THE FOUNTAIN GALLERIA, ADO-EKITI

(Sustainable Tourism through Effective Use of Landscaping and Eco-Friendly Materials)

Compiled By

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CERTIFICATION

We certify that **FAGBEMI, Olasunkanmi Samson (ARC/08/3998),** a Master of Technology student in the Department of Architecture carried out this project under the supervision of **Arc (Dr.) Mrs. D.A. Ayeni** and meets the regulations stipulated by the governing board of the said degree in Federal University of Technology Akure and is approved for its contribution to knowledge.

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DEDICATION

I dedicate this project to God Almighty, the Author and Finisher of my faith, who gave me a victorious ending of Master of Technology Degree (M.Tech) programme and being my only inspiration in my pursuance of fulfillment in life.

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ABSTRACT

Ekiti state is known as one of the least state with federal allocation in Nigeria and they seek to enhance infrastructural development to boost the economy and better the lives of her people. Tourism is an alternative means of generating revenue for the people of Ekiti. It is imperative to not only pay attention to tourism in the state but to also develop a sustainable tourism using Eco-friendly material and effective landscaping using green architecture principles. This research therefore seeks to discuss the ways in which green architecture and appealing landscape can be used on a proposed befitting masterpiece Galleria to showcase the people's heritage by developing tourism vis-a-vis enhancing the economy of the state, to promote social integration and to also foster cultural integration amongst people of different background. Gallerias have become social integration points which enhance influx of many people and this increases the exhale of CO_2 into the atmosphere which justifies the use of eco-friendly materials such as green plants even within the building to reduce the carbon monoxide released into the atmosphere. The present government of Ekiti States seeks to provide infrastructures that could improve the standard of living of the people and in turn enhance tourism as the so called tourist attraction centers in the state are fast becoming obsolete. Case studies were carried out with the use of questionnaires to collect information from interviewees about galleria, museums and event centres and to seek people's opinion about proposed Galleria in Ado- Ekiti.

Keywords: (Tourism, Sustainability, Green Architecture, Landscape, Eco-Friendly Materials, Galleria)

CHAPTER ONE

1.1 INTRODUCTION

1.2 BACKGROUND TO THE STUDY

There is a growing interest in tourism and the ability of tourist destinations to meet this demand is dependent on the attention paid to the tourism sector of that economy. Tourism is an important aspect of any nation's economy and its consequent effect on any economy cannot be overemphasised. According to Filion et al (1994), tourism is the key to the growth of the economy of any local area, State government and National government. Tourism is said to be one of the fastest growing economic activities in the world(Lanza and Pigliaru, 1999; Raymond, 2001; Newsome et al, 2002; Basu, 2003, Ozgen, 2003; Chockalingam and Ganesh, 2010; Jennie, 2012).Hence, it has also been promoted as an agent of social and economic integration, a propagation of unity and peace through interaction and dialogue. In addition, it isa fast growing and most portable industry capable of creating employment opportunities and income for both private sectors and the government at large(Hall and Jenkins, 1995).This does not just point at the need for tourism but for sustainable Tourism in a country like Nigeria. According to Weaver (2006), sustainable tourism is the application of sustainable development ideas to the tourism sector, that is, tourism that meets the needs of the present generation without compromising the ability of future generations to meet their own needs. Tourism is all embracing as it involves the interaction of other components such as transportation, communication, accommodation and destination among others. Sectors cannot be singularly handled by the government as they constitute pillars of tourism development (Akpet, 2005).

Beritelli (2009) defined a tourist destination as a geographical area consisting of all the services and infrastructure necessary for the stay of a particular tourist or tourism segment. A tourist centre is meant to cater for vacationers, leisure seekers, and recreation driven people. In order to efficiently satisfy tourists need, it is important to provide a sustainable tourist attraction centres that will cater for the need of present generation and the future generation(Reynold and Braithwaite, 2001). It is on this note that the United Nations has identified the development of tourism as one of the ways poor countries might meet millennium development goals(Olorunfemi and Raheem, 2008).

The terms landscape, landscape architecture and landscape design according to Ayeni (2012) are words often used in relation to the shaping, beautification and modification of the built and natural environment. However, Landscape overtime has been a major tool in the development of tourism and a sustainable landscape should be designed to be both attractive and in balance with the local climate and the environment (Hampshire 2003; Bousselot et al, 2005; Rosen, 2007). Landscape designs differ depending on how the landscape will be used as argued by Drexler (2008). Although the principles are the same, a homeowner who wants an aesthetically pleasing, low-maintenance landscape would create a design very different than that of an avid gardener whose main purpose in life is to spend time in the garden.

The drive to create sustainable architecture has become a key design consideration for purposes of enhancing and preserving ecosystems of immediate environment, reduction of material wastage by exploiting renewable and cheaper options, reduce mechanical interventions to the barest minimum and improve the overall health and productivity of the occupants amongst others.Sustainable development as stated by Taiwo&Adeboye (2013) can be described as that which meets the needs of the present, without compromising the ability of future generations to meet their own needs. Thus, the rational use of natural resources and appropriate management of the building stock will contribute to saving scarce resources reducing energy consumption and improving environmental quality (Dudek, 2007).

In order for the term tourism to come to play in any location there has to be a source of attraction of some sort in that particular location. A galleria as stated in Merriam- Webster dictionaryis a glass-enclosed promenade, which could house stores, a mall or anything of that sort. Oxford English Dictionary defined a galleria as a collection of small shops under a single roof. The Galleria in this context would involve shopping malls, virtual and physical museum to enhance tourism and also an event centre with impact on the economy of the state invariably. Galleria is primarily concerned with storing, displaying merchandise, stimulating a demand for a particular item or type of merchandise and providing commodities to the shopper such as jewellery, house wares, clothes, shoes etc. in order to increase his chances of attracting more interest and possibly making a sale.

Nigeria has a lot of potential, although not adequately harnessed natural tourist sites and being a developing country, major on tourism as one of the major sources of revenue. Tourist sites can also be created to achieve this aim. Olaoye (2012) stated that Ekiti state is blessed with rich natural

resources but these resources have not been fully explored and utilised to its full capacity especially the naturally based tourist centres located within the state. Therefore, to counter these telling relegation of tourism in the state which in turn have effect on the economy of the state and the standard of living of the masses, there is a need to look at ways in which tourism can be promoted using green architecture principles through effective landscape elements and eco-friendly materials considering the number of people coming together at a particular point in time.

1.3 STATEMENT OF THE PROBLEM

Tourism is presently recognized worldwide as the largest industry and its growth creates rapid increase in social, economic and environmental change. Nigeria is known to be richly blessed with fascinating tourist attraction centres but lacks sustainable tourism despite the huge natural and aesthetically pleasing tourist attractions scattered across the country (Ayeni 2012). Documentations have been done over the years on how landscape elements could be greatly utilized in promoting tourism but relatively little have been done on using Green architecture principles through eco-friendly materials in developing a sustainable tourism for future generation having considered its impacts on the economy, environment, social and culture of the people. This research work therefore seeks to explore the use of eco-friendly materials viz-à-viz effective landscaping to enhance sustainable tourism in Ekiti State through the proposed design of a Galleria that comprises a shopping mall, museum and event centre.

1.4 AIM AND OBJECTIVES

The aim of this research work is to design a Galleria that consist of a shopping mall, physical and virtual museum and an event centre using effective green architecture principles with emphasis on landscaping and eco-friendly material sustainable development of tourism in Ekiti state.

In achieving this aim, the objectives of this study are to;

(a) Explore green architecture principles vis-a-vis its relationship with sustainable tourism
(b) Evaluate eco-friendly materials which are aesthetically appealling in order to enhance tourism and reduce adverse effect on the environment.
(c) To integrate effective landscape design that will complement the building design in a way that the whole centre becomes a perfect place for tourist satisfactory perception.

(d) To increase the internal generated revenue of the state by diversifying into tourism which will in turn instigate cultural, social, environmental and economic development of the state.

(e) Make recommendations on how effective use of green architecture principles can ameliorate waste of materials through eco-friendly and proper landscaping.

1.5 SCOPE AND LIMITATION OF THE STUDY

The scope of this study is to design a Galleria in Ekiti-State with multiple facilities which includes commercial, administrative, recreationale and tourist attraction zone using landscape elements and eco-friendly materials in promoting sustainable tourism.

1.6 METHODOLOGY

In order to achieve the aim of the research, there is a need for research methodology. In conducting this research, data will be obtained from two major sources. They are:

i. Primary sources: These are primary sources of information. Data is collected directly from the field through the useof questionnaires, observations, photographs, and interviews.

ii. Secondary sources: These are indirect sources of information used to compliment the information obtained from the primary sources. Data is collected from newspapers, journals, textbooks, internet etc.

1.7 EXPECTED CONTRIBUTION TO KNOWLEDGE

As a result of this research on Sustainable Tourism through Effective use of Landscaping and Eco-friendly Materials, it is expected that professionals concerned in the area of tourism will have the necessary knowledge to adopt new methods of tourism development that will ensure the sustainability of the tourism sector and professionals in the building industry and environmental science will through the knowledge gathered from this research, incorporate proper landscaping and use of sustainable eco-friendly materials in the construction of tourism facilities.

1.7. JUSTIFICATION OF THE STUDY

Tourism is a means to promote the economy of any location and the provision of an additional source of income for Ekiti state will come in handy. Providing a galleria in Ado-Ekiti will serve

as a source of internal revenue for the state and meet the recreational needs of the people which is currently lacking in the state.

Ado- Ekiti being the capital of Ekiti state lacks the necessary recreational facility that is required to bring people together. The site location is strategic and located at the Central business district (CBD) which will increase its patronage

1.8 DEFINITION OF TERMS

Tourism: this is defined as travel for leisure, family or business purposes, usually for a limited duration. In 1976, the tourism society of England definition was: "Tourism is the temporary, short-term movement of people to destinations outside the places where they live and work and their activities during the stay at each destination. It includes movements for all purposes." In 1981, the international Association of scientific Experts in Tourism defined tourism in terms of particular activities chosen and undertaken outside the home.

Sustainability: Ecology defines sustainability as how biological systems remain diverse and productive. In general terms sustainability is the endurance of systems and processes. It is the quality of not being harmful to the environment or depleting natural resources, and thereby supporting long-term ecological balance.

Green Architecture: This is defined as an architecture that seeks to minimize the negative environmental impact of buildings by efficiency and moderation in the use of materials, energy, and development space. It is an approach to building that minimizes harmful effects on human health and the environment.

Landscaping: This refers to any activity that modifies the visible features of an area of land, including; living elements (gardening), natural elements(body of water, landforms), human elements (structures, buildings), abstract elements (weather and lighting).

Eco-Friendly Materials: An eco-friendly material is one that increases the efficiency of energy used and reduces impact on human wellbeing and the environment.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 TOURISM

World Tourism Organization defines tourism as travelling to and staying in places outside one's usual environment for not more than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited. Tourism is a collection of activities, services and industries that delivers a travel experience, including transportation, accommodations, eating and drinking establishments, retail shops, entertainment businesses, activity facilities and other hospitality services provided for individuals or groups traveling away from home (Northern Arizona University, Parks and recreation Management). It is also defined as travel for recreation, leisure, religious, family or business purposes for a limited duration. Tourism has become a popular global leisure activity which can be domestic or international. International tourism has both incoming and outgoing implications on a country's balance of payment. Tourism has become a major source of income for many countries, and it affects the economy of both source and host countries, in some cases being of vital importance. A foreign tourist is defined as someone travelling abroad for at least twenty-four hours (League of Nations 1936). Tourism is the sum of the phenomena and relationships arising from the travel and stay of non-residents, insofar as they do not lead to permanent residence and are not connected with any earning activity (Hunziker and Krapf, 1941).

Tourism is identified as an effective way to revitalize the economy of any destination as noted by Long (2012) and widely acknowledged as one of the fastest growing industry globally (Lanza and Pigliaru, 1999; Raymond, 2001; Newsome et al, 2002; Basu, 2003, Ozgen, 2003;Chockalingam and Ganesh, 2010; Jennie, 2012). Tourism is defined in terms of activities chosen and undertaken outside the home (International Association of Scientific Experts, 1981). Three forms of tourism (United Nations, 1994)include the following:

- **Domestic Tourism:** This involves residents of a given country traveling only within this country.According to the United Nations (1999a), domestic tourism accounts for approximately 80% of all tourist activity.
- **Inbound Tourism:**This involves nonresidents of a country traveling in the given country.

- **Outbound Tourism;**this involves residents of a country traveling in another given country.
- **Internal Tourism:** This is the combination of domestic and inbound tourism.
- **National Tourism:** This is the tourism of resident visitors within and outside the economic territory of the country.
- **International Tourism:** This is the combination of inbound and outbound tourism.

2.2 TOURISM AND NIGERIAN ECONOMY

The important roles of the tourism sector as the main instrument in socio-economic development of any nation cannot be overemphasized. Tourism is a powerful vehicle for economic growth and jobcreation all over the world. Tourism's main comparative advantage over other sectors is that visitor expenditures have a flow-through or catalytic effect across the economy in terms of production and employment creation. Iain et al (2013)acknowledged that tourism can be regarded as a catalyst for national and regional development, bringing employment, exchange earnings, balance of payment advantages and important infrastructural developments, benefitting locals and visitors same way. Glasson, Godfrey, and Goodey (1995) averred that although some of the tourist centers in Nigeria are not well developed to promote socio-economic development however, the only way to realize the important roles of tourism is through well-developed, packaged and promoted tourist attractions. Nigeria as a nation is endowed with both natural and material resources that can be harnessed to aid the economic development of the country by providing revenue and foreign exchange. Tourism plays significant roles in socio-economic development of many nations. This is because it contributes towards alleviating the major political, social and economic problems that characterize the rural areas. It equally helps in developing the urban centers. Tourism has been discovered to be a very important instrument to poverty alleviation, attainment of the millennium development goals (MDGs) and sustainable development (Olorunfemi and Raheem, 2008). Hence, governments of many developing countries have begun to commit huge financial resources to the sector. While tourism presents developing countries like Nigeria with huge opportunity and scope for economic diversification, efforts should be made to manage possible adverse social and environmental impacts. Although the quality of the environment, both natural and manmade, is essential to tourism, this cannot be taken for granted given the complex relationships that exist between tourism and the environment (Mbaiwa, 2003).

Many of these impacts are linked with the construction of general tourism enhancing infrastructure such as roads and airports, and of tourism facilities, including resorts, hotels, restaurants, shops, golf courses and marinas to name but a few. The associated environmental problems, according to Giaoutzi and Nijkamp (2006), have consequences for the quality and quantity of available resources, which in the long run could undermine tourism development.

However, Yasong (2008) has argued that it is not difficult to mitigate the negative impacts of tourism and clarify associated benefits, and that this can be effectively done through tourism planning. This is particularly the case in order not to undermine the carrying capacity of the biophysical environment. In particular, tourism can also impact negatively on the social fabrics of local economies where local culture such as local celebrations, festivals, dance, and folklore amongst others could be subsumed (Godfrey and Clarke, 2000). (Hall, 2007) states that tourism is widely acknowledged as an effective tool for socio-economic development, because of the possible backward and forward linkages with the rest sectors of the economy, which allows it to facilitate employment opportunities, income, local economic development, and enhance the quality of life, but (Hall,2007) argues that the extent to which these benefits accrue to a nation crucially depends on local conditions. This is further emphasized by Smith (2007) that apart from the type of tourism, the extent to which tourism confers economic benefits on any country also depends on the expectations of the tourists and the host country's ability to provide appropriate and adequate facilities. And unless economic policies to promote tourism remain a focus in developing countries, tourism will not be a potential source of economic growth (Ekanayake and Long, 2012).

2.3 ROLES OF TOURISM IN ECONOMIC DEVELOPMENT

Johnson and Barry (1990) identified three kinds of employment generation. The first is the direct employment. Direct employment is associated with all key activities in tourism. They include all workers in tourism attraction payroll- receptionist, the shopkeeper and other workers in the tourist centre. The other places where tourists directly spend include hotels, guesthouses, restaurant, retailing and transportation. The type of employment is the indirect employment generation. Employment in this area occurs because the key and its associated activities which together constitute the direct activities, purchase, supplies from other firms and organization in the

reference are made up of some individual who are employed in those activities and who indirectly benefit from tourism employment. The third type of employment is the inclined employment. Such employment arises because employers in the direct and indirect activities spend a proportion of their income in purchasing goods and services for their own consumption. For those people from whom they buy, some forms of employment is created.

According to George, (2013), the tourism industry offers marvelous opportunities in jobs creation and strengthening of the nation's economy. The number of jobs created both directly and indirectly by the industry should reach almost 1.9m this year, according to the WTTC, and is expected to rise to 2.9m by 2020, making up 3.5% of total employment. In another expansion WTTC's estimate, Nigerian's visitor numbers should increase by 3.5% per year over the coming decade, with the country expected to welcome a total of 1.8m international travelers this year. The number is forecast to rise to 2.9m over the next 10years. By comparison, the WTTC expects South Africa to see 9.7m international tourist arrivals in 2012 and 13.9m per year by 2022. (Oxford Business Group, 2012).

If major attention is paid to the level of tourism in Nigeria then employment opportunity will be in abundance. If two third of the states in Nigeria could focus on tourism just like Cross River State then the economy of the nation as a whole will experience a paradigm shift.

The roles of tourism in the economic development of any nation are numerous and cannot be overemphasized. Kinwar (2002) noted that tourism industry has become a job generator, both services oriented and product oriented in the sense that the people are employed in order to provide services to the tourists. This means increased income by job generation which will eventually raise people's standard of living. He stressed further that the diversification of various new economic activities can lessen the big social problem of unemployment. For effective development of tourism, infrastructure such as roads, hotels, electricity, and pipe-borne water among others must be developed. One of the potentials of well-planned and managed tourism is to bring economic benefits to host communities and help alleviate poverty and conserve natural and cultural assets.

Other advantages of tourism include:

i. Provision of revenue and diversification to rural communities. This is because foreign currencies from foreigners remain within the local economy.

ii. Tax revenue realized from foreigners can be used for further development of some facilities such as swimming pools, golf courses, restaurant and shopping facilities.

iii. Inhabitants of the host community will be interested in some of the events planned for tourists.

iv. It attracts location of industries because of the quality of services and recreational resources provided.

v. Foreigners may become permanent residents if the country is a pleasant place to reside.

However, despite all these advantages there are still some disadvantages that affect the development of tourism. These include:

1) It is capital intensive

2) Exerts pressure on public services.

3) It requires promotion, marketing and time.

2.4 LANDSCAPING

2.4.1 LANDSCAPE DESIGN

Both arts are concerned with the composition of planting, landform, water, paving and other structures, but garden designs is essentially concerned with enclosed private space. Landscape design is concerned with the design of enclosed space, as well as unenclosed space which is open to the public (town squares, country parks, park systems, greenways etc.).

Dada (2011) illuminated that the physical landscape evolved from the interaction between man; as an individual and two other major units; a part of human society serving as a store of processes on one side and the non-human nature serving as a store house of materials at the other hand.

He further explained that landscape design thus started with the nobility and the then landed families who had an abundance of space to work with having a desire to create something beautiful around their homes. Landscape design evolved from formal garden to a natural design in late 1700s and lakes, pools and tree were added to provide natural beauty.

2.4.2 EFFECTIVE LANDSCAPE AS ENERGY SAVER IN GALLERIA DESIGN

Landscaping can be defined as the process of shaping and safeguarding for public enjoyment of the scenery and of opportunities for outdoor recreation, tourism, field sports and other related activities. The concept includes the preservation and enhancement of not only what has been inherited but provision of new amenities and facilities (Chaatwaal & Panley, 1990).Landscaping is the process of arranging the landscape elements in the spaces provided for to create an environment for the satisfaction of the human requirement (Fadamiro, 1998). Microsoft Encarta (2009) defines it as the enhancement of the appearance of and especially around buildings by altering its contours and planting trees, shrubs, and flowers. Generally, a well landscaped environment is made up of the combination of several different landscape elements properly arranged to work together as a harmoniously entity hence landscaping can be said to be the key to the unification of the outdoor space. Landscape architecture is the art and science of planning, design, management, preservation and rehabilitation of the land and the design of man-made constructs. (Tom, 1998).

