KAGORO TOURIST RESORT

CREATING A SUSTAINABLE TOURISM ENVIRONMENT

M.Sc. Thesis

By

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A Thesis presented to the Department of Architecture, Ahmadu Bello University, Zaria in partial fulfilment of the requirements for the award of Masters of Science in Architecture (M.Sc. Arch)

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DECLARATION

I hereby declare that this research work titled **KAGORO TOURIST RESORT, KAGORO: Creating a sustainable tourism environment;** has been a personal academic undertaking executed under the supervision of my supervisors and other lecturers in the department. It has no bearing to any work done by any person or group of individuals, which has been presented and accepted for a higher degree. Sources of information have been duly acknowledged accordingly by means of references.

_____ _____

IBRAHIM, Musa Abubakar **Date**

CERTIFICATION

This thesis entitled **KAGORO TOURIST RESORT, KAGORO: Creating a sustainable tourism environment;** meets the requirements governing the award of the degree of Master of Science in Architecture (M.Sc Arch) of Ahmadu Bello University, Zaria and is approved for its contribution to knowledge and literary presentation.

Chairman Supervisory Committee	**Date**
Member Supervisory Committee	**Date**
Member Supervisory Committee	**Date**
Head of Department	**Date**
Dean of Postgraduate School	**Date**

DEDICATION

This work is dedicated to ALLAH (S.W.T.) for his mercies all through this life and to his noble prophet Muhammad (S.A.W.).

To my mum, and members of my family; for their love, patience, understanding and faith in me.

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ABSTRACT

Tourism is a phenomenon that engineers growth and development of any community or nation through promotion of traditional values, arts, crafts and resource centres. It embraces activities that are of broad appeal for the population. It provides the outlets to appreciate the diversities as well as the complexities of cultures and industries, in addition creating a magnificent uniqueness which adventurers and mountaineers would cherish worldwide.

However, tourism is said to be a major economic activity worldwide, available statistics show that it employs about 6% of the world's labour force, and this figure is increasing daily with growth in population, and the discovery of new attractions. Nigeria, unlike most nations has not tapped in to the vast and abundant attractions that abound in the Country. Tourism in Nigeria is like our precious coal, the hidden treasures which when lit, shines like rosebuds. If Nigeria is to partake in this present global tourist trend, then there is need to develop and improve facilities and infrastructure in the country.

This thesis will elaborate on the potentials of tourism in Kaduna State and making provision for the development of a tourist resort in Kagoro. A tourist resort is essentially developed for the sojourn of tourists, providing multiple facilities for their recreation, accommodation, leisure and other needs. The development of a resort in most cases involves altering the natural and cultural environmental settings which tourist comes to see and enjoy.

The thrust of this work is to proffer design solutions that will not be foreign to the host environment. It would also be a design that is subservient to the local environment.

In line with this, the design emphasizes on the use of the cultural landscape as a means of enhancing the natural and cultural environments and also the minimization of developmental impacts on the environment.

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CHAPTER ONE

INTRODUCTION

1.1 Introduction

Tourism has been a rapidly growing sector and a wide sweeping socio- economic phenomenon with broad economic, social, cultural and environmental consequences. It is likely that tourism will continue to dominate the international scene for many years to come. As a result of increasing human activities and the inherent degradation of the environment through these activities, there has been a conscious effort towards protecting the environment.

This consciousness has led to the development of a great number of alternative forms of tourism in the last decade. Various names are used to demonstrate the typologies of the environmentally conscious tourism viz 'Green, 'soft', 'Eco', "sustainable, 'responsible' or 'alternative' tourism are some of the terms used to describe this "new tourism".

The emergence of this "new tourism" has prompted the need for a rethink in the way we plan, design and construct our tourist environment. According to David Waan, in his book Biologic, "poor design is more often responsible for environmental problems. The overall consequence of these problems is environmental degradation. Environmental degradation as a problem could be looked at from two perspectives, namely; pollution of the environment and depletion of natural and cultural resources.

The continued use of natural resources without appropriate measures to either replace or preserve them, may jeopardize the lives of future generations. As a result of the magnitude of this problem, sustainable practice in architecture has been proposed as the

best possible solution to environment degradation. Sustainable simply means rethink in the way architects approach design.

Sustainability according to European charter "is a process wherein responsible consumption, so as to minimize waste and interact in balanced ways with natural environments and cycles is practiced". Therefore, sustainable practice entails environmentally sustainable developments. This type of development aims to balance human needs with the carrying capacity of the environment. This balance can only be achieved through minimization of impacts, minimization of importation of goods and energy conservation intents as well as minimization of waste generation. It also tries to capture the vernacular architectural style of the locality which entails cultural preservation.

1.2 statement of research problems

Sustainable development has always tended towards the humane and regenerative approaches to the use of resources to achieve highly functional built forms or spatial enclosures that guarantee minimal distortion of the natural environment and accommodating the users and any other component of such environment. Since the object of any sustainable development is to protect the sanctity of a place, its people and its spirit through architecture. This has always been lacking in the architectures that had preceded this century.

The capital-intensive nature of construction and maintenance of buildings which are mainly due to the uncontrolled exploitation of resources especially in less developed countries has made it imperative to find ways of reducing the cost of building as well as their impact on the environment and the preservation of the special characteristics of the environment that attracts people.

Therefore the theses will attempt to propose a savoury solution that will carter for the needs of the visitors and to complement the sites natural attractions as well as capture the spirit of the place by responding and conforming to the traditional layout (the decentralised clusters) common to the middle belt region of Nigeria (Sa'ad and Ogunsusi 1996) as well as being organic with the buildings seemingly growing out of the site.

1.3 Motivation

The main motivating factor for this thesis stems from the recent drive by the democratic dispensation to boost the Nigerian tourism sector with the intention of attracting foreign interest in our country, which by and large will be a boost to our economy. Another factor is the recognition given Afan festival by the federal government as one of the festivals to be adopted as a national cultural festival. This recognition is as a result of the importance of the festival and its unrivalled place as one of the largest cultural festivals in Nigeria (Kagoro Development Association 2000).

1.4 aims and objectives

The aim of this study is to find architectural solutions that guarantee the well-being and coexistence of inorganic elements, living organisms and humans within a cultural concordant spatial context in a recreation environment. To achieve this aim, the following objectives will be pursued.

a. Establishing a harmonious combination of modern and local technologies with as much local materials as possible to realise a homogenous design typology.
b. To create an environment that will encourage to a good degree social interaction amongst the people.

c. To create a resort that will be subordinate to the environment, this is in the spirit of sustainability.
d. Create a serene and conducive environment that will provide a unique holiday experience where man is in a symbiotic relationship with nature.

1.5 Research methodology

a. Primary sources of data

The researcher will investigate sources of data based on their relevance to the research field of sustainability. Primary source of data will be through case studies of existing resort developments in Nigeria and abroad. Case studies are an essential ingredient in this research because they offer practical knowledge of how sustainable concepts have been incorporated in to real-life situations.

A set of criteria for selecting case studies was adopted based on the research topic. An important criterion is the use of sustainable building materials, which involves sourcing materials locally. Another criterion for selecting the case studies is how the vernacular style of architecture has been incorporated into the design. Other criteria to be considered include waste management/ prevention and the conservation of natural resources, and efficient energy management in resort developments.

In light of the above criteria, 10 local case studies were analysed, and two were selected because they met some of the criteria mentioned above.

Two foreign case studies were also selected. The local case studies selected are Obudu cattle ranch resort in Cross River State and La Campagne Tropicana beach resort in Lagos. Obudu cattle ranch provides valuable lessons on sustainability. Over dependence on mechanical systems has been clearly avoided and locally sourced building materials have been extensively used. An attempt was also made to preserve the natural environment by planning developments in such a way that some places are

preserved. In La Campagne Tropicana resort, artificial energy mechanisms have been adopted to reduce discomfort associated with high humidity regions like Lagos. Spaces for cultural performances and local crafts have been provided to encourage the indigenous people to be part of the development.

The lessons learned from theses case studies will be compared with literature review to assist in forming a design brief that will make the proposal better than the existing resources in the area of sustainable development.

b. Secondary sources of data.

Secondary sources of data will be the review of relevant literature on tourism and sustainability. These sources are unpublished thesis/ dissertations, journals, articles magazines and books on sustainable tourism developments. More recent and up to date materials will be sourced here.

1.6 Thesis scope

The architecture of resort development more often tries to only meet tourist's needs with very little thought given to preservation of these attractions people come to see. The consequence of this is environmental degradation.

This thesis will be delimited to the creation of a serene and conducive environment that will provide a unique holiday experience where man is in a symbiotic relationship with nature.

It will cover other aspects of sustainability such as minimising generation of waste and energy consumption. The research will also deal with the vernacular style of architecture and the use of alternative sources of energy like solar and wind.

1.7 Architectural significance and justification

A reconnaissance survey I carried out has shown that a lot of potentials abound in Kagoro and tourists have been visiting even without adequate facilities to carter for their needs. Hence the architectural proposal will be tempered by need for sustainability and environmentally responsive which guards the essence of ecosystem while enhancing an already existing practise.

CHAPTER TWO

TOURISM AND SUSTAINABILTY

2.1 Defining tourism

Tourism is a leisure activity that involves a discretionary use of time and money and recreation is often the purpose. Attempts have been made to define tourism but the most comprehensive definition which was also adopted by the international association of scientific experts in tourism defines tourism as the "sum total of the phenomenon and relationships arising from the travel of non-residents and are not connected with any earning activity". The concept was later extended to embrace business and vocational travel of people who do not have to be employed there or convert the place to their permanent residence.

The characteristic of tourism includes the following:

a. It arises from the movement of people to and their stay in various destinations.
b. There are two elements in tourism, the journey to the destination and the stay including activities at the destination.
c. The journey and the stay take place outside the normal place of residence and work, so that tourism gives rise to activities which are distinct from those of the resident and working populations of the places, through which tourists travel and in which they stay.
d. The movement to destinations is of a temporary short-term character with intention to return within a few days, weeks or months.

e. Destinations are visited for purposes other than taking up permanent residence or employment within the places visited.

2.2 Historical background of tourism

Prior to the industrial revolution, travel was mainly for pilgrimage, official purposes from one government to another and for business purposes. The industrial revolution brought a change in the lives of Europeans. Improvement in the standard of living resulted in increased time for leisurely activities. These activities ranged from swimming, mountaineering, hunting, walking, canoeing and visit to spas for healing purposes. People engaged in these activities usually outside their normal place of residence.

Foreign travel was then a part of the aristocratic class education. Spas and seaside resorts were the most fashionable of locations. Domestic travel for pleasure in the western world began in the 18th century. Industrialisation created two sections of society in the developed countries. Firstly there was the urban population, which became the prime market for the passenger railway and for the popular excursions associated with it, secondly, the new class of fund holders and financial intermediaries with wealth not committed to land formed the market for travel and tourism. Hotels and Inns emerged as a result of these travellers to have accommodation.

At the tail end of the 19th century there was concern about man's activities on his environment and his heritage. This concern was as a result of urbanisation and by the depression, which afflicted agriculture in most developed countries. (Ogisi, 1992)

The first and second world wars confirmed the coming importance of cars and aircrafts for civil use. This gave a large number of people the opportunity to experience vehicles. After the Second World War came increase in wealth of most European nations. This created societies with increasing capacity to consume and a desire to travel. From the

1950s, tourism experienced a remarkable growth. A conference on travel and tourism was held by the United Nations in Rome in 1963. During this conference, it was emphasised that for one to be called a tourist, he or she must have been in the country visited for at least 24hours. The purpose of which could be either leisure including recreation, holiday, health, study, sports and religion or business or family visits and conferences.

By 1970, tourism has become a major economic activity open to all classes of people as against it being the reserve of the wealthy and leisured in the previous years. A conference was later held in 1980 in Manila, Philippines. The conference later brought tourism into limelight and a theme was also declared for leisure and paid holidays. By August 1982, the world tourism conference in Acapulco, Mexico laid emphasis on rights to leisure rest and leave with pay. All these with increase in education and disposable income as well as growth in population of the developed countries made holiday an essential feature of their life. In 1991, the world travel and tourism council stated that travel and tourism is the world's largest industry and the major contributor to global economic development one in fifteen employees, 112 million people world wide are involved in this sector. Today tourism has become the world's largest and fastest growing activity.

Total international tourist arrivals have grown from a mere 25 million in 1950 to 718 million in 2002. This represents an average annual growth rate close to 7% over this period. The receipts generated by these arrivals have reached 474 billion US dollars in 2002, and the average annual growth rate has been even higher than that of arrivals.

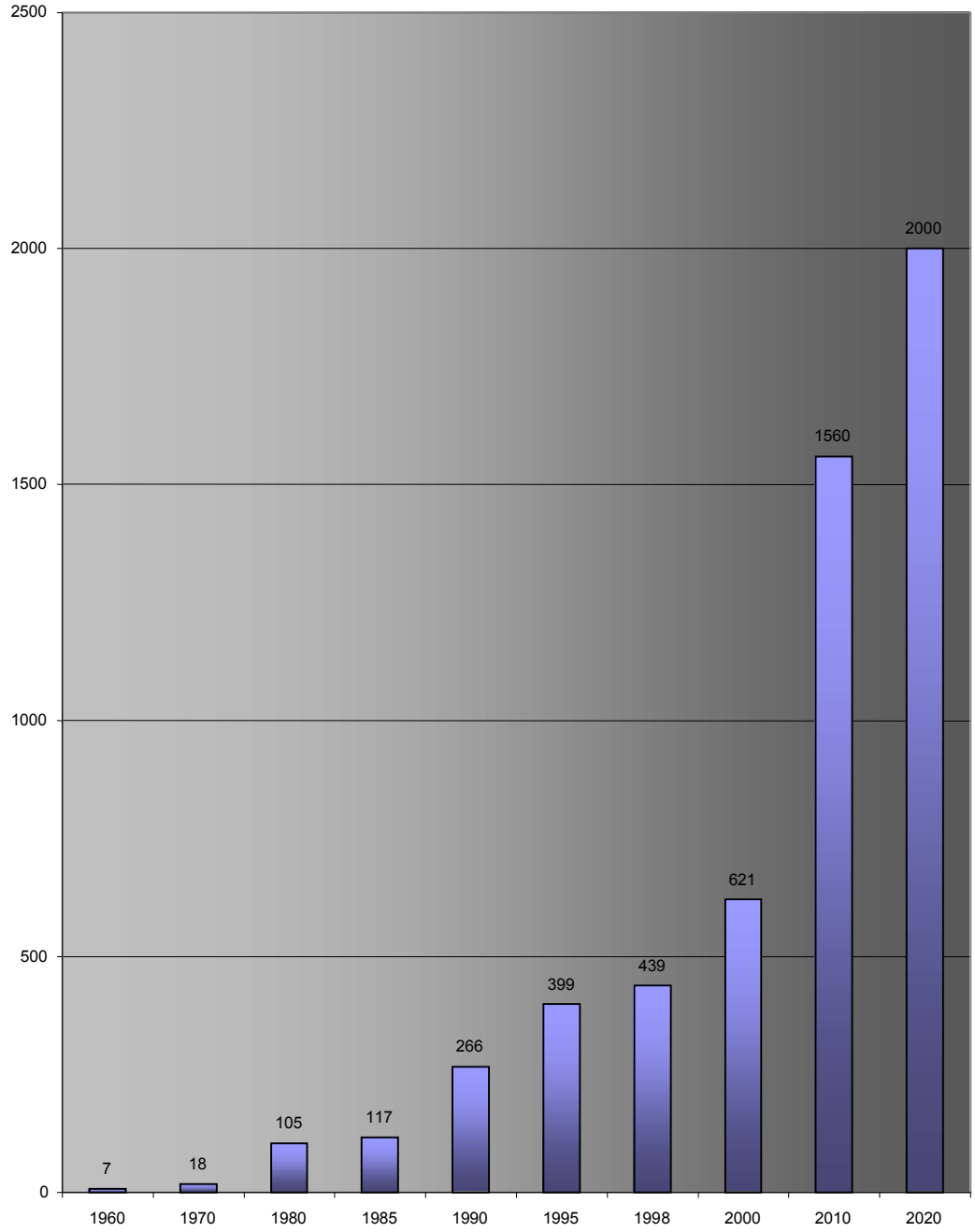


Figure1. International tourism receipts (excluding airfares) in us billion
source: world tourism organisation, 2000

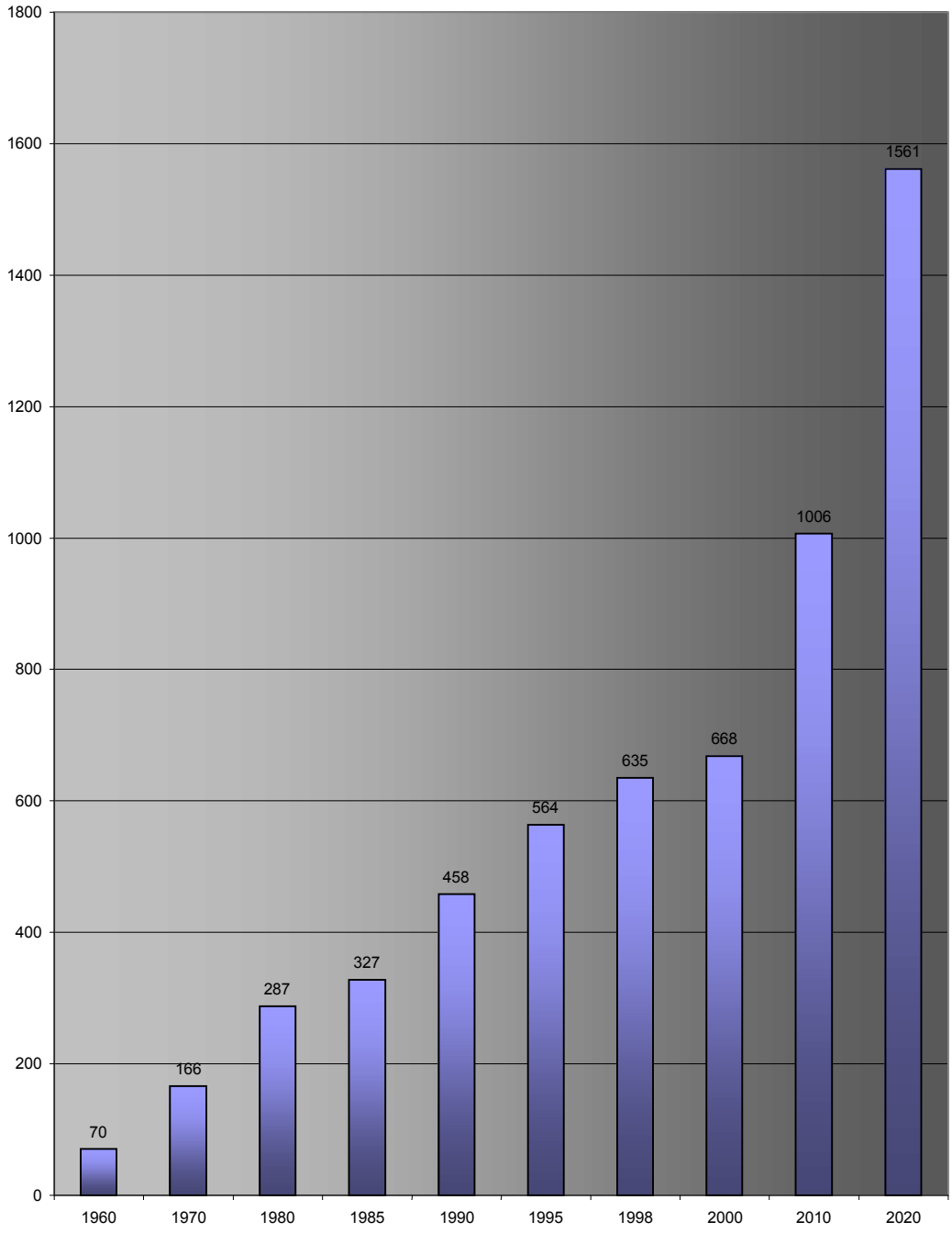


Figure.2 International Tourist arrivals in millions

Source: world tourism organisation

Perhaps more important than this growth has been the diversification of destinations that has taken place during the last 30 years or so. While in 1950 fifteen countries, all of them from Europe plus USA and Canada, accounted for over 90% of total international tourist arrivals, in 2002, their share of the market had fallen to around 60%. In parallel, many developing countries saw their tourist arrivals increase significantly.

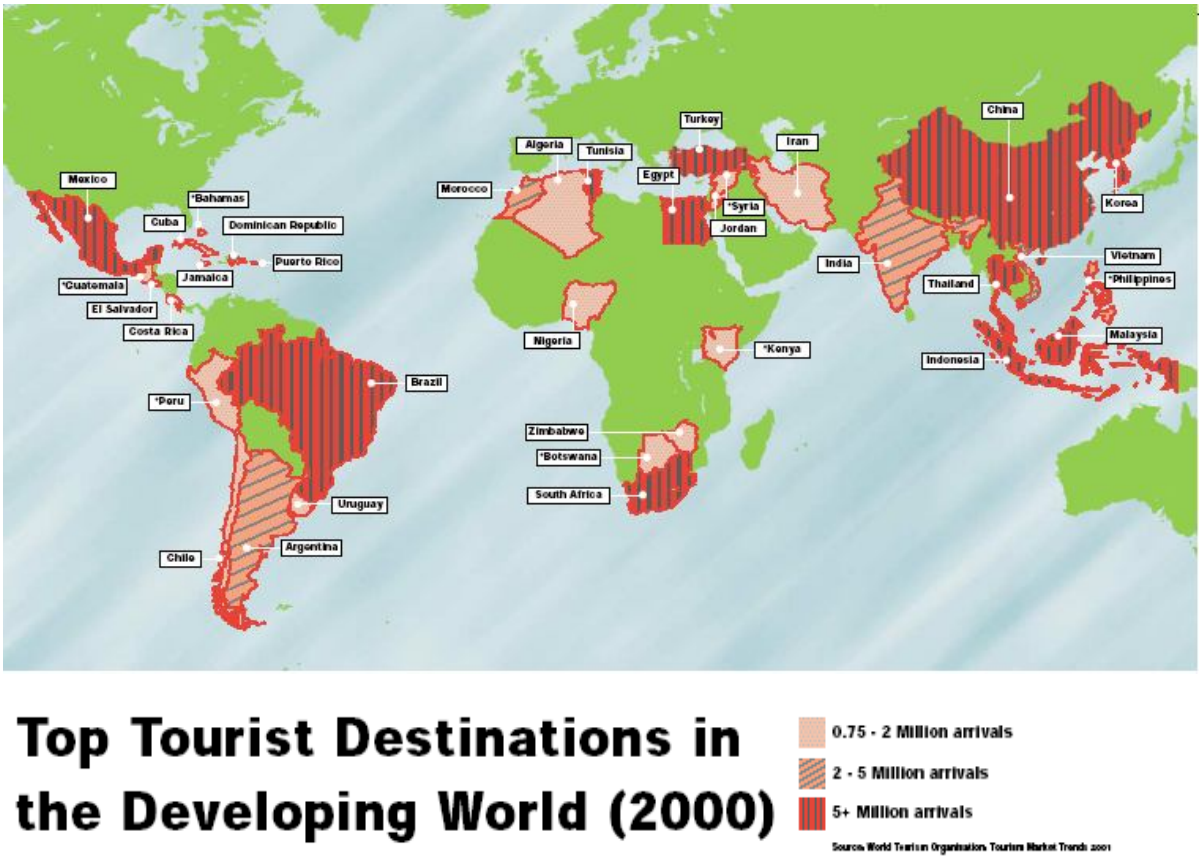


Figure 3: Map of the world showing top tourist destinations in the developing world.

Source: World tourism organisation.

Recent trends in world tourism have shown a much faster growth in developing countries than in developed countries the graph below shows the relative growth in

recent years between low and high income countries in terms of international tourist arrivals.

2.3 Types of tourism

Tourism is basically divided into three sub-headings:

a. Leisure tourist: included in this type of tourism are people visiting places for pleasures or out of general interest, sight seeing, taking holidays.
b. Business tourist: those travelling for business pursuits including those attending conferences and exhibitions are the make up of this group.
c. Specific tourist: for specific tourist, the travel motivation is directed towards particular needs, for example students on pilgrimage.

