

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND
TECHNOLOGY**

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KNUST

WATERFRONT RESORT, WINNEBA

**THIS DESIGN THESIS REPORT IS PRESENTED TO THE DEPARTMENT OF
ARCHITECTURE OF THE KWAME NKRUMAH UNIVERSITY OF SCIENCE AND
TECHNOLOGY, KUMASI IN PARTIAL FULFILMENT OF THE REQUIREMENT OF
MASTER OF ARCHITECTURE DEGREE IN ARCHITECTURE.**

BY

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B .Sc. (Hons) Architecture

MAY 2009

DECLARATION

I hereby declare that this thesis has been undertaken solely by me, except for portions where references and acknowledgment have duly been given, and not a duplicate work. It has resulted from thorough research and logical analysis and synthesis under department staff supervision.



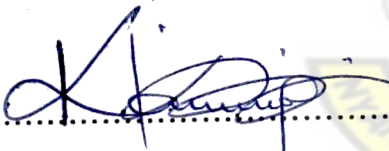
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I hereby declare that this work is an original research undertaken by my student and has been conducted under my supervision.



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DEDICATION

I dedicate this design thesis to the Almighty God who gave me strength to go through six years of architectural education and to my parents, Prof. and Mrs. Atukwei Okai for their support and inspiration throughout my educational life.



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I am most grateful to God, not only because He made this work possible but especially because He has been there for me throughout all the changing seasons of my life, remaining unchanged in his unfailing love. He did it again, where this work is concerned through the following people to whom I offer much thanks.

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CHAPTER ONE

1.1 INTRODUCTION

“As travel destinations go, Ghana is difficult to flaw..... Not only can Ghana, like Malawi be recommended without reservation to even the most nervous of first-time travelers, for being as amiable, affordable and hassle free as practically any country on the African continent; but just as important, Ghana boasts a travel circuit so varied and compact that it might almost be seen as offering a microcosmic first taste of Africa.”

Phillip Briggs, Ghana, The Bradt Travel Guide, February 2005.

This dissertation addresses issues relating to the coastline of Ghana, and its immense potential as a major boost and source of revenue for the tourist sector or industry of the country, through the development of beach resorts along the coast. In recent years, this potential has been brought to the forefront in more ways than one. Leading the way in the sensitization of stakeholders on this subject is the Ministry of Tourism, who together with the Ghana Tourist Board, has been spearheading the campaign to harness the potential of the Ghana's coastline and beaches which the country is blessed with as a viable alternative for revenue generation for our economy.

Ultimately, the research seeks to investigate and reveal some basic guiding principles to be followed in the design and construction of sustainable beach resorts in Ghana, taking into consideration the local factors that come into play, i.e. socio-cultural, economic, climatic as well as architectural design considerations.

Ghana's coastline on the south stretches for a distance of about 560 kilometers .It is generally dotted with sandy palm-fringed beaches and lagoons where water sports can be practiced. Coastal plains stretch across the southern portion of the country, featuring low sandy beaches interspersed with saltwater lagoons

1.2 PROBLEM STATEMENT

The current state of Ghana's coastline leaves much to be desired. Too many of our beaches today have been turned into garbage collection points for all kinds of waste including human waste, and are infamously points of disease transmission for those who reside too close . A typical example is the Osu beach in Accra, which does not

permit a casual stroll along the beach due to the hindrance of rubbish as well as human excreta fighting each other for space.

This phenomenon affects the health and livelihood of residents-most of who are fishermen. This invariably leads to a decline in the number of tourists who visit the country because of its beach life.

In Ghana, although Beach resort development has been receiving some interest recently, it still faces problems due to an inability on the part of stakeholders to make sound decisions about sustainable design due, in part, to the complexity of the sustainability issues and the lack of a comprehensive decision- making tool to assist them.

1.3 JUSTIFICATION

The development of beach resorts in Ghana is very critical and should be given the needed attention for these imperative reasons.

- The coastline of Ghana has the potential of elevating the frontiers of tourism in Ghana.
- Without the issue of poor sanitation at the beaches, tourists may still not visit some beaches due to the lack of adequate facilities at these sites. Thus, the country loses on revenue to be generated from international as well as local tourists.
- D.S Amlalo, a coastal expert has stated that the beaches, cliffs, lagoons, wildlife, cultural and historical sites and coastal landscape in Ghana provide an immense potential for tourism development.
- Currently, tourism comes third to Cocoa and Gold in its contribution to G.D.P (Gross Domestic Product).It is a major foreign exchange earner.
- “Architecture is as old as old as man himself .The most important characteristic of contemporary architecture is the coordination of the elements of space to satisfy the needs of man. Space, not only the buildings should be fundamental for the realization of specific function. Recreational architecture is obviously in its infancy of development and there are wide opportunities thereof. In Ghana, there is currently a general tendency towards the development of recreational tourism facilities.” (Comments from Dr. Charway, 2009)

- The travel and tourism Industry in Ghana has made significant strides over the past decade. Within this period, the industry grew by 12 %, moving to become the 3rd foreign exchange earner of the Ghanaian economy, after Gold and Cocoa. The sector has attracted substantial investments in accommodation, restaurants and fast foods, travel and tour agencies, car rentals and the crafts business.

Table 1 International Market Targets for Ghana

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YEAR

Notwithstanding the series of recreational tourism facilities that have sprung up in some coastal areas of Ghana, the natural setup, economic and geographic situation, there is room for further development of tourism to meet local market targets and international standards. Its efficiency and productivity are therefore of paramount importance to the long-term viability of the Ghanaian economy.

With projected arrivals for holiday-type tourists being the highest at 50.3%, the obvious implication is that any major planning done as a response to the above data must attach enough prominence to catering to the holiday-tourist, as this is where most of the tourist receipts will come from. This will help to project the image of the country abroad, as an ideal tourist destination.

1.4 SCOPE

The thesis will involve the detailed Architectural design of an internationally competitive beach (destination) resort.

This facility will be designed to have all the necessary facilities to make it self-supporting and sustainable even during off-peak periods.

Once it begins operating, the resort will be a prime mover of economic activity in Winneba and its environs. It will be an important generator of employment and income for the people. It will also establish the cost of investment in the industrial, commercial, infrastructure and housing areas.

The facility will seek to achieve the following:

- A 130 room 4-star rated facility
- Accommodation and Dining
- Entertainment facilities
- Leisure and Recreation
- Sports and Health
- Cultural Integration
- Business Facility

1.5 TARGET GROUP

- Holiday-makers
 - a. International tourists in search of an idyllic setting for the perfect relaxation, recreation and serenity
 - b. Domestic tourists.
- Business travelers and route to other tourist sites e.g. Cape Coast castles, Kakum National Park, etc.

1.6 CLIENT

The Caribbean Atlantic Holdings Company Limited in collaboration with the Ghana Tourist Board.

1.7 CLIENTS' BRIEF

✚ Four star Hotel with:

- 130 rooms
- 10 or more chalets
- Restaurants

✚ Water sports facilities

- Surfing, Snorkeling, Speed boating,

- ✚ .Casino and Night club
- ✚ Sports and Health facilities
 - Spa and Gym
 - Tennis Courts
 - Beach sports facilities
 - Mini clinic
- ✚ Adequate parking
- ✚ Administrative facilities
 - Reception
 - Offices
 - Staff facilities
- ✚ Waste treatment

1.8 RESEARCH METHODOLOGY

A descriptive, qualitative and humanistic approach will be employed in the quest for information.

- Personal interaction with some users and staff of beach resorts in Ghana.
- Questionnaires
- Personally experiencing relevant spaces (e.g. beachside facilities)
- Photographs
- Reading and reviewing works on related subjects.

1.9 RESEARCH TOOLS

The primary tools to be used will be:

- Digital camera
- Personal observations
- Questionnaires
- Journals and books
- Internet

Literature Reviews

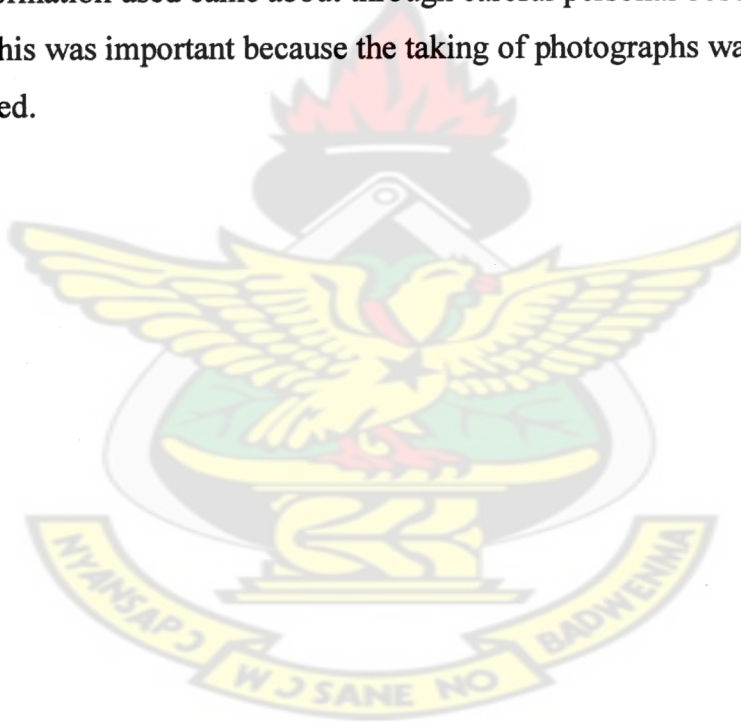
Published and unpublished literature on the topic was reviewed. This involved the examination of written material such as books, journals, periodicals etc. and video recordings. A lot of literature was also gathered from various web sites associated with the history and design of beach resorts and coastal tourism in general.

Case Studies

Local and foreign buildings which serve some or all of the functions of the project to be undertaken were studied to enable the author draw conclusions on design decisions to be taken in tackling the scheme.

Personal Observations

Some of the information used came about through careful personal observations made by the author. This was important because the taking of photographs was not allowed in some areas visited.



CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

The literature review will explore the subject of beach resorts, with special consideration to the Ghanaian perspective. It will also deal specifically with issues concerning coastal tourism in general, again with particular attention to coastal tourism in Ghana.

2.2 BEACH FRONT HOTELS/RESORTS

2.2.1 Hotels

A hotel is a place for overnight stay: a building or commercial establishment where people pay for lodging, and where meals and other facilities such as conference rooms are often available. (Encarta dictionary)

A Hotel is also known as a commercial establishment that provides lodging, food, and other services to the public. The hotel business is an important industry in many countries, especially in those attracting a large tourist trade. Hotels can be classified according to location, facilities and services offered, and clientele served.

2.2.2 Resorts:

Resort hotels and motels usually are located in seaside, lake, or mountain areas, and they cater to tourists and vacationers. Resorts provide all hotel services plus recreational and athletic activities. In recent years, the hotel industry has experienced tremendous growth as a result of the increase in tourism in resort areas such as the Caribbean islands, the Mediterranean region, and Hawaii.

2.3 HISTORY OF THE SEASIDE RESORT

The coast has always been a recreational environment, although until the mid-nineteenth century, such recreation was a luxury only for the wealthy. Even in Roman times, the town of Baiae, by the Tyrrhenian Sea in Italy, was a resort for those who were sufficiently prosperous. During the early nineteenth century, the Prince Regent

popularized Brighton, on the south coast of England, as a fashionable alternative to the wealthy spa towns such as Cheltenham. Later, Queen Victoria's long-standing patronage of the Isle of Wight and Broadstairs in Kent ensured the seaside residence was a highly fashionable possession for those wealthy enough to afford more than one home. Nowadays, many beach resorts are available as far afield as Goa in India.

It was in the mid-nineteenth century that it became popular for people from less privileged classes to take holidays at seaside resorts. Improvements in transportation brought about by the industrial revolution enabled people to take vacations away from home, and led to the growth of coastal towns as seaside resorts. This is perhaps most strongly evidenced in England and Wales, where no point is more than 180 km from the coast.

In his book, "The Image of the City" (1960), Lynch drives home the fact that it is important for us to begin to deal with visual form at the urban scale. He also offers some first principles of city design-He- writes: "The urban landscape, among its many roles is also something to be seen, to be remembered and to delight in. Giving visual form to the city is a special kind of design problem, and a rather new one at that." (Lynch, 1960). That was in the sixties. Now, almost half a century later, we can no longer claim to be faced with a new problem. Yet it would not be wrong to say that even now many countries still have difficulties in city planning.

Ghana still has quite a long way to go in terms of its urban planning and development. No doubt, our city planning should go hand in hand with the development of our coastlines to meet international standards so that our tourism industry will also receive a positive boost.

Indeed, virtually all coastal and ocean issue areas affect coastal tourism and recreation either directly or indirectly. Clean water, healthy coastal habitats, and a safe, secure, and enjoyable environment are clearly fundamental to successful coastal tourism. Similarly, bountiful living marine resources (fish, shellfish, wetlands, coral reefs, etc.) are of critical importance to most recreational experiences. Security from risks associated with natural coastal hazards such as storms, hurricanes, tsunamis, and the like is a requisite for coastal tourism to be sustainable over the long haul

2.4 PLANNING AND DESIGN THEORY RELEVANT TO COASTAL TOURISM:

Are there waterfront failures and flawed efforts? The answer is yes. There are many examples all over the world of unsuccessful waterfront projects. This presupposes that it is not enough for a country to have a desire to develop along its waterfront or coastline. Very careful planning is required if such projects are to be successful.

Various aspects of design relevant to coastal development:

In most countries, there is usually no coordination between programs that promote and market tourism and those that manage coastal and marine areas. Integrated coastal management often tends to be done within environmental or planning agencies. On the other hand, agencies dealing with the promotion of tourism are not involved with the evaluation of its effects or with advance planning and management of the adverse impacts of tourism through avoidance, mitigation, and compensation strategies (Cicin-Sain, 1993). Hence, one of the greatest challenges facing coastal managers in the United States and elsewhere is how to integrate development or redevelopment must be taken into consideration.

Sustainable development of coastal tourism is dependent on:

- *Good coastal management practices* (particularly regarding proper siting of tourism infrastructure and the provision of public access);
- *Clean water and air, and healthy coastal ecosystems;*
- *maintaining a safe and secure recreational environment through the management of coastal hazards (such as erosion, storms, floods), and the provision of*
- *adequate levels of safety for boaters, swimmers, and other water users;*
- *Beach restoration efforts* that maintain the recreational and amenity values of beaches; and,
- *Sound policies for wildlife and habitat protection*

(Year of the Ocean, 1998)

2.5 SOCIO-ECONOMIC DIMENSION

The economic aspect of beach side construction is by all standards a very important one and should not be underestimated. A prime mover of economic activity in Ghana ,the tourist industry is an important generator of employment and income ranking third to Cocoa and Gold. Its efficiency and productivity are of paramount importance to the long-term viability of the Ghanaian economy. The issue of who will finance the project can be a dicey one.

2.5.1 Appreciation creation

Here, the developer buys large hotels, condominium buildings or resorts as well as the surrounding properties, on which they then build extensive amenities and recreational facilities, renovate the existing buildings (the hotels or condominiums) and then add more luxury homes. The new world-class amenities and facilities add tremendous value to the old and new structures. (Breen and Rigby, the New Waterfront, 2004

2.6 ENVIRONMENTAL DIMENSION

In siting coastal resorts and other facilities, there is understandably a predilection for locating in beautiful but high-risk zones that are as close as physically possible to the edge of the sea, or otherwise take advantage of scenic views and proximity to beaches and ocean recreation. Of course, it is precisely these areas that are most vulnerable to both long-term and episodic coastal hazards: such as erosion, storms, and floods.

D.S Amlalo, a coastal expert has stated that the beaches, cliffs, lagoons, wildlife, cultural and historical sites and coastal landscape in Ghana provide an immense potential for tourism development

The people who are in the tourist trade are heterogeneous comprising of large developers medium and small scale. The cultural background of operatives are diverse and of different nationalities. In terms of geographical locations, the tourist trade is very diverse with visitors coming from within and without. .

2.7 WORLD TOURISM- Where does Ghana fit in?

According to a National Geographic research carried out in 2006, people all over the world are traveling far from home more than ever before in human history. International tourist arrivals, arrivals in one country from another, jumped from about 540 million in 1995 to 763 million in 2004.

Ironically, the entire continent of Africa, which is made up of 53 countries, and can boast of some of the world's most spectacular natural phenomena, received just 41 million visitors, 20 million of whom headed to sub-Saharan Africa. While this may be attributed mainly to the number of conflicts plaguing the continent, it is also true that even in areas without conflict, like Ghana, a lot more remains to be done in the area of tourism and taking advantage of their natural resources to help boost the industry. In 2004, total tourist arrivals to Ghana were 583,821.

2.8 OVERVIEW OF THE TRAVEL AND TOURISM INDUSTRY IN GHANA

Historical Perspective:

The travel and tourism Industry in Ghana has made significant strides over the past decade. Within this period, the industry grew by 12 %, moving to become the 3rd foreign exchange earner of the Ghanaian economy, after Gold and Cocoa. The sector has attracted substantial investments in accommodation, restaurants and fast foods, travel and tour agencies, car rentals and the crafts business.

Statistics reveal a slump in tourism arrivals and receipts after 1966, when the country suffered its first major political disturbance and subsequent instability. Hitherto, Ghana had become a beacon of hope for Africa, with attainment of Independence from the British on 6th March, 1957. Many world dignitaries, Pan-African loyalists, artistes and Africans in the Diaspora visited Ghana in solidarity with its achievement and to experience the country its people. Tourism was born. The well-established state hotels and guest houses, the National Airline, Ghana Airways and the cultural offers of the country favourably supported this growing and promising industry for Ghana.

Tourism was to be revisited in the mid eighties when the sector was prioritized under the National Investment Code as a strategy for economic recovery. Under the code, generous concessions and incentives were given to potential investors. By 1990, the

first international chain of hotels, Novotel Accra was born. Novotel Accra was followed by other international and local investors in the accommodation and restaurant business, creating in no time a conducive atmosphere for business and leisure tourism which hitherto had become non-existent.

2.9 THE GHANA TOURIST BOARD (GTB)

The Ghana Tourist Board was set up by Legislative Instrument (NRC Decree 224) in 1973 to ensure an appropriate implementation of the government's tourism policies initiated by the Ministry Of Tourism and Diasporean Relations. GTB's main functions are therefore to implement and advise the Ministry formulation of tourism policies, Market tourism locally and internationally, Regulate and control the tourism industry as well as regulate, classify, license and control the is of accommodation, catering and retail tourism enterprise. Provides support services to investors and provides them with necessary information.

In addition to the operational and admire departments at the Head Office, the Ghana Board has outlets in all the ten regions in the country

2.9.1 Mission of the Ghana Tourist Board

The mission of the Ghana Tourist Board is to achieve sustainable tourism development through the implementation of an enabling environment for the provision of tourism and services for the traveling public well qualified, highly motivated and dedicated, thereby promoting tourism to become the mainstay of the Ghanaian economy.

2.9.2 Vision of the Ghana Board

To see Ghana become the TOURISM CAPITAL of West Africa especially in culture, heritage, ecotourism as well as conference tourism in a quality non-mass manner.

2.10 GHANA'S TOURISM PRODUCTS

The tourism product is the totality of tourist attractions, facilities and services. Ghana's attractions can be categorized as follows:

2.10.1 Eco-Tourism

These are features primarily related to the natural ecology of the country. Examples of these resources are:

- ✚ **National Parks**, such as Mole National Park, Ankasa Nature Reserves, Kakum Canopy Walkway, Buabeng-Fiema Monkey and Tafi Atome Sanctuaries etc
- ✚ **Beaches** such as, La Pleasure Beach, Mighty Beach, Ningo-Prampram-Ada Beaches and Brenu-Akyinim.
- ✚ **Lakes** such as Volta Lake and Lake Bosumtwi. Waterfalls such as Wli and Kintampo waterfalls, among others.

2.10.2 Historical Tourism

These are features of historical significance. Examples of these features are Cape Coast, Elmina Castles, Fort St. Jago (UNESCO World Heritage Sites), Gwollu Defense Walls and the Slave Trade relics at Assin Manso and Salaga, traditional buildings.

2.10.3 Cultural Tourism

Ghana's cultural heritage is a blend of both traditional and contemporary cultural values, which are expressed in the way of life of the people and in festivals (Homowo, Odwira, Hogbetsotso and Damba); art and craft (wood carvings, pottery making, Kente weaving, basket weaving and smocks making).

2.10.4 Recreational Tourism

These include water sports, angling and swimming.

2.10.5 Conference Tourism

Facilities exist for domestic and international conferences. These include the Accra International Conference Centre and conference facilities at major hotels.

2.10.6 Community-Based Ecotourism

The Community-Based Ecotourism Project (CBEP) in Ghana is a joint effort by Nature Conservation Research Centre (NCRC), Ghana Tourist Board (GTB)

In 2006, at a remote beach in Accra, a concerned individual embarked upon an admirable venture. His goal? To do everything within his capabilities to ensure that the beach is kept neat at all times. The Mighty Beach in Nungua, a suburb of Accra is a popular recreational destination for the people of Nungua and its environs with their main activities at the beach being swimming, sunbathing and picnicking.

Over the years however, like many of the beaches in Ghana, especially Accra, maintenance of Mighty Beach had been ignored, thus making the beach unsightly and deplorable in appearance. Too many of our beautiful shores have been turned into garbage collection points with all kinds of waste, including human waste being dumped on the beaches. This has resulted in the fact that many of our beaches in Ghana, especially in the Accra metropolis are unfit for any leisure activities.

The young man, Nii Ayiku, a resident of the area therefore endeavored to do something about the situation by holding regular clean up exercises along the beach. He says he was driven mainly by the fact that Ghana would be celebrating her 50th anniversary the following year and would therefore be a major tourist destination. He observed that “most tourists who visit from Europe and the Americas usually throng the beaches in search of ideal spots for sunbathing”. (Nii Ayiku-Ghanaian native, 2006) .No doubt, he was very right and must be applauded for his efforts. With the current sorry state in which most of our beaches have been left, it would be helpful to have a lot more people like him .The fact remains however that the likes of Nii Ayiku and his uncle who helps him with his philanthropic work are rare. The situation therefore needs to be addressed at a much higher level.

2.11 THE NATURE OF GHANA'S COASTLINE

- ✚ Ghana's coastline on the south stretches for a distance of about 560 kilometers.
- ✚ The coastline is generally dotted with sandy palm-fringed beaches and lagoons where water sports can be practiced.



Fig.1 A sandy beach in Ghana-kokrobite

Source: Internet

- Parts of Ghana's coastline however are rough and jagged...



Fig. 2A rugged beach in Tema, Ghana Source: Internet

Landscape near the beach preserves nature whilst providing area for swimming and recreation.

2.11.1 West Coast of Ghana

There are many popular beach resorts along the western coast. At Dixcove, there is a fish market and a 17th-century British fort. Nearby Busua is a tropical beach with palms and spectacular Atlantic breakers. However, as with much of the Ghanaian coast, swimming is unsafe due to the treacherous undertow of the waves. In this area there are to be found small rocky inlets, which are safe for swimming.



Fig.3 Fishing Village, Ghana

Source: Jane Schreibman/Photo Researchers, Inc. Microsoft Encarta 2007.

