara,(1988), experience dating back to the medieval periods shows that shopping centres evolved from the open-market operation. An example is the trans-Saharan trade of the eighteenth (18th) century where buying and selling of Gold and salt between the Arabian Peninsula and the North African sub-region in the open market operation.

The earliest type of retail trading system which still plays a part in modern life, however, is that of the market and its history which stretches back to many centuries, even though over the course of time the functions of the market has changed.

2.2 HISTORY

The first structure resembling what is considered to be a "shopping mall" built in the present-day is located in the City of Damascus, the capital city of Syria. It is called Al-Hamidiyah Souq in old Damascus and dates back to the seventh century. Isfahan's Grand Bazaar, which is largely

covered, dates from the 10th century. The 10 kilometer long covered Tehran's Grand Bazaar also has a long history. The Grand Bazaar of Istanbul was built in the 15th century and is still one of the largest covered markets in the world, with more than 58 streets and 4,000 shops.

Gostiny Dvor in St. Peterburg which was opened in 1785, may be regarded as one of the first purposely-built-mall-type shopping complex, as it consist of more than 100 shops covering an area of over 53,000m^2 (570,000 sq ft). The Oxford Covered Market in Oxford, England opened in 1774 and still runs today.

The Burlington Arcade in London was opened in 1819. The Arcade in Providence, Rhode Island introduced the retail arcade concept to the United States in 1828. This was a forerunner of today's shopping mall. The Galleria Vittorio Emanuele II in Milan, Italy followed in the 1870s and is closer to large modern malls in spaciousness. Other large cities created arcades and shopping centres in the late 19th century and early 20th century, including and Cleveland Arcade, Dayton Arcade and Moscows' GUM, which opened in 1890. Early shopping centres designed for the automobile include Market Square, Lake Forest, Illinois (1916) and Country Club Plaza Kansas City, Missouri (1924).

An early indoor mall prototype in the United States was the Lake View Store at Morgan Park, Duluth, Minnesota, which was built in 1915 and held its grand opening on July 20, 1916. The Architect was Dean and Dean from Chicago and the building contractor was George H. Lounsberry from Duluth. The building is two stories with a full basement, and shops were originally located on all three levels. All of the stores were located within the interior of the mall; some shops were accessible from inside and out.

In the mid-20th century, with the rise of the suburb and automobile culture in the United States, a new style of shopping centre was created away from downtown.

2.3 DEFINITION OF SHOPPING MALL

The Definition of shopping mall differs from places and circumstances. The general idea behind a shopping mall is a collection of different commercial activities taking place in one entity. There are two basic perspectives gearing towards defining what a shopping mall is or should be.

The encyclopedia Britannica (2009) defines a shopping mall as "a collection of independent retail stores, services, and a parking area conceived, constructed, and maintained by a management firm as a unit. Shopping malls may also contain restaurants, banks, theatres, professional offices, service stations, and other establishments". The oxford advanced learner's dictionary defines shopping mall as "a large group of shops or stores built together under one roof and closed to traffic". The Wikipedia encyclopedia (2007) defines a shopping mall as "a building or set of buildings that contain a variety of retail units, with interconnecting walkways enabling visitors to easily walk form unit to unit".

The Microsoft Encarta (2008) defines shopping malls as "collection of retail businesses in a building or set of buildings under one ownership or management".

Cyril, M. (2006) defines a shopping mall as "A shopping centre enclosed within a large structure; often two or three stories high, often designed around a central atrium; may have numerous stores, as well as entertainment facilities such as movie theatres, fast-food outlets, restaurants, and public areas."

For the purpose of this research the definition below shall be adopted: A shopping mall is defined as a fully enclosed collection of independent retail units and services in a climate controlled environment, with covered pedestrian walkways and restricting vehicular access at its periphery, run and by one management.

Shopping Mall

A shopping mall, shopping centre, shopping precinct or simply mall is one or more buildings forming a complex of shops representing merchandisers, with interconnecting walkways enabling visitors to easily walk from unit to unit, along with a parking area – a modern, indoor version of the traditional marketplace.

Modern "care-friendly" trip malls developed from the 1920s, and shopping malls corresponded with the rise of suburban living in many parts of the Western World, especially the United States, after World War II. From early on, the design tended to be inward-facing, with malls following theories of how customers could best be enticed in a controlled environment. Similarly, the concept of a mall having one or more "anchor" or "big box" stores was pioneered early, with individual stores or smaller-scale chain stores intended to benefit from the shoppers attracted by the big stores.

Regional Differences

In most of the world the term *shopping centre* is used, especially in Europe, Australasia and South America; however *shopping mall* is also used, predominantly in North America and the Philippines. Outside of North America, *shopping precinct* and *shopping arcade* are also used. In North America, the term *shopping mall* is usually applied to enclosed retail structures (and is generally abbreviated to simply *mall),* while *shopping centre* usually refers to open-air retail complexes; both types of facilities usually have large parking lots, face major traffic arterials and have few pedestrian connections to surrounding neighborhoods.

Shopping centres in the United Kingdom can be referred to as "shopping centres", "shopping precincts", or "town centres". The standard British pronunciation of the word "mall" is as in "*The Mall, London"* – the tree-lined avenue leading to Buckingham Palace, London and also like "*pal"*

(friend). *Mall* can refer to either a shopping mall – a place where a collection of shops all adjoin a pedestrian area – or an exclusively pedestrianised street that allows shoppers to walk without interference from vehicle traffic. *Mall* is generally used in North America to refer to a large shopping area usually composed of a single building which contains multiple shops, usually "anchored" by one or more department stores surrounded by a parking lot, while the term *arcade* is more often used, especially in Britain, to refer to a narrow pedestrian-only street, often covered or between closely spaced buildings (see town centre). A larger, often partly covered and exclusively pedestrian shopping area is in Britain also termed a *shopping centre, shopping precinct,* or *pedestrian precinct.*

The majority of British shopping centres are in town centres, usually inserted into old shopping districts and surrounded by subsidiary open air shopping streets. A number of large out –of-town "regional malls" such as Meadowhall, Sheffield and the Trafford Centre, Manchester were built in the 1980s and 1990s, but planning regulations prohibit the construction of any more. Out-of-town shopping developments in the UK are now focused on retail parks, which consist of groups of warehouse style shops with individual entrances from outdoors. Planning policy prioritizes the development of existing town centres, although with patchy success. The Metro Centre, in Gatehead (near Newcastle upon Tyne), is the largest shopping centre in Europe with over 330 shops, 50 restaurants and an 11 screen cinema and Westfield London is the largest inner-city shopping centre in Europe. Bullring, Birmingham is the busiest shopping centre in the UK welcoming over 36.5 million shoppers in its opening year.

In Hong Kong, the term "shopping centre" is the most frequently used, and the name of a shopping centre in Hong Kong usually contains the word "centre" or "plaza". The same is true for Portuguese-speaking Brazil, though with America spelling "shopping centre".

2.4 CLASSIFICATION OF SHOPPING MALL

In many cases, regional and super-regional malls exist as parts of large superstructures which often also include office space, residential space and amusement parks. This trend can be seen in the construction and design of many modern supermalls such as Cevahir Mall in Turkey. The International Council of Shopping Center's 1999 definitions were not restricted to shopping centers in any particular country, but later editions were made specific to the U.S. with a separation set for Europe.

2.4.1 Regional

A regional mall is, per the International Council of Shopping Centers, in the United States, a shopping mall which is designed to service a larger area (15 miles) than a conventional shopping mall. As such, it is typically larger with 400,000 sq ft (37,000m^2) to 800,000 sq ft (74,000m^2) gross leasable area with at least two anchor stores and offers a wider selection of stores. Given their wider service area, these malls tend to have higher-end stores than need a larger area in order for their services to be profitable but may have discount department stores. Regional malls are also found as tourist attractions in vacation areas.

2.4.2 Super regional Mall

A Super regional mall is, per the International Council of Shopping Centers, in the U.S. a shopping mall with over 800,000 sq ft (74,000m2) of gross leasable area, three or more anchors, mass merchant, more variety, fashion apparel, and serves as the dominant shopping venue for the region (25 miles) in which it is located.

2.4.3 Outlet Mall

An outlet mall (or outlet centre) is a type of shopping mall in which manufacturers sell their products directly to the public through their own stores. Other stores in outlet malls are operated by

retailers selling returned goods and discontinued products, often at heavily reduced prices. Outlet stores were found as early as 1936, but the first multi-store outlet mall, Vanity Fair, located in Reading, PA did not open until 1974. Belz Enterprises opened the first enclosed factory outlet mall in 1979, in Lakeland, TN, a suburb of Memphis.

2.4.4 Dead Malls

In the U.S, as more modern facilities are built, many early malls have become abandoned, due to decreased traffic and tenancy. These "dead malls" have failed to attract new business and often sit unused for many years until restored or demolished. Interesting examples of architecture and urban design, these structures often attract people who explore and photograph them. This phenomenon of dead and dying malls is examined in detail by the website Deadmalls.com, which hosts many such photographs, as well as historical accounts. Until the mid-1990s, the trend was to build enclosed malls and to renovate older outdoor malls into enclosed ones. Such malls had advantages such as temperature control. Since then, the trend has turned and it is once again fashionable to build open-air malls. According to the International Council of Shopping Centers, only one new enclosed mall has been built in the United States since 2006.

Some enclosed malls have been opened up, such as the Sherman Oaks Galleria. In addition, some malls, when replacing an empty anchor location, have replaced the former anchor store building with the more modern outdoor design, leaving the remainder of the indoor mall intact, such as the Del Amo Fashion Center in Torrance, California.

2.5 EARLY EXAMPLES OF SHOPPING MALLS

The Arcade of Cleveland was among the first indoor shopping arcades in the US and an architectural triumph. When the building opened in 1890, two sides of the arcade had 1,600 panes of glass set in iron framing.

An early shopping centre in the United States was Country Club Plaza, which opened in 1924 in Kansas City, Missouri. Other important shopping centres built in the 1920s and early 1930s are the Highland Park Village in Dallas, Texas; River Oaks in Houston, Texas; and Park and Shop in Washington, D.C.

The suburban shopping mall, as Americans and the world came to know it, debuted in King Country (Seattle), Washington in April 1950. Originally known as Northgate Center (now as Northgate Mall), it was an open-air complex of eighty stores and services, anchored by a Seattle-based The Bon Marche. This idea was quickly copied in several American cities, such as with Lakewood Centre (1951), in Lakewood, California, Shopper's World (1951), In Framingham, Massachusetts, Stonestown Centre (1954), in Southfield, Michigan. Open-air-type malls were also built in Canada and Australia. Don Mills Convenience Centre (now Shops at Don Mills) opened in 1955, in Toronto, Ontario. Top Ryde Drive-In Shopping Centre (now Top Ryde City), started trading to the public in 1957, in the environs of Sydney, New South Wales.

The fully enclosed shopping mall did not appear until the mid-1950s. The idea of a regional-sized, fully enclosed shopping complex was pioneered in 1956 by the Austrian-born Architect and American immigrant Victor Gruen designed Southdale Centre, which opened in the Twin Cities suburb of Edina, Minnesota, USA in October 1956. For pioneering the enormously popular mall concept in this form, Gruen has been called the "most influential Architect of the twentieth century".

The first retail complex to be promoted as a "mall", as it were, was Paramus, New Jersey's The Outlets at Bergen Town Center. The center, which opened with an open-air format in 1957, was enclosed in 1973. Aside from Southdale Centre, significant early enclosed shopping malls were

Harundale Mall (1958), in Glen Maryland, Big Town Mall (1959), in Mesquite, Texas, Chris-Town Mall (1961), in Phoenix, Arizona, and Randhurst Center (1962), in Mount Propect, Illinois. The early malls moved retailing away from the dense, commercial downtowns into the largely residential suburbs. This formula (enclosed space with stores attached, away from downtown, and accessibly only by automobile) became a popular way to build retail across the world. Gruen himself came to abhor this effect of his new design; he decried the creation of enormous "land wasting seas of parking" and the spread of suburban sprawl.

In the UK, Chrisp Street Market was the first pedestrian shopping area built with a road at the shop fronts. Developers such as Alfred Taubman of Taubman Centers extended the concept further, with terrazzo tiles at the Mall at Short Hills in New Jersey, indoor fountains, and two levels allowing a shopper to make a circuit of all the stores. Taubman believed carpeting increased friction, slowing down customers, so it was removed. Fading daylight through glass panels was supplemented by gradually increased electric lighting, making it seem like the afternoon was lasting longer, which encouraged shoppers to linger.

Ala Moana Center in Honolulu, Hawaii is currently the largest open-air mall in the world and was the largest mall in the states when it was built in 1957. It is currently the sixteenth largest in the country. The Outlets at Bergen Town Center, the oldest enclosed mall in New Jersey, opened in Paramus on November 14, 1957, with Dave Garroway, host of *The Today Show,* serving as master of ceremonies. The mall, located just outside New York City, was planned in 1955 by Allied Stores to have 100 stores and 8,600 parking spaces in a 1,500,000 sq ft (139,000m^2) mall that would include a 300,000 sq ft (28,000m^2) Stern's store and two other 150,000 sq ft (14,000m^2) department stores as part of the design. Allied's Chairman B. Earl Puckett confidently announced the Outlets at Bergen Town Center as the largest of ten proposed centers, stating that there were 25

cities that could support such centers and that no more than 50 of this type would ever be build nationwide.

The largest mall ever is South China in Dongguan, China with gross area of 892,000m^2 (9,600,000sq ft). The world's second – largest shopping mall is the Golden Resources Mall in Beijing , China with gross floor area of 680,000m^2 (7, 3000,000 sq ft). The world's second-largest shopping mall is the Golden Resources Mall in Beijing, China with gross floor area of 680,000m^2 (7,3000,000 sq ft). The SM City North EDSA in the Philippines, which opened in November 1985, is the world's third-largest at 460,000m^2 (5,000,000 sq ft) of gross floor area, and SM Mall of Asia in the Philippines, opened in May 2006, is the world's fourth largest at 386,000m^2 (4,150,000 sq ft) of gross floor area.

Previously, the title of the largest enclosed shopping mall was the West Edmonton Mall is Edmonton, Alberta, Canada from 1986-2004. It is now the fifth largest mall. Two of the largest malls are in China, South China Mall and Jin Yuan. Dubai Mall is the largest mall in Middle East, currently ranked seventh in the world. The current largest shopping centre in Europe is the Dolce Vita Tejo in Lisbon, Portugal, while the largest in Australia is Chadstone Shopping Centre in Melbourne.

One of the world's largest shopping complexes in one location is the two-mall agglomeration of the Plaza at King of Prussia and the Court at King of Prussia in the Philadelphia suburb of King of Prussia, Pennsylvania, United States. The King of Prussia mall has the most shopping per square foot in the U.S.

The most visited shopping mall in the world and largest mall in the United States is the Mall of America, located near the Twin Cities in Bloomington, Minnesota. However, several Asian malls are advertised as having more visitors, including Mal Taman Anggrek, Kelapa Gading Mall and

Pluit Village, all in Jakarta-Indonesia, Berjaya Times Square in Malaysia and SM Megamall in the Philippines. The largest mall in South Asia is Mantri Square in Bangalore, India.

2.6 NEW TRENDS

In parts of Canada, it is now rare for new shopping malls built without incorporating shopping and recreation. The Vaughan Mills Shopping Centre, opened in 2004, and Crossiron Mills, opened in 2009, are the only malls built in Canada since 1992. Outdoor outlet malls or big box shopping areas known as power centres are now favored, although the traditional enclosed shopping mall is still in demand by those seeking weather-protected, all-under-one-roof shopping. In addition the enclosed interconnections between downtown multi story shopping malls continue to grow in the Underground city of Montreal (32 kilometers of passageway), the PATH system of Toronto (27 km (17 mi) of passageway) and the Plus 15 system of Calgary (16 km (9.9mi) of overhead passageway.

2.6.1 Vertical Malls

High land prices in populous cities have led to the concept of the "vertical mall," in which space allocated to retail is configured over a number of stories accessible by elevators and/or escalators linking the different levels of the mall. The challenge of this type of mall is to overcome the natural tendency of shoppers to move horizontally and encourage shoppers to move upwards and downwards. The concept of a vertical mall was originally conceived in the late 1960s by the Mafco Company, former shopping center development division of Marshall Field & Co. The Water Tower Place skyscraper, Chicago, Illinois, was built in 1975 by Urban Retail Properties. It contains a hotel, luxury condominiums, and office space and sits atop a block-long base containing an eight-level atrium-style retail mall that fronts on the Magnificent Mile.

Vertical malls are common in densely populated conurbations such as Hong Kong and Bangkok. Times Square in Hong Kong is a principal example. Vertical malls are now a combination of shopping and recreation which harmonizes a conducive environment.

A vertical mall may also be built where the geography prevents building outward or there are other restrictions on construction, such as historical buildings or significant archeology. The Darwin Shopping Centre and associated malls in Shrewsbury, UK, are built on the side of a steep hill, around the former outer walls of the nearby medieval castle; consequently the shopping centre is split over seven floors vertically – two locations horizontally – connected by elevators, escalators and bridge walkways. Some establishments incorporate such design into their layout, such as Shrewsbury's McDonalds restaurant, split into four stories with multiple mezzanines which feature medieval castle vaults-complete with arrowslits – in the basement dining rooms.

