FANTASYLAND LEISURE RESORT, ILORIN
(an architectural innovation in recreation and education)

by

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D E C L A R A T I O N

I, Bolakale Abubakar BELGORE of the Department of Architecture, Faculty of Environmental Design, Ahmadu Bello University, Zaria, Nigeria, solemnly declare that this thesis has been my undertaking and a personal effort in pursuit of knowledge (architecture or otherwise).

I also declare that all relevant information in form of quotations, modified sentences are acknowledged.

D E D I C A T I O N

In dedicating a thesis, book, monument, arcades, buildings of any form, one has to really struggle within oneself to justify such a dedication.

Dedication can be an acknowledgement of an individual, group of individual, sanctity, etc., to the development of a certain (noble?) objective one believes in. One has to really take cognisance of the attributes of two major classes of groups qualified - the dead and the living. The latter stands a great disadvantage of being reduced from the high citadel while still alive. The attributes or ideals for which one feels qualify him for a dedication might be missing or greatly of less significance afterwards.

On the other hand, a dead man would have completed his assignment (if it's true that all inhabitants of this planet are here for specific purposes) and therefore, stand a good chance of being accessed in relation to his deeds while living. Such an evaluation would be more logical, sound and impervious.

It is in this light that I have decided to dedicate this thesis jointly to great men of yesteryears who have dedicated their lives to humanity for the purpose of making this world a better place to live in. These men ranked among the greatest that ever lived since the homosapiens first appeared on this planet called earth about twenty million years ago (20,000,000)

Though, almost all of them are not architects in the sense of designing houses and the likes, they are architects in the greater sense of the word. They shaped the future and direction of mankind.

You are indeed among the greatest!

Some of these men are: Vitruvius, who lived a century before Christ. His architectural principles still stand the test of time.

Another great architect was Alberti whose philosophies are of immense contribution to architecture. You were both pioneers!

Among these noblest of all men were Scientists Nicolaus Copernicus whose theory on the revolution of the heavenly bodies served as the gateway for the later works of Giordano Bruno, Galileo Galileo (both were punished by the Church for their pronouncements of heavenly bodies which contradicted the scriptures hence charged of heresy) culminating in Yohannes Kepler's three laws of Planetary Motion. Thanks to these quartet mankind can now travel to space. Your spirits live on in pursuit of knowledge.

Among them was also the Dutch man, Christian Huygens who invented the pendilum clock. Without him space, time and activity would have taken another dimension. We shall forever remember you.

Mention must also be made of two eminent Scientists who lived several hundreds of years apart - Sir Isaac Newton who was an astronomer, Mathematician and one of the greatest Scientists of all times. His three Laws of motion have gone a long way in improving the laws of mankind.

The other was the nineteenth century Physicist - Albert Einstein whose Theory of Relativity was the greatest work since Newton. Marvellous!

One must not forget Charles Darwin who propagated the 'Pandora Box' of the development of the atom from the 'big bang' to the eventual development of the homosapiens.

Karl Marx, the nineteenth century Propagandist must also be mentioned. He dedicated his life to the upliftment of the down trodden. We salute you!

I remember two of the greatest Mathematicians - Pythagoras and Calcutus. Your mathematical ingenuity shall live forever.

Definitely, the list will be incomplete without the name of the greatest all-round genuis that ever lived his earlier works influenced people like Newton among others.

This man was an architect, artist, astronomer, pioneer of Aviation, Anatomist (first man to disect a human being) Philosopher, Scientist. His name was LEONARDO DA VINCI. Perhaps the first real modern man and the greatest that ever lived.

GLORY BE TO THY NAMES!

A C K N O W L E D G E M E N T S

In writing such voluminous thesis as this, one might have scanned through several magazines, journals and read so many books. At times, if necessary, one would have contacted experts or professionals in fields or disciplines relevant to the thesis. In doing so, one would have extracted relevant informations, reflect on one, agree or disagree with many with the sole objective of conceptualising the thought and therefore serve as the basis for taking certain decisions.

No doubt, thesis has undergone these stages of development It would therefore, be improper not to acknowledge the various contribution towards the realisation of this thesis.