In the foreground, these are the mud ovens for smoking and drying fish. In the background are the traditional one storey buildings. The whole village gives you a picture of calm and serenity. The village is dramatically embedded into its natural surrounding

2.11.2 Volta and Ashanti Region

The Volta region is dominated by Volta Lake, the largest man-made lake on earth. The waterway stretches for two-thirds of the length of the country. A round trip on the car ferry to Kete-Krachi takes a day; alternatively, one can take the three-day trip to the northern capital of New Tamale at the head of the lake. There are facilities for sailing, water-skiing and other water sports. Ferry links across the lake now make the region more accessible. Akosombo, centre to the important Akosombo irrigation dam, is developing as a holiday resort, particularly for water sports.



Fig. 4 Akosombo Dam Source: Microsoft Encarta 2007.

The Akosombo Dam can be classified as a tourist facility. The landscape in which the dam sits portrays a sculptural landform that stimulates the senses.

2.11.3 Examples of well-maintained beaches in Ghana

In Ghana today, the search for a decent beach for leisure will inadvertently lead you to a beach resort or hotel of some sort. This emphasizes the fact we would be killing two birds with one stone if we encouraged tourist development along our coasts.

i. ADA BEACH WITH RESORT

The Ada beach with resort provides the perfect hideout which tourists look for. The vast coconut trees underline the serene atmosphere for recreation and relaxation. Such tourist landscape is meant to conserve forest as seen here.



Fig. 5 A popular destination for local tourists –The Ada beach

Source: Field study

ii. **KOKROBITE BEACH WITH RESORT** Fig.6 Tourists enjoying the clean beach of kokrobite-25 km west of Accra and home to the Academy of African Music and Arts

The indigenous architecture of the kokrobite beach sits well within the coconut trees, which provide shade to tourists. It is serene and cool and provides the means for relaxation that tourists yearn for. The beach overlooks the sea whose waves lash against the landscape, producing a calming rhythm that soothes the nerves.

Source: Internet

iii. **DUTCH HOTEL NSHONAA**

This smart new multi-storey hotel on Beach Drive lies on an attractive rocky stretch of coast about 1km east of the new Coco Beach Hotel and 1.5km from the coastal road to Tema.(Briggs,2004)

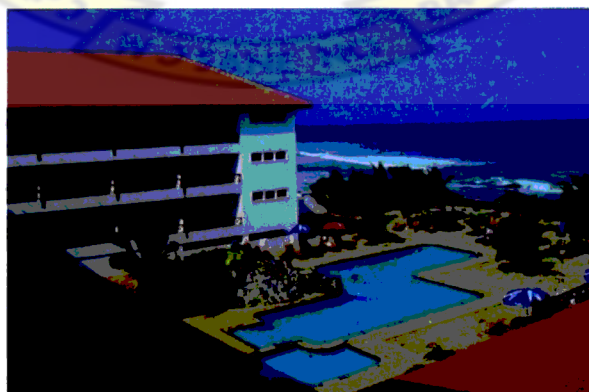


Fig.7 The Atlantic Ocean hugs the shore of this hotel
Source: Field study

Tema is a busy city with the harbour in the background. Being a modern city, the tendency to build a high rise hotel was realised. The hotel itself blends with the surroundings, giving the perfect spot for recreation and relaxation. In this hotel, one can see the use of modern building materials and construction.

iv. THE ELMINA BEACH- Central Region

The Elmina Beach Resort is a four star hotel resort serving both domestic and foreign vacationers. Located in the heart of the historic Central Region of Ghana, the Elmina Beach Resort represents the ultimate locale for businessmen, tourists and eco-adventures alike, The Elmina Beach Resort is just 150 kms west of Accra, The Elmina Beach Resort is near the historic town of Elmina on Atlantic coast, overlooking the famous Elmina Castle Heritage Site,

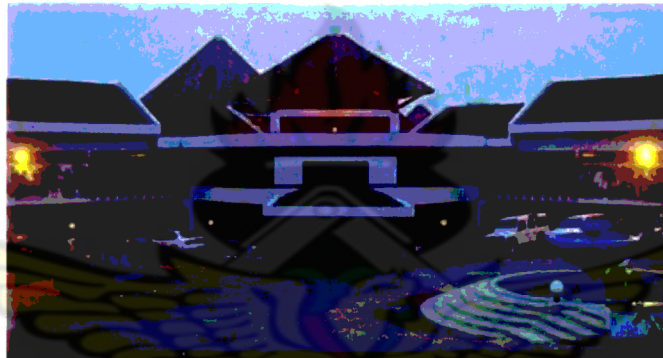


Fig. 8 The Elmina Beach Resort

Source: Internet

This building demonstrates how traditional architecture can be integrated with modern forms to create recreational formations that stimulate the senses.



Fig. 9 Location map of the Elmina Beach Resort-Central Region

Source: Internet

This map shows the well-planned recreational zone where the popular beach resort is situated.

2.11.4 EXAMPLES OF POORLY-MAINTAINED BEACHES IN GHANA



Fig. 10 Osu Beach, Accra

Source: Field Study

The above image is an example of how the beauty of some beaches is wasted by humans. All kinds of waste, solid waste are dumped by residents on the beach and this hinders the development of beach resorts in some areas of Ghana's coastline.

2.11.5 European Influence on Ghana’s Coastline

Central and Western Region

The central region of Ghana borders the Gulf of Guinea and is home to ancient castles and forts that were often used during the slave trade as holding areas for human cargo. Ghana boasts 42 European forts and castles including Elmina and Cape Coast Castles which are all recognized by UNESCO as World Heritage Monuments .Cape Coast Castle, built in the 17th-century and later reconstructed and enlarged, served as the seat of British administration in the then Gold Coast until 1877 (when administration moved to Christiansborg Castle in Accra). Further west is the castle of Elmina (‘the mine’). Elmina was the first Portuguese settlement in Ghana. This huge 15th-century fort, that largely remains intact, is the location of one of the first Catholic churches in sub-Saharan Africa. Fort St Jago was primarily used as a military base and stands on a hill commanding fabulous views of both Elmina and the Atlantic Ocean. Cultural shows are often performed at the castles and guided tours are available. UNESCO has declared both fort St Jago and Cape Coast Castle World Heritage Monuments

🏰 Saint George’s Castle, Ghana



Fig. 11 View of the Saint George’s Castle, Elmina
The background view of St. George Castle, Elmina depicting openness and beauty of space and landscape.

Saint George’s Castle, in the coastal town of Elmina, Ghana, is the oldest European-built structure in sub-Saharan Africa. It was constructed in the late 15th century by the Portuguese to protect their gold-trading post at Elmina from European competitors and African powers. The castle was captured in the 17th century by the Dutch and became a major slave-trading center, servicing the Atlantic slave trade until the 19th century.

Source: Liba Taylor/Panos Pictures Microsoft Encarta 2007

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

In the previous chapter, an overview of the literature relevant to this study was presented. Chapter 3 describes the research methodology of the study in terms of aims, sub-aims and research design. It includes a description of the approaches and participants selected for the study and the material developed and used during this study. A discussion of the field study is provided and is followed by a description and discussion of the data collection procedure and data analysis process.

3.2 AIMS OF THE STUDY

3.2.1 Main Aims

- The study sought to first of all explore the possibilities that Ghana has in terms of the development of beach-front tourist-related (beach resorts) facilities as a tool for boosting her tourism industry.
- Also to explore how the design of beach-front resorts in Ghana can make them more attractive to its target users? I.e. International and domestic tourists

3.2.2 Sub Aims

The sub-aims of this study were to:

- Explore the factors that come into play in the design of a successful beach resort in Ghana.
- Elicit associations from some well-chosen existing beach resorts in Ghana.
- Analyse elicited associations, leading to recommendations for any future development of similar projects.

3.3 THE RESEARCH DESIGN

3.3.1 The research design

The study uses mainly a survey approach through interviews, analysis of existing data research from several media of public discourse including internet publications, books, journals and transcripts from radio and television to help explore the possibilities that Ghana has in terms of the development of beachfront resorts as well as investigate the factors that should be considered in the design of such a facility in Ghana. Existing data research also took the form of a Case

Study approach through exploration of some existing beachfront tourist facilities to achieve the same purpose. Thus, a qualitative method was adopted.

3.3.2 The phases of research

The research was conducted in 2 different phases:

3.3.2.1 Phase 1: Preparation

- Beachfront facilities to be studied were selected (based on criteria set out in 3.5.1);
- Questions for face-to-face interview were prepared in addition to those for the self-administered questionnaires to elicit opinions of relevant parties on the topic of Beach front development in Ghana.
- Appropriate literature to be reviewed was selected. A critical review of the material was conducted and analyses made.

3.3.2.2 Phase 2: Fieldwork

- Specific groups of individuals were selected (including Architects, as well as lecturers at the Department of Architecture, KNUST) and data was collected through face-to-face interviews and self-administered questionnaires.
- An in-depth survey was carried out on an existing beachfront tourist accommodation facility in Ghana.
- Data was analysed; and
- Elicited information was compared with the existing body of knowledge on the topic.

3.4 DESCRIPTION OF PARTICIPANTS.

3.4.1 Selection criteria

A set of criteria was formulated in order to select participants for this study. Below is a summary of the selection criteria and the rationale for including them in the selection process.

Criteria

- a) Participants had to be either practicing architects in Ghana or lecturers in the field of architecture at the Kwame Nkrumah University of Science and Technology or both.
- b) Subjects had to have in-depth knowledge of the topic under discussion.
- c) Subjects had to be well acquainted with issues concerning beachfront development in Ghana, especially from an architectural perspective.

MOTIVATION FOR INCLUSION

- a) This group of individuals is generally known to be well-versed in the intricacies of issues concerning trends of architectural development in Ghana.
- b) The wealth of information available to this category of people in the area of study will by extension increase the amount and diversity of information available to this researcher.

3.4.2 Description of participants

All participants in this study were either practicing architects in Ghana or lecturers at the Department of Architecture at the Kwame Nkrumah University of Science or Technology (all of who are also practicing architects). Respondents were all seasoned architects who have been practicing for not less than 10 years.

3.5 MATERIAL USED

As already mentioned; i) a literature review was conducted to explore relevant existing data on the subject and this appears in Chapter 2 of the report: ii) an in-depth survey was carried out on an existing beachfront tourist accommodation facility in Ghana using the Case Study approach: and iii) a self-administered open/closed-ended questionnaire was developed (see appendix....) for eliciting the opinion of architects on the topic.

3.5.1 Reasons for Case Study

In conducting existing data research, the Case Study was one of the methods that were adopted. It was important to study an existing beachfront facility to examine the following issues.

1. The relevance of Beachfront tourist facilities in our society today.
2. The success rate of such facilities when they are developed and the factors that may influence this success.
3. The ecological factors that may influence the design of such facilities.
4. The extent to which culture and the local environment can and should influence the planning and design theory for these developments.
5. The Socio-economic implications of the development of these beachfront resorts.

3.5.2 Case Study-Selection of a Beachfront facility.

The selection of a particular beachfront facility to be included in this study proved to be a challenging one as there were quite a number to choose from. The Labadi Beach Hotel was chosen due to its success as a beachfront tourist accommodation facility, being the first hotel in Ghana to be given a five-star status. Below is a further look at the factors influencing the choice of this facility as a major case to be examined:

- Location:
 - i) The siting of this hotel next to a popular beach in Ghana, The La Pleasure beach presents a good premise for the design of another similar facility.
 - ii) The location of this facility in Accra, will also be investigated to ascertain how much of an influence that has had on the performance of the facility.
- Materials used:
 - i) The choice of materials in the construction of the hotel has been carefully done to ensure sustainability of these materials, considering how close the buildings are to the ocean. This will again serve as a good precedence for a future design.
 - ii) The extensive use of wood and other locally available materials not only provide an answer to the problem associated with building close to the ocean but at the same time helps create a rustic look which has been a very strong appeal point for the hotel.

3.5.3 Development and description of questionnaire

A questionnaire was subsequently created for the architects. See Appendix for examples of the questionnaire.

A questionnaire was developed by formulating mostly open-ended questions. The use of statements was avoided largely to prevent a bias by the researcher. The open-ended questions were employed mainly to support the qualitative nature of the interview.

The views expressed by the respondents were analysed and the underlying or recurring opinions were critically examined, eventually leading to the conclusion of certain findings and recommendations

CHAPTER FOUR

FINDINGS AND DISCUSSIONS

4.1 INTRODUCTION

This chapter mainly presents the results of the survey undertaken with the help of a Case Study, Special Studies and Technical studies. The results of the interviews mentioned in the previous chapter are also discussed. The chapter describes the process

4.2 CASE STUDY

The purpose of the Case Studies is to identify both positive and negative aspects of the design of the facilities under study, and their effects on users and stakeholders resulting from environmental variables in the development of beach resorts; quality of location, architecture and building materials with the objective to underscore the factors that help create an environment that stimulates the senses of users as well as the operational aspects.

The structure of the Case Studies will focus on:

1. Adequacy and quality of functional spaces; Location, Layout planning as well as building materials usage.
2. Ventilation of functional spaces, tourist accommodation, service space etc. in compliance to Town planning standards and Safety of users.

The positive aspects of the Case Studies will have a major influence on the design process of programming and design of the proposed project.

CASE STUDY OF THE LABADI BEACH HOTEL, ACCRA.



Fig.12 aerial view of the Labadi Beach Hotel

4.3 BACKGROUND

The Labadi Beach Hotel, established in 1991 is the first hotel in Ghana to be given a five-star status.16 years later, the hotel is still with its five-star status and is still one of the more sought after hotels in Ghana.

Specifically designed to meet the needs of the discerning international business traveler, The Labadi Beach Hotel has over the years managed to keep a clientele of varying backgrounds and categories who visit the country for various reasons. Today, the hotel is proud to acquiesce that it caters not only to the business traveler, but also has most of its users being tourists to the country.

1. Location

Just a short drive from Kotoka International Airport, the hotel is situated adjacent to one of the most popular beaches in Ghana, The la Pleasure Beach. The proximity of the hotel to the beach gives it an edge over its rivals. This is because many tourists who visit the country on vacation are especially lured by the attraction of a beachside revelry. Conveniently situated opposite the International Trade Fair Centre and adjacent to the popular La Pleasure Beach, the Hotel is only a 10-minute drive from Kotoka International Airport and 15 minutes from the Central Business District of downtown Accra.

2. Layout

The entire establishment covers some 15 acres of land in this prime location. The layout of the hotel makes room for a lovely pool as the central feature. The entrance foyer (which includes a reception), together with a bar and restaurant radiate around the pool. The guest lodgings are to the west of the pool area, with the reception being just north of the front parking lot.

3. Site Map

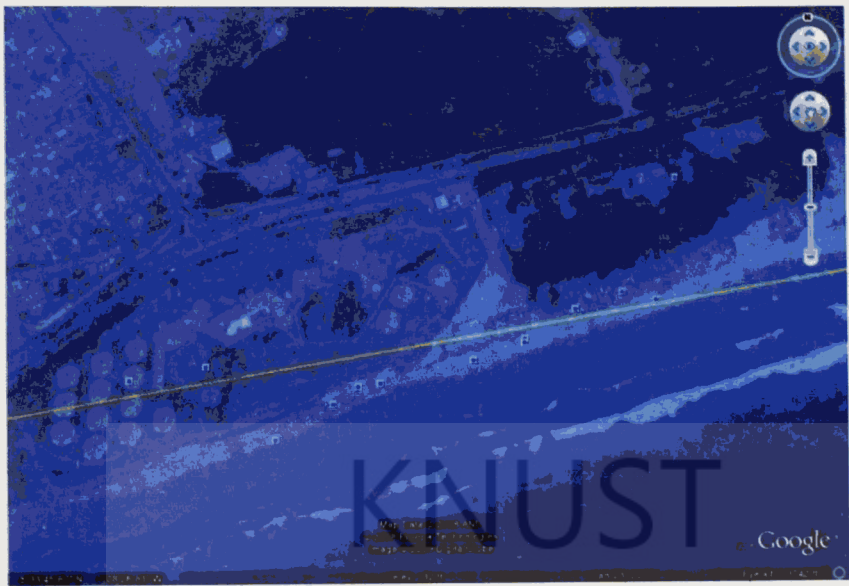


Fig.13 Site Map



Fig.14

Map shows strategic location of the hotel in relation to the coast, the International Airport and even the International Trade Fair Site. Source: www.labadibeach.com

At the hotel, you will find conference, meeting and banquet rooms set amidst 15 acres of tropical landscaped gardens. The land on which the hotel sits is a sloping one and makes for more interesting landscaping.

4. Approach

The approach is obscured, indicating poor planning.

5. Entry



Fig. 15 Main Entrance



Fig. 16 Reception Entrance

Pictures above show the main entrance to the hotel from the beach road.

Notice the use of Palm trees at the entrance to give the desired tropical beachside effect.

Source: Field study

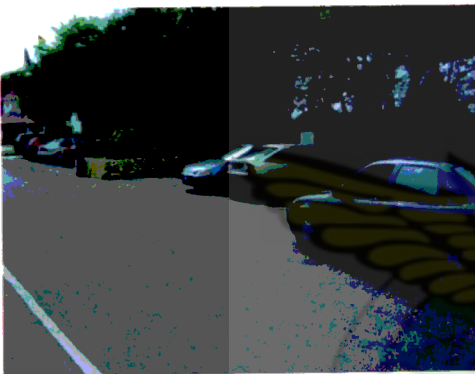


Fig. 17 View of car park

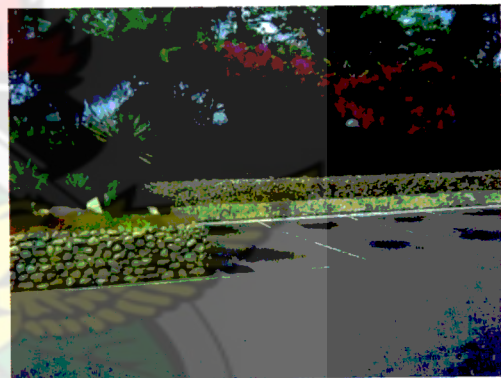


Fig. 18 View of car park

Pictures above show part of the parking lot of the hotel. Attractive flowering trees have been employed to create a screen from the road. Source: Field Study

6. Form and Appearance

This unique example of a beach resort is indeed a welcoming place for visitors to the country, especially tourists who have a strong affinity to nature. Some say the most striking feature of the hotel is the rare attention given to detail noticeable especially in the architecture and the lush landscaped gardens (complete with reed-fringed dam and adult and children's' swimming pools). The extensive use of timber in both the exterior and the interior, while ensuring durability of material in response to the coastal climate of the area, also lends a certain feeling of closeness to nature and gives the hotel an overall effect of a

unique tropical cocoon. Set within 15 acres of sprawling landscape, the hotel has a ranch-style appeal when viewed from the main entrance as it presents a one-storey façade with a low roof. This look is somehow maintained through the entire facility in spite of the fact that the lodgings are located in two-storey high buildings.

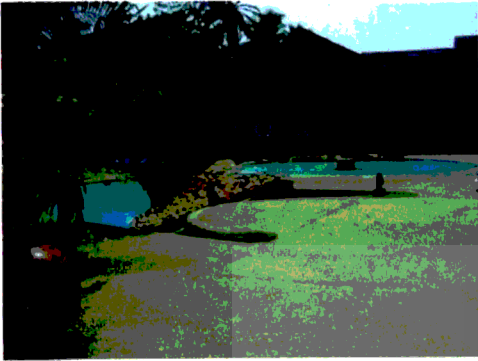


Fig.19 Indigenous building form

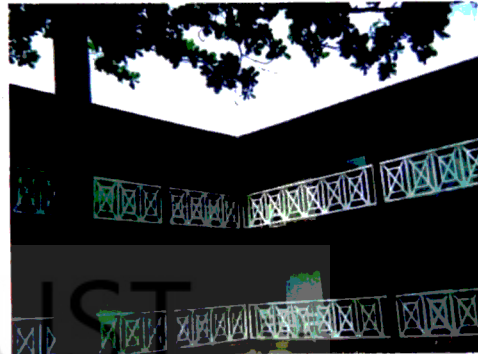


Fig. 20 View of lodgings

7. Circulation

The hotel has both horizontal (corridors and walkways) and vertical circulation systems. The vertical circulation is limited to the staircases as lifts are absent in the facility.

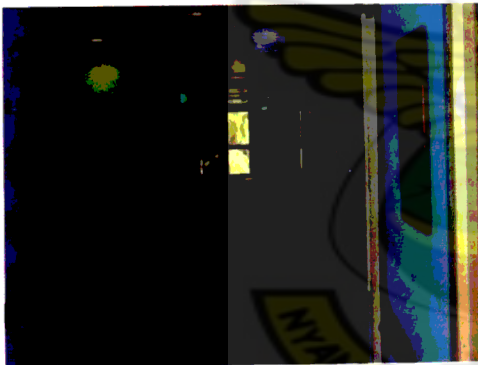


Fig.21 Corridors leading to hotel rooms

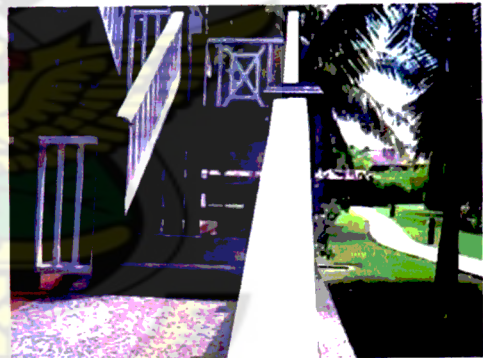


Fig.22 Staircase leading to Guest Lodging

8. Structural System

A Post and Beam structural system has been employed extensively in this facility. The timber columns also add to the rustic appeal of the hotel.

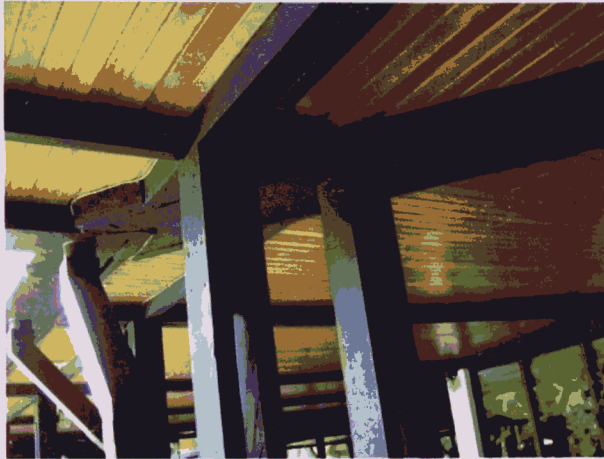


Fig.23 View of columns and beams

Part of what adds to the general appeal of this hotel is the very crafty way in which its structure has been integrated into the total look of the facility, giving it quite a rustic appeal. This is especially evident in the exposed wooden trusses, which feature in most parts of the hotel.

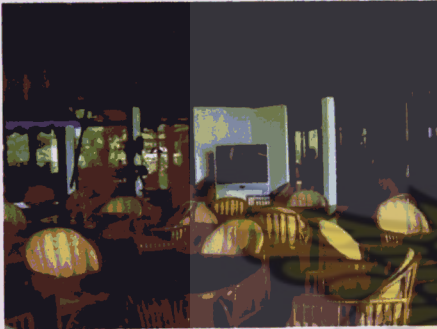


Fig.24 Exposed wooden trusses in restaurant



Fig.25 Closer view of wooden trusses

The absence of ceiling in these spaces is a plus. Where ceilings have been used, wooden T& G has been carefully chosen in order to keep the rustic effect created by the exposed wooden trusses. The columns are also made from wood and tie in beautifully with the entire setting.

