

MINNA MODERN POLO CLUB M. TECH.  
(ARCHITECTURE) THESIS

BY

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A THESIS SUBMITTED TO THE DEPARTMENT OF ARCHITECTURE,  
SCHOOL OF ENVIRONMENTAL TECHNOLOGY, FEDERAL UNIVERSITY OF  
TECHNOLOGY, MINNA IN PARTIAL FULFILMENT OF THE AWARD OF  
M. TECH. (ARCH.)

AUGUST, 1995.

CERTIFICATION

This is to certify that this project titled "Minna Modern Polo Club" by Erhadje Ebenezer meets the regulations governing the award of the degree of Master of Technology in Architecture and is approved for contribution to knowledge and literary presentation.

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Supervisor's Signature

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Date

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Head of Department's Sign.

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Date

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External Examiner's Sign.

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Date .

DEDICATION:

This thesis is dedicated to my Late Dad, Chief Joseph Olovughevu Erhadje, my Mum, Mrs. Grace Erhadje and the entire Erhadje family.

ACKNOWLEDGEMENT:

A thesis of this complexity could not have been written without the help of many people, and this help has taken many forms; intellectual stimulus in the generation, evaluation and refinement of ideas.

Special thanks to my supervisor/Head of Department Arc. Dr. G. C. Nsude, whose relentless effort and encouragement like opium sawn me through the entire project.

I am also grateful to everyone who has contributed in some ways to the completion of this work. I wish to acknowledge the efforts of Alhaji Idikuta, the Club Secretary of Minna Polo Club and other Polo Clubs visited for the information provided for this study.

My indebtedness also goes to my parents and family for their support and prayers which have always been the bedrock on which I stand.

Lastly, my gratitude goes to my friends and studio mates for all the assistance they provided and especially to the Almighty God for his infinite mercy and care.

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A B S T R A C T :

In the design of Minna Modern Polo Club, the task is to create an ideal, psychological aesthetical and functionally pleasing environment capable of coordinating the activities of various recreational facilities, which would be a centre for recollection and reforming of minds.

In carrying out this work an attempt was made by articulating a relationship between the different units that make up a Polo Club.

On completion, this Club will provide Minna Inhabitants a place where peace of mind, physical development, self-fulfilment, fun, a true sense of relaxation and a good life will be attained.

I N T R O D U C T I O N

Several factors are responsible for the high level of recognition possessed by most towns. And can be easily identified with the major activities that take place in them, which bring out the output for which it is known some of these factors could be academics, commercial, transportation and agricultural.

However, there are some potentially latent activities that contribute immensely and uplift the level of recognition given to any town. Such activities could grow busy of time from being obscure to become what the town is noted for, one of such activities is sports (Polo). A good example of town that developed and gained world recognition through Polo Tournaments is Buenos - aires in Argentina. The growth, popularity and development of the City was marked by her hosting of several international Polo tournaments.

Polo having undergone a lot of transformation is a permanent feature in the Nigerian Sporting scene and is being played by the rich, mighty and the royals which make it a noble game. Currently several Polo Clubs spread across the country with Minna being one of them.

However Minna as the Capital of Niger State lacks Modern Polo sporting facilities which invariably means the state is deficient. It should be noted that how well a Nation does is relative to training facilities provided. As only a physical and mentally fit person can improve productivity. The location therefore of a modern Polo Club in Minna makes it the only one in the State and the most modern within the country. The big question is why in Minna? Minna Occupies about a Central Position geographically in this country making it possible to reach from all sides.

Polo as a sport is recreational and should therefore be seen as one of the play activities which from its conception is a rough, disorganised, warlike spectacle, sophisticated sports need a modern well organised and suitable area for the play and practice of this noble game as well as other form of recreational activities. There is also the need for Polo Sportsmen to have an avenue to partake in national and international Polo tournaments.

## CHAPTER ONE

### 1.1 DEFINITION DEFINITIONS.

Before defining polo, it would only be fair to know what is sport since polo is an aspect or integral part of sports.

The term sports defines absolute definition. Even when used to describe a game or other physical education activities. There is still a considerable disagreement as to the real meaning of sports. Sports means different things to different people. "Sports, a recreational or competitive activity which involves a degree of physical exertion or mental which requires a skill in the playing of an object for scoring. The term encompasses races athletics contesy in which the outcome is in doubt"

-----Webster's Sport Dictionary.

"Sports is utter concentration, deep involvement, a challenge met, a game won or lost. It may consist of shooting an arrow, kicking or throwing a ball. Sports is fun = disappointment, triumph and defeat. It is a means of testing one's strenght courage and stamina.

----- Encyclopedias of physical

Education, fitness and sports;

Ed Reuben B. Frost

Thomas K. Cureten Jr.

polo can be defined "as a stick and ball game played on horse back and is the oldest of all equestrian sports and also the oldest organised sport of any kind".

----- Encyclopedia Britannica.

Polo Club is therefore a place reserved or created primarily for recreational activities; polo, horse racing, horse training, breeding and others, of both the athletics and spectators. It is normally equipment for the smooth performance of such activities. Life is a series of games - games of finding answers, finding amusement, persuading people, winning friends, raising families and performing rituals.

Some persons relish the game of life and enjoy all the sub-games to be built, others play them grimly with their eye fixed on the scoreboard, too much concerned with staying a head to enjoy the games.

----- Don Robinson (Ph.D.).

1.2.0 HISTORY OF POLO

Definite historical references establish that polo was being

played in Iran (Persia) during the 1st Century A. D. And after undergoing elaborate transformations from Iran, the game was carried to Arabia and from there to Tibet. (The English word Polo is the Balti word meaning "ball". Then on to China where it found a great followings and Japan polo in China often involved more than pure sporting interest, in AD 910, the death of a favoured relative in a game prompted Emperor T'ai TSo to order all surviving participants in the game beheaded polo was introduced into India by the Islamic Conquerors in the 13th Century. It was from there six centuries later that the sport was played for the first time by representatives of western culture, undergoing elaborate transformations and modern polo rules by the Hurlingham Club of England were modified to what he have today. In 1888 a system of handicapping was devised to equalise tournament play and formal organisation. Besides the United States, the supreme governing body for polo is the Hurlingham polo Association of which the various National Polo Associations are affiliated with.

The first polo was played in Nigeria in 1904 and it was there the first Nigeria Polo Club was formed. The game was predominately played by officers of the colonial administration in their past time. Many of these which were both military and civilian administrators whom have served in various parts of the British Empire where polo had been entrenched. By 1914 the same year as the amalgamation of Nigeria, Kaiser Wilhelm II of Germany presented a

cup to be competed for by Cameroon and Nigeria promoting the spirit of Colonial affinity beyond politics and international boundaries. The late Emir of Katsina, Alhaji Mohammed Dikko vigorously promoted polo especially in Northern Nigeria and Clubs were formed in Katsina, Kano, Zaria and Kaduna. With polo so firmly entrenched by the 1910s. Tournaments became a regular feature on the Nigerian Polo Association Calender prompting the British Bank for West Africa to present the Georgian Cup which ultimately became the premier polo trophy in Nigeria, made of Georgian silver in 1785 which is competed for every October in Kaduna.