First and foremost, I wish to express my gratitude and appreciation to the various forces both human and material that have contributed in shaping my life right from infancy till now. As a Chinese Philosophy says: "the journey of a thousand miles begin with the first step", so also was the thesis. These forces, no doubt, have tremendous impact on my personality and affects almost all my thought, actions and reactions to life with the best possible eye of objective reality.

Before I finally decided to design a Fantasyland several conceptions have been considered. Fortunately or otherwise they did not quite strike the bull-eye hence did not materialise. No doubt, several individuals might one time or the other have

discussed this issue with me. Some strengthened my solved, some were less bothered while others betrayed the expected response. To all I am grateful for whatever position they represented.

Several people have also contributed to the making of this thesis either through their professional advices, kind or cash.

Special thanks to several colleagues with whom I have shared the years in the department. Some were sources of inspiration to me and they serve in no small a way to gear me forward and boasted my morale. Some were of tremendous help in providing the conducive environment for a healthy architectural environment for discussion, agreement and disagreement, competition when necessary in pursuit of greater intellectual symphony.

Just like I was (and still am) a fan of individuals so also have I got my disciples. Special thanks to them all-both real and imaginary. I know you have all contributed in the making of this thesis.

Mention must also be made of the entire Belgore family. Your tremendous moral and financial support is acknowledged. There couldn't have been a better one. I'm happy I belong to you!

A B S T R A C T

The Fantasyland is not an amusement park with its random collection of distractions which offer cheap thrills to the clientele, comprising mainly adolescents.

In an amusement park, there can really be no all year round profitable business for the patrons or the proprietors as most visitors appear during public holidays or mostly at school vacations.

Presently, leisure resorts restricts themselves to just a theme and therefore, suffer for its inadequacies. The effect is that such a place cannot offer the best for its clientele and is not family oriented. The juveniles are the only beneficiary. Lack of varieties further deplore the situation. The sheer pace of progress and environmental influences and financial independence have further contributed to a situation whereby each individual exhibits his genotypic and phenotypic characteristics even though they may be product of the same source.

A multi-theme leisure resort that provides the right blend and varieties of offers will not only benefit the proprietors but also the clientele. In such a situation, the family is well catered for and they may democratically agree to go on resort without fear of one imposing an activity on the other. Since

varieties will be provided there won't be room for dissatisfied or disgruntled members.

Conducive avenue will also be available for school parties, picnics, excursions, exhibitions, tourists, clubs, educational provisions and others.

In essence, Fantasyland will be an exciting place in one setting, providing pleasure for local and outside visitors alike, disseminating information and stimulating thought in the slipstream of enjoyment. The public will be able to participate on a grandscale.

Presently, the trend of leisure have been passive. Majority 01 people spend their leisure time watching others, Pantasyland is a multi-functional resort with emphasis on participation,

for everyone, there will be something wonderful in his world.

FANTASYLAND DEFINED

WHAT IS IT?

Fantasyland is a place where there is room and reason for existence, entertainment and education. It is a unique set in a beautifully landscaped environment that blends with nature, taking into account the micro and macro-climate. It is a centre where the widest variety of attractions can be housed, each based on a particular theme such as the technology of the day taking cognisance of social and environmental matters. Themes that not only look at our prospects for the futute but also our cultural heritage, folklore and fairytales. Really, it is an ambitions project.

WHERE IS IT

Fantasyland is being developed on the South-western part of Ilorin along the Bank of Asa Dam taking into consideration the environmental and character of the area. An ideal location in many respects, especially when it comes to accessibility.

Asa Dam is situated a few kilometres outside Ilorin and have accesses through the Airport/Adewole Road, the proposed expressway and the New Yidi Road. So, from many directions Fantasyland will be very easy to reach.

WHO IS IT FOR?

Fantasyland is a family affair aimed at different families bearing in mind the variation in taste, demands, and expectations.

It is made up of a broad mix of ingredients designed to meet the requirements of different people with differing up bringing, backgrounds, peer groups, etc.

Fantasyland should not be confused with sea-side style or random facilities which offer transient thrills to fun seekers. At the sametime it should not be compared to museum or a formal education centre despite its commitment to it.

It will draw its audience from kids, school pupils workers, intellectuals and the elites.

WHY IS IT?