2.7 SHOPPING TRENDS IN NIGERIA.

Before the colonial period, there was no existence of a shopping mall, what we had was a traditional market place influenced by the socio-cultural values of the people.

The Nigerian indigenous settlements had their first market place at major cross-roads along the streets leading into central area so as to attract many buyers and sellers.

Meeting place in form of a forum and street mall was what we had that was close to a shopping mall.

The shopping system was a personal adaptation of a group of people which had relationship with the socio-cultural values of the people. The recreational activities were wrestling, holding meetings and festival. These activities was done in fields which was the only facility as at that time.

There was an improvement over the indigenous shopping pattern, resulting in the emergence of new business and general trading activities. Sales of luxury goods imported into the country from abroad, by large companies like U.A.C Johnholt, began to flourish in our markets.

2.7.1 Development Of Shopping Trends in Nigeria

However, retailing activities was universally identified and accepted as an element of urban structure in large urban centres like Lagos, Kaduna and Owerri over the years. Retailers now tried to define the changing behavioral pattern of consumers by building specialist consumer shop.

Thus, as the free-market situation could not cope, our shopping streets prospered and expanded as an unplanned structure along major roads and highways in our urban centres as may be noticed in broad streets in Lagos and Ahmadu Bello way in Kaduna. There had been a recent trend towards the erection of shopping plazas, mall of various dimensions, scales, and multiple floors in the country.

Due to the breaking points as a result of over stretching shopping streets, there was need for a proposal for an organized shopping mall to provide a better and efficient shopping requirement for the ever growing urban population.

2.8 CURRENT TRENDS

Because of the small number of shops in towns, it is difficult to appreciate their success or failure since their present popularity must be compared with their popularity before conversion.

Other trends of considerable importance since there has been a tendency towards what we call greater mechanization in retailing, with a view to increasing productivity. The establishment of self-service shops on a small scale which was licensed in 1949.

2.8.1 Shopping Activities

Commercial activities include whole-sale, retail, services trade, as well as business establishment. There are three hierarchies of commercial activities. These includes light, medium and heavy usually differentiated in terms of their volumes of commercial activities. For example, while you find perishable and non-perishable goods in high commercial areas, the heavy commercial areas, have banks, business offices, department stores and among others. Most residential areas have light commercial activities while the heavy commercials are located in the city central business district. (C.B.D)

Shopping activities refers to the ways of purchasing or buying goods in a shop by a buyer or consumer. This can be done in different shopping areas including the department store, market, super markets, shopping streets shopping centres or complexes. Shopping activities also includes the following:

Short term shopping

This refers to the shopping activity that is usually done frequently for example, the purchase of food items, vegetables and toiletries.

Long term shopping

This refers to shopping done once in a while for example, purchase of textiles, electronics among others.

Formal and informal shopping activities

It is the sales and purchase of goods and services in shops whose activities and locations have been approved by the authority and are usually within a confined shop or space. The informal activities refer to hawkers along streets, with no confined shopping space.

2.8.2 Shopping Centres

Shopping centres are set up to ensure convenience to their users by the provision of parking, open spaces and good sanitary conditions. They are classified into the neighborhood, community and CBD/regional shopping centres depending on volume and types of goods sold, location, size and relative trade area. They also serve as recreational and social centres. They are mostly without planning problems and privately owned. The modern shopping centres are located away from but linked to major thoroughfares of the city to reduce traffic problems.

In developing countries, the shopping centre plays a secondary role in the city's retail trade and is yet to have any significant impact. What obtains is the occurrence of shopping complex scattered in the city and shopping districts or streets adjacent to markets. The latter adds to the congestion around the parking area and chaotic problems in the market area.

It can be concluded that in both the developed and developing countries shopping centres have suburban location except for shops existing in the cities of the developing countries.

2.8.3 The Patterns of Shopping Activities

The characteristics of urban shopping activities and other commercial activities were discussed in the various theories of urban structure. These theories are expressed in two important characteristics of commercial activities.

They are highly dependent on location. This is why commerce is ready to pay the highest price for a given location on the basis of location, two important attributes of the site are Inter-dependent i.e accessible and cost for rent or land. A highly accessible site is likely to attract a higher cost than poorly accessible site.

For the reason explained above commerce is also consumer orienteer because it tends to follow it consumers which determines location, accessibility and cost.

The theories explained reasons why commerce also occupies the most accessible parts of a settlement or city that accessibility determines land or rent values which are mostly very high in commercial zone, based on these factors Goodall (1978) suggested that "commercial land uses form the skeletal of urban organization about which other uses are arranged according to their ability to pay"

The central place theory by Christaller, was one of the earliest geographic theories that developed a model, on the distribution of market places and towns in regions. Since the 1950s, the planned shopping center in Europe gradually increased in function. From a purely commercial centre to a recreational and social centre.

2.9 SHOPPING STANDARDS

The use of different indices to establish shopping standards have been proposed by various authors based on volume of activities at different hierarchies, types that could be provided and the socio-economic characteristics of the population. McClelland (1966) observed that the responsibility of the decision has shifted from market forces to the shoulders of the planning authorities. He further observed that there is uncertainty in the ideal figure in view of the complexity of the problem, and if there is an optimum size measured in terms of population served, it will be different for different trades and will also be affected by economic scale and competition.

The main distinction lies between shopping goods, trades and also between trades that represent a high degree of specialization possible in centres or communities. Examples are super markets, small scale stores among others at the neighborhood centres. His observations implies that the shopping standards will be of different towns and cities as well as in different areas within the urban spatial structure. They will also be affected by the socio-economic characteristics of the city

population. The impact of socio-economic characteristics of the population on the development of urban shopping activities are further analyzed by Booth (1970) and Sharp (1970).

Booth (1970) observed that social factors such as increased number of working women, the accelerated pace of life, the pressure of press and television, have catalyzed the demand for more efficient methods of retailing, which will in turn affect the types and locations of retail outlets shopping areas in the town. Sharp (1970) also postulated that types of shopping areas to develop the facilities to be provided and their locations must be preceded by a market research as well as shopping surveys to ensure their successful implementation and operation. These proposals express the significance of socio-economic factors, in the development and emergence of urban shopping activities. These factors will consequently determine the types, patterns and distribution of shopping activities in the urban area.

This implies that a combination of population size and the socio-economic characteristics of the city's population are very important factors in determining the characteristics of shopping activities in the urban area. These could provide explanations for the various proposals made by the different authors.

2.9.1 Shopping Facilities

Although different types of recreational services and facilities are necessary on many commercial areas, the best long-term interest of both the public and the concessionaire will be served by recreation activities to ensure the primary values of such areas. While the financial solvency of those who provide necessary commercial services must be considered by the administration, concessionaires and most also recognize that the existence of their enterprises depends on the maintenance of any alterations of an area.

2.9.2 Facilities Required in the Shopping Mall

These include all facilities which make the shopping experience less stressful and enhance comfort and easy circulation within the shopping mall. They include,

a. Security: The security office should be located close to the shopping area for effective services.

b. Tiny Taxis: Free tiny taxis are facilities made available to customers purchasing large amount of good, hence walk ways should be wide to prevent its interference with pedestrian movement within the mall.

c. Lifts And Escalators Public lifts should be conveniently located at the central atrium or side to assist movement between all floor levels .These lifts should preferably be of paronamic type to enhance the effect of vision while in use.

d. Meeting/Waiting Areas: should be provided at the reception near the main entrance, to ease the location of lost children and inquiry.

2.9.3 Categories of Shops

Department Stores: These are shops which come in different sizes and offer various services to the public, to ensure financial stability of a shopping mall. Departmental stores should be located in a way that they compliment themselves and thus imposing minimal stress on the users.

Health stores: Personalized health, vitamins & supplements, diet and nutrition, sports nutrition, healthy and pharmacy should be provided.

Beauty & Personal Care stores: Women's skin care and makeup accessories, men's skin Care and hairdressing.

Jewelry & Fragrances stores: Jewelry accessories, bracelets and watches, earrings, necklaces and chokers, rings, fashion accessories.

Home care store: Laundry and apparel care, wipes and cleaners, house wares, bedding and bath, air and water , home furnishings and fabrics.

Apparel store: Men's, women's, children's, shoes. Bridal wear, menswear, maternity wear, children wear, ladies wear.

Sport & Outdoor Leisure: Bowling alley, table tennis, and other indoor games.

Audio/Visual/Photographic: Passport, photographs, recording studio, video clubs, music rooms.

Specialist Shops and Services: Travel agents, opticians, fixed wireless service providers, cards and gifts shop.

Entertainment, Toys and Games shops: Game arcade, children play room, aquarium among others.

Financial stores: Bureau de change and atm.

News/Stationery and Books: Bookshops, newspaper stands and book clubs.

Food and Beverages stores: Bars, beverages, breakfast foods, condiments, fasy meals restaurants, cafés and fast food shops and stores.

Anchor Stores: These are typical examples of larger departmental shops which helps to draw as much traffic as possible, thus resulting in the patronage of other stores around them. These larger departmental stores could also be referred to as draw tenant. In physical configuration, anchor stores are normally located as far from each other as possible to maximize the amount of traffic from one anchor to another.

Food court: A shopping mall food court consists of food vendors offering a selection of food. At a typical food court, food is ordered at one of the vendors and then consumed at a seating area. Other types of anchor stores induces, galleries, cinemas, bowling hall, aquariums, showrooms among others, which is normally surrounded by the counters of the multiple food vendors.

Table 2.1 Standard Schedule of Accommodation

Space definition	Basic.	Desirable.
Entrance hall	20msq	30msq
Offices	12msq	15msq
Shops	12msq	15msq
Parking space	1 parking	Per 75msq per floor area
Toilet	1.2m	1.5m
Staircase	Riser 150mm	Riser 175
	Thread 270	Thread 300mm
Conference/meeting room	0.65msq/person	0.85msq/person
Cafeteria/restaurants	0.65msq/person	0.65msq/person

CHAPTER THREE

INTEGRATION OF SHOPPING AND RECREATION FACILITIES

3.1 INTRODUCTION

The main purpose of shopping and recreation is to revitalize people so that they may efficiently return to activities, which are economically and intellectually gainful Tata,(2002). Clarson and Knetsh (1966) stated that the distinguishing characteristics of shopping and recreation are not the activities itself but the attitude with which it is under taken. Adamu (1990) sees these two components very compactable due to the impact it offers man to his physical, creative and purchasing power as response to an inner desire rather than out compulsion. Individuals engage in these activities from choice between the personal enjoyment and satisfaction which they receive. Thus, modern facilities in Nigeria such as shopping centre, stadium, sport centres and playground are planned to accommodate people who are interested in active participation while, botanical gardens and parks are planned for those interested in passive activities.

3.1.1 Inter-Relationship Between Shopping And Recreation

Convenience in shopping centres is an important factor that needs consideration in designing them. With different social classes, and habits of people, shopping has been made more conducive thorough development. Increase in standard of living has created a better opportunity in the purchase of goods and services with the impact of modern architectural developments.

The current trends in shopping have fully evolved recreation for more convenience. The recreation in this contex has improved shopping through relaxation, entertainment, sports and even educative activities. Today, shopping and recreation are activities that are carried out at the same time; an example is exhibition and shopping, sports and shopping, entertainment and shopping, relaxing and shopping and among others.

3.2 ADVANTAGES OF RECREATION AND SHOPPING

a. Physical health: They afford participants a better acquisition of physical skills and improved physical health and value of which differs according to age, level and developmental needs.

b. Intellectual advantages: Full participation promotes more effective mental and cognitive performance as well as relaxes and challenges the participants. Intellectually, it enables users to concentrate more intensively in buying of goods and participating in activities that will satisfy their needs.

c. Architectural advantage: They provide a comfortable environment by integrating various facilities with a good functional spatial organization that will enhance, encourage and attract people for a convenient recreation and shopping activity.

d. Social advantages: They provide opportunity for people to overcome a sense of isolation by providing sociality and common interest. The facilities serves people with different moods, needs, ages, religion, race and social grouping.

Planning Considerations

Building scale should reflect neighbourhood character. For neighbourhood shopping centres, use of architecture will reflect the scale and architectural character of the neighbourhood.

Enhance the design of large stores. Large stores of more than 25,000 square feet can still contribute to an interesting streetscape.

Long blank walls of more than 100 feet are prohibited next to walkways, main drive aisles, and public streets.

Ground floor facades that faces public streets shall incorporate arcades, display windows, entry areas, or other such elements for at least half of the facade width.

Emphasize the customer's entrance through the use of canopies or porticos, recesses or projections, arcades, or arches.

Provide defined and varied storefronts.

Exterior building design and detail on elevations should be coordinated with regard to colour, types of materials, number of materials, architectural form, and detailing to achieve harmony and continuity of design.

Design elements and detailing should be continued completely around the structure. Such design elements should include window treatments, trim detailing, and exterior wall materials.

Separate structures on the site should have consistent architectural detail and design elements to provide a cohesive project site.

Building facades should be articulated by using colour, arrangement, or change in materials to emphasize the facade elements. The planes of the exterior walls may be varied in height, depth or direction.

Elements such as bay windows, balconies, porches, arcades and courtyards should be utilized to add variety and break up facades.

Porches, stairs, railings and fascia boards should be used to articulate a consistent architectural style.

Vents, gutters, and electrical conduits, should generally be painted.

To match the colour of the adjacent surface, unless being used as a trim or accent element.

When a large portion of the front elevation is devoted to driveways and walkways, the landscape area should be constructed with visually contrasting paving surfaces

Local Planning Consideration

i. The building should be given adequate setback on all sides

Front set back---------6m

Back set back----------4m

Sides set back----------4m

ii. Plot coverage should be such that leaves enough space for other outdoor activities.

Minimum plot coverage----40%

Maximum plot coverage-----60%

iii. Floor height should be made high enough to provide adequate head room for the large crowd the building intends to accommodate

Minimum floor height-----4 floors

Maximum floor height----6 floors

Pedestrian walkways should be provided within the landscape linking most outdoor activities like parking among others. Parking lots should be provided based on 1 car per 75metre sq leasable space

3.2.1 Integration Planning

Generally, planning is the process that relates people and time over space. Shopping and recreation planning involves data collection and analysis gotten from the public participation and adequate usage.

3.2.2 Shopping and Recreation Planning

Standards are generally seen as the rule that guides the planning provision and distribution of facilities within the neighborhood or urban area. Base on physical, socio-cultural and economic

characteristics of the urban areas, to achieve effective shopping convenience in our urban areas today, consideration should be given in order to achieve the expected needs.

The standards should therefore relate to the people's needs from the neighborhood level through the community, district and finally to the city level.

3.3 SHOPPING AND RECREATION FACILITIES

They are those facilities that helps to carry out activities that refreshes the body and mind, Morlowe (1982). The desire to be involved in shopping and recreation ranges from the young to the old, the able to the disable and from the rich to the poor. No one is left out, that is why there are different or variety of facilities available at different spots and spaces, depending on the category of people which they are designed for, Afolabi (1996). Though it has been observed that most public facilities do not take into consideration that part of the public that are disabled, who needs special arrangements. Provision of ramps next to the steps for those of them on wheel chairs is necessary. These facilities though having similar aims and objectives are seen to have two forms, Gold, (1973). These are those that are enclosed within covered spaces, where activities take place internally. They are called internal facilities, while the other one is the external facilities which involves shopping and recreation carried out in open spaces and outdoor.

The researcher here, will categorize the shopping and recreational facilities under internal and external activities.

3.3.1 Internal Facilities

One of the basic necessities of life is convenience which sometimes transfers into people's needs when performing and undertaking shopping and recreational activities, Afolabi, (1996). A preference of either internal or external space, when performing these activities in most cases is psychological. They are influenced by the feeling of safety or the need for privacy. Those internal

facilities are purposely created and made by man to suit the particular activities that the space is intended for Dulana (1990).

The indoor sports hall is an example of internal facility. Activities that takes place indoor, ranges from ball games to bard games, gymnastics, tennis among others. Other body building activities are also carried out in the gym, which is indoor. Apart from sporting activities, internal facilities can be used for other purposes like shopping. Visiting exhibitions reminds us of where we came from and re-invigorates the desire to stick to our culture. Buildings where art, culture events, social occasions are carried out includes cinema halls, theaters, museum, cultural centre and youth centres are integrated with shopping, in order to achieve a free flow of movement within the mall through a good spatial organization.

3.3.2 External Facilities

External facilities are those used for re-invigorating activities that are located in open spaces and usually contain elements of nature existing in harmony, providing pleasant sights for those viewing and using it, Afolabi, (1996).

Land is one of the basic commodities of man, the usage of which cannot be over emphasized. Ways to which land is being put to use for recreational purpose varies all over the world, but the general pattern remains similar. Land is now used for recreation and shopping which manifest in sports grounds, play ground, parks, gardens and green areas.

3.4 COMPARTABLE RECREATIONAL ACTIVITIES

Recreation is the expenditure of time in a manner designed for therapeutic refreshment of one's body or mind, they could include;

Computer games Martial arts Sports and exercise

Cycling	Reading a book	Travel and tourism
Dancing	Shopping	Using the internet
Eating and drinking	Singing	Video games
Kite flying		Visiting an amusement park
Listening to music		Watching movies

3.4.1 Demand And Supply For Shopping And Recreation Facilities.

Facilities are planning processes. It helps residents, organizations, and other users to make decision about what facilities they need and where they go to get them, based on supply and demand. Unlike the needed determinant that may arise in the process. The detail survey of what is demanded is important to the planner, because it determines what can be paid for, thereby making sustainable management less difficult.