Landscaping is an easy and inexpensive way to improve the energy efficiency of a building, enhance the appearance and value of a property, and provide screening for privacy. (Dee, 2010). Effective landscape design is a science that involves the understanding of the environment and selecting plants that perform well in that environment. In this case, a well-conceived landscape design, properly installed and well maintained, adds value to the property and enhances the quality of life and even saves energy in buildings. (Alabama Cooperative Extension System, 2006). According to Alabama (2006), there are four ways in which landscape, when effective, is valuable in building designs:

a. Aesthetically

b. Economically

c. Functionally,

d. Environmentally

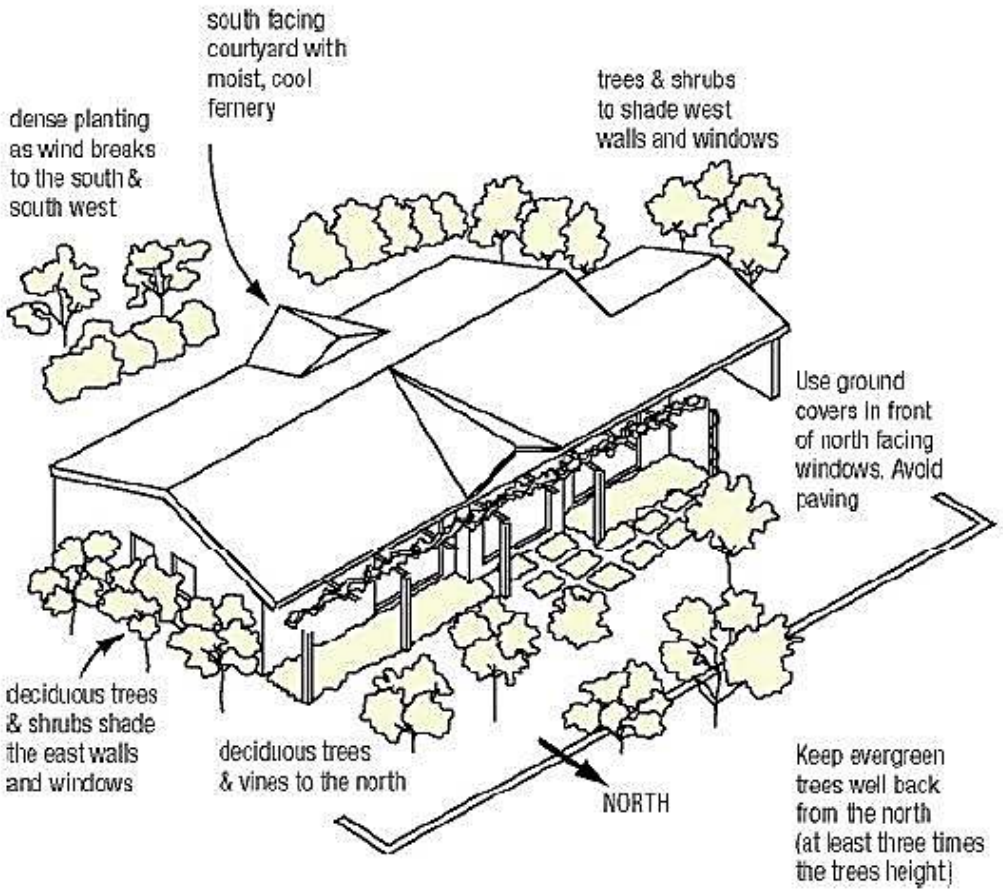

Figure 2.1: Effective landscaping can enhance energy efficiency

Source: Info Fact file 2015

Selected types of plants can be strategically positioned to protect the building from the harsh extremes of summer sun and chilling winter winds, improve comfort both inside and outside the home, and reduce the need for supplementary heating and cooling. Deciduous trees and vines can be 'designed' to shade exposed indoor and outdoor living areas in summer while still allowing the sun through in winter. Low shrubs and ground cover around the home can reduce reflected heat and glare. Dense trees and shrubs can be positioned to deflect strong winds and channel cooling summer breezes. (Sustainable Energy info fact sheet)

2.4.2.1 INTEGRATING LANDSCAPE WITH THE BUILDING DESIGN

Too often the landscape is not considered until after a building is completed. Landscape design ideally is part of the wider design process, allowing interaction between the building orientation, building design, site conditions, and proposed landscape development. This presents the best opportunity for maximizing the landscape benefits to the home and its occupants. Once the desired performance characteristics of the proposed landscape have been identified, a local horticulturalist or nursery may be consulted about suitable plant species which meet the requirements, i.e. tall and deciduous trees, low and dense bushes, ground cover, etc.

2.4.2.2 SITE AND MICROCLIMATE ANALYSIS

While there are broad climate zones throughout the country, each site will have its own microclimate and conditions that will influence the house design and landscape development. A site and microclimate analysis provides information to assist the designer to decide on the best placement of the building on the site, and to identify what types of landscape protection areneeded. The analysis should consider:

(a) Site size, topography, slope, soil and drainage.
(b) Prevailing seasonal winds, temperature and humidity.
(c) Relationship to sun and shade patterns in summer and winter; >existing vegetation and any special features.
(d) Location of other buildings and fences.
(e) Location of vehicular and pedestrian access.
(f) Views.
(g) Any legal setbacks and building restrictions; and
(h) Adjacent site conditions.

2.4.2.3 SUSTAINABLE DESIGN

Sustainability is the capacity to endure (Wikipedia, 2010) but it can be broadly defined as the ability to meet the needs of the current generation without jeopardizing the needs of future generations. In environmental design, it is a multifaceted approach to building development which requires an environmentally responsible disposition to the selection and design of building

materials and services. This development arose from growing concerns amongst professionals in the building industry as regards the impact of building and buildings on the environment. Sustainable design (also called environmental design, environmentally sustainable design, environmentally-conscious design, etc.) is the philosophy of designing physical objects, the built environment, and services to comply with the principles of economic, social, and ecological sustainability.

Sustainable Design (SD) as a design approach focuses on the judicious use of our naturalresources in building development, with particular emphasis on the use of energy. Energy usehas become an important issue as much of the energy used to power industries come from non-renewable sources and thus is not thought to be sustainable (Hyde, 2000).

Sustainable Design not only focuses on natural resources for building development alone, the eco-friendly materials used in the building could also amount to the efficient use of energy. There are actually lots of energy efficient appliances that could be adopted in order to have an energy efficient home.

The plate bellow shows the analysis of a climate response design.

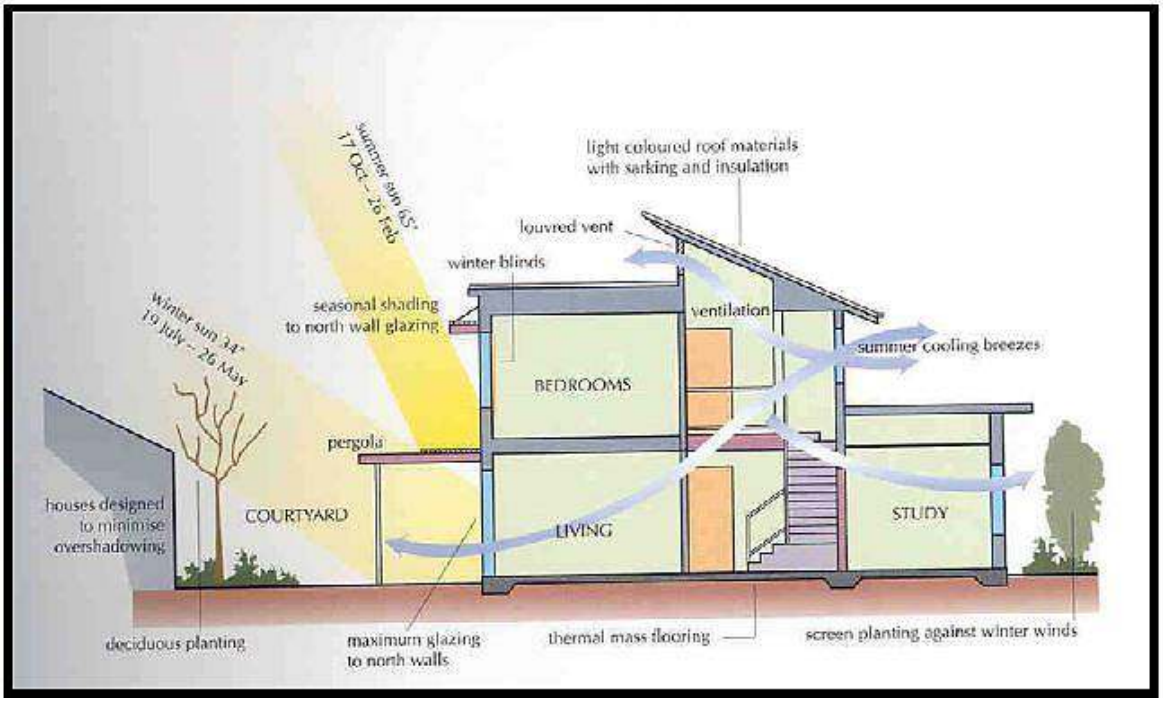

Plate 2.1: a climate responsive design.

Source: www. Netspeed.com.au/ .../newington%20design.htm

2.4.2.4 DESIGN RESPONSE

Concept plans for the site can be developed working with the design brief and site analysis. The site analysis will help to determine the best location for plants and the best contribution they can make. For example, should a windbreak be used to give protection from unpleasant winds and where should it be located? Are there large areas of glass to be protected from glare? Are there large areas of paving that have to be shaded? The brief may have identified the need for a paved courtyard besides the building. The site analysis might have concluded that unpleasant winter winds blow across the courtyard from the south-west, and that reflected glare may be expected from the north- west during summer. The concept plans may indicate the location of a windbreak for winter wind protection and shade trees for glare control. The detailed plan would give the precise configuration of the planting barrier.

2.4.3 SUSTAINABLE LANDSCAPING IN TROPICAL COUNTRIES

A sustainable landscape is designed to be both attractive and in balance with the local climate and environment and it should require minimal resource inputs such as fertilizer, pesticides and water.

Sustainable landscaping begins with an appropriate design that must be functional, cost- efficient, visually pleasing, environmentally friendly and maintainable. It pays close attention to the preservation of limited and costly resources, reducing waste and preventing air, water and soil pollution. Also, compost, fertilization, pest control measures that avoid or minimize the use of chemicals, integrated pest management using the right plant in the right place, appropriate use of turf, irrigation efficiency and or water-wise gardening are all components of sustainable landscaping. A sustainable environment is the one in which all plants, animals and other forms of life are able to exist in an ecosystem without any exterior aid or interference (Sustainable Landscape Designs (2010); White, 2010).

Sustainable landscaping includes a diversity of practices that have developed in response to environmental issues. These practices are used in every phase of landscaping, including design, construction, implementation and management of residential and commercial landscapes (Loehrlein, 2009).

Sustainable landscaping can be achieved by the adoption of the following:

1. Reduction of storm water run-off through the use of bio-wastes, rain gardens and green roofs and walls (Rowe et al, 2006).

2. Reduction of water use in landscapes through design of water-wise garden techniques (sometimes known as xeriscaping (Krizner, 2008).

3. Bio-filtering of wastes through constructed wetlands (Carver, 2008).

4. Landscape irrigation using water from showers and sinks, known as gray water (Melby, &Cathcart, 2002).

5. Integrated Pest Management techniques for pest control.

6. Creating and enhancing wildlife habitat in urban environments.

7. Permeable paving materials to reduce storm-water run-off and allow rain water to infiltrate into the ground and replenish groundwater rather than run into surface water (Kerkhoff, 2006). 8. Use of sustainably harvested wood, composite wood products for decking and other landscape projects, as well as use of plastic lumber (Weber, 2006).

9. Recycling of products, such as glass, rubber from tires and other materials to create landscape products such as paving stones, mulch and other materials.

10. Soil management techniques, including composting kitchen and yard wastes, to maintain and enhance healthy soil that supports a diversity of soil life. 11. Integration and adoption of renewable energy, including solar-powered landscape lighting.

2.5 GREEN ARCHITECTURE IN TROPICAL CLIMATES

In the African context, this study views "Green Architecture" as the indigenous approach of building practices with the goal of sustaining the ecosystem. It puts into consideration the easily affordable local resources and the development of concepts that sustain the socio-cultural value system within the building sector. Green Architecture approaches building construction (from design conceptualization and construction to its material usage all through its life-span) with the aim of minimizing harmful effect on human health and environment. It attempts to conserve environmental factors such as air, water and the earth by employing eco-friendly building materials and construction practices (Watson and Balken 2008).

Green building brings together a vast array of practices and techniques to reduce and ultimately eliminate the impacts of new buildings on the environment and human health. It often emphasizes taking advantage of renewable resources e.g., using sunlight through passive solar, active solar and voltaic techniques and using plants and trees for reduction of rainwater run-off. Many other techniques, such as using packed gravel or permeable concrete instead of conventional concrete or asphalt to enhance replenishment of ground water, are used as well.

While the practices, or technologies, employed in green building are constantly evolving and may differ from region to region, there are fundamental principles that persist from which the method is derived: siting and structure design efficiency, energy efficiency, water efficiency, materials efficiency, indoor environmental quality enhancement, operations and maintenance optimisation and toxic waste reduction (U.S. Environmental Protection Agency, 2009).

Although new technologies are constantly being developed to complement current practices in creating greener structures, the common objective is that green buildings are designed to reduce the overall impact of the built environment on human health and the natural environment by:

a. Efficiently using energy, water and other resources;

b. Protecting occupants' health and improving employees' productivity and

c. Reducing waste, pollution and other environmental degradation.

The construction and operation of buildings require more energy than any other human activity. The international Energy Agency (IEA) estimated in 2006 that buildings used 40% of primary energy consumed globally, accounting for roughly a quarter of the world greenhouse gas emissions. Commercial buildings comprise one-third of this total. Urbanization trends in developing countries are accelerating the growth of this sector relative to residential buildings, according to the World Business Council on Sustainable Development (WBSCD). Reducing these emissions is therefore a cornerstone intention and responsibility of green building standards and initiatives.

Green architecture focuses on saving energy production and consumption. While buildings could be the highest carbon emitters, they could equally represent the best means of reducing environmental, economic impact and energy use, effectively. Synonymous with green architecture, sustainable architecture focuses on climate responsive or eco-friendly designs and construction techniques in buildings with positive impact on social, ecological economic and environmental sustainability. The consideration of environmental factors, tradition, culture and their effects must be given a high priority. Largely, this study relates the indigenous (traditional) and African-'tropical' architecture with green architecture.

Green Architecture is a concept developed to encourage sustainable development. It brings transformation to design and construction in both developed and developing economy, the concept of green architecture will affect the nature of architecture and design which depends on the choice of materials, the construction techniques, the calculated cost of construction and the climatic conditions, the developmental concept of green architecture in Nigeria will encourage sustainable development and environmental protection. Every building responds according to its composition and of its design. The International Energy Agency released a publication that estimated that existing buildings are responsible for more than 40% of the world's total primary energy consumption and for 24% of global carbon dioxide emissions (Howe, 2010).

Architecture is responsible for about 45% of the carbon dioxide (greenhouse gas) emissions in the UK (RIBA, 2012). The designs of architects are very important in mitigating the problem of

climate change. This calls for the concept of sustainable architecture. This invariably form the major concern of the architects in seeking sustainability in design. Green Architecture and Courtyard System Green architecture, or green design, is an approach to building that minimizes harmful effects on human health and the environment. The "green" architect or designer attempts to safeguard air, water, and earth by choosing eco-friendly building materials and construction practices. Green architecture entails adequate natural ventilation systems designed for efficient heating and cooling, appropriate energy-efficient lighting and appliances, adequate and appropriate landscapes that ensures maximum passive solar energy. Generally green architecture ensures minimal harm to the natural habitat. Location of building on site, including access, and utility supply routes; Arrangement of internal rooms, and doors and windows; Dimensions of building competing discourses (Guy 1997 in Boyle, 2004).

2.5.1 OBJECTIVES OF GREEN ARCHITECTURE

A sustainable/green building is an outcome of a design, which focuses on increasing the efficiency of resource use energy, water, and materials-while reducing building impacts on human health and the environment during the building life-cycle, through better siting, design, construction, operation, maintenance, and removal (Frej, 2005). A green building is environmentally responsive and resource-efficient, reducing the impact of the built environment on human and the natural environment as well as waste, pollution, and environmental degradation. In line with Howe (2010), Green architecture can be used to achieve the following as discussed below;

2.5.1.1 IMPROVING ENERGY EFFICIENCY

Any path to sustainability necessarily includes improving energy efficiency throughout the global economy (IEA, 2008). Green architecture approaches buildings with the basic concept of creating energy efficiency and contributes to global economy by extensively cutting down on energy consumption growth. Energy efficient technologies are imperative for a revolution in every sector. (Sambo, 2009). Thus, if the rate at which energy consumption is checked both in buildings and the environment by reducing the use of high energy induced materials, then energy can be said to be efficiently maximized.

2.5.1.2 ENVIRONMENTAL SUSTAINABILITY

Milani (2005) explained that green buildings are designed bearing in mind environmental management. It takes drastic measures to reduce wastage as well as environmental degradation to a barest minimum. Milani (2005) emphasized further that environmental sustainability also takes into consideration the comfort of the end-users. Therefore, the overall aim of environmental sustainability is about the total safety of the environment and sustainability of the eco-system as it advocates the use of materials, methods, and technology that favour this primary objective.

2.5.1.3 GREENHOUSE GAS EMISSION REDUCTION

The built environment contributes ultimately to global warming by its high rates of emitting greenhouse gases through energy usage (for cooling, heating, and lighting) and for construction.Green architecture projects a possibility of total reduction to a near zero carbon emission[1]of buildings. Green buildings take on the initiative of improved technologies, to contribute significantly in mitigating global climate change. IEA (2008)report asserts that accelerating energy efficiency has the greatest potential for carbon dioxide (CO_2) [7] savings at low or negative cost, and with immediate results; and that a large potential remains for further energy and CO_2 savings across all sectors. While IPCC (2007) highlights the possibility of reducing the global energy CO_2 emission by 50 percent in 2050, World Energy Outlook (WOE) (2008)reports that existing buildings account for 24 percent of the world CO_2 emission, as well as more than 40 percent of the world's total primary energy consumption. It stresses that making buildings more efficient is therefore imperative, as it is a cost effective way to reduce carbon emission. Energy efficient buildings can significantly cut CO_2 emission globally. The Annual Energy Outlook report, in its alternative technology cases between 2000 and 2020, projects that advanced technology could reduce residential energy use by 22% (AEO,2001). However, the International Energy Agency (IEA), while urging technological revolution, warns that CO_2 emission is expected to rise by 130% by 2050 especially if no serious efforts are made to combat it (IEA, 2008). Urgency to improve energy efficiency in all sectors is a necessity in order to reverse this trend, whilecareful designs are imperative to keeping the environment sustained, since building itself is a long-term project. Africa therefore could utilize its local resources to enhance environmental sustainability, with enhanced technology.

2.5.1.4 WASTE REDUCTION

Green architecture also seeks to reduce waste of energy, water and materials used during construction. During the construction phase, one goal should be to reduce the amount of material going to landfills. Well-designed buildings also help reduce the amount of waste generated by the occupants as well, by providing on-site solutions such as compost bins to reduce matter going to landfills. To reduce the impact on wells or water treatment plants, several options exist. Waste water from sources such as dishwashing or washing machines, can be used for subsurface irrigation, or if treated, for non-potable purposes, for example, to flush toilets and wash cars. Rainwater collectors are used for similar purposes (U.S. Environmental Protection Agency, 2009a).

2.6 ECO-FRIENDLY BUILDING MATERIALS

In recent times, making use of eco-friendly building materials is a response from the building sector intended to reduce the environmental cost of making and using building. Eco-friendly literally means earth-friendly or not harmful to the environment. This term most commonly refers to products that contribute to green living or practices that help conserve resources like water and energy. Eco-friendly products also prevent contributions to air, water and land pollution. You can engage in eco-friendly habits or practices by being more conscious of how you use resources. An eco-friendly building material is one that increases the efficiency of energy used and reduces impact on human well-being and the environment. There are many different materials that can be used that are eco-friendly; from foundation, to insulation, to interior and exterior wall finishes, flooring, and countertop materials. (ENVIS Centre, 2007)

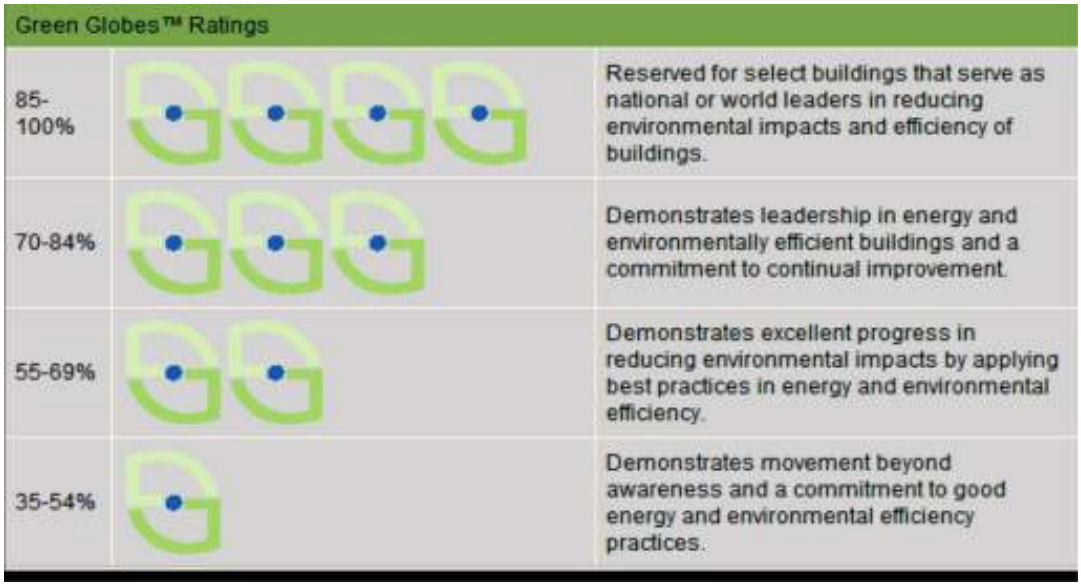

Table 2.1: *Green Globe's* Rating System.

Determining the True Definition of Green(Cody Fithian andAndrea Sheets)

Green building practices aim to reduce the environmental impact of building. The first ruleis that the greenest building is the building that doesn't get built. Since construction almost always degrades a building site, not building at all is preferable to green building, in terms of reducing environmental impact. The second rule is that every building should be as small as possible. The third rule is not to contribute to sprawl, even if the most energy-efficient, environmentally sound methods are used in design and construction. Rousseau (2011) revealed that there are a number of motives for building green, including environmental, economic, and social benefits. However, modern sustainability initiatives call for an integrated and synergistic design to both new construction and in the retrofitting of existing structures. Also known as sustainabledesign, this approach integrates the building life-cycle with each green practice employed with a design-purpose to create a synergy among the practices used.