There is a revolution taking place around us. Increasingly the need to release tansion after exhaustive hours of work is not just a possibility. It is a necessity. The need to exercise the bones, relax and muscles, forget the sorrows and free the entire system is paramount. It is definitely a necessary prerequisite for greater intellectual and mental work.

The traditional forms of recreation are still being enjoyed but they will not be enough to fill the sheer abundance of leisure time. Clearly, something constructive, better and need be done. Active relaxation is required through participation in specially designed activities that will increase awareness, develop the body and develop a sense of community and unity and friendliness. These in its entirety is the aim of Fantasyland.

HOW WILL IT GROW?

From the conception stage to execution, only the leading specialists in various fields related would be selected. This is a necessary prerequisite of guaranteeing of the highest standards and will set the pattern for the futures.

It is a project that will attract private investors and dreamers. Fantasyland is a continuing store and the opportunities are just as exciting as the uniqueness of the concept in providing the creating a conducive atmosphere for a fantastic dream to metamorphosise into practical reality.

Afterall, the Utopia of today are the realities of tomorrow and the realities of today were the Utopia of yesteryears!

TABLE OF CONTENTS

		Page
	Declaration	ii
	Dedication	iii
	Acknowledgement	vi
	Abstract	viii
	Table of Contents	xiii
CHAPTER ONE		
	THE PROJECT DEFINITION	
1.1	Project Location	2
1.2	The Concept	2
1.3	Scope	3
1.4	Users	4
1.5	Goals and Objectives	4
1.6	Sponsorship	6
1.7	Why Fantasyland	8
1.8	Philosophy of Design	10
CHAPTER TWO		
2.1	Definition	13
2.2	Leisure	16
2.3	Types of Leisure	17
2.4	Leisure and Work	20
2.5	People and Leisure	21

Page

CHAPTER THREE

LEISURE: PAST, PRESENT AND FUTURE

3.1 Background 22

3.2 The Historical Perspective 22

3.3 Leisure: Its Importance 31

3.4 Recreational Facilities 32

3.5 Leisure: The Contemporary Trend 38

3.6 Future Trends in Leisure and Recreation 45

CHAPTER FOUR

DESIGN STUDY

4.1 Introduction 52

4.2 Environmental Prototype Community of Tomorrow .. 53

4.3 Holiday Development, Pulchedu, Sardina 59

CHAPTER FIVE

DESIGN PRINCIPLES

5.1 Total Planning Concept 63

5.2 Building Design Concept 63

5.3 Traditional Concept 64

5.4 Concept Evolution 64

5.5 Configuration of Paths 67

5.6 The Building Approach 69

5.7 Structural Systems 71

5.8 Geometrical Synthesis 73

Page

CHAPTER SIX

DESIGN INFORMATION

6.1 The Dream 77

6.2 Facilities 78

6.3 Zones 78

CHAPTER SEVEN

DESIGN ANALYSIS

7.1 General 86

7.2 Thermal Control 86

7.3 Wind Control 88

7.4 Zones 88

7.5 Aquarium - "The Living Sea" 89

7.6 Types of Aquaria 90

7.7 Contents of the Aquaria 95

7.8 Diseases 99

7.9 General Information 104

7.10 Rendering 105

CHAPTER EIGHT

PROJECT ANALYSIS

8.1 Project Location 109

8.2 The Site: Asa Reservoir Nature Reserve 125

8.3 Site Structure 128

8.4 Site Analysis 131

Page

CHAPTER NINE

FANTASYLAND DESIGN

9.1 Fantasyland Aquarium 145

9.2 Disco Restaurant 150

9.3 Educational Core 155

9.4 Schematic Layout of Leisure Complex 167

9.5 Site Plan 182

CHAPTER ONE

THE PROJECT DEFINITION

1.1 PROJECT LOCATION (Asa Dam Nature Reserve, Ilorin)

1.2 THE CONCEPT

1.3 S C O P E

1.4 U S E R S

1.5 GOALS AND OBJECTIVES

1.6 SPONSORSHIP

1.7 WHY FANTASYLAND

1.8 PHILOSOPHY OF DESIGN

THE PROJECT DEFINITION

Changing styles in activities of different epoch require a corresponding adaptation in the basic requirements of people generally. The days of extreme hard work without corresponding revatilisation of lost energy and exercise of muscles is gone. It is now the time of conceptual analysis of all human requirements with a view to harmonising them together. The days of providing a room or two for drinking purposes as leisure place is no more acceptable. It is now scientific age and we must keep pace with it. Fantasyland will be one of the places where leisure time could be effectively utilised.