In 1920, the Nigerian Polo Association was inaugurated and the Scion of the Katsina Monarchy. Alhaji Sir Usman Nagogo became the "father of the Nigerian Polo" promoting the sport throughout the country and giving polo an international reputation. By the Nation's Independence in 1960, the original Kaiser Wilhelm trophy was rededicated by the Germany Ambassador in Commemoration of Nigeria's independence.

Currently polo is a permanent feature on the Nigeria sporting scene with over (25) polo clubs across the Nation.

#### 1.3.1 HOW IT IS PLAYED:

1) Officials:- The game is controlled by two mounted impires each generally responsible for one half of the field. A referee stands off the field and his decision is final in the event of

any disagreement between the two Empires.

Two goal judges stand behind each goal and report to the empires in GSC of doubt or incident near their goal. They signal with flags when a goal is scored. The beginning and end of each period is signalled by a bell rung by the time keeper who is also responsible for score keeping.

ii) The ground. This comprises the playing area ( $NSO,000m^2$ ) and a safety zone around it. No one, other than officials may enter this zone during play.

iii) Goal posts: These are of light construction designed to break if collided with.

iv) Team: Each team consists of four players. Substitutes are only allowed to replace players who are injured or ill.

v) Scoring: Goals are scored by striking the ball at any height between the opponent goal post or imaginary height lines produced from them.

vi) Ponies: Ponies can be of any height but must be calm in temperament. They must be able to see with both eyes and blinker or any form of nose band that restricts their vision are not allowed. Frost nails and screws on the shoes are forbidden but a calkin (small spur - like projection may be used on hind shoes only if the rim is on the inside of shoe. Bandages or boots must be



worn on all four leg

**Duration:** A match is divided into eight minute period or "chukkas" amounting to 56 minutes actual playing time. This may reduced by the match organizers by cutting the number of periods their duration or both. There is normally four or six chukker in full game.

There is a three minute interval between each period and a five - minute interval half the periods have been played.

**Dress:** A polo helmet or cap with a chinstrap must be worn by all players. Polo boots and knee pads must be free of any buckles or studs that might damage another players equipment. Sharp spurs are forbidden. A distinguishing colours must be worn by both teams.

**Players:** Each player is handicapped or rated from 0 to 10 according to his ability and relative worth to a team. (in Nigeria minus ratings e.g -1, -2,) are used but this is not universal. Players are rated on horsemanship, hitting ability, knowledge of the game, the quality of their horses. The pony is judged to be 60 to 75 percent of players ability and sportsmanship. But unlike other team sports, polo players are not known by position name (e.g forward, half back etc) but rather than number. The fine points and intricacies of each position are learned over a period of time with practice and game experience being important

factors. The basic duties of the players are as follows:

a) Number one (1): This position (1) is usually assigned to the Novice or the weakest player on a team, is in fact one of the most difficult to play requiring great anticipation of the play, determination and self control, the number one is theoretically responsible for scoring goals and neutralizing the opposing number four (defensive player), he places himself to receive passes from his team mates and generally serve as an offensive spearhead.

b) Number two (2): The number two is the "Instler" or "Scrambler". Always scrapping for the ball he requires quick fast ponies, a keen eye and impulsive aggressive nature.

c) Number three (3): The number three some times referred to as the pivot man, "quarter back" of the team. He must be a long powerful hitter capable of tactical leadership. The three has a dual role: We must feed balls upto the two and one but also help maintain a solid defence. The number three is usually the best player on a team.

d) Number four (4): The number four (back) is primarily a defensive player who though he may move anywhere on the field has as his main function the prevention of the oppositions scoring.

#### 1.4.0 THE POLO CLUB:

##### 1.4.1 Defination:

A Club is a culmination of a group of people coming together

for some specific purpose and in this case polo. - The Club house is a building used by these people.

#### 1.4.2 FUNCTIONAL ASPECT OF POLO CLUB

The functional aspect of a Polo club revolve around:

- i) The playing and spectating the game of polo: The main stay of play is the pitch which is used for Tournaments and practice sessions while the aspects of spectating include that of formal and informal seating. The formal seating is for those that are invited or are fee - paying spectators while the informal spectators are those that have a passive interest and are not fee paying and are mostly in the standing position.
- ii) Socialization during, after and between play sessions and off seasons: These include facilities that are exclusive to members and their guests and include lounges, catering facilities, Banqueting facilities etc.
- iii) Support and Ancilliary functions: These are functions that support (i) and (ii) and these include pony lines, stables Toilet etc.

#### 1.4.3 USER OF POLO CLUB HOUSE:

The users of a polo club house can be broadly categorized into the player - members, non - playing members and guests.

The facilities provided revolve around sustaining these categories of users. The players are into two groups and include those that are visiting and residential. And as far as playing polo is concerned they are mostly involved in the mounting and dismounting of ponies for play and practice, changing and the stabling.

The socialization aspects of a polo club house revolve around catering, Banquet, lounge, Bar, etc.

The support staff for all these activities include,

- 1) Waiters/cooks, groundsmen, groomsmen, vet. staff and Admin.

#### 1.5.0 DESIGNED AIMS AND OBJECTIVES:

The aims and objectives of this thesis are as follows:

- a) To promote interaction between people of different socio-cultural background; through sport and to be precise, polo.
- b) To create an ideal environment for high level performance in sports;
- c) To accelerate the rate of growth/development of Minna, through sport.
- d) To provide for leisure seekers as well as tourists;
- e) To promote unity through sporting and festival activities;
- f) A collection point for national and international polo tournament.

g) As a source of generating revenue.

#### 1.6.0 RESEARCH METHODOLOGY:

For this project, in order to obtain precise and concise information. Every possible means within reach was exploited to obtain the data required. This was done through primary and secondary data collection.

**Primary Data:-** This term "primary data" refers to the statistical materials originated for the purpose of this proposed design.

Sources of primary data are as follows:

- Direct appraisal of some existing polo clubs, identifying their problems and how this can be solved;
- Information from correspondent or officials
- Indirect personal interview.

**Secondary Data:-** This are information obtained from other peoples work or record in the cause of this project. The sources include; books, Journals, Newspapers, Magazines etc, which are thoroughly reviewed to enhance standard.

#### 1.7.0 SCOPE OF WORK

This project is meant to provide an architectural documentation with particular reference to historical background, planning, functional relationship and organisation, development trends and compilation of spaces required for various activities on one and while

the other gives a description of the design facilities to be provided;

- a) Club House;
- b) Grandstand
- c) Play pitch;
- d) Race Course;
- e) Guest House/Accommodation;
- f) Horse Stable;
- g) Veterinary Clinic;
- h) Admin;
- g) Multipurpose Hall
- j) Children Play area;
- k) Outdoor Garden;
- l) Staff Accommodation;
- m) Out door Recreation;
- Badminton Court;
- Lawn Tennis Court;
- Swimming Pool.