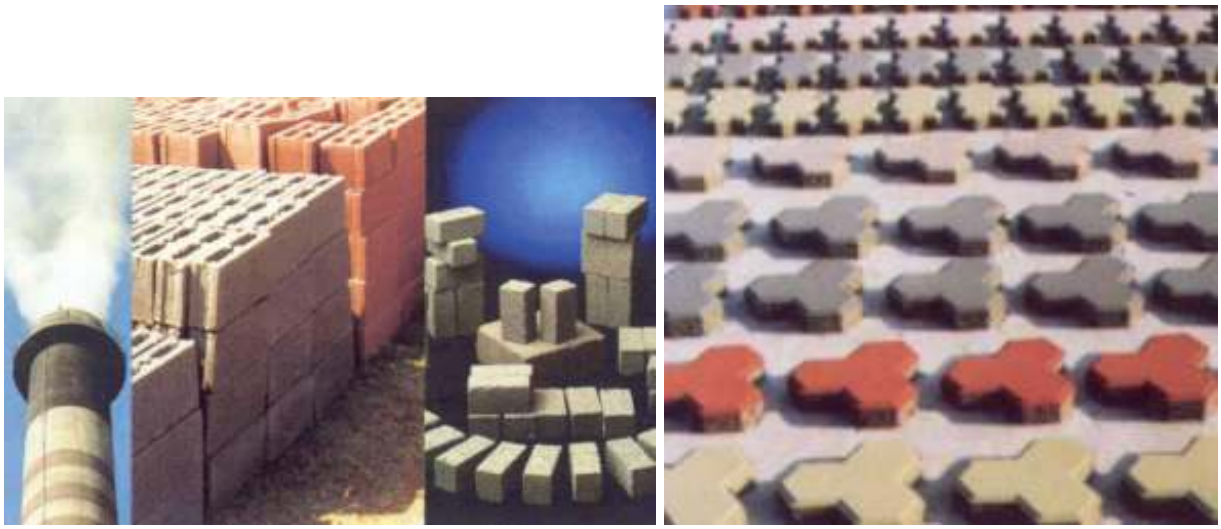

Plate 2.2: Fly Ash Based Bricks and Blocks

Green building brings together a vast array of practices, techniques, and skills to reduce and ultimately eliminate the impacts of buildings on the environment and human health. It often emphasizes taking advantage of renewable resources, e.g., using sunlight through passive solar, active solar, and photovoltaic equipment, and using plants and trees through green roofs, rain gardens, and reduction of rainwater run-off. Many other techniques are used, such as using low-impact building materials or using packed gravel or permeable concrete instead of conventional concrete or asphalt to enhance replenishment of ground water.(Chirag&Aakash, 2014)

While the practices or technologies employed in green building are constantly evolving and may differ from region to region, fundamental principles persist from which the method is derived: siting and structure design efficiency, energy efficiency, water efficiency, materials efficiency, indoor environmental quality enhancement, operations and maintenance optimization and waste and toxics reduction. The essence of green building is an optimization of one or more of these principles. Also, with the proper synergistic design, individual green building technologies may work together to produce a greater cumulative effect.During the materials selection phase of the green building process, issues to consider include life cycle assessment (LCA) and embodied energy, availability of local and sustainable materials, use of salvage and recycled-content materials, durability, and toxicity. Trade-offs are often involved when selecting building and

finishing materials; for example, the most durable material may not be available locally. The goals of the occupants should be used as criteria when selecting among alternatives.(Nancy, 2012).

Thus, on the aesthetic side of green architecture or sustainable design is the philosophy of designing a building that is in harmony with the natural features and resources surrounding the site. There are several key steps in designing sustainable buildings, specify eco-friendly building materials from local sources, reduce loads, optimize systems, and generate on-site renewable energy.

2.6.1 THE CONCEPT OF ECO-FRIENDLY MATERIALS

According to ENVIS Centre (2007), the extraction of raw materials, manufacturing of building materials, use and disposal have become a major component of the total human effects on the global ecosystem and earth's climate. However, this explains the fact that the impact of building materials, either positive or negative on the ecosystems are measured right from the extraction stage, to the stage when they are put into use in buildings.

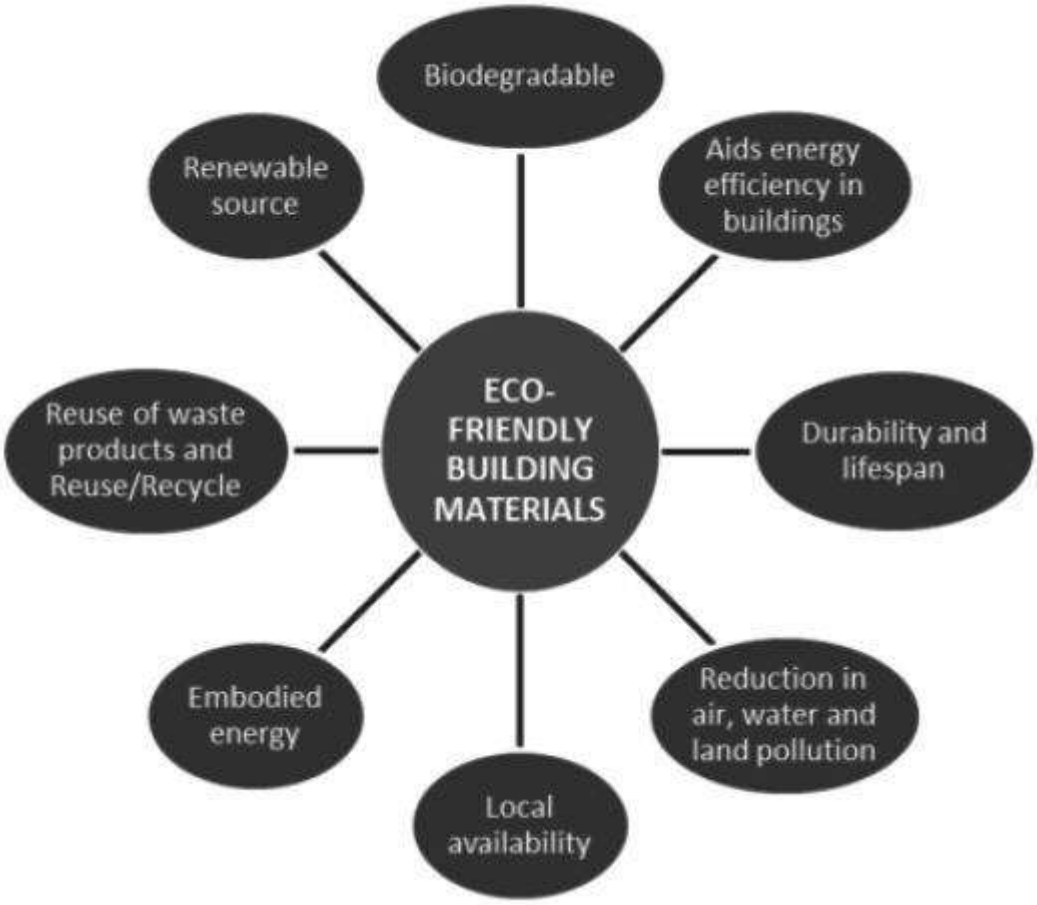

Figure 2.2 : Properties of Eco-friendly building materials

Source: ENVIS Centre (2007)

2.6.2 EXAMPLES OF ECO-FRIENDLY MATERIALS

2.6.2.1 CONVENTIONAL ECO-FRIENDLY MATERIALS.

Conventional eco-friendly building materials are those that provide appropriate service and considerable lifespan with minimum maintenance, while minimizing the extraction of raw materials, the pollution, the energy consumed by manufacturing and use, and maximum potential for reuse. (Rousseau, 2011).

1. Bamboo, Bamboo Based Particle Board & Ply Board, Bamboo Matting.

2. Bricks sun dried.

3. Pre-cast cement concrete blocks, lintels, slab. Structural and non-structural modular elements.

4. CalcinedPhospho-Gypsum Wall Panels.

5. Calcium silicate boards and Tiles.

6. Cellular Light Weight Concrete Blocks.

7. Cement Paint.

8. Clay roofing tiles.

9. Water, polyurethane and acrylic based chemical admixtures for corrosion removal, rust prevention, water proofing.

10. Epoxy Resin System, Flooring, sealants, adhesives and admixtures.

11. Ferro-cement boards for door and window shutters.

12. Ferro-cement Roofing Channels.

13. Fly-ash Sand Lime Bricks and Paver Blocks.

14. Gypsum Board, Tiles, Plaster, Blocks, gypsum plaster fiber jute/sisal and glass fiber composites.

15. Laminated Wood Plastic Components.

16. Marble Mosaic Tiles.

17. MDF Boards and Mouldings.

18. Micro Concrete Roofing Tiles.

19. Particle Boards.

20. Polymerized water proof compound.

21. Polymerized water proof compound.

22. Portland Pozzolana Cement Fly-ash / Calcinated Clay Based.

23. Portland Slag Cement.

24. RCC Door Frames.

25. Ready Mix Cement Concrete.

26. Rubber Wood Finger Joint Board.

27. Stone dust.

28. Water proof compound, adhesive, Polymer, Powder.

2.6.2.2 POTENTIAL ECO-FRIENDLY MATERIALS AND TECHNIQUES

The tenets of eco-friendly building materials are resource efficiency, reusability, recyclability, water consumption and waste reduction, avoidance of toxic substances during manufacture and use, and nature of raw materials source. According to ENVIS Centre (2007), eco-friendly building materials have been traced to traditional sources, such as stabilized compressed earth blocks, bamboo, and other earth and stone materials. However, eco-friendly materials could be industrially sourced as well, and these processes also are environmentally friendly such as burnt clay, fly ash bricks, and aerated light-weight concrete blocks or industrial waste. Below are the lists of some potential eco-friendly materials as stated by ENVIS Centre (2007);

1. Bagasse Board – BMTPC.

2. Bricks from Coal Washery Rejects -CBRI, Roorkee.

3. Building Blocks from Mine Waste – SERC.

4. Burnt Clay Fly Ash Bricks – CBRI, Roorkee.

5. Coir Cement Board – CBRI, Roorkee.

6. Compressed Earth Blocks – BMTPC.

7. EPS Composites and Door Shutters -CBRI, Roorkee.

8. FiberFly ash Cement Boards –BMTPC.

9. Fiber Reinforced Concrete Precast Elements, Wall panels, Blocks, Manhole Covers – SERC.

10. Fibrous Gypsum Plaster Boards – CBRI, Roorkee.

11. Fly ash Cellular Concrete, fly ash Cement Brick, Blocks – BMTPC.

12. Flyash Lime Cellular Concrete – CBRI, Roorkee.

13. Flyash Lime Gypsum Brick – BMTPC.

14. Insulating Bricks from Rice Husk Ash- Central Glass and Ceramic Research Institute, Kolkata.

15. Jute Fiber Polyester –BMTPC.

16. Non Erodible Mud Plaster – CBRI, Roorkee.

17. Polytiles – CBRI, Roorkee.

18. Timber from trees such as Poplar, Rubber, Eucalyptus – BMTPC.

19. Precast walling roofing components – CBRI, Roorkee.

20. Prefab Brick Panel System – CBRI, Roorkee.

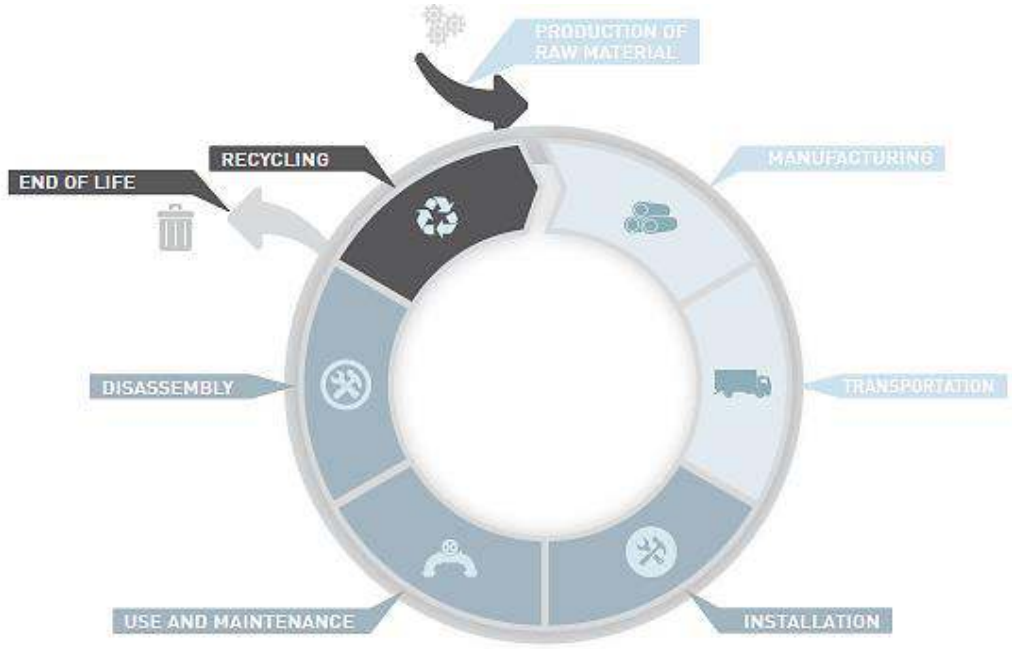

Figure 2.3: Material environmental life cycle

Source: Sustainability brochure, (Georg Fisher 2013)

2.6.3 MATERIALS ENVIRONMENTAL LIFE-CYCLE.

Every building material or system has an environmental life cycle which is not the same as its economic life cycle as many of the environmental factors are not adequately accounted for by conventional economics. For example resource extraction and the release of waste is counted as beneficial economic activity though it is environmentally detrimental.

2.6.3.1 RESOURCE EXTRACTION

The environmental lifecycle of a product can be said to start when the raw materials to make it are extracted. The most benign raw materials are those that are from recycled sources, particularly post-consumer waste, those that are renewable (and well managed) or those that are readily available with small extraction impacts.

Reducing the impacts of raw materials extraction is typically a matterof effective resource management and pollution prevention. Other factors such as renewability and habitat disturbance are also very important, but are more descriptive and difficult to quantify.

2.6.3.2 MANUFACTURING

The next stage of the life cycle is manufacturing. Three useful measures used to calculate the impact of product manufacturing are:

(a) The solid waste and toxics produced.
(b) The air and water pollution produced.
(c) The energy consumed per unit of raw material.

The manufacturing stage is the point at which advanced technologies such as energy and waste recovery, typically have the most effect on reducing waste and pollution factors associated with materials

2.6.4 ADVANTAGES AND BENEFITS OF ECO - FRIENDLY HOUSING

Green building practices aim to reduce the environmental impact of new buildings. Buildings account for a large amount of land use, energy and water consumption, and alteration of the environment. Considering the statistics, reducing the amount of natural resources buildings consume and the amount of pollution given off is seen as crucial for future sustainability (United States Environmental Protection Agency, 2009b). Benefits derivable from green housing can be categorized into two. These are environmental benefits and economic benefits. The environmental benefits include improving air and water quality; protecting the biodiversity and the ecosystem of our planet and conserving natural resources such as natural gas and fossil fuels (Greg, 2003). Economic benefits include lower energy consumption with energy saving electrical appliances,

lightning bulbs, home designs and locations; and through green energy solutions such as solar panels and wind turbines which generate electricity independently from utility companies. Additionally, green housing and eco-friendly materials increases the value of a home. (Ogunsote, 2012).One of the most effective ways of achieving sustainability in architecture is through the use of materials that could reduce cost right from manufacturing stage to installation and operation. Most times these materials are environmentally friendly and easy to maintain.

However, the benefits of Eco-friendly materials in Buildings over standard buildingsas stated by Copper Brook(copperbrook.ca) are summarized as follows:

- **Healthy Home**

  An eco-friendly buildings such as galleria utilizes toxin freebuilding materials, ensuringthatpeople insidethe spaces are generally freefrom all harmful pollutants.

- **Cost Efficient Buildings**

  The cost of maintaining a building that is eco-friendly is the same or even lesserthanthe maintenance cost of a traditional or standard buildings using conventional trending materials.The initialcost is possibly high, but the future savings that will be generated later is sufficient enoughtooffset the initial investment. About 40percent from monthly electricity bill and 50 percent from water consumption. In addition, eco-friendly homesaremuchmore durable as compared to standard homes.Thistranslates and equates to lesser maintenance and repair. Moreover, a green home value much higher compared to a standard home this is the reason why the demands for eco-friendly materials are steadily increasing.

- **Environment Friendly Home**

  The heating and cooling of homes usually account to more or less 20 percent of the total used energy from a typical or standard building. Standard buildings with conventional materials are beingconsidered asa segment that uses and consumes lots of energy because of the energy requirements when all the household appliances, lighting and other electronic equipment's are added together. On thecontrary,eco-friendlybuilding consume less than 40% energy. Nowadays, there are eco-friendly buildings that have the capacity of reducing their dependence from conventional energy source and they have this added capability of generating their very own energy with the use of alternative energy

sources and they have this added capability of generating their very own energy with the use of alternative energy sources like geothermal, biomass, wind and sun.

However, Eco friendly homes have highly efficient plumbing and bathing fixtures.They adopt landscaping designs that are drought tolerant. Eco friendly homes canalso make use of excellent irrigation systemsequipped with beneficial water conserving features.These combined features and elements can cut water consumption for almost 50%.

- **Increased Security And Safety**

Eco friendly buildings have much higher security and safety standards as compared to regular buildings. They are basically equipped with excellent and high performing smoke detectors, gadgets that detect radon and carbon dioxide emissions, security systems, and techniques of delivering termite treatment and pesticide. Lesser natural resources are being used in building an eco-friendly homes. This alone can be considered as an excellent boost in campaigns of saving the natural resources. A huge portion of materials used to build a green home are basically recycled materials.

2.6.5 ECO-FRIENDLY BUILDING FEATURES

According to Copper Brook, eco-friendly buildings do not have to be excessively big or small. It needs to be large enough to let everybody have their own space. It needs to be adequate enough for it to be maintained cost effectively and efficiently. The book highlighted some basic features in an eco-friendly building below:

(a) An eco-friendly building is one that is equipped with energy efficient appliances. Meaning anything that is installed inside the buildingconsumeslesserenergyas compared to old appliances. And because of this, huge savings from utilities expense will be enjoyed.

(b) Considering location, an eco-friendly home is usually situated in excellent locations. It is usually a part of one green community with homes that have eco-friendly features. The surrounding is usually filled with environment friendly landscaping regardless of it being a public building or residential home.

(c) Eco friendly homes are generally made from sustainable materials. The materials used to build an eco-friendly home are highly abundant locally; theyalso come from allrenewable resources materials that are organic such as

wood, plants, or animals. Of course, some of the materials used are synthetic but they are used minimally.

(d) Eco-friendlyhomes are equipped with passive solar system, meaningthey are being oriented to utilize and maximize benefits from using natur al sunlight.

(e) Eco-friendly buildings are well insulated. Their walls have an inert gas layer that functions to keep the air warm during cold seasons and design to maintain cool unruffled air during the hot seasons.

(f) Most eco-friendly homes are automated, allowing homeowners tomanage and monitor essential features such as smoke detection, security, even energyconsumption.

(g) In building eco-friendly structures, pints that are not volatile are being used posing no risks to the health of the occupants.

2.7 HISTORY OF GALLERIA

A galleria is actually a glass-enclosed promenade, which could house stores, a mall or anything of that sort. Though originally it was not referred to as malls, these days the term 'galleria' has become synonymous with shopping malls. The term is accepted from the Medieval Latin same word, 'galeria' meaning "gallery". A galleria could also house restaurants, offices, shops and can even refer to an art gallery. However, art galleries may not always have the glass roof; they would still be referred to as galleria. (Wikipeadea 2015).Today, it is observed that Galleria which is increasingly growing in number, especially in metropolitan cities, is used as public spaces by many urban inhabitants. Gallerias have become places where social life is experienced and leisure time is spent through a wide range of activities offered besides shopping. On the other side, city centres that can be regarded as the most essential public spaces of urban areas are in a process of deterioration both in terms of physical quality and functional features. These two developments are essential indicators of a change and transformation concerning the public space's role and its features like openness to everyone's use, high accessibility and social integration. Public spaces, all through the history, have been places where people interact, exchange goods and ideas; where the social life takes place. They are places where people just wonder and spend time for relaxation (Carr et al., 1992). Besides, they have been places where public action in the form of demonstrations, protests etc. find existence. Beyond all, public spaces are often defined as places,

which are open to everyone without any restriction to one's accessibility to those places. City centres, squares, streets, parks and plazas are common public spaces of urban areas. However, today one more place seems to be added to these well-known public spaces and it is the galleria.

Plate 2.3: View of a Typical Galleria

Source: Wikipedia, the free encyclopedia (2015)

2.7.1 MODES OF SHOPPING IN GALLERIA

Carr in one of his publications identified a continuumof activities between shopping as a leisure activity and shopping as a functional activity which seems useful.Shopping takes several modes ranging from venturing into stores and malls to purchase item, service or good to participating in comparisons shopping in which shoppers' travels from one store to another looking for the best purchase for the least price. There is another group of shoppers who venture into shopping centres for the leisure/sporting activities. The actual activities for such shoppers consist of walking for leisure, watching people and being watched. Purchasing merchandise/goods is not the main reason behind such shopping, but it provides the potential shopper with the opportunity to travel into another world filled with images and vignettes of other times and places. In this mode, many impulse purchases are made i.e. purchases that are not created for need or desire but purchases that are created through marketing and display strategies. This is because well executed displays create the urge to buy because sales are made not because the shopper made the trip to the store particularly for the item, but because of the method and positioning of the

display and the aura of the environment. Galleria is a fertile ground for impulse purchasing and leisure activity. As an established place of commerce, galleria being more compact than arcade or shopping street, provides the opportunity to buy, even for those who are not in the mood.

2.7.2 GALLERIA AS PUBLIC SPACES

It is often observed that many people nowadays are using and preferring galleria for shopping, for spending their leisure times through the recreational, cultural and entertaining facilities offered in these places or for just wandering around. People use galleria as public spaces for socializing and non-commercial activities, also both quasi-and semi-public spaces of the galleria are experienced differently by different groups of income, gender, ethnicity and age. Some people like elderly, working-class and women find these places fearful while others like youth and male find the place joyful and desirable. Middle-class people find surveillance cameras and other security instruments as increasing their safety and the civility of the urban life, whereas others such as working class and ethnic minority view them as a threat to their privacy. However, there rises a crucial question about the public space characteristics of galleria in terms of accessibility, surveillance, control and users' rights.

Gallerias are in fact in the private sphere since the owner and management have legal prerogatives to exclude someone from using the space. In this sense, access to galleria is not a right but a privilege (Banerjee, 2001). Shopping centres have a privatized, commercial form of governance in which the customer rights and responsibilities are considered rather than rights of citizenship there is a distinction between the structure and practice of galleria which can lead to tensions and resistance. It means that gallerias have a structural feature of having consumption and profit maximization as their primary goals. However, people use these places for the satisfaction of their own purposes. The ownership pattern of the mall has considerable effect on the control of these places. Under conditions of central ownership in which all spaces are rented, the degree of control is greatly compared with fragmented ownership (Dijkstra, 2000). In other words, the environment that is provided by the mall is the idealized vision of the street and city centre. Therefore, it can be said that galleria is designed in order to protect the middle-class from a moral confusion that might result from the risks of social difference. Reducing the risks of social difference and bringing up the virtues of familiarity. When emphasizing on the difference between public access and public use, although low-income groups are not restricted from entering a galleria, due to the lack of facilities and opportunities suitable for them, their use of

the space is a limited. On the same issue, Carr et al. (1992) claim that with their expensive shops and strict security services, galleria serve as "social filters" keeping lower-income users and "undesirables" out. It is argued that shopping mall designs neglect the various needs of users; rather, these spaces are designed in a way to control and limit people's activities and direct them to shopping and consuming. Shopping malls provide highly limited activities and experiences compared with the creative and unpredictable potentials that good public spaces provide (Smithsimon, 2000).