An increase in population and industrialisation leading to mobility of labour and the consequent urban drive leads to increased demand for complex and more elaborate leisure complex. All hands are on deck in this pursuit. Government on its own part is doing the little it could given the economic means at its disposal. Various institutions within Ilorin Metropolis is not left behind. Staff Clubs are a common phenomenon. Unfortunately, these provisions are quite inadequate hence the need for Fantasyland. It aims to fill the gap created by the existing facilities and make up for its inadequacies. Fantasyland will also serve as a spur for greater innovations in leisure and recreation and could also serve as a means of generating fund in terms of tourism and promotion of our cultural heritage.

1.1 PROJECT LOCATION (Asa Dam Nature Reserve, Ilorin)

Originally, two sites were allocated for recreational purposes in the Master Plan. These are Asa Dam Nature Reserve and the Amusement Park. For reasons stated later on, the former was chose.

The site is located along the banks of Asa Dam. Originally the Dam was set up to cater for the water needs of Ilorin Metropolis. The Dam will be incorporated in the design. It will serve to create a micro-climate for the site, create visual attraction as well as herbouring some squa-activities. The site on itself is an architectural landmark in terms of potentials and location.

1.2 THE CONCEPT

The project is aimed at designing a recreational complex that will cater effectively for users and meet their requirements taking cognisance of present trends in leisure and recreation with a view to providing a unique setting in beautiful environment devoid of the hazards of urban life.

It will be an avenue for people of different approaches, races to come together and enjoy the facilities either in conjunction with one another or separately with participation as the keyword. Such facilities are being conceived as events

in themselves rather than mere house for such events. The essence is therefore, a total concept which anticipate the demand and meeting all the recreational needs within the acceptable parameters in accordance with the location, size, need and the character of the complex. Certain other factors as convenience, attraction, functionality and accessibility are essential ingredients in the provision of these facilities and the general planning concept.

1.3 S C O P E

On the macro-scopic level, Fantasyland will ensure the provision of essential facilities required of such a project. It will follow the general trends in leisure and recreation and provide the services necessary for effective utilization of the complex. Various recreational needs in terms of indoor and outdoor, active and passive, singular or multiple user facilities, day-time and night-time, land and water, etc., would be provided. In other words it wouod be a dialectical environment harmonized together in a conducive setting.

The micro-scale will consists of the various zones each serving a particular purpose as a part of the related whole.

1.4 U S E R S

Fantasyland is an idea imed at different people as it is a broadmix of ingredients designated to appeal to people of different peer groups, backgrounds, upbringings, tastes and interests. Presently, leisure resorts restricts themselves to just one theme and suffer for it. The net effect is that family group don't enjoy leisure to the fullest.

In Fantasyland, it is aimed at families will be able to all enjoy different or same activities together so that in the end everybody is catered for. It is also aimed at promoting inter and intra family relationships.

Rapid changes in development is responsible for so much disparity between one generation and another. Fantasyland is well aware of this deficiency and intends to make up for the inadequacies by providing for all the members of a family so that they can democratically enjoy the complex by providing a variety of attractions and interests to appeal and satisfy the recreational requirements of different age groups of similar or different backgrounds and interests.

1.5 GOALS AND OBJECTIVES

1. To explore the natural potentialities of the site with a view to providing a leisure complex of immense standard.

2. To effectively design a complex of high architectural standard in terms of organisational structure, space and form; form and function exploring the various materials and structures at the disposal of the architect.

3. To provide modern leisure complex befitting the status of Ilorin.

4. To provide in an urban setting a beautiful environment in which people can really enjoy the life they cannot obtain in the typical urban hub.

5. To bring people closer to nature by exploring and understanding it in a well organised set up.

6. Wherever possible, the traditional forms can be incorporated into the design with a view to promoting the cultural heritage.