#### 1.8.0 JUSTIFICATION:

Ever since the advent of polo in Nigeria the followship and spectating of the game has being on the increase Nationwide which account for the high number of polo clubs around the country today.

Minna as the capital of Niger State house many retired generals, top civil servants, prince e.t.c who are noted for playing this noble game. With several tournaments already organised in Minna shows that the game has come to stay and therefore should not be allowed to die a premature death due to the diminishing interest by spectators, leisure seekers and enthusiasts for lack of standard and modern polo facilities. A Polo Club that can coordinate and integrate the activities of several recreational facilities together; "an ideal environment for polo sport". This environment should be ideal, psychologically, aesthetically and functionally pleasing.

A place like this would ensure Minna residents a place to let off steam, interact with one another especially for a retreat and relaxation.

## CHAPTER TWO

### LOCATIONAL ANALYSIS:

#### 2.1.0 GEOGRAPHICAL LOCATION:

##### 2.1.1 NIGER STATE, NIGERIA:

Niger State is located in central region of Nigeria. It lies within the middle belt region of the country between latitude  $3^{\circ}20'$ , and  $7^{\circ}40'$  East and longitude  $8^{\circ}00'$  and  $11.30'$  North. The state occupies a land area of 74,244 square kilometres. This makes approximately 8 percent of the country's total land area.

To the South, it is bounded by Kwara and Kogi States but separated the River Niger. To the South-East, by the Federal Capital Territory, Abuja; the North-East by Kebbi State and finally to the North by Kaduna State.

Figure 1, depicts Niger State in the context of the Federal Republic of Nigeria.

##### 2.1.2 MINNA, - NIGER STATE:

Minna stands out as the capital of Niger State. It lies



along latitude  $9^{\circ}37'N$  and longitude  $6^{\circ}33'$  East on a geological base of undifferentiated basement complex of mainly gneiss and Magnetite. To the North - East of the Town a more or less continuous steep outcrop of granite occurs. Connecting Minna, to the other parts of the country are three major transport network system, namely; the Railway, the international and Local airports and her major road network to other major towns and cities such as Abuja, Suleja, Bida Zungeru, Kaduna, Ilorin and Keffi

Figure 2 shows Minna in Niger State.

### 2.1.3 MINNA TOWN TODAY:

The major characteristic of Minna town lies widely dispersed along the major road that runs from Chanchaga in the South, referred to as Paiko road, to Maikunkele in the North and known as Bosso road. It covers a distance of approximately 16 kilometres. The International Airport is situated off the Bosso road in Maikunkele. The main Kano - Lagos rail line cut across the town at the centre via a narrow gap in the steeply rising granite hills to the East of the town. To the South of the railway lines lies many low density public function such as the railway station; army headquarters, police compound and old G.R.A.

To the North of the railway lines are the high density quarters, Minna market and Sabon Gari. Recent investment by the government on institution and housing, has tended towards the

Northern side of the high density area. Thus creating an even greater strain on the road crossing over the railway line. The recent relocation of the parliament and secretariate building South of the railway line has relief congestion a bit.

Physical Constrains:- To the North - East of the town a more or less continuous steep outcrop of granite occurs limiting any urban development in that direction. A major drainage vallege flows from the centre of the town south - west ward with many minor drainage channels feeding into it with storm water run off from the hills to the East. In some places these streams form large area's of flood land. There are large but isolated rock out crop in this landscape and also some area's of scattered rocks. In other word land beyond the presently developed strip is suitable for development, but would need careful planning to keep down the high cost of bridges, embarkment, drainage and culverting as possible.

To the North, over the hills there is some available land but intermingled with pockets of poor land. Any large development cannot take place in this direction due to the restriction in connection with the urban core.

In the South, the land offers reasonable development possibilities but is curtailed further down by the chanchaga river.

The South - West of the Suka river poses another problem at the Baro railway line. This would amount to high cost of bringing.

The Eastern side Characterized as a series of small hills. One of which was built on Old G.R.A. making use of the excellent breeze that blow over the escarpment and also has the main town water storage tank sited on it. The hills and the railway lines which together passes through the valley between these hills and the mountain escarpment to the North have restricted development in this direction.

This feasibility study constitutes the basis of the feature development of Minna. This project is therefore sited such that it not only falls within the sporting core of Minna, but also to lie centrally within the town presently and in the near future.

#### 2.1.4 THE SITE IN MINNA:

The proposed Minna "Polo" Club needs to be located in a strategically vantage position for its effective functionality and economic viability. A site with some evolutionary trend in terms of sport and commerce is considered. This is evident in the fact that Minna, being the state capital has the highest concentration of sport men and women. This is due to her high level of

sporting and public awareness.

The increasing rate of commercial activities in Minna makes her a total point. Thereby rendering hope and brighter prospects for it, Utilization. As one of the set goals, it would generate revenue.

This project, therefore has been intentionally sited close to the town total point along Maazu Road close to the airport landing ground. The choice of the site stems from the flat terrain and good accessibility from Maazu road and off Maazu road.

## 2.2 ECONOMY AND COMMERCE:

During the pre-colonial era, the main commercial life style of the people was the open market system in group cluster representing either tribal interest or on village basis. Each of this group or clusters sell various goods or commodities. This system is existence in some part of the state.

The epoch of Western Culture and Civilization eroded this system putting in place a more defined and refined commercial system. At the moment, Minna is one of the numerous towns swept by this modern commercial activity. This activities ranges from heavy manufacturing industries to commercial services like banking. Others include fashion houses to the ordinary stores people in all this work of life need some amount of recreation and sport to keep fit.

And also to show their physical prowess and as an avenue to socialize with others. Therefore, this project if established would be a viable and profitable venture. As the populace are expected to patronise the, club to watch and also the attraction of fees from new and old members. Other facilities on site are also expected to generate fund for the Club; This include the Guest house, multipurpose Hall e.t.c.

A more refined cosmopolitan city like Minna today has a lot of retired general and top civil servant with strong parchant for polo. This idea siting the modern polo club in Minna would would therefore be a square ped in a round hole.

### 2.3 CLIMATIC CONDITION:

#### 2.3.1 Rainfall:

Aims sit  
Minna site experience the typical seasonal climate of Northern Nigeria. The mean annual rainfall of 1,334mm (52 inches) taken from an exceptionally long period of 34 years. The highest mean monthly rainfall is recorded in September with almost 300mm (11.7 inches). The raining season starts on average in mid April and last between 120 - 200 days. Rainfall break down over the years is as illustrated in the barchart figure.

The beginning of the raining season is characterised with windstorm and slight drizzles that usually terminates by May ending.

By mid October, the storm return again, while the end of the season is of dust storm and rain storms. The architectural implication of these rainfall characteristics on most buildings in the town is that frequently at the sides of most buildings, roofs are being embedded in the block walls which rises above it. More so parapet walls are being utilized in some cases. This same trend will be adopted, thus, parapet walls will be used in shading the roof of buildings in the polo club. It also means having a safe and durable structure or building that can overcome the rainfall effects. Wind screens and bracing would be used to protect the buildings on site from storms. Landscaping plants would be planted to act as wind brakers.