It is claimed that through the development and increasing use of galleria by so many people, public open spaces are transformed into private indoor spaces.

2.8 THE CONCEPT OF SHOPPING AND CONSUMPTION IN GALLERIA

Shopping that is an everyday activity is both related with commodity exchange and social exchange. It is not merely a commercial activity but also has a social aspect. Since it is a social activity besides being an economic one; it is about place and identity. This means, that particular parameters of identity such as the family, class, ethnicity and gender are reconstituted by shopping sites through the addition of particular distinctions which emerge from the experience of these spaces. In this sense, it is identified as a realm of social action, interaction and experience which structures everyday practices of urban population, or in other words as an essential realm of public behaviour. Shopping as the very old and basic form of communication has created its own public sphere since its emergence (Aksel, 2000).

Shopping, as a recent research topic, is regarded as a cultural phenomenon in contemporary postmodern society. As consumers we reproduce both our existence and culturally specific ways of life. Thus, consumption acts as a bridge between people and their experiences of the urban environment. Shopping and consumption provide individual experiences and the ground for individual fulfilment besides offering social experiences. However, it has an ideological role in controlling the character of everyday life. Therefore, it can be said that consumption is both enabling and constraining from psychological and social aspects. Shopping for represent a certain degree of obligation or routine while shopping around is an open-ended activity which includes recreational purposes and an autonomous realm of experience and action. Shopping

around can include the elements of shopping for but it leaves open space for recreational activities (Bowlby, 1997; Falk & Campbell, 1997).

Shopping is different from buying since buying is the fulfilment of a predetermined aim while shopping contains a degree of aimlessness. It requires a certain and larger amount of time and money. In this sense, shopping is a life pattern in which people have their leisure time in their hands (Gruen, 1973). Shopping as an activity that is done for its own sake; it is done for pleasure. Shopping as a leisure activity enables people to spend time together and that enables shared creation of taste and style which affects the process of social identification and provides means for the creation and maintenance of social relations. After the 2nd World War, the access to consumption by working class greatly increased through a rise in their purchasing power and this gave way to the emergence of a mass market and the consumerist society. In 1950s, the accessibility to consumer goods began to transcend social classes and the status implying qualities of consumption had become quite clear. The introduction of credit card was an important development for this change. Contemporary consumption is more diversified since the market is segmented to serve the interests of the consumers. Shopping experience is an essential tool for overcoming alienation and for forming identity for many people who lack the intensity of public culture.

2.9 THE CHARACTERISTICS OF GALLERIA

The development of shopping centres are due to economic, political and social forces which rise due to increase in car ownership, the growth of female labour force and the moving of middle-class out of cities (the process of suburbanization) But, today, galleria all over the world are not only growing outside cities close to middle and upper class residences, also at locations not far away from the city centres. Privately owned and managed gallerias are fully enclosed, totally pedestrianized and controlled environments with adequate parking facilities and multi functions. Separated from the rest of the world, they provide a comfortable, peaceful and secure shopping and leisure environment away from the effects of weather conditions and from the fears and risks of city streets and other deteriorated public spaces of the city. Their artificially lit interior spaces are good-looking, well maintained and always clean.

Balazs (2001) claims that the effect of globalization on retailing lead to the emergence of 'retail globalization' and relatedly the homogenization of shopping and leisure behaviours. As a result, similar commercial developments are taking place in many different countries since developers tend to import solutions that are already experienced in other countries. Fully enclosed shopping centres are components of the rationalized society. Galleria provides a predictable, uniform and profitable environment. From the perspective of their economic characteristics, Cox (2001) discussed how galleria could be efficient for both retailers and consumers;

i. They are cost-efficient for retailers since the collection of shops and department stores under one roof attracts large numbers of people to these places. They are efficient for customers since at the same time they can visit several shops and stores and can engage in different activities like seeing a movie or a theatre show, eating something in the food court, have their children to play, have their dresses cleaned or have their hair cut.

ii. Galleria have a particular appeal to women where other marginal groups like elderly, adolescents and minorities are kept subject to traditional societal exclusion. Galleria as one of the public spaces of contemporary cities, have brought about the feminization of public spaces. Women have felt more comfortable and secure in the well-controlled public space.

iii. Galleria serves as primary sites of recreational shopping which is the extension of the recreational role of city centres. Other words, city centre are a complex of Galleria but they differ in terms of accessibility, control over space and artificiality. Although the differentiation of urban space and the concentration of retail and recreational functions is not a recent trend, contemporary shopping centres have changed the configuration both in response to the shifts in consumer mentality and as physical entities shaping both the cityscape and the spatial practices of its inhabitants. The rapid development of Galleria is a kind of response to the decaying vitality and increasing fear of city centres and street life. Galleria provides a domestic environment for family shopping where the degree of unfamiliarity (mostly in terms of class and race) is controlled through the mechanisms of exclusion. The unpredictability and uncertainty of city streets, which can easily lead to a feeling of fear, are generated into excitement through the controlled environment of the Galleria.

iv. The most apparent and crucial critics directed towards the rapid development of shopping centres is the declining retail sales of traditional shopping streets and town centres due to the development of Galleria. However, the reasons why consumers prefer shopping centres to town

centre include planning trends, shifting consumer tastes, the effects of economic recession, convenience, safety, cleanliness and variety of choice. Miller et al. (1999). Moreover, centrally owned and managed Galleria offered an alternative to the inefficient and chaotic city centres since a centralized administration achieved the mix and "scientific" placement of stores, meeting customers' diverse needs and maximizing store owners' profits in its most perfect way.

2.10 FUNCTIONS OF GALLERIA

Below are the functions of a galleria according to the Leisure Industries Research Centre (LIRC, 2000);

2.10.1 AESTHETIC AMBIENCE

Galleria provides a more pleasant atmosphere for shopping. it presents an attractive decor and interesting interior experience for shoppers. In fact, in recent years, Galleria interiors have developed from comfortable yet mediocre spaces into architecturally rich spaces with lavish materials and sophisticated design elements. In most cases, shoppers go to Galleria not only for shopping but to look at the interior design, to enjoy the architecture and to find unique crafts. This suggests that consumers may choose a Galleria based on some hedonic influences such as fitting their personal image and aesthetic preference, and also to experience the desirable aesthetic ambience.

2.10.2 ECONOMIC INCENTIVES

Galleria provides its users with the motivation to find good prices, to compare-shop to find the best for one's money and to hunt for a real bargain. In other words, consumers may go shopping at a specific shopping Centre or galleria because it provides better prices or economic incentives for shoppers

2.10.3 SOCIAL EXPERIENCE

Three items were involved in this factor which is; to talk with other shoppers, to simply enjoy the crowds, and to watch people Social Experience is considered hedonic motivation because it provides opportunities for social experience outside the home, such as meeting friends and

watching people. Furthermore, many reports have stated that more and more teenagers and elderly consumers go to Galleria not only for purchase or consumption purposes but for socializing, because galleria, usually provide a more comfortable environment than other public locations.

2.10.4 CONVENIENT SERVICE AVAILABILITY

Obviously, for some consumers, an important incentive for going to galleria is because they provide a variety of related services, such as banks and clinics. As consumers perceive their time to be increasingly limited and valuable, they are increasingly concerned with accomplishing different tasks on the same shopping trip. Thus, as displayed in this factor, utilitarian motivation is extended to combine assorted tasks in achieving the greatest efficiency and time saving.

2.11 ARCHITECTURAL QUALITIES OF GALLERIA

In an attempt to invite and facilitate shopping, galleria should be aesthetically appealing and not necessarily only an enclosure for a defined economic activity as against Merriam-Webster Dictionary. (Carr et. al., 1992) argues that it should develop architectural themes by creating special place and sense of time. Architecturally, this is done through materials, entrance treatment, and street furniture, shop front décor, floor treatment and lighting. But more importantly, the size and character of the main public space known as the major focal space usually sets the theme for the entire mall.

Carr emphasized that the entrance should be monumental, well-lit and heavily detailed which marks the transition from the everyday world to the world of leisure purchasing.

The entrance to galleria should be largely glass, transmitting what's awaiting the shopper inside. Pedestrian concourse in galleria should be straight forward to connect the anchor tenants and also connects the entrance to the major focal space. Circulation in galleria consists of entrances, concourses and one or more focal spaces. The focal space themselves may be an interior destination point, or a node that collects a series of intersecting concourses. The major purpose of the concourse it to connect the major anchor tenants and provides a pleasant passage and individual retailers. Seating and planting are added within the concourse to provide places of rest along the long trek.

The character of galleria is the quality it possesses that makes it different from other shopping malls, for instance if designed contextually, character is influenced by the location and surrounding architecture.

2.11.1 MATERIALS

Material selection encompasses at least three concerns i.e. cost, appearance and durability. Materials like granite, marble and limestone although they have a long lasting quality appearance are really used because they are extremely expensive and are required added design effort in detailing joints and corners. When used in a galleria, it gives a long lasting quality and appearance reminiscent of architectural palazzo and public spaces. Less expensive materials like brick, pre-cast concrete and wood have an enormous variety of colors; finishes and texture give a less elegant but more natural feel to the space. Reflective surface such as clear and mirrored glass, aluminum and stainless steel are moderately expensive and tend to give a more contemporary hard edged feel. Stucco and plaster mostly used in warmer climates are light and flexible. They too offer a wide variety of textures and colors. In shopping districts, materials should be complementary. They should not only relate the interior with the exterior of the building, but should be contextual with the surrounding area.

2.11.2 LIGHTING

Lighting is a very important element in galleria. Natural lighting creates more of a street atmosphere. In an enclosed space, natural lighting can be cleverly handled with the use of head skylight or clerestory windows which is a major characteristics of a galleria. Malls are sometimes lit artificially when they do not have access to sky. Natural light can also be used to direct pedestrians in a particular direction. A continuous illuminated path can control the direction and movement of the pedestrian towards entrances, exist and other major focal spaces. Natural light is an integral part of the character and image of any shopping spaces. It allows the character of the mall to change with the time of the day and to form a point of reference easily recognizable from the outside.

2.11.3 GALLERIA AURA

Shopping began as a direct response to satisfying a demand, but more that satisfying demand, Galleria has become activity centres where people venture for entertainments and leisure

activity. It creates an aura that emits excitement. They have in a sense become shopping Disneyland that recreates images, times and places that have little to do with shopping but very much to do with life. The colors, character, architectural themes form a world that recalls cherished urban spaces that were conceived and designed for the public. In recent times, many other uses have been added to the usual ingredients of shopping to form mixed use project. In essence, movie theatre, hotels, residential and office uses have been added to create an environment that feeds itself.

The opportunity to interact with people, the notion of multiple activities inside and adjacent to Galleria, the urban context, the theme, the materials and character all creates this aura. The Galleria is no longer merely a physical place where retail sales occur. It has become an integral part of the social structure of most communities and will continue to expand in that role in the future.

2.12 SHOPPER MARKETING IN GALLERIA

The increasing significance of shopper marketing as a retail discipline has provided added impetus for store-based retailers. Shopper marketing is defined as the use of insights-driven marketing and merchandising initiatives to satisfy the needs of targeted shoppers, enhance the shopping experience and improve business results and brand equity for retailers and manufacturers.

At the most basic level, the buying process is shaped and influenced by the stimuli encountered and perceptions created in bricks-and-mortar stores. Shopper marketing however goes beyond the transactional basics to include all activities and points of engagement along a path to purchase designed to influence brand awareness and preference and store selection in galleria experience. Retailers, it is proposed, need to develop a more holistic store engagement strategy to capitalize on all the opportunities that a store visit can present, not relying solely on supplier-driven shopper marketing initiatives, but instead developing a comprehensive and robust understanding of how a shopper's senses in galleria can be positively engaged and optimized in relation to the purchase process, in order to once again place the store at the heart of the decision-making process.

2.12.1 TOUCH

Central to consumer engagement in-store is the power of touch. Although virtual representations of products online can convey look, shape and colour but the sense of texture, temperature, weight and feel is realised only through touch.

Touch gives the consumer a sense of empowerment in their shopping experience which cannot be replicated online. It enables them to have a tactile interaction with the brand or product, thereby influencing their experience and subsequently their purchase decision. In fashion retailing, a lot of the decision-making is tactile. Shoppers like to feel the textiles as well as try the clothing on, fuelling emotions for inspirational decision-making. Beyond the traditional `product touch' approach in-store, intangible products can also be experienced and there are many other ways of bringing touch into the traditional retail environment. Kiosks with in-built touch screens have enabled many retailers to present more product information and choices to consumers, increasing their product knowledge and simplifying the purchase decision.

2.12.2 SOUND

Research has consistently revealed that music and sounds influence the shopping experience in retail environments and can affect consumers in very tangible ways. It's important for retailers to consider the soundscape of the retail environment, especially as the perceived congruence between music and the brand or retail product has proven to affect consumers' in-store response, dwell time and perceptions of brand. As our auditory sense is keenly developed, unattractive or unappealing sounds can literally drive customers away, but by the same measure the targeted or timed use of sound stimulation can be used to attract or maintain shoppers in a galleria. Creative mood and ambience music can also be used strategically in relation to service used to modify the shoppers' negative perceptions of crowded retail environments when slow-paced music is played. The type of music played in-store has also been identified as tangibly influencing shopper moods. While happy music fosters positive buying emotions and can lead to customers spending more time in store. Consumers tend to underestimate time when their auditory senses are positively engaged. It's critical to ensure that the music experienced in galleria reflects the consumer's perception of brand. Although there was no direct evidence in this case of increased spending, but choosing the right music did increase the potential selling time available to the business. Music should add to the ambience of galleria, but, unless it is crucial to the product and market, should not be so loud to be immediately noticeable. It should however mask the

sounds of customers moving about, employees working or the conversations of people across the room in the galleria.

2.12.3 SCENT

Our sense of smell is highly developed and like our auditory senses different odours can evoke different moods, perceptions and emotions. Scent has the power to strongly influence people because it has a direct connection to the emotional seat and memory centre of the brain. Scent can be used strategically for many purposes in retail and consumer environments. For retailers and manufacturers looking to attract customers and develop a long-lasting relationship with them, emotion and memory are critical connections and should be some of the top goals of their marketing campaigns and branding efforts

Increasing numbers of fashion retailers have created a 'brand-scent' for example, although established technology enables particular parts of the store and specific products within it to offer diverse olfactory experiences. Scent can be used to attract consumers to specific parts of the store and can prompt strong brand and product recall. Scent can also prompt positive (or negative) associations and memories and can assist in the formation of a stronger bond between retailer and consumer. Scent can also be used overtly to achieve a particular purpose or covertly to change behaviors to the retailer's advantage without necessarily being noticed by the shopper. Research has shown that scent has the ability to improve people's mood, make them happier, make them more alert, reduce anxiety and make them more willing to help and get along with others. Used alongside other positive brand experiences such as high product quality and excellent customer service, scent marketing is a win-win situation for both the company and the customer. There are obvious ethical issues in relation to the covert use of scent to change behavior but the fact remains that many retailers do not optimize store or category scent management. . Scent devices have been developed to disburse realistic scents into the air using fans rather than sprays, enabling a more authentic scent experience.

2.12.4 AMBIENCE

Subtle factors experienced through the senses - either individually or collectively can affect our sentiment in relation to degree of relaxation, stimulation and perceived market position. According to research differing light and temperature combinations act to influence our

perceptions of the retail offer, with soft or warm light tones and cool or warm temperature variables creating different perceptions in diverse product sectors . It's vital for retailers to determine how these key ambience factors are optimized in relation to their brand and product offer, by capitalizing upon both academic research and industry best practice.

2.13 CRIME PREVENTION IN GALLERIA

Certain building and site design techniques have a positive effect on reducing the instances of crime. Crime Prevention through Environmental Design is an internationally recognized collection of design principles for the built environment, both indoors and outdoors. These principles encourage users of a building, park, or street to feel safe about their surroundings while discouraging would-be criminals from engaging in anti-social behaviour. (Peponis et. al. 1997)

2.13.1 NATURAL SURVEILLANCE

Eyes on the street and eyes from the street are two phrases that describe the concept of natural surveillance. Allowing people to see their surroundings, weather inside or outside of the galleria, will prevent people from "sneaking up." Additionally, people are attracted to well-designed buildings and sites. When people look at a building, they are also observing the activity around it. An unattractive building discourages people from looking at it, thus giving criminals their necessary cover to commit a crime. Hiding spaces around the galleria should be reduced or eliminated through proper placement of windows, landscaping, reception areas, and front offices.

2.13.2 TERRITORIAL REINFORCEMENT

The way that spaces are defined can give a welcoming feel to wanted users or an unwelcoming feel to undesired users. There are three divisions of space:

(i) Public Space. This space is typically where anyone in the galleria is free to travel. Such examples would include public streets, sidewalks and car park. The spaces are open and visible. Few or no barriers exist to control entry to these spaces.

(ii) Semi-Public Space. Semi-public spaces are areas that are open for people conducting business or have regular permission to use, either supervised or unsupervised. Examples include cinemas, food court, open sit-out, circulation lobby and retail stores. A person could enter a store

to shop or browse. A person would feel comfortable in these spaces doing limited or specified activities, but uncomfortable doing other things. Few or no physical barriers may exist to control entry to these spaces

(iii) Private Space. This space is designed specifically for the owner or user. Examples would include an employee's office, or a retail store's back room. Uninvited or unauthorized people would feel uncomfortable in these spaces or feel as if they were not supposed to be there. Typically, there are barriers or controls established to limit access into these spaces.

Providing clearly defined spaces will help reinforce feelings of comfort in authorized users and discomfort in unauthorized users.

2.13.3 BUILDING DESIGN

The following design principles aid in positive visibility for a building. These principles can be applied in both commercial and residential situations.

(i) Visible Entrances. Locating the main entrance of the galleria in an area clearly visible from the street serves two functions; it assists building users in identifying the building and it allows law enforcement personnel to monitor the entrance during routine patrol.

(ii) Windows. Windows create a welcoming feeling from the outside. They also allow users of the building to see people approaching the building. The use of some unobstructed opaque windows should be used in every business and multi-family application, especially near entrances.

(iii) Gathering Spaces. People tend to feel safe when in groups. Provision of places for people to interact inside galleria should be encouraged wherever possible.

(iv) Building Placement. Orientating building towards the public right-of-way provide opportunities for people of all mobility types (drivers, pedestrians, and transit users) a means to access the building easily. Typical suburban building placement places buildings away from the street and away from each other. The only way to access these buildings safely is by automobile. When a building is placed close to a street, it gains more attention from users of the adjacent streets and sidewalks. Additionally, buildings that are isolated from each other do not allow for natural surveillance that close buildings enjoy.

2.13.4 SITE DESIGN

2.13.4.1 LANDSCAPING

Landscaping can be used in a variety of ways some of which are discussed below to both enhance a site visually and detract crime. Improperly placed landscaping can also give a potential criminal a place to hide.

Territorial Reinforcement: Trees and shrubs, planters, walkways, fences and walls, and other landscape features help define a space into public, semi-public, and private areas. The landscape design should be created with this in mind.

Screening: Berms, fences, and landscaping used for screening purposes should be designed based upon the adjacent land uses and for what is being screened. For example, when screening parking lots from adjacent roadways, screening only needs to be high enough to shield vehicle headlights. Building design should be considered first when placing loading and waste areas. Fencing and walls may be a better screening tool than berms and should be considered.

2.13.4.2 PARKING LOTS AND STRUCTURES

Adequate convenient parking is essential for businesses success. Proper design and placement of a parking lot or ramp can provide safety for its users and protection of the vehicles and property. Visibility from the building or public areas is critical in providing safety for its users as well as discourages improper use of the lot (i.e. loitering).

2.13.4.3 LIGHTING

Proper lighting can create a welcoming feel to galleria as well as thwart criminal activity. Proper exterior lighting enhances the architecture of galleria and provides a safe environment. Poor lighting on the other hand, focus attention in the wrong area, create shadows, and/or glare. Different light sources produce a different colour light choosing the right colour is important based on the use and setting.

Moreover, roadway lighting is primarily designed for vehicle safety. A secondary effect of street lighting is pedestrian safety and comfort. Street lighting can be effective with shorter standards that more pedestrian in scale. Another effect of street lighting is providing security lighting to adjacent properties.

2.13.5 SOCIAL INTERACTION

Positive constructive social interaction between residents of Ado and Ekiti State in general will have long lasting benefits on the galleria. The galleria will offer many opportunities for residents to participate in organized or passive social interaction. Youth and adult sport and wellness programs will allow the people to interact with other residents in the community in a positive and safe environment.

CHAPTER THREE

3.0 CASE STUDIES

3.1 CASE STUDIES AND COMPARATIVE ANALYSIS OF EXISTING SIMILAR STRUCTURES

In carrying out a successful research, there is need to adopt research methodology in getting information and data. Case study is the primary tool adopted for the purpose of this research. In this aspect of the research work, analysis of selected and existing galleria and shopping malls will be used as a basis for drawing conclusion for the research work. Five case studies were carried out among which three are modern galleria and shopping centres in Nigeria. The studies include personal interview and direct observations of the approximate dimensions, site layout, facilities, climatic control, space relationship, why they attract patronage, the impact on their neighborhoods and retail activities in general. Two international case studies of galleria were also carried out through internet. Photographs were taken to enrich the studies.

3.2 CASE STUDY I: THE IKEJA MALL, ALAUSA IKEJA, LAGOS

3.2.1 LOCATION

Ikeja City Mall was opened for business in December 2011 welcoming 45,000 visitors on its first day of trading. It was built on 28,500square meter land close to Lagos State secretariat AlausaIkeja Lagos. It was built to service the Lagos mainland, the Ikeja City Mall hopes to return the suburb to its former standing as the traditional retail hub of Lagos.

3.2.2 SITE LAYOUT

The Mall comprises 27,000 square metres of gross built area and 23,000 square meters of lettable area. The space accommodates nearly 100 shops including Shoprite's latest generation store of over 4,400 square metres. Bounded by access roads on three sides, the five hectare site is ideally positioned for convenient parking and shopping. Waste treatment plant is located at the rear of the facility. There are also three entrances for access and exit to the complex.