3.5 EFFECT OF SHOPPING AND RECREATION TO DEVELOPMENT

They are seen as activities pursued during leisure or needy times either individually or collectively through which a person develops, spiritual, emotional and physical comfort. The following factors are impacts of this integration.

3.5.1 Economic development.

There is a high level or degree of relationship between shopping and recreation participation and individual efficiency. Some of these activities originally embarked upon, as hobbies for pleasures and are known to have turned into income generating activities e.g. shopping, painting, photography, interior designing, gardening, playing, swimming, watching movies and sports. It plays a role in revenue generation and earning income as a means of livelihood to the participants and community.

3.5.2 Social development.

They attract some forms of social and impersonal interactions, which tends to have favorable social beliefs and lead to greater social adjustment. Shopping and recreation provides a medium for the interaction of different people in the spirits of peace, unity and social harmony to overcome sense of isolation and violence.

3.5.3 Environmental Quality.

Modern facilities add to improve the aesthetic quality of the urban environment and up grading the status of the people. The presence of the compatible natural feathers like soft and hard landscaping elements adds to the beauty and it portrays friendly environment attracting inhabitant and tourist for social activities like shopping, picnic, company tour festival among others.

3.6 PRINCIPLES AND STANDARDS OF SHOPPING AND RECREATION

These principles are defined as the fundamental guidelines for the placement of land use within urban areas. They are essentially the regulating instruments of planning conduct in order to achieve comfort, convenience, good health and aesthetical environment for the facility. The basic principles of shopping and recreation planning includes the following:

Facilities.

Facilities improves patronage and participation in the usage of the facility and up grades the life of the users through different activities.

The recreational facilities should be provided to users at reasonable cost and should also be available at all times. Irrespective of the period even at weekends. These facilities are meant to serve any area and should be accessible to all irrespective of sex, age, income and religion. Neighborhood facilities like a shopping mall should be located at working distance between 1.5km – 2km.

Spatial organization

A simple layout with major entrances, walkways and lobbies connecting the various facilities which enhances spatial organization of the functional spaces and controls the movement pattern and coordinates all activities within the entire building.

The building Form

Building form is a vital component of the design which add to improve the aesthetic quality of the urban component. The facilities should be attractive and aesthetically appealing to the users so that the environment in which people spend their leisure time will provide a sense of leisure and relaxation.

d. Circulation

Well defined walkways have been provided all over the site to separate vehicular and pedestrian circulation as this would enhance circulatory efficiency. To reduce the hazards related to crowd control, huge spaces for refunction and socialization within and outside the building.

3.7 FACTORS INFLUENCING SHOPPING AND RECREATIONAL PARTICIPATION

People get stimulated into recreation only if the facilities are available. Increase in recreational activities, leads to a reciprocal in demand for recreational facilities that influence recreational participation which include:

a. Age

Age affects the type of recreation one involves in. The youths within 15 to 45 years, participate in more active recreation than the old who pursuit the passive recreations.

b. Sex

Barton (1970) points out that, sex affects the type than the level of participation in recreational activities. Males prefer active and outdoor recreation while female gender prefer passive and indoor recreation. It has also been established that except for individual or less than 10 years old, male of all age group have more leisure time than female (Gold 1980).

c. Income level

Income level determines the money available and willingness to pay for recreation and also determine the recreational activities on one's participation. Those with higher income may participate in expensive type of recreation like golf.

d. Educational level

Education level deals with the interest and choice of activities. It affects almost the five levels of participation.

e. Mobility

Transportation influences the participation in recreation especially outdoor. Therefore people with means of mobility will tend to participate more.

f. Time

Some recreational activities needs a long period of uninterrupted time if they are to be fully enjoyed in other words, if time available for recreation is short, participation will reduce.

g. Other factors

Participation may be contained not only by barrier linked with age gender, religion, time, income, but also by lack of facilities and opportunities. Studies in Belfast (Robert Dench et al 1989) have showed how level of participation can be lifted and social inequality overcome by increase in facility provision.

3.8 CIRCULATION

Circulation is relatively easy to recognize due to the conflict between vehicles, goods, and pedestrians in trying to have easy access to a facility to be used.

3.8.1 Circulation System in Shopping and Recreational Facilities.

Circulation networks in shopping facilities encompass all movements within an around the shopping facility. These circulations involve the movements of vehicles and people in and around various functional spaces. This section deals with analysis of all categories of movements and their design consideration, so as to serve as a sort of guide in the design of circulation system in the proposed shopping mall for Kaduna.

3.8.2 Classification of Circulation in Shopping and recreational Facilities

Circulations in and around shopping facilities can generally be classified into two main groups, namely: vehicular and pedestrian circulations, with other like goods circulations being intermediaries or secondary circulations in relation to the aforementioned two classes.

3.8.2.1 Vehicular Circulation

Vehicular circulation spaces are spaces provided mainly for vehicular traffics, maneuvering and parking (Roadways, junctions, parking and turning spaces). These involves all automobiles such as cars, buses, bicycles, motorcycles, and other vehicles that ply roads within and around the shopping facility. However, the vehicular traffics include:

Through traffic: This is the private and public vehicular traffic plying major roads and carriage ways that may bound the terminal. The intensity and pattern of flow of this traffic depends on the importance and hierarchy of the route.

The characteristics of this type of traffic around a shopping mall influence the selection, distribution and location of entry and exit points. The design of vehicular roadways, junctions and

turning spaces as well as the sitting of parking spaces. However, the designer can influence the through traffic characteristics with adequate care, to suit the site condition and reduce any problem envisaged to the minimum. This can be achieved by either redirecting the flowing pattern to decongest the routes and lessening traffic volume of widening the routes to accommodate more vehicles and higher speed.

Direct Access Traffic: This class of traffic is associated with the vehicular traffic for the terminal staff, (personal and official cars). The designs and geometry of its circulations is of great significance to the architect. Also delivery truck circulation which is also one of the major vehicular traffic formed part of direct access traffic in shopping centres. Their flow pattern should be properly laid out to enhance efficient vehicular circulation system, safety and fast movement of shoppers into and out of the mall. In addition, it has to relate closely to the built-up areas and in harmony with the general landscape of the shopping mall.

Waiting Traffic: This is the traffic that involves other commercial vehicles (Apart from private vehicles) such as taxis, business and personal cars that convey shoppers and other users to the shopping mall. Its circulation pattern should relate to other traffics and carefully laid-out to ensure efficiency and safety.

Occasional Traffic: This is the traffic associated with services/utility vehicles, which include ambulance, fire fighting vehicle, delivery trucks and refuse disposal vans. The indispensable service of these vehicles should be allowed to their respective service areas without much difficulty, hindrance and interference with other traffics.

3.8.3 Pedestrian Circulation

Pedestrian circulation spaces include footpaths, walkways and other spaces (Ramp, staircases, lift, escalator and corridor) which are exclusively used by pedestrian with little or no vehicle

interference. Pedestrian circulation in a shopping mall involves mainly direct pedestrian traffic, which is the movement of staff, shoppers and other users that are on foot with business in and around various shopping facilities. Pedestrian traffic routes should be planned to form harmonious entity that provide shortest and quickest movements to, within and between all fundamental units. Also, it should be planned to ensure quickest and sage evacuation of passengers. Traffic nodes should be kept to the minimum to reduce points of pedestrian conflicts, having in mind that all users of shopping facilities become pedestrians at one point or the other.

3.8.4 Design Consideration

The nature, design and distribution of circulation spaces in addition to their various surface treatments influence circulation characteristics, safety and speed of movement of users in any shopping facility. The different categories of circulation spaces are discussed below, with analysis of their design requirements and standards which are to be employed in the design of the proposed shopping mall, Kaduna.

3.8.5 Design of Vehicular Circulation

The following are problems associated with vehicular circulation: Bad layout of traffic routes with many intersections and inadequate road dimensions; multi purpose use of road ways by different type of vehicles; inadequate provision of occasional traffic way; insufficient parking spaces; congestion and accident from thorough traffic. All these problems have to be considered in the design of various vehicular circulation with the following consideration in addition:

Roadways:

The design of roadways, junctions turning spaces and parking areas is influenced and determined by size, geometric characteristics and intensity of the expected vehicles.

Spaces requirements for the vehicles to move and maneuver depend on the context within which they operate.

Parking bays should be marked to achieve safety and economic use of space and this also adds aesthetics of the large pavements.

At least five meters between building line and end of parking bay is required.

Well defined and sufficient turning spaces are very important.

Pedestrian crossing should be kept to minimum and where used, it should be properly designed with appropriate sign.

Appropriate surface treatments should be used in various parts as may be necessary.

3.8.6 Design for Pedestrian Circulation

Pedestrian walking speed – the rate at which people walk on pedestrian route is influenced by the following:

The purpose of the walking – those going for shopping are associated with a slow sped than those boarding bus.

The age and sex of individuals – young adult and males walk faster than old people and females.

Alone or group walking – walking alone is faster than when in groups.

Crowd density and carrying weight – people walk slower when carrying baggage as well as when the crowd density is high.

Overall crowd flow pattern – people tend to move faster when in a well articulated pattern.

Walking surface finishes – soft surface are associated with slow speed and discourage movements while hard ones encourage fast movement.

Air temperature – it is a well proved fact that people move fast in cold and slow in hot weather.

Low gradient ramp (10% or less) have little effect on walking but steeper ramps reduce speed.

Elderly and disabled people walk more slowly down ramp then up.

Also, considerable variation of walking speeds are usually obtained even in an homogeneous crowd e.g. women, students, travelers but the mean rate is obtained by the range between the highest and the lowest speed observed from the crowd. However, the design, location and configuration of circulation spaces such as ramp, staircase escalator, elevator and others, considerably influence the walking characteristics of users.

From the above analysis, it can be inferred that both slow and fast pedestrian are expected in the proposed shopping mall, hence due consideration has to be given to all of them so as to serve this wide range of users.

Footway and Path: The design and geometry of pedestrian footway and path in a facility of this kind should be in such a way to enhance convenience, efficiency, safety and fast movement of passengers into and out of the terminal mall with the following consideration:

They should be designed to run directly as possible, by adapting the shortest routes between major areas of functional units.

They should be adequately separated from vehicular ways and kept away from heavily traffic road to avoid accidents.

They should be sufficiently lighted in the night.

They should be overlooked from a distance and secured.

Where necessary, they should be appropriately sheltered from driving rain, sunshine and wind. This can be done by planting, walling or roofing.

Where alone is required, footway or path should be kept to the easiest and lowest practicable gradients.

Ramp serves better than steps but where steps are necessary, ramp can be provided as alternative route.

Footways and paths should be wide enough to avoid people colliding when passing, meeting others or step out into planted areas or vehicular road.

Where necessary, they should be designed to provide occasional routes for emergency vehicles such as ambulance and fire fighter vehicles.

Ensure adequate visibility in their design and should be well lighted during dark period of the day.

For shared circulation in parking areas, bays should be clearly marked.

Clear zones free from parking vehicles should be provided to allow comfortable circulation of both vehicles and pedestrians.

3.9 GENERAL PRINCIPLES OF SHOPPING CENTRES PLANNING AND DESIGN

For a shopping centre to be successful, many conditions will have to be analyzed, criteria weighed, requirements met and problems solved. Some of these are what have been briefly discussed in this chapter.

a. Economic Survey

Prior to any planning activity and often prior to the acquisition of land, it is essential that the market analyst makes a complete survey of the anticipated trade area surrounding the proposed site for the centre.

This survey will help the architect to prepare the size, type of stores and project for future expansion. The developer will also be given an insight into the potential for a successful venture based on the market analysis, the architect's schematic drawings and the cost analysis.

The data to be collected should include:

The present and future population, and income level for a reasonable extent of the locality of the centre.

Existing shopping facilities present in the primary trade area of the proposed centre and their probable competitive effects on the proposed centre.

The driving and walking times from the different parts of the trade area to the proposed centre site.

The proximity of the existing major highways to the proposed centre.

Study of the types of major and specialty stores most needed in this area.

The expenditure per family within the trade area on food, drugs, furniture, clothes, shoes, among others. These estimates will enable the market analyst to prepare charts indicating the recommended total amount of floor area to be provided and how much of this should be devoted to various kinds of merchandise and services.

It is these data that form the basis of architectural planning.

b. Site Selection Consideration

Before a piece of land can be considered suitable for a shopping centre development, among the conditions to be met are:

The cost of the land must be in keeping with the over-all economic consideration.

Existing zoning must permit usage of the site for shopping centre purposes, or there must be a reasonable likelihood that rezoning can be achieved.

There must be enough land to allow construction of facilities that will meet the sales potential.

The shape of the site must be such that advantageous planning is feasible.

The land must be in one piece, free of interfering roadways, rights-of-way, easements or major waterways and so on. That would force development to separated portions.

Physical characteristics of the land must permit advantageous planning and reasonably economical construction.

The surrounding road pattern and the accessibility of the land must be allowed for the full utilization of the business potential of the project centre.

The possibility of achieving visibility of the shopping centre structure from major thoroughfare must be present.

The surrounding land users should be compatible with the operation, free of competitive developments and should, if possible, offer contributing and enhancing characteristics.

This is to say that there should be the possibility of integrating the land with mutually beneficial uses such as town canters, recreational facilities, residential housing among others.

Rarely will a site completely fulfill all the above requirements and therefore, its advantages will have to be weighed and balanced against its short comings.

c. Planning

Careful financial planning is essential to making the shopping centre develop a successful venture. Basically, financing is the art of leverage. Leverage as referred to in the financial world, entails using someone else's money to finance with what has to make more money.

Financing is basically of two types:

Mortgage financing

Equity financing

Mortgage financing consist of either first or second mortgages at interest rates depending on the availability of funds and the interests rate in the market.

Equity investment may be represented by ownership of the land and cash investment on the part of the developer or, in the case of corporate ownership, may be represented by investment in preferred or common shares.

The proportion of capital invested in these various types of financing will depend upon:

The quality of the location and the likelihood that sufficient business can be attracted to the centre to provide a profitable volume of business for the tenants.

The availability of suitable tenants prepared to pay satisfactory rents.

Since circumstances for shopping centre developments are never exactly alike, studies in economic guidelines exist for the patterns of financing that should be considered. The common ingredient in any centre's financial planning and negotiation is the projected income from high credit-rated retail tenants and seasoned merchandisers, a projection which is based on minimum guaranteed rents with cushions provided by rental income over and above the guaranteed rent.

It is pertinent from the onset, that the developer avails himself of the services of a financial consultant or qualified mortgage broker who helps when the developer comes to an architect for his development. The former advises the prominent lender. This helps prevent problems in later negotiations.

The developer's primary efforts should be geared towards raising the fund to carry out such development preliminaries such as market analysis, site acquisition and negotiation, zoning approval procedures and environmental clearances, key tenant solicitations, preliminary design and sketches.

One thing that strikes one here is that, the shopping centre development unlike most other forms of estates developments, substantial site is usually not stated, until the tenant leases, or other binding

agreements have been completed. It is after key tenants are committed and there is a certainty of a deal then can a permanent financial commitment be sought.

The architect's work starts with the physical planning of the site after he must have become acquainted with the total rental area needed for various merchandizing categories, the requirements of the potential tenants and the physical condition of the site.

Among the things to be considered are:

d. Merchandizing

This is the selection location of different tenant types within the shopping centre in such a way to ensure:

Maximum exposure of all shops to maximum foot traffic in order to promote high sales volume

Customers are able to pick and choose with greatest convenience, what the shop have to offer.

An uninterrupted window shopping, by the compact arrangement of the shops.

These aims cans be achieved by placing the primary customer attractors (supermarket, restaurant, bank) and the secondary customer attractors (variety shops, drug stores, dry cleaners shop) in locations where they function as magnets. Customers are pulled through the centre, from one magnet to the other, past the doors of other tenants, who cannot in themselves attract a sufficient number of customers to survive. These type of shops are often referred to as traffic users because they are dependent upon the foot traffic generated by the former traffic attractors. Such shops are the tobacconist, gift and sweet shops.

The primary and secondary traffic generators function best for a shopping centre when located in accordance to the "pull" principle. The single-pull plan is used when one anchor tenant is completed. The double-pull plan is desirable for two anchor tenants with mall type of building

arrangement. The triple-pull plan can be used for a variety of more complex building arrangements where three or more anchor tenants are to be located in the project.

After the primary and secondary traffic generators have been located, the location of the other shops can be determined by the principle of compartmentalization – the grouping of stores featuring related or like merchandize, particularly with respect to type, quality and price of merchandize.

e. Vehicular Survey

During the fact-finding period, information on the following conditions will have to be assembled through the co-operation of the architect, real estate consultant and the traffic engineer:

Point of origin of the shopping centre traffic from eth expected trade area and the number vehicles that will approach from various directions.

The routes that are most likely to be taken when approaching the centre.

The existing traffic loads on such approach roads especially the existing hourly traffic loads which will coincide with the peak traffic hours in the shopping centre.