#### 2.3.2 TEMPERATURE:

The mean montly temperature of Minna is  $30.5^{\circ}\text{C}$  ( $87^{\circ}\text{F}$ ) and occurs in March. The lowest of  $25.1^{\circ}\text{C}$  ( $77^{\circ}\text{F}$ ) occurs in August. The site experiences very hot and uncomfortable weather between 25th February through March to 4th April. The temperature falls during the raining season due to cloud cover, increased vegetation thereby causing cooling effect. These temperature fluctuation will be resolved architecturally to suit human comfort during the design stage by means of cross ventillation and/or artificial ventillation as the case may be. Landscaping devices and elements apart from

aesthetic function of the environment, would also be used to achieve temperature balance and as shading devices. The effect of solar radiation will be controlled by adequate selection of walls, floor finishes, roofing materials, glazing materials and paints among others.

### 2.3.3 Wind:

The site is characterised by two air masses; the tropical maritime airmass fig. and the Tropical Continental Airmass fig. . The Tropical Maritime dominates over the Atlantic Ocean to the south of the country. This makes it warm and moist. It flows inland from the southwest to Northeast direction. While the Tropical Continental is dominant over the sahara desert. It is warm and dry and blows from Northeast to Southwest.

The changes or variation in seasonal weather condition is attributed to the two air masses. The Tropical Maritime Create wet season and is termed the southwest trade wind. While the Tropical Continental is associated with dry seasons, and is termed the Northeast trade wind, which produces harmattan. The duration and intensity of each wind over an area is a function of the interfaces between the two airmasses.

These wind systems and characteristics will guide in h the buildings. It will also aid in the effective planning of the polo Club in terms of ventilation and overall functionality. And helps

in the selection of roof trusses and roofing materials.

#### 2.3.4 Sunshine and Cloud Cover:

During the dry month (Nov - April), the annual monthly variation of sunshine follows a general trend which is over 214 hours on the state. The approach of raining season increases the trend in cloudness. The sunshine hours experiences a major decline as the raining season reaches its lowest value in the month of August.

#### 2.4 Geology and Topography:

Minna lies on a geological base of undifferentiated basement complex that it made up mainly of gneiss and magmatite. The igneous rocks are mainly grauite while the metamorphic sediments include quartzites and schists. The igneous rock (grauite) is prevalent in the North east of the town. This has limited or constrained any effective urban development in this direction. The in the season stream and rivers. This factors of geology constitutes the essential basis for the foundation design of the structure. It will also serve greatly as materials or raw materials of rendering and landscaping elements.

#### 2.5 Vegetation:

Generally, Minna lies in the savannah region of the country and as such is characterised by the sudan savannah type of vegeta-



tion. The vegetation is made up of sparsely clustered trees mingle with shrubs and intermitent grass covers. Among the trees that commonly thrives in the town are manila, Dogon Yaro, Mango trees, pines and palms, to mention but a few.

High density vegetation including some hard deciduous trees exists along some of the rivers and stream valleys.

The present vetetation of Minna has been adversely effected by bush bñrining and implanned Mass cutting of trees. The former has greatly reduces the soils substantiability and fertility, while the latter might have contributed to the lack of trees on the site apart from a few trees and shrabs.

Investigation of the site shows that it lacks vegetation. It is mainly made up of pavement. This requires selective and strategic planting of trees and flowers. They will serve both for landscaping, to shades the various planned pavements and help improves the condition of the micro climate.

## 2.6 Socio - Cultural Factor:

### 2.6.1 Socio - Political Structure and Setting.

Minna is basically a Gwari Town. These early settlers and founders lived on the range of hills that lines the Eastern and Northern sides of the present town. The Minna of today has evolved from four distinct metamorphic processes.

Firstly, In 1905 when construction work of the rail line got there and established the first set of inhabitants - the Gwaris, Nupe's and Hausa's. They were mainly involved in the railway construction processes in different camps that today constitutes some of the present ward of the town.

Secondly, in 1908, with the introduction of the Alkali (Judge) for the various camps existing in the town. This saw the beginning of the development of governmental influences such as the prison and police.

Thirdly, in 1910 when the Gwari inhabitants decided to move from the hill top to settle on the area of the present paida, One of the wards of Minna. It is today the abode of the founders of the town.

Fourthly, in 1976, when Niger State was created with Minna as the State Capital.

As these metamorphic processes persists with its consequent developments, the socio-political life style of the people of Minna undergoes a series of changes. A reflection of these changes have been very paramount on the architecture of the people.

## 2.7 Transport Network and Traffic Flow:

Niger state is well connected with transport network, which ranges from road, railway to air services, while Minna is connected

to the other part of the country by three major transport network system namely; the Railway, the international and local airports and her major road network to other major towns and cities such as Abuja, Suleja, Bida, Zungeru, Kaduna, Ilorin and Kebbi.

The transport network is so good within and connecting Minna to ensure maximum patronage of the Polo Club by people from all works of life from within and outside Nigeria.

CHAPTER THREE:3.1 DESIGN APPRAISAL - CASE STUDIES:3.1.1 Introduction:

The purpose of the research is to study the problems and general trends in Polo Clubs. Similar to the course design in appraising the workability of the proposal. These existing trends and problems will then serve as a guide in the determination of the facilities to be provided in the proposed Minna Modern Polo Club.

The problems associated with the planning and design of a Polo Club are basically two; planning and technical problems, this problems require a concise appraisal for solution. A comparatively concise appraisal demands that the problems and solution of one Polo Clubs should be fairly applicable to another within the same socio economic and Geo-climatic condition.

The solutions to the technical problems are universal. There is hardly any field of architecture and construction act-

ivities, where standards are accepted and acknowledged as compulsory on an international scale, as is the case with polo clubs. For it is exactly their internationalism, their spirit of tolerance and peace, which allow a better understanding between races, people and therefore a better co-existence. The solutions to the planning problems are fairly governed by total conditions such as traffic problems, site location of the particular environment.

In order to tackle these problems, design appraisal or case studies was taken from within and outside Nigeria. The criteria for selection of these case studies are as follows:

- a) Centres chosen as case studies are located in town of high population, with the aim of investigating how large crowd have being catered for.
- b) The most modern and more old fashion polo club will help in comparing and evolving solutions to technical problems.
- c) Within Nigeria clubs were chosen from the northern part of the country to help evolve certain climatic considerations in design especially as regard to spectators and horses comfort.

### 3.2 Case Study 1: Guards Polo Club.

- 1) Location: smiths Lawn, cumber land, U.K.

- ii) Capacity: 350 Formal guests in pitch (1) and 200 Formal guests in pitch (2).
- iii) Total Area: 5 sq km.
- iv) Facilities: Club House building, Royal Box, pony lines, stables, Groundmen yard, Car parking and accommodation.
- v) Spatial organisation linear - Clustered.
- vi) Arts and Crafts style of Architecture with elaborate surface articulation and victorian influence.