3.2.3 DESIGN DESCRIPTION

The design of the Ikeja Mall is modern, simple and accommodates about 64 shops, fully air-conditioned, and has ample external parking spaces. There is large food courts, cinema halls, display area for car sales, and is environmental friendly. The complex is finished externally in aluminum and glass, natural stone and paint.

3.2.4 CIRCULATION

The shops are arranged along the corridor for the shoppers to have a good view of the merchandise and for easy access to the shops. Escalators and elevators were located at the centre of the Mall for easy upward and downward movement of the shopper in the Mall.

3.2.5 VENTILATION AND ILLUMINATION

Natural and artificial lighting systems are provided for in the Mall especially along the corridors and centre of the Mall which are treated with atria with skylights to admit daylight into the mall interior. The shops are lighted with artificial lightings to make them attractive to the shoppers. Artificial ventilation is being employed in the Mall with the use of ducting air-condition systems

3.2.6 MERITS

- Ample vehicular parking space
- Apart from the cinema Halls, the other mall facilities are located on the ground floor making it convenient for visitors to move around
- Provision of various entry and exit points
- Simplicity of design resulting in ease of circulation within the building
- Provision of goods warehouses

3.2.7 DEMERITS

- The absence of an events and meeting halls to cater for meeting, conference and civic activities of the community
- Inadequate provision of shops
- Food court area relatively small and inadequate
- Absence of green areas externally to soften the hard landscape

Plate 3.1: Southern view of the Ikeja Shopping mall, Alausa, Ikeja, Lagos
Source: *Researcher's field survey (2015*)

Plate 3.2: Southern view of the Ikeja Shopping mall, Alausa, Ikeja, Lagos

*Source: Researcher's field survey (201*5)

Plate 3.3: Interior view of the Ikeja Shopping mall, Alausa, Ikeja, Lagos

*Source: Researcher's field survey (201*5)

Plate 3.4: Interior view of the Ikeja Shopping mall, Alausa, Ikeja, Lagos

*Source: Researcher's field survey (201*5)

Plate 3.5: Interior view of the Ikeja Shopping mall, Alausa, Ikeja, Lagos

Source: Researc*her's field survey (201*5)

3.3 CASE STUDY II: THE SILVERBIRD GALLERIA, VICTORIA ISLAND, LAGOS.

3.3.1 LOCATION

Silverbird Galleria is located at 133 Ahmadu Bello ways, Victoria Island, Lagos. The Galleria was opened for business in 2004. Silverbird Galleria has been credited for bringing back the movie cinema culture to Nigeria.

3.3.2 SITE LAYOUT

Silverbird Galleria was built on a small portion of land on the Island. The Galleria is built very close to the road with very few parking spaces. No pedestrian walkway to differentiate vehicular from pedestrian routes this is due to inadequate land used for the building. With five (5) Super screen cinemas, Silverbird Galleria, Lagos, continues to provide Nigerians and the expatriate

community blockbuster movies in an environment and ambience that is comparable to, and sometimes arguably better than, the service quality available in developed markets.

3.3.3 DESIGN DESCRIPTION

The Galleria is a three storey building with only one entrance and an exit. It has very few retail shops on each floor. The Galleria is a popular hangout where people generally come to see recent Hollywood blockbuster movies as well as shop and have fun. Located within the galleria is Saffron Restaurant offering a mixture of Nigerian and intercontinental food that is simply great, exquisite shopping outlets and a night club called Cubes which prides itself as one of the best club hangouts presently in Lagos.

3.3.4 CIRCULATION

There is a good circulation for the shoppers coming into the Galleria. There is an open circulation area on the ground floor which allows free flow of movement of the shoppers. The open circulation is covered with skylights to allow day lighting into the Galleria. lifts are provided at the Galleria to facilitate movement of shoppers. The corridors in front of the shops are wide enough for free passage of shoppers.

3.3.5 VENTILATION AND ILLUMINATION

The ventilation and lighting to the Galleria is supplied naturally and artificially. The Galleria has a well-designed artificial lighting and also enjoys natural lighting through the skylights. Central air-conditioning system provides the needed ventilation for the Galleria.

3.3.6 MERITS

- The complex provides for four number Cinema halls
- The complex has various exhibition and civic halls
- There are various food courts

3.3.7 DEMERITS

- Inadequate Car parking spaces leading to traffic and congestion on the major road (Ahmadu Bello way, Victoria Island, Lagos)

- The structure is located too close to the major road
- Absence of pedestrian walkways to separate pedestrian from vehicular traffic
- Absence of delivery and offloading bays
- Absence of storage warehouses
- Inadequate number of shops

Plate 3.6: Exterior view of the Silver Bird Galleria, VI, Lagos.

*Source: Researcher's field survey (201*5)

Plate 3.7: Interior view of the Silver Bird Galleria, VI, Lagos.

Source: *Researcher's field survey (201*5)

Plate 3.8: Interior view of the Silver Bird Galleria, VI, Lagos.

*Source: Researcher's field survey (201*5)

Plate 3.9: Interior view of the Silver Bird Galleria, VI, Lagos.

*Source: Researcher's field survey (201*5)

3.4 CASE STUDY III: COBB GALLERIA CENTRE, ATLANTA UNITED STATE

3.4.1 OVERVIEW

The Cobb Galleria Centre is a meeting and convention centre and a shopping centre in the Cumberland/Galleria District of Cobb County, in Northwest Atlanta, Georgia, in the United States. It is also located next to a cluster of mid-rise office buildings, the Cumberland Mall and the Cobb Energy Performing Arts Centre. Cobb Galleria was opened in 1994 and its banquet/ballroom houses about 7,500 people.

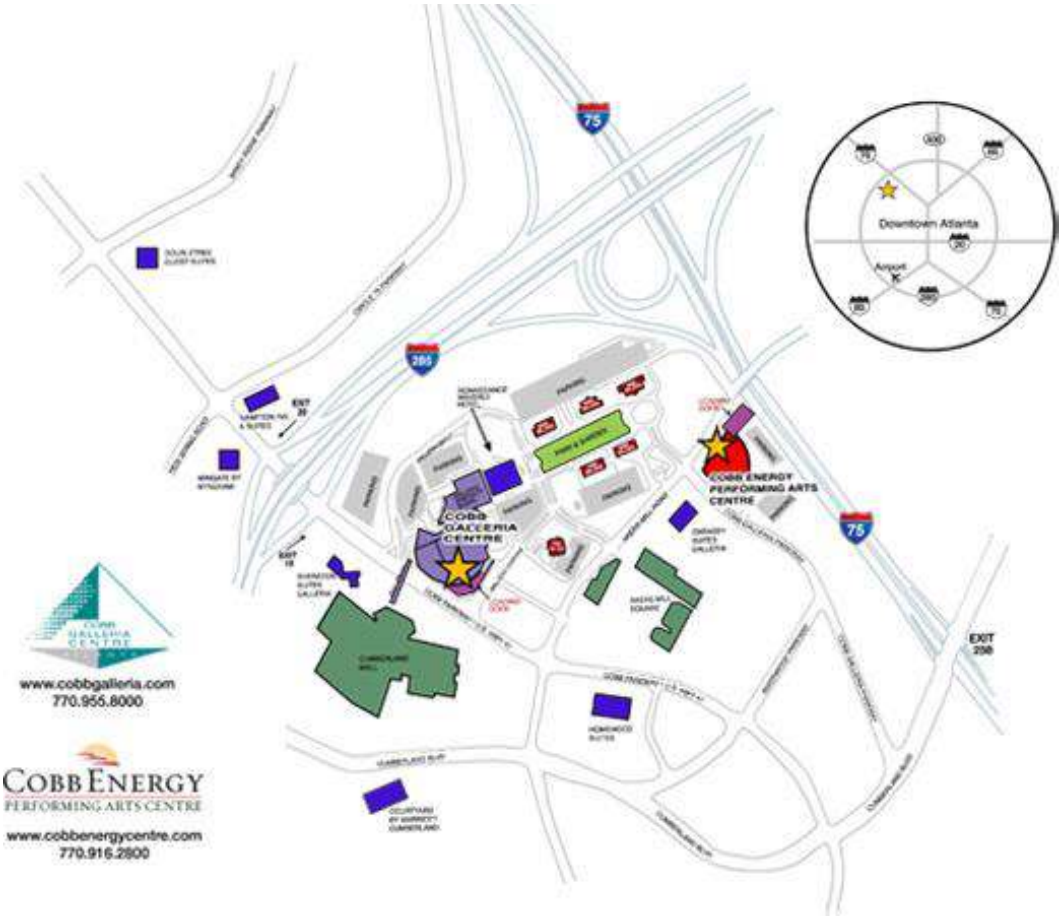

Plate 3.10: Picture showing the site layout of Cobb Galleria

Source; www.google.com (2015)

Plate 3.11: Ariel view of the Galleria

Source; www.google.com (2015)

Plate 3.12: Showing the access to the Galleria

Source; www.google.com (2015)

3.4.2 Site Layout

The Galleria has about 13,400 square meters of the exhibit space, a 2,300 square meter ballroom, 20 meeting rooms and 4 executive boardrooms. Located within the Galleria complex is an 88acre upscale office/retail/hotel area, the Centre is connected to the Galleria Specialty Mall and the 520 rooms Renaissance Waverly Hotel. Accessible by a pedestrian sky bridge are the Sheraton Suites Galleria Hotel and Cumberland Mall.

Plate 3.13: 2-D view of the Approach of Cobb Galleria Centre

Source; www.google.com (2015)

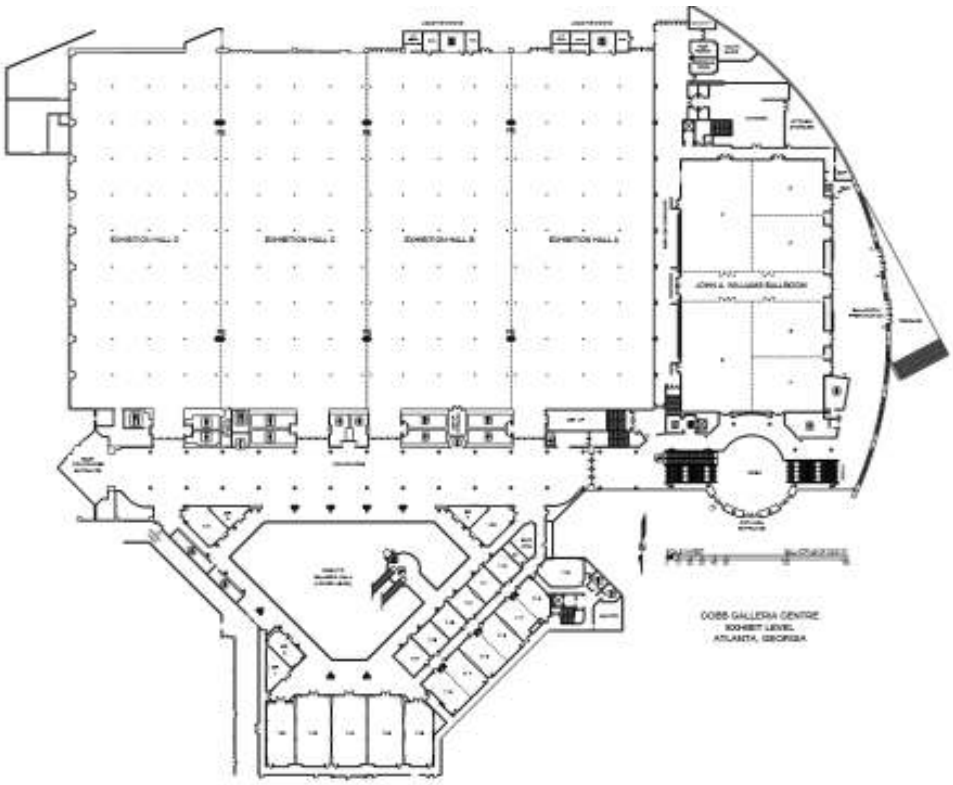

Plate 3.14: Picture showing the ground floor plan of the Galleria

Source; www.google.com (2015)

Plate 3.15: Picture showing the swimming pool within the Galleria

Source; www.google.com (2015)

Plate 3.16: Picture showing the ballroom in the Galleria

Source; www.google.com (2015)

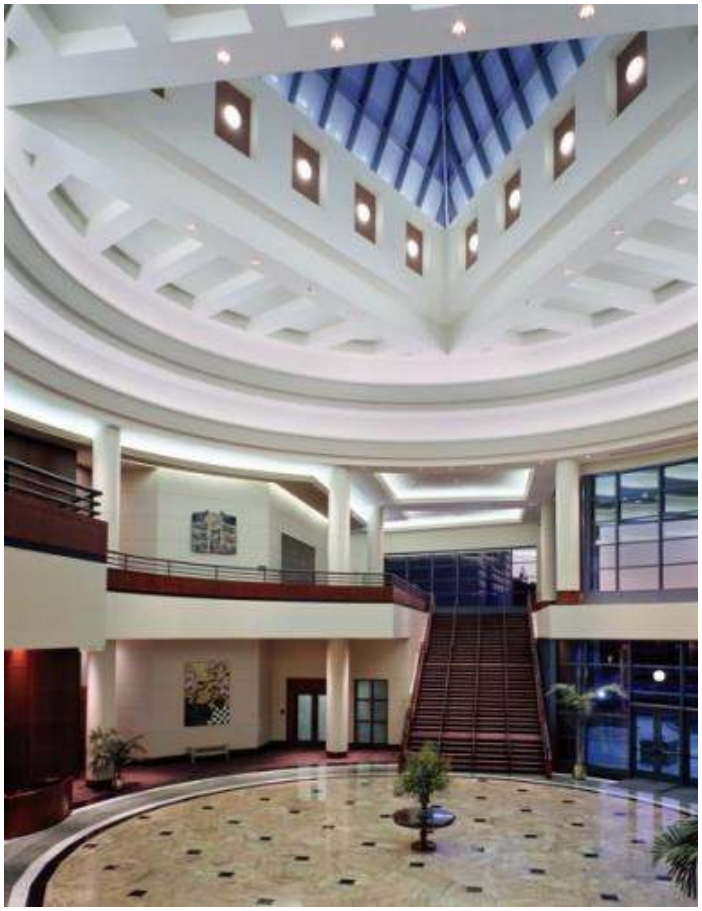

Plate 3.17: Picture showing the ballroom in the Galleria

Source; www.google.com (2015)

Plate 3.18: Picture showing the grand lobby in the Galleria

Source; www.google.com (2015)

3.4.3 MERITS

- Good aesthetical use of sustainable materials even when they serve functional usage.
- Provision of separate entrances for visitors and goods and services.
- Simplicity of design resulting in ease of circulation within the building.
- Good pedestrian control.
- Purpose built structure.
- Disable friendly building i.e presence of ramps and slopping floors.
- Adequate spaces to accommodate circulation and adequate recreation users.
- Good waste management systems available.
- Adequate circulation and space management.
- Ample vehicular parking space.
- Some of the landscape elements are perennials plants instead of annuals in flower beds, perennials grow deeper roots and requires less watering.

3.4.4 DEMERITS

- No sitting area for users.
- Inadequate natural lighting available
- Building depends solely on artificial power generation.
- Inadequate sitting areas provided for shoppers.

3.5 CASE STUDY IV: TYSON GALLERIA, VIRGINIA UNITED STATE

3.5.1 LOCATION

Tyson Galleria was opened for business in 1988 located at 2001 International Drive, Mclean Virginia, United State. The Galleria is strategically located adjacent to Ritz Carlon hotel which is accessible from inside the Galleria.

3.5.2 SITE LAYOUT

The total retail floor area of the Galleria is about 74,000 square meters. The Galleria accommodates over 120 shops with three Anchor Tenants. Provisions were made for ample parking spaces for employee, shoppers with reserved parking spaces for the consistently big-spending customers.

3.5.3 DESIGN DESCRIPTION

The galleria is an upscale three-level super regional shopping centre which opened with departmental stores, Niman Marcus and 5^{th} avenue in 1988. The galleria was renovated to appear more like a European streetscape and expanded in 1997. The interior was lightly remodeled to appear less like a spacewalk and attracted high end tenants. Tyson galleria was rated one of top 15 sales producing shopping centres in 2003.

3.5.4 CIRCULATION

The interior acts as a transitional lobby space that welcomes the shopper and knits the retail spaces together, providing a warm environment conveyed with exquisite details, yet minimalist design catering to this sophisticated consumer. Provision of escalators, lift and staircases at the Galleria makes upward and downward movement possible.

3.5.5 VENTILATION AND ILLUMINATION

Artificial lighting systems are provided for in the Galleria. Recessed lighting are used fixtures unless with decorations (pendants, chandelier, and wall sconces). Lighting design combine the use of ambient light and accent light in creative methods that highlight the displays and merchandise. Concealed track lighting painted to match the adjacent ceiling finish are used in the Galleria.

Showcases and display cases are adequately vented. Light sources are fully concealed to avoid glare.

Artificial ventilation is being employed in Galleria with the use of ducting air-condition systems.

3.5.6 MERITS

- The Galleria has an efficient circulation system
- Specialized vehicular parking space
- The Galleria is Energy efficient.
- There is enough provision for entertainment and relaxation
- Provision of various entry and exit points
- Simplicity of design resulting in ease of circulation within the building

3.5.7 DEMERITS

- Location of shops within the Galleria is difficult due to many Hall ways
- The absence of an events and meeting halls to cater for meeting, conference and civic activities of the community
- Absence of green areas externally to soften the hard landscape

Figure 3.1: Ground Floor Plan of Tyson Galleria, Virginia United State

Source: Wikipedia, the free encyclopedia (2015)

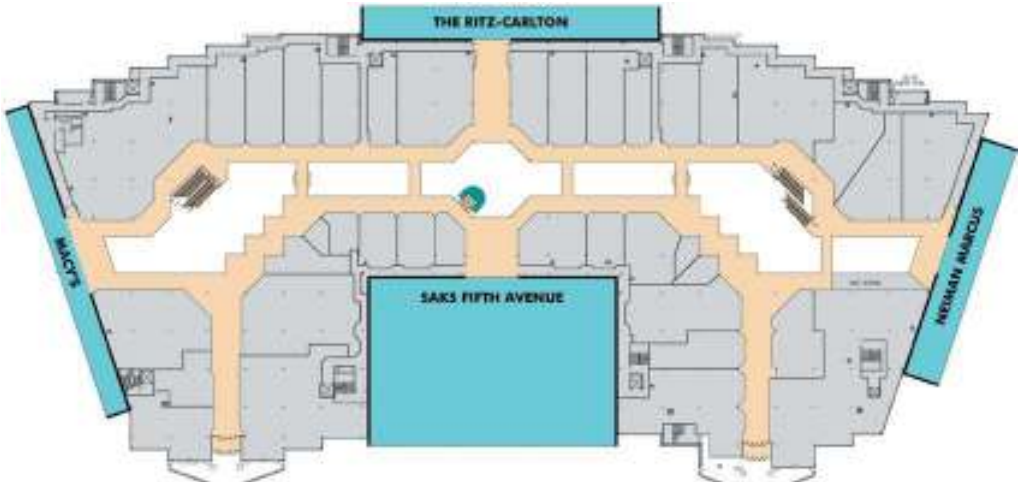

Figure 3.2: First Floor Plan of Tyson Galleria, Virginia United State

Source: Wikipedia, the free encyclopedia (2015)

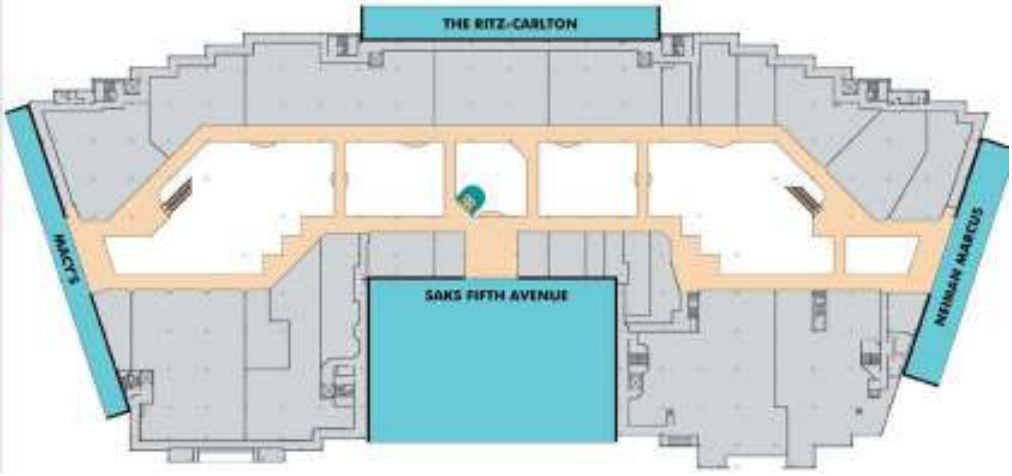

Figure 3.3: Second Floor Plan of Tyson Galleria, Virginia United State

Source: Wikipedia, the free encyclopedia (2015)

Plate 3.19: Aerial View of Tyson Galleria, Virginia United State

Source: Wikipedia, the free encyclopedia (2015)

Plate 3.20: Exterior View of Tyson Galleria, Virginia United State

Source: Wikipedia, the free encyclopedia (2015)

Plate 3.21: Interior View of Tyson Galleria, Virginia United State

Source: Wikipedia, the free encyclopedia (2015)

Plate 3.22: Interior View of Tyson Galleria, Virginia United State

Source: Wikipedia, the free encyclopedia (2015)

Plate 3.23: Interior View of Tyson Galleria, Virginia United State

Source: Wikipedia, the free encyclopedia (2015)

3.6 CASE STUDY V: DLF GALLERIA, MAYUR VIHAR, NEW DELHI, INDIA.

3.6.1 LOCATION

DLF Galleria is located at Mayurplace,MayurVihar, East Delhi, Delhi 110091, India about 30kilometers to both domestic and international airport in India. The Galleria is also 2.5kilometers away from Akshardham Temple and Commonwealth Games Village.

3.6.2 SITE LAYOUT

The Galleria occupies approximately 13,935 square meters. The Galleria accommodates retail Arcade, Hypermarket and Gourmet. It has surface parking which contains over 500cars. The Galleria is accessible through Nodal link road.

3.6.3 DESIGN DESCRIPTION

DLF Galleria incorporates everything needed in a galleria to provide a high class shopping experience. The galleria has various entrance located on all sides of the building which gives easy access to the building. It is three floors building with a very wide hallway with over 500 parking spaces.