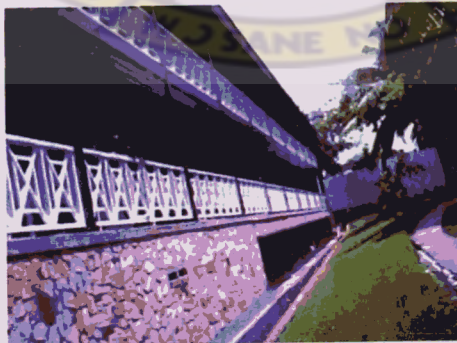


Fig.26 Reinforced concrete foundation

The wooden Post and Beam system however does not extend to ground level. Where the building achieves an interface with the ground, reinforced concrete has been used complete with stone cladding to give the structure a more secure footing

9. Building Materials

For the walls, ordinary masonry units have been employed. This has been finished with emulsion paint of various colours depending on the colour theme of the particular space.

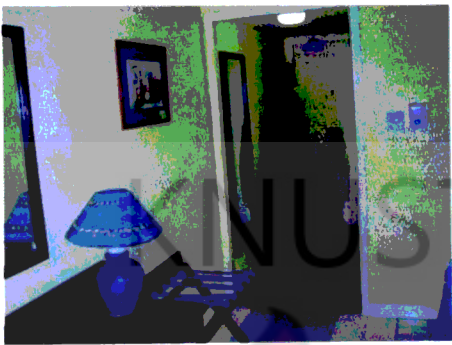


Fig.27 Emulsion-painted walls

Wood has been used extensively in the facility. It has been used as cladding for columns, for railings as well as ceilings. Wood was also used to insulate metals from sea erosion. Wood was also used for the doorknobs because of their resistance to rust.



Fig 28 the hotel lobby

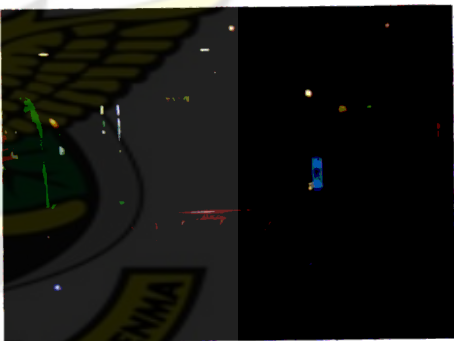


Fig. 29 Lobby bar

The roofing material used however, is slate. This is of course also in response to the location of the hotel close to the beach.



Fig.30 Roofing material

The floors are mostly laid with attractive floor tiles or marble. The lobbies leading to the rooms however are fully carpeted.

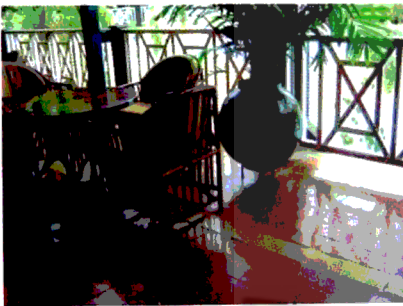


Fig.31 Floor tiles

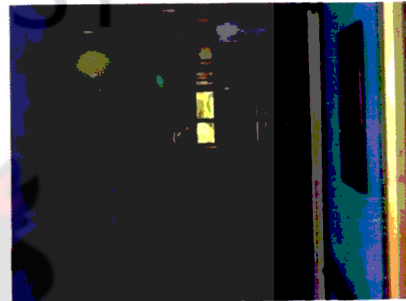


Fig.32 Carpeted lobbies

10. Major rooms and spaces

The hotel features some other interesting spaces where various services are provided including restaurants and bars, a conference room and a hair salon. The two specialty restaurants enable guests to savour excellent cuisine enhanced by a distinct African ambience.

According to management of the hotel, “the hotel's management has extensive international experience ensuring your stay in Ghana's premier Hotel is Unique.”

- **Primavera Restaurant:** An elegant Restaurant offering a lovely menu.

- **The Akwaaba:** This casual restaurant serves a full English buffet breakfast and an extensive buffet luncheon and dinner. A la carte items are also available throughout the day
- The hotel has a **Lobby bar** where visitors are entertained with music and a **Terrace bar** which overlooks the swimming pool and gardens.

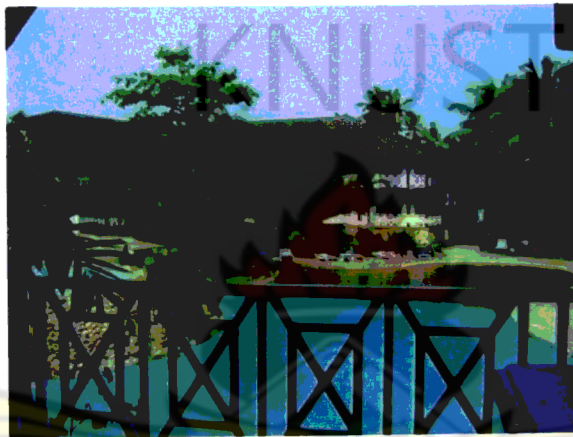


Fig. 33 View of pool from Terrace bar.

- **The Salon**

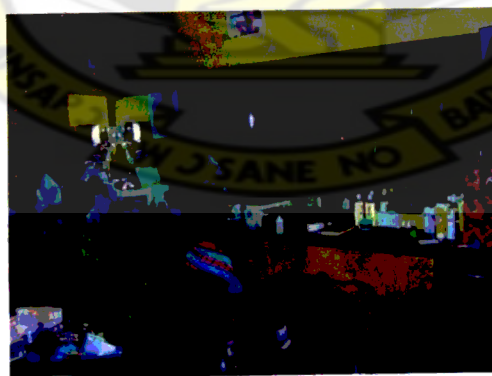


Fig. 34 Unisex Hairdressing Salon.

This is a hairdressing salon where visitors can have a hair-do touch-up.

- **Conference Room**

Fully air-conditioned, the conference centre consists of one large suite, The Labadi, which may be split into two separate suites, The Obuasi and the Adinkra, by a soundproof sliding door. The Labadi can accommodate up to 250, cinema- style, 120 classroom- style or 140 for dinner. Each of the smaller suites can accommodate 100 cinema-style, 50 classroom- style or 60 for dinner. It is the ideal venue for business meetings, residential conferences, presentations and fashion shows. State of the art audiovisual equipment, meticulous attention to detail and the creativity of friendly professionals guarantee an event to remember.



Fig.35 The Labadi



Fig. 36 Conference in the Labadi Suite

11. Bedrooms

The hotel has different categories of rooms with matching room rates. These include the Crown Royal Suite.

- **The Crown Royal Suite**



Fig. 37 Bedroom

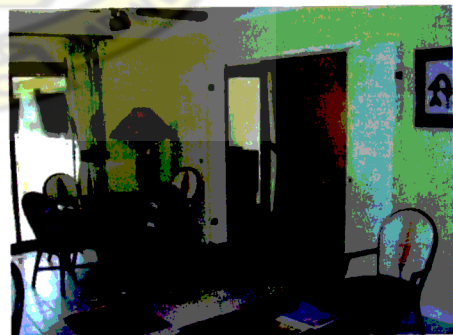


Fig.38 Dining area of the suite



Fig.39 Part of the living room

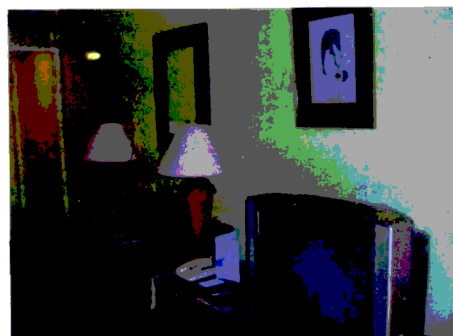


Fig. 40 Writing desk in living area

In The Crown Royal Suite, varying tones of beige and brown have been combined together in an appealing fashion to create a space that is delightful to experience.

Rooms & Rates*

<u>Room Type</u>	<u>Rate</u>
Standard Rooms	
Standard - Single Occupancy	\$270.00
Standard - Double Occupancy	\$310.00
Suites	
Suite w bedrooms, living room & kitchenette	\$600.00

12. Services

- **Lighting:** Interesting lighting fixtures have been employed in the facility to give a spectacular ambience to the space.

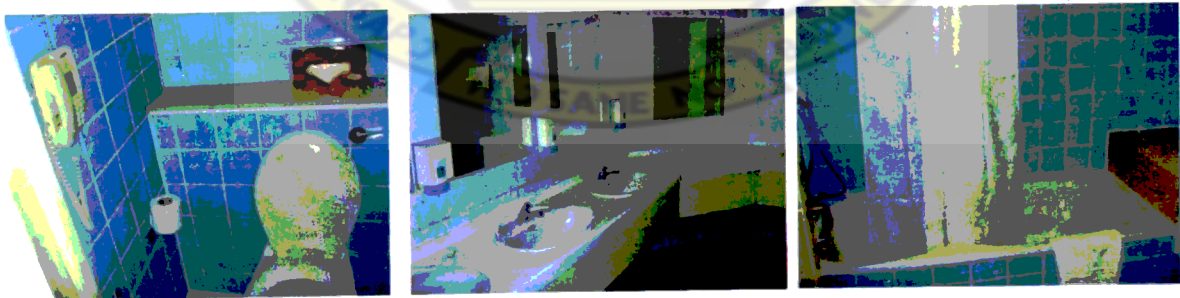


Fig(s) 41-43 A sampling of the lighting fixtures employed in the hotel.

- **Water:** Water supply is regular and supplied from the mains.
- **Air-conditioning:** All rooms are installed with both air-condition units and fans to create a micro-climatic condition and ensure comfort of users.



Fig.44a gilt-framed ceiling fan



Fig(s).45-47 The wc and bathroom areas are adorned with beautiful tiles.

13. Grounds

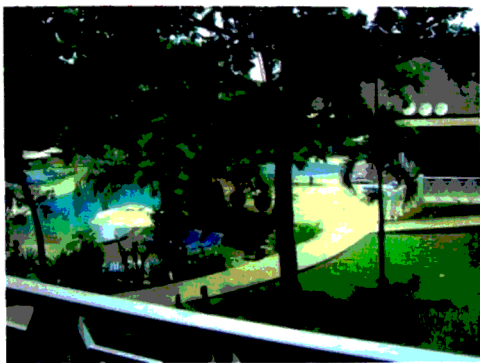


Fig.48 Captivating Landscape



Fig.49 Beautiful Walkways

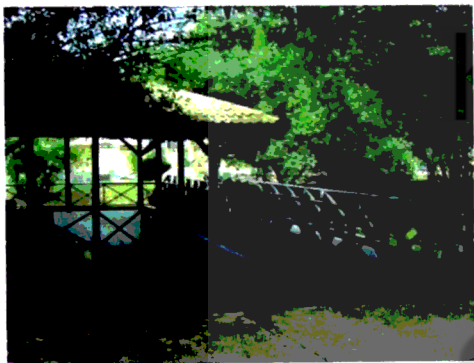


Fig.50 the Bridge

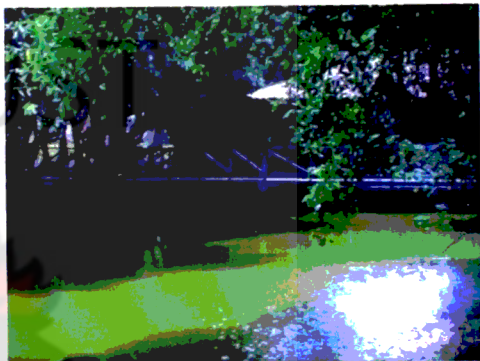


Fig.51 the Pond

The Gardens: A stroll through the gardens is a delight for ornithologists and the lagoons provide interesting sightings of fauna and flora. The pictures above show parts of the beautifully landscaped grounds that is one of the hallmarks of the hotel.

14. Principal Outdoor Spaces

- Leisure



Fig. 52 View of pool from the terrace bar

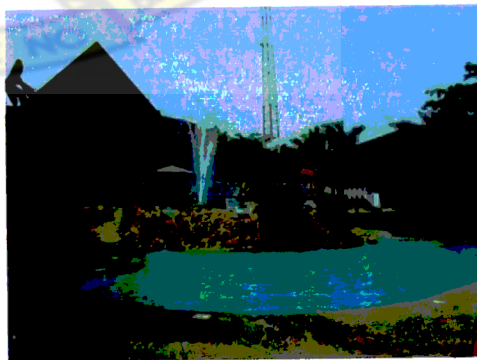


Fig. 53 Part of the pool

Leisure time is a priority at Labadi Beach and the Hotel's swimming pool is the central attraction. Fringed by palm trees, the pool area and fountains provide a welcome retreat from the heat and humidity of the Equator.

Immediately adjacent to the pool deck is the Health Club, offering a fully equipped Gymnasium and Sauna. For the more energetic, two floodlit tennis courts are in the grounds as well as a floodlit volleyball court. The Concierge will also gladly arrange a round of golf or a game of squash at nearby Clubs.

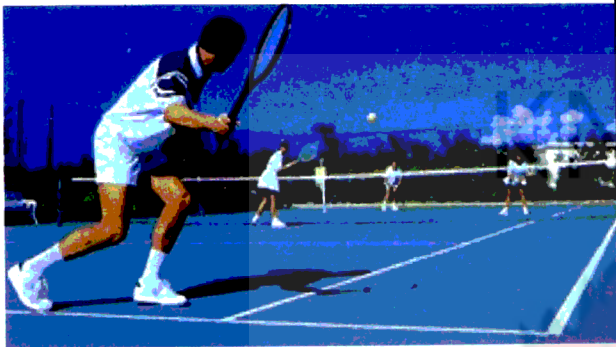


Fig. 54 Guests play tennis

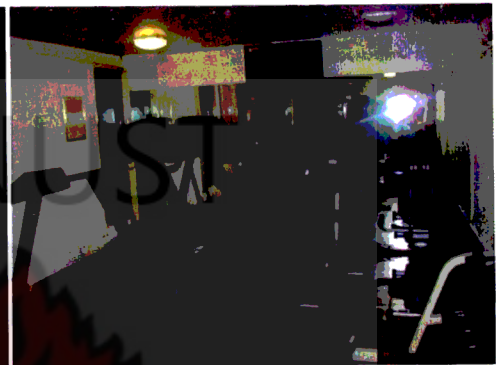


Fig. 55 the gym

• **The Beach**

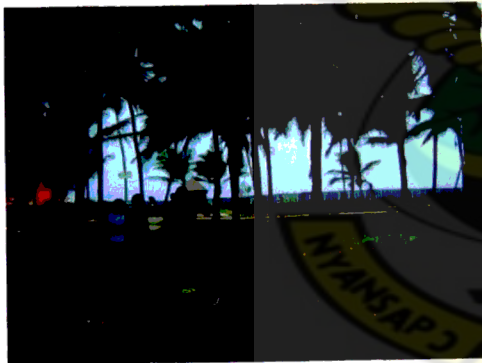


Fig.56 Walkway leading to the beach

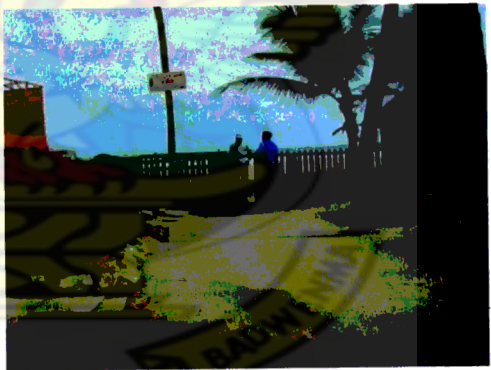


Fig. 57 Private access to the beach.

Guests at the hotel enjoy exclusive access to the Labadi Beach. Security at this post ensures that only guests of the hotel use this entrance to the beach. Ordinary beach goers pay to enter from the main entrance to the beach.



Fig.58 The lovely beach sand



Fig.59A tourist enjoys the crashing waves

The Labadi Beach is one of the more popular beaches in Ghana and is actually a major tourist spot on its own, even without the presence of the hotel.



Fig. 60 A beach restaurant



Fig.61The Billy Jane Restaurant and Cocktail Bar

The beach is well equipped to play hostess to its numerous visitors. Restaurants at the beach ensure that fun-seekers can also satisfy their palettes.

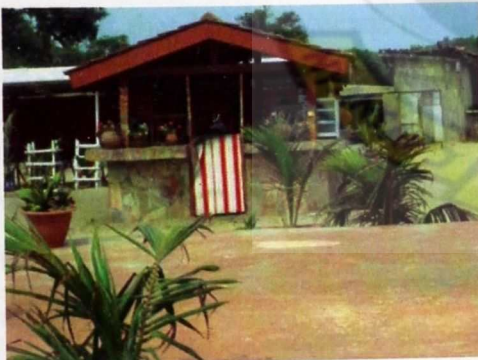


Fig.62 A food stand at the beach



Fig. 63 The art and crafts shop

One other major attraction at this beach is the art gallery where locally made artifacts can be purchased at reasonable prices.

4.4 CRITIQUE

At the Labadi Beach Hotel, the negatives or flaws as revealed by this study include:

- **Absence of lifts**, relying solely on the staircases for its vertical movement or circulation. Even though the facility only goes two floors high, the absence of lifts obviously will limit the places that a physically- challenged person can visit, within the facility, be it a guest, or perhaps even visitors of guests.
- **Inadequate provision made for storage**. The hotel currently has a storage problem as a result of the fact that storage wasn't made a major priority at the time the hotel was built. It is therefore a challenge trying to maintain the goods in storage or even to find appropriate places to keep some of their supplies until the need arises for their use.



Fig. 64 Storage at the hotel

- **Sea currents:** Management at the hotel mentioned that one of the problems they had faced initially was how to keep sea water at bay especially during high tide. It was explained that hitherto, when the tide was high, the water had been driven very close to the hotel. This problem has however been solved now with the construction of a very long reinforced concrete wall to act as a breakwater.

Notwithstanding, the positives far outnumber the negatives.

Guests at this hotel are especially enchanted by its ranch-style appeal, which endears it to all manner of visitors.

It is safe to say however that the location of the hotel, right next to the beach is a big feather in its cap and has been the main deciding factor for many-a guest who had to choose from the many different hotel facilities available in the region.

The hotel must also be complimented for the following:

- **Waste disposal:** Waste disposal has been handled in a very impressive manner. For solid waste, the facility has a waste-conditioning room which prevents the smell from escaping and polluting the environment, until the waste is collected by the refuse company. For liquid waste, the hotel actually has its own waste treatment plant. The clean water is then used to maintain the lawns.



Fig. 65 Waste Conditioning room



Fig. 66 Covered walkways:

- **Covered walkways:**

Walkways connecting the apartment blocks to the restaurants and pool area have been attractively covered. This will allow for outdoor movement even during bad weather i.e. rain or extreme sunshine.

- **Extensive Landscape/Lawns**

The hotel can boast of very extensive, well-manicured lawns which are add to the attractiveness of the place. The lawns are even hired sometimes by individuals or companies as venues for parties, etc.



Fig. 67 Extensive Landscape/Lawns



Fig. 68 Maintenance yard

- **Maintenance yard**

The hotel has a maintenance yard where they repair and manufacture their own furniture.

4.5 SUMMARY

The Labadi Beach Hotel is a unique and classic example of how developments along the coastline of Ghana can be done. With the careful choice of building material as well as the amount of attention given to detail, this establishment has proven beyond any shadow of doubt that tourist architecture along Ghana's coast is indeed a reasonable and feasible venture; one that must be considered and explored thoroughly by all concerned parties so that the benefits may not be lost to the country.

With the pace set by the Labadi beach and such like, it becomes easier for such a trend to be established because they act as precedent for any new developments.

4.6 SPECIAL STUDIES

Informational Brochure No. 11. Waterfront Development. Town of Queensbury

Introduction

The Town of Queensbury Informational Brochure series has been developed to provide the public with general information on land use regulations commonly affecting activities undertaken by the public and administered by this office. It is not intended to be a complete statement of all applicable regulations and individuals are encouraged to contact the office for complete permitting requirements.

The Town of Queensbury has significant waterfront along several unique bodies of water including Glen Lake, Lake George, and the Hudson River. In addition to providing residential and recreational opportunities, several of these water bodies are sources for drinking water. The Town's zoning ordinance includes requirements sensitive to aesthetic and environmental issues particular to waterfront development.

What are some of the special requirements in the Waterfront Residential zone?

Briefly, the Waterfront Residential (WR) zones include unique building setbacks, building density (termed floor area ratio) restrictions, shoreline clearing limits, and stormwater management regulations. Special rules also apply to wastewater disposal systems. Certain development along Lake George may also be subject to the jurisdiction of the Lake George Park Commission (LGPC) and/or the Adirondack Park Agency (APA).

Sliding setback scale?

Setback requirements for the WR zones are variable and based on the lot width. For example: a 150-foot wide parcel has a greater side and rear setback requirement (25 ft.) than a 50-foot wide parcel (12 ft.). You should consult the zoning administrator for a determination.

How is the shoreline setback determined?

The shoreline setback is measured from the Mean High Water (MHW) mark of the water body, if one has been established. Guidance on determining the MHW is available from the Town. Absent a MHW determination, the shoreline setback is measured from water's edge and subject to verification.

How close to the water can I build?

Properties within the Waterfront Residential 1 acre (WR-1A) zone are generally required to meet a minimum 50-foot setback from the shoreline, while properties within the WR-3A zone need to meet a 75-foot minimum setback. Additional regulations apply to hard surfacing and construction of fences in this area. Shoreline setbacks in commercial and industrial zones can range from 100 to 200 feet.

What's Floor Area Ratio?

Floor Area Ratio (FAR) is the sum of the total floor area of the primary structure(s) expressed as a relationship to the lot area. The allowed FAR in the waterfront zone of 22 % is designed to limit the building mass in an area sensitive to development. An expanded discussion of FAR is provided in the Town's codebook and as part of the application package for waterfront development.

Are there shoreline Clearing Limits?

The Town prohibits the removal of vegetation within 35 feet of the mean high watermark of all lakes, ponds, rivers, streams, or wetlands. There are exceptions to the rule and cutting plans require preapproval. Consult the Town's planning staff for additional information.

Stormwater Runoff

The goal of the stormwater management regulations is pollutant removal and control of off-site stormwater flow. In many instances the use of practical measures (or best management practices) is highly effective.

What about dock regulations?