7. The project is aimed to intimate the people with the operation of the solar system in this age of space exploration and also explore the past, present and future of contributions of different individuals, epochs, animate and inanimate objects to the entire universe.

8. To educate the populace about certain fundamental occurences governing or affecting the entire inhabitants of this planet.

1.6 SPONSORSHIP

As earlier reiterated, this project is the dream of the architect. It is a product of thought as produced in the drawings.

The project will be financed by the architect, interested private investors and any other body considered desirable. It is very much hoped that Fantasyland will get enough sponsorship and promotion for its realisation.

The general trend is that such a project will be financed by the government. The believe of many people is that such a project does not bring enough return quickly to justify the huge investment. We have seen precedents where an individual sponsored the design of a whole environment. Watt Disney did it in America, Britain and Japan. Fantasyland will be the realisation of the architects ambition of such a related venture. It will definitely take some time to materialise, nevertheless, I am undaunted.

At the moment we are inclined to believe, because things have been done a certain way, that, that is the best

way to do them. Following old grooves of thought is one method of playing safe. But it deprives one of initiative, creativity, procreation of the human mind and takes too long. It sacrifices the value of the element of surprise. At times the only thing to do is to be progressive, revolutionary and break loose. It takes vision and courage.

With all the optimism expressed about the realisation of the project certain obstacles might make the dream unrealised. The death of the architect before he has enough money to build it, change in governmental policy against privatisation and other encumbrances might constitute a stumbling block. Nevertheless, the fact that the project was conceived would have been satisfied. It would then remain purely an academic exercise and an "unbuilt".

For unbuilt the term "negative" and "positive" sound ambigious. In this case unbuilt is of the Biblical Noah's Ark which was suppose to be a completely self-sufficient and contained environment floating and protective.

There was also a triumphant moment for unbuilt in the 18th Century with the emergence of Romantic classicisms and the visionary architects of Boullee, Lodoux and others. There was also Oscar Newman's underground cities to be

created by controlled nuclear explosion. Anyway, "unbuilt" is in keeping with that humanistic tradition tracing its origin back to Plato - who proposed the Atlantic which is a prototypical Utopia which was one of the first great unbuilts - itself a republic.

Architecturally, we may gain a richer appreciation and understanding of mythology and it will serve as inspiration to posterity. Afterall, the Utopia of today will be the reality of tomorrow and the realities of today were the Utopia of yesterday.

Therefore, the complete history of architecture is that of both the built and unbuilt.

1.7 WHY FANTASYLAND

This thesis is about the designing of open and closed spaces and what goes on in them. The ultimate purpose of it is to provide a creative environment for people to live in. By creative, it is meant a diverse place allowing for freedom of choice, one which generates the maximum of interaction between people and their urban surrounding.

For the puritan, leisure was a sin. For the modern way at lathe, pit-head or office desk, it has become the purpose of life and life demands space. The incidental afterthought the allotment of land randomly is no longer

enough. Leisure must be given equal space with housing, schools, factories, hospitals, in the light of space: nay more, it must be built all these things.

Starting from home, the pattern of leisure is changing rapidly. So many families have television, playroom for kids, booms in stereo sets, etc. Clubs once devoted to male are now taking female members. The account is a family entertainment, or on youth - and increasingly on culture as well.

Real creative value arise from the heart of unspoiled children, who are always able to observe themselves impartially. We must, consequently, remove our children from the noise and pollution of contemporary society, bring together their innate simplicity of heart and the natural world, and by doing so re-establish a dialogue between individual and nature and ultimately between individuals. We need a planned system of open space in each town, linking its elements together.

Leisure activities have been encouraged not only by a rise in income but also by new techniques - the architect can now bring the target and arrows sliding to him on a rail when his quiver is empty. Sophistication has become essential for many recreational activities.

The role which leisure play in our lives was acknowledged by two eminent personalities among others.

"We do not intend to live - in the widest of abundance - isolated from neighbours and nature, confined by lighted cities and bleak suburbs, stunted by a poverty of learning and an emptiness of leisure", Lyndon B. Johnson. Also, His Royal Highness, the Duke of Edinburgh said this in 1963; "It is no longer a question of encouraging people to take part, from now on we have to concentrate on providing facilities of the right sort and in the right place, and properly organised".