Tourism could be further classified in to two, namely; domestic tourism and international tourism. Domestic tourism involves short term visits within the same country or region, while international tourism entails short term visit to outside the tourist's country of residence.

2.4 Emerging trends in tourism

Emerging trends in tourism are basically new concepts which have given birth to a different type of tourist known as the environmentally conscious tourist as against mass tourism of previous years. The term used to describe this type of tourism range from Eco-tourism, responsible, attentive, to sustainable tourism.

2.4.1 Eco-tourism

Eco-tourism is simply responsible travel to natural areas, which conserves the environment and sustains the livelihood of local people. Sometimes it is defined as a sub category of sustainable tourism or a segment of the larger nature tourism market.

a. Eco-tourism activities- activities included in a tour that is designed to entertain clients and are co-ordinated by a professional guide or interpreter. Over 80 activities have been listed for Eco-tourism, such as bird watching, hiking, dining, kayaking, participating in cultural events, photography and mountaineering.

b. Eco-tourism products- this is a combination of resources, activities and services which are sold and managed through professional tour operators.

c. Eco-tourism resources- natural and cultural features that attract visitors, such as landscapes, endemic or rare flora and fauna, cultural festivals and historical monuments.

d. Eco-tourism services- tourism services such as transportation, food, lodging, guiding and interpretation services which cause minimal damage to the biological and cultural history of an area.

2.4.2 Sustainable tourism

Sustainable tourism embraces all segments of the industry with guidelines and criteria that seek to reduce environmental impacts, particularly the use of non renewable resources, using measurable bench marks and to improve tourism contribution to sustainable development and environmental conservation.

2.5 The concept of sustainability

Sustainability is defined differently within and between cultures, and its definition has changed over time, it is not possible here to deal with all of the definitions and interpretations of sustainability, including the view that in the face of an entropic universe it is oxymoronic. Hence it may be more appropriate to examine the concept of sustainability as a whole.

Earth's resources are limited but at the same time the economic prosperity of modern society is based on consumption of earth's limited resources. With the explosion in world population and the increasing rate of consumption it will be increasingly difficult to sustain the quality of life on earth if serious efforts are not made now to conserve and effectively use earth's limited resources (C. Madu)

According to Chaharbaghi and Willis, there should be an ideal world in which there exists a society where people everywhere live in peace and security, breathe fresh air, drink clean water and eat uncontaminated food. They have livelihoods that allow them to enjoy life, raising healthy, contented and educated children. They leave behind them a stock of wealth comprising manmade and environmental assets for the next generation, no less than they inherited from the previous generation. The real world, however, is far from this ideal. There is a growing concern about the long-term future, the resources of the planet, the environment and high levels of poverty, which are linked with the spread of disease, social unrest, population growth and environmental degradation. They went on to state that sustainable development has come to prominence, neither as a sudden fad nor a silly fashion, but rather to bridge the gap between the ideal and real worlds.

Sustainability refers to a process or viewpoint. In Europe, as characterized by Levine, sustainability is a process wherein responsible consumption, so as to minimise waste and interact in balanced ways with natural environments and cycles, is practiced. He discusses "the charter of Europe cities and towns towards sustainability" interims of process. (www.architronic.edu.kent)

The purpose of the charter was to formulate a program and process whose comprehensive nature would balance the desires and activities of human kind within the integrity and carrying capacity of nature. (www.architronic.edu.kent)

Instead of a wish list of idealized conditions, principles and processes were defined which real cities could adopt to achieve a stable, long term relationship within the limits of their local and global environment. It represents a process document. It presents a complete and coherent theory for the realization of the sustainable city. It also describes a politically workable, economically feasible process through which the balance seeking process of sustainability may be actualised.

(www.architronic.edu.kent)

What becomes evident in reviewing Levine's work in the centre for sustainable cities and the European charter is that much good can be and is being accomplished. It is being done under the banner of sustainability by those who choose to take up its call. The accomplishments are not so much in achievement of perfect environments ass it is in consciousness raising and defining appropriate, effective steps and actions.

The rocky mountain institute defines sustainability as "meeting the needs of the present without compromising the ability of future generations to meet their own needs". We will run out of resources at some point in time but we seek to delay that point for as long as possible. Implicit in this definition is the hope that if we delay long enough, we may be able to learn how to defeat the second law of thermodynamics which states "in any energy conservation, you will end up with less usable energy than you start with because of the inevitable loss of heat that occurs" and new technologies will reverse what now appears to be a continual process to an inevitable end. A similar interpretation is that we treat the natural resources available to us as capital and seek to live off only the interest or produced resources of nature. It would mean that we would

consume less through the products of our creative efforts than nature produces through the natural cycles. As appealing as these definitions sound, the second law of thermodynamics tells us that they are fundamentally flawed. The reality is that we are beholding to the universe that surrounds us for our survival, the existence of life and the opportunity to express ourselves creatively. We do crate order and an increase in resources for human fulfilment through our architecture.

From a naturalist's point of view, Ian McHarg states: We may now be quite sure, that as men we depend upon the sun the major elements and compounds, water, the chloroplast and the decomposers. With this new conviction we now turn to the sun and say, "shine that we may live". When we do these things with understanding, we have crossed in to another realm- leaving behind the simple innocence of ignorance. We can see the world more clearly now, our allies and ourselves. We have formulated a rudimentary value system and we are further on the path to formulation of a workman's code, the view of the good steward. (www.architronic.edu.kent)

Where as Ian McHarg looks inward Richard hawksley looks beyond the immediate environment to the source of the created order. This religious expression sees the universe as a gift from a super natural creator. Sustainable architecture as a description of human response is an offering of thanksgiving and honour to the author of the supporting resources, and the universe is not only a supportive system, it is also a model for how we are to create. If nothing else the concept of a sustainable environment should cause us to recognize our situation. Somehow, just as we create new environments with increased order, a creator put in place an order which today sustains us. (www.architronic.edu.kent)

2.5.1 Sustainability and Architecture

From the above discussion we could deduce that for us to achieve sustainability in our architecture we must adhere to the philosophy of environmental sustainability. This philosophy can be simply put as "to leave the Earth in as good or better shape for future generations than we found it for ourselves". By a definition, human activity is only environmentally sustainable when it can be performed or maintained indefinitely without depleting natural resources or degrading the natural environment. This includes Resource consumption to be minimal, Materials consumed should be made entirely of 100% post consumer recycled materials or from renewable resources (which were harvested without harm to the environment and without depletion of the resource base), Recycling of waste streams should be 100%, Energy should be conserved and energy supplies should be entirely renewable and non-polluting (solar thermal and electric, wind power, bio-mass, etc.), Use of natural resources efficiently, Minimization of waste and pollution, Protect natural diversity, Reduce green house gases' emission, Reduce road traffic, Good quality of rivers; Population of wild birds, Building new homes on brown field, Reduced waste, effluent generation, and emissions to environment, Reduced impact on human health, Use of renewable raw materials, elimination of toxic substances, etc.

This translates to a compelling need to find long-terms solutions that warrant continuing human existence and well-being. Architecture being a prominent player in any economy, and one of the most conspicuous forms of economic activity, would also require a change in approach. It is predicted that the pattern of architectural resource intensity (the ratio of per-capita architectural resource consumption to per-capita income) will generally continue growing. A country's economic development will necessitate more factories, office buildings, and residential buildings. For a household,

the growth of incomes will lead to a desire for a larger house with more expensive building materials, furnishings and home appliances; more comfortable thermal conditions in interior spaces; and a larger garden or yard. During a building's existence, it affects the local and global environments via a series of interconnected human activities and natural processes. At the early stage, site development and construction influence indigenous ecological characteristics. Though temporary, the influx of construction equipment and personnel onto a building site and process of construction itself disrupt the local ecology. The procurement and manufacturing of materials impact the global environment. Once built, building operation inflicts long-lasting impact on the environment. For instance, the energy and water used by its inhabitants produce toxic gases and sewage; the process of extracting, refining, and transporting all the resources used in building operation and maintenance also have numerous effects on the environment. Architectural professionals have to accept the fact that as a society's economic status improves its demand for architectural resources, and buildings or building products, energy, and other resources will increase. This in turn increases the combined impact of architecture on the global ecosystem, which is made up of inorganic elements, living organisms, and humans.

2.5.2 Principles of sustainability

Sustainability does not require a loss in the quantity of life but does require a change in mind-set, a change in values towards less consumptive lifestyles. These changes must embrace global interdependence, environmental stewardship, social responsibility and economic viability.

Sustainable design must use an alternative approach to traditional design that incorporates these changes in mind set. The new design approach must recognise the

impacts of every design choice on the natural and cultural resources of the local regional and global environments.

A model of the new design principles necessary for sustainability is exemplified by the "Hanover principles" or "Bill of rights of the planet" developed by William Mc Donough Architects for EXPO 2000 held in Hanover, Germany.

i. Insists on the right of humanity and nature to co-exist in a healthy, supportive, diverse and sustainable condition.
ii. Recognise interdependence: the elements of human design interact with and depend on the natural world, with broad and diverse implications at every scale. Expand design considerations to recognising even distant effects.
iii. Respect relationships between spirit and matter. Consider all aspects of human settlement including community, dwelling, industry and trade in terms of existing and evolving connections between spiritual and material consciousness.
iv. Accept responsibility for the consequences of design decisions upon human well being, the validity of natural systems and their right to co-exist.
v. Create safe objects to long term value. Do not burden future generations with requirements for maintenance or vigilant administration of potential danger due to the careless creations of products, processes or standards.
vi. Eliminate the concept of waste. Evaluate and optimise the full cycle of products and processes to approach the state of natural systems in which there is no waste.
vii. Rely on natural energy flows. Human designs should, like the living world, derive their creative forces from perpetual solar income. Incorporate this energy efficiently and safely for responsible use.
viii. Understand the limitations of design. No human creation lasts forever and design does not solve all problems. Those who create and plan should practice humility in

the face of nature. Treat nature as a model and mentor not an inconvenience to be evaded or controlled.

ix. Seek constant improvements by sharing knowledge. Encourage direct and open communications between colleagues, patrons, manufactures, and users to link long term sustainable considerations with ethical responsibility and re-establish the integral relationship between natural process and human activity.

2.5.3 Sustainability and cultural resources

Culture is expressed in many ways. Culture is said to consist of patterns, explicit and implicit, of and for behaviour and transmitted by symbols, constituting the distinctive achievements of human groups, including their embodiments in artefacts… the essential core of culture consist of traditional (that is historically derived and selected) ideas and especially their attached values; culture systems may, on the one hand, be considered as products of action, and on the other hand, as conditioning elements of further action. They went on to further say that it is culture that gives character to an area.

Cultural resources are those tangible and intangible aspects of cultural systems, both past and present, that are valued by a representative of a given culture or that contain information about a culture. (www.nps.gov)

Tangible cultural resources include, but are not limited to sites, structures, districts, landscapes, objects and historic documents associated with or representative of peoples, cultures and human activities and events either in the present or in the past. Tangibles also include plants, animals and other natural resources cultural defined as food, manufacturing and ceremonial items, and naturally occurring or designated physical features such as caves, dance grounds, villages e.t.c.

In tangible cultural resources include the primary written and verbal data for interpreting and understanding those tangible resources. Intangible cultural features including family life, myth, folklore, ideology, folk song, and folk dance are renewable and transmitted from generation to generation.

When a people of any culture occupy a land, they transform the land by building structures on it. This composite of human imprints on the surface is called cultural landscape, (Sauer, 1977) and the definition of cultural landscape is given below as:

"The form superimposed on the physical landscape by the activities of man"

He stressed that such forms result from cultural processes prevailing over a long period of time, so that successive generations contributed to their development. These forms made over time will amount to a locality's tangible cultural resources.

Most cultural resources are unique and non renewable, because the people that made those resources are long gone and can not be brought back. Sustainability has often been an integral part of the composition of both intangible and tangible resources. Ecological sustainability and preservation of cultural resources are complementary. The historic events and cultural values that are commemorated were shaped by humankind's response to the environment.

It is not just nostalgia that draws people to historic developments. Much of what is valued in these developments is their response to the climate, natural setting, and locally Cultural resource preservation intrinsically is a form of sustainable conservation. The built environment represents the embodied energy of past civilizations. Where resources can have a viable continued use, preservation is conservation in every sense of the word.available building materials. Their usefulness as model for new buildings only adds to their value. Many preserved buildings,

districts, and landscapes consist of vernacular design architecture without architects built with onsite or locally available materials.

The vernacular response to climate, setting and materials provide opportunities for presenting lessons in ecologically sound design. Conversely, many of our historic military, industrial and engineering sites afford opportunities to discuss ecological excess of the past.

2.5.4 Sustainable building design philosophy

Sustainable design balances human needs with the carrying capacity of the natural and cultural environments. It minimises environmental impacts, it minimises the importation of goods and energy as well as the generation of waste. The ideal situation would be that if development was necessary, it would be constructed from natural sustainable materials collected on site, generates its own energy from renewable sources such as solar or wind and manage its own waste.

Sustainable design is an Eco-systematic approach that demands an understanding of the consequences of our actions. As a tool to understanding this principle, we may choose to draw an example using an organism to symbolise functional appropriateness, habitat harmony and survival based on adaptation and cultivation.

The organism makes use of immediately and locally available materials to construct itself, and does so with economy and efficiency. The same strategies when used in development can minimise global and local impacts on resources. It adapts to its environment through instinctive reaction and an evolutionary process of generations. Through the ability to rationalise and mechanise, humans have the ability to adapt psychologically and physical in a matter of hours but with little instinct for harmony with the environment.

The organism maintains a harmonious relationship with its environment by establishing a balance between its needs and available resources. Similarly, the ecologically sensitive design adjusts demands, lifestyles and technologies to evolve a compatible balance with the natural and cultural systems within its environment.

One method of describing sustainable building design is to compare it to other forms of resource-based development. Metaphorical interpretation of traditional forms of tourist resorts provides insight into the relationship that their facilities and visitors have with the resources upon which they are based. Although obviously attempting to capitalise on available resources, few resort developments actually provide or can sustain a harmonious relationship with those. A more appropriate metaphor for resource related design may be Aesculapia, the Greek place of healing. In this model, nature is respected for its restorative qualities. The human experience is set in harmony with the environment and an opportunity is created to allow a reconnection of human needs to the natural systems upon which all life is based. Applying these objectives to a park or tourism- related area, any visitor development would embrace the following characteristics:

i. The primary sense_ sight, hearing smell, taste and touch are incorporated into the visitor experience to enhance understanding of the environment uniqueness.
ii. To be healing, visitors must experience an obvious organic connection with the natural and cultural context of the surroundings so as to appreciate their worth and to seek ways to minimise biological disturbances.

2.5.5 Sustainable tourism development

Aesculapia provides a prime opportunity for ecologically oriented tourism. As Eco-tourist seek close involvement with authentic natural and cultural experiences, Aesculapian- based building design could establish a “right of passage” to place human

activities in harmony with local, regional and global resources. The resulting development would serve as a "class room" to demonstrate environmental conservation, understanding and respect for indigenous cultures and resources, and ways to live environmentally better in the 21st century.

The following are criteria or standards that a sustainable tourism development should strive to meet.

i. Provide education for visitors on wildlife, local cultural resources, historical features or natural features.
ii. Involve indigenous populations in operations and interpretation to foster local pride and visitor exposure to traditional values and techniques.
iii. Accomplish environmental restoration.
iv. Provide research and development for and /or demonstration projects of ways to minimise human impacts on the environment.
v. Provide spiritual or emotional recuperation.
vi. Provide relaxation and recreation.
vii. Educate visitors that knowledge of our local and global environments is valuable and will empower their ability to make informed decisions.

2.5.6 Sustainable building design objectives

The long term objective of sustainable design is to minimise resource degradation and consumption on a global scale. Thus the primary objectives of sustainable building design is to "lead through example" to heighten environmental awareness. Sustainable design must seek to: -

i. Use the building (or non-building) as an educational tool to demonstrate the importance of the environment in sustaining human life.

ii. Reconnect humans with their environment for the spiritual, emotional and therapeutic benefits that nature provides.
iii. Promote new human values and life styles to achieve a more harmonious relationship with local, regional, and global resources and environments.
iv. Increase public awareness about appropriate technologies and the cradle-to-grave energy and waste implications of various building and consumer materials.
v. Nurture living cultures to perpetuate indigenous responsiveness to and harmony with, local environmental factors.
vi. Relay culture and historical understanding of the site with local, regional and global relationships.

2.6 Tourism in Nigeria

Tourism as an industry in Nigeria began immediately after independence in 1960 when it was at its lowest ebb. The problems then were non-availability of welfare facilities such as hotels. There was also absence of personal trained to guide tourists to places of interest. Communication and transportation networks were also not developed.

Immediately after independence there was a boost in the tourism characterised with development of night-clubs, which provided recreation for many foreigners, especially sailors at the sea port of Apapa, Warri and Port Harcourt. Capital cities and towns also witnessed this development.

Tourism became a serious business in Nigeria after the civil war. The traffic increased sharply between 1966 and 1968 and then dropped by 10,000 visitors in 1969. After the civil war, there was an influx of visitors into Nigeria from all parts of the world who probably came to see and study the effects of the war. These developments prompted the federal government to formulate policies for the development of the sector. As a result of this, the government established first the tourist company of Nigeria and later

on as the oil boom brought a dimension to the Nigerian economy, the Nigerian tourist board was established (NTB) by decree 54 of 1976.(ogisi, 1992)

trends of international tourism in Nigeria 1992-2002

YEAR	arrivals(000)	%change over previous year	receipt Us million	%change over previous year
1992	272	-	29	-
1993	294	8.1	31	6.9
1994	214	-27.2	34	9.7
1995	665	67.8	54	58.8
1996	822	23.6	85	57.4
1997	1263	25.7	86	1.2
1998	1293	21.1	142	65.1
1999	1392	21.1	145	2.1
2000	1459	21.3	148	2.3
2001	1526	21.7	151	2.3
2002	1593	22.1	156	3

Average growth rate %

arrival=17.5%

receipt=5.3%

Table 1: trends of tourism in Nigeria 1992-2002

Source: Nigerian tourism Development Corporation

trends of international tourism in Nigeria forecast

1992

	base year 1995	forecast		Average annual Growth rate (%)	market share%	
	1995	2010	2020	1995-2020	1995	2020
Total	565.4	1006.4	1561.1	4.1	100	100
Africa	20.2	47	77.3	5.5	3.6	5
Americas	108.2	190.4	282.3	3.9	19.3	18.1
east Asia	81.4	195.2	397.2	6.5	14.4	25.4
Europe	338.4	527.3	717	3	59.8	45.9
middle E	12.4	35.9	68.5	7.1	2.2	4.4
south Asia	4.2	10.6	18.8	6.2	0.7	1.2
intra-reg(a)	464.1	760.9	1183.3	3.8	82.1	75.8
long haul(b)	101.3	215.5	377.9	5.4	17.9	24.2

a. intraregional includes arrivals country of origin is not specified

b. long-haul is defined as everything except intraregional travel

Table 2: forecast of international tourism in Nigeria

Source: world tourism organization

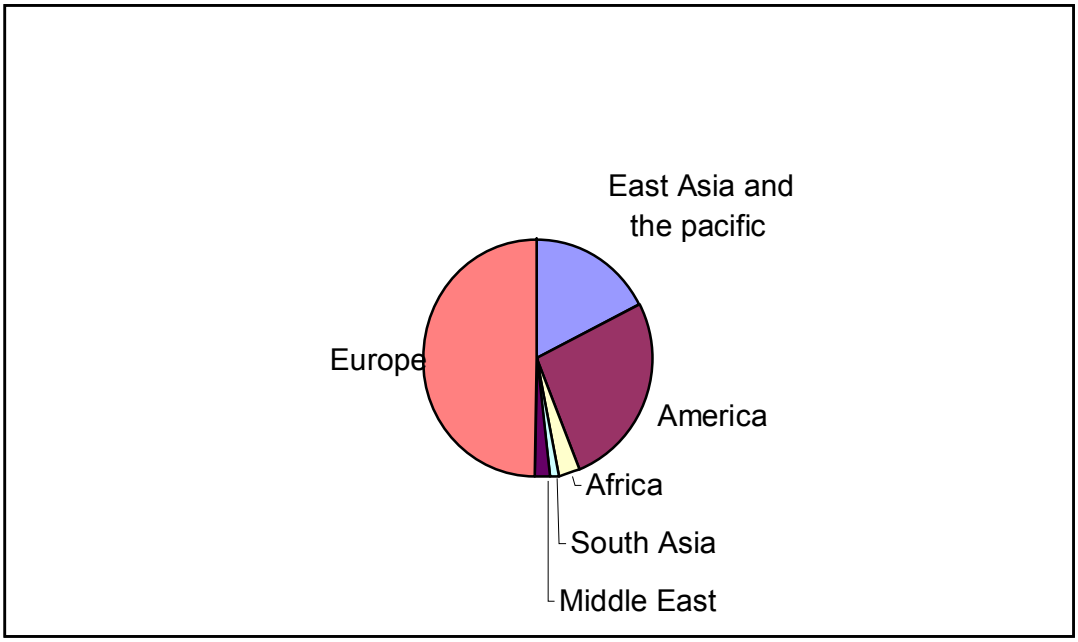


Figure 4: showing international tourism receipts 2001 market share by region.

Source: World Tourism Organization

2.7 Historical review of government policies on tourism

The first attempt made at managing resources and potentials in Nigeria was in 1953 by the setting up of the antiquities commission to preserve national antiquities. This signalled the formation of a committee to find ways of developing the tourism industry. The committee was placed under the supervision of the federal ministry of commerce and industry in 1959(ogisi, 1992). The points of reference for these committees were: -

i. To look into ways of improving hotel and catering industry.

ii. To make recommendations on provision of entertainment facilities.

iii. To into ways of improving transport facilities in Nigeria

iv. The other resources which are to be developed in various aspects.

Recommendations were made on public campaign on scenic views and attractions. A committee was then appointed by the federal government to carry studies tourism situation in the country. The committee brought idealistic proposals such as-:

i. Nigeria was to join holiday associations to exchange data and ideas.

ii. Publicity campaign on tourism to be intensified.

iii. Nigeria should concentrate on preservation of natural features, local customs, crafts, in addition to game reserves.

iv. There should be improvement of transportation

v. There should be organisation of entertainment facilities in the country

vi. Advocated the training of personnel for catering trade.

The federal government took the following steps based on the proposals of the committee: -

i. Establishment of Nigerian hotels limited in association with regional government and operated hotels in Kano, Lagos and Jos.

ii. Tax relief on hotel industries, granted incentives in the form of loans, remission on taxation for 5-10 years.

iii. Hotel keeping was declared pioneer industry under industrial development ordinances (1958)

iv. Catering houses was established

v. Cooperation with international tourist bodies and provision of Nigerian tourist data to them and vice versa e.g. world training and automobile (WTAA) and alliance international de tourism (AIT)

vi. Easement of immigration laws and formalities and allowing visitors from abroad to stay up to one month without prior notice to the federal government.

vii. Campaign on cultural preservation

viii. Sales of hand craft and souvenirs

ix. Establishment of motor transport firms and corporations

x. Personnel training for tourist industry was embarked upon

xi. Brochures such as 'fly Nigeria' and this is Nigeria were distributed by the federal ministry of information, in conjunction with the Nigerian airways and British Airways corporation (B.O.A.C). The Nigerian tourist association was charged with the responsibility of developing the tourist industry up to 1975.

The Nigerian tourist board (NTB) was given the responsibility of promoting tourism facilities all over the country subsequently, states were made to set up tourism committees to assist the board on implementation of the decree with the following requirements(ogisi, 1992): -

i. Encourage people living in Nigeria to take their holidays within and visitors to come in.
ii. Encourage the provision and improvement of tourist amenities and facilities in Nigeria including the development of museums/ historical sites, parks, game reserve, beaches, natural beauty spots and souvenirs industries.

The Nigerian tourism magazine was launched by the board in 1986 and also embarked on a registration programme of hotels nation-wide to enable classification and grading standardisation of hotel services and ensure that customers were given value for their money. This helped in the control of hotel tariff (ibe, 1991).

The Nigerian tourist board and national council of tourism called for the commercialisation of tourism as a way to revive the industry. This was submitted in a document to the federal government in 1986.