MERITS:

- i. Well landscaped with grass cover (turff) all through the club ground.
- ii) Arterial road connection between the various game pitches and the club house, stables and accommodation.
- iii) Separation of groundsman yard by zoning from the Club house.
- iv) Provision of residential accommodation for visiting players and enthusiast.
- v) Provision of toilet facilities for informal guests.
- vi. Provision of a spensor's Marquee.

DEMERITS:

- i) No proper link between clubhouse building and grandstand.
- ii) Paddock area not in the same zone as groundsman yard and stables.

### 3.3 Case Study: Kaduna Polo Club.

- i) Location: Murtala Mohammed Square, Kaduna
- ii) Capacity: 350 Formal Spectating guests.
- iii) Total Area: 2.3 sq km.
- iv) Facilities: Club house building incorporating Grandstand, Tackroom, squash court, pony lines, players gallery, catering facilities and founge.
- v) spatial organisation: Centralized clustered.
- vi) Modern but with no strong aesthetic appeal.

#### M E R I T S :

- i) The Grandstand has a strong link with the club house.
- ii) The provision of adequate socialization facilities.
- iii) The provision of squash court to angument recreation especially during the off season of polo.
- iv) The provision of adequate Car parking facilities very accessible to the club house.
- v) The provision of a practice pitch.

#### D E M E R I T S :

1. Though the grandstand has a strong link with the Club house, during the off season its redundansy is too apparent.
- ii) The functional relationship between the players gallery, task room, and pony line is poor.

- iii) In adequate provision of toilet facilities.
- iv) The absence of barrier between the standing spectating area and the play pitch.
- v) The practice pitch cannot be viewed from the grandstand/ clubhouse.

#### 3.4 Case Study 3 Zaria Polo Club:

The Zaria Polo Club was established in the same year as the one in Katsina in 1918. It is nevertheless in the same status as that of Katsina because it has not been able to attract major Polo tournament due to its inadequate facilities.

#### 3.5 Case Study 4 Club of Royal Brunei Polo Brunei 1.

The Club of Royal Brunei Polo is arguably the most exclusive Polo Club House in the world today with electronic touch button score board, Air conditioned stables and adjustable grandstand canopy and is located within the grounds of the suttains of Bruner's palace.

#### 3.6 Case Study 5: Minna Polo Club.

Minna Polo Club occupies a tight square area and contains the following facilities; old club house building, Badminton Courts and a pitch though located on a different site.



M E R I T S :

- i. Easy accessibility to site.

D E M E R I T S :

- i. No amenities for horses and trainers
- ii. Inadequate parking space
- iii. Lacks credibility of a Polo Club.
- iv. No proper landscaping
- v. No link between the Polo pitch and the Clubhouse.
- vi. Absence of toilet facilities on Polo field.
- vii. Absence of support facilities.

## CHAPTER FOUR

### THE DESIGN

#### 4.1.0 Site Analysis:

##### 4.1.1 Site Allocation:

The propose Minna Modern Polo Club is located on the piece of land to the left of the former 123 Recce Battalion "Old airport landing ground". The site is bounded in the West by Western bypass, in the South by State Secretariat and in the east by the Intermediate Low Cost Quarters.

##### 4.1.2 Area of Site:

The site covers a total of 325,087 square metre or 32.5 hectares of land.

##### 4.1.3 Site Visibility Factors:

The site is quite large considering the range of activities required within the proposed Modern Polo Club. In order to effectively accommodate all the desired activities, interaction within the Club will be achieved both horizontally and vertically.

Consequently, the buildings structures within the club will be multistorey in some cases instead of a total spread out of all functions on the ground.

The choosen site possesses certion characteristics that makes it viable for the propose Club. Among these unique features are:

1. Its central location: The site is centrally located. This is because the club is intended to serve both the people of Minna and its suburbs.
2. It falls within the central sporting area of Minna. Therefore, it will allow for a continous trend in sporting activities.
3. The site is in one piece. It is free/intarvening ways /of and lacks any waterways. Thus, there is no obstacle of any sort that may force development in separated proportions.
4. The site is of fairly regular shope with flat Terrain. This allows for advantegeous planning and reasonable economic construction.
5. Ease of pedetrian end vehicular control.
6. Avallability of services e.g electricity.

#### 4.1.4 Accessibility:

The site lies along Muazu road; which constitutes its main access, with another access off Muazu road through an existing road. This road will be well developed to serve as the service

entrance. The pedestrian access will be via Muazu road. They will be linked directly to the Grand stand by well defined pedestrian walkways, that will stretch out directly from the bus/taxi stop. This set up is to avert conflicting vehicular and pedestrian access.

#### 4.1.5 Geographical/Geological Factors:

A building site geographical factors of soil, topography and vegetation has tremendous effect and influence on the design and consequently the functionality of the structure intended for the site soil.

The type of soil on the site among other things affects:

- The buildings foundation system and type.
- The drainage system on the site, both underground and on the surface.
- The type of vegetative cover it will support.

In effect, the building on a typical soil type for its ultimate support. The structural integrity being a function of the soil type and its strength under load. Therefore, this project requires an Engineering design of the foundation. This should be such as to perfectly distribute the effective load over an area of the soil, so that, the resultant unit load on the soil is uniform and does not exceed the soil load bearing capacity, as will be determined.

#### Topography:

The relative flat topography of the site ensures no specific

effect on the play and design of the polo pitch. It also ensures no effect on the design of the building structures, in terms of the foundation, the structure, its form, its relationship to the ground plane and its orientation.

The drainage pattern both under ground and on the surface are dependent on artificially created channels designed to slope away from the buildings. They are linked up with the public drainage channels that runs along Muazu road.

The design strategy is aimed at avoiding.

- The deterioration of the soils load bearing capacity.
- The harmful effect of moisture on the buildings finishing materials especially the floor finishes.
- Possible leakage of water into the horse stable.

Consequently, all buildings on the site are elevated above the ground level from 300mm.

#### Vegetation:

Generally, it was observed at the site the lack of dense and natural vegetation, meaning the land has being tempered with. This dictates the micro climatic effect on the site. The site requires a lot of landscaping, as little or no land scaping features presently exists. The following factors were taken into consideration in the choice of plants.

- Their potential heights and spread.
- The size and depth of their root.
- The overall form, density and colour of the intended foliage.
- Their required soil, water, sunlight, air and temperature.

Based on these parameters, the following trees, plants and flowers are recommended:- Bean locust tree, dogonyaro, Malana, pine, Acacia, Hibiscus flower, pride of Barbados.

The location of these plants relative to buildings within the polo club, requires the consultant services of a landscape architect. However, precaution will be taken to avoid trees with wide spreading roots being located close to buildings, as they can disrupt the building foundation.

Grasses and other vegetative covers were utilised to among other things.

- reduces the temperature of the surrounding environment by absorbing insulation.
- enhances cooling by evaporation processes.
- aids in soil stabilization, thus preventing erosion to a large extent.

In some cases trees were used to modify the immediate environment. This is achieved by strategically locating them.

- to provide shade
- to reduce and filter wind blown dust
- to define space and direct views
- to provide visual screening and privacy.
- to reduce air borne sound.
- to serve as wind brakes.