3.6.4 CIRCULATION

The galleria has a good circulation for shopping. The hallways are wide enough with the retail shops arranged in both sides. There are service corridors adjacent to the hallways, which serve each retail shop apart from the main shop entrances.

3.6.5 VENTILATION AND ILLUMINATION

DLF galleria has a good lighting system from artificial and natural means. The presence of a laminated glass skylight above makes daylight preferred above artificial lighting during the day. The galleria is well ventilated mostly with the use of mechanical devices. (Central Air conditioning system)

3.6.6 MERITS

- Adequate parking of over 500 spaces
- The galleria has seats in strategic places along the hallway for shoppers
- Good illumination through the skylight above the atrium
- The galleria has beautiful and interesting interior finishing

3.6.7 DEMERITS

- The absence of an events and meeting halls to cater for meeting, conference and civic activities of the community
- Absence of green areas externally to soften the hard landscape

Plate 3.24: Exterior View of DLF Galleria, MayurVihar, New Delhi, India.

Source: Wikipedia, the free encyclopedia (2015)

Plate 3.25: Interior View of DLF Galleria, MayurVihar, New Delhi, India.

Source: Wikipedia, the free encyclopedia (2015)

Plate 3.26: Interior View of DLF Galleria, MayurVihar, New Delhi, India.

Source: Wikipedia, the free encyclopedia (2015)

Plate 3.27: Interior View of DLF Galleria, MayurVihar, New Delhi, India.

Source: Wikipedia, the free encyclopedia (2015)

3.7 DEDUCTIONS FROM CASE STUDIES

3.7.1 LOCATION

The location of a galleria is important, it was noted that all the case studies used for this research work were properly located. They are close to Central Business district as well as to residential areas and in close proximity to available markets.

3.7.2 SITE LAYOUT

The Malls and Gallerias studies were well designed in terms of site layout. Except for Silverbird Galleria which have inadequate setback and parking which pose a great threat to shoppers and the owner of the galleria, others have enough setback and parking around them. Therefore, it is appropriate for a galleria to have adequate parking spaces with landscaping elements to define and arrange in such a manner that vehicular movements can be controlled effectively.

3.7.3 ILLUMINATION

Artificial and natural lighting were put into consideration in the design of the structures except DLF galleria and Tyson Galleria, where provision of natural lighting was inadequate, other case studies made minimum consideration for day-lighting through the use of skylight and sidelights in the retail stores. It can be concluded that provision of daylight in galleria through the use of skylights is necessary in galleria design. Infact one major thing that differentiates galleria from shopping mall is the use of skylight.

3.7.4 CIRCULATION

Provision of generous entrance halls to allow for ease of flow of users.Circulation is the movement of shoppers and goods in, out and around the galleria. It was discovered in the case studies that the best circulation is one that makes provision for larger circulation area and circulation medium that allowed free movements of shoppers at the same time, service lobbies should run through to the shops and many entry and exits points. Large lobbies need to be created to allow for easy circulation.

3.7.5 ACCESSIBILITY

Provision of mixed-use (commercial) spaces within the galleria such as cinemas, restaurants, shops, business and financial services, among others which makes them a one stop recreational location.Importance was attached to ease of access and movement for visitors and service requirements. There is provision of separate access for visitors and services (such as deliveries) in the various facilities.

3.7.6 STORAGE FACILITY

Provision of loading docks with direct access to storage and display areas to facilitate ease of delivery of wares.

3.7.7 SECURITY

They are usually a beehive of activities so security and comfort of user is necessitated.

CHAPTER FOUR

4.0 SITE / PROJECT ANALYSIS AND PROPOSAL

4.1 HISTORY OF EKITI STATE

Ekiti State was created on 1st October, 1996 alongside five States by the late Head of State and Commander-in-Chief of the Armed Forces of the Federal Republic of Nigeria, General SaniAbacha (GCON) in a nation-wide broadcast to mark the 36th independence of Nigeria. The state which was carved out of the old Ondo State has its headquarters located in Ado Ekiti and it covers the twelve local government areas that made up the Ekiti zone of the old Ondo State. However, Ekiti State on creation took off with sixteen local government areas, having had additional four carved out of the old ones.

4.1.1 SITE SELECTION

The chosen site for the location of the Galleria should suit the purpose for which it is intended. Of utmost priority in the choice of the site against all other odds was its vintage location nearness to the local government secretariat and other existing facilities, both natural and built. Another interesting justification for the site selection is the availability of a small spring which would be expanded to making an interesting water park on site so as to promote tourism which is one of the foci of this research.

4.2 SITE LOCATION CRITERIA

Meticulous analysis and the study of several factors based on the demands of the project led to the selection of the site. The appropriateness for choosing the site was not without consideration for the following conditions:

1. The site being close to the core of town at the State Capital; in line with the 20th Century City Beautiful Movement.

2. The natural beautiful scenery that nature provides in this area gives it the touch of comfort and relaxation that Galleria needs.

3. The closeness to neighborhood market, new general hospital, though still under construction, ministry of agriculture, school and the Local Government Secretariat gives an advantage of attracting users to the Galleria.

4. Future development opportunities which the project would attract to the part of town and the host neighborhood in particular.

4.3 SITE LOCATION AND DESCRIPTION

Ekiti State is situated entirely within the tropics. It is located between Longitudes 4°45‘ to 5°45‘ East of the Greenwich meridian and Latitudes 7°15‘ to 8°5‘ North of the Equator. It lays South of Kwara and Kogi States as well as East of Osun State. It is bounded in the East and South by Ondo State. The State is mainly an upland zone. It rises above 250 metres above sea level and it lies within the areas underlain by metamorphic rocks of the basement complex. It has a general undulating surface with a characteristic landscape that consists of old plains broken by steep sided-out of-crops dome rocks that may occur singularly or in groups. Such rocks are common sights at Ado-Ekiti (the State Capital), EfonAlaaye, Ikere-Ekiti and Okemesi-Ekiti. The State is dotted with rugged hills; the notable ones among them are Olosunta, Ikere-Ekiti Hills in the Southern part, EfonAlaaye Hills on the Western boundary of the State and Ado-Ekiti Hills in the Central part of the State

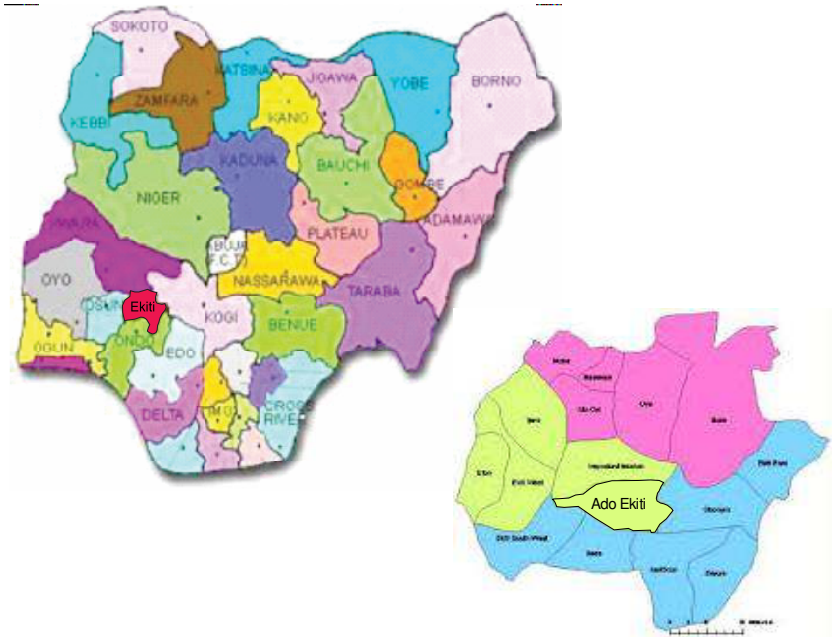

Plate 4.1: Maps showing Nigeria, Ekiti and Ado Ekiti study areas.
Source: Google earth, (2015)

Plate 4.2: Showing the Ado Ekiti city core map

Source: Google earth, (2015)

Plate 4.3: Showing the neighbourhood map

Source: Google earth, (2015)

4.4 SITE ANALYSIS AND INVENTORIES

The proposed site is located at Ado-Ekiti

Plate 4.4: Showing the Chosen Site
Source: Field survey, (2015).

4.4.1 SITE ANALYSIS

A thorough analysis of the project site that enhances an in-depth understanding of its suitability to the intended purpose is necessary. The reason is to achieve the aim of the design. Site analysis helps in the functional development of the relationship that exists between the site and the structure. Every design solution should aspire to be a function of the site and also a direct reflection and adaptation of its environment. This is the principle of Organic Architecture.

Plate 4.5: Showing the site analysis
Source: Field survey, (2015).

4.4.2 SITE INFORMATION

The total area of the site is approximately 17 hectares. To the East of the site is the undeveloped large expanse of land and to its West is the new general hospital. To the north of the site are the new Moferere neighbourhood market and Moferere nursery and primary school. On the Southern part of the site is the Moferere neighborhood.

Plate 4.6: Existing General Hospital to the west of the site

Source: Researcher's field survey (2015)

Plate 4.7: Existing Palm Plantation to the east of the site

*Source: Researcher's field survey (201*5)

4.4.3 ACCESS ROAD

The site is accessible from the Agric road coming off Akure – Ado road, leading to the east-west axis of the site and spitted into two at the starting edge of the site, one continues along the formal axis and the other along the north-south axis, thereby making the site a corner piece. Both roads are tarred.

4.4.4 TOPOGRAPHY

The site slopes gently downwards towards the South-East direction.

4.4.5 VEGETATION

The site is thickly covered with weeds and not trees; there are obviously no trees on the entire land.

Plate 4.8: Showing the vegetation of the site
*Source: Researcher's field survey (201*5)

4.4.6 EXISTING INFRASTRUCTURE

There is easy access to electric power from the Benin Electric Distribution Company of Nigeria which is the second (after road access) physical infrastructure available on the site. Pipe borne water is not available and so alternative sources of water supply must be provided.

Plate 4.9: Showing the power line adjacent the site

*Source: Researcher's field survey (201*5)

4.5 GEOGRAPHICAL / CLIMATIC DATA

The climatic comfort that is experienced at Ado-Ekiti is a function of the moderate temperature and the relative high humidity. Ado-Ekiti like most part of Nigeria falls into two (2) distinct climatic Zones: the wet and the dry seasons. But at times they experience the extremes of the condition of these two seasons. Also, these two seasons are marked by the sun's position when it is in the Northern Hemisphere and when it is South of the Equator. In temperate lands where the movement of the sun causes wide variations in temperature, the terms' hot' and 'harmattan' are used.

4.5.1 TEMPERATURE

Usually, the maximum temperature which is about 36^{o}C tends to occur at the end of the dry season around March, while the minimum temperature of about 20^{o}C occurs around the middle of the dry season (generally between December and January). The average daily temperature ranges from 23^{o}C to 28^{o}C.

Table 4.1: Showing the Mean Monthly Temperature for Ado Ekiti

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Min. temp/^{0}c	22.0	22.0	23.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	21.0
Max. temp/^{0}c	34.0	35.0	36.0	32.0	31.0	30.0	29.0	26.0	27.0	29.0	32.0	33.0

Source: Ekiti State Information Services, 2008

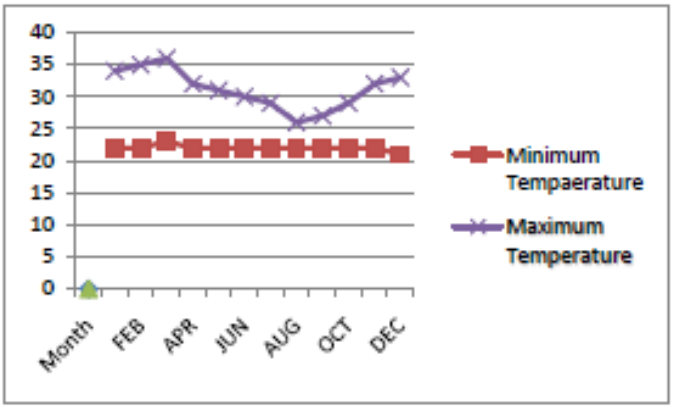

Fig 4.1: Showing the Mean-Monthly Temperature for Ado Ekiti

Source: Ekiti State Information Services, 2008

4.5.2 RELATIVE HUMIDITY

From November to January there is a general reduction in the relative humidity; during the rainy season (April to October), the temperature also drops with a corresponding rise in the relative humidity.

Table 4.2: Showing the Mean Monthly Relative Humidity for Ado Ekiti

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean. Max.	78	81	80	85	87	90	92	95	90	85	80	70
Mean. Min.	42	39	40	55	55	56	68	71	70	55	40	50

Source: Ekiti State Information Services, 2012

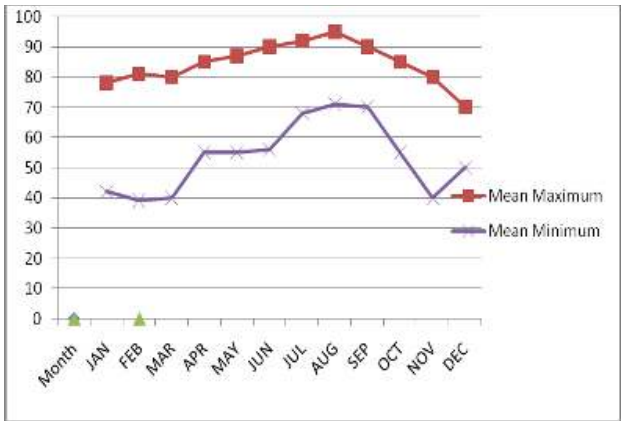

Fig 4.2: Showing the Mean Monthly Relative Humidity for Ado Ekiti.

Source: Ekiti State Information Services, 2008

4.5.3 PRECIPITATION/RAINFALL

A higher percentage of the rain falls between April and October. The area witnesses a high torrential downpour particularly at the beginning and towards the end of the rainy season.

Table 4.3: Showing Mean Monthly Rainfall for Ado Ekiti

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Av. Rainfall/mm	30.0	19.0	45.0	101.6	186.0	193.8	230.0	250.0	209.0	180.0	45.0	15.0

Source: Ekiti State Information Services, 2008

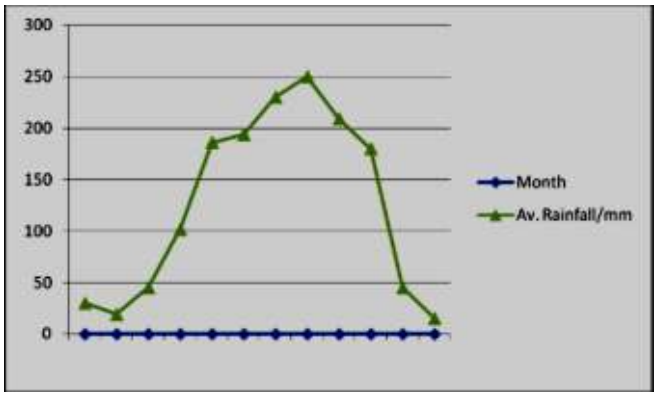

Fig 4.3: Showing Mean Monthly Rainfall for Ado Ekiti.

Source: Ekiti State Information Services, 2008

4.5.4 CHANGE-OVER OF THE SEASONS

The wet season is associated with Tropical Maritime Air Mass and the dry season with the Tropical Continental Air Mass. These two prominent seasons of the year present an interesting change-over at a zone separating an area where they operate. The two air masses meet along a plane in this zone, called the Inter-Tropical Front. In response to the advance and retreat of the air masses, this front moves northwards and southwards. Also, at this zone, there is a cool easterly air mass called the Equatorial Easterlies that blows in the upper atmosphere over the front. The Equatorial Easterlies stays above the two other air masses and dives down to undercut either of them forcing the other up violently. When it is the Maritime Air Mass that is under cut thunder, light, strong wind and a brief downpour of rain (lines quall) emerge. When it is the dry Continental Air Mass that is undercut there is a whirlwind called "dust devil" which blows spirally upwards.

4.5.5 VEGETATION

Ado-Ekiti lies within the High Forest vegetation that has many plant species, parasites, climbers, and creepers. This vegetation has three distinct layers:

1. **The lower layer:** This has dense undergrowth of about 3 – 5m high. They are made up of low plants, shrubs and ferns making travelling through the forest difficult.
2. **The middle layer:** this consists of very huge trees 18 – 30m high with dark green and dense foliage, and many branches which grow on thick woody trunks.
3. **The top layer:** this has trees up to 60m tall. They have few leaves, grey trunks and buttressed roots. Examples are the Iroko, Obeche, and the Walnut.

4.5.6 SOIL

Nigeria has 4 distinct soil types:

1. The alluvial soil,

2. The Southern belt of the forest soil,

3. The Interior zone of the laterite soil,

4. The Northern Zone of the sandy soil.

The kind of soil that is found in most areas of Ado-Ekiti land is the fertile and well-aerated loamy soil, which retains moisture during the dry season. This soil type is suitable for the cultivation of Cacao (theobroma Cacao). This makes Ado-Ekiti to be the largest producer of Cocoa in Ekiti State. Many people from different parts of the country settle in Ado-Ekiti to engage in large-scale farming of other tree crops such as Kola/abata(Cola acuminata), gbanja (Cola nitida), rubber, coffee, citrus, and oil palm. The soil obtained on the site however is a mixture of the hard clay and laterite soil types.

4.6. PROJECT ANALYSIS AND DESIGN SYNTHESIS

4.6.1. DESIGN BRIEF

Using tourism as a tool for the economic growth of Ekiti state there is a need for tourist destinations in the state and this led to the decision of designing a galleria with other auxillary facilities that will promote tourism within the state. The galleria will provide for lettable spaces, museum, events hall, cinema, shopping mall.Owing to the recent increase in the infra structural development in the country and Ekiti state in particular, bearing in mind the particularly increasing rate of development in Ado Ekiti, the capital city of the state and also a boom in the attendance of leisure gatherings such as This thesis hereby seeks to design a functional and a sustainable Galleria using eco-friendly materials to enhance tourism of the state and the Country at large. The following are important spaces worthy of note in the design of the building:

1. Event/Multi-purpose Hall
2. Physical and Virtual Museum
2. Indoor sports hall
3. Food Court
4. Changing room
5. Car/Water Parks
6. Store and mall.
7. Conveniences
8. LettableSpaces
9. Internet Cafe
10. Good Landscape Elements/ Water Park

and any other necessary facility.

4.6.2 BRIEF DEVELOPMENT

In order to achieve the aim of the design, some of the facilities that will be provided are:

- Commercial facilities
- Relaxation facilities
- Administrative facilities
- Tourist attraction
- Landscape element
- Entertainment Facilities

Thus, after thorough investigations of the requirements for the design, the necessary facilities needed for this design project has informed the provision of three main units which make up the facility;

1. The Galleria
2. The Museum
3. The Multi-purpose Event Hall

4.3.3 BRIEF ANALYSIS

The proposed Galleria Centre in Ado Ekiti focuses on the development of tourism in the state through effective use of Landscaping and eco-friendly materials used in and outside the building. The strength of the tourism aspect of this research lies in the use of water activities and fascinating landscape elements to attract tourists from far and wide. It is expected that professionals concerned in the area of tourism will have the necessary knowledge to adopt new methods of tourism development that will ensure the sustainability of the tourism sector and professionals in the building industry and environmental sciences will through the knowledge gathered from this research, incorporate proper landscaping and use of sustainable eco-friendly materials in the development of tourism facilities. The facilities required for the design proposal can be categorised into the following groups:

1. Retail facilities

i. Anchor Stores
ii. Retails Shops
   a. Medium Shops

b. Small Shops

iii. Lettable Offices / Spaces

iv. Warehouse

2. Museum

i. Curators Department

ii. Photography Department

iii. Temporary Exhibition Spaces

iv. Open Exhibition Space

v. Exhibition Atrium

vi. Stores for Artifacts

3. Entertainment Facilities

i. 2- Screen Cinemas,

ii. Games Arcade

iii. Events Hall

iv. Gymnasium

4. Recreation Facilities

i. Food Courts,

ii. Restaurants,

iii. Outdoor Recreation

iv. Children Play Area

v. Waiting Lounge

vi. Bar

vii. Outdoor Games Area

viii. Gymnasium

5. Administrative section

i. Reception

ii. Mall Manager's Office

iii. Secretary's Office
iv. Board Room
v. Maintenance Offices
vi. Electrical Maintenance Office
vii. Mechanical Maintenance Office
viii. Board Room

6. Ancillary facilities

i. Conveniences
ii. Atrium
iii. Elevator
iv. Car Parks
v. Gate House
vi. Water Treatment
vii. Refuse Dump
viii. Generator House
ix. Kitchens
x. Fire Service

Miscellaneous items occasionally used to catch the public interest such as fashion mirrors, close circuit TV, clocks, continuous music, exhibit areas, etc Trash and ash receptacles, a mandatory aid in preventing litter, well landscaped exterior areas. Mall finishing materials should reflect the quality level of the project, be sturdy enough to resist wear and tear, and require minimum maintenance.