A fair tagged as international tourism exposition (NITOUR) was organised by the Nigerian tourist board. It was held at Kaduna in 1989. The fair was aimed at setting Nigerian products aggressively nationally and internationally. Promotion of the country rich and diversified tourist products and facilities can be enhanced through participation in fairs. Participants in the fair included the private sector, banks, hotels, restaurants,

industrialist, consultants, travel and tourism, waiters, shipping lines, cultural groups, breweries e.t.c. Foreign country participants included; Gambia, West Germany, Sierra Leone, Great Britain, Morocco, France, Jamaica, Senegal, U.S.A., Togo, Belgium and Brazil

Government policy on tourism was reviewed in 1991 with the objectives of generating revenue, encourage even development, promote tourism based rural enterprises, generate employment and accelerate rural- urban integration and cultural exchange. Guidelines were set and strategies adopted. The strategies are: -

a. Provision of basic infrastructure like good roads, water, electricity, and communication e.t.c to centres of attraction in order to accelerate their development for the purpose of exploiting fully their touristique value. Relationships to be established with other government agencies responsible for the provision of the infrastructures.

b. Concession and easy access to land to be provided by state government without any hindrance. It became mandatory for the state government to demarcate potential tourism zones and their products from other usage to avoid undue pollution.

c. Government would introduce incentives such as tax holidays, tax rebate and soft loans with very long period of moratorium to potential investors. The government would also give the tourism sector preference, just like the agricultural sector.

d. Government will take equity interest to tourism projects in their areas of jurisdiction in order to lend support to such projects.

e. Adoption of a project development philosophy in order to maximise the benefits from tourism. This would be achieved by demarcating the country into major

tourism zones for purposeful and even development which shall take into consideration the elimination of unnecessary duplication and rivalry among the states in tourism development. Government shall encourage the establishment, by private investors, of major holiday resorts, through out the country. The local government in collaboration with appropriate security agencies in their areas of jurisdiction shall ensure the safety and comfort of tourism in their localities. The use of local architecture and components in construction works shall be encouraged not only to depict the aesthetic nature of Nigerian cultural heritage but also to save costs. Government shall also establish national tourism festivals to be hosted in rotation among the states at designated periods in order to accelerate the promotion of domestic tourism.

f. In order to facilitate the growth and development of tourism, government shall:

- Embark on a massive and aggressive publicity campaign among Nigerians on the potentials and significance of tourism in our national development. Availability of publicity organs of the government shall be utilised.
- Publicise and market the nation's tourism potentials abroad through Nigeria's diplomatic missions and the foreign media.
- Simplify issuance of visas to intending visitors such that they could be issued immediately on application, or in case of bonafide tourists arriving at our parts with return tickets, visas should be issued on the spot.
- All security agencies including customs and immigration shall be re-oriented in the discharge of their duties in order to eliminate inconveniences faced by visitors entering the country.

The following institutional framework to implement these strategies at National, state and local government levels shall be put in place: -

a. The federal ministry of commerce assumes full responsibility for policy initiation and monitoring, maintaining link with the state governments on funding and monitoring of nation-wide tourism infrastructure; and relating with international tourism agencies.
b. State ministries of commerce and tourism implements policies and directives from the federal ministry of commerce and tourism and initiate projects for tourism development in the states.
c. National council on commerce and tourism, chaired by the federal minister of commerce and tourism, ensures the coronation of national planning and development of tourism in the federation. It is an annual forum for discussing and perfecting modalities for tourism management.
d. The Nigerian tourism development corporation (N.T.D.C) is the apex tourism body responsible for promoting, marketing and disseminating information on the industry locally and internationally, through publication of hand books, brochures and general guidelines for the operation of the industry. It collaborates with the private sector as well as other tiers of government in implementing policy directives and executing tourism projects. It co-ordinates the activities of organised private sector tourism associations and practitioners.
e. State tourism boards are to identify, preserve, protect and develop tourism assets and resources within the states.
f. Local government tourism committees locate and identify potential tourist attractions in their areas serve as information centres and provide tour guides, preserve and maintain monuments and museums in their areas of jurisdiction (ogisi, 1992).

CHAPTER THREE

TOURISM IN KADUNA STATE

3.1 Introduction

Tourism in Kaduna State just like most states in Nigeria has over the years been left un-harnessed. The lunching of the national policy on tourism and the promulgation of decree No 81 of 1992 (Nigerian Tourism development decree) at the centre and tourism boards for each state is evidence that efforts are being finally made towards boosting this ailing sector.

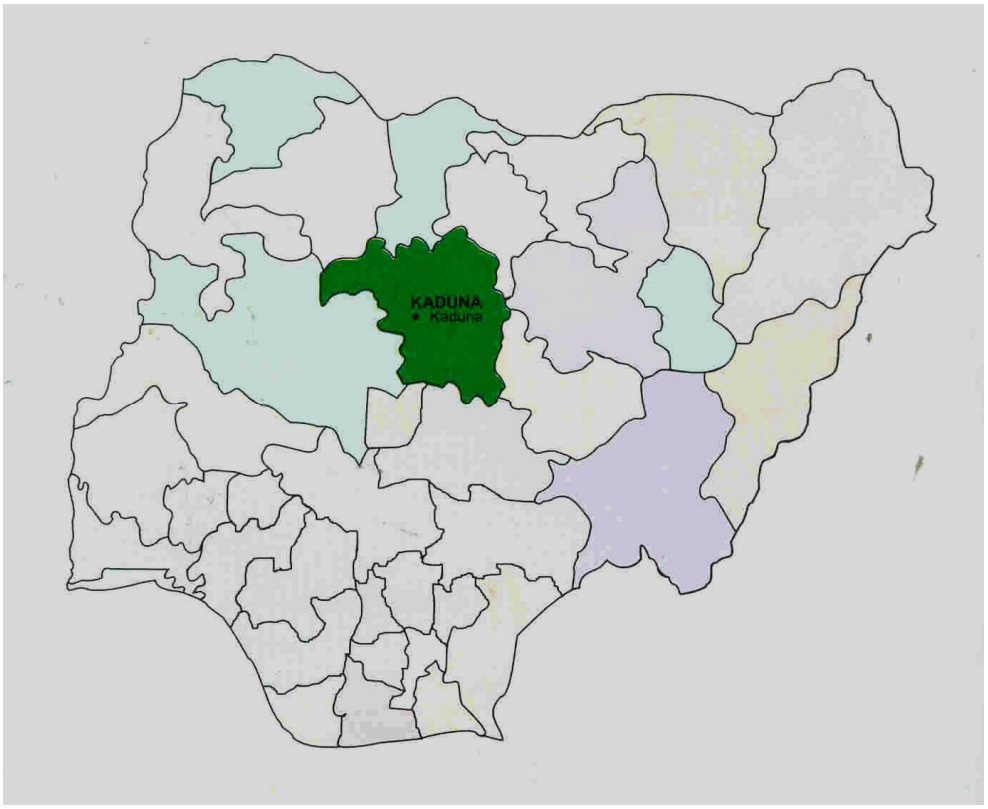


Figure 5: Map of Nigeria showing the location of Kaduna state

Source: Kaduna State Tourism Board

Nature has endowed Kaduna State with abundant natural and human resources. Tourism potentials are so many and diverse, with a few of them having facilities for

tourist. Accesses to some of the attractions in the state have been greatly facilitated by the construction of road network. Such attractions include the Emir of Zazzau's place, historic Zaria mosques the ancient city of Zaria surrounded by the 15th century Queen Amina walls with its gates, the over 2500 years NOK settlement, the tomb of bakwa – Turunku, Kangimi dam, Zaria dam, general Hassan park, the Galaxy national park, Lugard foot bridge, National museum, Arewa house, the beautiful Kagoro Hills and numerous other attractions.

3.2 tourism infrastructure

An appraisal of infrastructures in Kaduna State has been carried out by the Kaduna State tourism board. Tourism resources shall be categorised in to three groups; Natural infrastructure, comprising natural resources, physical infrastructure comprising transportation communication, water and electricity and lastly social infrastructure comprising man –made tourist attractions and entertainment facilities (support facilities). Purpose of this is to examine the tourism potentials in Kaduna State.

3.2.1 Natural infrastructure

(a) Kagoro hills – the Kagoro hills scenery is one of the most beautiful natural attractions in Kaduna State. It is nature's gift to Kaduna state. The hills influence the weather of the area and it enjoys a mild climate similar to that of the Jos plateau. There is heavy rainfall with mild fresh humid wind during the rainy season. The hills also form a long range, with tall trees and rocky places at the base. The area is good for rock climbing, hunting, mountaineering, and has very beautiful sceneries for picnic and relaxation.

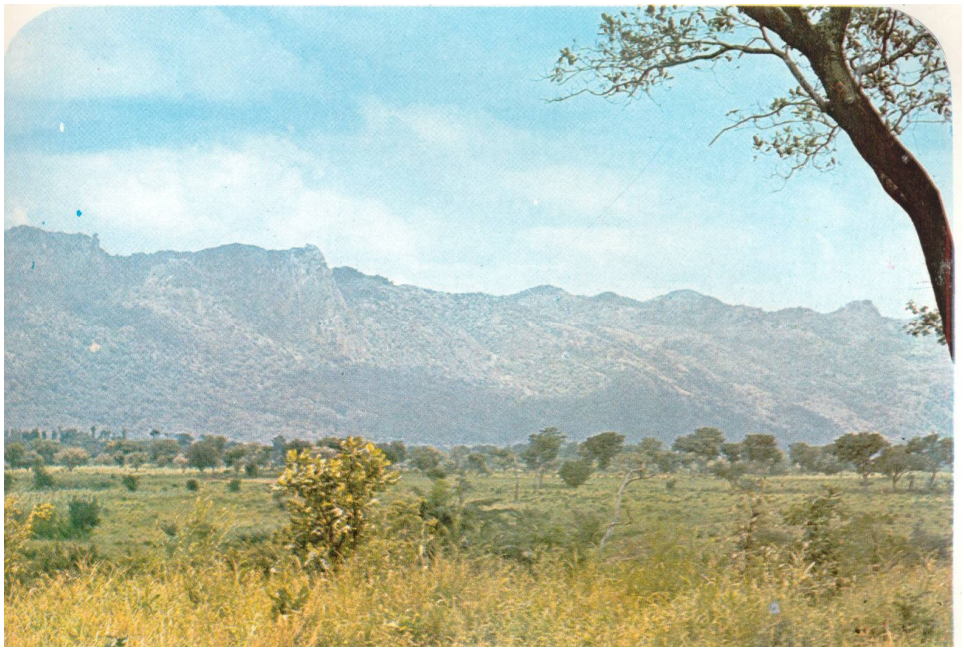


Plate 1: kagoro hills

Source: Kaduna State Tourism Board

(b) Matsirga water falls – is situated about 227 kilometres south of Kaduna. The water drops 30 metres in to a gorge that has been supported by the beautiful rocks. The fresh cool breeze around the area has something to offer for tourists. The proximity of the Kagoro hills and Nok museum settlement provides and added advantage to tourist visiting the area (Kaduna state Tourism).



Plate 2: showing the Matsirga water falls

Source: Kaduna State Tourism Board

3.2.2 Social infrastructure

(a) General Hassan Usman Park – the park is situated at the end of swimming pool road in Kaduna. The park was used as a garden during the periods of colonial and northern administrations. It occupies an area of about 7000 meters square. It has a natural setting of trees, mango grove, orchard and dotted small islands from river Kaduna which flows majestically around the islands.

A very prominent attraction in the park is the Lugard Bridge which was transported down to Kaduna by lord Lugard, the then governor general of Nigeria. The bridge was created 40 years before it was finally removed and transported to Kaduna in 1920.



Plate 3: showing the legendary Lugard Bridge at the park

Source: Kaduna State Tourism Board

The beauty of the landscape with fire flowers and palm trees is further enhanced by a mixture of modern and traditional architectural designs and sculptures

(b) Zaria Dam – the dam is situated in one of the transit routes from Kaduna through Zaria to Jos road. The dam is built across the Galma River to from a body of water about 3000 metres wide and 24 kilometres long. The sound of the water falls at the spillway, the district yet unobtrusive view of the town in the distance, the serenity

of the water and the gentle slope of the site all add up to a most desirable location for relaxation.



Plate 4: Zaria Dam

Source: Kaduna State Tourism Board

(c) Kangimi dam – The dam which is about 37 km from Kaduna town is situated along Kaduna – Jos road. The area is an attractive place for tourists and is good for picnics and general relaxation. Presently, the area has been earmarked by the Nigerian tourist board in conjunction with the Kaduna state tourism board to build a holiday resort near the dam.



Plate 5: Kangimi Dam

Source: Kaduna State Tourism Board

3.2.3 Historical infrastructure

(a) Nok terracotta and museum project – the Nok culture which is over 2500 years is no doubt one of the most significant and best known cultures in the black African region today. Scholars and researchers both in Nigeria and abroad, have, for a long time, developed keen interest in this fascinating culture. It is known that Nok archaeological sites and findings have been made in Kastina – Ala (present day Benue State), and Kagara in the north-west. Objects such as terracotta heads of monkeys, elephants, and other animals; terracotta head of man, stone, axe, iron, axe, spears, armaments and pots were found.



Plate 6: showing a Nok terracotta head

Source: Kaduna State Tourism Board

(b) Emir of Zazzau's place – The palace was built of mud with traditional expertise in typical Hausa architecture design and is surrounded with high walls. At the main entrance gate, there is a second gate separating the residential area of the Emir and his family from his emirate offices. The place like most Hausa states has a flag which indicates the presence of the Emir.



Plate 7: showing the emir of zazzau's palace

Source: Kaduna State Tourism Board

(c) St Bartholomew's Church – The church was built by the first missionaries in Northern Nigeria at Wusasa in Zaria. It was built of mud in the local Hausa architectural design. The buttressed vaulting of the roof has an interesting architectural feature for tourists.



Plate 8: showing ST. Bartholomew church in Wusasa

Source: Kaduna State Tourism Board

(d) Lugard hall – this was the former house of chiefs during the first republic. It still retains its administration status and was house of the legislature during the second republic in 1979 – 1983. It is still maintaining the same in this civilian administration.



Plate 9: showing the Lugard hall in Kaduna.

Source: Kaduna State Tourism Board

(e) Arewa House – the arewa house used to be the residence of the former premier of Northern region, Sir Ahmadu Bello, Sardauna of Sokoto. It was taken over by Ahmadu Bello University Zaria in 1976 to be used for historical documentation and research centre. A well preserved history of northern Nigeria can be found there. The centre also comprises of a research library, Archives, exhibition galleries, conference and study hostels for visiting research students and workers.



Plate 10: showing arewa house

Source: Kaduna State Tourism Board

3.2.4 Cultural infrastructure

(a). Afan Festival- the festival is celebrated by the kagoro people in the southern part of Kaduna State. “Afan” means mountain or hill and the festival marks the end of the annual harvest of the grains and the beginning of the hunting expeditions as well as other numerous activities. The hills have great significance to the people of Kagoro as they believe that the hills protected them from their enemies. Preparations for the festival usually commence two to three weeks before the date. The festival is thus celebrated with the greatest solemnity, according to history. December thirty first marks the beginning of the festivals with cultural performances and local sports competitions taking centre stage. In the early morning of January first, the chief of kagoro is taken round the town in a colourful procession with singing and dancing by cultural troupes from all parts of Kaduna state. The festival is one of its kind in sub Saharan Africa, it is said to have an average attendance of between eight

thousand to ten thousand people. (Kagoro development association, 2000). The festival is attended by people from all walks of life, from high government officials to low cadre civil servants, from indigenes coming back home to mark the end of the year festivities to foreigners from all corners of the globe.



Plate 11: showing Fulani women during afan festival.

Source: Kaduna State Tourism Board



Plate 12: showing horn flutters.

Source: Kaduna State Tourism Board



Plate 13: the Ninzo cultural group during the festival

Source: Kaduna State Tourism Board



Plate 14: jarawa dancers at afan festival.

Source: Kaduna State Tourism Board

b. Tuk- ham festival- the present day of the Tuk ham annual festival is a fusion of both "KU" and "Fain" festivals which were known to be celebrated by the forefathers of the ham (Jaba) people, it features a lot of traditional and cultural displays, traditional dances "juju" and many other processions. The festival is usually celebrated and performed during the Easter holidays. The two- day ceremony is normally preceded by a symposium and Tir- Ham (Miss Jaba) and is rounded up with cultural displays and a gala night.

c. Eid- el- fitr- this is a Muslim festival that is celebrated annually to commemorate the end of Ramadan fasting. The Islamic name given to this festival is Eid- El-Fitr, which is translated in Hausa language and called "Karamar Sallah". The festival takes place on the first day of the Islamic month of "shawwal". It is normally celebrated in a very colourful manner which includes riding of horses, drumming and dances through out the week.

d. Eid- El- Kabir- this is another annual Muslim festival which takes place on the 10th day of the Islamic month of "Zull- Hajj", to commemorate the acceptance by Prophet Abraham to sacrifice his only son Ismail. The same colourful activities of the Eid- El- Fitr are also obtained.

e. Christmas- this is the Christian festival that is celebrated annually mostly in the southern part of the state. The festival takes place each year on the 25th of December, and it is celebrated to mark the birthday of Jesus Christ. There are a lot of traditional drumming and dances a week before and after the festival and it is colourful to watch.

3.2.5 Physical infrastructure

(a) Water: Kaduna Township and many major towns like Zaria, Kafanchan, Ikara, Zonkwa, Saminaka, Kagoro, Kachia and many others enjoy adequate supply of pipe borne water. More water supply schemes are being planned to supply the rural areas with clean portable drinking water both for human and livestock consumption by sinking bore holes and the construction of dams by the Kaduna State government, water supply in Kagoro is from Kagoro mountain water works which pumps nearly 1-3 million litres per day. This water is easily pumped to every part of town.

(b) Electricity: Major towns in Kaduna State are supplied with electricity by the national Electric power Authority (NEPA). The state rural electrification board helps in electrifying the rural areas, stand-by electric generators abound in many hotels to overcome shortages in power supply. The proposed resort will have to also seek for alternative source of power.

(c) Telecommunication: most towns and settlements in Kaduna State have not been left out of the Internet age. Internet cafes are available in most towns with a large

part of the population still patronising the post and telephones for their day to day communications.

(d) Transportation: The state is linked with other states by good road network, railways, and transport. Private airlines such as Chanchangi airlines, ADC, etc operates domestic flight daily to and from Kaduna international airport. Tickets are easily obtained at the airports or the airline offices in Kaduna town. The Kaduna international airport is yet to commence international flights. Most visitors arrive Nigeria through Kano, Lagos and Port Harcourt airports. Some other charter airlines also provide "shuttle" flights daily to Kaduna and other important towns in Nigeria which makes getting round the country fast and easy.

3.3 Kagoro as a tourist haven

There is need for us to now discuss tourism in Kagoro, having elaborately discussed Kaduna State tourism. Below are the criteria used in determining the viability of Kagoro as a tourist haven.

3.3.1 Location criteria

In choosing a good location for the proposed tourist resort, the following criteria were used.

(a) Tourist attractions: Adequacy of tourists' exports would be assessed to determine whether they are appealing to tourist.

(b) Accessibility: whether such attractions are accessible with ease and with any mode of transportation appropriate.

(c) Availability of infrastructures such as water, transport, communication facilities, power, entertainment and leisure facilities.

(d) Whether Kagoro is already attracting tourists of which such facility as a resort could be provided for.

(e) Presence of good and conducive climate would also be considered.

The above criteria were looked into with comparism made to other locations in Kaduna State. From the comparisons, I was able to decide on the viability of Kagoro as a tourist exporter.

3.3.2 The people and settlement

The land and language spoken by the people of Kagoro is known as Gworok, however as a result of contact with tribes that could not pronounce this name, especially the Hausas, the names Kagoro was evolved as a more easily pronounced substitute. The Oegworok or Kagorowa migrated from the Bauchi plateau and settled in Assop, Nimbo and Tsok before finally settling down at their present site about 400 years ago. This final choice was in consideration of the availability of land for cultivation purpose as well as the provision of a safe haven from wild animals and invaders from far-away lands (Kagoro development association 2000)

3.3.3 Population

According to the 1991 census figure, Kagoro had a population of 48,329.The projected value for the population in 1996 would be 56,156. The difference between 1991and 1996 would be 8,156 for a period of 5years. This implies that the population increased annually by 1.6312. The annual increase of 1,631.2 corresponds to an increase rate of 3.39%, approximately 3.4%. This would imply that the projected figure for 2004 would be 73,375.

3.3.4 Occupation and income

The kagoro people are primarily subsistent agriculturist. Hunting is an important economic activity. The food crops grown include millet, guinea corn, rice, yam, cassava, cocoa yam and potatoes. Crafts like basketry, mat making metal work and wood caving are also occupations of people in and around Kagoro. A very small percentage of the population work with government establishments. (Comfort, 2000).

3.3.5 Tourism potentials

a. Afan festival: - the Afan festival is celebrated by the Kagoro people in Kagoro town. Afan means mountain or hill and the festival marks the end of the annual harvest of the grains and the beginning of the hunting expeditions as other numerous activities. The hills have great significance to the people of Kagoro as they believe that the hills protected them from their enemies. The festival is thus celebrated with the greatest solemnity, according to historical details. After sanctifying the hills, the hunting expedition is organised early in the morning of the following day. All the hunters climb on top of the hill to a place called "Jiyo" trouble where they surround the place and set it on fire. "This is called burning of the hill" and it is then that the hunting starts. At the end of the hunting expedition, the hunters return home shouting and jubilating"O Afan", "O Afan", "O Afan". Recently, the federal government has selected the Afan festival as a national festival. (Kagoro Tourist Guide, K.D.A). The festival is celebrated on the 31st of December and on the 1st of January of every year. The main event which takes place on the first of January begins with an attractive and colourful procession. During this elaborate procession the chief circumnavigates his chiefdom amidst pomp and fanfare to meet his subjects. This attention-grabbing procession terminates at the chiefs palace, and it signals the commencement of the most absorbing part of the

festival which is cultural performances from all tribes and peoples of Kaduna state. The pictures below offer a glimpse of what ensues during this momentous festival.



Plate 15: cultural dances during the festival

Source: Field Work



Plate 16: cultural dancers from another tribe during the festival

Source: Field Work



Plate 17: The people of kagoro participating in the festival

Source: Field Work



Plate 18: showing Jarawa dancers during the festival

Source: Field Work

b. Flora and fauna.

Kagoro has high rainfall, numerous sources of spring water, beautiful scenarios, including a tropical rainforest in the middle of the savannah. In addition, numerous culturally significant caves, shrines and places of interest, which formed part of the culture of the people, are still visible today on the hills. Before the colonial era, the dominant activity was farming and hunting. Modernisation contributed some new craft and skills including weaving, netting and black smiting.



Plate 19: showing typical landscape of Kagoro

Source: Field Work

c. Katagwan

From historical facts, a giant by the name of Katagwan lived in Kagoro about 150 years ago, and it was estimated that he lived for a period of 300 years. His real height has still not been ascertained, but he was said to be very tall and huge. According to the legend, Katagwan was a warrior who protected his people during wars and invasions. No one could tell which clan he came from or if he ever got married. He possessed spiritual powers such as being able to reach for something with his hand at Kankada (Kadon) in Bajju land. One can only comprehend the size of this giant by paying a visit to his grave at Dushui. Katgwan's house, utensils and grave could easily be sighted from the surrounding hills at Dushui.

d. udong katagwan

Katagwan stored his drinking water in a place called “Udong Katagwan” which means Katgwan’s refrigerator. The Udong still exists even today. Water inside the cave is ice cold. The effect of cold is felt usually from a distance of 50m away from the cave where the actual fridge is. Water comes out from the rock requiring no artificial filtering and no artificial cooling before consumption. People are not allowed to wash any cloths, pots, calabashes e.t.c. The place is kept clean and pure. Security over the place is maintained for 24hours a day.

e. kpak water board site

The water board site is blessed with very beautiful scenes for relaxation. The KwanKlarag is one of such. It could be visited easily on a free ride. Water flows to kagoro and Kafanchan all the year through without drying. The area is generally good for picnicking.

f. Gada balang (bridge).

The bridge is located in the Fadan Daji district precisely at Tayit, just a little distance from the Wazirin Kagoro'' house. This is the first hanging bridge at Utak Balang that was constructed by the Sudan interior mission (SIM) in the 50’s. The bridge swings when walked on, so much that one needs to gather courage before stepping on it. Just few meters west of the Utak Balang bridge is a rapid, similar to the one on river Niger where Mungo Park died.

g. Oedua shwai.