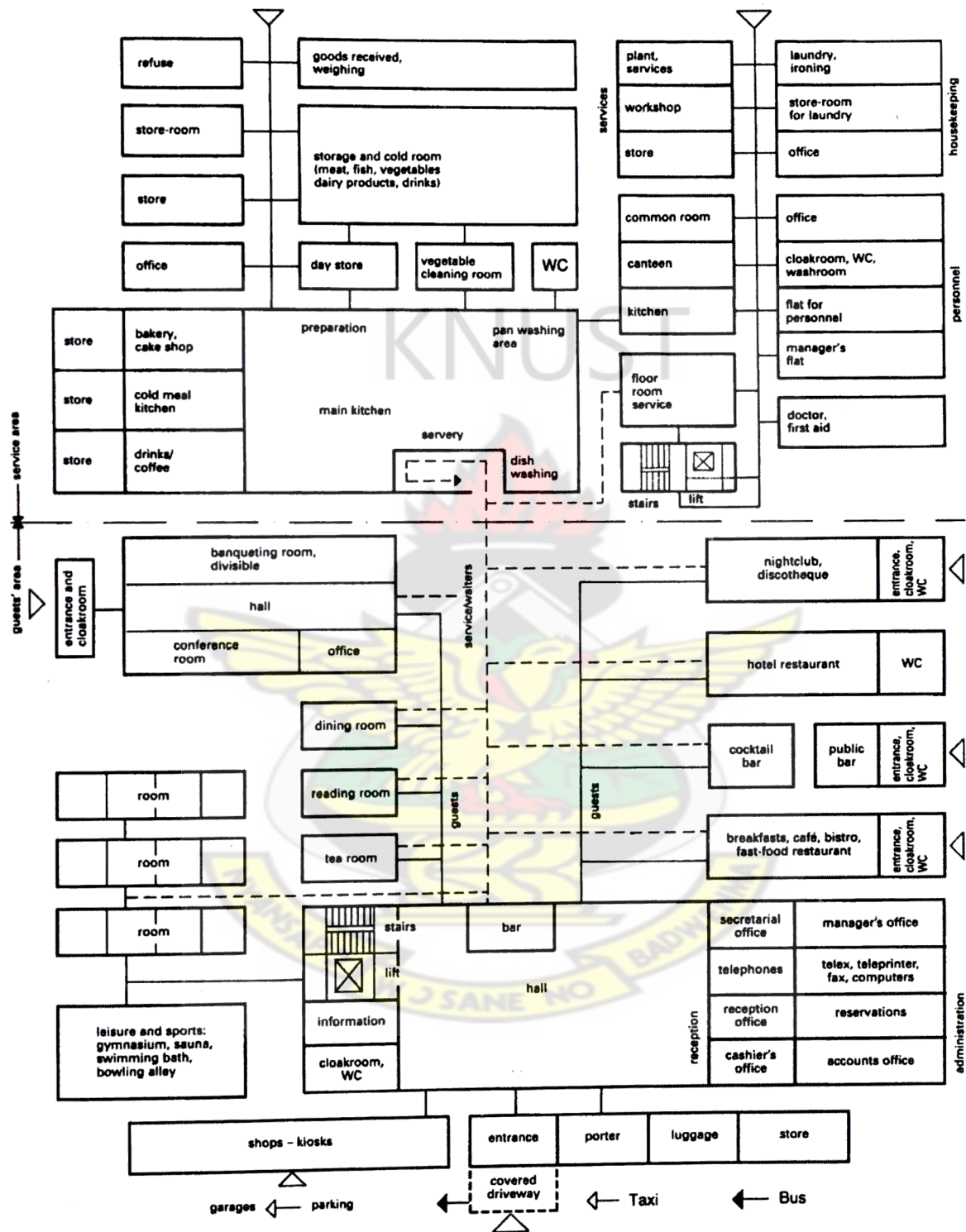
Similar to the setback requirements, the number of docks and moorings allowable are based on shoreline frontage. Conventional docks require only a building permit, while docks with boathouses or sundecks; require review by the Planning Board. Special rules may apply on Lake George.

What's the special rule for septic systems?

Basically, any building alteration or addition to your home in a waterfront zone, will require that you confirm that the sanitary septic system on the site meets all the current design requirements. This provision was devised as a means of requiring the upgrade of undersized, antiquated or otherwise deficient wastewater disposal systems that have a potential to harm the lake's water quality. In some instances a conventional wastewater system can be installed on waterfront properties. The type of system and location should be determined by an engineer and include an evaluation of soil quantity and quality, setbacks to all water sources, and the number of bedrooms proposed for the system.

4.7 TECHNICAL STUDIES

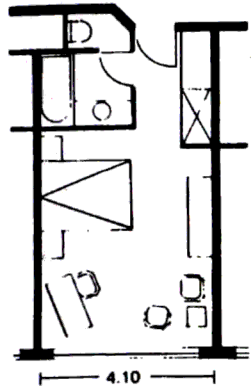
Functional Relationship Diagram



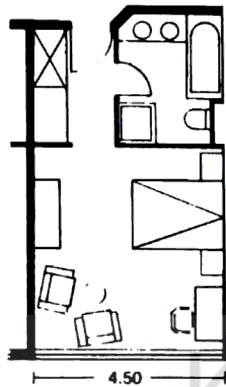
Typical interrelationships between rooms on hotel ground floor

Source: Neufert

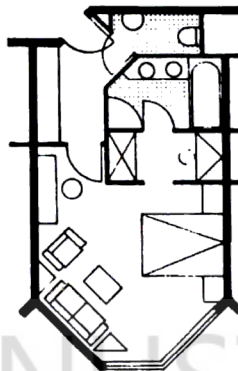
Sample Room Arrangements



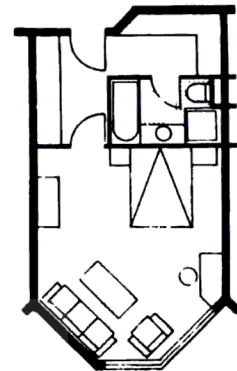
Standard room



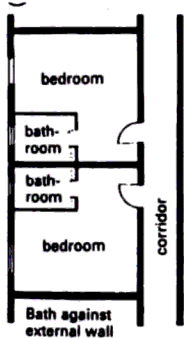
⑨ Executive room



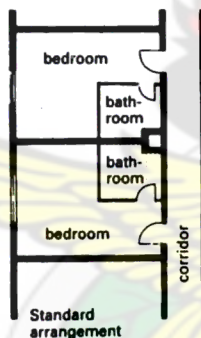
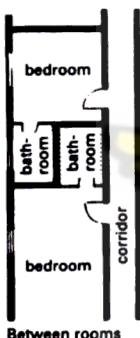
Luxury room (>5.0m wide)



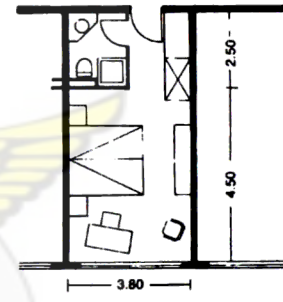
⑪ A variant of ⑩



⑤ Bathroom arrangement



⑥ Narrow hotel room



⑦ Double bed in economy hotel

Hotels offer different types of accommodation, including bedrooms, suites, self-catering units and apartments using the hotel services → ⑥ – ⑪. The size and number of beds largely dictates dimensions and layout of rooms, e.g. twin 100/200cm, double 150/200cm, queen-size 165/200cm, or king-size 200/200cm. Rooms may include a sitting area with chairs, a desk, TV, self-service drinks refrigerator and suitcase stand.

Corridor space should be about 6m² per room, and normally at least 1.5–1.80m wide. Separate routes should be provided for guests, staff and goods → ① – ②.

Hotels should provide facilities for the handicapped and disabled in at least 1–2% of rooms, preferably on the ground floor, and with the following minimum criteria: ramps 1:20, corridors 915mm wide, doors 815mm clear opening, lobbies 460mm wider than the door on the latch side, closet doors either narrow or sliding, shelves 1.37m high. Bathrooms: central turning space 1.52m, width 2.75m, vanity tops 860mm high, 685mm knee space, mirrors extending down to 1.0m, compromise toilet seat height usually 430mm. Grab bars are needed on the headwall and sides of the bath and toilet. Standard bedrooms, 3.65m wide, can be adapted to the following criteria: switches 1.2m high, space between beds and furniture 910mm, beds 450–500mm high with toe space below. Eye level from a wheelchair is 1.07–1.37m; dressing tables should allow for this and have 685mm knee space. Low window sills are also preferable.

Source: Neufert

4.7.1 STRUCTURE

The building is of reinforced concrete construction embodying a large span and column bays with waffle slabs. These spans are upwards of 10m.

WAFFLE SLABS

Standard moulds (designed as two-way slabs with integral beams and level soffits)

These slabs are popular in spans up to 10 m. They combine the advantages of waffle slabs with those of level soffits. Standard moulds are 225, 325 and 425 mm deep and are used with toppings between 50 and 150 mm thick. The ribs are 125 mm wide on a 900 mm grid.

Depth is governed by deflection of the beams, which, therefore, tend to be heavily reinforced.

The chart and data assume internal beams at least 1925 mm wide (ie. two waffles wide) and perimeter beams at least 962 mm (i.e. one waffle) plus column width/2, wide. They include an allowance for an edge loading of 10 kN/m.

Advantages

- Medium spans
- Lightweight
- Level soffit
- Profile may be expressed architecturally, or used for heat transfer

Disadvantages

- Higher formwork costs than for plain soffits
- Slow. Difficult to prefabricate reinforcement

Bespoke moulds (designed as two-way slabs with integral beams and level soffits)

These slabs are popular in spans up to 10 m as they combine the advantages of bespoke waffle slabs with level soffits. Bespoke moulds can overcome the dimensional and aesthetic restrictions imposed by standard moulds. However, site operations remain complicated.

Economic depths are a function of the beam width. The beams are governed by deflection and, therefore, tend to be heavily reinforced. The ribs are a minimum of 125 mm wide. For simplicity, the chart and data assume a 900 mm grid, internal beams at least 1925 mm wide (i.e. two waffles

wide) and perimeter beams at least 962 mm (i.e. One waffle) plus column width/2, wide. They include an allowance for an edge loading of 10 kN/m.

ADVANTAGES

- Medium spans
- Lightweight
- Profile may be expressed architecturally, or used for heat transfer

DISADVANTAGES

- Higher formwork costs than for standard moulds and other slab systems
- Slightly deeper members result in greater floor heights
- Slow. Difficult to prefabricate reinforcement span

4.8 ENVIRONMENTAL CONSTRAINTS PECULIAR TO SEA-SIDE STRUCTURES

The *durability* of a coastal building relies on the materials used to construct it. Materials and construction methods should be resistant to

flood and wind damage,

driving rain,

corrosion,

moisture, and

decay

All coastal buildings require maintenance and repairs (more so than inland construction) It is necessary to use proper materials and methods for repairs, additions and other work following initial construction.

4.8.1 Flood-Resistant Materials

Flooding accounts for a large percentage of the damage caused by a coastal storm. Building materials exposed to flooding must be resilient enough to sustain a certain amount of water exposure in order to avoid the need for complete replacement after the flood.

FEMA defines a flood-resistant material as *any building material capable of withstanding direct and prolonged contact (i.e., at least 72 hours) with floodwaters without sustaining significant damage (i.e., requires more than cosmetic repair).*

The following are examples of flood-resistant materials:

- Lumber: pressure-treated or naturally decay-resistant, including redwood, cedar, some oaks, and bald cypress
- Concrete: a sound, durable mix, and when exposed to saltwater or salt spray, made with sulfate-resisting cement, with a 28-day compressive strength.

The following are examples of flood-resistant materials used in coastal homes

Round tapered woodpiles preservative treated for ground contact, at a minimum; square section piles or wood posts preservative –treated for foundation or marine use.

Reinforced concrete or concrete or concrete masonry units(CMU)

Solid sawn timbers and glue-laminated products, either naturally decay-resistant or preservative-treated for above-ground exposure; built-up members preservative-treated for ground contact

High-capacity shear wall sheathing rated “Exterior”

Plywood or oriented strand board(OSB) rated “Exposure1”, or rated “Exterior” if left permanently exposed (e.g. exposed underside of elevated house on open foundation)

- Vinyl or naturally decay-resistant wood.
- Latex or bituminous cement formed-in-place, clay, concrete tile, pre-cast concrete, epoxy(a thermosetting resin; used chiefly in strong adhesives and coatings and laminates) formed-in-place, mastic flooring, polyurethane formed-in-place, rubber sheets, rubber tile with chemical-set adhesives, silicon floor formed-in-place, terrazzo, vinyl sheet-goods, vinyl tile with chemical-set adhesives, pressure-treated lumber or naturally decay-resistant lumber
- Cement board, brick ,metal, cast stone in waterproof mortar, slate, porcelain, glass, glass block, clay tile, concrete, CMU, pressure-treated wood, naturally decay-resistant wood, marine grade plywood or pressure-treated plywood
- Hollow metal
- Foam or closed-cell
- Natural or artificial stone, steel, or rubber

4.8.2 Wind-Resistant Materials

Buildings in many coastal areas are often exposed to winds in excess of 90 mph (3-second peak gust).

It is therefore important to use building materials (e.g., roof shingles, siding, windows, doors, fasteners, and framing members) that are designed for use in high-wind areas.

Examples:

- Shingles rated for high winds
- Double-hemmed vinyl siding
- Deformed-shank nails for sheathing attachments
- Wind-resistant glazing
- Reinforced garage doors
- Tie-down connectors used throughout structure (from roof framing to foundation)
- Wider framing members (2x6 instead of 2x4)

Note:

A wind-resistant material is only as good as its connection. Always use recommended fasteners and connection methods.

4.8.3 Corrosion and Decay Resistance

Coastal environments are conducive to metal corrosion and moisture- and termite-related decay of other building materials. Metal corrosion is most pronounced on coastal buildings (within 3,000 feet of the ocean), but moisture- and termite-related decay are prevalent throughout coastal areas.

Recommendations

Use hot-dipped galvanized or stainless steel hardware.

- Reinforcing steel should be protected from corrosion by sound materials (masonry, mortar, grout, concrete) and good workmanship
 - Avoid joining dissimilar metals, especially those with high galvanic potential (e.g., copper and steel).
 - Some wood preservatives should not be used in direct contact with galvanized metal. Verify that wood treatment is suitable for use with galvanized metal, or use stainless steel.
 - Metal-plate-connected trusses should not be exposed to the elements. Truss joints near vent openings are more susceptible to corrosion and may require increased corrosion protection.
- Every material resists corrosion to some extent, or conversely, every material corrodes.

The real issue is *how long will a given material serve its intended purpose at a given home?*

The answer depends on the following:

- The material
- Where it is used in the building
- Whether installation techniques (e.g., drilling, cutting, bending) will compromise its resistance
- Its degree of exposure to salt air, moisture, and corrosive agents
- Whether maintenance required of the Building owner is performed

4.8.4 Moisture Resistance

Materials resistant to moisture can greatly reduce maintenance and extend the life of a coastal building (however, by themselves, such materials cannot prevent all moisture damage. Proper design and installation of moisture barriers is also required).

Recommendations

Control wood decay by separating wood from moisture, using preservative-treated wood, using naturally decay-resistant wood, and applying protective wood finishes.

Use proper detailing of wood joints and construction to eliminate standing water and reduce moisture absorption by the wood (e.g., avoid exposure of end grain cuts, which absorb moisture up to 30 times faster than the sides of a wood member).

Do not use untreated wood in ground contact or high-moisture situations. Do not use untreated wood in direct contact with concrete.

Field-treat any cuts or drill holes that offer paths for moisture to enter wood members.

For structural uses, employ concrete that is sound, dense, and durable; control cracks with welded wire fabric and/or reinforcing, as appropriate. Use masonry, mortar, and grout that conform to the latest building codes.

4.8.5 Termite Resistance

Termite damage to wood construction occurs in many coastal areas (attack is most frequent and severe along the southeastern Atlantic and Gulf of Mexico shorelines, in California, and in Hawaii and other tropical areas).

Termites can be controlled by soil treatment, termite shields, and the use of termite-resistant materials.

Recommendations

Incorporate termite control methods into design in conformance with requirements of the authority having jurisdiction.

Where a masonry foundation is used and anchorage to the foundation is required for uplift resistance, the upper block cores must usually be completely filled with grout, which may eliminate the requirement for termite shields

Use preservative-treated wood for foundations, sills, above-foundation elements, and floor framing. Credit: www.fema.gov

4.9 ACCOMMODATION SCHEDULE

4.9.1 MAIN HALL

Table 2. Accommodation Schedule-Main Hall

SPACE	AREA (m ²)
Entrance foyer/Lobby	130
Reception	21
Lounge	400
Cocktail bar	35
Washrooms	30
Restaurant/breakfast	140
Kitchen	300
Business Centre	40
Forex bureau	9
Curio & Gift store	50
Travel and tours office	25
Control room	12

4.9.2 OTHER DINING

Table 3. Accommodation Schedule-Other Dining

SPACE	AREA (m ²)
Local dish restaurant & bar	140
Interactive Restaurants on beach	160

4.9.3 GUEST ACCOMMODATION

Table 4. Accommodation Schedule-Guest Accommodation

SPACE	AREA (m ²)
50 standard rooms	2500
30 Executive rooms	1650
30 Deluxe suites	1800
1 Ultimate luxury suite	100
3 Family suites	300
4 Paraplegic suites	300
20 self-catering Chalets	2000

4.9.4 CONFERENCE FACILITIES

Table 5. Accommodation Schedule-Conference facilities

SPACE	AREA (m ²)
2 Multi-purpose conference room	900
Private dining	160
Tea room	60
Offices	50
2 Meeting rooms	80
Service room	30
Washrooms	30

4.9.5 SPORTS AND LEISURE

Table 6 Accommodation Schedule-Sports and Leisure

SPACE	AREA (m ²)
Swimming pool	600
Pool bar & Terrace	100
Changing rooms/showers	150
Spa	300
Gym & Fitness Centre	300
2 Tennis Courts	1800
Watersports rentals/storage facility, etc	400
Casino	600
Mini Cinema	400
Beach sports	850

Transport:

Easy access to public transport is a vital requirement for siting a facility which is in itself supposed to be income-generating. Transport facilities are fairly developed and people can get to the tourist sites by means of public transport, taxis and individual cars.

SITE OPTIONS

▪ CENTRAL REGION

- Biriwa beach

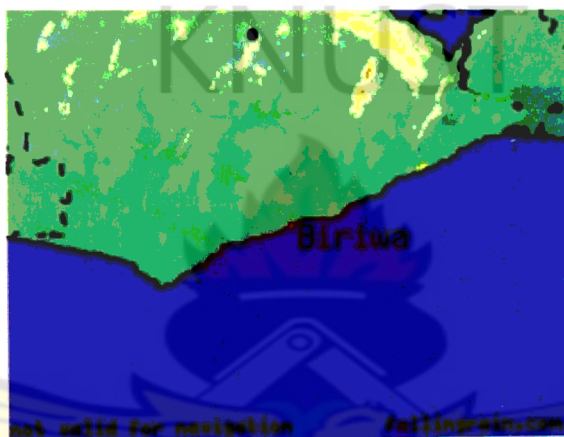


Fig. 69 Map of Central Region showing Biriwa

Biriwa beach is near a small fishing village off the Winneba/Cape Coast road in the Central Region of Ghana. The beach is enveloped by smaller hills and valleys of green vegetation and the ocean. . About 52 species have been recorded by bird watchers who have been there on vacation. The beach has the potential to attract tourists who are interested in bird-watching and taking a splash on the beach.

Transport:

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SITE OPTIONS

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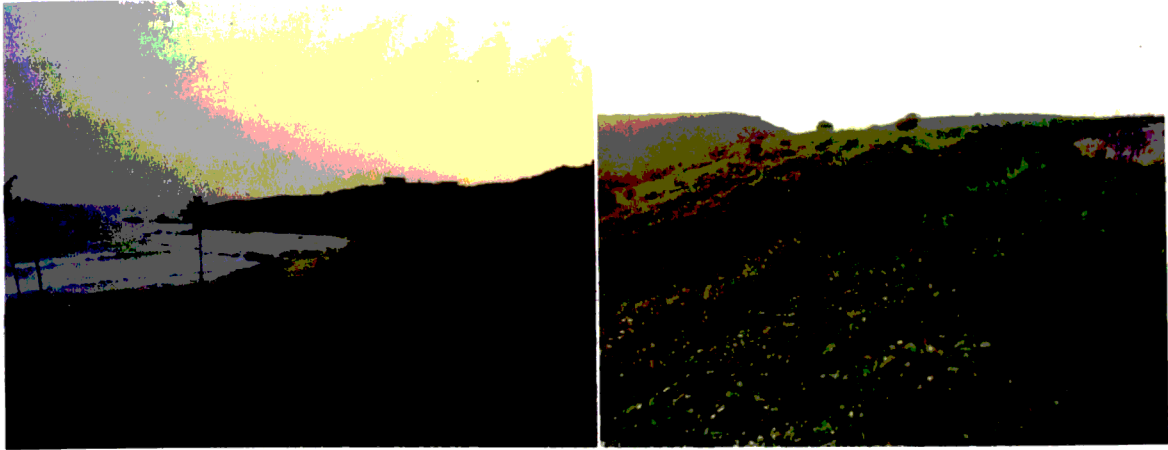


Fig. 70-71 Views of Biriwa beach and surrounding landscape

Merits

1. The strategic location of this beach off the Winneba/Cape Coast road will make it easily accessible.
2. Attractive beach
3. The site is undulating with hills which tourist mountain-climbers will take advantage of for relaxation.

Demerits

1. Proximity to the town of Cape Coast, albeit a major plus with regards to the fact that such a resort would complement the activities of the town, comes with the disadvantage of the fact that the location, in effect is too far away from Accra in terms of travel time, and may have negative impact on patronage.

B.CENTRAL REGION

- Muni Beach with Lagoon

Location

- 1) The site is located on a prime centrally located beachfront site in Winneba.

- 2) The site is vast and is open to the vast ocean.
- 3) The site has the potential for development into a beach resort which can compete with other beach resorts elsewhere.



Fig. 72Map of Winneba

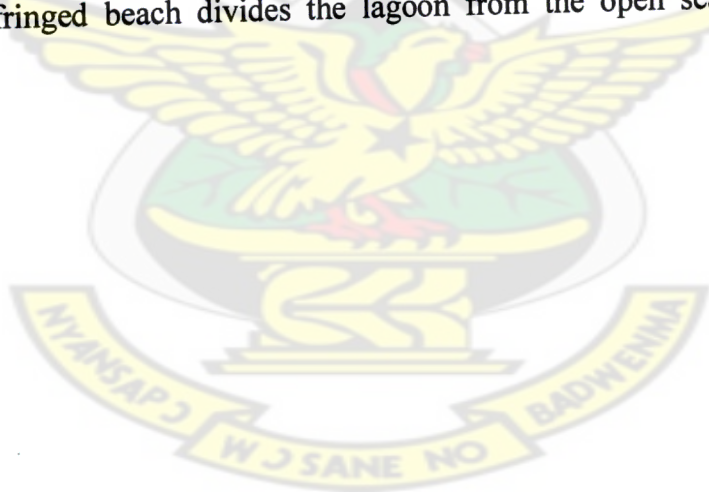
WINNEBA-Brief Introduction

Winneba lies about 6km south of the main road between Accra and Cape Coast. Winneba is the largest coastal settlement between Accra and Cape Coast. It is the traditional capital of the Afutu, whose King Ghartey IV was the prime initiator and president of the Fante Confederation of 1868-73. Winneba was the site of an important British fort from 1673 until 1812. Traces of the old fort can be seen in the Methodist built on the same site by missionaries in the late 19th century. Otherwise, Winneba's compact town centre has the atmosphere of a historical port, all winding alleys, malodorous fishy markets and fading colonial buildings.

Winneba has an attractive busy fishing harbour and expansive beach lying immediately to its west. Winneba has old European and royal cemeteries, situated about 300m from the fishing harbour.