4.6.4 SPACE ALLOCATION / SCHEDULE OF ACCOMMODATION

(1) RETAIL FACILITIES

Table 4.4: Schedule of Accommodation for retail Facilities

S/N	SPACES NAME	NO REQUIRED	SIZES (M^2)
1.	Anchor tenants	2	18000- 20000
a.	Medium Shop Type 1	12	220 – 250

b.	Medium Shop Type 2	20	90 – 100
c.	Small Shops	80	59.5 – 60
d	Lettable Offices/Spaces	3	365
e	warehouse	2	300 -500

(2) ENTERTAINMNET FACILITIES

Table 4.5: Schedule of Accommodation for Entertainment Facilities

S/N	SPACES NAME	NO REQUIRED	SIZES (M^2)
1	Cinemas,	2	600
2	Games Arcade	2	400
3	Events Hall	1	750

(3) RECREATIONAL FACILITIES

Table 4.6: Schedule of Accommodation for Recreational Facilities

S/N	SPACES NAME	NO REQUIRED	SIZES (M^2)
1	Food Courts,	2	400
3	Bar	1	175
4	Outdoor games	1	175
5	Gymnasium	1	100
6	Outdoor recreation space	4	180
7	children play area	4	180

(4) Administrative section

Table 4.7: Schedule of Accommodation for the Administrative Section

S/N	SPACES NAME	NO REQUIRED	SIZES (M^2)
1	mall manager's office	**1**	**30**
2	Sec office	**1**	**20**
3	electrical maintenance office	**1**	**77.8**
4	mechanical maintenance office	**1**	**77.8**
5	Board room	**1**	**42.2**
6	Reception	**1**	**36**

(5) Ancillary facilities

Table 4.8: Schedule of Accommodation for the Ancillary Section

S/N	SPACES NAME	NO REQUIRED	SIZES (M^2)
1	conveniences	115	2.2275
2	atrium	1	400
3	elevator/staircase	3	37.5
4	car parks	600	18 – 25
5	gate house	2	100 – 144
6	water treatment	1	550
8	generator house	1	750
9	Fire service	1	450
10	kitchen	2	146.6

11	Electrical workshop	1	46.9
12	Mechanical workshop	1	46.9
13	Store	6	25

(4) Museum

Table 4.9: Schedule of Accommodation for the Museum

S/N	SPACES NAME	NO REQUIRED	SIZES (M^2)
1	Curators Department	**1**	**30**
2	Photography Department	**1**	**20**
3	Temporary Exhibition Spaces	**1**	**77.8**
4	Open Exhibition Space	**1**	**77.8**
5	Exhibition Atrium	**1**	**42.2**
6	Stores for Artifacts	**1**	**36**

4.6.5 DESIGN PHILOSOPHY

Design philosophy is perhaps the belief of the designer or the point of view from which he sees the design in question. In this case, the galleria design has a philosophy which is to create a nature friendly environment with capacity to boost the economic, social and cultural viability of Ekiti State, a place that is capable of integrating building facilities with the climate and geographical environment and to make the building usable for other purposes if decided thereafter.

4.6.6 DESIGN CRITERIA

The design of thisgalleria is not limited to the provision of shopping malls, recreation and commercial facilities. It involves the provision of physical/ virtual museum and over 1000 seater capacity event/ multipurpose hall all within the building for socio-cultural gathering. On the site, there is provision for Water Park for both children and adult for proper relaxation of the mind. The criteria and major considerations adopted in the design of the proposed galleria include;

1. Sustainability/Eco-friendly Materials
2. Proper Landscape facilities
3. Functionality
4. Flexibility
5. Spatial efficiency
6. Aesthetics
7. Thermal comfort
8. Lighting
9. Structural stability
10. Safety and security

4.7 BUILDING DESIGN CONSIDERATIONS

Some of the building criteria adopted in designing the proposal include:

i. Design brief
ii. Spatial analysis
iii. Space allocation and schedule of accommodations
iv. Functional relationship analysis
v. Schematic concept etc.

4.7.1 ENVIRONMENTAL CONSIDERATIONS

These are physical and environmental criteria that need to be studied to form the basis of the design.

4.7.1.1 SITE ORGANIZATION

A proper management and effective usage of the site is necessary to maintain comfort, safety, and user's satisfaction.

4.7.1.2 SITE ZONING

The site of the proposed galleria is zoned into three different regions and they include

Public zone: This includes the parking lots, pedestrian walkways, water park, driveways and every area located before the galleria building.

Semi Public zone: This includes the galleria building and every facility provided within the building such as cinemas, food and drinks, offices, retail shops etc.

Private zone: this include the areas located behind the galleria building which include staff parking, sewage plant, water treatment plants etc.

4.7.1.3 ACCESS

A main access to the site needs to be celebrated. The point of access needs to be defined for monitoring and control in order to ensure safety and security. Walkways need to be planned in order to control traffic efficiently, and the access road must be wide enough to accommodate the high vehicular density.

4.7.1.4 TOPOGRAPHY

Though, Ado Ekiti has a naturally flat terrain, except for some hills that dot the terrain. This landform and the terrain is a plus for construction works in the town because it makes construction and leveling less stressful, but site slopes gently downwards towards the south-East direction.

4.7.1.5 CIRCULATION

Good circulation (both vehicular and pedestrian circulation) enhances site organization. Since the civic center in said to be a public place, effective circulation system is imperative to ease users‘free movement around the civic environment and interaction with one another.

4.7.1.6 BUILDING ORIENTATION

Building Orientation to solar lighting and radiation will be effectively planned in order to achieve a high efficiency of interior passive lighting and thermal comfort. Also

building orientation to wind flow patterns and prevailing winds will improve passive ventilation, body cooling and structural cooling.

4.7.1.7 VENTILATION

Ventilation is the replacement of used inside air by outside (fresh) air. It is needed in enclosed space to enhance human comfort. Air movement through buildings can be induced naturally by the stack effect, wind pressure or artificially by mechanical means such as fans evaporative cooler air conditioners and heaters. Mechanical means are usually employed when it is impossible to achieve natural ventilation due to the nature of space and improper positioning of openings. However studies have shown that in Nigeria, even where there is sufficient natural ventilation, mechanical device especially fans is still used for decorative and psychological reasons.

The design laid more emphasis on natural as opposed to artificial ventilation, in achieving this, factors that affect airflow through buildings were examined with the design they include;

1. External feature and factors (e.g. Ventilation).
2. Number and size of openings.
3. Position of the opening.
4. Opening component.

Also considered during the design are the determinants of the air flow around the buildings, these includes the shape, height, orientation and planning of the building.

4.7.1.8 ECO-FRIENDLY MATERIALS AND LANDSCAPE FEATURES

The concept of eco-friendly materials usage is a sub-set of sustainable architecture and it is an important feature as the energy embodied in each material could determine the thermal comfort ability of the users and how the environment will be sustainable. The ultimate goal in using eco-friendly materials is to reduce the amount of generated energy that must be brought to a building site. The long-term energy costs of operating a building are heavily dependent on the materials used in its construction. Depending on type, the energy-efficiency of building materials can be measured using factors such as R-value, shading coefficient, luminous efficiency, or fuel efficiency. Preferred materials slow the transfer of heat through a building's skin, reducing the need for heating or cooling. Deliberate

employment of alternative energy sources such as the solar energy in particular will help achieve reduction in energy consumption during the building life thereby achieving savings in the cost of energy creation, distribution and consumption. Essentially, the galleria is to be designed and constructed using such material and building methods that are sustainable and environmentally friendly in order to achieve conservation of energy.

Another unique feature adopted in this design is the use of water bodies to enhance tourism in form of Water Park. It is a major focus to promote tourism in the state. Provision are made available for both young kids and adults and necessary safety measures are put in place against accidents.

4.7.1.9 LIGHTING

The proposed lighting strategy for this design is by day lighting alone (in accordance with the energy reduction and conservation goal of the building design and use) with artificial lighting used only at night or where day light condition falls below tolerable level. Although due to psychological reasons artificial lighting in such public buildings are always needed during the daytime, this is not to undermine the possibility of this strategy. Effective lighting in this proposal would be achieved through the appropriate use of building element (i.e. wall, ceiling and roof), materials and finishes. Windows with sizes proportional to working area would be provided and wall would be painted with colour that would enhance the brightness or reduce the effect of glare of the interior. Ceiling with moderate reflective characteristics would be used taking into consideration the need to eliminate glare by the use of sun-breakers, roof overhangs, shading devices etc. Atrium will also be used to achieve effective lighting where necessary.

4.7.1.10 CLIMATE

The thermal comfort of the users is a priority in the design. Thus, the buildings' thermal characteristics have to be taken into consideration. The micro-climatic factors

(temperature, relative humidity, prevailing wind, precipitation, e.t.c.) of the site are also a primary concern.

4.7.2 USERS' CONSIDERATION

The consideration of the users plays a vital role in the design of the buildings. Various categories of people in the town visit the galleria because of its public functions and these functions determine the design consideration that would be given to it, which include:

1. Status
2. Gender
3. Age
4. Seasonality

4.7.2.1 STATUS OF USERS

The knowledge of the social and economic status of prospective users is of great importance in determining the type and number of public facilities e g. parking lot, conveniences e.t.c. to be provided in the galleria.

4.7.2.2 GENDER

The greater percentage of galleria users are female, therefore there will be more convenience provision for women.

4.7.2.3 AGE

Because galleria users are both adults and children, emphasis may be placed on the provision of children's facilities like children playground.

4.7.2.4 SEASONALITY

The users 'population in the galleria is a function of the seasons and the times of the year. For example, during the festive period, thousands of people are seen at the galleria premises while in an activity days; the population size will be greatly minimal. Because of this, provision is made for extreme conditions of population increase duringthe expected festive period of the year.

4.8 BUILDING ECO FRIENDLY GALLERIA

Eco friendly galleria are built using processes that are resourceefficient andenvironmentally responsible. All facets ofthe home from interior to exterior design are provided with eco-

friendly features. Even construction, maintenance, and operation are performed inways that do not affect and endanger the environment.

- **Site Conditions:**

Before planning for a proposed building, the best site shouldconsidered. The area that best suits what is needed is chosen. It should be able to offer space for various solar accesses, water, air, privacy, gardens.

- **Building materials:**

If really building an eco-friendly galleria is the uttermost thing, then the use of environmentally friendly materials should be considered. Materials such as, cement, aluminum, bricks, steel and glass could be used as raw materials. Before wood isconsidered as a primary material in eco-friendly homes but because of the illegal logging issue, it was replaced with aluminum and mild steel. In addition to that, non-toxic paint, LED lightings, recycled tiles, recycled glass, recycled aluminum, as well as other recycled products and materials.

- **Spaces:**

The room locations should be carefully considered and the amount of natural air and sunlight that can enter through it. Also the amount of natural heat to enter the rooms at certain time of the day should be considered.

- **Site Layout:**

Most eco-friendly buildings are equipped with open design layout to reduce the cost of construction. It also enhances ventilation and light. It is also easier to manage and arrange the furniture with open spaces.

- **Roofing:**

Green roofing is very cost efficient. With green roofing, Extra insulation could be achieved as well as low energy consumption.

- **Wall Materials:**

Materials that have the ability of absorbing solar heat such as fabricated or natural brick

should be used. Bricks that are made from cement, lime, sand, etc. are great because they are resistant to fire, they absorb heat from the sun and they have lower water absorption.

- **Flooring Materials:**

Depending upon the function of the room, varieties of flooring options and materials could be chosen from such as parquet, marble, terrazzo, granite, wood, bamboo, and ceramic. But when it comes to an eco-friendly flooring, bamboo and laminated wood can be the best option especially when it comes to the partitioned spaces in a public buildings or the bedrooms in residential settings.

- **Utilize Solar Panels:**

Solar panels arebecoming more and more popular to eco-friendly consumers. These are being used as an alternative source for electrical energy. Aside from its economic benefits, protection from short circuits and fires is guaranteed. Having an eco-friendly home is a simple step that can help save the environment in some ways and it als o offers potentially vital benefits to homeowners. This is a simple yet excellent way of exerting an effort that aims toward the improvement of the earth.

4.9 THE USE OF ALTERNATIVE ENERGY FOR ECO-FRIENDLY GALLERIA

Alternative energy comes in various types. Some examples include:

i. **Hydropower**

This type of energy converts water from rivers into valuable energy released from turbines. Before, it was used for operation of machinery and irrigation. As time passes by, people use hydropower to build hydropower plants to create mass amounts of electricity.

ii. **Geothermal**

This is produced from hot or steam water from the surface of the Earth. The vapor powers electric generators through rotating turbines. Geothermal is use for heating buildings.

iii. **Wind**

This is often used to create energy by rotating huge propeller like blades. These blades slow down the speed of the wind and channel it to the generator that generates electricity.

iv. **Solar**

This is use to power some sections of the galleria such as lighting and some mechanical ventilation equipment.

v. **Hydrogen**

This is also one of the eco-friendly energy that is very expedient. It can help in producing unlimited amount of energy with the use of electricity and water.

CHAPTER FIVE

5.0. PROJECT APPRAISAL

5.1. Appraisal of Proposed Scheme.

The design of a modern galleria tends to be different in expression from their early age of its design. The proposed development is going to be an integration of all such functions that accommodates public activities while promoting the culture of the people of the state. The galleria is conceived to be that which employs sustainable building materials and construction technologies in achieving a start of the art monumental edifice with cultural relevance for the people of the state. Thisgalleria which is very flexible in its uses is expected to contribute greatly to the culture and economy of the state. It is also expected to change the urban realm and improve cityscape of the study area.

The proposed scheme is to provide an enabling environment in which shopping activities can take place without any constraints for shoppers and retailers and provision of necessary facilities to facilitate business and transactions. The scheme will also serve as an avenue for household retailers and other multinational business enterprise that have the major challenge of befitting business environments for business to expand their businesses to the city. Also people buy their groceries, use internet cafes, engage in sports and games, take shelter, interact, and gather information. The generous concourses of the project would provide opportunities to attract both rich and poor, old and young, local and immigrant. The site of the project will be adequately planned and coordinated through the provision and proper location of drop-off, pedestrian walkways, car parks, party lawn, outdoor recreation and shopping mall.

The proposed design will achieve scenery of well-designed galleria, outdoor spaces with the implementation of landscape which will serve as a masterpiece of how a shopping environment should be.To the posterior end of the building on the ground floor is a flexible event/multipurpose hall which doubles as an event hall. The right end of the floor is the Museum section where both permanent and temporary artifacts and antiquities are kept and stored. Some art works are also displayed for the pleasure of tourists. One of the major challenges in a museum is theft. As some visitors come solely to steal some artifacts therefore a major consideration is given to the safety of artifacts in the museum by ensuring that there are adequate doors with security guards and visible circulation with CCTV to capture visitors touring the museum. To the right is the game arcade and fitness center. The other floors contains cinemas, smaller meeting rooms of different capacities,

internet cafe, cocktail hall, shops and general administrative area. With adequate vertical circulation across these levels, the ease of access around and through the service point of the building is quite easy. The shopping mall on the other hand is an open design with flexible shopping spaces on all three floors. Vertical circulation is achieved with the use of escalators, elevator (which are powered using solar energy) and stair cases. Both natural and artificial lighting and ventilation is achieved in the building unit by ensuring that the floor areas have adequate atrium for lighting and fountain courtyards for ventilation and cool breeze.Artificial lighting and cooling would be achieved with power generated in the building using solar panels. Water needed for the building will be provided for onsite from borehole and harvested rain water.

Therefore, the outcome of the harmonious coordination of the different structures under one roof is a careful analysis of relevant building criteria such as aesthetics and proper circulation control and in accordance to the general definition of a galleria stating that all activities has to be under one roof with a significant atrium as an identity.

5.2. CONSTRUCTION TECHNIQUES AND MATERIALS

5.2.1 STRUCTURAL LAYOUT AND ANALYSIS

The buildings are frame structures that transmit load from the columns and beams to the foundation. The external and internal walls are basically non-loading bearing walls. This frame construction system allows for flexibility of spaces. The wall claddings and glazing skin is nonstructural in function. The frame steel structure is quite easily assembled.

5.2.2 SUB-STRUCTURE

Foundations

The nature of the site and the magnitude of the design necessitate the construction of a reinforced concrete foundation which will be to the discretion of the structural engineer, But for external works such as fences and sewage treatment chamber, foundations are to be strip

Foundations made from mass concrete cast in-situ. A hardcore of approximately 200mm to 300mm diameter granite should be fitted and a damp-proof membrane sandwiched in the oversite concrete to assist in preventing the floor from being damp and cold.

5.2.3 SUPER STRUCTURE

1. Floor Slabs

The span of the building are of two folds: firstly the ground floor, secondly for the first, second floor and third floor slabs. The ground floor slab (oversite concrete) will be plain concrete mass laid with wire mesh according to the structural engineer's specification while the other floor slabs are to be constructed using the normal reinforced concrete massing.

2. Walls

Generally, walls in this design should be non-load bearing, ones of low time lags due to the high daily diurnal temperatures and as such should be generally thin walls. Internally, glass partition walls are extensively used in the buildings with consideration for minimal glazing so as to reduce cost.

3. Roofs

The material used in the roof of the building majorly will be long span aluminum roofing sheets constructed to optimize rain water harvesting.

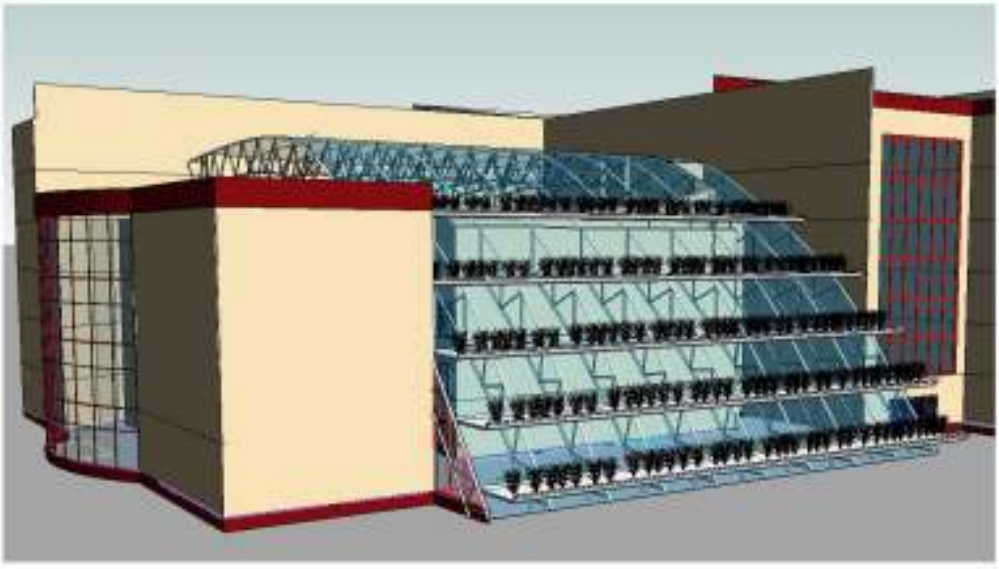

Fig 5.1: Showing the use of transparent Polycarbonate roof with egg-crate

*Source: Researcher's field survey (201*5)

The use of polycarbonate roofing material will also be adopted in this design. In sections of the building where solar energy is required will be made with solar glass roof. The skin of the glass roof is entirely covered in single-crystal photovoltaic sensors positioned between the two layers of glass. They also act as shading devices, optimizing the comfort of people using this public space in summer and winter alike steel members in this thesis are proposed to be made from hollow circular steel tubing sections, arc welded together and sourced locally.

5.2.4 MATERIALS AND FINISHES

The selection of materials and finishes for floors, ceilings and walls in contribute to the comfort, safety, sustainability and aesthetics of a building. The finish materials'patterns, textures, and colors, together with the geometry, help define the architectural quality and identity of the galleria. The proposed project must be operable and maintainable with minimal resources and the material and finish selections must be durable, maintainable, vandal-resistant, environmentally friendly, fire-resistant, cost effective, and visually pleasing.

Floor Materials: finish to provide slip-resistant surface.

1. Monolithic Materials

    Concrete - with appropriate finish to provide slip-resistant surface in ancillary areas.

    Hardened finish where required.

2. Unit Materials (large units - min. 200 mm. x 200 mm. x 12.5 mm.)

    a) Natural granite

    b) Manufactured granite

    c) Terrazzo - precast only, up to 600 mm. x 600 mm. slip resistant texture, with sealed surface

    d) Quarry tile

    e) Paver brick - dense, hard

    f) Unglazed ceramic tile

    g) Vinyl title - non-public areas only (with the exception of the multi use hall).

    h) Cement Terrazzo (special/hard aggregates, abrasive aggregates and installation control); thick set installation.

Wall Materials

1. Monolithic Materials Concrete with sealers (with sufficient surface texture to conceal minor soiling and damage without complicating maintenance procedures, or constituting a hazard to clothing or skin of patrons).

2. Unit Materials - min. 150 mm. x 150 mm. unless used for limited feature strips.

a) Unglazed and unglazed ceramic mosaic tile

b) Ceramic facing veneers

c) Glazed and unglazed brick

d) Precast concrete

e) Structural glaze faced concrete masonry units

f) Vitreous enamel steel panel – noncombustible assembly

g) Crystallised glass panels

h) Glass Partitions: - These are to be custom designed to suit the requirements of the various internal spaces of the galleria.

i) Reinforced cast-in-place concrete shall be used for the underground of the swimming pool.

Ceiling Materials

1. Monolithic Materials

a) Smooth concrete

b) Acoustic Materials sprayed onto mechanically fastened expanded metal lath.

2. Unit Materials

a) Non-corrosive linear metal panels with applied coating or natural brushed finish with wrapped acoustical material

b) Non-corrosive metal panels with applied coating or natural brushed finish with large perforations with wrapped acoustical material.

Door Materials

1 Flush hollow metal doors and frames:

a) Public areas - alkyd enamel finish

b) Non-public areas - alkyd enamel finish.

2 Wire glass at doors with vision panels

3 Laminated safety glass at elevator, glazed doors.

4 Stainless steel service gates.

5 Stainless steel doors.

5.3 SERVICES, CIRCULATION, VENTILATION AND LIGHTING

5.3.1 CIRCULATION

There must be adequate provision for proper means of circulation between floors, both vertical and horizontal for easy circulation of users around and within the galleria.Escape route requirements must conform with regulations standards of travel distance, occupancy load, and number of exits, which must discharge to the exterior. The conveying system could be with fixed stair ways or mechanical devices that are used to move between floors in the separate units of the center. The types of mechanical conveyors to be used are escalators and lifts.

Fig. 5.2: Picture showing pergola over green roof in the proposed galleria

*Source: Researcher's field survey (201*5)

Elevators

Elevators are vertical conveyors that are mostly located at service lobbies and corridors used in transporting people especially handicaps and the elderly. The elevators are located close to the main circulation lobby and closely located between the shops they serve.

Escalators

These are moving stairs for movement between floors. They provide visual connections between the floors as they ascend. It is located in the atrium of the shopping mall.

5.3.2 VENTILATION

Ventilation generally may be natural or artificial/mechanical. Natural ventilation requires effective temperature difference or wind action to induce air movement, while artificial ventilation through air-conditioning is the process of treating air in an internal environment to establish and maintain required standards of temperature, humidity and air movement. The galleria will be ventilated and cooled by both natural and artificial means of ventilation. Artificial ventilation is through a combination of central air-conditioning system and extractor fans.

Natural Ventilation.