This place is located in Agban. In pre-colonial times, it served as a watchtower for enemies that might penetrate Kagoro through the Agban axis. Especially at the time the Hausas were raiding for slaves from the minority groups of southern Zaria province

presently, the Oedua shwai is preserved by barring any body from hunting there, so as to protect special animals. (Kagoro Tourist Guide, K.D.A)

h. utak siyen

This place is located in Agban and it is where some of the kagoro people settled when they came down from the hills. The first farmer adan saret settled her. His life settled here. His life style was similar to that of the Bantus of southern Africa. The national scout camp was later built on the site. (Kagoro Tourist Guide, K.D.A).

3.4.2 Assessment of facilities

The biggest and only functional hotel is the kagoro motel, which is facing dilapidation. Other hotels are located in Kafanchan about eight kilometres from Kagoro. Two hotels were assessed in Kafanchan to investigate the level of patronage received by these hotels. The hotels are Grand Motel and the new world model. The grand motel has 16 rooms, while the New World motel has 12 rooms. The Kagoro motel has only 10 functional rooms.



Plate 20: The kagoro motel

Source: Field Work

Apart from rooms, the hotels have restaurants, bars, and banquets halls for conferences and conventions. Tourists facilities such as travel offices, tour operators, shopping, entertainment facilities e.t.c are absent in all the hotels assessed. Other recreational facilities such as swimming and lawn tennis courts are also absent. The table below shows the occupancy rate of the three hotels. The statistics are only for the period of one month. The data were obtained from their visitors books for the month of April 2004

Hotel	First week	Second week	Third week	Fourth week
New World Motel	52	19	38	61
Grand Motel	29	31	26	22
Kagoro Motel	12	9	13	7
	83	59	87	30

Table 3: showing occupancy rates

Source: Field Work

From the above, one can conclude that even with the substandard facilities, these hotels are still being patronised. Provision of better facilities will attract tourists in large numbers. All the accommodation spaces are usually taken during the Afan Festival. People often have to travel to neighbouring towns and settlements to find accommodation.

A survey of social activities of the kagoro people was carried out to determine if the provision of better facilities will further boost economic activities. The survey has

shown an increase in the number of outdoor relaxation spots in kagoro town. This increase can be directly linked to the boost in economic activities which in turn is as a result of the increased tourist activities in the region.

CHAPTER FOUR

CASE STUDIES

4.1 Introduction

How sustainable is the design of tourist resorts? This question could only be answered through an analysis of existing case studies. The case studies to be analysed were selected based on their levels of sustainability. An evaluation system of indicators was adopted to determine the levels. These indicators are eight in number, namely; energy, water, materials, land use, architectural typology, local, aspirations, maintenance costs, local people employment. Geographical spread was also a determinant in the selection of case studies. Out of the ten resorts studied, four were finally selected to be studied in detail for the purpose of this research; two local and two foreign. Obudu cattle ranch and lacampagne Tropicana beach resort are the two local case studies. Obudu was selected not only because it addresses issues of sustainability, but also because it is located in a mountainous environment similar to kagoro. Lacampagne Tropicana is a beach resort and it offers a different experience from Obudu cattle ranch. The foreign resorts taken for case studies are nungwi village beach resort in Zanzibar and sidi fredj resort in Algeria. In sidi fredj resort we would see how importance was given to environmental issues and social indicators and a neglect of economic issues. Similarly, in nungwi village beach resort environmental issues were given prominence but at the expense of social indicators. Economic issues have also been totally neglected.

4.2 Case study one: la campagne Tropicana beach resort.

Client: la campagne Tropicana

Location: located on the lekki peninsula of Lagos state on the coast of Nigeria facing the Atlantic Ocean. It can be assessed by road from Lagos on a well maintained highway in a 50 minute journey from Victoria Island to ikegun, the site of the resort. It

can also be reached by boat via a 30 minute boat ride will be made either via the inland water ways that lead to a jetty close the resort, from which an air conditioned bus will convey visitors to the resort.

The Resort has presently, ten fully air conditioned bungalows spread out over 65 acres of virgin, green tropical lands on the bank of fresh water lagoon and a superb and beach stretching along the warm equatorial seas of the Atlantic Ocean: bothered by the multitude of towering coconut trees and the green fields beyond. The resort consists of four ecological zones.



Plate 21: Fresh Water Lagoon.

Source: Field Work



Plate 22: Mangrove Swamp - monkey habitat

Source: Field Work



Plate 23: Tropical Forest - nature trails for bird watching, jogging, horse riding, cycling

Source: Field Work

The Resort acts as home to wide variety of tropical birds and butterflies. Its mangrove forest also constitutes a safe haven for tribes of monkeys, who can be observed swinging through the trees from various vantage points in the nature and jogging trails carved through the forest. Accommodation in the Resort consists of furnished loft styled huts arranged in small villages. Every hut contains a well-equipped general living area, shower and toilet facilities as well as an upstairs sleeping area. The huts are all air-conditioned and have in-house entertainment facilities. The resort also has tents that can be used for "living rough". These can be erected by the beach or within the forested area.

Facilities: guest accommodation, restaurant and bar, African aerobics, base ball, beach foot ball/soccer, board games, bird watching camping, children's activity hut, spaces for cultural shows, darts, fishing, flying kits, nature walks and jogging paths.





Figure 24 and 25: showing the accommodation units

Source: Field Work





Figure 26, and 27 showing hut and stage constructed of locally sourced materials.

Source: Field Work



Plate 28: showing a bar near the beach.

Source: Field Work



Plate 29: showing accommodation units. The roof is coloured green to blend with the natural environment.

Source: Field Work



Plate 30: showing use of sustainable materials like bamboo and timber for walls and roof construction.

Source: Field Work



Plate 31: showing sale of artefacts by local people. This provides them with a source of livelihood.

Source: Field Work

Merits

a. Extensive use of locally sourced materials

a. The resort has a wide range of recreation activities.

b. The site is well preserved.

c. Basic facilities required for user convenience are provided.

d. The natural environment is maintained as much as possible.

e. The activities are spread over the site to stop the over exploitation of the sites resources at points of concentration.

Demerits

a. The remoteness of the site calls for an effective communication network which is lacking.

b. There is no provision made for emergency medical evacuation units.

c. There are no provisions for active-indoor recreation in the event of expansion.

d. water conservation techniques not utilized.

e. No energy conservation techniques utilized in the accommodation units.

4.3 Case study two: Obudu cattle ranch

Client: cross river state government and protea hotels

Facilities: conference centre 78 accommodation chalets, bar/restaurant, gymnasium, golf course, squash court, tennis courts, ranch swimming pool/water Park, club.





Plate 32 and 33 showing the administrative building which is the central core of the design

Source: Field Work





Plate 34 and 35: showing how the road blends with the natural environment.

Source: Field Work

Merits

a. Extensive use of locally and environmentally friendly building materials

b. There was a deliberate attempt preserving delicate fauna and flora by establishing nature reserves.

c. Utilisation of site characteristics by locating the buildings on the highest point of the site.

d. Abundant natural attractions and beautiful sceneries

e. The spatial organisation is atomised with the administrative building forming the central core while the remaining facilities are scattered around it. The concentration of facilities in one place reduces environmental impact of buildings.

Demerits

a. Neglect of vernacular style of architecture.

b. Indoor recreation has not been provided.

c. Lack of constant power source.

d. Lack of sufficient conference facilities.

e. Sites good views are not taken in to consideration in the situation of accommodation units.

4.4 Case study three: nungwi village beach resort

Nungwi Village Beach Resort consists of several seafront bungalows with the traditional African style makuti thatched roofs purposely-built to blend with the natural surroundings. It is also for those adventurous people looking for some exclusive atmosphere combining the Village life without sacrificing many comforts whilst preserving and balancing the delicate flora and fauna of the land and the sea. These bungalows have been constructed to match with the typical traditional village type

theme whereby people with the different cultures from the various parts of the world come, stay & relax.

Client: sunshine beach development

Location: nungwi; Zanzibar

Facilities: administration block, accommodation chalets, massage centre, sea front bar and restaurant, business centre, emergency medical evacuation, bureau de change, guided tour operator, conference facilities, and deep sea fishing, dhow cruises, and surfing.



Plate 36-41: showing different views of the resort.

Source: Field Work

Merits

a. The resorts' facilities are located to take advantage of the sites' good views.

b. The water recreation potential of the site is well harnessed.

c. The chalets are on the beach to give them a feel of the natural environment.

d. The resort is designed with the aim of preserving the local fauna and flora.

e. Indigenous architecture design principles and spatial organization have been incorporated in to the resort design.

Demerits

a. The resort does not provide indoor recreation activities.

b. Kid's special area recreation needs are not provided.

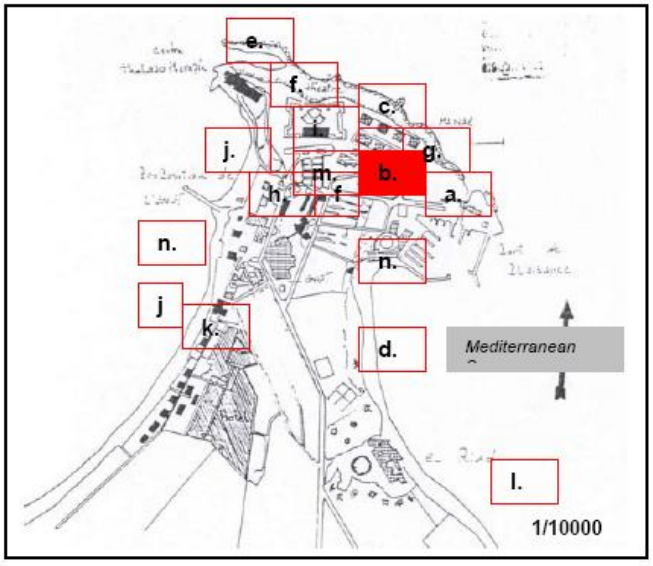
c. Most of the active non water recreation activities are not provided.

d. Issues of local people employment and maintenance cost were not given priority by the designer for example materials used for roofing require regular routine maintenance.

4.5 Case study four: sidi fredj resort

Client: enterprise nationale d`expansion touristique

Location: The resort is located on the Sidi-Fredj peninsula (hence the name of the resort). With 70 Ha of superficies, the Sidi-Fredj peninsula is surrounded in the north by a rocky seaside, and by two beaches on its eastern and western sides. The southern part presents a flat topography with dense vegetation, agricultural lands and forests. It is located in the Staweli district at 25 kms west of Algiers.



a. Marina
b. Hotel El Marsa
c. Hotel El Manar
d. Hotel El Ryad
e. Azur Club
f. Amphitheatre
g. Commercial centre
h. Artisan village
i. Tennis playground
j. Private accommodations
k. Car Parks
l. Beach
m. Future development by ENET
n. Moretti resort

Sidi-Fredj Resort Layout

(Fadli, F. 2002 adapted from ENET*, 1997)

*ENET: Entreprise Nationale d'Expansion Touristique (National Enterprise for Tourist Expansion)

Figure 6: sidi-fredj resort layout.

Source: Fadli F and Sibley M, University of Huddersfield, department of architecture

Facilities: marina, hotel el marsa, hotel el manar, hotel el ryad, azur club, amphitheatre, commercial centre, artisan village, tennis courts, private accommodations, car parks, beach moretti resort, future development.





Sidi-fredj resort view from the east beach. Elmarsa hotel view from leisure port.

Plate 42 and 43

Source: Fadli F and Sibley M, University of Huddersfield, department of architecture



Plate 44: showing use of traditional architecture elements.

Source: Fadli F and Sibley M, University of Huddersfield, department of architecture



Plate 45: showing use of traditional architecture elements.

Source: Fadli F and Sibley M, University of Huddersfield, department of architecture

Merits

a. The use of local materials combined with innovative design responsiveness and functionality

b. There was a deliberate attempt aimed at tackling the challenges of environmental and social impacts.

c. There was an attempt at preserving the natural environment by creating nature reserves of dense vegetation and forest.

d. The resort visualization is in keeping with the natural and local characteristics of the site through a well-established integration of low rise buildings spread over the peninsula.

Demerits

a. Economic issues of maintenance cost and local people employment were almost neglected.

4.6 architectural implications

The architectural implication of these case studies will be discussed under the following headings;

a. Architectural typology: architectural typology here refers to design principles of the traditional vernacular architecture. In Sidi Fred resort, the principles and concepts of the local architecture were adopted in the design of the resort. For example the juxtaposition between open spaces and built spaces in a simplistic cubical organisation based on a modular geometry. This organisation is formulated through the local and environmental integrations. Another feature of the traditional architecture adopted is the use of traditional elements on the buildings. In Nungwi village beach resort, indigenous architecture design principles and spatial organisation.

b. Material conservation: an important aspect of sustainability that is well tackled in most of the resorts studied is the conservation of materials. Non conventional building materials have been greatly used in most of the resorts. In Lacampagne Tropicana beach resort we have seen how timber and bamboo have been used extensively in the construction of buildings, walkways, stages for performances, bridges. Likewise in Nungwi village beach resort and Obudu cattle ranch we have seen attempts at conserving materials through the use of non conventional materials.

c. Energy conservation: most of the buildings studied have failed in utilising alternative energy sources, and have not adopted passive heating and cooling techniques. The only energy conserving feature of these resorts is the use of low embodied energy materials. For a development to be energy conserving, it must utilise alternative sources of energy, passive cooling techniques, use of low embodied energy materials and an energy conscious site planning.

d. Water conservation: water conservation techniques such as maintaining indigenous landscaping of a site have clearly not been given attention to. Water reuse is not employed in any of the resorts.

e. Local people employment: a number of the cases studied have provided avenues for the participation of local people in a resort development. For example in Obudu cattle ranch no facilities have been provided to serve as a means of livelihood for the local people. On the other hand, spaces for cultural displays and for sale of artefacts made by the local people have been created.

4.7 Site selection criteria

The site was selected based on based on the below mentioned criteria.

a. Accessibility of site from transport centres.

b. Availability of natural or man made features to enhance the proposal.

c. Availability and accessibility to physical infrastructure.

d. Close proximity of site to kagoro town.

e. High potentials of making a holiday resort very effective.

4.8 site analysis

The site is known as boys scout camp and is located in Agban district of kagoro, in present day jama'a local government. It covers 280 x 300meters, and is assessed through the trunk A Kafanchan-kagoro road in the north-west/south-west direction. A rail line bypasses the e site in the north-west/south-west direction affording another opportunity apart from vehicular means only.

4.8.1 Topography

Kagoro constitute part of the Bauchi-jos-plateau hill. The surrounding elevation rises well over 4000 feet above the sea level. Apart from the stretching kagoro hills which constitute the Bauchi-jos-plateau running from the east to the west of the fairly flat with

an overage slope of 4%. The immediate surroundings are marshy with many small rivers and streams which gave their source from the surrounding hills.

4.8.2 Geology/ Soil

The geology of kagoro is the basement complex consisting of Precambrian igneous rocks. The resultant weathering of the parent rocks gives rise to lithosis on ferruginous crust having characteristic gum-like texture when wet and gardens when dry. The top soil on the general topography is sandy-loamy and fertile, even on some firm rock layers with a little depth from the surface. The water-table is about 8-12 meters deep.

4.8.3 Vegetation

The vegetation is that of guinea-savannah. It comprises of tall trees around the streams and water bodies, and shrubs and grasses. Also on the site are trees like locust beans, palm trees, acacia trees along the direction of the flow of the stream. There are pockets of tropical forests on the site.

4.8.4 Temperature

The area has maximum temperature of 37^{o}C in the months of February to April while the minimum is 12^{o}C in the month of December. The tropical comfort zone is on latitude 231/2^{o}N. Upper comfort limit for tropics is 27%, while the lower comfort limit for tropics is 22^{o}C.

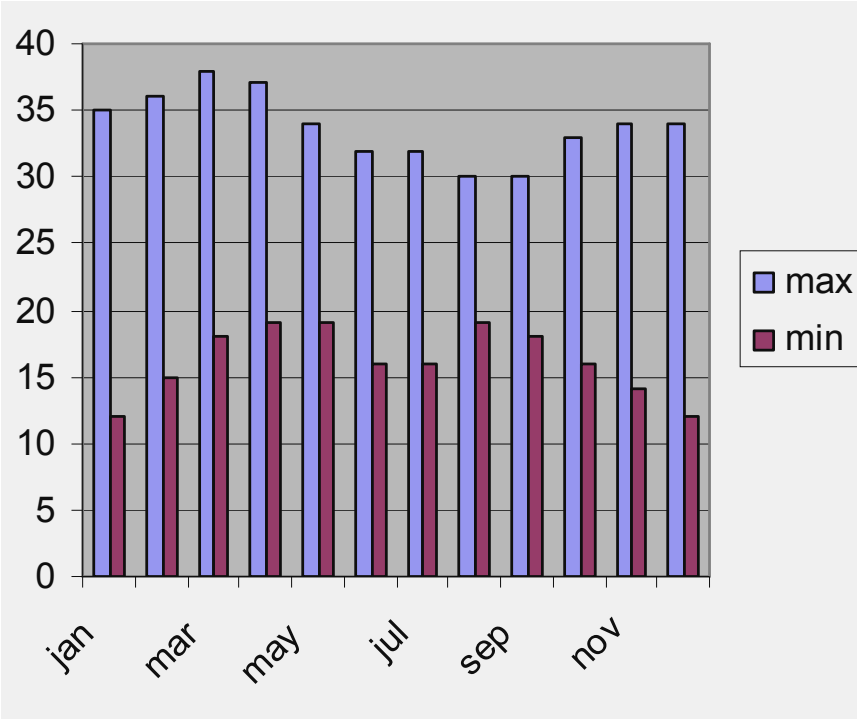


Figure 7: showing minimum and maximum temperature.

Source: Kaduna state Meteorological Department

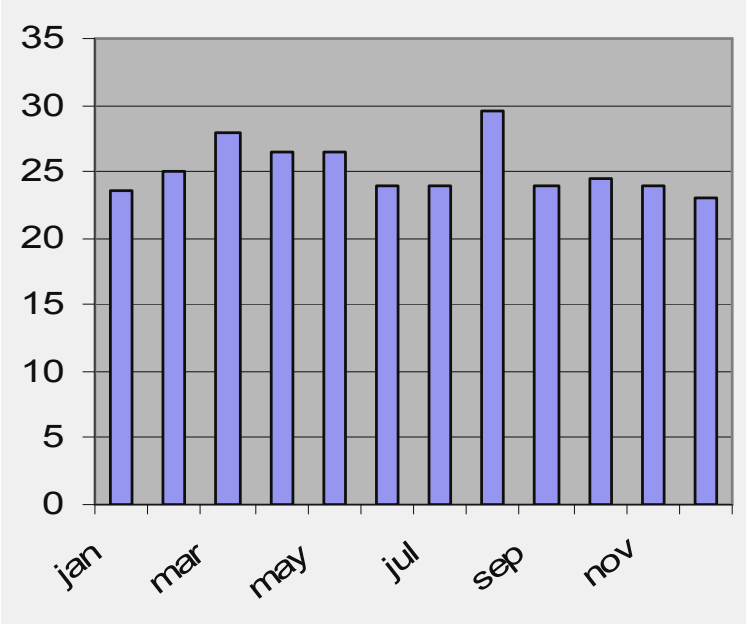


Figure 8: showing mean average temperature for kagoro.

Source: Kaduna state Meteorological Department

4.8.5 Humidity

The relative humidity in kagoro is 90% in the month of august and September during harmattan. The normal tropical comfort zone for relative humidity is 30% to 70%. The upper comfort limit for tropics is 90%, while the lowest comfort limit for the tropics is 20%. See figures 8, and 9 for relative humidity data of kagoro.

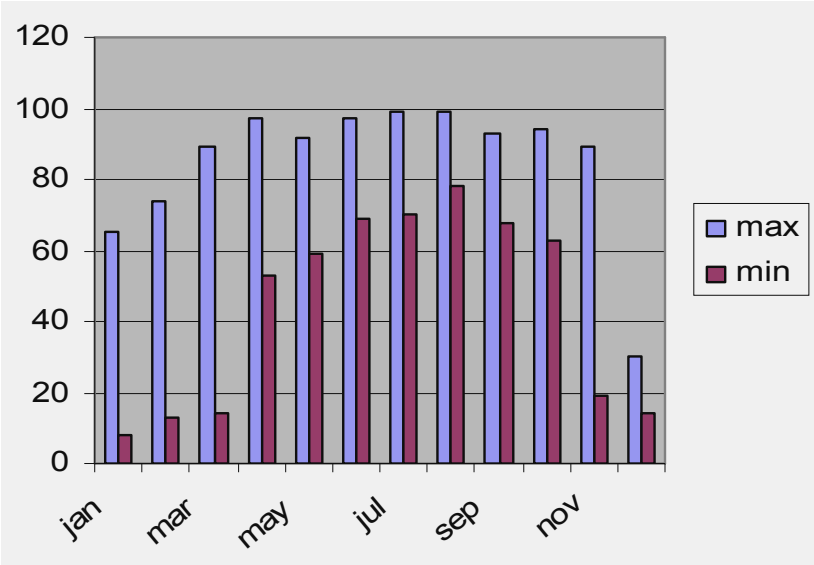


Figure 9: showing maximum and minimum levels of relative humidity in kagoro.

Source: Kaduna state Meteorological Department

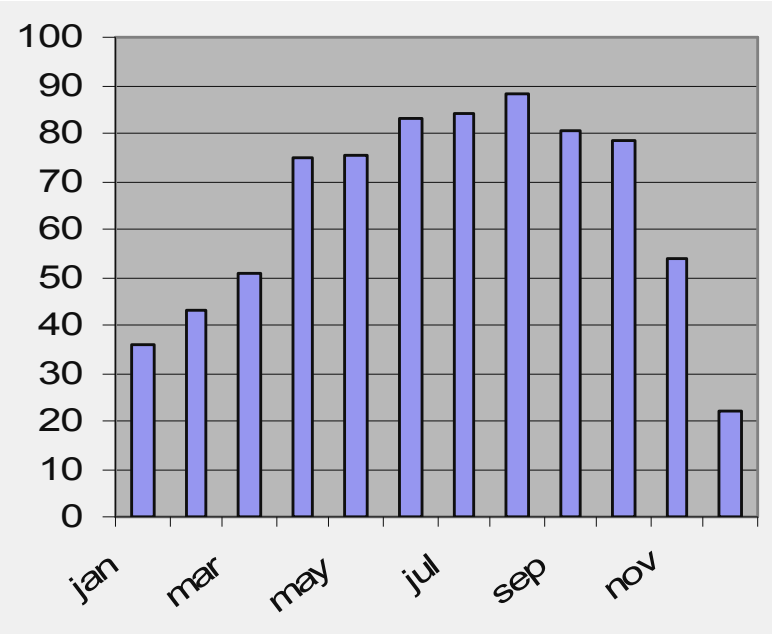


Figure 10: showing average relative humidity of kagoro.

Source: Kaduna state Meteorological Department

4.8.6 Rainfall

Kagoro is the moderate humid belt of Nigeria. It has a total monthly rainfall of 383.6 millimetres in august. No rainfall is usually recorded in the month of December but generally low amount is recorded between January and March. See fig. X for annual rainfall in millimetres.