Winneba is the focal point of another major not-to-be-missed experience offered by the town when it hosts the Aboakyer festival which takes place in May. This 300-year-old-festival, one of the most famous in Ghana, is centered on the 'deer-hunt', in which two *asafo* companies, dressed in full traditional regalia, compete for deer. The festival carries on throughout the weekend, climaxing twice: on Saturday, when the deer hunt takes place amid fanfare and colour. At 14:00 on Sunday, the captured animal is sacrificed to the oracles at the Pemkye Otu fetish.

The Muni-Pomadze Ramsar site is situated in Winneba and is dominated by the vast Muni Lagoon, stretching over 30km squared. The Muni Lagoon site incorporates two forest reserves and a traditional hunting ground used during the Aboakyer Festival. It is an important bird-watching site, noted for large seasonal colonies of black, roseate, common, royal and little tern, as well as being the only known Ghanaian haunt of the localized Powel's illadopsis. Less esoterically, the palm-fringed beach divides the lagoon from the open sea hosting breeding turtles.



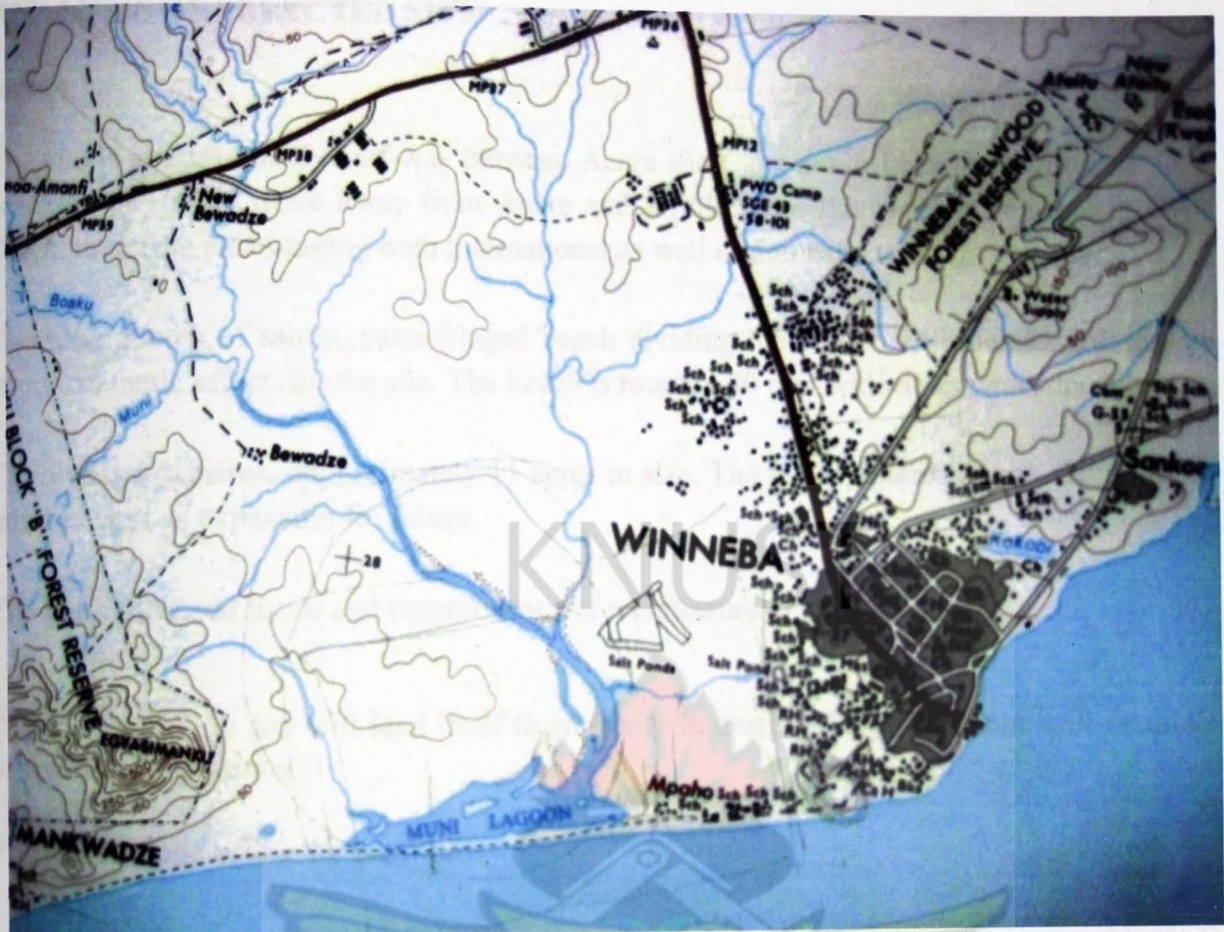


Fig. 73 Map of Winneba Township-Showing Muni lagoon site

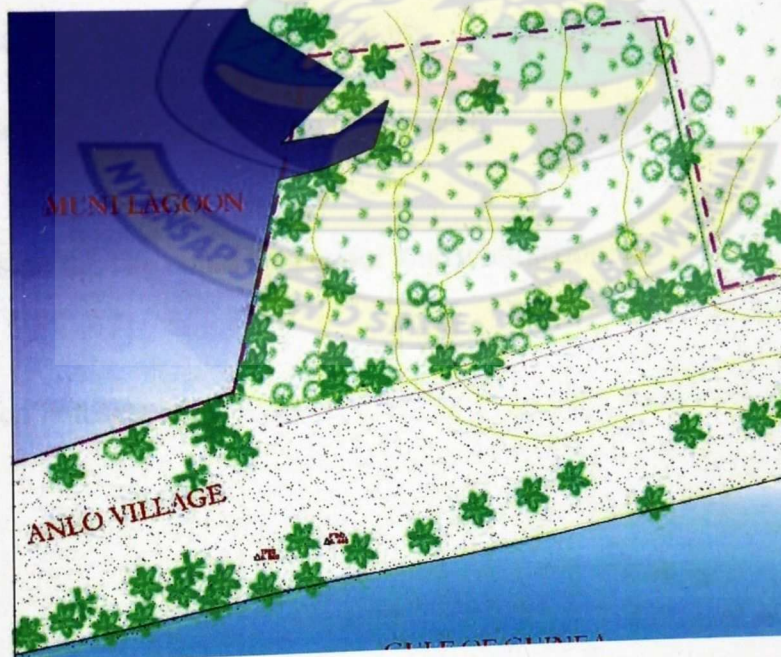


Fig. 74 Site plan

4.11 ANALYSIS OF SELECTED SITE

Strengths

- The site is almost exactly half-way between Accra and Cape coast. In terms of travel time, it is about an Hours' drive away from Accra and a little more than an hour's drive to Cape Coast, therefore encouraging both international as well as domestic tourism.
- The long stretch of sandy, palm-fringed beach dividing the lagoon and the sea provides a major dramatic effect for the site. The beach is roughly 80 mm wide at its widest portions.
- The site is expansive, approximately 11 acres in size. The facility planned with flexibility in mind as well as expansion for future.
- The palm trees add luster and magnificence of architecture to the facility.
- Topography of the site will lend itself to creativity in design-The gentle slope will facilitate interesting landscaping.
- The gentle slope offers the possibility
- y of designing the plumbing and sewage system for the facility.
- Vastness of the lagoon will facilitate watersports.
- There is an already existing road leading to the beach.
- Fishing activities on the site could be a major tourist attraction.
- Soil supports good landscaping.

CHAPTER FIVE RECOMMENDATIONS AND CONCLUSION

5.0 INTRODUCTION

In the previous chapter the findings of the survey were discussed and the relevant associations made. This chapter describes more extensively the extent to which the results of the survey have influenced the design of the beach resort.

5.1 DESIGN PHILOSOPHY AND CONCEPT

The philosophy used for the design, is "CREATING EXCLUSIVE CONTEMPORARY SPACES INSPIRED BY TRADITIONAL TROPICAL EASE!"

In order for this facility to be attractive to international tourists, there has to be something unique about the design. All over the world, there exist many hotels, designed in various styles, yet the modernist style seems to dominate. This new facility therefore seeks to achieve its uniqueness by drawing inspiration from its environment, especially regarding the socio-cultural as well the physical and climatic environment. The resort will therefore have an underlying theme of 'response to its tropical environment', while at the same time offering contemporary, majestic spaces which meet the international standards offered by 3 or 4-star facilities.

The style of architecture to employed therefore could be described as a cross between "Regionalism" and the "Mediterranean Revival Style"

Regionalism in architecture is the design of buildings and structures peculiar to the design of a particular area or culture.

Mediterranean Revival Style architecture is an eclectic design style that was first introduced in the United States around the turn of the nineteenth century, and came into prominence in the 1920s and 1930s. The style evolved from "rekindled interest in Italian Renaissance palaces" and seaside villas dating from the sixteenth century, and can be found predominantly in California and Florida due to the popular association of these coastal regions with Mediterranean resorts.

terra cotta and tile roofs, (all readily available in Ghana) arches, scrolled or tile-capped parapet walls and articulated door surrounds.

Balconies and window grilles are common, and are generally fabricated out of wrought iron or wood. Ornamentation can range from simple to dramatic, and may draw from a number of Mediterranean references. Classical, Spanish, or Beaux-Arts architecture details are often incorporated into the design, as are lush gardens.

The style was most commonly applied to hotels, apartment buildings, commercial structures, and even modest residences.

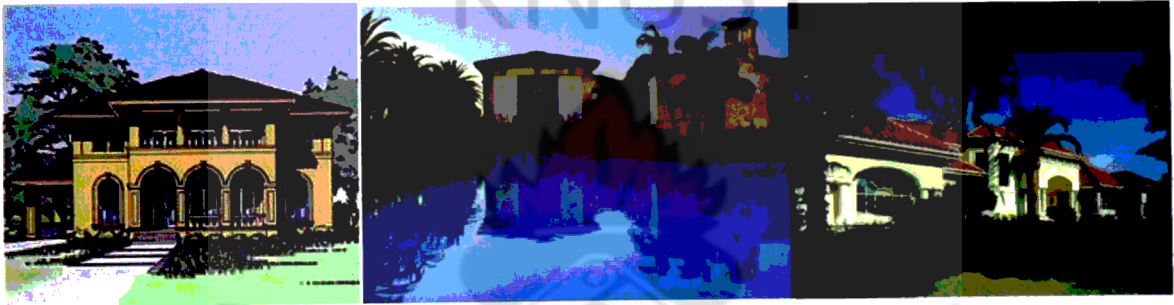


Fig. 75-77 Mediterranean Revival Style of Architecture

THE CONCEPTS

- In response to the environment, and the proximity to the ocean as well as lagoon, views will be maximized by **carefully placing the buildings along the beach and the lagoon**. This will ensure that very few, if any of the spaces, will not have direct views of the water. This is very critical for such as facility, since the majestic views offered by water are one of the main reasons why people would choose to come to the resort.
- The use of a curving arrangement for the blocks will also help in the response to the environment as this will prevent direct harsh contact of the sea breeze against the building facade. At the same time, the courtyard so formed will help attenuate the room temperatures by trapping the ocean breeze and gently drawing it into the rooms, to help in ventilating the spaces.

- A tropical design will also be achieved by the typology of the buildings, which will generally have a **depth of not more than 10 meters**, in order for **natural ventilation** and lighting to be possible.
- **Locally available materials** such as thatch will be employed for some of the roofs. Bricks and stonework will also be utilized. Locally-made tile roofs will be used as well.
- The use of these **materials** e.g. brick tiled roofs, will at the same time serve the purpose of being **able to withstand the strong winds** which emanate from the ocean.
- The interior spaces will be decorated with a theme of rich cultural splendor, with grandeur fit for kings, so that the spaces are in effect luxurious enough to meet international standards, while at the same time seeking to showcase the rich culture of the people.

5.1.1 CONCEPTUAL SITE PLANNING

- **Merits**

1. All blocks will be oriented towards the ocean and the lagoon to allow for dramatic views.
2. Segregated accesses for guests and staff.
3. Service yard located away from views of guests.
4. Orient all chalets towards ocean as well as the lagoon.
5. Solid waste treatment plant in the North-Western end, in accordance with site gradient.
6. Direct link between staff housing and maintenance yard.
7. Children's playground within close range of pool area to help parents lounging by the pool to keep a watchful eye on their wards.
8. Spa and health club is located towards the more quiet area of the site, away from the noisy activities of the beach and the poolside area.
9. Fishing dock, also located at the quieter area of the site to facilitate easier catch.
10. Expansive green area available for landscaping and healing gardens.
11. Buildings are not too close to the ocean in order to minimize the negative effects of construction along water bodies, especially the ocean.
12. Overall good functional relationship between units.
13. North-South orientation has been maximized to help achieve a tropical design.

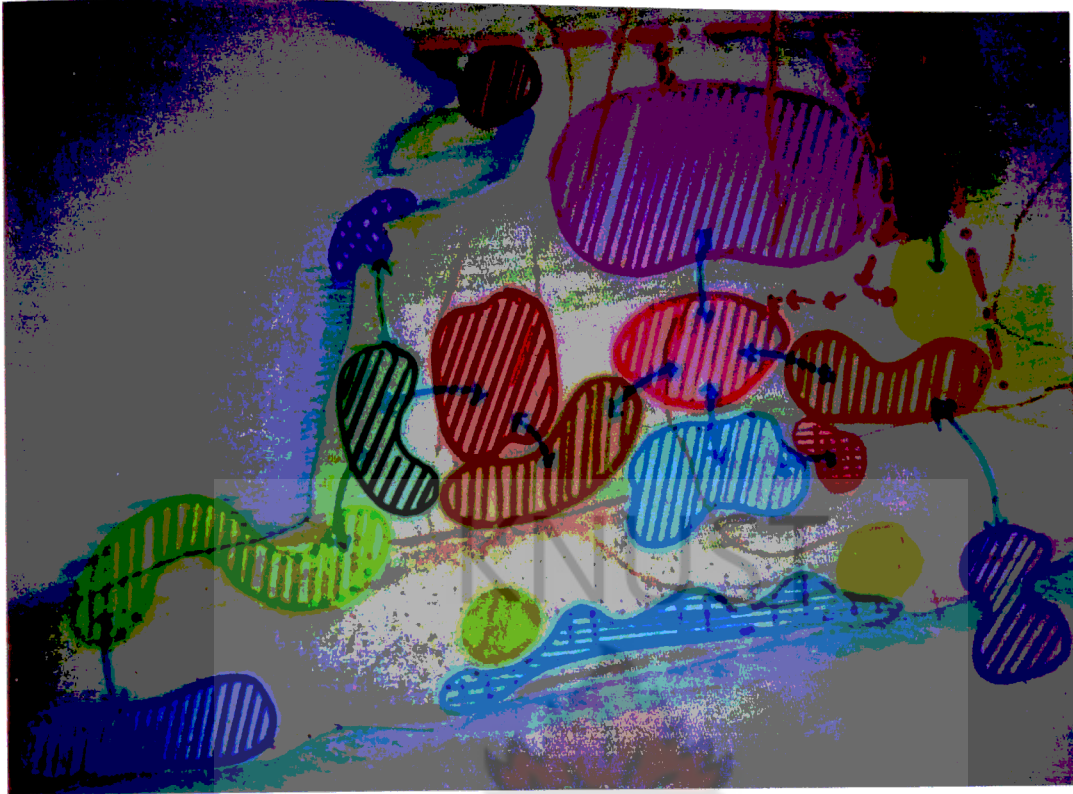


Fig78-79 Option 2 (Selected option) Bubble Diagram and Legend

Conceptual Process-Refining stages

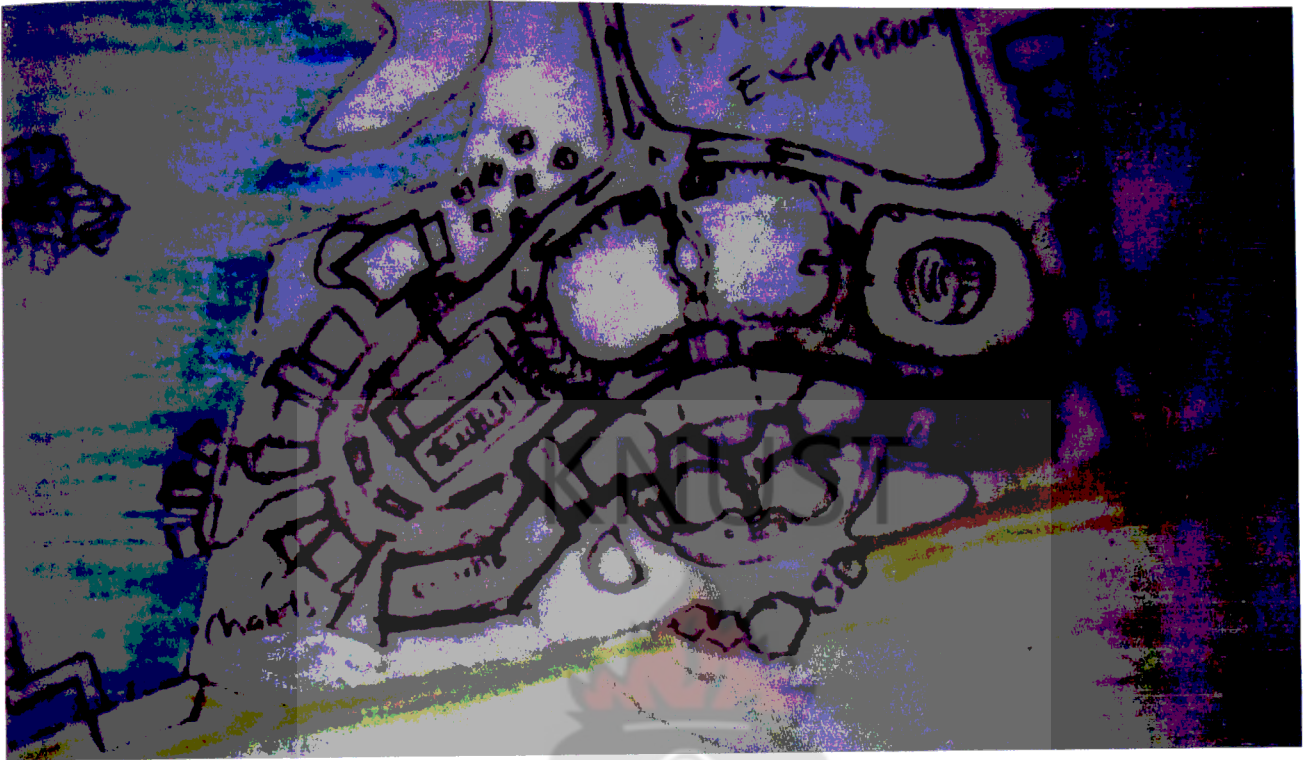


Fig. 80 Design Process-Refining stages

5.2 THE DESIGN

The design tries to achieve a tropical beach environment with the aim of making itself attractive to international travelers, as well as making it the ideal leisure spot for domestic tourists. To achieve this, the design will be a combination of modern and traditional style, as this reflects the current trend in evolution and development of traditional architecture. The advantage of a beach resort is that its location is by itself a major, if not the main pull factor to the facility. All over the world, people take vacations, travelling far away from their home countries in search of the ideal relaxation spot. Most of these vacationers inadvertently end up at vacation spots which are located close to a beach. This is because of the unsurpassed appeal presented by lovely, clean; sandy beaches working together with the draw of the azure waters of the ocean. They are willing to pay a whole lot just so they can have magnificent views of the water. It is therefore extremely important that the views offered by such locations not be compromised in the final design of such facilities, especially the views from rooms.

Every aspect of the design ,be it the treatment of the landscape, the choice of materials, the orientation of the buildings or even the building form itself, should ultimately evoke all the senses pleasantly and contribute to creating the ambience of a tropical beach resort.

5.2.1 GENERAL DESIGN

Based on research on the functional relationship diagram of spaces in a hotel, in conjunction with the philosophy and concept, the design process involved the arrangement and positioning of the desired spaces within an envelope, with significant functional relationships between the building blocks. In a bid to achieve the design concept, attention was given to the placement of buildings in relation to the sea and the lagoon, as well as the placement of buildings in relation to each other.

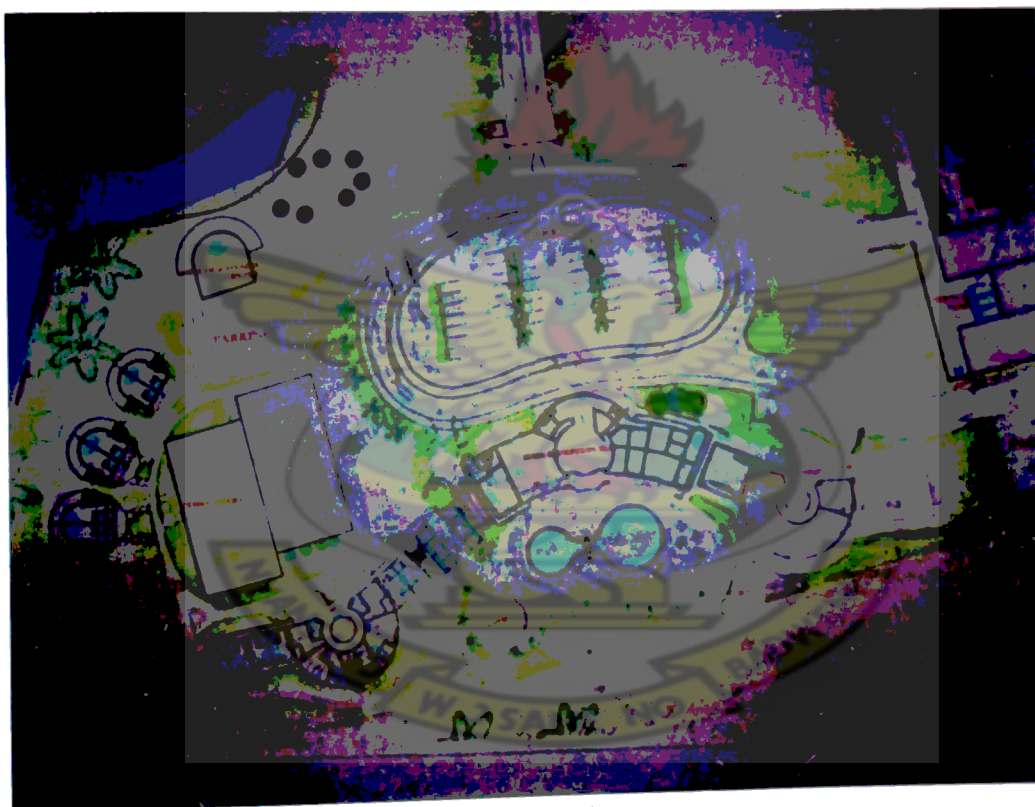


Fig. 81 Design Process-Refining stages-2

There are two separate entrances for guests coming to the facility and for service trucks coming to the service yard. The guest entrance brings guests first to the car park, where they can either choose to park, or continue upwards to the port cochere or drop-off zone. The car park has public parking as well as parking for tour buses and rentals, and staff parking. The major zones of the site are:

- Staff housing and service yard towards the eastern end of the site. This part of the land is not very prime compared to the areas close to the beach and water bodies, and was therefore an automatic choice for these ancillary areas. The service area however enjoys direct vehicular access to the resort for the purpose of deliveries, etc. This also ensures that there's no vehicular conflict between guests moving within the facility and service or delivery vans.
- A centralized parking area which also enjoys commanding views of the lagoon. As guests and visitors approach the facility either by car or on foot, they immediately start to experience the spirit of the site, with the lovely views presented by the lagoon, as it reflects the rays of the sun, giving a sparkling motif.
- The resort facility itself including the apartment blocks are further southwards of the site, overlooking the sandy palm-fringed beach and the ocean with its crashing waves. The lagoon-hugging chalets are also along the same undulating axis and enjoy commanding views of both the beach/ocean and the lagoon.
- An enclave between the visitor parking and the gym and wellness centre features two tennis courts, which help to gently erase the formality and unfriendliness of the parking space, leading into the more leisurely and friendly areas of the resort.
- The pool with its poolside lounge is nestled between apartment buildings, offering compensatory views in itself, and leads further southwards to the beach.
- The long stretch of sandy palm-fringed beach also features two outdoor interactive restaurants, where guests can watch their food being prepared for them by the chefs, or even cook their own food. Guests who go fishing from the sea or the lagoon can bring their catch and watch it being cooked or grilled for them. A spot has been demarcated for beach volley. There is also a sprinkling of summer huts among the coconut trees. The boathouse where beach and ocean sports equipment can be rented is also located on the beach, and leads to the marina.