Once these data are assembled, it then remains for the architect to translate them into a design that will ensure a free flow of traffic, on the surrounding road system. This can be achieved by having fewer number of branch roads around the centre. Roads along all boundaries of the centre can also be widened, if necessary, so that vehicles can enter and leave the site without much slowdown.

Effectively transfer of road traffic onto the site is also essential. Obstructions that would be created by cars in the process of moving into stalls can be prevented by the provision of magazine roads. The entrance and exit points of these internal roads must be well removed from the main highway of about 100 metres minimum.

To ensure even distribution of traffic on the site, customers should have the choice of parking anywhere. However, adequate plans should be made for the possibility of secondary traffic movement within the site. Circulatory traffic arrangements must be such as to guarantee easy flow and non-interference with pedestrians, walking to and from the centre's structures.

The need for the provision of adequate and convenient car parking opportunities cannot be overemphasized. In the Suburban areas of the United States of America where almost all the trade come by vehicle, a ratio between 5 to 6 car spaces per 1000sq. ft. (95sq.m of the gross leasable area (GLA) is mandatory. This figure of course, comes down to 2.5 to 3 cars per the same GLA in the central business districts where mass transportation and walk in trade can be counted on. Base of filling and emptying of parking stalls must be taken into consideration when constructing the parking stall lines of a minimum width of 2.5 to 3 metres and an angle of 45 are best used.

In central business district (CBD) with high land cost, parking can be done on multi-levels and connected to some levels of the centre. The separation of service vehicles from customer car traffic is essential. Provision should also be made for public transportation stands near the shopping centre.

f. Climate Control

In the tropics the problem of cooling or dehumanization of all commercial spaces are or paramount importance. This is necessary to compensate for the body heat and moisture emitted by the shoppers and traders, as well as the heat from electrical lightings.

Dehumification can be achieved in two ways:

Ensuring natural cross ventilation through buildings by having large well oriented fenestrations.

Using mechanical systems such as extractor fans, air conditioners and among others.

Natural cross ventilation is usually very difficult to achieve in a commercial building. This is because of the various spaces like storage, service and the different types of wares that block air movement. Therefore, in most cases, mechanical ventilation are used to provide the necessary air changes per unit time.

By the use of air-conditioning system, the temperature of the shopping environment can be kept at normal body temperature. Not only for the customers to feel more comfortable, but also to prevent merchandize spoilage, reduce cleaning bills and increase personnel efficiency. The provision for air conditioning systems may be on individual or centrally controlled bases. Any air-conditioning system, however, should be planned to counteract the heat loads produced by electric lights, people, machinery within the shop and the outside heat produced by the effect of the sun on the building. The external heat load can be reduced by the use of shading devices over windows, as well as the use of deep canopies over and along display window areas.

g. Services

Services in shopping centres can be viewed in two ways:

The provision of services areas for services such as the delivery of goods to stores, garbage collection, repair works among others.

The provision of areas for housing electrical and other mechanical equipments.

Good planning demands that both areas be properly screened from view of shoppers and access to such paces free of interference from other vehicles or customers within the centre. Provision for the housing of the mechanical and electrical services which includes endless length of piping, wiring and duct work for plumbing, firefighting, communication, lighting and air-conditioning, is essential that all are located out of the public's sight in the services areas, in walls or between floors and ceilings.

h. Security

Apart from fire risks, security planning in shopping environment is mostly concerned with pilfering and burglary. Various means that can be used to control these include electronic surveillance, locking devices, cash and goods control and an effective communication system. Nevertheless, it is important that the architect includes the security of the centre into its planning, for example:

Ensuring that there are no concealed areas around the centre where intruders are likely to be able to work undisturbed.

Ensuring that galleries are provided over main sales floor of department stores to prevent shop lifting and enhance effective management and supervision.

Ensuring that the location of cashier's office or other areas where money is kept in large quantities is deep within a secure zone to prevent easy access for criminals.

Ensuring that visibility is maintained through circulation areas, especially where valuables are being transported. There should be extensive use of glazed panels or mirrors around corners to prevent collision or attack from criminals hiding.

Ensuring that good lighting is provided in parking areas to deter purse snatchers and car thieves.

Other means of ensuring security will be through the use of convex mirrors, closed circuit television, security sirens to detect locks that are opened under duress and the employment of security staff to operate both day and night.

i. The Building Structure

In designing the shopping mall structures, it is essential that individual characteristics of different enterprises are not suppressed at the same time. Building for single tenancy such as department store, restaurant and bank requires free standing structure which should be planned in accordance

with the specific requirements of the users. The architectural shape must be simple and should express prestige for the whole centre.

Multiple tenant structures such as groceries or market hall, should have great flexibility in the use of space. Depth of shops will depend on various factors. However, flexibility of space can best be achieved by keeping column spacing as far apart as possible. Though this may mean additional construction cost. Choice of materials and structural methods should be such as to allow expansion for individual users. The criteria for the selection of materials included durability, ease of maintenance, water proofing, insulation qualities, availability cost, ease of installation and of course, the appearance. Utilitarian facilities such as tenants and shoppers' toilets, stairways, elevators and lifts, must be carefully located. Possibility of grouping such facilities together should be considered as means of saving construction cost and space.

j. Shop Fronts

The treatment of these areas should not be controlled but influenced by the architect. Except for certain limitations on the use of materials, the placement, size and type of store signs, the tenants should be encouraged to use their initiatives to produce a variety of store frontage which will add glamour, interests and appeal to the stores and the mall as a whole. Tenants store signs should not be allowed to be attached or to protrude into controlled areas. Arrangement of store signs on top of canopies or on parapets should be discouraged because it destroys the overall architectural character of the mall. A general colour scheme should be used for the store fronts. For safety, the shops entrance doors must be recessed to avoid their swinging into walkways.

k. Pedestrian Areas

These areas include the walk ways and corridors. The separation of these areas from transportation areas is one of the cornerstones of good planning. This is because of the noise, fumes, confusion

and distraction that characterizes transportation areas, will create a feeling of anxiety and tension in the shoppers, and thereby diminish the attainment of a psychological climate conducive to shopping.

The separation of these areas can be achieved by:

The use of screen walls between pedestrian and parking areas.

Provision of walkways within parking area.

The importance of creating a pleasurable pedestrian environment is also very essential. The pedestrian areas must not only be narrow lanes but afford an opportunity for a change of space by having variations in their sizes. Atrium or open courts should be decorated with flower beds, murals, sculptures, water fountain, all contributing to making the shopping environment look busy, colourful, exciting and full of interest. Atrium should be able to serve public events such as exhibitions, band concerts, fashion shows and other social events. It is essential that restaurants, snack bars, outdoor cafés are all part of the scene.

Covered crosswalks can form sheltered areas for pay telephones, drinking fountains for children and adults, information boards among others. There should be the possibility of people to sit around the mall or plaza in pairs, groups or singly. The seating should be durable, easy to keep clean and simple in design. They are best placed around large trees to protect from the sun. planting beds and fountains must not obstruct pedestrian movement nor should the kiosks obstruct users.

l. Landscaping

This task must proceed in close integration with the site planning and architectural design of the centre. It should never take the character of exterior décor limited to the addition of few plants here and there as it is in most shopping centres, especially in Nigeria. Attempts should be made at

conserving existing natural features such as trees, rock formation, water bodies among others on this site. Large scale planting should be introduced to enhance the beauty of the shopping environment, act as wind beakers, protect surrounding residential areas from commercial noise and provide a welcome shade in parking and pedestrian areas. The planting should be informal and natural as a contract to the man-made structures. The planting materials should be indigenous, easy to maintain and replace.

m. Management

Once the centre is completed and most of the tenants have moved in, effective maintenance and operation become prime factors in the success of the centre. The elements that make for an efficient and economic operation are numerous and diverse. Some of the outstanding factors which require special attention include the common areas maintenance for indoors and outdoors planning for promotional events and the socio-political and public relation problems.

The common area maintenance fee refers to a charge that is added to normal rents of the shops. This additional charges covers the maintenance and protection of those areas commonly used by all tenants and the buying public. These common areas include sideways, wall areas, track area, parking lot and roadways. As a rule, the principle of maintaining a medium sized centre as similar to those for the very large centre.

Workmen and supervisors are responsible to the general manager, who will be responsible to the owner. The duties of the general manager will be to maintain the profitability of the centre by achieving monthly, yearly and long-range goals. He also has to ensure the collection of all rents, utility and security charges, preparing and evaluation of new and existing leases, meeting with prospective tenants in cooperation with the leasing department and maintenance of all building and common areas.

3.9.2 Movement Patterns in Shopping Mall

3.9.2.1 Pedestrian Movement Pattern:

This pattern of movement is the network in which the pedestrians move around the mall in different directions and access ways. These access ways have different road networks which involves only pedestrians, in order to avoid congestion from users and staff so that free flow of circulation will be achieved.

Pedestrian movement pattern has a consideration variation of walking speed and direction on each pedestrian depending on the purpose of shopping or recreation.

Pedestrian movement patterns is for both staff and the users around the facility and the traffic routes must be designed to achieve a free flow of circulation by having shortest and fastest route due to different activities of the staff and users. Pedestrian circulation is normally congested after purchase of goods and closing hours, whereby great conflict occurs during exit.

3.9.2.2 Vehicular Pattern of Movement:

Vehicular pattern of movement is done in spaces specially reserved for vehicles to be parked, driven and turning at a particular radius to avoid holdings and traffic conflicts.

The vehicles are of different categories which are small and big category and this is determined by the nature of patronage. It creates a high level of traffic in the facility especially the big and commercial vehicles, therefore the network should be properly designed to enhance efficient movement pattern for easy and safety movement of staff and users.

3.9.3 Vehicular and Pedestrian Circulation Recommendation

Reduce potential safety hazards caused by conflicts between pedestrian and automobile traffic by clearly identifying locations for pedestrian activity and circulation, vehicular circulation, and by separating locations for delivery trucks from public points of

Ingress or egress.

Provide special paving treatments at site entrances.

Use canopy trees in parking lots to break up the scale of large parking lots and provide additional shading.

Such Pedestrian ways shall feature textured or coloured paving materials (excluding stamped asphalt), landscape features, Bollards, and lighting.

Provide a safe, attractive, shopping environment by incorporating pedestrian amenities such as shade, lighting, landscape, and gathering areas.

Pedestrian focal points should have enhanced pedestrian paving such as decorative scored concrete, stained concrete, exposed aggregate, integral coloured or textured concrete.

Design convenient pedestrian and bicycle access to all adjacent streets.

On west and south exposures, design plazas, patios and pedestrian areas with architectural and landscape shade elements.

Children's amusement rides shall be prohibited within pedestrian walkways located adjacent to shopping centre buildings.

Shopping centre Buildings shall provide a minimum 10-foot wide pedestrian walkway adjacent to building's frontage.

3.9.4 Parking Requirements

Pedestrians should not be allowed into the parking facilities, and lots should not be used as pedestrian entrances or exits to the mall.

A ratio of between 5-6 cars per 1000sq feet of leased store area. When the walk in trade is more it could be reduced to 2.5-3 cars per 1000sq feet.

Only shoppers with parking ticket or pass should be able to enter the parking lot from the mall.

A guard booth at the entrance to the parking lot with a ramp is always an advantage.

Minimize the expansive appearance of parking lots.

As with anything else, for parking lots too it is better to have smaller number of entries and exits. This makes it easier to monitor who is coming in and out, and it is easier to intersect the offender.

Car stalls are to be made at 70 degrees to lane for a one-way traffic. This is more convenient for putting the car in the stall unlike two-way traffic which requires an angle of 90degrees.

When the topography of the site is steep, advantage can be taken by creating an underground parking

3.9.5 Structural Consideration

Frame structure has proven to be efficient in mall designs. Proper consideration should be taken when locating columns to prevent them from interfering with the free flow of spaces.

Staircase and beams should in addition to their structural role serve aesthetic functions.

Steel trusses are preferable for roofing members as they are more efficient in spanning longer distances.

Steel Column can be used for its load bearing capacity, but needs to be encased in concrete to enhance its visual attraction and resistance to fire.

Large structures should be designed to reduce their perceived height and bulk by dividing the building mass into smaller-scale components.

Buildings over two stories high should "scale down" their street-facing facades to reduce apparent height.

Box-like forms with extensive unarticulated facades or large, unvaried roofs should be avoided.

A variety of levels and planes should be encouraged to reduce the massing of larger buildings.

Façades of horizontal buildings should be broken up into smaller components by utilizing vertical elements.

3.9.6 Landscaping

Design the project landscape theme to complement and enhance project architecture.

Design arterial street intersection frontage with substantial landscape features, creative grading design, fountains, seasonal colour, art and vertical landscape focal points.

For projects over 15 acres, provide a raised landscaped median at major entrances from arterial streets to separate ingress lanes from egress lanes.

For projects over 10 acres, create prominent focal points. Architectural structures, art, historical and landscape features should be located at the terminus of major project entry drives.

For projects over 10 acres, incorporate prominent entry features, vertical landscape forms and seasonal colour at both vehicular and pedestrian project entrances.

Provide landscaped islands with automatic irrigation systems, comprising at least 7% in parking lots.

Incorporate canopy shade trees, landscape features and seatings or other pedestrian amenities near colonnades, storefronts and pedestrian routes.

Provide significant foundation and accent plantings, including trees, around buildings to accentuate or screen building features.

Provide low-profile accent plantings at the base of monument signs.

Use lush but low water consumption ground cover in areas near pedestrian amenities and prominent entrance features.

CHAPTER FOUR

KADUNA STATE

4.1 HISTORICAL BACKGROUND OF KADUNA TOWN

Kaduna town made its first international debut with the massive pageantries of the royal visits in 1959 and followed it with another in the self-Government celebrations in 1959. Many remember it therefore as a town of magnificent durbars and breathe taking exhibitions. A town riotous with colour and throbbing with excitement.

Kaduna is tailor made for its role as capital town like India's Delhi, Canada's Ottawa, Kaduna is more of an administrative town.

From its humble beginnings, Kaduna grew rapidly in 1928 a new Government house was built and between 1928 and 1930 electricity and pipe borne water were installed. The "hole in the bush" now covers 48 leisurely square miles of rolling parklands and has a population of some 46,000. It was created as capital territory in 1956, independence of any province or other local government unit, "administrative by or under the control of the government in council" whose function are carried out by the administrator of Kaduna.

If Lord Lugard were to return today, he would find it a little difficult to believe that this town with its generous and graceful layout, its tree line avenues, its long straight streets and attractive buildings, its beautiful round-abouts, grew from what was described as a "deserted village" just years ago.

4.2 POPULATION STRUCTURE AND DISTRIBUTION

The 1991 census provisional result puts the population of Kaduna state at 3,935,618 and 2006 census puts it at 6,066,562. Although majority live and depend on the rural areas, about third of the State's population are located in two major urban centres of Kaduna and Zaria. However, except in

the northwestern quadrant, the ;rural population concentration is moderate, reaching a high of over 500 persons per sq. km. in Kaduna/Zaria and the neighbouring villages; 350 in Jaba, Igabi and Giwa and 200 in Ikara LGAs.

Despite the provisional nature census results, observations of movements of young able-bodied male labourers in large number, from rural to villages to town during the dry season and back to rural agriculture fields during the wet season, suggest a sizeable seasonal labour force migration in the state. However, the seasonal labour migration has no effect on agricultural labour demands in the rural traditional settings. Indeed, some of these seasonal migrants come to town to learn specific trade or acquire training and eventually go back to establish in the rural areas as skilled workers (e.g. masons, technicians, tractor drivers, carpenters, motor mechanics among others).

Another major feature of the state's population structure is the near 1:1 male/female ratio, not just for the state as a whole, but even among all the LGAs. The effects of this may be helpful to the future social and economic development of the rural sector especially in the agro-allied rural industries. The large number of secondary school leavers, polytechnic and university graduates provides a growing skilled labour force for the growing industries in the state.

4.3 URBAN AND RURAL DEVELOPMENT AND PATTERNS OF HUMAN SETTLEMENT

The pattern of human settlement throughout the state is tied to the historical, political and socio-economic forces the area has been subjected to, from the pre-colonial to post-colonial period. Prior to the advent of the British occupation, the basic unit of human settlement was the extended family compound. As compounds grew, the needs to security and defence led to a higher hierarchy of settlements called "Garuruka" (towns). These towns were protected by walls with a titled, administrative head appointed by higher political authority, the "Sarki". This pattern of settlement

dominated the Hausawa cultural groups to the north (i.e. Giwa, Igabi, Zaria, Sabon Gari, Kudan, Makarfi and parts of Ikara LGAs).

Higher settlement hierarchy than the tural extended family compounds in other parts of the state was delayed, until the development of social amenities and infrastructure such as motor and rail roads, Christian Missionary establishment and recently, produce buyers, markets and administrative reorganizations gave impetus (settlements such as Birnin Gwari, Kuda'a, Kachia, Zango Kataf, Kwoi-Sambam Kagoma and Saminaka are good examples). IT is the impact of these historical and cultural developments on settlement pattern and probably because of the nature of the rural economy (agrarian) that created the dominance of the two urban centres (i.e. Zaria and Kaduna) in the state.

4.4 PEOPLE OF KADUNA TOWN

Before the coming of the British, Kaduna town was sparsely populated. Majority of the indigenous settlers, notably the Gwari and Fulani were located around the environs. For Gwari and Fulani settlements stretched along the banks of River Kaduna with settlements such as Kudanda (now referred to as Kakuri) Kukogi (now called Gworo) and Makera very prominent.