#### 4.1.6 Site Climatic Factors:

The site climatic factors are the same as that of Minna discussed earlier in 2.3. As stated, the climatic factors of sun, precipitation, wind, and temperature have tremendous influence on the buildings form and orientation, its construction processes and techniques and the choice of materials.

##### Sun:

The location of Minna as discussed in 2.1 allows the sun to pass directly overhead. Its effect on the northern and southern facade of the buildings is therefore almost the same. The adverse effect of the sun is limited greatly by the use of large overhangs along the north and south facades respectively. The buildings on site are oriented and given forms such that their thermal, hygienic and psychological benefit is fully utilized.

##### Precipitation:

The stormy characteristics of precipitation as stated earlier, is critically considered in the choice of roof truss members, roofing

sheets and finishing materials used in the polo club building structure.

Considering its rigidity, concrete deck roof would have constitute the best and most effective roof cover for the Guest House, Club House and/Multipurpose Hall. However it is ruled out for the following reasons:

- It requires a lot of drainage technique
- Maintenance will be a problem where it is not constructed properly.
- the thermal property of concrete allows it to gain heat, which it radiates slowly later.
- It posses limited construction technique considering the present level of building technology in Minna in particular and Nigeria at large.

Long span industrial aluminium roofing sheet on steel and timber trusse constitutes a better alternative. This is in two different categories. The steet slope roofs, with slope greater than or equal to ten degree ( $10^{\circ}$ ). This can ensure fast runoff and shades rain off the building to a large extent. But, when considering the total height of the highest building on site about fourteen metre (14m), it is not very suitable. This is because it can be easily adversely affected by stormy condition. In addition,



it will not give the club an attractive or beautiful look.

The gentle slope type has slope of less than ten degrees ( $10^{\circ}$ ). It has relatively easy run off but more prone to stormy effect than the former. This effect can be taken care of by incorporating parapet wall to shade it from the storm. It will at the same time enhance the aesthetics of the club. Thus, a gentle slope roof, screened with parapet wall is adopted for the buildings on site. Because of the span steel trusses were used in some cases.

#### Windi:-

The effects of the prevailing winds as discussed earlier, were fully considered in the organisation of the site and design of the club.

Natural ventilation in a building is being generated by differences in air pressure and temperature. The air flow pattern is being affected more by the building geometry other than by its speed. The building design on site therefore indicate low level air flow inlets and high level outlet windows to direct the airflow in some part of the club house.

#### Temperature:-

All the above discussed climatic factors (sun, precipitation, wind) affects the air and thermal comfort of the polo club environment.

Bodies of water tends to moderate temperature variations and temper the immediate environment during the dry weather. For this reason, provision is made within the club House and Guest House for a water body fountain. This has a set back. It can serve for breeding by mosquitos. However, this can be taken care of by effective maintenance culture. A fountain like this is necessary not just for its evaporative cooling effect but also for its psychological effect.

#### 4.1.7 Site Sensory Factors:

Views:- The club House of the polo club being a collection point for the affluent requires cast identification. This is achieved by means of the following design strategies.

- giving it an imposing nature, that will allow for easy identification.
- orienting it to directly face the main access road (Muazu road).
- Avoiding broad trees at the front of the club House.

#### Sound:-

The site for this proposed club is directly adjacent one of the least busy road in the town. All the same, it will be prone to noise from vehicles along the road. This demerit is taken care of by locating the buildings on site some few metres into the site from the road. This transit distance will reduce the noise effect

to a great extent.

Trees will be planted strategically to aid reduce airborne noise. For the same reason the plant house was located away from the main building.

#### 4.1.8 Building Orientation on Site:

The orientation of a building is the relationship of the building to its immediate surrounding. After a concrete analysis of the site and its associated geographical and climatic factors, the buildings were suitably oriented within the site relative to the sun and prevailing winds. They are well positioned to take advantage of their immediate surrounding environment, namely; access roads, good views, trees, grass and lawn, and flowers. Figure of the site plan shows this relationship.

The buildings location, orientation and form is aimed to take advantage of the sun's thermal, and psychological effects.

#### 4.2.0 The Design Concept:

##### 4.2.1 Introduction.

The oxford Advanced Learners Dictionary of current English defines concept as idea underlying a class of things; general notion". Concepts in architecture are ideas that integrates various elements of a design into a whole. Such elements could be ideas,

notions, thoughts, observations and belief, to mention but a few.

The proposed Minna Modern Polo Club is a design aimed at meeting the taste of time of Modern Polo Club. Thus, it is required to fulfil both local, national and international purposes. The ideas underlying the entire design of the Club is conceived from two different perspectives, namely;

- psite by out
- elevation form

#### 4.2.2 The Site Layout Concept

Since the proposed Minna Modern Polo Club is required to fulfil the stated aims and objective, the functionality of the club becomes a prime factor in the design. Consequently, the site layout was conceived based on its functional requirements. This concept is therefore termed DEAL or GANIC CELL. This is because a polo club intergrate and co-ordinate the effort of many disciplines. There is which entails maintaining a balance of unity and diversity of integration and differentiation in a design just like an organic cell. The fact that this concept strives of perfect situation in terms of traffic flow, byilding orientation location of services and parking lots, has guided the choice of an organic which grow in all direction allowing for maximum functions tity and aesthetic flexibility in response to the club needs.

The conceived layout is reflected in the site plan Fig.

#### 4.2.3 Elevation form Concept:

The elevation concept which is analogic, is the hybridization of neo-classical and contemporary architecture to get an analogic hybrid. The combination of both reflects the age and origin of polo in a modern society.

#### 4.3.0 Functional Analysis and Site Planning:

##### 4.3.1 Design Criteria:

The primary goal in planning and design of the Minna Modern Polo Club is to create a Club with conducive environment which will satisfy the fundamental requirement of the facilities provided and be of special architectural significance.

##### 4.3.2 Functional Relation of the Site:

###### - External Circulation and Access:

A look at the site plan (Drawing) shows that the proposed Minna Modern Polo Club is bounded on the West by a dual carriage arterial road on the south and east by dual carriage collector roads. Access into the site are from the dual carriage collector roads which of the three carry the least traffic. This is to cater for the problem of traffic congestion that may otherwise arise.

###### - Internal Circulation within the Site

The access ways and exist into the site are basically three

for vehicular and pedestrian traffic, with clear distinction between them to avoid traffic problems.

The western access serve as the main access and exit into the site with the main spectators and V.I.P/Club members car parking to the left of it to achieve this.

The Northern access and exist which is expected to cater for majority of the spectator with one leading to the popular stand. This also serve as a service route to the club. The other access is to help decongest traffic at the main entrance.

#### 4.3.3 Orientation:

Axes of play field/pitch is oriented north - south. This is to ensure that the players are not facing the sun which moves in the east - west direction. This orientation also puts the sun behind most of the spectators and enhance comfortable viewing. As most polo tournaments played in Nigeria are usually in the evenings, the popular stand is located on the eastern end of the site.

#### 4.3.4 Carparks:

A provision for parking space for 400 cars has being made at different c location within the Polo Club. The Northern Car parks is to serve the spectators, V.I.P and Club members.