Crystal Palace, once the home of Paxton's great exhibition building, now holds the nations greatest sporting centre, a testimony of the change of interest over four generations.

1.8 PHILOSOPHY OF DESIGN

This particular architect takes a great deal of interest in humane architecture. Several individuals have some basic philosphies governing their lives, determining their actions. Architects and Artists for generations have adopted certain philosophies serving as guidelines in their works.

From time immemorial architects have stood by one philosophy or another. Alberti, who founded renaisance architecture believed that beauty is quality of things which are in themselves and apart from all circumstance and opinion of their own nature, beautiful. He produced a theoretical basis for the practical design of modern architecture.

Vitruvius had his system which he applied to his plans and structures based on human body. The great English Architect, John Ruskin had his "seven lamps of architecture" in which he enunciated his principles.

Leonardo da Vinci had his system of proportion based on components of human figure in relation to its total height.

In the modern times certain architects have evolved their own concept of design. The greates American Architect to date, Frank Lloyd Wright propageted his theory of organic architecture while Paolo Soleri called his own "Arcology".

No doubt, this architect is borrowing from these masters. All I am trying to do is to further elaborate on them categorically.

The current learning towards humane values in everyday life is on the increase and is supported by growing awareness of the ecological conditions and commitments of mankind. Since we are products of nature, belong to it and will eventually be part of it we must strive to see ourself in its context instead of being against it or trying to capture it. Survival itself, I think depends upon our being a natural component of the ecosystem. Man should be in relation to the rest of nature, not in an assumptions predatory mastery of it. It should be in the philosophical illustration of the house to the garden, the garden to the landscape and the landscape to the ecosystem.

It is inhibited by the requirements of its nature to be harmonious and congenial. Man's relationship with his environment is a two-way traffic. Abuse begets degeneration. Harmony foster peace.

CHAPTER TWO

LEISURE IN PERSPECTIVE

2.1 D E F I N I T I O N

2.1.1 Leisure

2.1.2 Recreation

2.1.3 Out-Door Recreation

2.1.4 Park

2.1.5 Recreation Planning

2.1.6 Recreation Design

2.1.7 Leisure and Recreation

2.1.8 Some Definitions of Recreation

2.2 L E I S U R E

2.3 TYPES OF LEISURE

2.3.1 Practical Leisure

2.3.2 Physical Leisure

2.3.3 Artistic Leisure

2.3.4 Intellectual Leisure

2.3.5 Social Leisure

2.3.6 Important Relationships

2.3.7 Leisure and Education

2.4 LEISURE AND WORK

2.5 PEOPLE AND LEISURE

LEISURE IN PERSPECTIVE

2.1 DEFINITION

It is very important to state categorically the intention of any project by the use of the very appropriate word(s) necessary. The need to establish clearly a working set of definitions at the on-set of any project is necessary since different terms connote different meanings.

A set of values are conveyed by the meaning attached to the particular word(s). Definition term is an important aspect of any planning effort because people will be prompted to consider their values or understanding of it. Clarity of words can help to eliminate or reduce ambiguity associated with most recreational plannings. Below are some of the terms employed in recreation and their definitions:

2.1.1 Leisure

Any portion of an individual's time not occupied by employment or in pursuit of essential activities. In this case the relevant word is time.

2.1.2 Recreation

Any leisure time activity being pursued for its own sake or that happens to a person as

a result of a recreation experience. The word activity is the dominant factor here.

2.1.3 Out-door Recreation

These are leisure time activity which utilize an an out-door public or private space.

2.1.4 Park

Any public or private land set aside for aesthetic, educational, cultural or recreational use.

2.1.5 Recreation Planning

This is a process that relates people to leisure time and space. The use of information for the allocation of a spouces to accomodate the current and future leisure needs of a population and planning area, the emphasis is at the macroscale and systems level.

2.1.6 Recreation Design

This is a process that relates people to the form and function of a recreation resource. The use of information to create designs that relate to the existing or potential users of a recreation space or population of a planning area.

2.1.7 Leisure and Recreation

Judging from the above definitions one should possibly be able to differentiate or distinguish between leisure and recreation. Leisure, per se can be generally conceptuatized as the time in question while the operative word in recreation is the activity going on or being pursued at that material time.