The entire site has been lined with different species of palm trees and other tropical plants to add the tropical ambience that the design tries to achieve.

5.2.2 THE ORIENTATION:

For a leisure and relaxation facility such as this, where views of the ocean and the lagoon are of utmost importance, the buildings on site have been aligned and oriented with the aim of

maximizing these views, while at the same time minimizing solar ingress. A typically North-South orientation has therefore been utilized. This orientation will also help to pull in the breeze from prevailing south-west winds to foster cool breeze within the rooms and other spaces of this facility.

Due to the intense solar condition, majority of the spaces, have been orientated to face the north and south to reduce the heat build-up and unwanted sun ingress. The western and eastern facades have been carefully and consciously planned and used for the non-habitable spaces such as the sanitary, storage and vertical circulation (staircase).

5.2.3 VENTILATION

As mentioned earlier, the room depths, which are generally not more than 8 meters (with carefully placed windows, cross-ventilation can be easily achieved) will allow for natural ventilation. This is very important for the design because the cool breeze that sweeps in from the ocean is very invigorating and will help stimulate the senses i.e. the undeniable unique smell of the ocean as well as the wonderful feel of the breeze against your skin.

The placement of the main reception block, which is in central position, was also done carefully. By pulling the block further into the site, something of a courtyard was created. This area therefore has been utilized as a main forecourt and converging point for leisure and relaxation, with the placement of the pool here. More so, the courtyard so created will in effect help trap the cool air as it's blown onto the site fostering a very cool atmosphere at the poolside area, then moving gently to ventilate the spaces within the surrounding blocks.

Mechanical ventilation has also been provided as an alternative. For reasons of privacy, some guests may not open their windows. They have therefore been provided with the alternative of air conditioners as a means of regulating room temperature.

5.3 BLOCK PLAN

The facility sits on about 40% of the land with the remaining land utilized for landscaping. The expansive neatly clipped and manicured lawns could be rented out occasionally to groups and individuals for parties and other events. The total land area is approximately 11 acres. The land surrounding the facility has been acquired for the purpose of a beach resort so the facility will be nestled among its own.

5.4 STRUCTURE/FORM

The structural system employed here is the load bearing post and beam system. In order to achieve wide spans of upwards of 10m without punctuating the spaces with columns, the waffle slab floor system has been utilized. Columns used are of 400mm diameter to offer strong supports.

The amount of solar heat received by the surface of the structure has been minimized by the thoughtful manipulation of the

- Shape and orientation of the building form with respect to the sun and its path. With all the buildings having a curving façade as opposed to a flat one, the sun will never directly fall on an entire facade, but will always hit only a certain angle or surface of the buildings thus reducing the amount of heat to be generated.

- Shape and pitch of the roof. The cool roof technology will be applied here to again reduce the amount of sun ingress into the roof and subsequently the interior spaces. A double pitched roof has been employed for most of the structures in the facility because research has shown that they are better able to withstand the sometimes strong wind currents that are peculiar to coastal regions. Conical roof forms have also been employed for this purpose

5.5 MATERIALS (WALL, CEILING AND FLOOR FINISHES)

In the design of this beachfront facility, care was taken in the choice of materials to ensure that the buildings are fortified against the effects of proximity to the ocean. Also, bearing in mind the Philosophy of this scheme, it was important to choose materials that could carry it out effectively, i.e. "TRADIIONAL TROPICAL ease.."

Walls-Masonry walls have been used in most parts of the facility. The cement used is however Pozzolana cement which is suitable for use in coastal areas. Blast furnace slag cement could also be used. Timber has also been used in certain areas as an alternative. Timber is also a material which lends itself to coastal construction when treated well.

Exterior

Most of the exterior walls are finished in soothing colored- paints such as the white emulsion paint. This is to complement the clear blue color of the sea and the water.

Certain areas of the wall have also been finished with brick cladding and stone cladding to project the rustic look or to add to the cultural appeal of the facility.

Interior

The choice of finish for interior walls was dependent on the location and use of the space. Generally, brick and stone cladding has again been utilized in the interior spaces . Kitchen and Sanitary areas have been finished in semi-polished tile to make walls cleanable and easy to maintain.

In areas which need to attenuate noise, such as the gym and the night club, a combination of egg crate, foam and other sound insulation materials form the wall unit, and have been finished with wood paneling in some areas.

Floors Choice of floor finish is also very critical for this establishment .Issues such as noise-abatement to prevent guest disturbance must be factored in..Also slip resistance, surface durability, stain resistance comfort underfoot, repair ability, life cycle, color selection, substrate requirements, and clean ability. Terra cotta tiles will be employed mainly for the corridors since especially since they reduce sound even as they're traversed. They are not only beautiful, and they also lend an informal and somewhat rustic or even southwestern air to residential floors. Terracotta tile are water, allergen and bacteria resistant. Terra Cotta is perfect for many uses such as kitchen tile, bathroom tile, and patio tile and even for pool decks. It is recommended that a sealer is used when used near sources of water.



Fig. 82 Samples of Terracotta floor finish

Ceiling

Mineral fibre tiles used for the spaces are available in a large variety of styles to suit any decor and perform well in both stopping sound transmission and being sound absorbent. Their biggest disadvantages are moisture absorption and brittleness. Wooden T&G will also be employed in certain areas like the reception and the rooms.

Cabinetry

Plastic laminate or wood (good quality) pre-manufactured with wide selection of styles and with exceptional accessories.

5.6 ACOUSTICS

Keep noise from bouncing off walls by installing products with high noise-reduction coefficient ratings. These include mylar -faced acoustic ceiling tiles, mylar-faced sound baffles, and sound-absorbing, fabric-wrapped wall panels. This will be applied mainly in the gym and the night/jazz club to prevent noise being transmitted into other spaces.

5.7 LIGHTING

As much as possible natural lighting has been used and complemented by artificial lighting where necessary. A lot of large openings have been designed to improve on the admittance of light from the natural source. Because of the size of the buildings voids and pockets of openings have been made part of the design to help with the situation of lighting

5.8 SERVICES

A beach resort cannot operate without hindrance if water supply, electricity and other mechanical systems are lacking or not planned for in the initial stages.

5.8.1 Electricity

Power will be tapped from a transformer station very close to the site. This is part of the proposal for the area according to the plans of the investor agency.

5.8.2 Water supply

Water to the facility would be from the mains. Hot water would be provided. In addition, recycled water from the waste treatment plant will be used in maintaining the lawns.

5.8.3 Fire Protection

○ *Emergency exits*

Emergency exits routes have been mapped out in case of a need for rapid evacuation of the facility. All rooms will be furnished with this evacuation plan.

○ *Fire fighting installation*

Automatically-triggered sprinklers will be installed in certain key areas like the corridors to help reduce the spread or speed of fire should such an eventuality occur.

o ***Fire Hydrants***

Fire hydrants will be placed in strategic areas where they can be easily accessed. E.g. stair landings

5.8.4 Telecommunication

A Broadband service will be installed for wireless internet access. The data points will be located next to the staircase area. The site also benefits from the presence of telephone poles in the area.

5.8.5 Security lighting

To ensure safety and security in and around the resort premises day and night, security lighting would have to be provided at some vantage points.

5.8.6 Drainage – Waste and Surface Water

Soil waste is taken to the central treatments plants by means of underground pipes. At the treatment plants the waste is separated into solid and liquid. The solid waste is used as manure for the landscaping and the liquid waste is further treated and used to water the parks and gardens of the facility.

Surface drainage is generally underground in covered drains with the provision of grills intermittently to take away rain water. The lawns have also been provided with subterranean drain pipes to help drain it effectively.

5.9 COSTING AND ENVIRONMENTAL IMPACT ASSESSMENT

5.9.1 COSTING

The nature of the project is such that all the facilities provided are meant to support each other. In order for the facility to function properly as a resort, all supporting facilities such as the spa and wellness centre, the swimming pool, tennis courts as well the two marinas will have to be constructed at the same time as the accommodation units. The staff housing could be constructed in the second phase of the project.

The client, The Caribbean Atlantic Holdings Company is ready to make the needed investment to ensure a smooth construction process.

To achieve the high standards associated with such developments and also taking into consideration possible extra expenditures to be made due to the unique nature of the site, ie proximity to water, the following costing was done.

- A cost per square meter of 700 dollars will be used for all the major facilities of the resort being the guest accommodation units and recreational facilities.
 - a. Total floor area of Apartment blocks = 10637m^2
Total amount needed for this construction = \$7,445,900.00
 - b. Total floor area of Chalets = 1470m^2
Total amount needed for this construction = \$1,029,000.00
 - c. Total floor area of Recreational facilities = 5364m^2
Total amount needed for this construction = \$3,709,450.00
 - d. Cost for construction of 2 tennis courts = \$70,000.00
- A cost per square area of 400 dollars will be used for the staff areas.
 - a. Total floor area of staff areas(housing and maintenance yard) = 2256m^2
Total amount needed for this construction = \$902,400.00

Therefore, on average, total cost for the construction of the main structures will be a total of approximately 15 million dollars.

This figure will however be inflated to about 20 million dollars, taking other frills into consideration e.g. water features on site, etc.

5.9.2 ENVIRONMENTAL IMPACT ASSESSMENT

The impact of the resort has both positive and negative on the immediate environment and as such measures should be taken to address any imminent situation. Environmental impact assessment is an activity that is designed to identify and predict the impact on the physical environment and on the human's life .A brief summary of such an impact by the design and planning can be outlined as follows:

Impact on Air Quality

Air pollution would be caused by dust during the construction stage through site clearance, excavation works, delivery and use of cement and aggregates.

Impact on marine life

The dredging of the lagoon could result in the disturbance of marine life. This must therefore be taken into consideration when the dredging is being done in order to minimize this occurrence.

5.10 CONCLUSION

This project was undertaken with the aim to:

- Create an internationally competitive destination resort that will readily make Ghana a world tourist destination.
- Achieve a design where the development has all the necessary facilities to make it self-supporting and sustainable.

The design that was done sought to give life to these proposals.

Once it begins operating, the resort will be a prime mover of economic activity in Winneba and its environs. It will be an important generator of employment and income for the people. It will also establish the cost of investment in the industrial, commercial, infrastructure and housing areas.

With the design that has been proposed, it is believed that the skyline of Ghana and its coastal image will see a marked improvement, which will in turn go a long way to help boost the tourism industry of the Country.

It is the sincerest anticipation of the author that this proposal would provide a rich source of reference material for all stakeholders who see the need to develop the coastline of Ghana.

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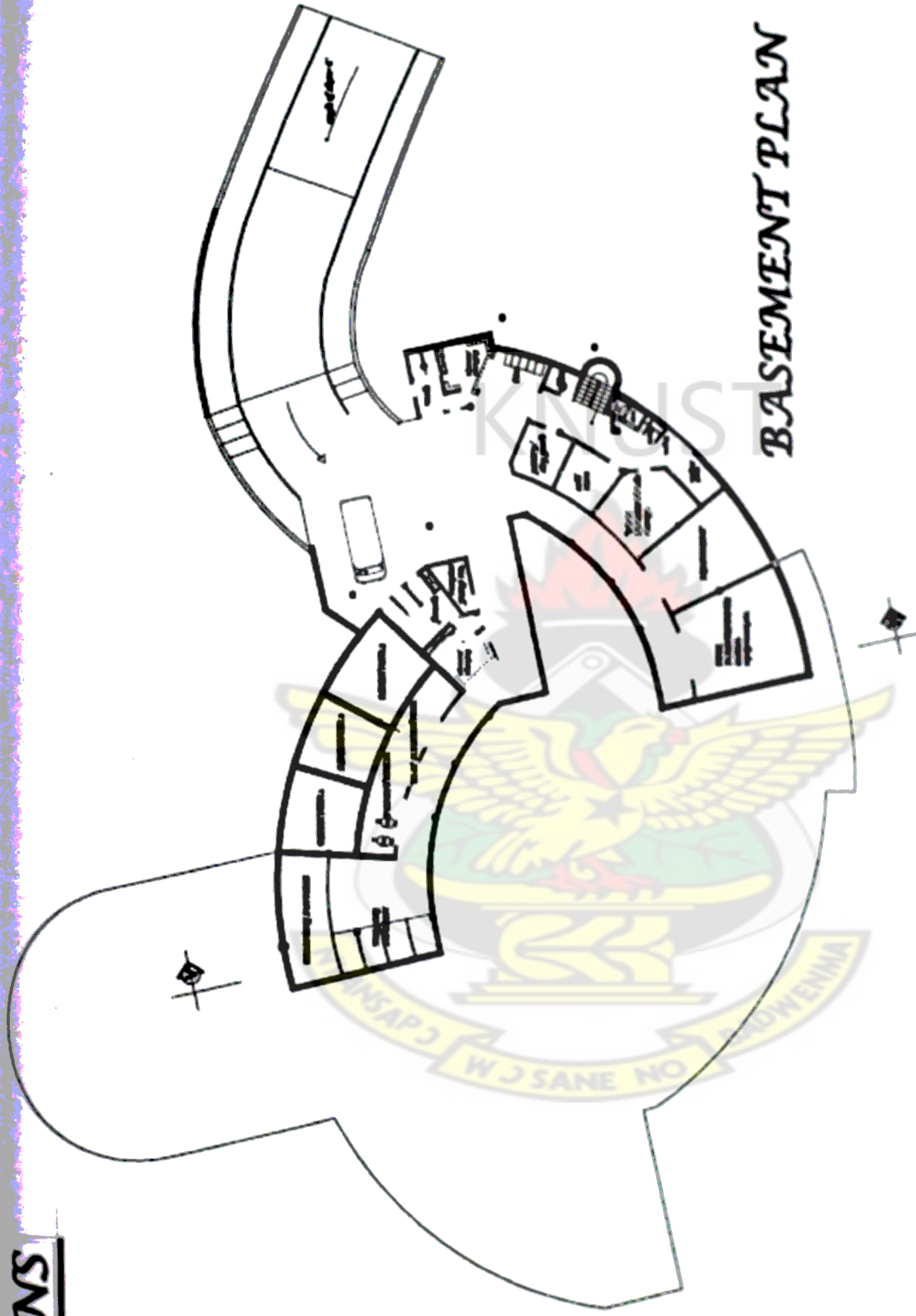
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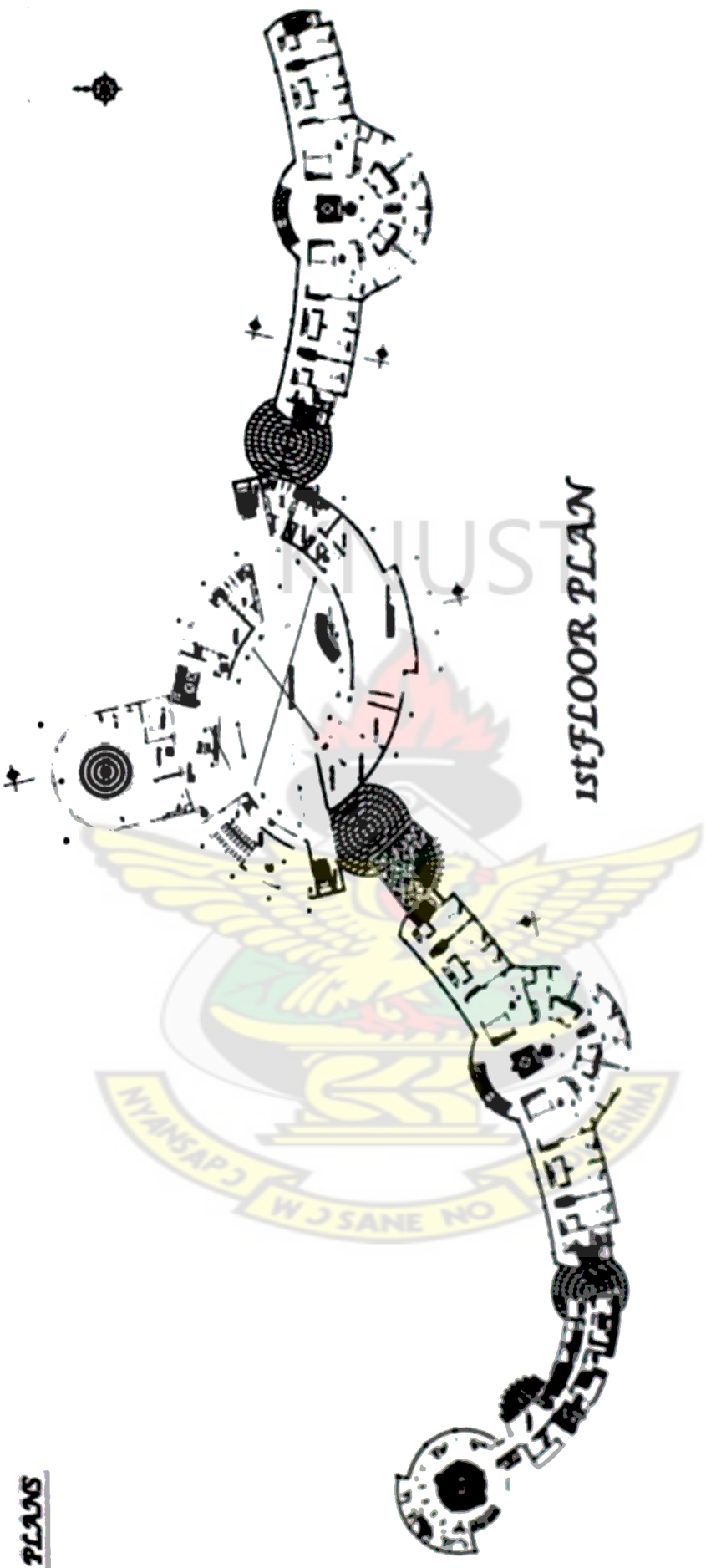