Though these settlements were small, in terms of population and size, nevertheless, some of them e.g. Makera constituted the early base from which Kaduna developed (Bello and Oyede: 63).

CHAPTER FIVE

CASE STUDY

5.1 INTRODUCTION

For every research work to be successful there is need to study existing works in the research area. For the purpose of this research, the prevailing malls in the large cities of Nigeria like Lagos and Abuja are studied. Each shopping mall has its unique characteristics in terms of its design and the way it renders its services to the costumers. These malls have similarities, advantages and disadvantages and the researchers work is to criticize and appreciate these factors. This would help the designer to make improvements where there are pitfalls in the design and service rendering aspects of such.

5.2 SILVERBIRD GALLERIA, VICTORIA ISLAND LAGOS.

The galleria is a modern facility of shopping and recreation within the Lagos metropolis. It was established in the year 2000 by the former NTA Director General Ben Murray Bruce. One of its recreational activities is entertainment and has about six cinemas with modern entertainment facility.

Silverbird galleria is a shopping and recreation facility located in Victoria Island Lagos. It is situated in a high-brow area of Victoria Island Lagos which is designed to cater for the middle and high class of the society encompassing Victoria Island.

It is located along Ahmadu Bello Way Victoria Island Lagos. It is bounded by NTA by the west, metro plaza and park n shop towards the west and other companies behind it.

The site covers an approximate land area of 1,200 sqm^2. The site is relatively flat and firm.

The philosophy behind the facility is to create a commercial setting which could easily respond to future growth and transformation and at the same time provide a good and relaxed shopping and recreation atmosphere.

5.2.1 Spatial Organization

The various wings had been planned to take advantage of the ventilation provided by the prevailing winds and at the same time coping with the menace of environmental hazards such as dust, noise and maintenance. The design is basically for the provision of retail shopping outlets, office and other supporting socio-economic facilities to serve the Lagos central business district.

5.2.2 Building form

The front elevation has an irregular shape in front and three sides rectangular three-storey building with entrance over looking the Ahmadu Bello Way. The ground floor accommodates entrance for workers and the customers which gives a very comfortable circulation pattern. It also accommodates an exhibition hall which serves as a lobby that leads to various shops and staircases.



Plate 5.1: The Main Lobby



Plate 5.2: Staircase to various Facilities

The exhibition hall also accommodate children's trampoline where they play in. It also has a parking space outside the premises. All the facilities (restaurant, wine bar, shops, children's

playing area, bowling room and cinema) are well incorporated together which gives the facility easy and comfortable movement pattern.



Plate 5.3: Approach view of Silverbird Galleria

5.2.3 Circulation

The entrance into the mall is conspicuous to prevent the new comers from losing their way within the mall. Ample spaces are provide between shops to enable easy movement between users. Vertical circulation is via a panoramic lift and staircases.

Lifts were located at different points to allow fast movement between different floor levels and glass was also use for easy visibility in the facility.

5.2.4 Spatial organization

The design took good care of proper coordination of various functional spaces in the building. Even with the site constraints a proper articulation of the spaces has been achieved. Circulation has allowed no space for conflict of staff and users. Being a building in a temperate region, energy conservation within the building had been the main consideration. Ventilation by artificial means has been employed and distribution of windows all over the building was not a priority.

The main road (Ahmadu Bello Way) is a busy road but the noise has been taken care of by the use of good acoustic material.

The shopping mall has a good access point from the front elevation of the building.

5.2.5 Merits

The separation of the pedestrian and vehicular traffic has controlled traffic.

The Architectural character differentiates the scheme from a residential building type.

Off loading bay is situated at the rear side of the building whereby the customers will not have a view of.

5.2.6 Demerit

No room for natural lighting

Insufficient parking space

There is no natural ventilation

5.3 THE PALMS LEKKI VICTORIA ISLAND LAGOS

The palms shopping mall is an integrated shopping mall located on a 40,000sqm (10-acre) plot of land in Lekki Peninsula, in Lagos, Nigeria. It has 20,000sqm (5 acres) of lettable retail space. The mall was built on swampland that was reclaimed by the government recently and building was commissioned by the Oba of Lagos and former President Olusegun Obasanjo. The mall which was opened in early 2006 has 69 stores and a modern six screen cinema.

The palms shopping is the largest and first of its kind in Nigeria. The mall is owned by Persians Properties Limited, a joint venture between Actis Capital, a UK-based leading emerging market private equity investor and Tayo Amusan, a Nigerian Property developer.

It is located around Lekki peninsula close to NYSC bus-top Victoria Island. It is easily accessible by all car users both private and commercial vehicles owners.

The palms have a flat and relatively sloppy topography towards the main entrance of the mall.

In the design of this facility provision has been made for comfortable lighting and ventilation. Fin walls were employed to protect the glazed sides from glare. It also has a spacious corridor of 3m wide.



Plate 5.4: The use of glass in the departmental store exposes the services,

Source: Author Oct. 2008

5.3.1 Building form

The facility has a rectilinear storey building with the entrance directly facing the parking space which accommodates 1000 cars. The ground floor consists of mainly retail with about 20,1000m2 shops, banks, communication network centres, news café, shoprite, Mr. Biggs, Pharmacy, Jewelry shops, games section for children, bowling room. Soullounge which combines a bar and food court was also accommodated on the ground floor.



Plate 5.5: Approach view of the Palms



Plate 5.6: Café



Plate 5.7 Shoprite



Plate 5.8: Departmental Store

The anchor tenants at the mall are South African Giants Games and shoprite. The shoprite is a section of bakery and beverage section with about nineteen else.

The games section occupies the largest space of about 5495sqm to be the centre of gravitation within the mall. There is shoprite, which labels itself as Africa's largest grocery stores and the other expansive marts, the anchor shops within the mega mall. The shops which range in size between 28-590sqm (300-6,400sqf) some in different widespread categories of diverse merchandise.

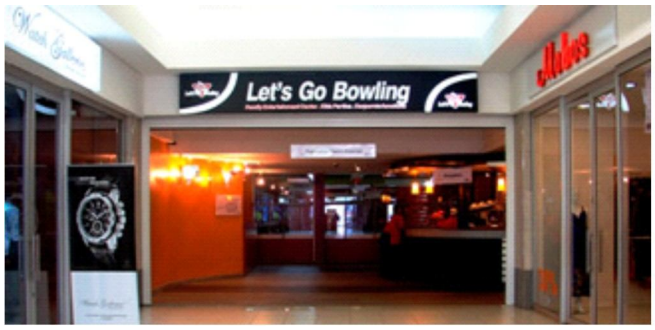


Plate 5.9 Bowling Room



Plate 5.10 Games Hall

The First Floor accommodates six cinema halls known as Genesis Deluxe Cinemas, bowling room and a gymnasium.

5.3.2 Use of material

Roof: The three anchor stores have lattice steel girder roof covered with long-span aluminum roofing sheets with exposed services for lighting, smoke detectors, sprinkler system, sound speakers and central air conditioning. The central part of the structure has lattice steel trusses with suspended ceiling, housing the services.

The walls: The interior walls are partition walls made of show glass to allow people see the display of goods in the shops. The exterior walls are made of sandcrete hollow blocks, well rendered and painted.

The floor: The floor is made of reinforced concrete with marble floor finish. The cinema area is covered with carpet for acoustic purposes.



Plate 5.11: The lattice girder roof system used in the departmental store exposes the services,

Source: Author Oct.2008

5.3.3 Spatial organization

The design has integrated the shopping and the recreation facilities together. The finishing was excellently well with the use of modern facilities and finishing. The movement pattern of most of the circulation space was conflict free.



Plate 5.12: A busy corridor

The building is sited far away from the main access road in order to control noise.



Plate 5.13: Approach View and Parking Area

5.3.4 Merits

The main building is located away from the road to achieve proper noise control.

Integrating the shopping and recreation activities brought a conducive atmosphere for relaxation.

Provision of adequate convenience for both users and staff was efficient.

Good accessibility to various units.

5.3.5 Demerits

There is traffic conflict of users after watching movie due to one exit.

The recreation facilities where only indoor which increased congestion.

There is no room for natural ventilation and lighting.

5.4 GRAND PALACE SHOPPING MALL, BANGKOK, THAILAND

5.4.1 Introduction

Grand-palace is a balanced combination of shopping gallery facing the Nevsky Prospekt and Halian Street. It was constructed in June 2003 with a total area of 2000m^2

Here you can find various goods, clothes, accessories and interior decoration produced by the world-famous brands.

Grand palace is a complex of buildings in Bangkok, Thailand. It served as the official residence of the kings of Thailand from the 18th century onward. The palace has been constantly expanded and many additional structures were added over time shopping and recreation and royal celebration later on took over the palace due to the construction of new royal structures of different monarch with different cultures.



Plate 5.14: Grand Palace

Grand palace is located at Italian street, Thailand with a relatively flat topography. It covers a total area of 2000m^2 with a comfortable parking space.

5.4.2 Building form

The building is rectilinear with an old royal Architecture which later on changed partly due to the constant shopping and royal ritual celebration which incorporated recreation. It also has an attractive royal façade.



Plate 5.15: Chakri Mahaprasat Hall

5.4.3 Spatial organization

The plan of the Grand palace followed closely to that of the old palace in Ayuthaya. The western side next to a river and the royal temple situated to the east side, with all structures facing north. The palace itself is divided into three quarters: the outer quarters, the middle quarters, the inner quarters and the shopping mall right at the middle towards the entrance of the palace and also a museum at the right side of it.

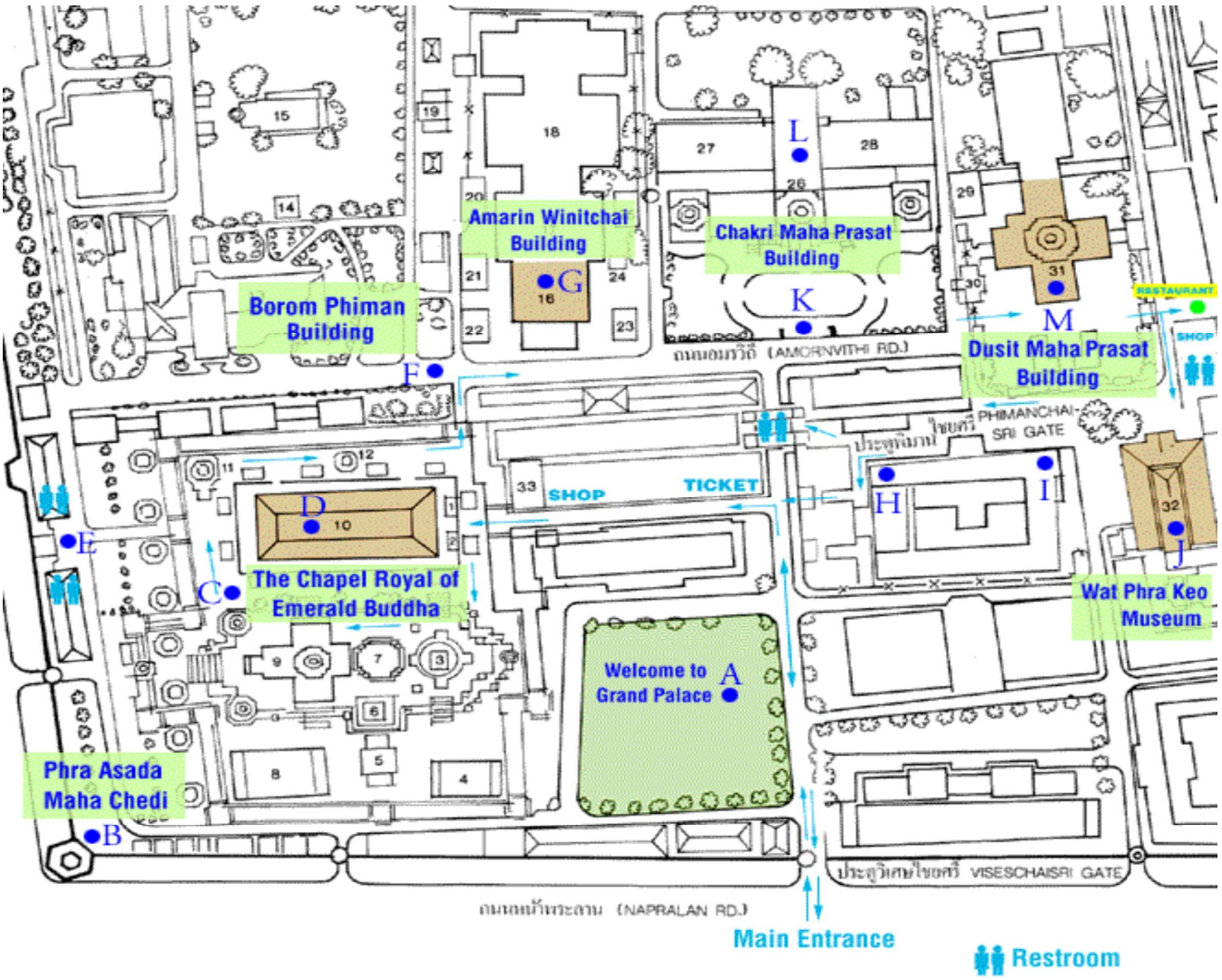


Plate 5.16: The Plan of Grand Palace

Grand palace has an office and primary place of residence, retail shops, soft landscaping, open restaurant, marriages and state banquet arena, children's play ground, parking space, a royal institute of Thailand and banking complex.

5.4.4 Use of material

The building is equipped with the advanced system of ventilation and air conditioning, the security and fire-sprinkler system, and panoramic and service elevators.

The construction of this complex shows a latest tendency in the modern Architecture. The use of marble, granite, brass and glass décor was combined with monolithic ferroconcrete. Grand palace has become the first administrative and trade complex in the centre of St.-Peter burg combining the shape of a historical building of the 18th century and the modern equipment of the 21st century. The facades have been restored according to the historical drawings of 1879. Grand palace was by right called the best investment project of 2003 in Thailand.



Plate 5.17: Prasat Phra Thap Bidon



Plate 5.18: Buddhist Multipurpose Hall



Plate 5.19: Grand Palace Wat Pho

5.4.5 Merits:

Traditional Architecture was modified.

The use of natural lighting and landscaping elements gave maximum explosive to the environment.

5.4.6 Demerit:

Congestion occurs during celebrations.

The recreation facilities were not integrated properly.

5.5 BLUE WATER MALL, ENGLAND

The blue water shopping mall is a super-regional shopping mall which was commissioned on 16 March 1999. It is located at Greenhithe in the borough of Dartford, near the M25 motorway in northwest Kent, England.

It is the second largest shopping centre in the UK after Gateshead's Metro Centre. It covers a total sales area of 154,000 square meters on two floor levels. The shopping mall ("Bluewater", 2008) 'is owned by four major UK institutions, Prudential Plc and PRUPIM (35%), Lend Lease Europe Ltd (30%), the Lend Lease Retail Partnership (25%) and Hermes (10%)'.

The facilities provided in the mall among others are as follows:

a. 330 no. shops

b. 40 cafes and restaurants

c. 13 screen cinema

5.5.1 The building form

The building has a combination of rectilinear and curvilinear forms. It is completely covered in steel and glass at its periphery. This mall is an epitome of high-tech architecture due to the use of materials and form of the structure.



Plate 5.20: The form of the building emphasizes extensive use of glass.
Source: www.google/images/bluewatermall/

5.5.2 Use of materials

The general materials used here, are steel and glass with reinforced concrete. The expressive use of glass and steel makes the building a unique one. Polycarbonate roofing sheets were also used to allow natural lighting of the interiors.

a. Series of escalators located in different points to allow for movement between different floor levels.

b. Use of glass to allow for natural lighting and for transparency

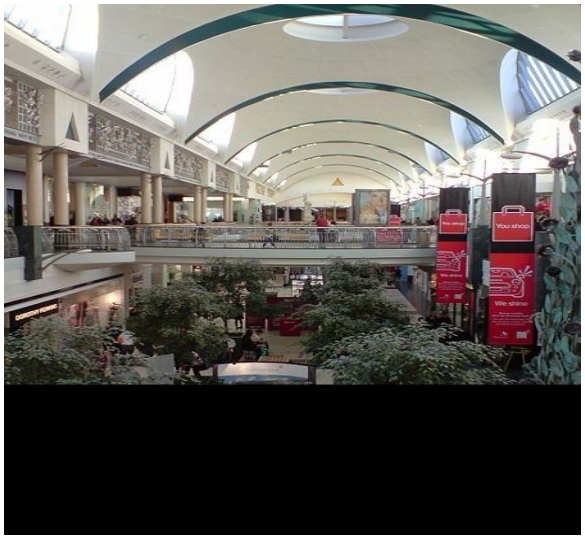


Plate 5.21: The atrium which allows light into the building interior.
Source: www.google/images/bluewatermall/

5.5.3 Spatial organization

The shopping mall has a triangular shaped floor plan. It has 3 anchor stores each located at the apexes of the triangle. Other shops are located in-between the apexes, this gives the building a triangular circulation pattern. It has a parking lot with capacity of 13,000 cars and 100 coaches.

5.5.4 Merits

Simple open plan layout makes movement easy.