As deduced from the case studiesthat natural ventilation is a challenge in the designs of public buildings general with attention to galleria, a careful deliberate modeling of the anticipated movement of air throughout the station is necessary, the proposed project would employ the use of a simple solution enabling solar-assisted natural ventilation within. The basic form of the building is the optimum shape required to achieve this. Air is drawn through a deep void in the double skin of the roof through the stack effect and exhausted at the highest point. This natural ventilation maintains air movement and keeps summer temperatures at comfortable levels, assisted by solar shading from the large overhanging eaves to the east and west elevations, and louvres along the glazed south elevation. Other factors like size of openings and their position, building interior plan, design of inlet and landscape may arise from design decisions. When wind pressure is very high, some measure of control can be employed. Natural elements such as landscaping (planting of trees) and the use of structural devise like fins overhang serve as wind breakers.

Artificial Ventilation

As natural ventilation cannot be relied upon to provide controlled conditions, mechanical methods are often employed. Basically, this entails the manipulation of the temperature and relative humidity within a space and the movement and composition of the air mass across it. But due to the resultant effect of the heat generated from the mechanical device, and also, the epileptic power supply common to Nigeria, more attempts should be made in attaining maximum natural ventilation in the design of the terminal building as an alternative. Nevertheless, both artificial and natural ventilation should be employed in the proposed galleria.

5.3.3 LIGHTING

Lighting is an integral part of station architecture and as such should respond to the given architectural conditions and be coordinated with other elements of the stations. In addition to providing illumination and a sense of security, the lighting system in railway stations should be durable, energy efficient and easily maintained. The lighting in office rooms, passages, stairs, open areas etc. shall be provided as per established norms and appropriately positioned. Lighting design shall provide an appropriate transition from street to station. The galleria is designed to have access to the natural daylight from atrium covered with laminated glass and wide windows on the exterior walls to diffuse light rays from the sky uniformly into the galleria interior. Concepts for lighting design are set forth under the umbrella principles of Safety, Economy and Drama:

1. Integration with architecture and artwork
2. Emphasis at key points of transition and transaction
3. Promotion of the sense of real and perceived security
4. Control of lighting in public areas via station management system
5. Location of luminaries and system components for feasible maintenance;
6. Introduction of natural light into building volumes wherever feasible
7. Intelligent systems /concepts shall be used for automatic switching on and off of the lighting fixtures. Sensors shall operate as per the lighting levels in different weather conditions. It will be focused to achieve maximum energy conservation.

5.3.4 ACOUSTICS

Good acoustic is one the most important consideration for galleria design. Room acoustic begins with establishing the basic size, shape and finish materials of a given space to achieve a certain room sound and the location, shape of sound reflecting and absorbing surfaces. These criteria are based on the intended function and occupancy of the room. Acoustic consideration at the cinema of the proposed galleria will be controlled by the use of absorptive materials like fibrous materials, volume resonators, foam, carpet and acoustic tile on wall and ceiling. While acoustics at the other places in the galleria would be achieved through the use of shaped plane of hard building materials including gypsum board, wood, glass, masonry and concrete.

Acoustical Treatment/Materials

Acoustical treatment is most effective when applied near the source of the noise. Designers shall take these into consideration in selecting acoustical materials and shall create solutions regarding easy accessibility to the materials for replacement. Options may include:

1. Cementitous spray-applied or trowel-applied acoustic materials (above reach of pedestrians).
2. Non-corrosive metal panels (with or without perforations) with wrapped acoustical material. Metal panels may have applied coating or natural brushed finish.
3. Rigid, cellular glass block.
4. Suspended acoustic tile (in nonpublic areas only).
5. Cellular glass blocks (typically concealed behind metal panels).
6. Glass fiber blankets that are wrapped in close-weave glass cloth or other nonflammable sheeting.

5.3.5 FIRE PROTECTION

Fire poses a serious threat on galleria because of the large number of people it accommodates. The objective of fire protection is to prevent the start and spread of a fire, stem the spread of smoke and facilitate the escape or rescue of persons. Active and passive precautions will be taken to effectively put out fires in the event of an outbreak. Active precautions are systems that are automatically deployed in the event of fire and they include the installation of heat-activated sprinklers which control a fire at its source through the release of discrete volumes of water sufficient to extinguish a blaze. Other important fire safety measures include convenient and well-marked exist, smoke and heat detectors, smoke and fire alarm systems, water spray extinguishers,

CO2 extinguishers, etc. Passive precautions are construction solutions in the building and its components that will help in reducing the spread of fire. These include minimum structural sections, casings and coatings, layout of rising mains, installation of fire doors and windows, construction of supporting floors, etc.

5.3.6 SERVICES

Water Supply and Plumbing

A constant water supply to the proposed project is very important and necessary for the day to day running of the galleria.

The supply is essential for the following:

i. It will serve special features such as fountains and aquarium.

ii. It will provide water for wash downs of lavatories, toilet facilities and equipment.

iii. To provide water for dry cleaning and restaurants.

iv. To cater for the fire brigade hose reels and sprinkler system

For plumbing, the design should be such that any section can be shut off in the case of repairs, leakages, vandalism or in a case where sprinkler head turns off accidentally. The supply of water to the hub is from sunken bore holes provided within the site of the proposed project. An alternative water source shall be from the harvested rain water collected into concrete reservoirs within the center.

Electricity Supply

For a transportation hub, a constant electricity supply will be very essential because a wide range of energy source to power various electrical equipment and appliances as well as for security gadgets. Stand-by power supply generated from solar panels is necessary to power information display media including audio, visual and tactile, lifts, escalators, lighting devices, mechanical cooling systems and foldable bleachers to meet with the needs of all users of the proposed facilities. The main source of power to the shopping plaza is from the Benin Electricity Distribution Company of Nigeria (BEDC) which is not reliable enough to carry the responsibility of power alone therefore an alternative is advised in the case of failures. A solar farm alongside solar energy saving components of the building units should be installed to complement the power source which is on a standby. This is the responsibility of the management of the galleria.

5.3.7 FURNITURE, FIXTURES AND EQUIPMENT

It is imperative that the furniture and fixtures that facilitate passenger comfort, convenience and safety, also be durable and designed for minimal maintenance and repair. The design of these objects, therefore, shall in corporate innovative technology and material.

Furniture Seating

1) Recycling and Trash, Receptacles

2) Fixtures

i. GPS Clocks
ii. Information Centre
iii. Drinking Fountains/Water outlets

3) Equipment

i. Public Telephones
ii. Help-Point Intercoms
iii. Closed-Circuit Television (CCTV)
iv. Internet
vi. ATMs
vii. POS
vi. Mobile/Laptops Charging Points
vii. Public address (PA) systems
viii. TVM‘s (Ticket Vending Machines)
ix. Walk-in Scanning Machine
x. Baggage Scanning Machine
xi. Control gates

5.3.8 SIGNAGE AND GRAPHICS

Signage is the most visible, most scrutinized station element and essential to the proper functioning of the galleria. Signage provides information essential to building use and navigation within the system, engendering a sense of reassurance, security, and orientation when entering, exiting, or transferring, which contributes to a positive, user-friendly customer experience. In brief, signage:

i. Guides users to and from the various function areas

ii. Accommodates the myriad informational requirements of the galleria and its services

iii. Informs users of service information

iv. Accelerate their way finding process

v. To relieve them of their information anxieties

Art Work

The inclusion of public art within the building complex can be a trigger for a sense of belonging and a pointer to the presence of a, museum within the building, cultural relevance, recognition, orientation and way finding. The designers (architectural, landscape and interior) of the galleria shall work in a collaborative process for creating new station design theme with architecture and artwork that is integral to the project's environment and its uniqueness. Art work improves the culture and environment of the center, hence it should be encouraged.

5.4 SUMMARY

The proposed galleria design was arrived at with the understanding of the portions of merchandising theories which affect the designs. This psychology consists of arousing interest, and then satisfying it. Galleria designs have different focus points depending on the area and the intention of the designers and clients. Some galleria designs could focus on cinemas and some could be on shops, but this proposed galleria is targeted on tourism which encompass the museum within the building and water park features on the proposed site. Parking spaces are clustered around the main building.

The galleria is designed to be flexible such that spaces, fixtures, departments and merchandise can be moved or modified whichever would be desirable and make future expansion possible without affecting the building fabrics. The concept adopted also allowed for the efficient use of all the spaces in the complex, as well not sacrificing function for aesthetics. The galleria will be economical and its attracting potential Customers, will also induce them to enter the shopping mall. The internal spaces have also been designed in such a manner as to allow Customers find shops and activities with ease.

A successful galleria design is an efficient selling machine or sales factory. In addition to servicing the Customers, the employees have also been taken into consideration in the proposed design so that excellent service can be given to Customers visiting the galleria

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATIONS

The key to the development of an effective and functional galleria design is to have a clear understanding of what is to be achieved and being able to define concisely the critical issues that facilitate/affect galleria designs. The data and case studies examined in this thesis show that galleria create a home for retail, entertainment and leisure with great potentials for business growth. The individual case studies are all successful projects that illustrate that Galleria can be successful in smaller environments, and that these types of projects can lead to great benefits for the communities.

6.1 Recommendations

Galleria development is a very important concept in promoting modern day retailing, entertainment and recreation in modern societies. While embarking on this type of projects, more attention should be given to sustainability of the facility. To achieve a design that will enhance productivity, users, environment and future needs must be put into consideration.

Also the issue of location is another critical problem that should be looked into when designing a galleria, the location should where it could be easily accessible by younger folks, therefore it should not be located at the outskirt of the town neither should it be at the core of the CBD, but rather it should be located in between the two for proper accessibility.

Make energy in buildings more valued by developing incentives, new commercial relationships and financial mechanisms, and clearer information about building energy performance

Educate and motivate building professionals & users in order to encourage behaviors that will respond more readily to market opportunities and maximize the potential of existing technology.

Crime is an important barrier and a sensitive subject to shopping. Galleria exhibit different successful tenant mixes that are not common with other retail markets and should be referred with upmost security to the core.

Good shading should be provided to prevent glare depending on the type of materials used.

Inadequate parking can create barriers to successful Galleria developments. Specific financing and policies should be created to solve parking problems in Galleria in particular and urban spaces in general

Good eco-friendly materials should be provided for the interior finishes for effective patronage and satisfaction of window shoppers which could be part of recreational purpose of a Galleria.

6.2 Conclusions

This study has clarified the Importance of using eco-friendly materials in terms of its relevance, needs, functionality, and human comfortability in Galleria. The galleria in its design must demonstrate an efficient use of materials and structure, which aesthetically integrates sustainability and eco-friendliness in energy conservation in lighting, communications, and ventilation, electrical and mechanical systems. Buildings and the neighbourhoods they occupy are not static artefacts even during the most stable times, and during times of social and technical upheaval, they need adjustment in some measure to remain attractive, safe and useful. Hence, the best galleria buildings are those which are most able to provide capacity to changing functions, standards of use and lifestyle. The decision to include some other functional spaces such as museum and event centre into the design is to propose a sustainable solution to the problem of expansion and future use of building which is generally left to the architect.

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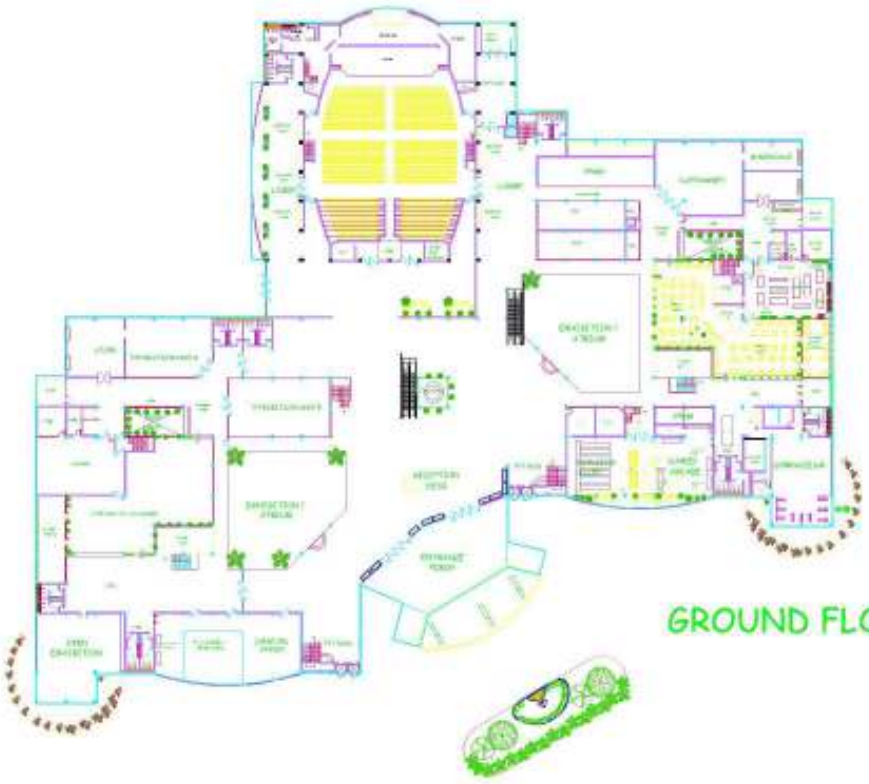
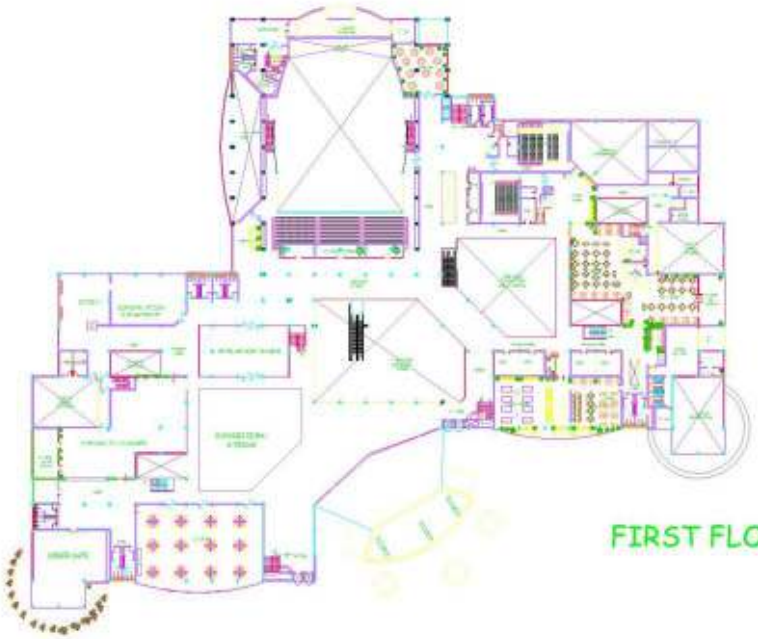
APPENDIX

SITE PLAN

GROUNDV FLOOR PLAN



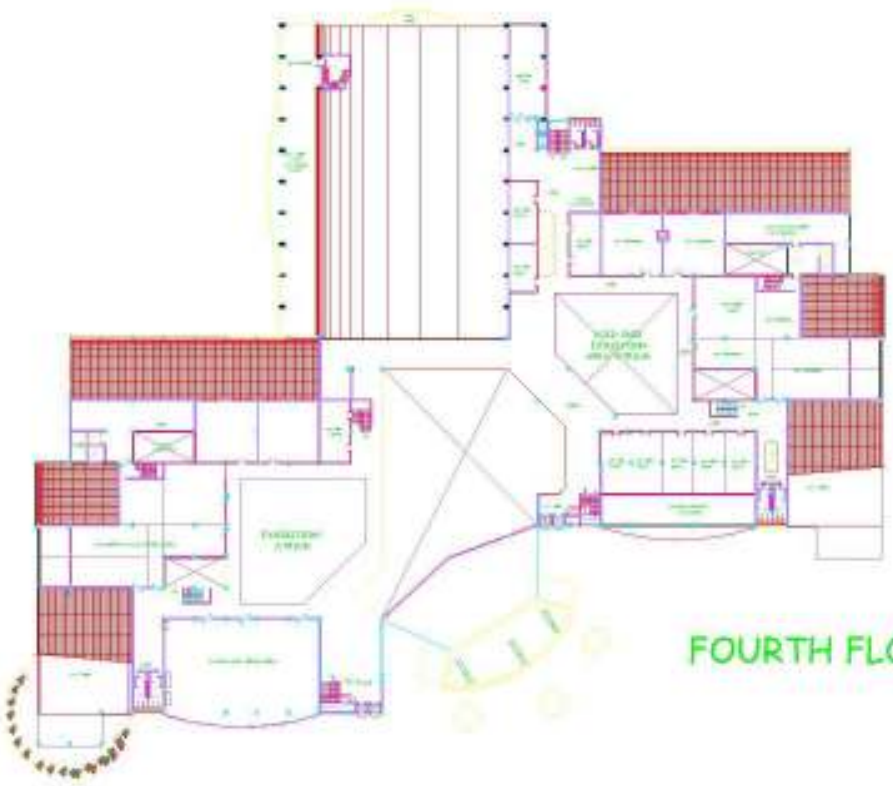
GROUND FLOOR PLAN



FIRST FLOOR PLAN

SECOND FLOOR PLAN

THIRD FLOOR PLAN



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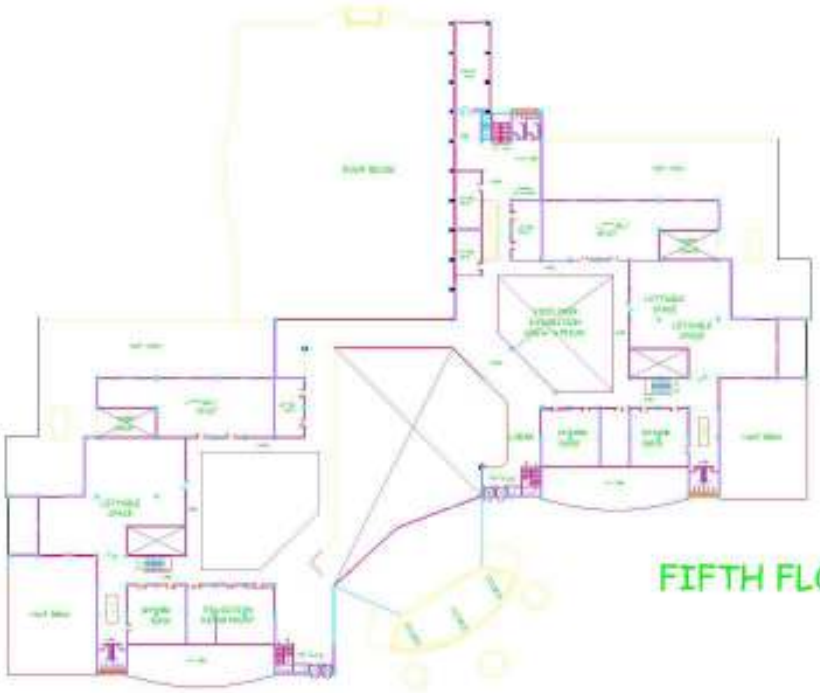
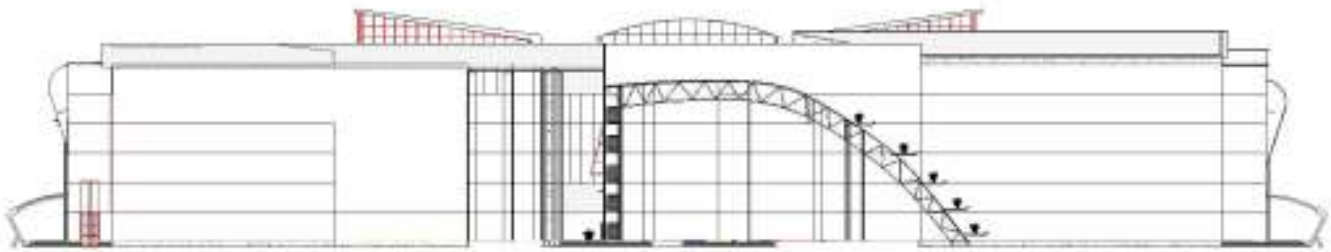


FIFTH FLOOR PLAN

NAME: FAGBEMI O.S.	PROJECT TITLE: THE FOUNTAIN GALLERIA, ADO-EKITI	SUPERVISOR: DR (MRS) AYENI
MATRIC NO: ARC/08/3998		SCALE: NTS
COURSE CODE: ARC 899		DATE: JUNE, 2015



SECTION 1

SECTION 2

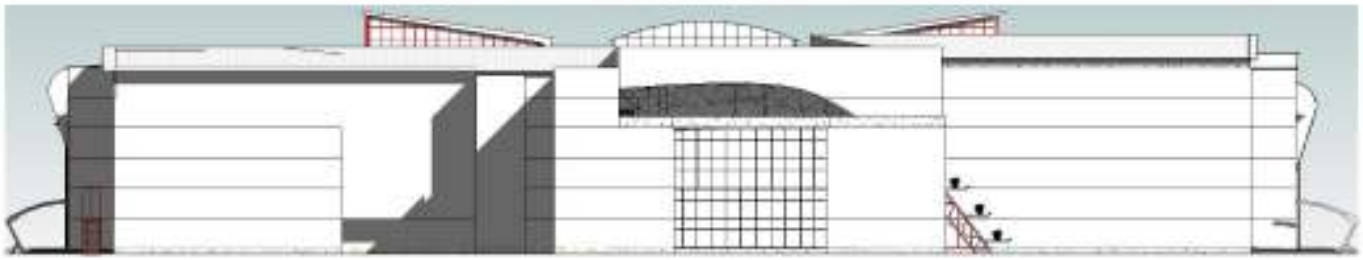
NAME: FAGBEMI O.S.	PROJECT TITLE:	SUPERVISOR: DR (MRS) AYENI
MATRIC NO: ARC/08/3998	THE FOUNTAIN GALLERIA, ADO-EKITI	SCALE: NTS
COURSE CODE: ARC 899		DATE: JUNE, 2015

RIGHT-SIDE ELEVATION

LEFT-SIDE ELEVATION

NAME: FAGBEMI O.S.	PROJECT TITLE: THE FOUNTAIN GALLERIA, ADO-EKITI	SUPERVISOR: DR (MRS) AYENI
MATRIC NO: ARC/08/3998		SCALE: NTS
COURSE CODE: ARC 899		DATE: JUNE, 2015

FRONT ELEVATION



BACK ELEVATION

NAME: FAGBEMI O.S.	PROJECT TITLE:	SUPERVISOR: DR (MRS) AYENI
MATRIC NO: ARC/08/3998	THE FOUNTAIN GALLERIA, ADO-EKITI	SCALE: NTS
COURSE CODE: ARC 899		DATE: JUNE, 2015