BASEMENT PLAN



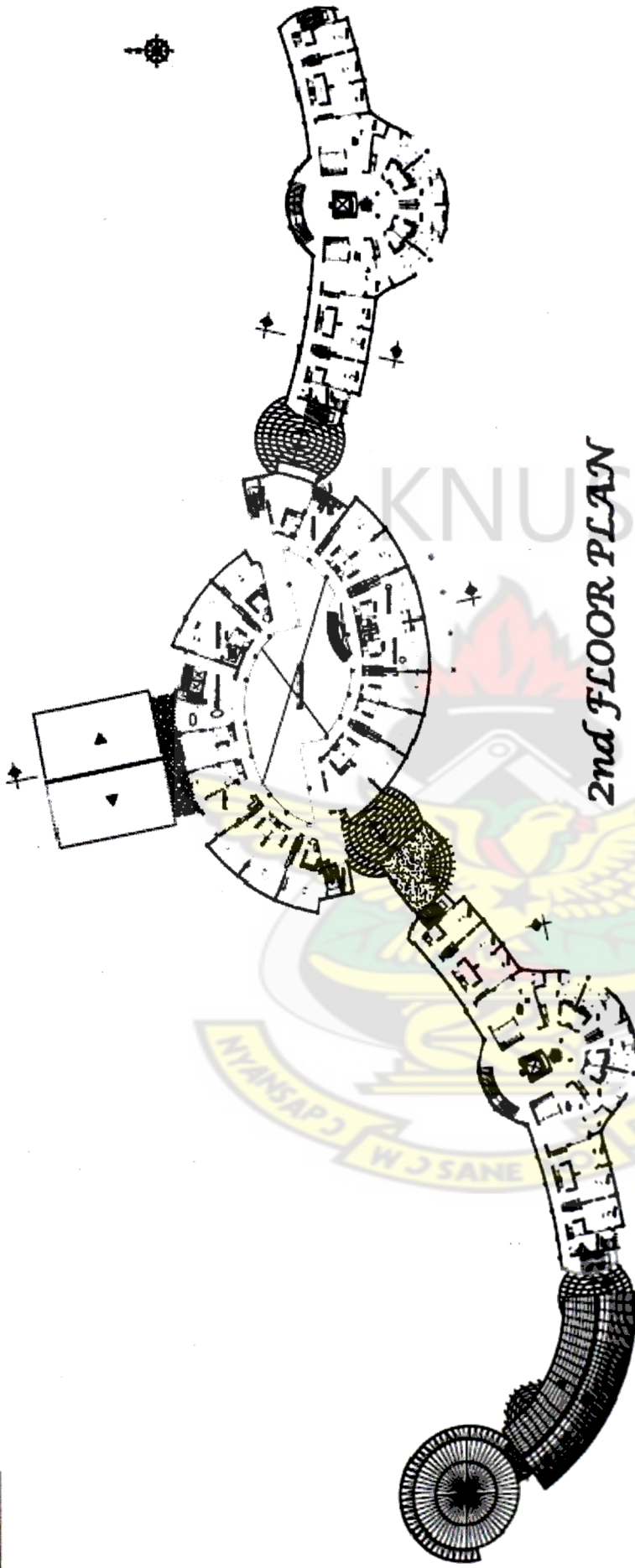


GROUND FLOOR PLAN



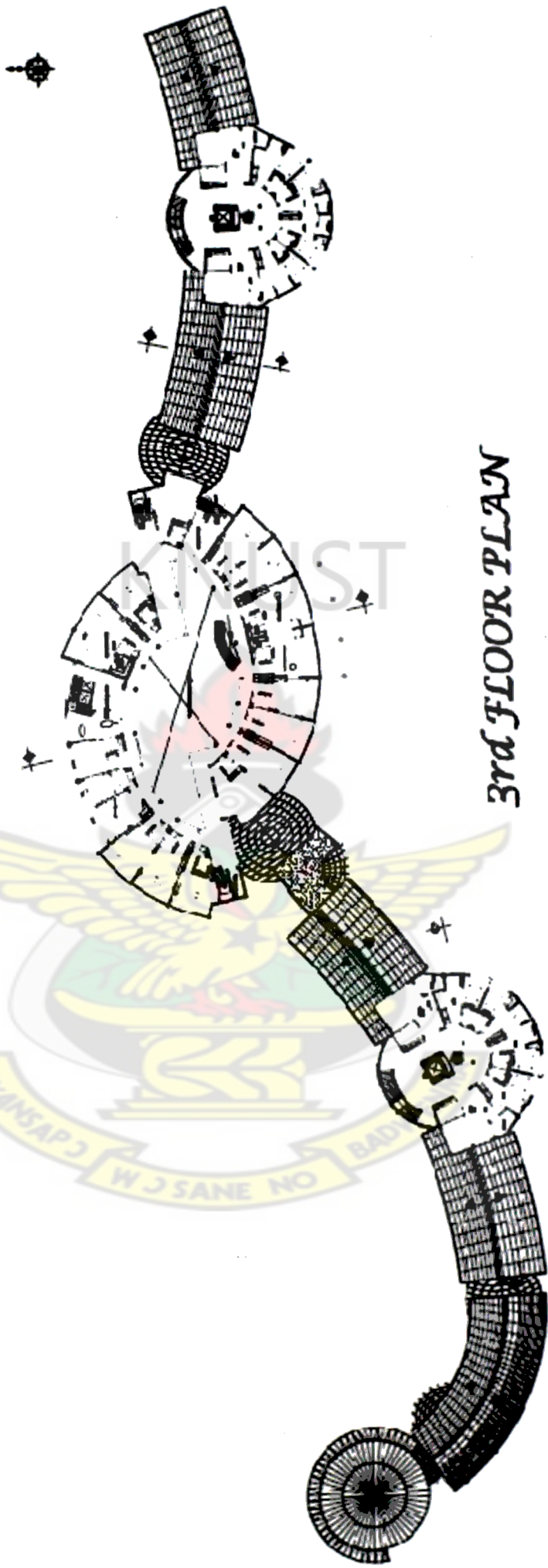
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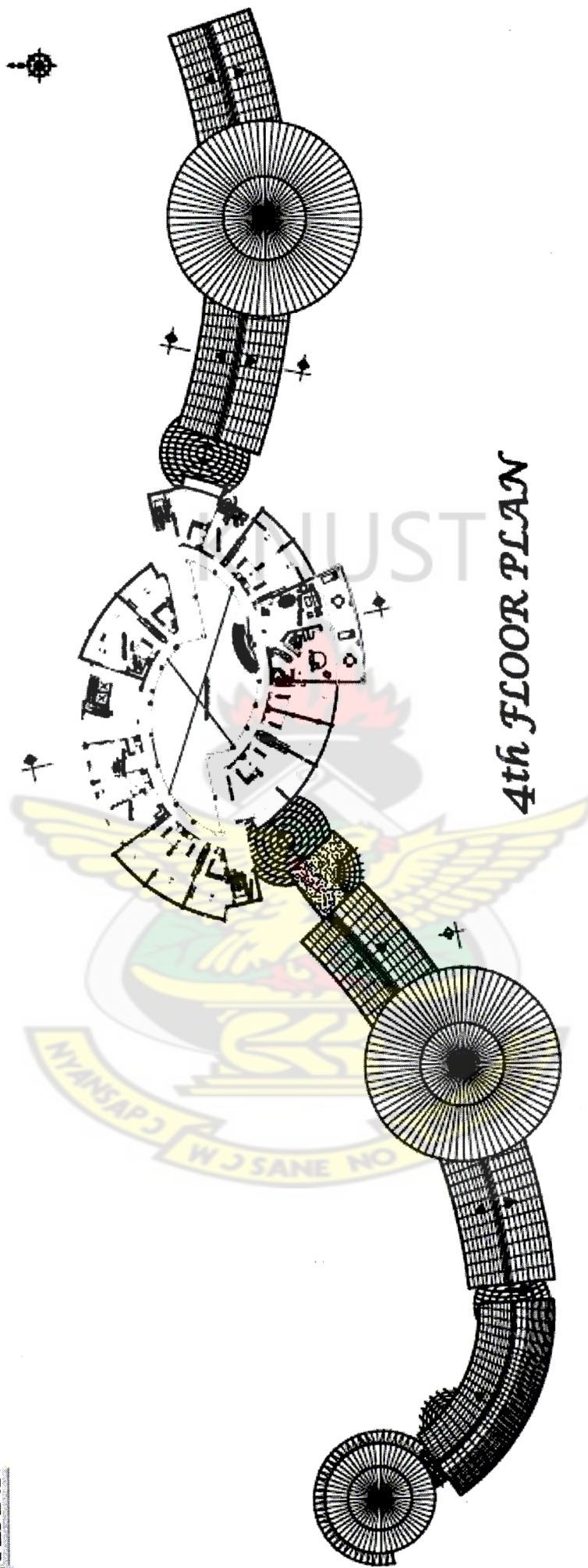
2nd FLOOR PLAN

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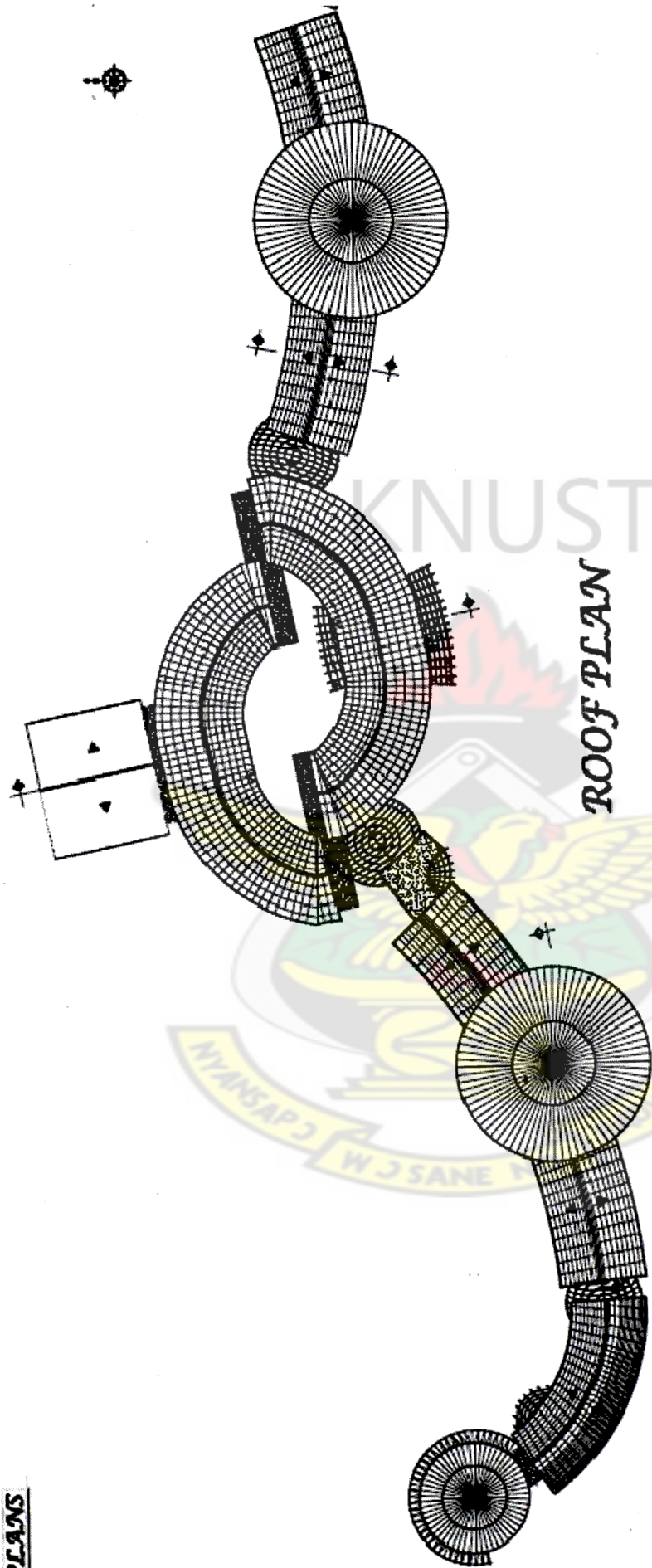
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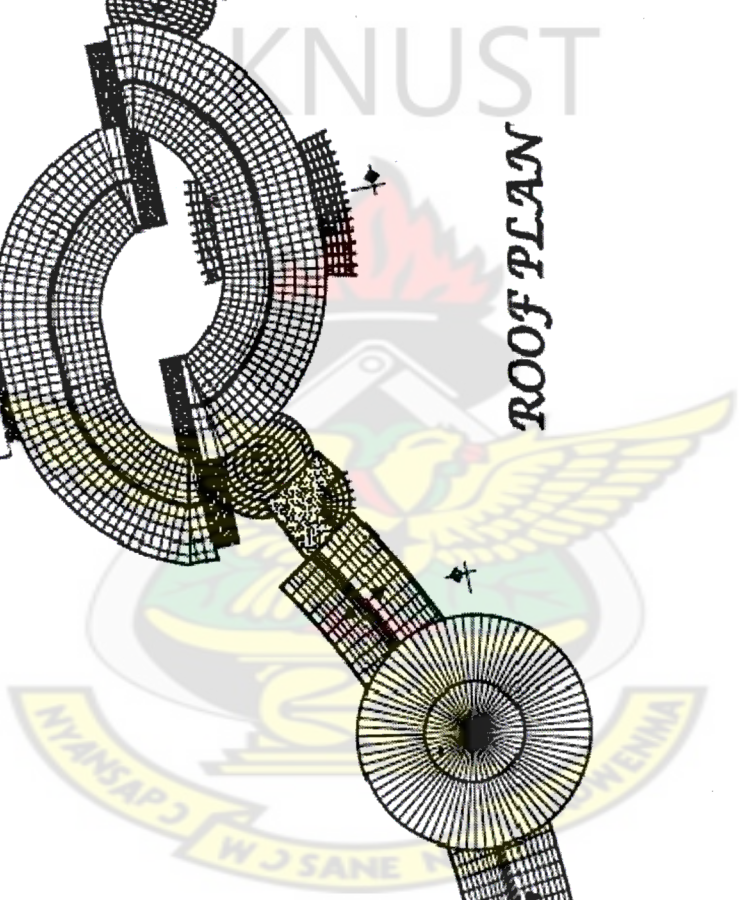


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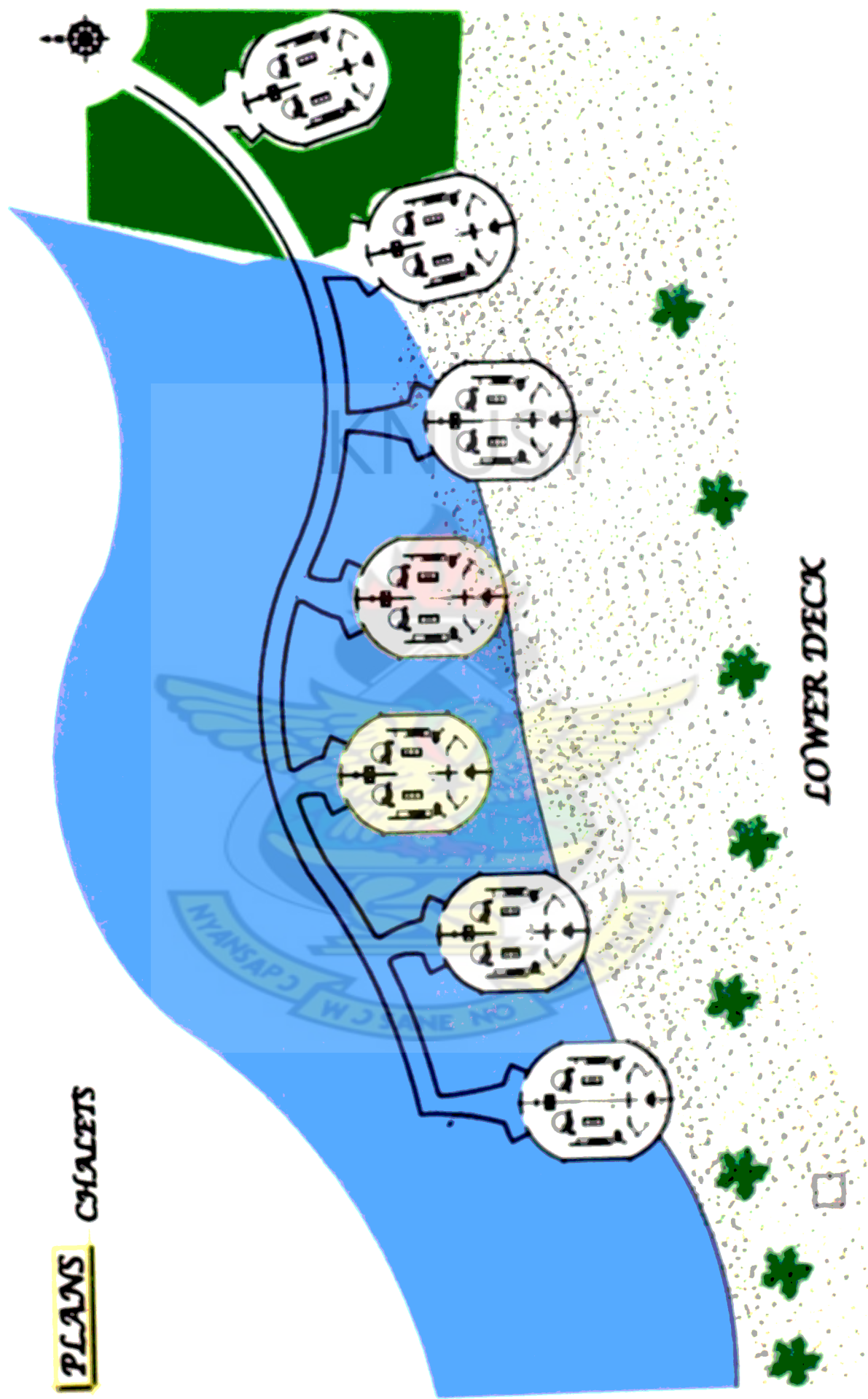
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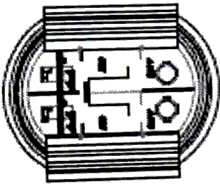
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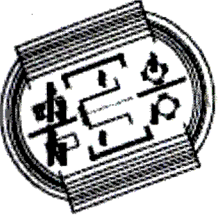
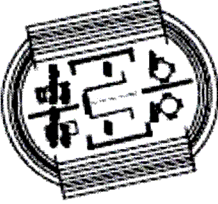
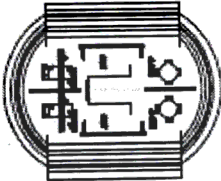
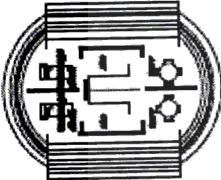
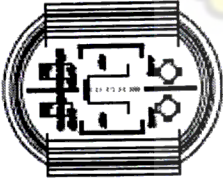
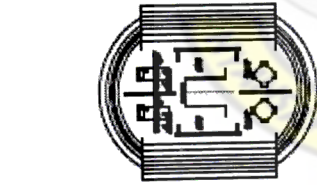
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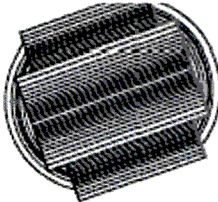
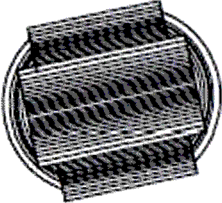
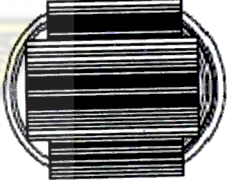


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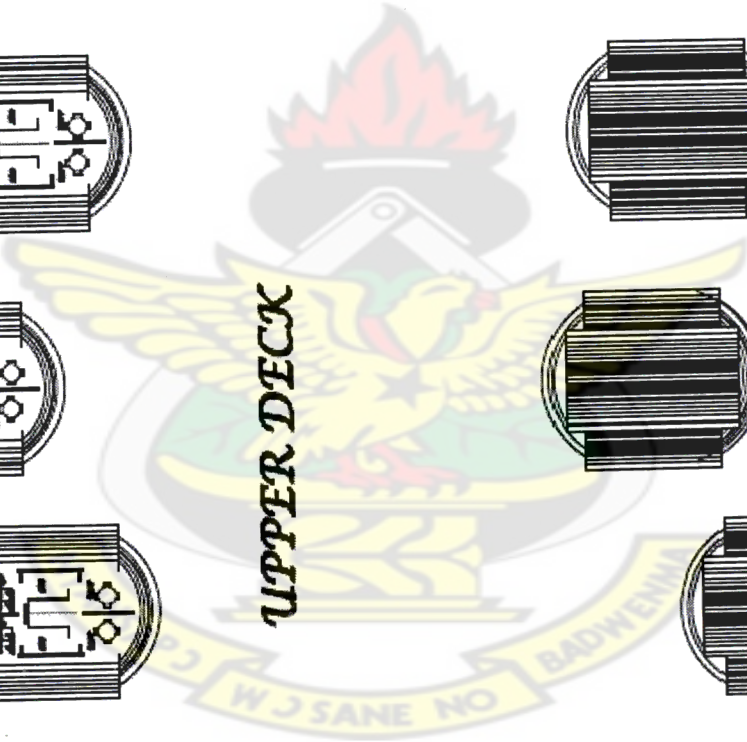


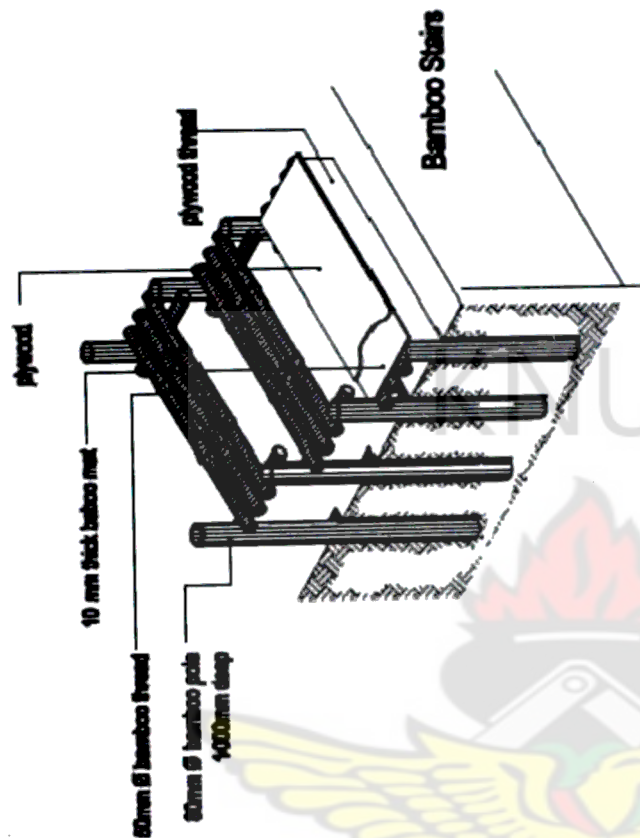
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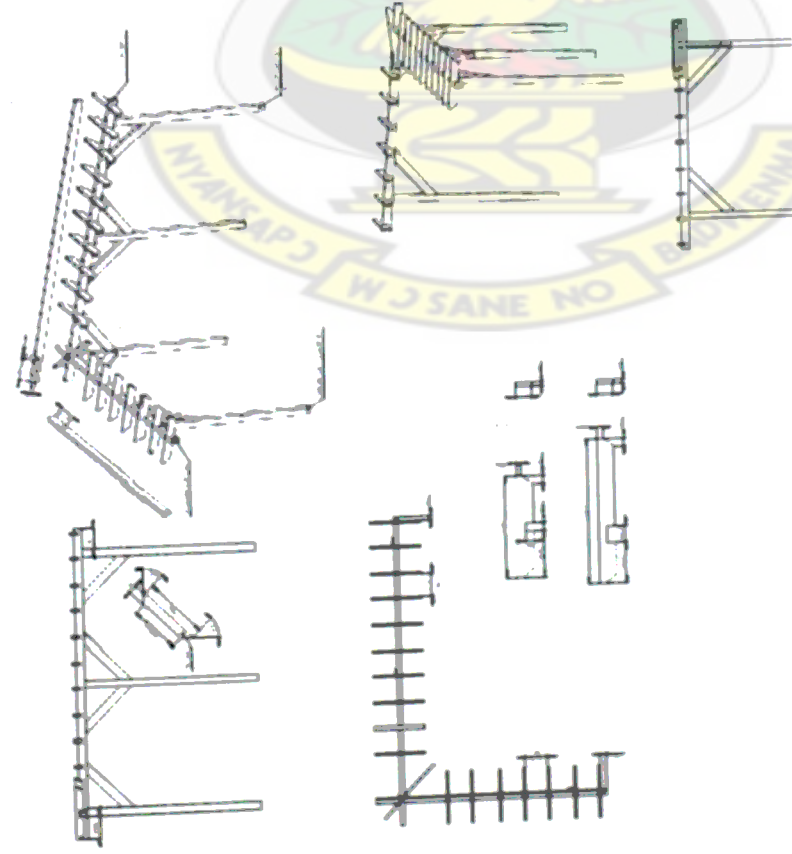


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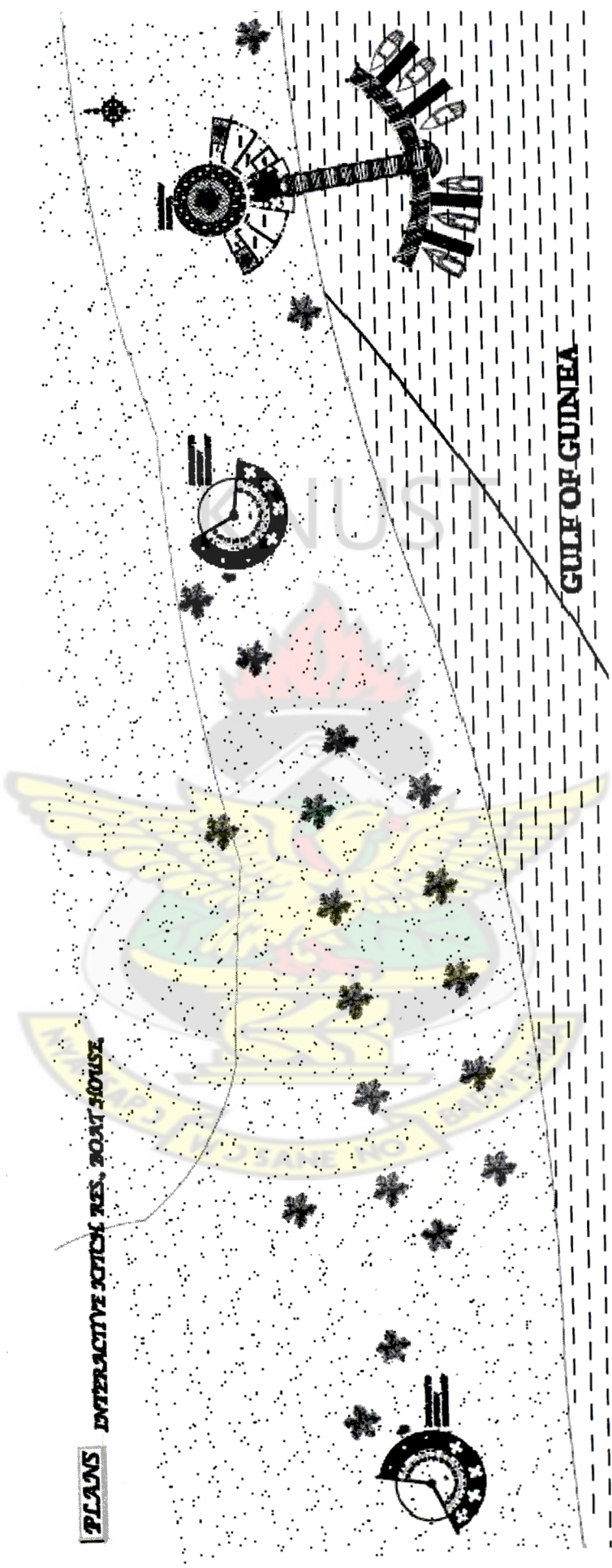