They are separated to avoid conflict of parking.

#### 4.3.5 Landscape:

Landscape development of the site is expected to match that of the city by planting of hedges, flowers, and trees. The landscape concept to be evolved is to envisage the following objective.

- High recreational value
- provide congenial micro - climate
- functionalism
- Durability
- Low Maintenance Costs
- High Sanitational level
- Aesthetics.

#### 4.3.6 Circulation Within the Polo Club:

The polo club is composed of several units (fig. ). Each unit is self contained but share some facilities with each other.

**4.4.0 Space Requirement:**

This shows the interior space required for the various facilities and functions provided.

**i) Club House:**

S/No	Functions	Types of Space	No	Area M <sup>2</sup>	Total M <sup>2</sup>
a)	Lounge	Interior space for sitting, relaxation and reception.	1	280	280
b)	Resturant	Interior space for dinning	1	60	60
c)	Private dining	Interior space for dining	1	42	42
d)	Bar	Interior space to take	1	34	34
e)	Banqueting Hall	Interior space for functions kitchenette	1	72	72
f)	Kitchen	Interior space with store and servery	1	48	48
g)	Shops	Interior space for selling	3	10	30
h)	Cloak room	Interior space for keeping valuables	1	14	14
i)	Library	Interior space for reading	1	25.90	25.90
j)	Meseum	Interior space for keeping troplines and artifices.	1	18.24	18.24
k)	Changing room	Interior space with toilet, shower and lockers.	1	38.4	38.4



S/No	Functions	Types of Space	No	Area M <sup>2</sup>	Total M <sup>2</sup>
l)	Souna	Interior space for male sauna	1	27.84	27.84
m)	Indoor	Interior space for table tennis and darting	1	30.24	30.24
n)	Gynemasium	Interior space for exercising and keeping fit	1	64.8	64.8
o)	First Aid	Interior space for treatment and store	1	23.2	23.2
p)	Indoor Games	Interior space for smoker and Billard	1	31.2	31.2
q)	Changing room	Interior space for two wc, shower and lockers	1	24	24
r)	Indoor games	Interior space for computer games, video games etc.	1	15.2	15.2
s)	Sauna	Interior space for female sauna facilities	1	15.2	15.2
t)	Store	Interior space for storage	1	16	16
u)	Office	Interior space for offices	8	20	160
v)	Stand	Space for VIP/State box stand.	1	240	240
(2)	S T A B L E S				
	Stables	loose box	40	16	640
	Tack room	Tack room	2	24	48
	Utility box	Utility box	7	16	112

S/No.	Functions	Types of Space	No	Area M <sup>2</sup>	Total M <sup>2</sup>
		sick box	2	16	32
		feed store	1	30	30
		cleaning room	2	16	32
		Hayand straw store	1	270	270
		Common room	1	17.6	17.6
		Kitchenette	1	8	8
		Office	1	16	16
		Toilets	2	3.24	6.48
(3)		MULTIPURPOSE HALL			
		Hall for functions and stage.	1	320	320
		Changing room with WC and Lockers	2	10.64	15.68
		Kitchen with store and suvery	1	26.32	26.32
		Office spaces for admin.	2	7.84	15.68
		Reception with Lobby and stair case	1	45.6	45.6
		Interior space for shops	4	3.24	12.96
		Toilet with WC, wash hand basine and urinary	2	14.44	28.88

S/No. Functions	Types of Space	No	Area M <sup>2</sup>	Total M <sup>2</sup>
(4)	GUESTS HOUSE			
	Lounge for easy seating, relaxation and booking	1	299	299
	Interior space for offices	11	11.2	123.2
	Interior space for drinking and relaxation bar.			
Outdoor		1	33	33
Indoor				
	Interior space for shopping	3	8	24
	Interior space for banqueting	1	54	54
	Kitchen with store, servery and chief office	1	120	120
	Interior space for a restaurant	1	158.4	158.4
	Interior space for laundry	1	36	36
	Interior space for maintenance	1	24	24
	Store	1	24	24
	Stair cases spaces	3	13.1	39.3
	Toilets	8	3.8	30.4
	Changing room with locker facilities	2	3.8	30.4

S/No.	Functions	Types of Space	No	Area M <sup>2</sup>	Total M <sup>2</sup>
(5)		<b>S T A N D S :</b>			
		Rooms for guest accommodation	36	36	1296
		Pent House with space for one two bedroom flat and one three bedroom flat	1	426	426
(5)		<b>S T A N D S :</b>			
	Stands	Grand stand popular stand	1	960	960
		Popular stand	1	1920	1920
		Disable stand	1	100	100

CHAPTER FIVE5.0 MATERIALS, CONSTRUCTION AND SERVICES5.1 Materials:

The main important factor here is economy, weather resistance, durability, maintenance handling and the use of locally sourced building materials. The basic materials used in construction include granite, cement sand screed, block walls with reinforced concrete for column, beams and floor slabs. Glass curtain wallings serve as infilling panels in addition to block walls. Concrete is also used for the cantilvered parapet.

The roof materials are of steel and Timber trusses with purpose made long span industrial aluminium roofing sheets, poly carbonite glass was also used for roof lighting as a means of introducing leaving architecture into the building.

### 5.1.1 Internal Finishes:

A coat of cement plaster is used to render the internal surfaces of concrete and block walls. This is done in the ratio of 1 - part of cement, 3 - parts of clean sand, and  $\frac{1}{4}$  - part of lime to produce a mix that is very plastic which dries out to form a hard smooth surface. These surfaces are then finally finished with three (3) coats of paint.

Floors are generally terrazzo and Granite finishes for the offices, lounges, rooms, stores and equipment rooms. The games room in P.V.C. floor tiles finishes, while the kitchen first aid room, and toilet floors are finished with ventrified floor tiles. Horse stable should be finished on saw dust.

Internal wall surface finishes for kitchen, toilets and first aid room are to be finished with white glazed tiles.

The seating ties are to be finished with concrete and upholstery leather, plastic and graiolithic materials.

### 5.1.2 External Rendering:

The concrete and block wall will be rendered smooth by the application of coats of plaster. The final finish is done in three (3) coats of texcote or Iyrolean finishes: This is a machine applied finish, the texture of which will be determined appropriately.

Parking lots are finish in asphalt with precast concrete element as curbs and slab 6 for landscaping.

### 5.1.3 Miscellaneous:

Doors and windows are of anodised aluminium frames. Asbestos fibre sheets are recommended as infilling materials for the expansion joints because of their fire resistance property.

### 5.2.0 Construction:

Strip foundation type is recommended for construction due to the relatively good soil bearing capacity of Minna. This shall however be subject to the engineers details or specification. The block walls with reinforced concrete column and beams for walls. The seating tiers are to be constructed of reinforced concrete supported by concrete columns. The entire roof is of long span industrial aluminium roofing sheet apart from the lifts and stair shafts that are cap with concrete decked roofs. Frame construction technique is suggested for the Grand stands.

### 5.3.0 Services:

The site for the project is yet to be fully developed, though the surrounding environment is highly developed. This means some of the services are to be tapped directly to the site from the neighbouring surrounding. The following services are expected to be provided to cater for the necessary services required.