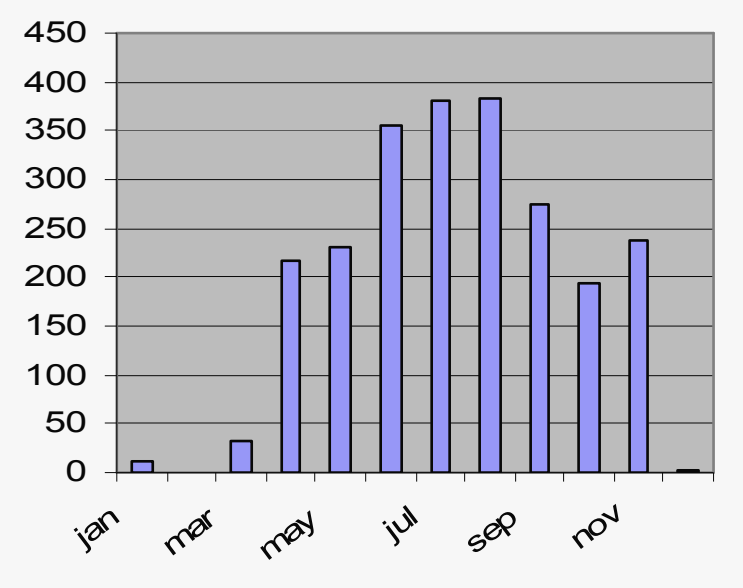


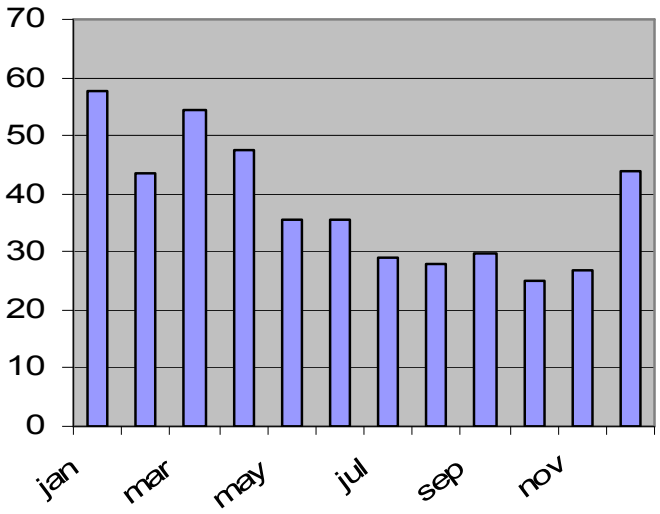
Figure 11: showing amount of rainfall.

Source: Kaduna state Meteorological Department

Highest rainfall is experienced in the month of august 383.6mm. Rainfall is low Jan-mar. No rainfall in December.

4.8.7 Wind

The north-east trade wind which prevails during the month of November to February brings harmattan, while the south-west trade wind from April-September brings rainfall. The north-east winds are stronger with an average of 51.5 km/day, while the south-west winds are slower with about 24km/day.



Wind speed in kilometre per day (km/day)

Figure 12: showing wind speed in km/day

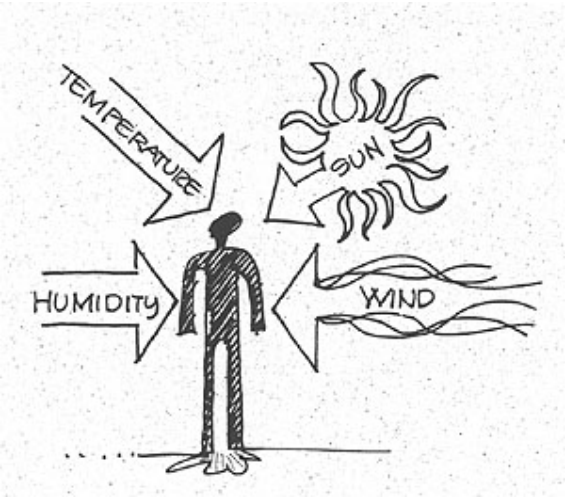
CHAPTER FIVE

DESIGN PARAMETERS

5.1 Building Design Considerations

5.1.1 Natural Factors

By definition, sustainable design seeks harmony with its environment. To properly balance human needs with environmental opportunities and liabilities requires detailed analysis of the specific site. How facilities relate to their context should be obvious so as to provide environmental education for its users. Although the following information is very general, it does serve as a checklist of basic considerations to address once specific site data is obtained.



i. Climate

- apply natural conditioning techniques to effect appropriate comfort levels for human activities . . . do not isolate human needs from the environment
- avoid overdependence on mechanical systems to alter the climate (such dependency signifies inappropriate design, disassociation from the environment, and nonsustainable use of resources)

- Analyze whether the climate is comfortable, too cool, or too hot for the anticipated activities, and then which of the primary climatic components of temperature, sun, wind, and moisture make the comfort level better (asset) or worse (liability).

a. Temperature

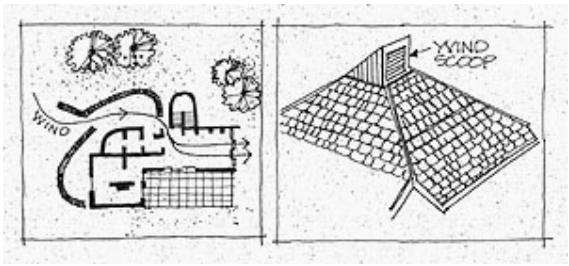
- temperature is a liability in climates where it is consistently too hot or too cold
- areas that are very dry or at high elevation typically have the asset of large temperature swings from daytime heating to night time cooling, which can be flattened through heavy/massive construction to yield relatively constant indoor temperatures
- when climate is predominantly too hot for comfort:
    - minimize solid enclosure and thermal mass
    - maximize roof ventilation
    - use elongated or fractured floor plans to minimize internal heat gain and maximize exposure for ventilation
    - separate rooms and functions with covered breezeways to maximize wall shading and induce ventilation
    - isolate heat-generating functions such as kitchens and laundries from living areas
    - provide shaded outdoor living areas such as porches and decks
    - capitalize on cool nighttime temperatures, breezes, or ground temperatures

b. Sun

- when solar gain causes conditions too hot for comfort
    - use overhangs to shade walls and openings
    - use site features and vegetation to provide shading to walls with eastern and western exposure
    - use shading devices such as louvers, covered porches, and trellises with natural vines to block sun without blocking out breezes and natural light
    - orient broad building surfaces away from the hot late-day western sun (only northern and southern exposures are easily shaded)
    - use lighter-coloured wall and roofing material to reflect solar radiation (be sensitive to resulting glare and impact on natural/cultural setting)
    - in tropical climates, use shutters and screens, avoiding glass and exposures to direct solar gain

c. Wind

Wind can be an asset in hot, humid climates to provide natural ventilation

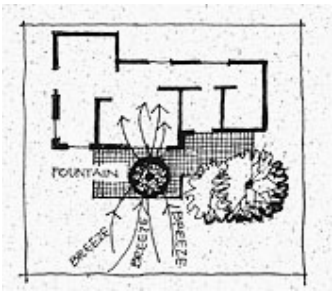


- use natural ventilation wherever feasible; limit air-conditioning to areas requiring special humidity or temperature control such as artefact storage and computer rooms

- maximize/minimize exposure to wind through plan orientation and configuration, number and position of wall and roof openings, and relationship to grade and vegetation
- use wind scoops, thermal chimneys, or wind turbines to induce ventilation on sites with limited wind

d. Moisture

- moisture can be a liability if it comes in the form of humidity, causing such stickiness that one cannot evaporatively cool (cooling by perspiring) in summer
    - strategies to reduce the discomfort of high humidity include maximizing ventilation, inducing air flow around facilities, and venting or moving moisture-producing functions such as kitchens and shower rooms to outside areas



- nature can be an asset by evaporating in hot, dry climates to cool and humidify the air (a natural air-conditioning)
    - techniques for evaporative cooling include placing facilities where breezes will pass over water features before reaching the facility, and providing fountains, pools, and plants

e. Other Climatic Considerations

- Rainfall can be a liability if any concentrated runoff from developed surfaces is not managed to avoid erosion
- Rainfall can be an asset if it is collected off roofs for use as drinking water
- storms/hurricanes/monsoons/typhoons

  - provide or make arrangements for emergency storm shelters
  - avoid development in floodplain and storm surge areas
  - consider wind effects on walls and roofs
  - provide storm shutters for openings
  - use appropriate wind bracing and tie-downs
  - design facilities to be light enough and of readily available and renewable materials to be safely sacrificial to large storms, or of sufficient mass and detail to prevent loss of life and material

ii. Vegetation

a. locate and size facilities to avoid cutting mature vegetation and to minimize disruption to, or disassociation with, other natural features

b. use natural vegetation and adjustments in building plan to diminish the visual impact of facilities and to minimize imposition on environmental context

c. In warmer climates, strengthen interplay of facilities with their site environment through minimizing solid walls, creating outdoor activity spaces, etc.

iii. Topography

a. consider building/land interface to minimize disturbance to site character, skyline, vegetation, hydrology, and soils

b. consolidate functions or segment facilities to reduce footprint of individual structures to allow sensitive placement within existing landforms

c. use landforms and the sensitive arrangement of buildings to

- help diminish the visual impact of facilities
- enhance visual quality by creating a rhythm of open spaces and framed views
- orient visitors to building entrances
- accentuate key landmarks, vistas, and facilities

iv. Water Bodies

a. capture views and consider advantages/disadvantages of off water breezes

b. Safeguard water from pollutants from the development itself and its users

c. Minimize visual impact of development on waterfront zones (also consider views from water back to shoreline)

- use building setbacks/buffer zones
- consider building orientation and materials
- avoid light pollution

v. Hydrology

a. locate and design facilities to minimize erosion and impacts on natural hydrological systems
b. safeguard hydrological system from contamination by development/activities
c. allow precipitation to naturally recharge groundwater, wherever possible.

vi. Geology/Soils

a. minimize excavation and disturbance to groundcover
b. minimize erosion by avoiding large impervious surface areas and building footprints that collect rain and create concentrate runoff onto site

vii. Wildlife

Sensitive habitat areas should always be avoided. Encouraging wildlife to remain close to human activities centres enhances the visitor experience. This can be achieved by maintaining as much original habitat as possible. Creating artificial habitats or feeding wildlife could have disruptive effects on the natural ecosystem and should normally be avoided.

viii. Visual Character

Natural vistas should be used in design whenever possible. Creating onsite visual intrusions (road cuts, utilities, etc.) should be avoided, and views of offsite intrusions carefully controlled. A natural look can be maintained by

using native building material, hiding structures within the vegetation, and working with the topography. It is easier to minimize the building footprint initially than it is to heal a visual scar at the end of construction.

5.1.2 Human Factors

i. Cultural Resources

a. Archaeological resources

use preservation and interpretation of archeological features to provide insight to previous cultural responses to the environment, their successes as well as failures

b. Vernacular architecture

- analyze local historic building styles, systems, and materials usually for time-tested approaches in harmony with natural systems
- use local building material, craftsmen, and techniques to the greatest extent practicable in the development of new facilities

c. Historic resources

Reuse historic buildings whenever possible to assist in their preservation, contribute to the special quality of the place, and extend the payback of their embodied energy and materials

d. Anthropology/ethnic background/religion/sociology

- understand the local culture and their needs to avoid introduction of socially unacceptable or morally offensive practices
- consult with local indigenous population for design input as well as to foster their sense of ownership and acceptance
- include local construction techniques, materials, and cultural considerations (that are environmentally sound) in the development of new facilities

e. Arts and crafts

- incorporate local expressions of art, handiwork, detailing, and, when appropriate, technology into new facility design and interior design
- provide opportunities and space for demonstration of local crafts and performing arts

ii. Sensory Experience

a. Visual

- provide visitors with ready access to educational materials to enhance their understanding and appreciation of the local environment and threats to it
- incorporate views of natural and cultural resources into even routine activities to provide opportunities for contemplation, relaxation, and appreciation

- use design principles of scale, rhythm, proportion, balance, and composition to enhance the complementary integration of facilities into environmental context
- provide visual surprises within design of facilities to stimulate the educational experience
- limit height of development to below top of tree canopy to preserve visual quality of natural and cultural landscape
- use muted colours to blend facilities with natural context, unless contradictory to other environmental considerations (reflection/absorption) or cultural values (customs/taboos)

b. Sounds

- Locate service and maintenance functions away from public areas
- space lodging units and interpretive stops so that natural, not human, sounds dominate
- use vegetation to create sound baffle between public and private activities
- orient openings toward natural sounds such the lapping of waves, babbling of streams, and rustling of leaves by the wind
- restrict the use or audio level of unnatural sounds such as radios and televisions

c. Touch

- allow visitors to touch and be in touch with the natural and cultural resources of the site

- vary walking surfaces to identify or give different quality to different spaces
- use contrasting textures to direct attention to interpretive opportunities

d. Smell

- allow natural fragrances of vegetation to be enjoyed
- direct air exhausted from utility areas away from public areas

e. Taste

- Provide opportunities to sample local produce and cuisine

5.1.3 Environmentally sensitive building materials

The complete life-cycle energy, environmental, and waste implications of each building material must be examined. This examination can be achieved through an analysis method called “cradle to grave”. This "cradle-to-grave" analysis is the tracing of a material or product, and its by-products, from its initial source availability and extraction, through refinement, fabrication, treatment and additives, transportation, use, and eventual reuse or disposal. This tracing includes the tabulation of energy consumed and the environmental impacts of each action and material. The stages of the analysis are given below:

i. Source of raw ingredients (is it renewable, sustainable, locally available, and nontoxic?)

ii.. what is the energy input? habitat destruction? topsoil erosion? siltation/pollution from runoff of raw material extraction

iii. Transportation (most local source? fuel consumption? air pollution?)

iv. Processing and/or manufacturing (energy input? air/water/noise pollution? waste generation and disposal?)

v. Treatments and additives (use of petrochemicals? exposure to, and disposal of, hazardous materials?)

vi. Use and operation (energy requirements? longevity of products used? indoor air quality? waste generation?)

vii. Resource recovery/disposal (potential for recycling/reusing materials? disposal of solid/toxic wastes?)

5.1.4 Site-Adaptive Design Considerations

The concept of sustainability suggests an approach to the relationship of site components that is somewhat different from conventional site design. With a sustainable approach, site components defer to the character of the landscape they occupy so that the experience of the landscape will be paramount. More ecological knowledge is at the core of sustainable design. Instead of human functional needs driving the site design, site components respond to the indigenous spatial character, climate, topography, soils, and vegetation as well as compatibility with the existing cultural context. For example, all facilities would conform to constraints of existing landforms and tree locations, and the character of existing landscape will be largely maintained. Natural buffers and openings for privacy are used rather than

artificially produced through planting and clearing. Hilly topography and dense vegetation are natural ways of separating site components.

i. Natural Characteristics. The greatest challenge in achieving sustainable site design is to realize that much can be learned from nature. When nature is incorporated into designs, spaces can be more comfortable, interesting, and efficient. It is important to understand natural systems and the way they interrelate in order to work within these constraints with the least amount of environmental impact. Like nature, design should not be static but always evolving and adapting to interact more intimately with its surroundings.

a. **Wind -** The major advantage of wind in recreational development is its cooling aspect. For example, trade winds in the tropical environments often come from the northeast to the southeast quadrant, orientation of structures, and outdoor gathering places to take advantage of this cooling wind movement, or "natural" air conditioning. Native cultures understand this technique quite well, and local structures reflect these principles.
b. **Sun -** Where sun is abundant, it is imperative to provide shade for human comfort and safety in activity areas (e.g., pathways patios). The most economical and practical way is to use natural vegetation, slope aspects, or introduced shade structures. The need for natural light in indoor spaces and solar energy are important considerations to save energy and showcase environmental responsive solutions.
c. **Rainfall -** Even in tropical rain forests where water is seemingly abundant, clean potable water is often in short supply. Many settings must import water, which substantially increases energy use and operating costs, an makes conservation of water important. Rainfall should be captured for a variety of

uses (e.g., drinking, bathing) and this water reused for secondary purposes (e.g., flushing toilets, washing clothes). Wastewater or excess runoff from developed areas should be channelled and discharged in ways that allow for groundwater recharge instead of soil erosion. Minimizing disturbance to soils and vegetation and keeping development away from natural drainage ways protect the environment as well as the structure.

d. **Topography -** In many areas, flatland is at a premium and should be set aside for agricultural uses. This leaves only slopes upon which to build. Slopes do not have to be an insurmountable site constraint if innovative design solutions and sound construction techniques are applied. Topography can potentially provide vertical separation and more privacy for individual structures. Changes in topography can also enhance and vary the way a visitor experiences the site by changing intimacy or familiarity (e.g., from a canyon walk to sweeping hillside overview). Again, protection of native soil and vegetation are critical concerns in high slope areas, and elevated walkways and point footings for structures are appropriate design solutions to this problem.

e. **Geology and Soils -** Designing with geologic features such as rock outcrops can enhance the sense of place. For example, integrating rocks into the design of a deck or boardwalk brings the visitor in direct contact with the resource and the uniqueness of a place. Soil disturbances should be kept to a minimum to avoid erosion of fragile tropical soils and discourage growth of exotic plants. If limited soil disturbance must take place, a continuous cover over disturbed soils with erosion control netting should always be maintained.

f. **Aquatic Ecosystems -** Development near aquatic areas must be based on an extensive understanding of sensitive resources and processes. In most cases,

development should be set back from the aquatic zone and protective measures taken to address indirect environmental impacts. Particularly sensitive habitats such as beaches should be identified and protected from any disturbance. Harvesting of any aquatic resources should be based on definitive assessment of sustainable yield and subsequently monitored and regulated.

g. **Vegetation -** Exotic plant materials, while possibly interesting and beautiful, are not amenable to maintaining healthy native ecosystems. Sensitive native plant species need to be identified and protected. Existing vegetation should be maintained to encourage biodiversity and to protect the nutrients held in the biomass of native vegetation. Native planting should be incorporated into all new developments on a 2:1 ratio of native plants removed. Vegetation can enhance privacy, be used to create "natural rooms," and be a primary source of shade. Plants also contribute to the visual integrity or natural fit of a new development in a natural setting. In some cases, plants can provide opportunities for food production and other useful products on a sustainable basis.

h. **Wildlife -** Sensitive habitat areas should always be avoided. Encouraging wildlife to remain close to human activities centres enhances the visitor experience. This can be achieved by maintaining as much original habitat as possible. Creating artificial habitats or feeding wildlife could have disruptive effects on the natural ecosystem and should normally be avoided.

i. **Visual Character -** Natural vistas should be used in design whenever possible. Creating onsite visual intrusions (road cuts, utilities, etc.) should be avoided, and views of offsite intrusions carefully controlled. A natural look can be maintained by using native building material, hiding structures within the

vegetation, and working with the topography. It is easier to minimize the building footprint initially than it is to heal a visual scar at the end of construction.

ii. Cultural Context.

Local archaeology, history, and people are the existing matrix into which visitation must fit. Sustainable principles seek balance between existing cultural patterns with new development. Developing an understanding of local culture and seeking their input in the development processes can make the difference between acceptance and failure.

a. **Archaeology -** A complete archaeological survey prior to development is imperative to preserving resources. Once resources are located, they can be incorporated into designs as an educational or interpretive tool. If discovered during construction activities, work should be stopped and the site re-evaluated. Sacred sites must be respected and protected.
b. **History -** Cultural history should be reinforced through design by investigating and then interpreting vernacular design vocabulary. Local design elements and architectural character should be analyzed and employed to establish an architectural theme for new development.
c. **Indigenous Living Cultures -** Cultural traditions should be encouraged and nurtured. A forum should be provided for local foods, music, art and crafts, lifestyles, dress, and architecture, as well as a means to supplement local incomes (if acceptable). Traditional harvesting of resource products should be permitted to reinforce the value of maintaining the resource.

. **iii. Visitor Safety and Security**

The design of a tourism development involves a closer, more integrated relationship of visitors with nature. To some extent, this concept is contrary to some conventional provisions for visitor security and safety. Visitor awareness of their natural surroundings is the best safety insurance. Written and personal briefings by staff could help foster awareness of safety risks and allow visitors to take responsibility for their own safety and security.

Some important design considerations are as follows:

a. Visitors must have a sense of personal safety and security to be attracted to recreation areas. The facility must have reasonable provisions to protect visitors from natural and manmade hazards. Location of walks and lodging must be designed to discourage visitor contact with dangerous plants or animals.
b. The design should consider safety from climate extremes; visitors may be unaware of natural hazards, including intense sun, high wind, heavy rainfall, and extreme humidity.
c. Ecological integrity must be balanced with safety concerns in a development where adventure and challenge are integral to the experience. Various challenge levels in site facilities should be provided to accommodate all visitors, including visitors with disabilities.
d. The use of artificial lighting should be limited to retain natural ambient light levels - baffle lights or use ground-mounted light fixtures to limit spillover light impacts while providing a basic sense of security.

e. Appropriate atmosphere and security can be enhanced by remote location and controlled access to the facilities - incorporate natural barriers into facility design to minimize need for security fencing or barriers.

f. An alternate means of access should be available to provide essential emergency provisions of water, food, and medicine, and a reliable communication system.

5.2 Design criteria

The design criteria for this project forms part of the programming process, and consist of a combination of various elements which together define the needs and requirements of the kagoro tourist resort. Two important components of these design criteria are:

- An analysis of the functional and / or activity systems to be accommodated
- A determination of the kinds, amounts and criteria of space corresponding to functional needs.

5.2.1 Functions and Activity Analysis

The functional system is an operational system of activities and relationships that is organized for the accomplishment of specified objectives. A facility makes possible the existence and performance of this system. Understanding the functional system is essential in order to project a corresponding physical system of elements, relationships, organization and configuration.

The functional system consists of separate but frequently overlapping functions that can be classified in three categories.

- Primary functions
- Secondary functions
- Support function

The performance of the functional system depends on activities and operations, which may be accomplished by human and other living beings or by mechanical and electrical devices.

The activities / operational, their interconnections and groupings, form a system that is a unique dimension of the functional system. The activity system can be examined as a distinct entity or as a subsystem of the functional complex in analyzing and creating a model on which a facility's physical system may be based.

Through the analysis of functional and / or activity systems, a non-physical infrastructure can be created. On this, the analysis and recommendations pertaining to physical needs can be based.

Such analysis consists of:

- Identifying functional or activity components.
- Assessing relevant dimensions or attributes of individual components.
- Rating or ranking components according to relative significance finance and organization status.
- Identifying relationships among components.
- Grouping components according to interdependencies
- Establishing performance goals, requirements or criteria.
- Resolving conflicts among components
- Organizing or reorganizing components into an efficient, effective system.

i. Function Analysis

The functional framework of a facility is based on the clients' goals and operational objectives. When programming a facility that is unique to a client's experience, the programme may begin by helping to develop and identify the primary objectives and various operations and activities necessary to achieve them. Categorization of primary

functions enables the management and analysis of such category. The analysis will include determining if primary functions have been adequately identified, defining necessary secondary functions and tentatively identifying necessary system supporting functions.

The analysis of primary functions may involve a variety of aspects, depending on the level of detail of the intended program. Each may be broken down into lesser components such as sub-functions or activities, performance criteria, conditions necessary for functional performance, existing or desired attributes, or space and environmental requirements. Once the common system-support functions have been identified, these will be related to primary functions to determine whether and to what extent each is needed for functional performance.

The most relevant factor in determining organization is the relationship among individual functions. Analysis of the interaction among functional elements can be based on various criteria.

Data to be obtained from functional interaction analysis include the fact of individual relationships, the type of connections and the strength or importance of the association. This information is useful for determining physical dimensions like adjacency and proximity, hierarchy of locations, space use scheduling and circulation.

ii. Activity analysis

Another approach to determining the physical requirements of a facility is activity analysis. An activity is an accepted and specific pattern of behaviour, or series or group of actions, that can be expected to be repeated periodically or routinely over any given duration. It may be dependent or independent of location and may be goal – or no goal – directed.

An activity analysis deals with the more precisely defined unit and enables recognition of all the essential elements of the functional system. Therefore, it produces a more complete indication of functional needs.

Data from activity analysis is useful in helping to determine how much space a facility and its components require, effective organization of space dimension of the energy system, current and future personnel needs, and subsystem requirements. The procedure of analysis involves:

- Identification of individual activities
- Definition of activities
- Assessment of similarities and differences
- Classification by similarities or functional category.
- Assessment of activity attributes such as number of people required, conditions necessary for performance, amount and periods of time etc.
- Identification of interdependence and other relationships
- Reconciliation of duplications and conflicts.
- Organization into the system (existing or desired)

5.2.2 Space analysis

Space is the single most important element of a facility. All the many other aspects and elements of a facility depend on and support the various kinds, amount and conditions of space that comprise the facility. As such, the analysis of the factors that influence a design converges in an assessment of space needs.

The purpose of space analysis is to determine the physical characteristics – the quantity and conditions that can accommodate clients' objectives, philosophy, organization and activities, translated into a physical dimension.

i. Products

The physical elements that comprise a space needs assessment might include types and numbers of different spaces: area requirements, visual acoustical and comfort criteria: equipment, apparatus and furnishings needed to make space usable: and space relationships. A part of space analysis might be an estimate of the costs of providing spaces; that is construction, financing purchase, life cycle. Identification of space needs also might include or provide a basis for determining support system requirements such as lighting, electrical mechanical and utility systems.

ii. Procedure

Depending on the scope of the program and the purpose for which it is to be used. The assessment of space needs may be general or specific.