Use of signs and graphics to ease navigation of the shopping mall.

Use of plants to give shoppers a good shopping experience.

Use of visual balconies for pleasant views.

Sufficient parking space provided for the handicapped as well.

Sufficient entrances and emergency exits.

5.5.5 Conclusions

The blue water mall is the most attractive shopping mall compared to the others studied. This is seen in its extensive of glass and steel, in addition to the elements such as panoramic lifts and so on. The mall has a very functional plan layout with its circulation lobby laid out in a triangular shape with shops arranged along the lobbies

5.6 CEDDI PLAZA, ABUJA

5.6.1 Introduction

It has an inward orientation and offers an interesting contrast to the landscaping that heralds the pedestrian access on the approach street level.

Members of the public would be dropped off at the carporch by the main entrance, while all cars are parked in the basement and street level car parks. There are two staircases and two lifts from

the car park to the main entrance level or any other floor in the development. The main entrance foyer opens into the giant circular atrium, traversing the entire six floors with twin panoramic lifts framing the grand staircase. This main atrium is connected to the other two atria of the three shopping levels through the mall.

The attractions for the shopping center are the restaurant, the departmental store and the café. The grand staircase terminates at and celebrates the access to the department store on the ground floor. Additional shops makes up the first floor, while an up market restaurant will complement the theatre on the second floor, other facilities includes a gym and service shops such as hairdressing and beauty salons and a laundry and dry-cleaning outfit.

The second to third floors are open plan offices with provision for voice and data outlets this will ensure that the offices can offer tenants the latest technology. The penthouse office on the 4th floor is designed for maximum visibility.



Plate 5.22: Ceddi Plaza

5.6.2 Access

Acces into the plaza is through the main gate which is to the right, and leading directly to the drop off carport by the Main Entrance,

5.6.3 Vehicular Parking

While all cars are parked in the lower level and street level car parks .This basement space carries structural column which were arranged in an order that they do not interfere with the traffic

5.6.4 Lighting

Artificial lighting is employed to ensure visibility at all time this is through three Standby 750 kva generators and one night time generator for emergency lighting and security. artificial lighting is also employed to illuminate shop signs.

5.6.5 Pedestrian Circulation

On entry into the walk ways are provided for pedestrian and this is usually arranged in the most convenient way. Vehicle owners need not to exit underground parking to the surface entrance as another equally important entrance is located on the basement floor. Vertical circulation is via staircases and two panoramic lift at central atrium. It combines both vertical and horizontal movement pattern.

5.6.6 Landscape

The site is properly lanscaped although the floor coverage area is less than the standard examples of the hard and soft landscape elements employed on the facility which includes pedesrian paved way, street level parking spaces kerbs lighting features, sculptures and waterfountain the soft elements includes green areas and plants which include trees of various species.

5.6.7 Architectural Expression

The overall effect is a self-sustainable mixed use development that revitalizes the cityscape while being in harmony with the environment. Escalators, bridges, lifts, voids interconnected levels, modulated fashion, to create a synergy that makes the whole experience unforgettable, and complimentary to the modernists nature of buildings in the nations capital.

Lower Level

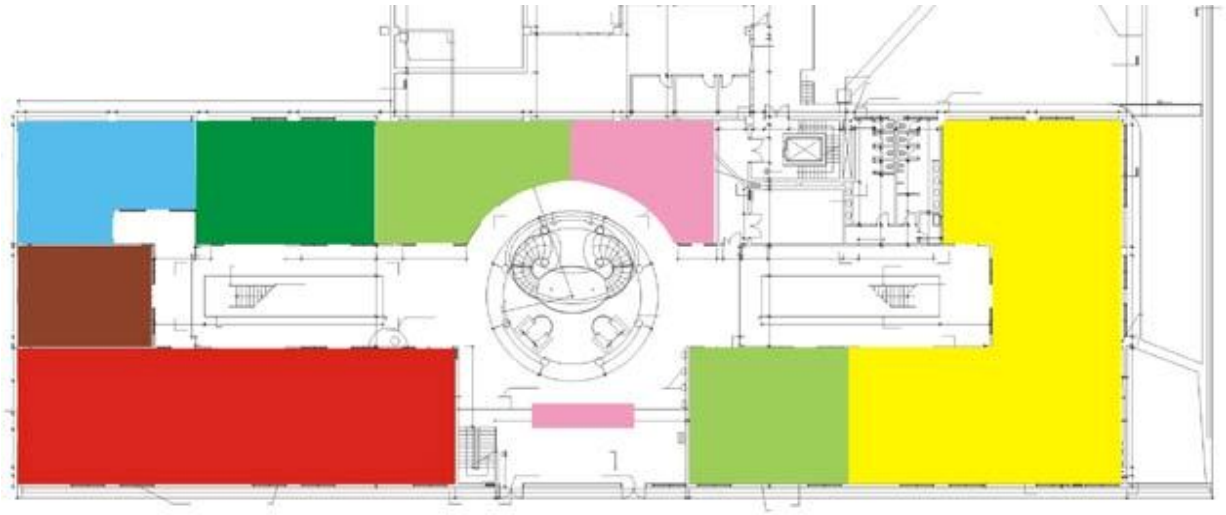


Figure 5.1: Plan

Legend

- Supermarket
- Stationery Store / News Stand
- Bank cash office, drycleaner
- Health club, gym, beauty spa
- Open
- Mgt office, security office
- Specialist retailers

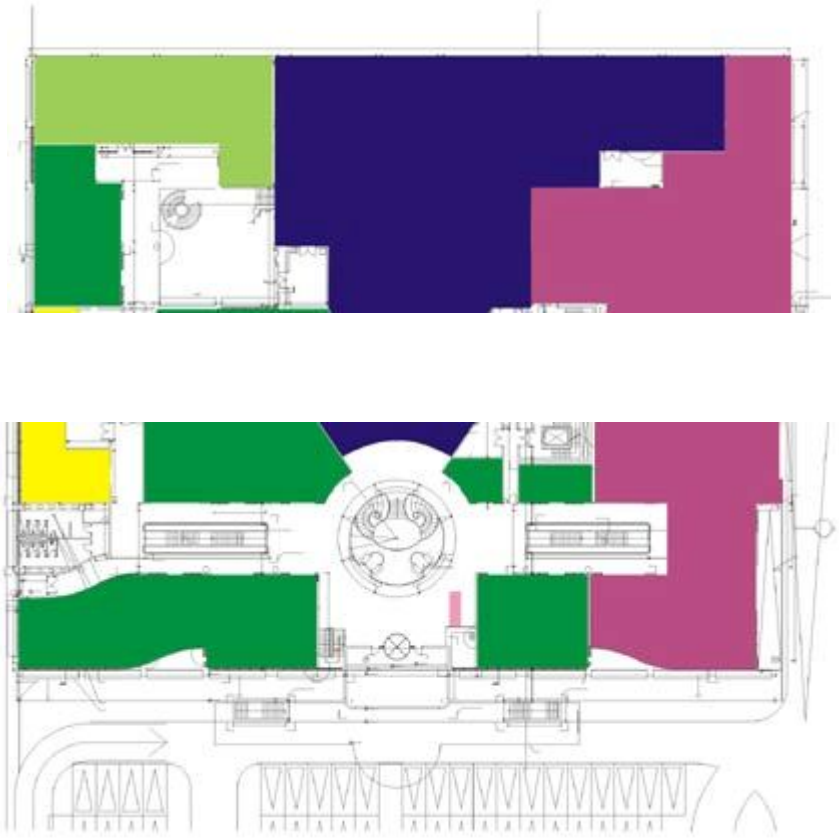


Figure 5.2: Ground floor

Legend

- News Stand
- Airline ticketing office
- Pharmacy
- Multi media store
- Specialist retailers

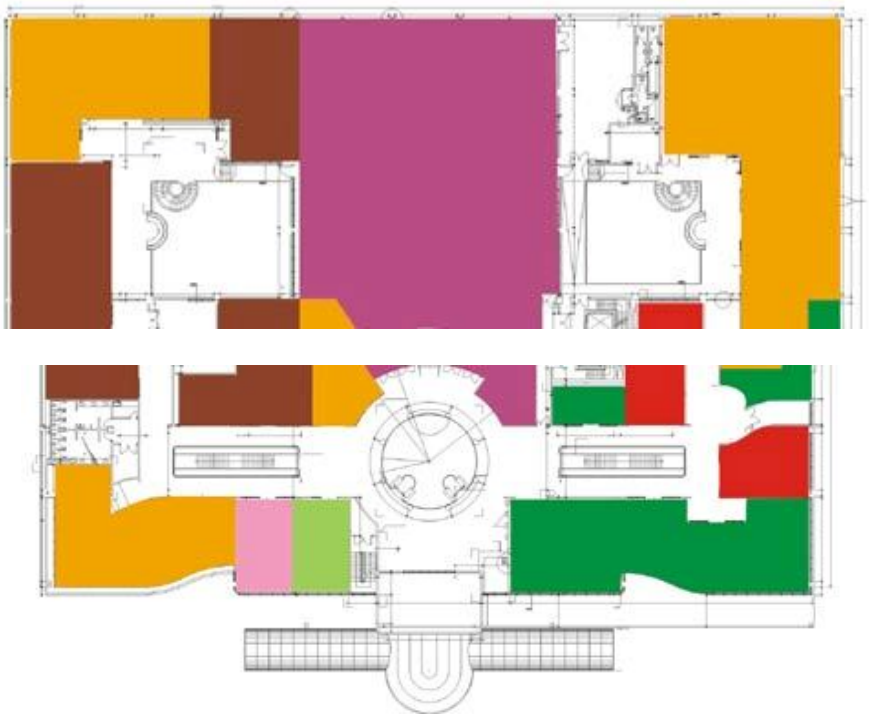


Figure 5.3: First floor

Legend

- Wine bar
- Bookstore
- Travel agent
- Restaurants, Café
- Open
- Cinema
- Specialist retailers

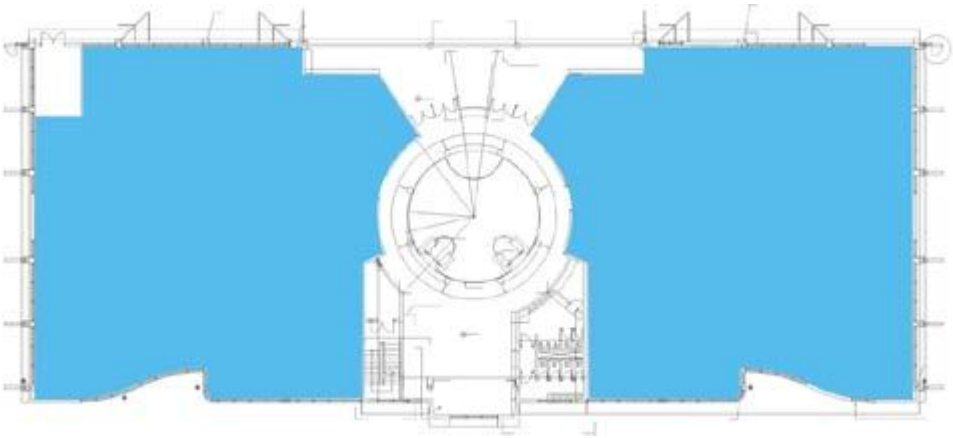


Figure 5.4: Second floor

Legend

Commercial Office

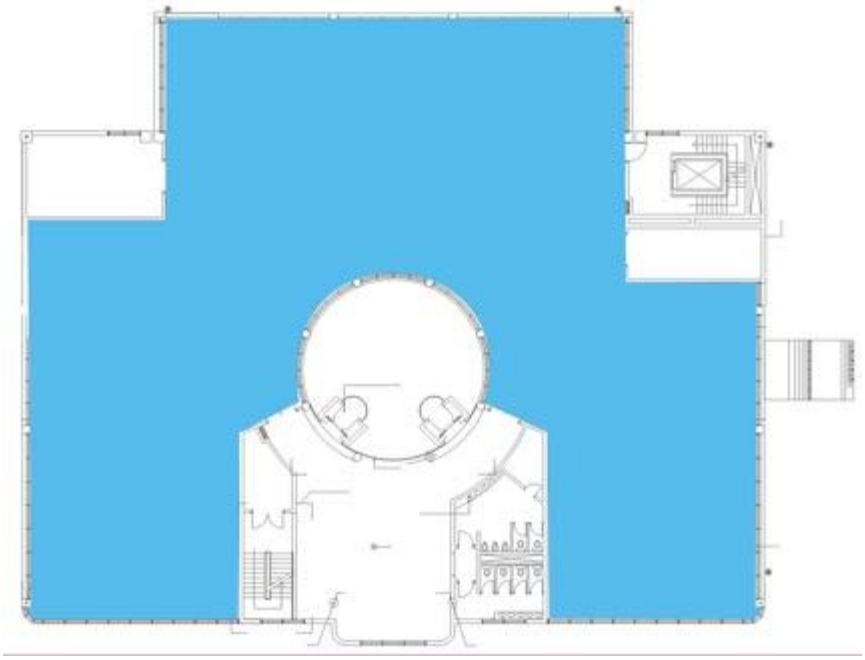


Figure 5.5: Pent-house

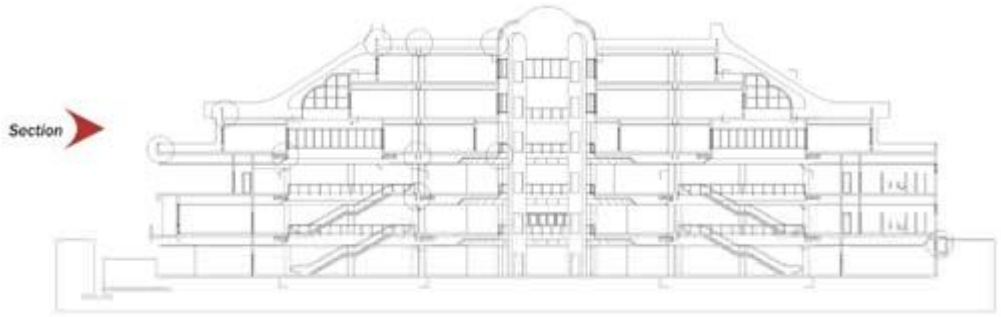


Figure 5.6: Section

Table 5.1: The summary of findings from the shopping malls studied, Source: Author 2008

Variables	Form of building	Spatial organization	Facilities	Circulation Pattern
The palms shopping mall, Lekki phase II, Lagos.	Rectilinear	Simple open plan layout	Cinema, games room, shops,	Vertical movement pattern
Silver bird Galleria, Victoria Island, Lagos.	Rectilinear / curvilinear.	Simple open plan layout	Shops, coffee room, cinema, bar.	Vertical and horizontal movement pattern.
Blue water mall,	Rectilinear /curvilinear.	Simple open plan layout.	Café, restaurant, cinema, shops.	Vertical and horizontal

Gateshead, United Kingdom.				movement pattern.
Ceddi Plaza, Abuja.	Rectilinear.	Simple open plan layout.	Café, restaurant, cinema, shops.	Vertical and horizontal movement pattern.
Summary	Most of the malls have rectilinear forms.	All the malls studied have an open floor layout.	Recreation facilities used in the malls studied are limited.	Vertical and horizontal movement pattern.
Grand palace mall Bangkok, Thailand.	Rectilinear	Open lay out	Banquet arena, children's play ground, shops.	Vertical and horizontal movement pattern
Summary	The buildings studied displayed all the principles of integrating shopping and recreation facilities.			

Table 5.2: The overall summary of findings from integrated shopping malls studied,
Source: Author, 2008

Summary of findings	From the case studies conducted it was observed that all the shopping malls had good designs in terms of the arrangement of shops and facilities

	provided, but the application of the principles of integrating shopping and recreation to enhance effective circulation was not fully achieved. The buildings studied displayed the importance of shopping and recreation which shall be used in the design proposal.

CHAPTER SIX

6.0 SITE (LOCATION AND SELECTION CRITERIA)

6.1 SITE: KADUNA, NIGERIA

Basic information:

Latitude: +10.52(10°31'12"N)

Longitude: +7.44(7°26'24"E)

Time zone: GMT+1hours

Country: Nigeria

Continent: Africa

Sub-region: Western Africa

Altitude: ~600 m.

6.1.1 Site Location

The site is located in the eastern part of Kaduna metropolis, within the new Kaduna city called Millennium city.



Plate 6.1: Map of Nigeria showing location of Kaduna State

(**Source:** www.google_images/kaduna state/)



Plate 6.2: Map of Kaduna State

(**Source:** www.google_images/kaduna state/)



Plate 6.3: Aerial View of Site.

(**Source:** http//www.googleearth.com)



Plate 6.4: View of site



Plate 6.5: View of site



Plate 6.6: View of site

6.1.2 Site selection criteria:

The site was selected based on three categories which are:

Location: The choice of location should be in relation to the following;

Zoning: The site should be within an area reserved for institutional facilities and public utilities. It should be free from industrial zones to avoid pollution by harmful smokes, fumes and boots.

Ease of access: There should be ease of access to and from site to allow for smooth traffic flow. The site should also be within easy reach to attract high number of patronage.

There should be adequate space for expansion.

Adequate space for parking.

Topography / Geology: The terrain of the site should be gentle with relative uniform slope. The geological masses should be such that can be easily excavated and buildable.