#### 5.3.1 Plumbing:

Water supply shall be via the water feeder serving the neighbouring sites. An alternative means of water storage system is to

be provided. Roof top storage tanks will be provided on top of concrete roof deck of the stair shafts.

Sewages from the toilet and kitchen and other area shall be properly disposed into the septic tank and sockways pit provided on site to link the mains a long muazu road as well as will be deemed necessary by the engineer.

#### 5.3.2 Solid Waste Disposal:

The main solid waste produced here are pieces of papers, drink can and other solid waste materials. The disposal shall conform with the sanitary requirement on site, and Minna waste disposal policy. Metal containers are to be provided at strategic location on site.

#### 5.3.3 Fires:

Chemical fire extinguishers are to be provided at strategic point within the buildings for immediate use. Adequate protected and fire exits stair access directly to the outside is provided, it is envisaged that automatic sprinkler systems be provided at all the building structures on the site. Fire resistant materials should be employed to give added protection to the horses. Also fire retarding paints and sprays may be used.

#### 5.3.4 Drainage:

Drainage channels shall be constructed on site at appropriate location, to be linked up to the main drain along Muazu road.



Emphasis shall be placed on the drainage of the stables to ensure a healthy living condition for the horses.


#### 5.3.5 Electricity:

The electricity to be provided on site, would be tapped from the National Electric Power Authority (N.E.P.A) plc, main supply line, that passes very close to the site. This shall be via the rear or side to avoid interference with the front view. A part from the N.E.P.A. supplied electricity, a standby generator plant is recommended to be provided on site in case of N.E.P.A power failure.

#### 5.3.6 Acoustics:

Acoustic materials to be used in each of the buildings in the club is to be in accordance with the functional requirement. The club house and the Grand stands are located away from the major transit road, from other public convenience to avoid extraneous noise. As this will hamper audibility within the Grand stand.

#### 5.3.7 Lighting and Ventilation:

All the buildings on site are naturally lit and ventilated  mechanical source which will be greatly employed. This however, in addition to reduction in energy consumption will assist in the smooth running of the club. Natural lighting will give reasonable facial modelling and accurate colour

rendering. To reduce glare, walls and furnitures are made of highly reflective light colours.

#### 5.3.8 Security:

Security posts are to be located at three main entrances to the polo club and at strategic points within the club premises. It is envisage that security official would be provided with modern communication gadget to monitor activities within the Club premises.

#### 5.3.9 Score Board and Timing System

Modern electronic score board timing system is proposed for the polo pitch where competitive activity would take place.

#### 5.4.0 Landscaping:

Landscaping is an important element of any ideal environment. A beautiful environment is capable of arousing one's interest and intellects and can enhance higher performance and a more relax atmosphere. This important factor has being totally neglected in all the polo clubs visited.

My design is therefore to integrate landscaping as an integral part of sports (Polo). This is done by the provision of out door recreation facilities for relaxation on the site. Cognisance is therefore taken of the need to create a situation where the building takes maximum advantage of landscape on site to maintain a conáusive micro climate.

As earlier said proper landscaping is important in any Polo Club, the pitch should always remain green and properly maintained to avoid accident to horses and its rioler. Such accident are capable of rendering the horse useless depending on the level.

## CHAPTER SIX

### 6.0 AESTHETIC AND GENERAL APPRAISAL.

#### 6.1.0 Aesthetics:

In architecture, while aesthetics is the inspired objective, functionality constitutes the functional objective of any given project. Thus, architecture unlike any other art is simultaneously functional and aesthetic. Separating these two parameters usually leads nowhere. Architecture thus requires form, function and structure making one continuous and mutually inclusive pattern.

To achieve great architecture, the desire has been that of reconciling the humanistic and Technological requirements that are essential to the fulfilment of architectural demands of today. This is accomplished and balance by blending of the two factors in their organic unionism. Thus the Minna 'Modern' Polo Club constitutes a curious design in some ways:

- reflecting the desire to identify the structure its functions and abode, and at the same time endeavouring to achieve an architectural edifice.

The well design pillar to post rectangular columns bear some part/entire of the aspructures in the design. It runs pass the horizontal floor slab at right angles. Both structures bears the entire activities within the buildings.

The column further accomplishes the psychological impression of stability within the buildings.

Some of the structures; club house and Guest house allow ample spaces or room for internal display within the lounge and enough balconies, porches and lounges for relaxation. These are both social and formalist consideration.

The vertical and horizontal glass glazing elements were philosophically inculcated to reflect the latest trend in Club buildings. This element so adopted for the club buildings are of present trend and the technology is far reaching in the society.

In summary, the adopted approach at accomplishing the aesthetics of the polo club is by balancing the humanistic considerations - political, phitosophical, social, psychological and formalist causes with the economic, technical and materials - the technological aspects of the work.

Both sets of requirements were strived at, thus allowing the architecture to emerge, function and to be accomplished aesthetically.

In addition to those set of requirements, attempt were made aesthically to create a great architecture by the introduction of a large approach to the club house by the use of landscaping elements.

Symmetrical forms and element of the different structures on site has also added colour to the general aesthetic of the site. Architectural elements such as the metamorphosed derrick classical order with a combination of modern order give the buildings some elements of monumental configuration worthy of an architectural edifice of this statue.

#### 6.20 0 General Appraisal

The Minna 'Modern' Polo Club which consist of several building with the tallest, the Guest House with a height of 15.0 metres constitutes an architectural edifice enriching the communal realm of Minna.

Vertical circulation within the highrise buildings is ensured by main stairs that runs through the entire floors of each building. Lifts were also provided in some cases to run through the floors. Ancillary service stair; escape stairs that link the floors of the building are also essential. In case of the Grand stand vertical movement is through the isles and/vertical stairs.

Horizontally, circulation within the building stems from the vertical circulation systems by means of corridors and passages. Structurally the buildings are of reinforced concrete frame and insitution structures. The roofs are built of long span industrial aliminium roofing sheets on timber and/steel members.

Externally, the facade treatment is a product of modern technology with low maintainance cost. As a centre for sports (polo) and was adorn with some element of monumental configuration to symbolize it function. A pleasing environment that welcomes spectaters and léisure seekers into the club was created by the introduction of landscaping elements. And just like an organic cell, keeping a part together with different parts working to achieve this is what this project strive to achieve.

#### 6.3.0 Conclusion:

Polo is an essential part of hthe society. As important social phenomena, it reflects the achievement of physical fitness and the development of physical prowess of man. Polo has therefore become an institute that creates recreation for others.

Minna inhabitant have historically had a slight philosophical difficulty in enjoying leisure time. This steams from necessity and partially from solial photosophy, which generally affect attitude towards leisure and also the absence of modern sporting facilities (polo).

Stowly, the idea of leisure as idleness is dying out. Now people chose to enjoy leisure. Leisure has become a reward. This proposal of modern polo club on completion will be a place where minds are sensitized through recreational experiences in natural setting apart from the primary role it plays in the training of polo sports men.



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