Generally, most procedure for space analysis include three tasks

a) Define and itemize space units.
b) Specify requirements of each unit.
c) Organizing space units according to functional relationships, hierarchy of needs and other criteria

iii. Space unit standards

The space requirements for repetitive activities will be similar in terms of size, accommodations and conditions. In specifying requirements for activity spaces, each separate unit may be taken individually to catalog its size, furnishings and so on. However, it is often easier to group such spaces into fewer groups of standard types of spaces. The general procedures of standardization are as follows:

(a) Identify individual activity spaces and determine desired requirements for each.

(b) Group individual space according to similarity in task, function and / or principal criteria.

(c) Based on user identified requirements for each unit in a group, determine the optimum criteria for the space type and repeat for each group.

(d) Test the resulting space unit standards by user evaluation and modify as necessary.

(e) Allocate standard units to each functional area, activity group or department.

(f) Calculate total space needs for each group and for the total facility.

iv. Space program.

The space program element of a facility program generally includes an itemization of requirements for each space unit (standardized or individual), categories according to primary functional or activity groups, and the total area requirements of each category and the total facility.

The functional or activity groupings of the facility may be further analyzed to determine various relationship needs. The interdependencies among different functional groups for the total facility may also be analyzed in a space program and illustrated by sketch diagrams, floor plans and / or stacking plans.

5.3 Brief development

Resorts are designed to meet up needs of various categories of people. The facilities to be provided will be determined by the interests of clientele. Therefore the design will not only meet up tourist requirements but also that of local people, because they will also patronise the resort. The following facilities will be provided for the aforementioned purposes.

a. Club with restaurant and bar

b. A theatre for cultural performances and other social functions.

c. Shopping area/ arts crafts shops, library, and a museum.

d. An administrative Unit

e. Accommodation Units.

The decision to provide facilities that would carter for the needs of local people was informed by a survey I did on the social habits of kagoro people and the corresponded increase in outdoor relaxation spots.

The capacity of spaces to be provided are given below

a. The restaurants and bars are to have indoor seating capacities of a 100 people each.

b. The auditorium should accommodate at least 1000people

c. six shops of standard sizes to be provided.

d. To arrive at number of bed spaces data on occupancy rates of three hotels within the study area was collated and analysed. The hotels with their occupancy rates are given below.

Hotel	Occupancy rates (2004)
i. New World Motel	61%
ii. Grand Motel	22%
iii. Kagoro Motel	7%
TOTAL	30%

New world motel has the highest occupancy rate. This can be attributed to having better facilities than the two remaining hotels. Like wise Grand motel has better facilities than Kagoro motel, and also a corresponding higher occupancy rate. From analysis of the occupancy rates given above, and relating it to occupancy rates of 1988, a total number of 56 bed spaces were calculated to be required for the resort. The accommodation will be composed of three different types of units.

a. Royal chalet 8 bed spaces

b. Family chalet 24 bed spaces

c. Single chalet 24 bed spaces

5.4 Schedule of accommodation.

The proposed kagoro tourist resort will be basically composed of five different components;

i. Accommodation
ii. Administration building
iii. Club
iv. Theatre
v. shopping

The space requirement for each component is given below;

i. The accommodation is divided in to three different types, namely;
   a) Royal chalets
   b) Family chalets
   c) Single chalets

A space analysis of every type of accommodation is given on the next page:

a) Royal chalet

1	BEDROOM	AREA (m2)	No	AREA
A	Bed	4.4	1	4.4
B	Bed side drawers	0.2	2	0.4
C	Settee	1	1	1
D	Wardrobe	1.8	1	1.8
E	Dressing table	0.5	1	0.5
F	Centre table	1.2	1	1.2
G	Entertainment console	0.7	1 TOTAL	0.7 10.0m2

2	BATH ROOM	AREA(m2)	No	AREA
a	Wc	0.24	1	0.24
b	Bath tub	1.4	1	1.4
c	Wash hand Basin	0.24	1	0.24
d	Bidet	0.24	1	0.24
e	Jacuzzi	1.6	1	1.6
	TOTAL AREA			3.72

3	LIVING/DINNING	AREA(m2)	No	AREA
a	Entertainment console	1.2	1	1.2
b	Centre table	1.2	3	3.6
c	Stools	0.2	5	1
d	Settee 1	1	2	2
e	Settee 2	1.4	2	2.8
f	Dinning chairs	0.2	6	1.6

g	Dinning Table	2.2	1	2.2
	TOTAL AREA			14.4

4	KITCHENNETE	AREA(m2)	No	AREA
a	Sink	0.4	1	0.4
b	Freezer	0.7	1	0.7
c	Cooker	0.4	1	0.4
d	Refrigerator	0.4	1	0.4
e	Cupboard/storage	1.4	1	1.4
	TOTAL AREA			3.3

Total furniture space requirements 31.42m2

Circulation space= 60% of total area calculated=18.85

Total area for the royal chalet=50m2

b) Family chalet

1	BEDROOM	AREA(m2)	No	AREA
a	Bed	4.4	1	4.4
b	Bedside drawers	0.2	2	0.4
c	Settee	1	1	1
d	Entertainment	0.7	1	0.7
e	Wardrobe	1.2	1	1.2
	TOTAL AREA			7.7m2

Bedroom space=2*7.7m2 for 2 rooms= 15.4m2

2	LIVING ROOM	AREA(m2)	No	AREA
a	Entertainment console	0.7	1	0.7
b	Settee 1	1.4	1	1.4
c	Settee 2	1	2	2.0

d	Centre table	1.2	1	1.2
e	Stools	0.2	4	0.8
	TOTAL AREA			6.1m2

3	BATHROOM	AREA(m2)	No	AREA
a	Bath tub	1.4	1	1.4
b	Wc	0.24	1	0.24
c	Wash hand basin	0.2	1	0.2
d	Bidet	0.2	1	0.24
	TOTAL AREA			2.08

Total furniture space requirements 23.6m2

Circulation space= 50% of total area calculated=11.8

Total area for the royal chalet=36m2

a) Single chalet

1	BEDROOM	AREA(m2)	No	TOTAL AREA
a	Bed	3.1	1	3.1
b	Settee	1	1	1
c	Centre table	1.2	1	1.2
d	Dressing table	0.7	1	0.7
e	Wardrobe	1.6	1	1.6
f	Bedside drawers	0.2	2	0.4
	TOTAL AREA			8m2

2	BATHROOM	AREA(m2)	No	TOTAL AREA
a	Bath tub	1.4	1	1.4
b	Wc	0.24	1	0.24
c	Wash hand Basin	0.2	1	0.2
	TOTAL AREA			1.84

3	LIVING ROOM	AREA(m2)	No	AREA
a	Settee 1	1	1	1
b	Settee 2	1.4	1	1.4
c	Stools	0.2	3	0.6
d	Entertainment console	0.5	1	0.5
e	Centre table	1.2	1	1.2
	TOTAL AREA			4.7

Total furniture space requirements 14.54m2

Circulation space= 40% of total area calculated=5.8

Total area for the royal chalet=22m2

ii. Space requirements for the administration building is given below;

Description of space	NO	Total area
Entrance lobby/reception/lounge	1	160
Conference room	1	72
Manager	1	30
Travel agency	2	32
Asst. Manager	1	25
Conveniences	8	20

Security office	1	10
Maintenance office	1	24
Store	1	6
Bureau de change	1	16
Snack Bar	1	16
House keeper	1	24
Laundry	1	20
TOTAL AREA		478m2

iii. Space requirements for the Club is given below;

Description of space	Unit	Area
Main bar	1	120
Exclusive bar	1	80
Out door bar	1	200
Kitchen	1	45
Store	1	12
Restaurant	1	160
Outdoor Eating		150
Conveniences	10	36
Gymnasium	1	120
Store	1	24
TOTAL AREA		927m2

iv. Space requirements for the Theatre is given below;

Description of space	Unit	Area
Auditorium	1	600
Ticket booth	1	10
Terrace	2	40
Toilets	5	16
Backstage	1	20
Clock-in	1	6
Manager	1	16
TOTAL AREA		708m2

v. Space requirement for shopping/ exhibition areas are given below;

Description of space	Unit	Area
Spaces for arts and crafts	2	48
Internet café	1	32
Toilet	20	30
Shops	9	108
Library	1	36
TOTAL AREA		254m2

CHAPTER SIX

DESIGN REPORT

6.1 The design

The design is conceived as a practical contribution to tourism growth and development in Nigeria. The theoretical frame works discussed in the previous chapters have been transformed through various stages of refinement via a suitable methodology to schematic diagrammatic. It is from this that the sketch design has evolved. The design is composed of six components as discussed below

(a) Club

The club consists of the following facilities; detach

Facilities in the Club consist of a restaurant with a capacity of 100 people, a bar also with a capacity of 100 people. Other facilities are kitchen, stores, exclusive bar, gymnasium and swimming pool, conveniences, out door eating, and outdoor bars. The club is located close to the stream, and it's closest to the entrance of the site. The building being a facility that would be highly patronized by the local population has been located near the entrance to detach public facilities from semi-public facilities. This would further enhance security as day visitors would be psychologically discouraged from going to the accommodation area.

(b) Shopping

The shopping unit is a curvilinear building that links the auditorium, administration and club. It has facilities such as arts and craft shops, standard shops, internet café a small library/museum, and public conveniences.

(c) Theatre

The theatre is situated on a hill, and is serviced by the same path that links all the buildings through the shopping area. The theatre has an imposing entrance, terraces, stage seating, and

office, changing rooms, back stage, conveniences, rehearsals room and a clock in. It has a seating capacity of a thousand people. It is envisaged that the people of kagoro will find the theatre very useful for social gatherings/functions. The theatre design has utilized the slope of the hill for seating arrangement. The building looks like a small rock growing out of a bigger one.

(d) Accommodation

The accommodation is divided into two 'villages' of chalets. A 'village' contains one royal chalet, three family chalets and six single chalets. The royal chalets are two in number and are meant for V.I.P guests. The two rooms in the royal chalet are suites. There is a living room and a kitchenette for preparing light foods. The family chalets are six in number, and each contains two bedrooms, a bath room and a living room. The single chalets are twelve in number and each contains a bedroom, living room, and a bath room.

(e) Administration

The administration building is situated in between the theatre and the club. The building has functional spaces like; reception, lounge, offices, snack bar, travel agencies, coffee shop conference room, staff lounge and conveniences.

(f) Park

The environment is the major attraction of the kagoro resort. The park is situated at the centre of the complex on a slightly elevated land. It has well landscaped green areas, fish pond, water fountain, spaces for outdoor activities, children play area and outdoor seating and spaces for picnic. Foot paths have been created from disintegrated rock residues from the construction of buildings and most landscaping elements are found locally.

6.2 Site layout concept

The site layout concept is based on the character of the site with the super organising idea derived from the traditional spatial structure of kagoro. The spatial structure of kagoro is

similar to that of the jaba who inhabit the southern part of Kaduna. In a jaba compound the courtyard serves as the main functional space of the house, receiving guest, cooking, washing and other household functions are done in the courtyard. The courtyard is the centre of the house and the most important space with other spaces such as sleeping quarters and storage spaces spread around it. Like wise the design has the park as the central space with other functions spread around it. The following figures show the typical Kagoro compound, the spatial structure of Kagoro town, and how the layout concept has been derived from them.



Figure 13: Typical Kagoro compound

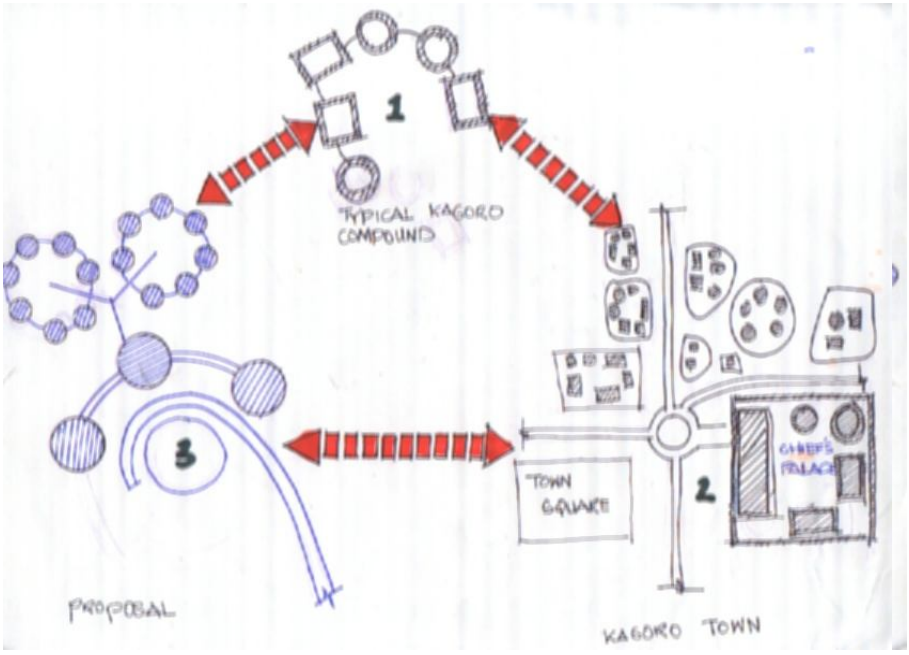


Figure 14: Layout Concept derivation from the spatial structure of Kagoro town.

6.3 Form concept

The form concept is circular (without edges), derived from the balanced circular relationships of organisms with nature. The micro organism is in complete harmony with its natural environment by establishing balance between its needs and available resources. The curvilinear morphology of the micro organism and nature is what has informed the adoption of circular plans for the design. Another reason for adopting circular form is to blend the structures with the circular rocks out crops. Like wise the design is made to look like related facets of a single component, just like the parent rock and the smaller out crops. The design epitomizes the natural process of rock disintegration into several parts.

6.4 Circulation concept

In the spirit of sustainability, it is important that site conditions are respected, existing network of roads and foot paths are maintained and absorbed into the design. In the layout of kagoro tourist resort, the circulation pattern was based on existing net work of foot paths to

connect buildings and media spaces. The vehicular route was created from an existing circular path that was used by the boys scout camp when they were using the site.

6.5 Zoning concept

Site topography, hierarchy of spatial organization, security and character of existing circulation paths are principal factors taken into consideration in zoning the components of the centre in to public, semi-public, and private. Most of the recreational activities (public facilities) are located near the stream; accommodation facilities (private facilities) are located further uphill while other functions (semi-public facilities) are zoned in between the two

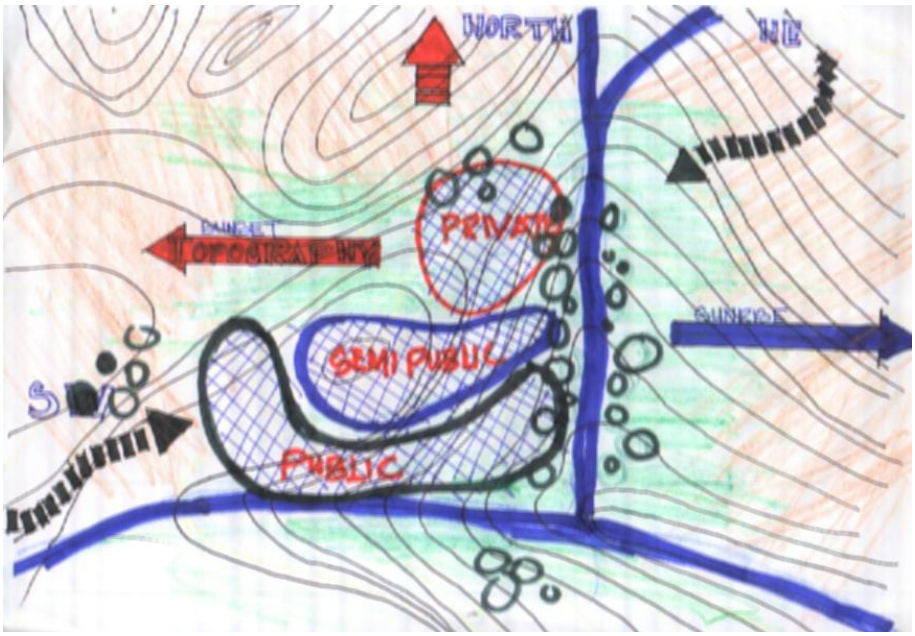


Figure 15: Zoning Concept

6.6 Building materials

Most of the building materials are obtained locally and have low embodied energy. Stone which is found in abundance on the site has been selected as the main building material for walls and circulation paths. It will be used in combination with a few conventional materials like cement. Locally sourced materials like wood and bamboo have also been used extensively especially in roof construction, ceiling construction, and for doors and windows.

Green tiled aluminium is the main roofing sheet proposed for the design. It is also from a renewable source and also blends with the natural environment.

6.7 Energy conservation

Passive cooling techniques such as cross ventilation and wind chimneys have been incorporated into the design to the design to reduce the need for artificial cooling methods like the air conditioner. In the administration buildings, a court yard has been provided to aid the ventilation process. . In the club, open planning has been adapted to aid the natural ventilation process.

Alternative sources of energy such as wind chimneys and solar panels have been used in the design. The wind chimneys will be located at the foot of the mountain to utilise wind turbulence associated with mountainous regions. The solar panels are decentralised where-in every building is powered by independent solar panels. The panels will be used especially in the accommodation units.

The site planning of the resort is environmentally conscious by locating facilities where buildings once stood in the past. This would minimise environmental disruption and impacts on the environment. The planning of the resort is also based on pedestrian circulation and reduced dependence on fossil fuels. Cars are parked away from the accommodation area to encourage walking. A network of walkways and foot paths connect most of the buildings.

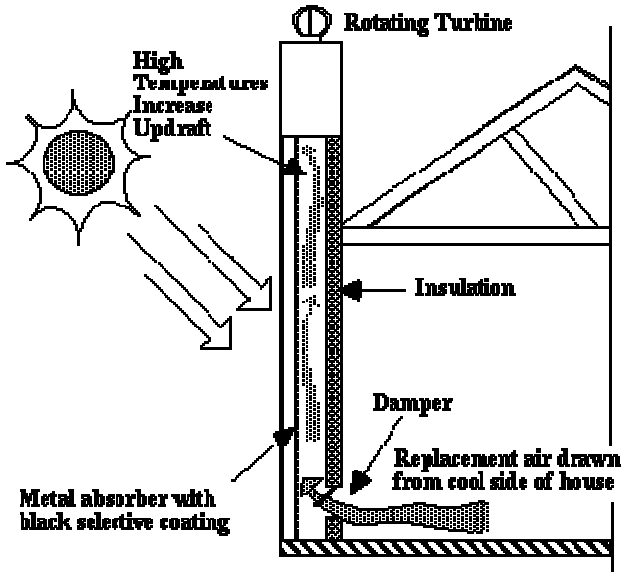


Figure 16: showing how the wind chimney works to enhance natural ventilation processes

Source: Sustainable Building material source book.

6.8 Building Services

6.8.1 Water supply

Water will be tapped from the kagoro mountain water works which supplies most of the area with water. Bulk storage water tank is provided at the northern part of the site which is also on a higher altitude for water storage. Automatic solar booster pumps would be provided adjacent to the storage tank for effective distribution of supply around the site.

6.8.2. Electricity

Wind turbulence associated with foot of the mountain will be utilized by using windmills to generate electricity. The windmills will be located at the northeast part of the site where the wind speed is highest. This will be used in combination with solar panels to provide adequate electricity for the complex.

6.8.3. Storm water drainage

The site will be provided with a storm water drainage system to transport flood water from only built up areas since other parts of the site may not be altered much. The storm drainageis made up of interconnected storm water collecting chambers and under ground

drain lines discharging into intercepting ditches and storm water sewers along lower contours.

Areas prone to erosion will be protected by concrete or rock lining to serve as retaining walls.

6.8.4. Sewage disposal

Bio composting toilets have been used in the design of toilets. This does not require septic tanks or central sewage systems to effectively dispose the effluent waste. Bio composting toilets work by non usage of water and only a small amount of energy is needed for an exhaust fan. Valuable nutrients are used to benefit the soil, proper maintenance requires little time. Waste from kitchens, laundry bar and other waste generating facilities will be piped to the recycling plant on the lowest part of the site. Treated waste will be recycled at this plant and pumped back into the system.

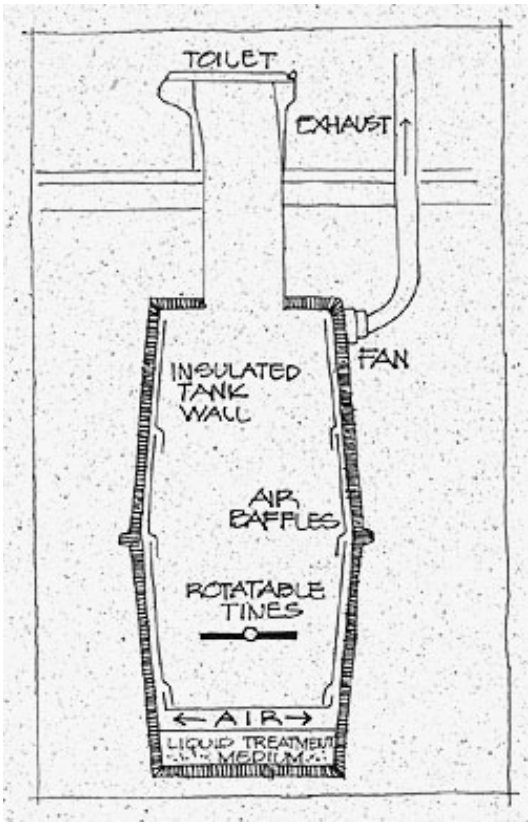


Figure 17: Composting toilets used in the buildings

6.9 Visual image

The visual image of the resort is composed of all impressions of its tangible elements-elements that would be perceived and retained by visitors.

An attempt has been made to make this image at once vivid, coherent and characteristic of the environment in which it is situated. Above all this, image expresses the unique history and geography of the kagoro area. Building height has been restricted to respect rural quality of site and its scale.

6.10 Visual form

The visual form of the kagoro resort composes of the physical reality which the tourist senses' group and on which he bases his visual image of the area. By strengthening the elements that make up the form-signs, paths, building facades and even the sky line, the visual image are strengthened-an image that determines the enhancement of the tourist experience.

CHAPTER SEVEN

SUMMARY AND CONCLUSION

7.1 Summary

This research was undertaken with the goal of proposing a tourist resort of international standard in kagoro. The resort would, through the provision of certain facilities, carter for the recreative and recuperative needs of both local and international tourist, and also affords the local people with a source of livelihood. The development of such facilities should be aimed at providing an almost anodyne infrastructure without causing extraneous damages to the natural character of the site.

Accordingly, an immersion in to the natural and cultural settings of the environment was carried out to understand the time tested responses to the environment by the various components or groups that constitute the local environment. Two types of studies were conducted to arrive at design solutions. The first was a survey carried out on the existing, and potential natural and cultural attractions of the study area so as to determine if the proposal of a development as large in magnitude as an international tourist resort will be viable. The second study was a survey on the culture of the local people to understand the unique on-site, human and environmental interrelationships and resources. This survey covered various aspects of the culture in detail such as cultural landscape, social functions, and general outdoor activities of Kagoro people. The study showed an inclination towards out door relaxation spots/activities such as bars, picnics, cultural performances, and parties. The growing number of outdoor relaxation spots further bolstered the need to create a serene environment that will be more conducive for the functioning of such activities.

In order to have a proper understanding of relevant literature reviewed, and to learn of practical solutions employed in the design of resorts as regards the research topic "creating a sustainable tourism environment", case studies of existing resorts were carried out. The findings from the case studies, the theoretical frame work, and the site investigation formed the backbone of the design of the resort.

The needs and requirements of the design scheme were determined through functional and/ or activity systems analysis, and a determination of the kinds, amounts and criteria of space corresponding to functional needs. Using sustainable site and building design considerations a design solution was obtained where the design is subordinate to its host environment.

7.2 Conclusion

The research "creating a sustainable tourism environment" focused on the preservation and interpretation of indigenous natural and cultural resources rather than creating a contrived or artificial environment. The design accentuates the indigenous natural and cultural assets while respecting resource constraints.