DETAIL OF BAMBOO STEPS LEADING TO CHALET



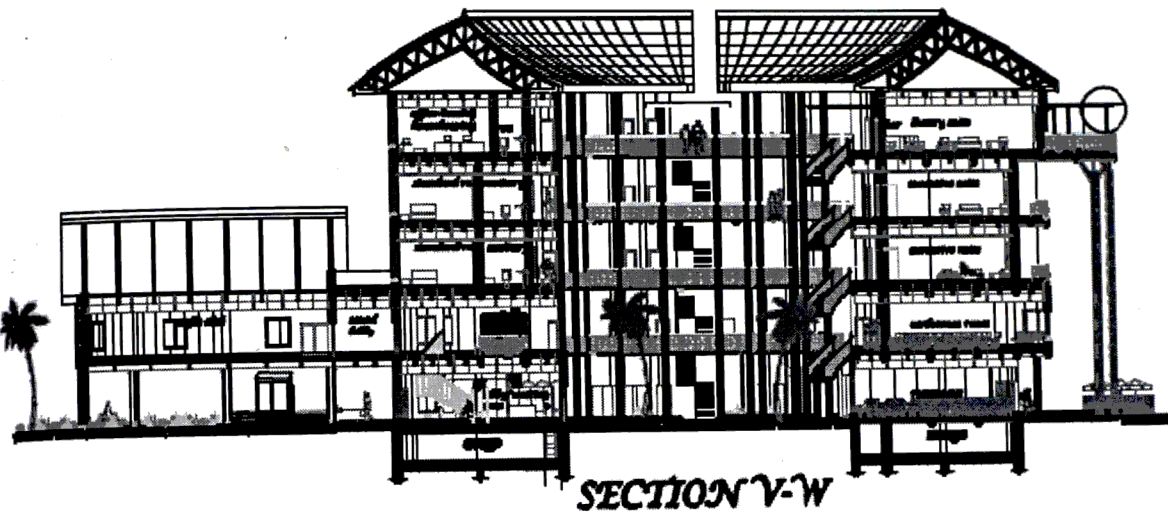
PLANS



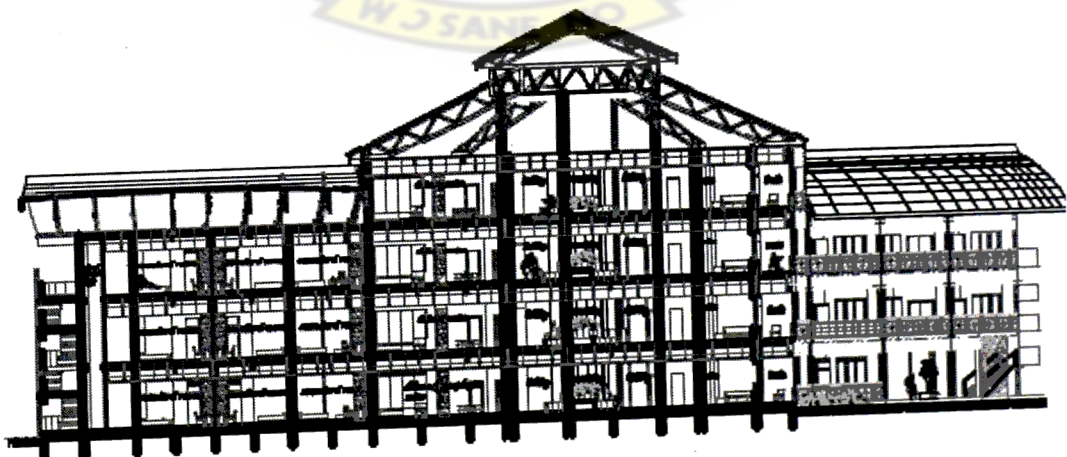
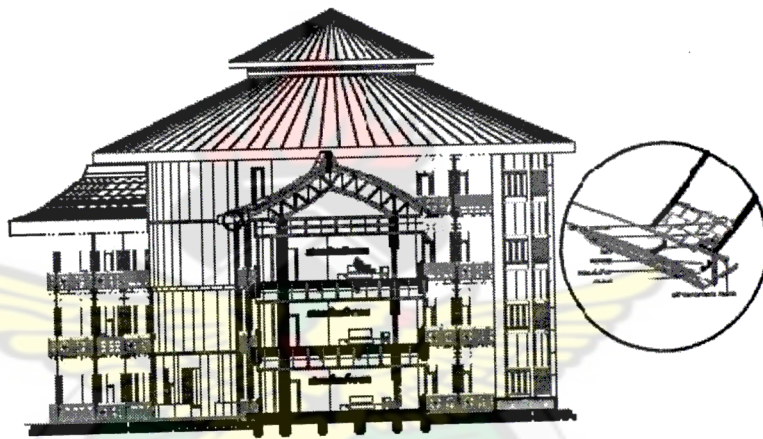
GROUND FLOOR PLAN



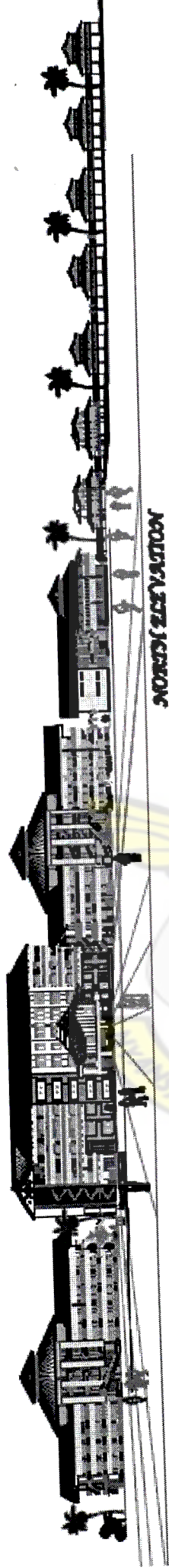
GROUND FLOOR PLAN



KNUST



Architectural



NORTH ELEVATION

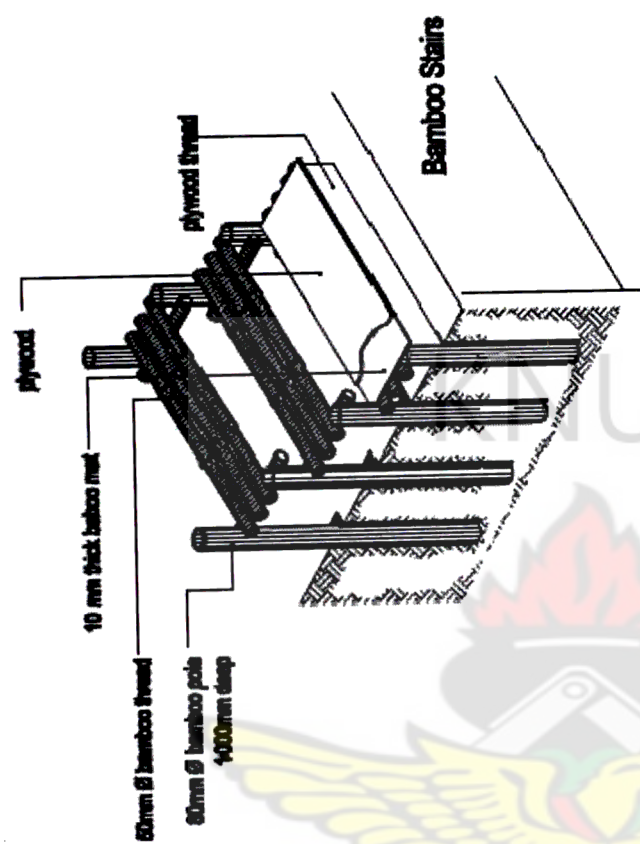


SOUTH ELEVATION

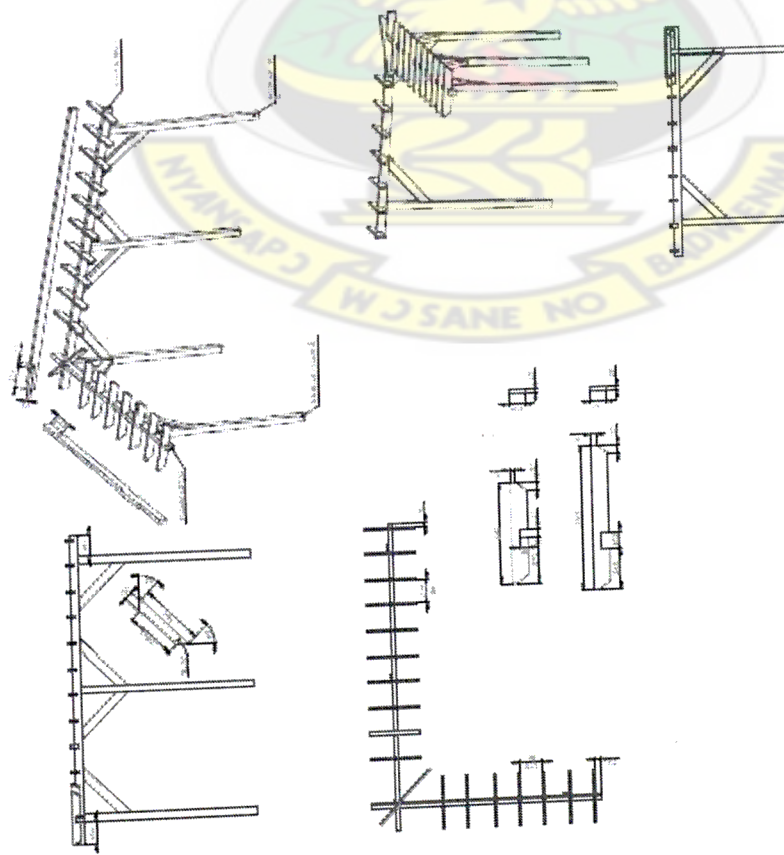


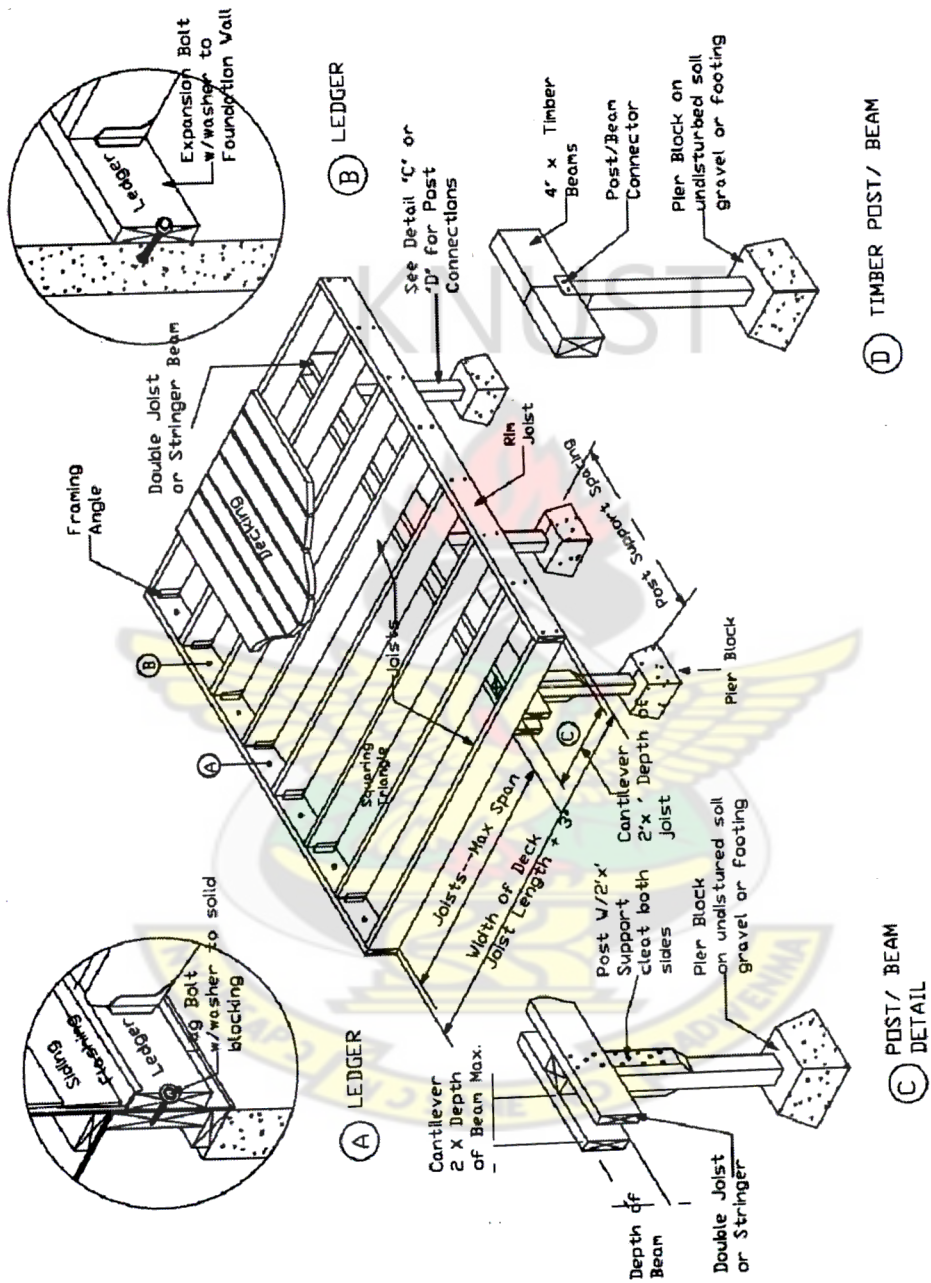
EAST ELEVATION

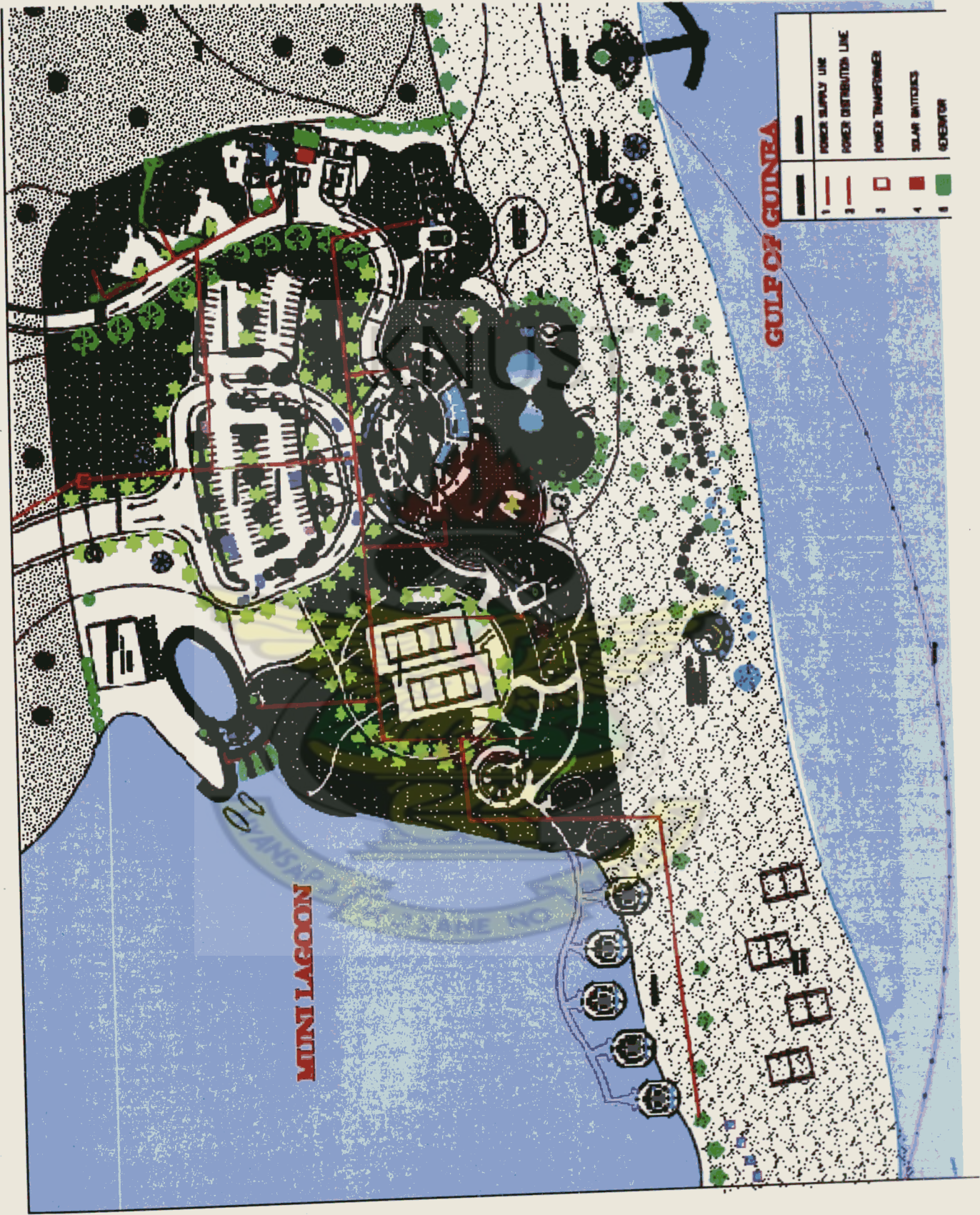
WEST ELEVATION



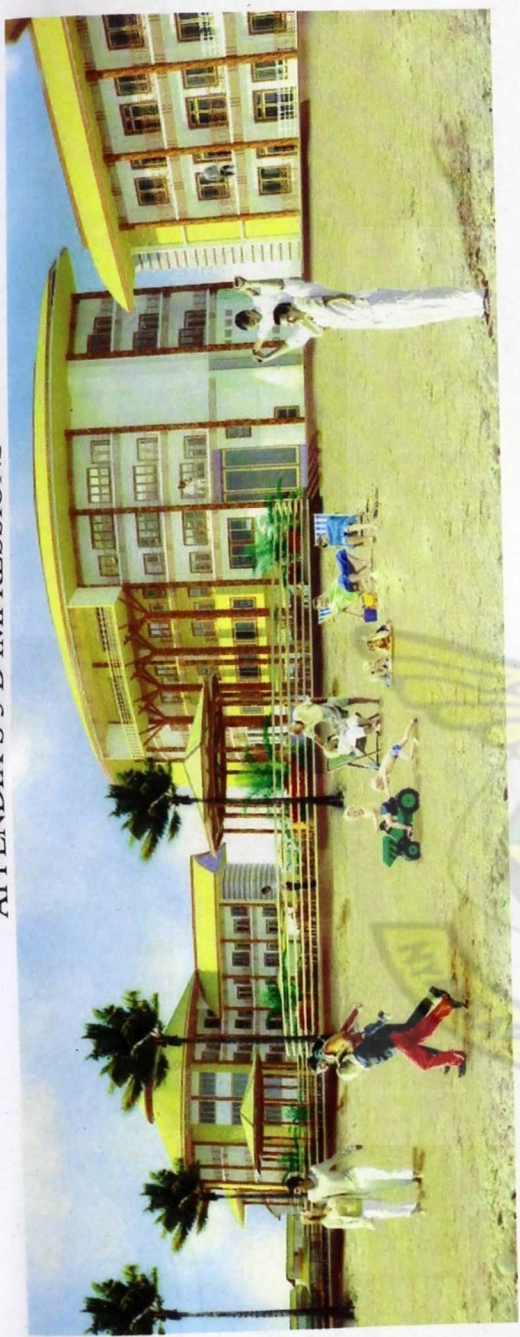
DETAIL OF BAMBOO STEPS LEADING TO CHALET



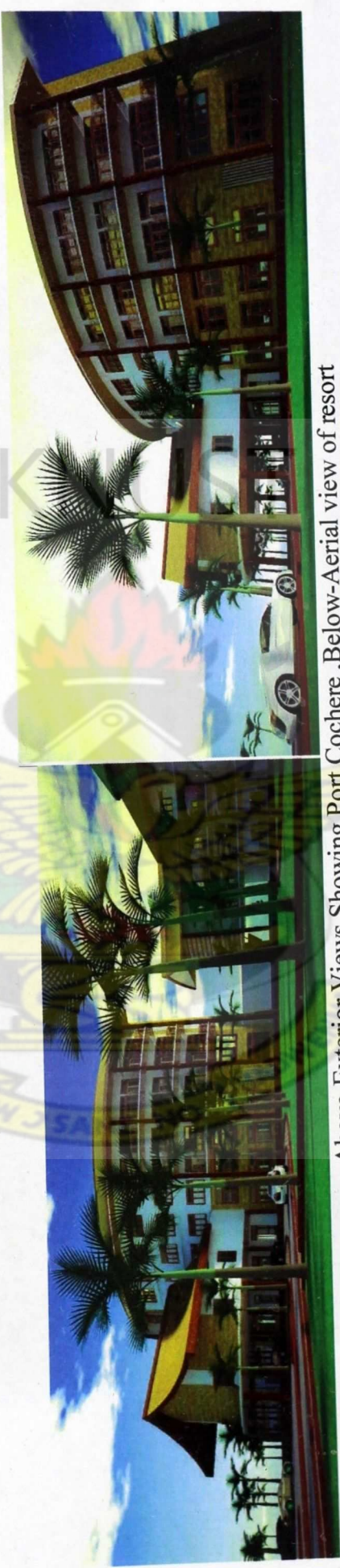




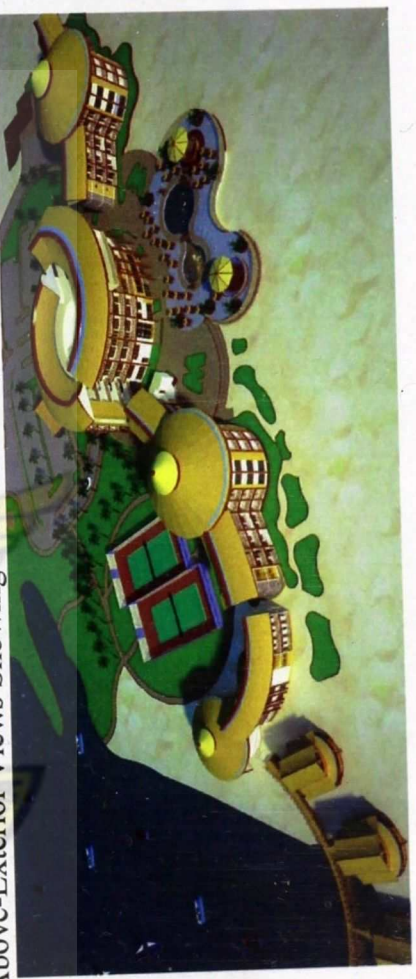




Above-Front View Showing Apartment blocks, overlooking the ocean



Above-Exterior Views Showing Port Cochere ,Below-Aerial view of resort





...gym inside spa and wellness center!



....the indoor pool area!



...the massage parlour overlooking the lagoon!

Above- interior views ;Below view of the Muni-Lezu Chalets
Right-View of poolside area with pool bar in background