The soil should be able to support weight of heavy structures. It should have moderate to high degree of permeability to prevent water logging. The soil should also have a minimum of 25mm topsoil layer to support turf and landscape.

The water table should be at least 70cm to support plant life.

Ecology: The site should have adequate vegetation cover for landscaping and to enhance the creation of micro climate.

Climate: The micro-climate should be conducive for mall and other related functions.

6.1.3 Site Justification

It is located in the Millennium city within the institutional and business district.

The site is large enough to accommodate all anticipated facilities for the mall.

It can satisfy parking requirements as well as room for expansion.

It is strategically located to attract patronage and accessibility from all parts of Kaduna.

Far from industrial zones and therefore safe from environmental hazards.

Well connected to infrastructures like electricity, water supply and traffic access.

Site offers a very good site.

6.1.4 Site Determinant and Suitability

There are several factors that contributed to the site selection and these makes it suitable for the design. Its position within the layout where related facilities are located makes it easy to merge functions together. Facilities such as hotels, petrol stations, fire stations, commercial bus routes are favorable to the site.

6.1.5 Site Drainage

Surface drainage of the site is excellent due to the nature of the site and its slope. The soils underlying the site are deep and well drained. Therefore, drainage as a design consideration has

already been taken care of by the topography of site. The following three main points was deduced from the above points.

Regional context.

Kaduna state due to its central location has acted as the regional capital of northern Nigeria.

Kaduna state has the second largest Population in northern and the third largest population in Nigeria.

Local context:

Proper access to site accommodating taxi, Shuttle buses and personal vehicles.

Economic potentials of the area surrounding the shopping mall.

Good hotel accommodation.

Electricity, pipe-borne water.

Natural features:

Surface drainage.

Suitability and potential for expansion.

River Kaduna and the proposed new town view.

Rocky Terrain

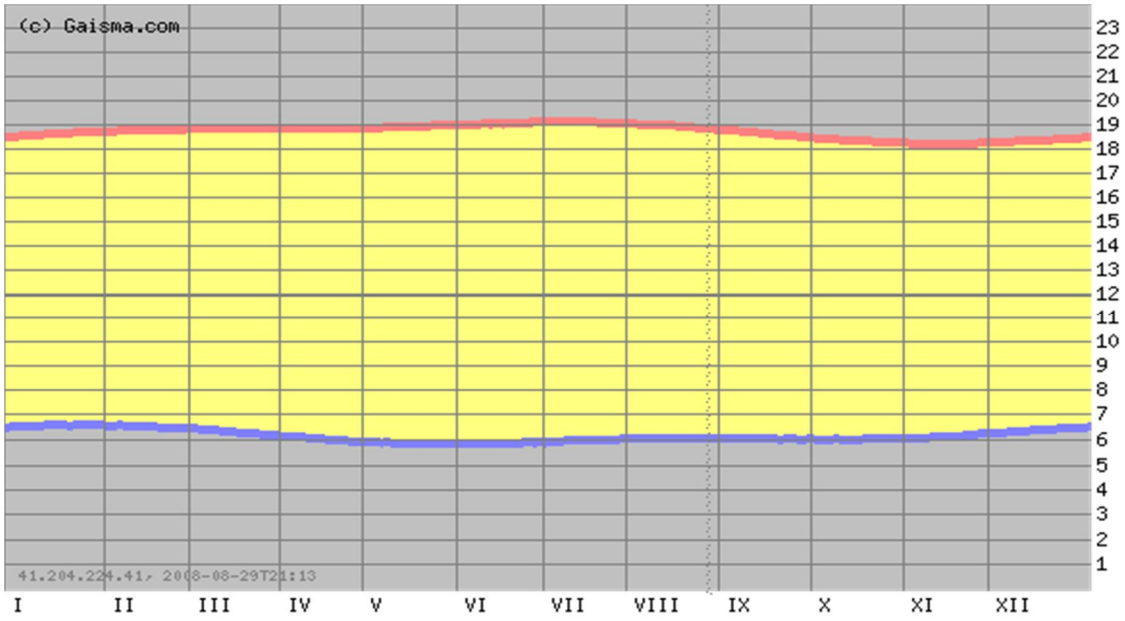
6.2 CLIMATIC DATA OF KADUNA

Variable	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Insolation, kWh/m²/day	5.66	6.49	6.72	6.63	6.41	6.03	5.44	5.03	5.47	5.76	5.80	5.40
Clearness, 0 – 1	0.65	0.69	0.66	0.63	0.61	0.58	0.53	0.48	0.54	0.60	0.66	0.64

Temperature, °C	23.31	25.17	27.67	27.36	26.11	24.61	23.63	23.56	24.22	24.95	25.65	23.87
Wind speed, m/s	3.99	3.86	4.30	4.31	4.21	3.60	3.43	3.24	2.96	3.17	3.69	4.17
Precipitation, mm	0	1	7	56	120	160	218	275	243	71	2	0
Wet days, d	0.1	0.1	0.7	3.6	8.2	11.8	15.3	16.8	13.8	4.6	0.0	0.0

Table 6.1: Kaduna, Nigeria- Solar energy and surface meteorology.

(**Source:** NASA Langley Research Center Atmospheric Science Data Center; New et al. 2002)



Legend: Darkness Dawn Sunshine Dusk.

Table 6.2: Kaduna, Nigeria – Sunrise, sunset, dawn and dusk times graph.

(Source: GAISMA.com)

6.3 POPULATION DENSITY

Kaduna state has the third largest population in the country. According to the just concluded census figures of 2006, Kaduna state has a population of over six million people.

6.4 SITE ANALYSIS AND LOCAL CLIMATIC/METROLOGICAL CONDITIONS

6.4.1 Site characteristics and analysis

The site has been analyzed and some of the constraints have been identified so that proper planning and design could be achieved. The site analysis was based on the: topography, geology, climate, vegetation, together with their associated elements.

6.4.2 Vegetation and Topography:

The vegetation on the site consists of scattered trees of different species and few shrubs. Site is used as a farm land during the raining season. The site is relatively gentle sloping with good natural drainage to the river. The soil type is loose clay which requires good foundation detailing.

6.4.3 Geology:

The site has good topsoil judging from the farming activity on it. It also has a rocky terrain along the river.

6.4.4 Climate:

Two different type of air masses passes through Kaduna, one from the north mostly dry and dusty (continental in origin) blowing from the Sahara Desert called the north-east trade winds and the other from the Atlantic in the south, brings rainfall, mostly cool and desirable for human comfort.

6.4.5 Temperature:

Fluctuations in daily November temperature are from 16 º C to 32 º C clear skies, visibility becofmes poor and the sun's rays do not reach the surface. Thus lowering the minimum temperature to 14 º C in January. Nights and mornings are cool but temperature increases 14 º C to

31 º C giving a variation of 16 º C which is the highest during the year. Maximum temperature occurs in April which reaches 35.9 º C but generally does not last more than two to three months.

6.4.6 Relative Humidity:

At the start of the dry season, relative humidity falls from 68% in October to 36% in November with the stabilization of the easterly winds. It further falls to 35% in January and 20% in February. Mean relative humidity reaches its maximum value of 80% in the month of August.

6.4.7 Sunshine

November sunshine hours vary from 8.9 to 9 hours per day. January sunshine hours are quite high, 8.7 to 9.5 hours. Minimum sunshine hours per day occur in August with as low as 5.1 hours per day.

6.4.8 Rainfall:

Rainfall starts in April and increases from 161.5mm in June to 281.6mm in August which is maximum in the year. Annual total rainfall lies within a range of 960mm to 1150mm.

6.5 SERVICES AVAILABLE ON SITE

The site will be accessed through a proposed road which is connected to the main road leading into the layout via the new completed bridge which connects old Kaduna city and the Millennium city (Makarfi Layout). Power can easily be supplied to the site from the 33KV/11KV PHCN sub-station which is less than a kilometer away. Also, water supply to the proposed site can be connected directly from the existing main-water supply line. There is good GSM coverage and telephone lines could easily be connected from the proposed layout telephone line.

CHAPTER SEVEN

DESIGN REPORT

7.1 SITE PLANNING CONCEPT

The site being a strip sloping and ending into the river with an access road along the strip provides for a more linear stretch setting to enable maximize the potentials of the natural features around the site. A dual roadway leads into the site for visitors and general users, and staff as well as staff. The proposed site has been zoned into three zones namely the noisy, semi-noisy and the quiet area. The main shopping mall is located within the quiet area of the site which is at the center of the plot. Two entrances into the site are along the southern and the western sides of the site. The main concept of the site planning is to have an easy flow of vehicular and pedestrian movement from the gate to the parking lot, outdoor recreation and into the main building. This was achieved by placing a straight road from the gate with pedestrian walkways along the road which leads directly to a drop off point. Trees and shrubs have been used along walkways and at different areas within the site to create a friendly atmosphere for people to move about and use the facilities comfortably.

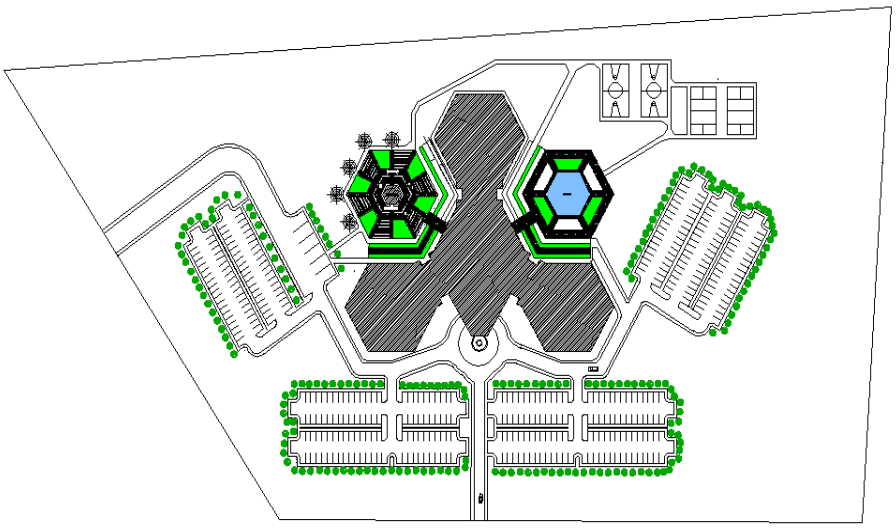


Figure: 7.1 Site Plan

In addition to the above layout of the site plan in figure 7.1,double entrances were provided to avoid and control traffic conflict. The main entrance to the shopping mall is used by customers and private car owners, while the other entrance from the western part of the mall is strictly used by big vehicles like service trucks, ambulance and utility vehicles. Parking spaces was also separated considering the turning radius of the big and small vehicles. The parking spaces provided for big vehicles are located close to their entrance while that of the smaller vehicles are located at the east and west side of the drop off.

Outdoor recreation facilities like swimming pool, lawn tennis court, basketball court, children's play area, an open bar and gazebos were provided to enhance exciting and interesting participation in the use of these facilities. Trees and hedges were also planted around the mall to provide shade while grasses and flowers were also planted to provide a natural atmosphere.

7.2 DESIGN CONCEPT

The main concept adopted in the design proposal for this shopping mall is from honey comb of a Bee which is a social insect. It harmonizes the movement pattern of people within a shopping mall and integrates the various facilities together. The main idea is displayed by connecting the heptagon space in such that they flow into each other, thereby depicting easy movement. It is also a natural, dynamic form which is interesting and reduces shopper fatigue. The honey comb is a six sided structure integrated together, and this proposal is to integrate both shopping and recreation facilities together, in a conducive environment.

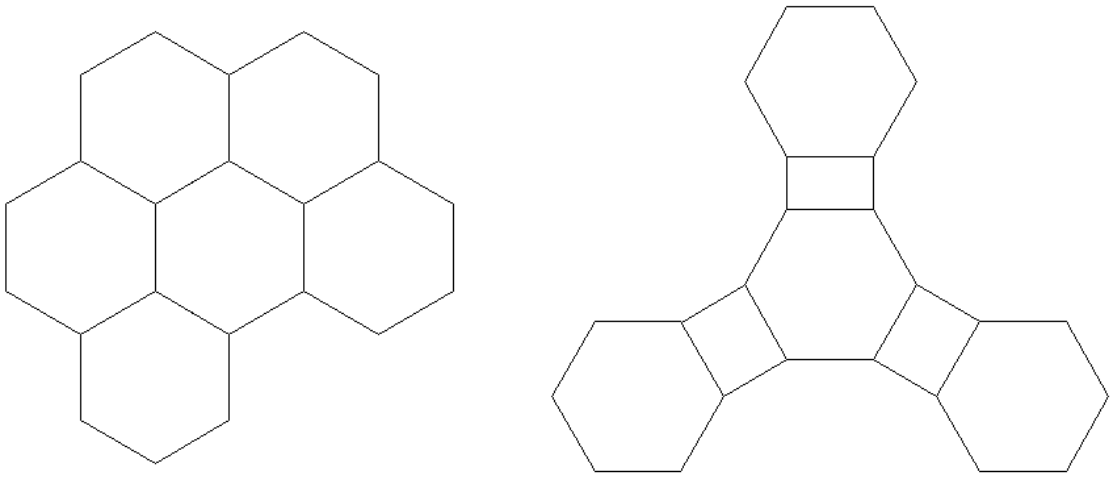


Figure: 7.2 Concepts

7.3 ELEVATION CONCEPT

The current trends in the design of shopping malls involve integrating the facilities with the forms. The concept is aimed at creating a pleasant and memorable sight of the mall using the shopping activity.

The elevation in figures 7.3.1, 7.3.2, 7.3.3 and 7.3.4 depict a transparent and attractive beauty of the mall. The circles are bubble on a transhicent fibre which protects the glazing from glare and other hazardous effects on the glass. It also allow light to pass through to the mall.

A dampalon was used to celebrate the main entrance to the shopping mall. The elevation was designed to be a unique and attractive master peace for a modern environment.

Special Concept

The spatial organization of the mall is to create a free and a convenient atmosphere for users to shop and recreate at the same time. The short term shopping facilities where distantly separated from the long term shopping facilities to avoid and control traffic conflict within the mall.

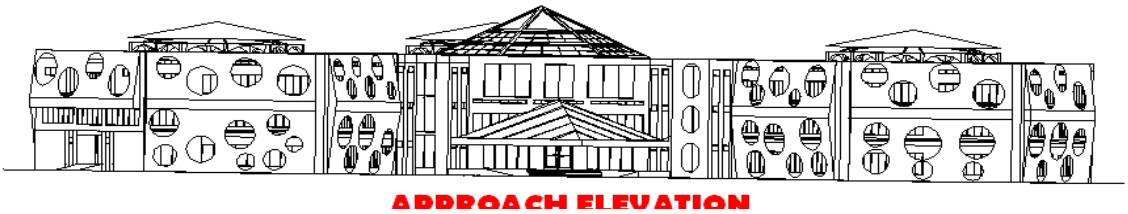


Figure: 7.3.1 Approach Elevation

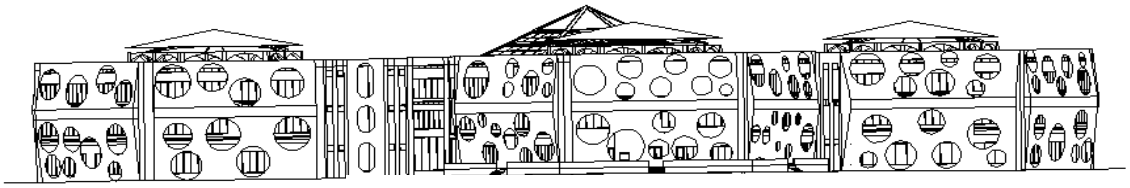


Figure: 7.3.2 Rear Elevation

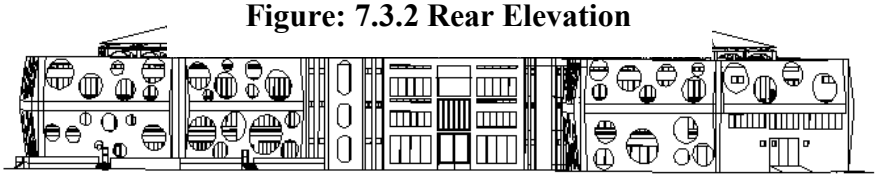


Figure: 7.3.3 Left Side Elevation



Figure: 7.3.4 Right Side Elevation

7.4 PLAN CONCEPT

The mall has five of the heptagons sections connected together to form a continuous whole. An atrium is located at the center and it serves as a link between the five sections. The atrium is surrounded by an array of shops, reception and games section separated by pedestrian walkway. The whole facility is designed to rotate around a central core. This makes accessibility easy and quick. There is no longer stretch of the arrangement of the buildings. The parking spaces are arranged on two wings as you approach the building and one by the side. This arrangement curbs

excessive traffic around the buildings. An evenly distributed garden emphasizes the integration of ‘leisure’’ and ’recreation’ which expresses the regenerative concept.

Activities such as kids play area, fountain, exhibitions and other activities that tend to amuse the shoppers.

Figure 7.4 is the ground floor plan that connects three internal and two external heptagonal spaces. From the extreme northern part of the mall, two cinemas are surrounded by salons and retail shops with a wide corridor of about three metres (3m) between the shops and the cinemas. The second heptagonal space accommodates facilities like grocery, boutique, café, pharmacy, bar, security post and a restaurant.