The basic programmatic objective of the proposal is to help visitors appreciate the natural and cultural uniqueness of the site by bringing them physically closer to it. To achieve this, the proposed development was human-scaled and intimate so that sensory features of the native landscape such as sights, smells and sounds are appreciated and preserved.

The basic environmental objective is to achieve these experiences within acceptable limits of change. The Kagoro tourist resort was designed within acceptable limits of change by the sustainable planning of the resort, use of local building materials from

renewable sources, lower energy consumption and resource demand, and reflecting the cultural landscape of the host environment. Generally, the relationship achieved is that of a master/servant, where the architecture is subservient to the ecosystem and cultural context. Also the cultural context was not left out. Effort was made to capture the spirit of place in conforming to the common layout characteristics of the traditional architecture of the middle belt region of the country.

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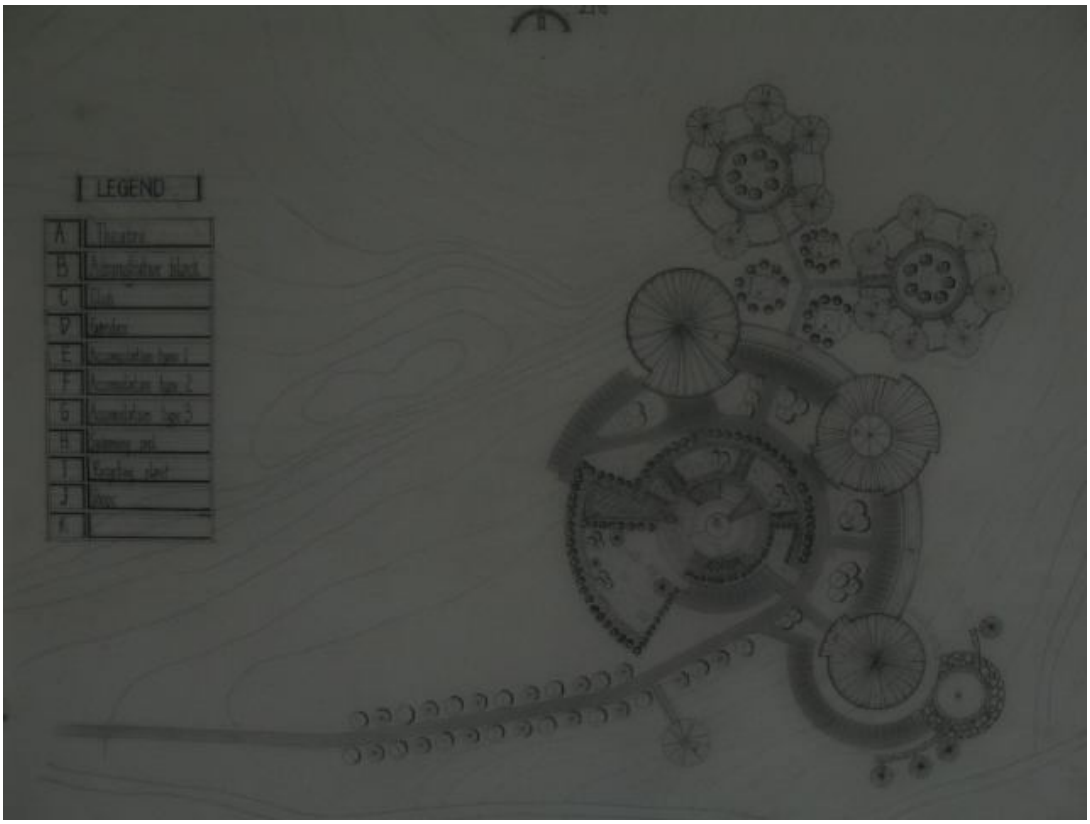
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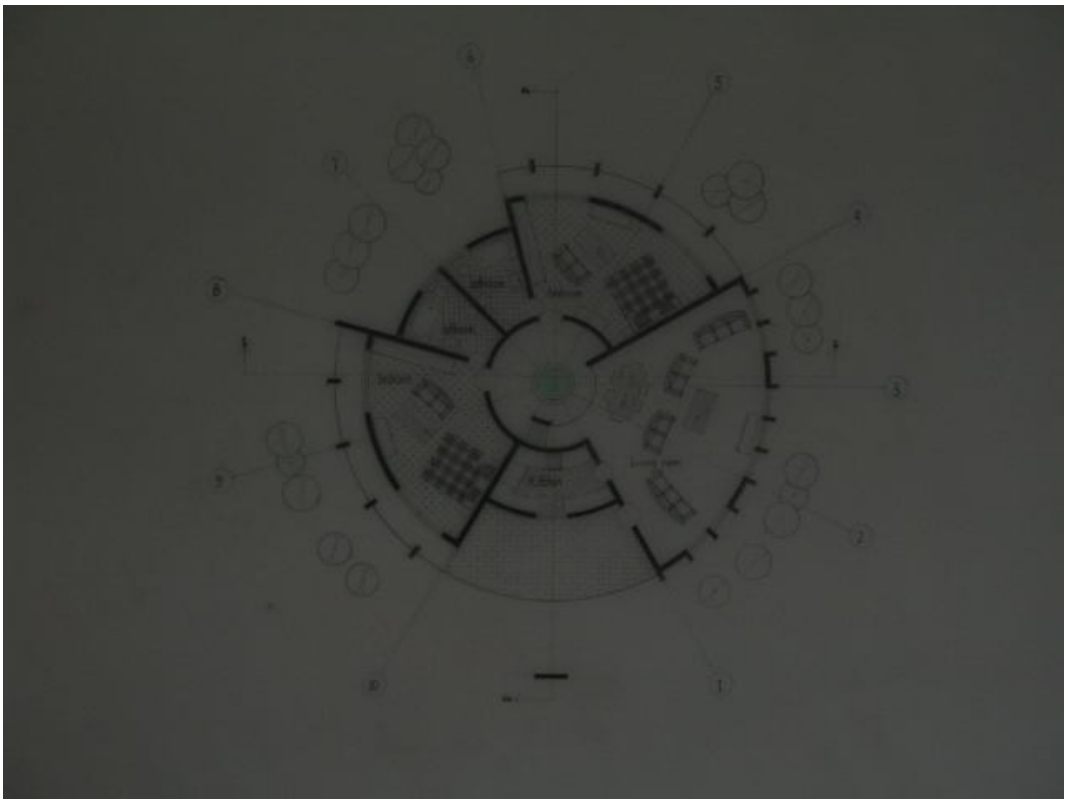
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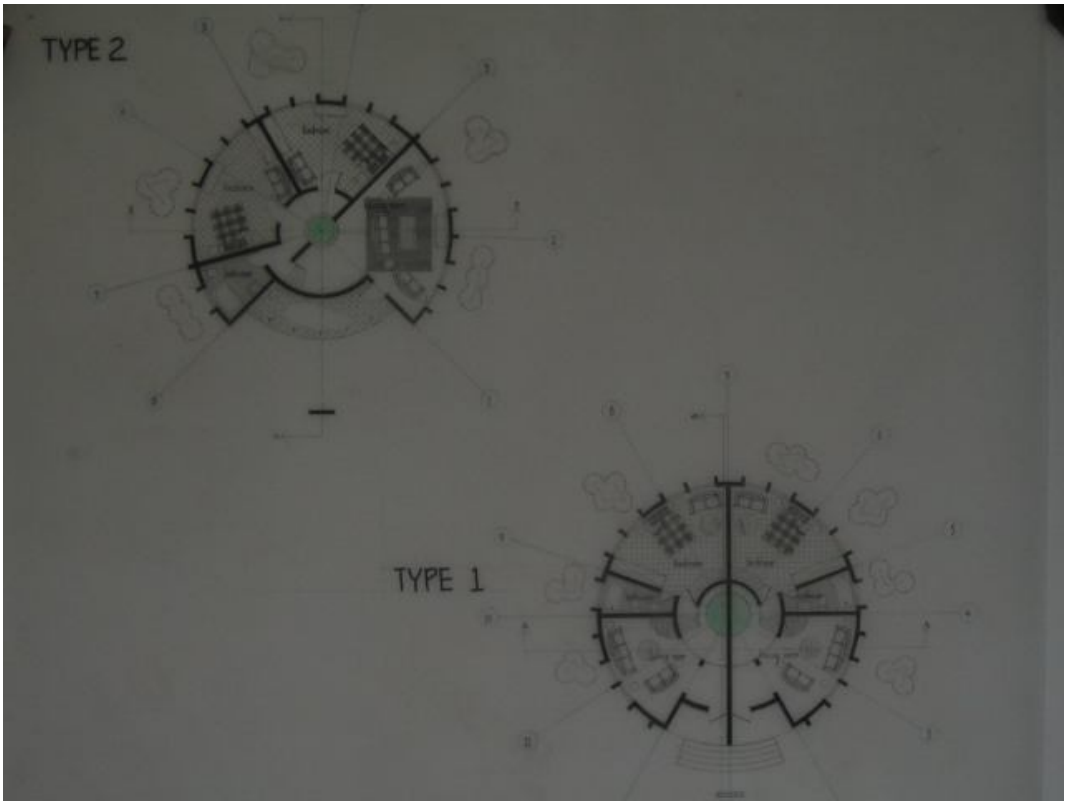
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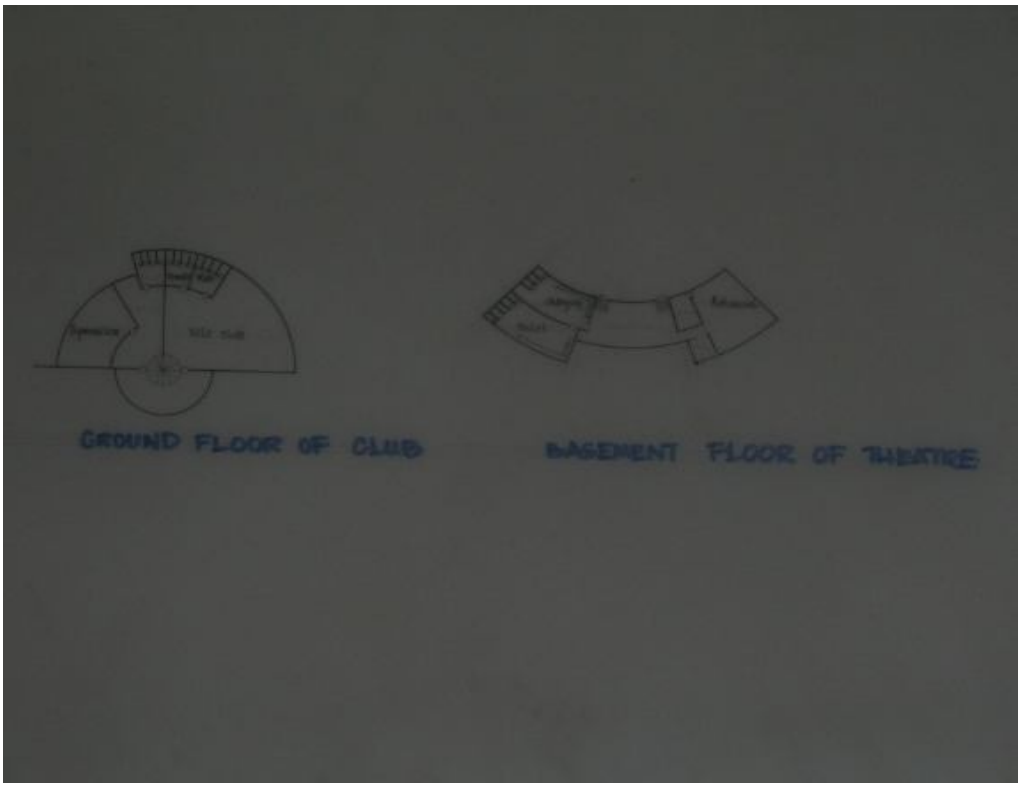
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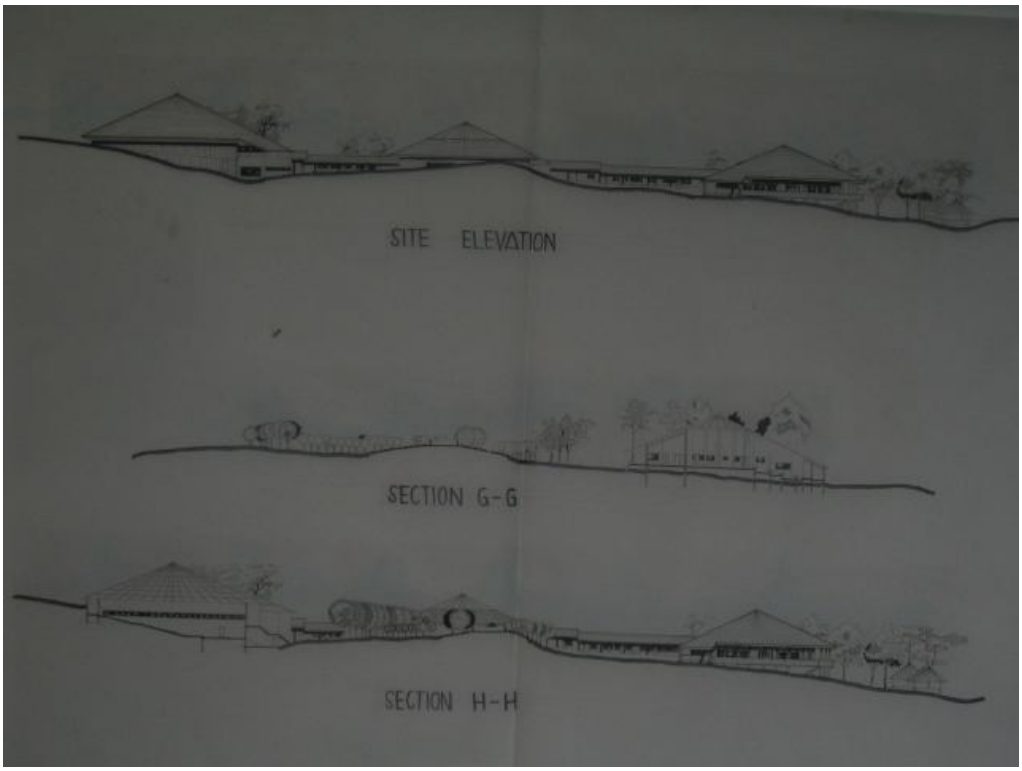
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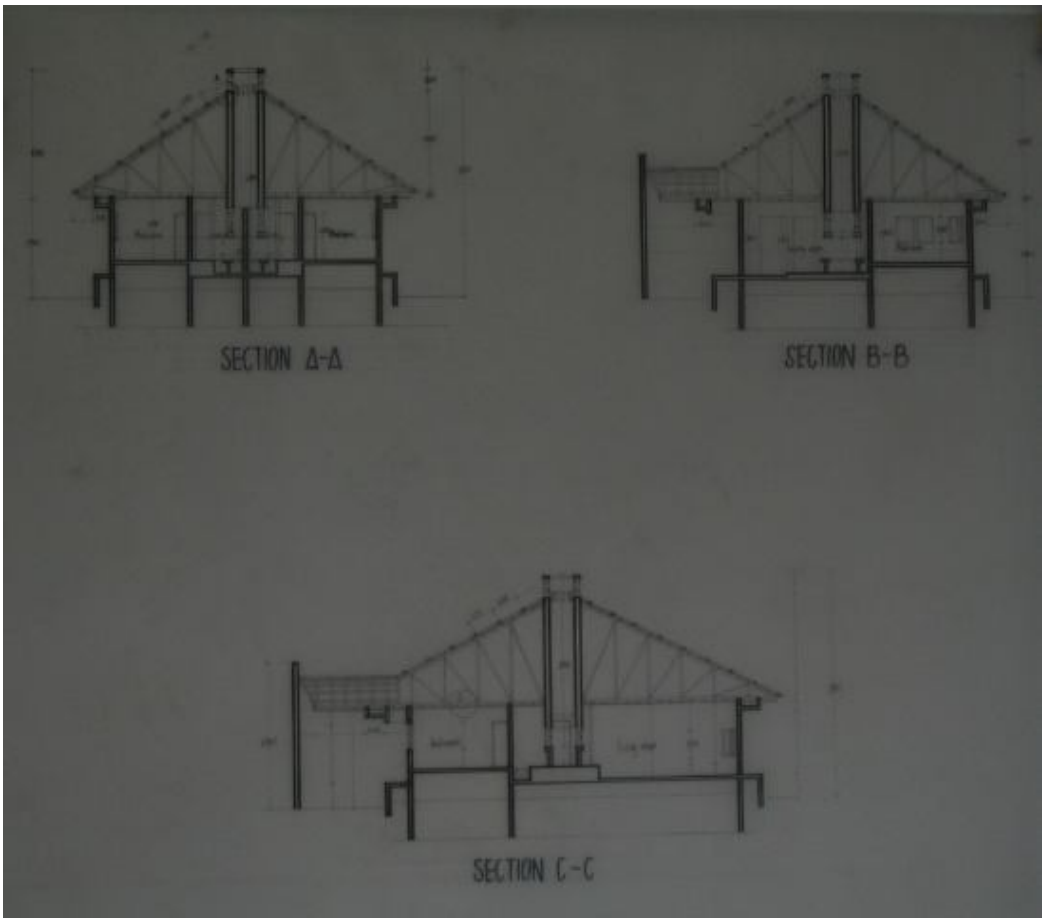
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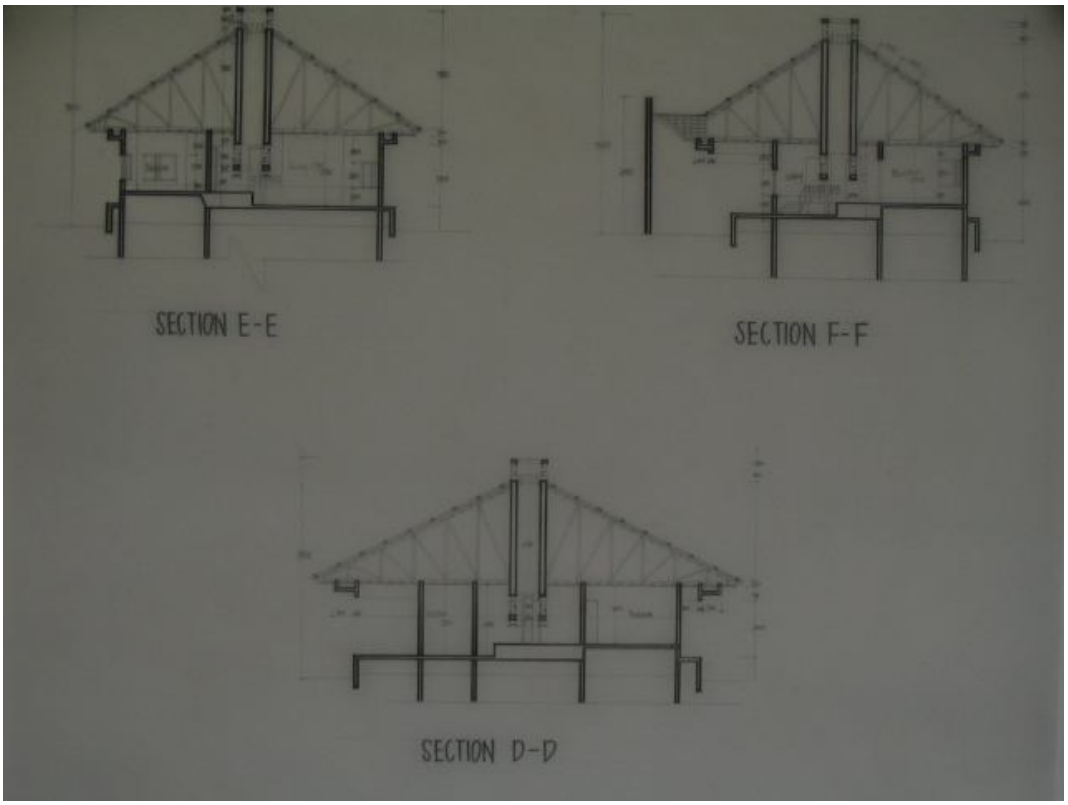
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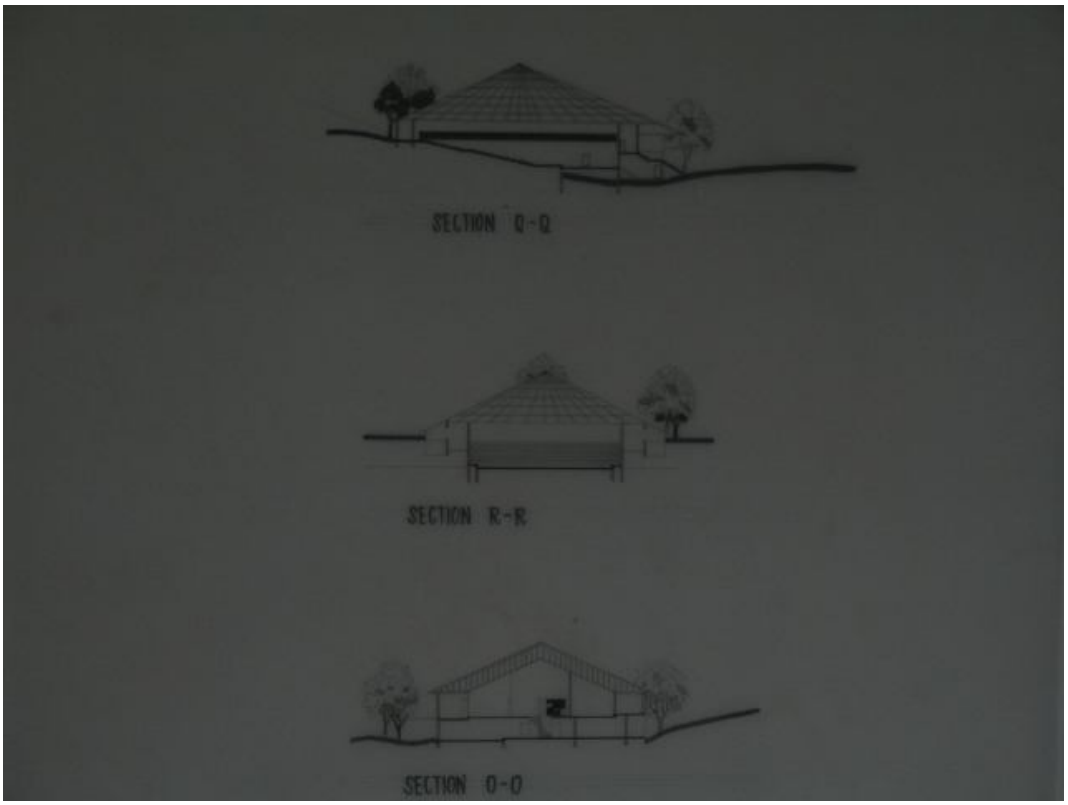
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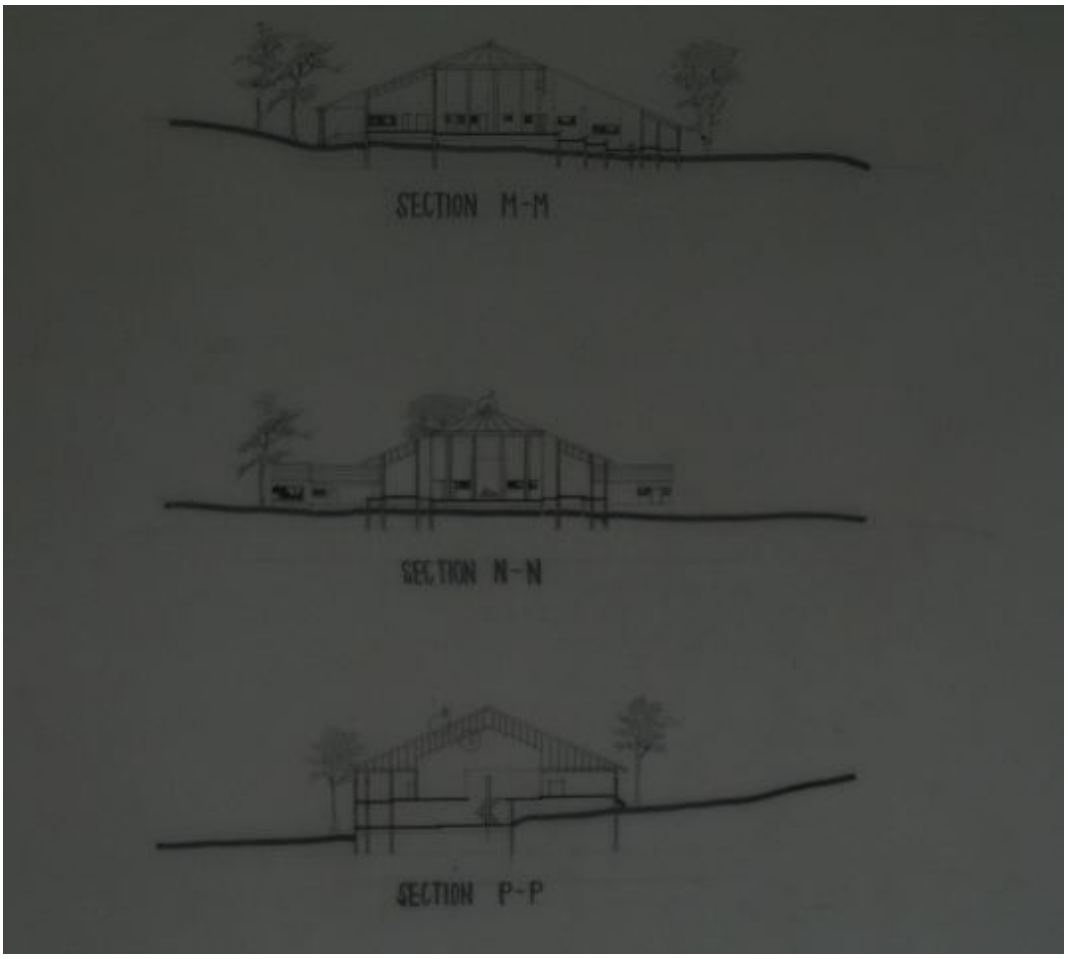
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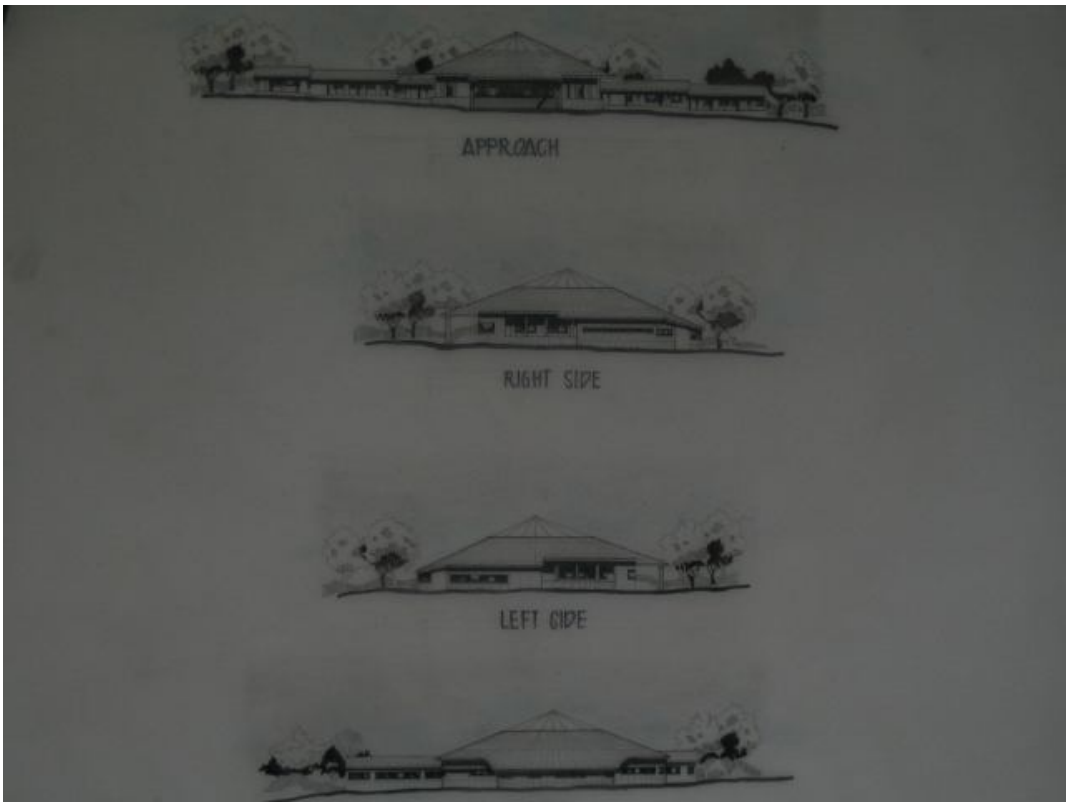
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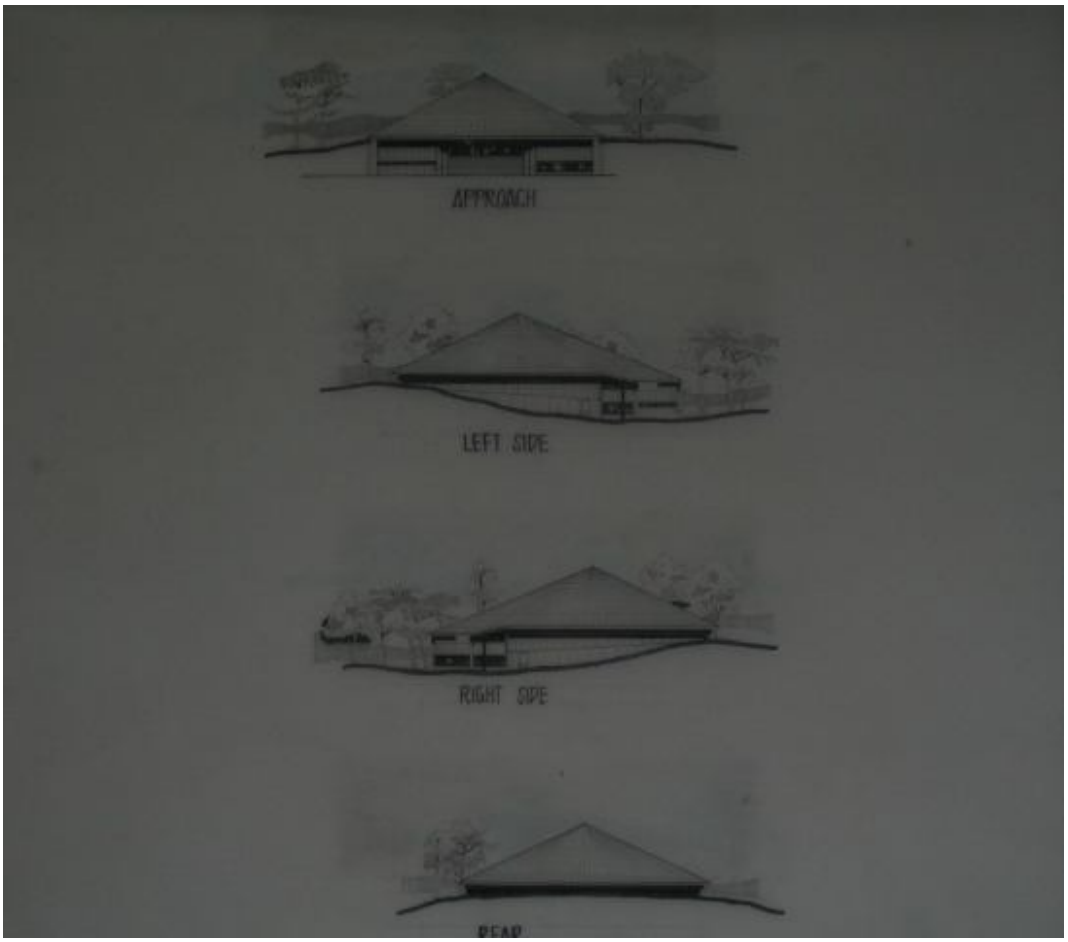
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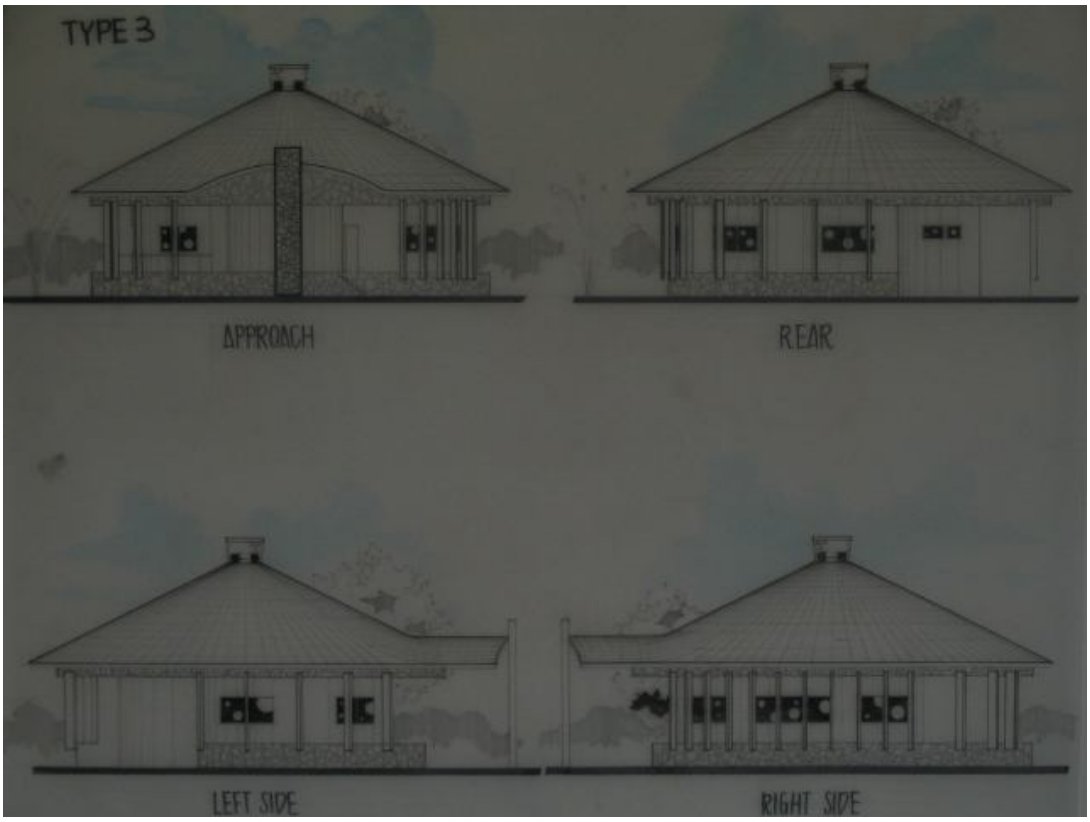
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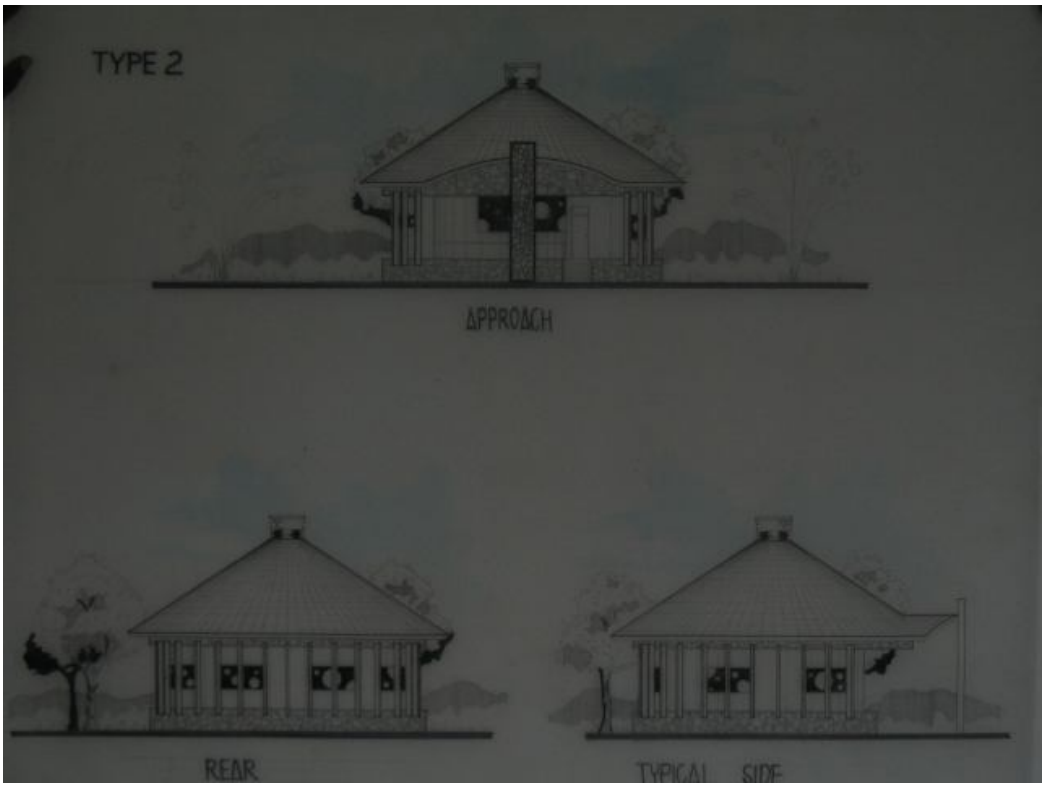
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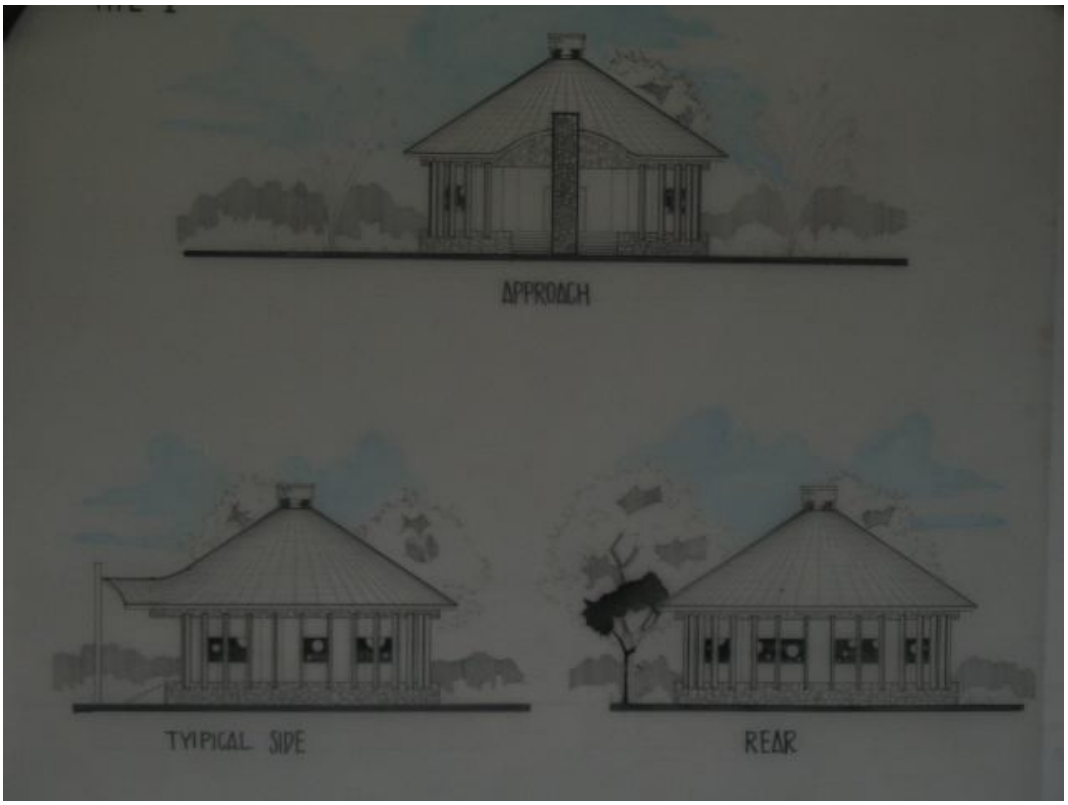
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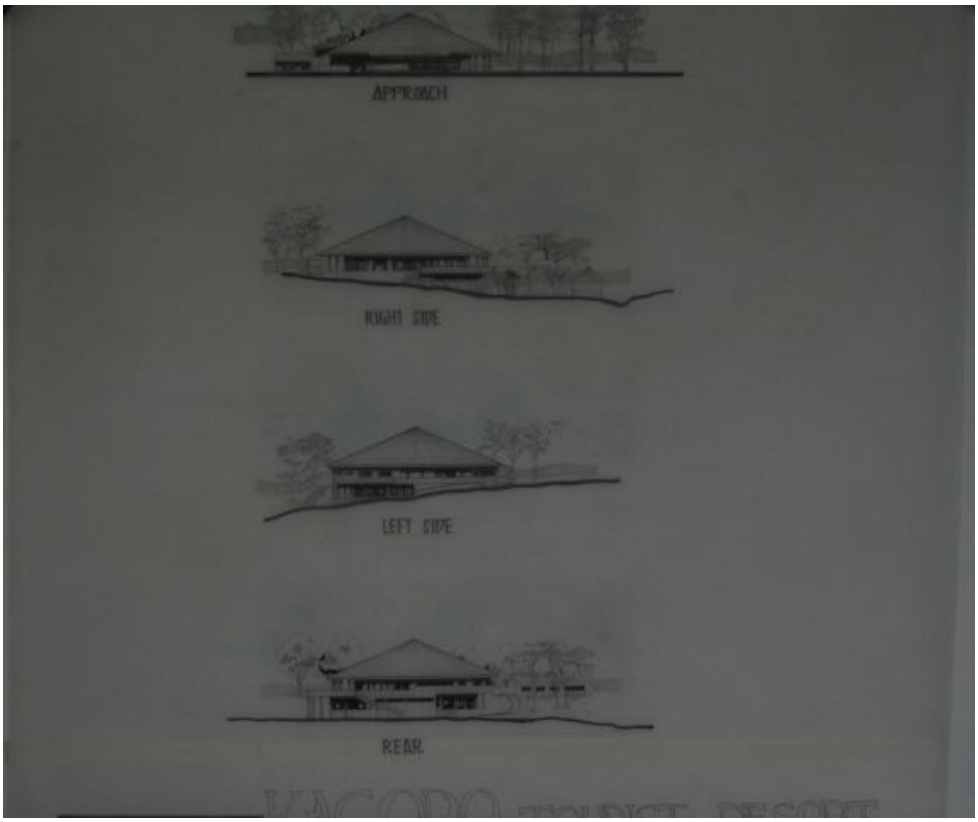
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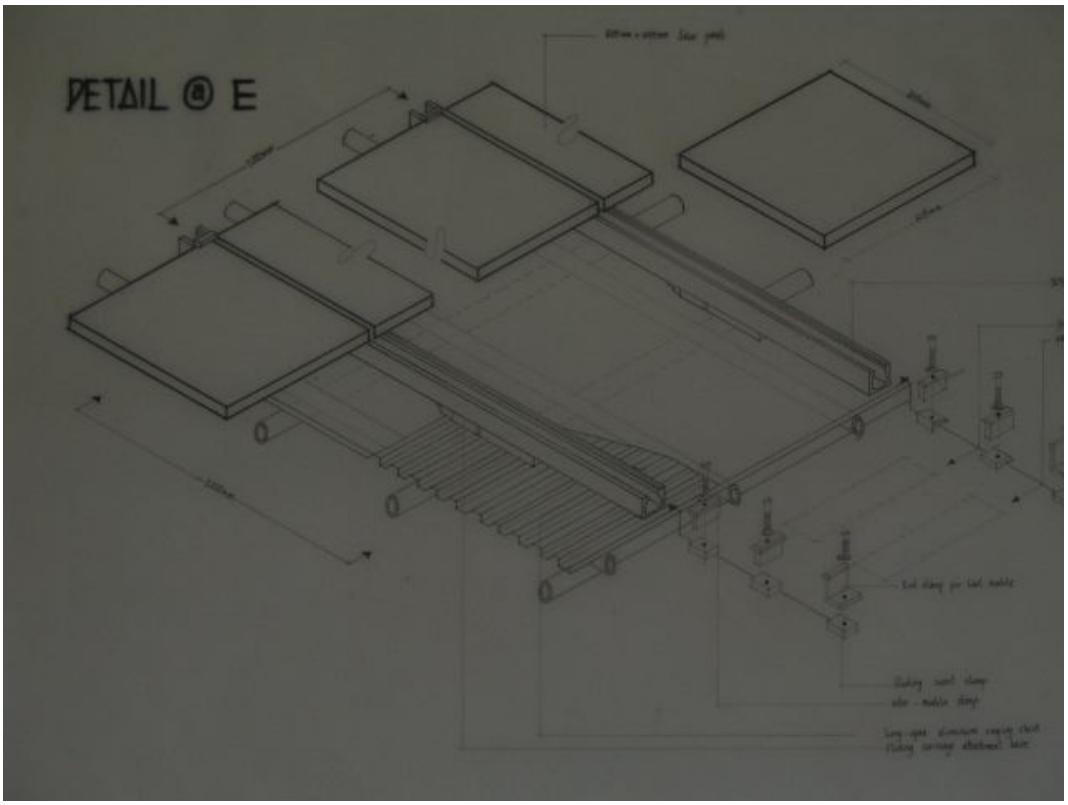
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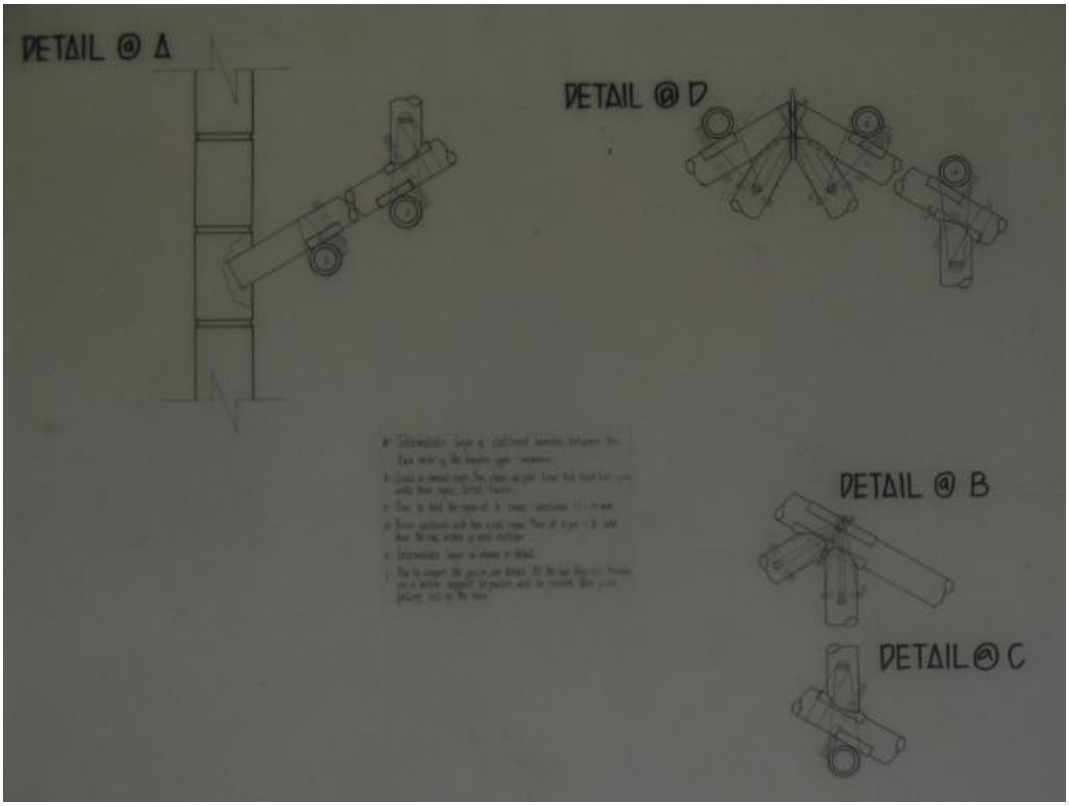
ELEVATIONS OF ACCOMMODATION UNITS



ELEVATIONS OF CLUB



DETAILS



DETAILS