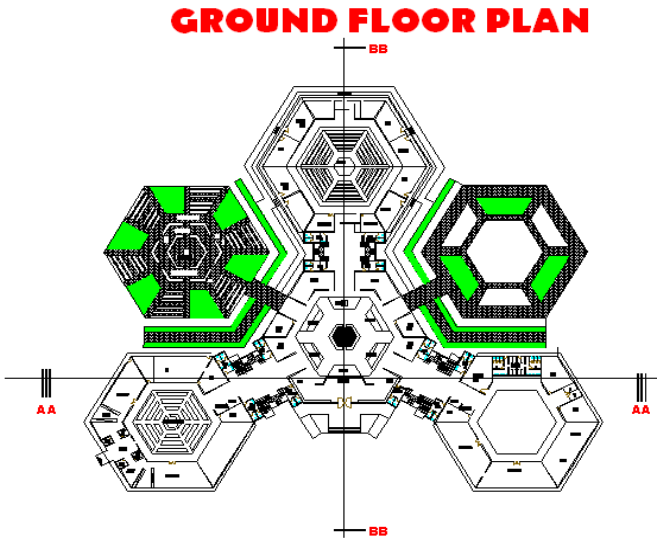
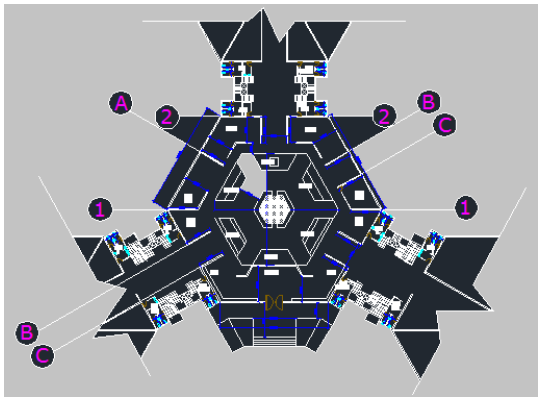


Figure: 7.4 Ground Floor Plan



The ground floor connects three internal heptagonic spaces and two external heptagons on the ground floor. One of it from the extreme northern part of the mall accommodates two cinemas which is surrounded by a male and female salon and also retail shops. The second heptagon located at the western part of the mall accommodates a grocery, boutique, café, pharmacy, bar, security offices and a restaurant. The third heptagon has children's gamesroom, bowling room and a sauna. These three heptagons are connected through walk ways that lead to two external doors which connects the two outdoor heptagonic spaces of a swimming pool and open door garden.

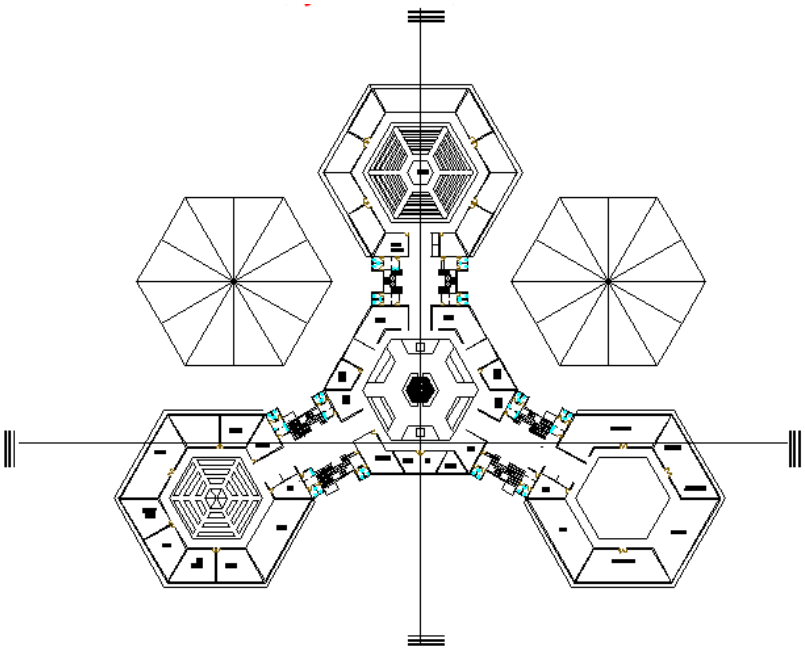
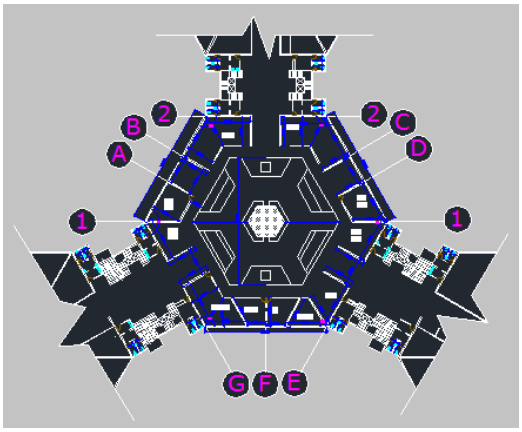


Figure 7.4.1 First Floor Plan



The first floor in figure 7.4.1 connects only three heptagonic spaces which accommodates two cinemas, ten leaseable offices and the twenty-five retail shops. This floor integrates a little percentage of recreation and more of shopping activities.

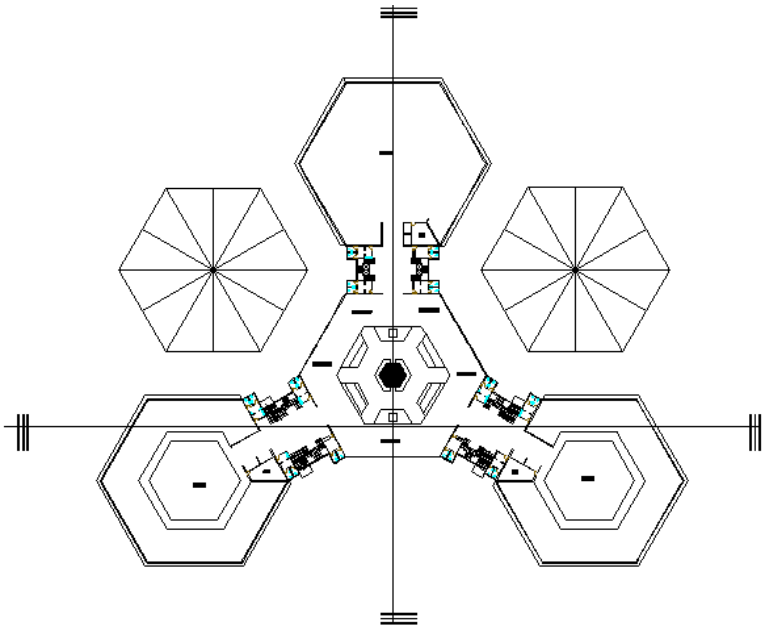
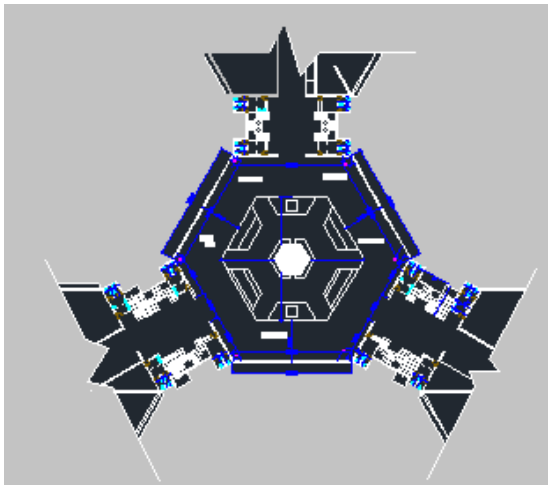


Figure: 7.4.2 Second Floor Plan



In figure 7.4.2, the second floor consist of three heptagonic spaces which accommodates two show rooms and exhibition hall. It also has tea room and offices for staff and a multipurpose hall for meetings.

In conclusion, all the floors have lifts and conveniences located on the same location to minimize cost of construction.

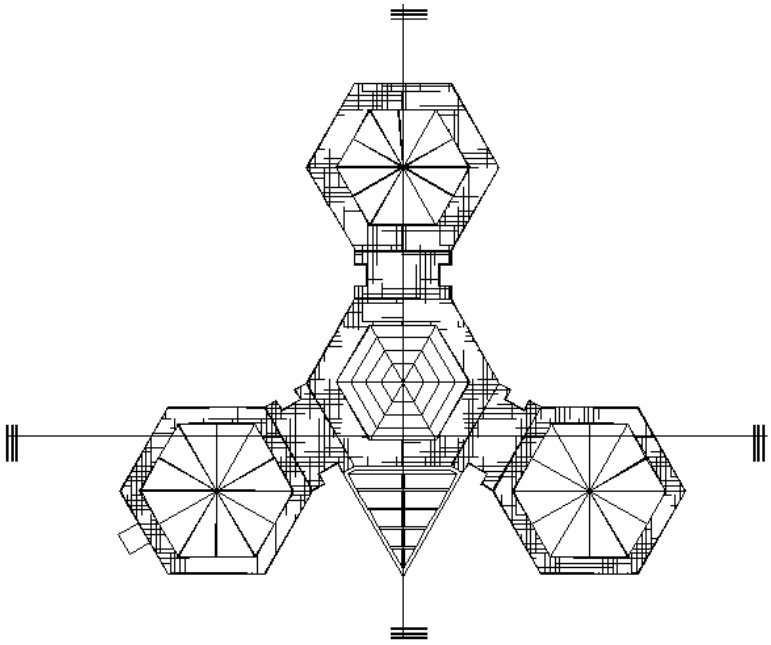


Figure7.5 Roof Plan

7.4.1. Circulation

Conscious design efforts was made to separate pedestrian and vehicular traffic. The inclusion of a ramp system in the entire building signifies the application of fluidity in the building

7.4.2. Day lighting

Natural light is available to all spaces in the design. The middle roof of the five sections of the buildings is of translucent plastic or synthetic membrane, to allow light filter through into the atria of both the main theatres and the multipurpose theatre.

7.4.3. Ventilation

The use of envelop walls around the major wall and the inclusion of a terrace floor before the roof allow for air flow through the building effectively. The design allows wind to tunnel through the building, thus artificial ventilation is optional.

7.5 BUILDING SERVICES

The main services used in the mall facilitate its smooth running. The mechanical, electrical and sanitary services have been properly provided where necessary borehole water supply is proposed for the facility.

Power shall be tapped from the PHCN national grid. There is provision for a power house, with three generator sets – one working and two standbys, to cater for power failure. Services such as the panoramic lifts can be seen on the building façade. The escape stair cases have also been exposed. The stairs are located within the mall to allow people move about between the different levels within the mall.

7.6 LANDSCAPING

The landscaping of the shopping mall is in two forms: the exterior and the interior landscaping. The exterior landscaping includes placing plants along walkways and at the parking lots. Trees were used to define the boundary of the site and at the same time they serve as wind and noise breakers. On the other hand, the interior landscaping is minimized so as not to block the views of shop fronts. Due to the climate controlled nature of the mall, the plants used within the mall are basically naturall which serves as strong attractions to the shoppers and they could be used for advertising.

7.7 MATERIALS AND FINISHES

The main materials used in this design are glass, and reinforced concrete, others include aluminum, timber and among others. These materials were purposely chosen due to the advantages they have.

The primary structural material used is concrete and steel. They are good structural properties which include: high strength, equal strength in tension and compression, high density, high

strength to weight ratio which makes its components light weight in relation to their load carrying capacity. These properties makes steel suitable for a full range of structural elements such as columns, beams and roof. Their advantages includes the following:

It enriches the external visual qualities of the building.

It modulates the surface of the building thereby giving it some texture.

It serves as a screen for the facade of the building and it filters the light and views, thereby reducing glare.

Glass also plays an important role in the structure of the building. The curtain wall structure is made of translucent fibre which enhances the feeling of transparency, spaciousness and lightness, thereby connecting the interior to the immediate exterior environment. Glass was also used for elements like the staircases exhibition stands, show glass and among others.

Reinforced concrete floor slabs were used on the different levels of the mall. The floor slabs support suspended ceiling which accommodates the electrical installations like the air conditioning, ducts and the lighting fittings. Other materials used are nonslip ceramic floor tiles, aluminium, ceiling and wall finishes.

CHAPTER EIGHT

CONCLUSION

8.1 CONCLUSION

In conclusion this thesis has made an attempt to contribute to architectural knowledge in integrating shopping and recreation in controlling congestion in shopping malls. This exercise has helped the researcher to produce a design that has achieved the following advantages:

A structure that provides a memorable and dramatic experience for the shoppers.

An internal atmosphere that opens up to the public realm.

A centre which tends to the communal needs of the people by providing facilities such as kids play area and exhibition spaces.

A centre which adequately provides the facilities with activities and services which cater for the smooth running of the commercial building as well as comfort and convenience for the shoppers.

A structure which serves as an architectural landmark and a thus a tourist attraction in Kaduna state.

8.2 RECOMMENDATION

For effective circulation and in order to achieve safety and free flow of movement in this facility, various aspects of overall design must be considered.

Exits:

The exits should be spacious enough to accommodate a lot of people at the same time. In considering exits, the width of the walk ways or ramps should be considered so as to avoid conflicts by users. The slopes of ramps should be designed in such a way that it slows down pedestrians coming from a different direction so that it will allow free flow from the opposite direction.

Vehicles and pedestrians should have different exits to avoid congestion.

Emergency routes should be provided for both pedestrians and vehicular users for safety and security purpose.

Capacity:

For a vehicular roadway, physical capacity should be considered. It should be designed in a way that it will be able to accommodate a particular number of people and the load they are carrying. High capacity ways accommodate high level of congestion while low capacity ways accommodates low level of congestion.

Parking:

A spacious parking area should be provided for a convenient turning radius.

Big vehicle parking area should be separated from the small ones in order to avoid crashes and conflicts in any movement pattern.

Pedestrian walk way:

It accommodates different users of sizes, age, sex, moods, purpose and walking patterns and therefore in the design of this walk ways, the mentioned factors should be put in consideration.

Fat, disabled and old people move slowly due to lack of being agile while thin, able, young people walk faster because they are agile and strong. Working in groups is slower than working individually, therefore it should be considered in the design in order to achieve a free flow of circulation.

In order to enhance convenience, safety and free flow in this proposal, the gradient should be as low as possible for the elderly and the pathway should be wide enough to avoid collision between pedestrians.

Light:

Proper lighting should be adequate for clear visibility within the different routes in the facility.

Speed control:

Rough finishes slows movement and should be provided for the able while smooth finishes is fast and slippery therefore it should be considered in the design.

Speed signs should be boldly placed at junctions, intersections and corners to avoid over speeding.

Speed bombs should be placed at regular intervals to control speed.

Integration of facilities

Incorporating shopping and recreation facilities decongest the conflict between users. It provides a more harmonized and a conducive environment where the users can shop and recreate at the same time.

These facilities are integrated through different mediums like lobbies, exits and entrances. Free Flow of movement through these mediums provides a comfortable circulation network within the entire facility.

The recreation facilities to be integrated are indoor and outdoor sports, relaxing and site seeing and other social activities within the facility.

8.3 SUMMARY

The research attempts to depict the current developments in retail architecture through a critical analysis of the recreation and shopping activities in the world of architecture today. The proposed shopping mall design seeks to create a unique structure that caters for the needs of its users. It further seeks to create a unique architectural landmark in Kaduna state by integrating shopping and recreation facilities together which will control congestion in the entire facility. To ensure the achievement of the stated aim the following objectives were highlighted:

To define a new trend of shopping.

To identify the aims of shopping and recreation.

To identify the people's culture of shopping in terms of their preferences of goods and services in shopping malls.

To apply the principles of a good circulation network in shopping malls.

To relate the internal and external environments to form a functional whole.

In addition to above stated objectives, the use of planning, materials, recent construction technology, services and entertainment facilities were adhered to in order to create a good design.

8.4 CONTRIBUTION TO KNOWLEDGE

This mall will aid in integrating the various communities with the Kaduna metropolis and beyond the permanent social nucleus for the residents. This shopping mall will also improve the wage of the business area of Kaduna as a result of the neat and orderliness of the environment where this facility will be located. The usual hazards in most traditional markets with respect to theft, over-crowding, fire among others, will be averted in this proposed shopping mall by a careful design programming.

Architecture here will be a way of solving all identified problems related to shopping facilities with special reference to circulation.

However, the central concept adopted in the entire design was climate conscious with special interest and bias for circulation, landscaping services and the resultant aesthetics. This is evident from the shape of the site itself taking advantage of the site's configuration and conditions. The courtyard or atrium is adopted as a result, a function requiring maximum natural ventilation will face the south while opening will be reduced to the bearest minimum along the east-west axis. However, special attention is given to the circulation pattern within and around the complex. Easy

accessibility, good circulation and a pleasant aesthetics emerging from the change in levels of the court-yards and the interchange of height by the commercial skyline.

8.5 OBSERVATION

The achievement of this thesis research is possible by the case studies conducted during its running course. These studies were based on two categories: the study of shopping malls, recreation, shopping and congestion. The primary observations made highlight to the relationship between shopping and recreation in a shopping mall design.

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