Perhaps it is necessary to trace the origin of the word recreation. Recreation in latin means that which refreshes or restores. Conservatively, this has been interpreted to mean that period in which one refrain from any hard work and that of restful activity at one's violation.

2.1.8 Some Definitions of Recreation

- Recreation being perceived as a process of a state of being, i.e., something that happens within a person while engaging in cartain of kinds of activity with a given set of expectations.

- Recreation being viewed as any activity carried out under certain conditions or with certain motivations.

- Recreation being seen as a social institution;
  a body of knowledge of a professional field.

Recreation can encompass certain characteristics. It may include games, crafts, sports, performing arts, social recreation, etc. Generally recreation is percieved as activity during leisure time and this may take the form of social, mental and internal motivation rather than reward are what prompt recreation intellectual, social and physical developments results.

Therefore, one may define recreation as that consisting of activities or experience carried out during leisure time, usually chosen by the participant either in pursuit of satisfaction, pleasure or creative fulfilment.

2.2 L E I S U R E

The word leisure is a coinage from the latin word licere which means to be free or to be permitted or the french word loisir which connotes free time which in turn is a derivative of licere.

Leisure is generally defined as that part of one's time which is not devoted to work or work connected responsibilities to other forms of

maintenance activity and which may therefore be regarded as discretionary or unobligatory time.

Activities in leisure time are freely chosen and it is an avenue to satisfy one's personal needs for self fulfilment, relaxation or pleasure or to contribute to the well being of society.

By the international study group on leisure and social sciences definition, leisure was defined as consisting of a number of occupations in which an individual may indulge of his own free will either to rest, amuse himself, to add to his knowledge and to increase his voluntary participation in the life of the community after discharging his professional family and social duties.

2.3 TYPES OF LEISURE

There are five major categories to which leisure can be classified:

2.3.1 Practical Leisure

Practical leisure can take the form of pottery, gardening, needle work and other creative activities which are generally performed at home or in school at one's leisure time. Manual activities under this category of leisure are more common in rural

than urban areas and in the lower means group. A number of those activities are usually ult utilitarian in nature and linked with family duties.

2.3.2 Physical Leisure

These include activities classified as active recreation in conformity with leisure pursuit requiring physical efforts. It include activities like hunting, walking, outdoor and indoor games requiring some basic skills and perception.

2.3.3 Artistic Leisure

Generally, most activities under these category are in terms of visual appreciation like visiting museums, monuments, works or arts, appreciation of landscapes or viewing television. This kind of activity is usually passive in nature. Visits to places like the Great Crystal Palace, Washington Monument or Esie Museum are regarded as artistic leisure.

2.3.4 Intellectual Leisure

In most cases, this type of leisure involve adults or old age people who usually engage in reading newspapers, listening to radio or viewing television.

2.3.5 Social Leisure

Social leisure is that type which involve interaction between or among two or more persons in forms of visits, meetings, social activities and discussions on a social level.

2.3.6 Important Relationships

There is the need to draw an analogy in the relationship between leisure and some other phenomena. The relationship of one to the other is of great importance.

2.3.7 Leisure and Education

There is the need to evaluate critically the relationship between educational services and leisure time in order to bring into the open air the relevant of one to the other. From the intellectual perspective, education increases the general pursuit of leisure by highlighting the need and necessity for one to have a balanced system or body through effective utilization of the leisure time. In most institutions learning there has always been one programme or another designed to affect one's leisure time. At the elementary level, specific times or hours are designated for sports.

At the advanced and University level various activities are designed for this leisure time. These could be in form of Student Union Buildings in which various activities ranging from in-door to out-door activities are provided. This is a testimony of the mutual relationship between leisure and education.

2.4 LEISURE AND WORK

Work can be defined as the physical or mental effort or exertion for the purpose of satisfying an end. Leisure and work are the two major competitors for time. The relationship is inversely proportional in that an increase in one automatically result in the decrease of the other. It is an agreed fact that; man must engage in work for the general benefit of up-lifting his social, mental and capital level. Karl Marx, the great philosopher and sociologist of 19th Century, considered work in itself as the prime need for man, stating that only the collective ownership materials will enable man-kind to gain free time, enhance space for human development. Also the International Labour Organisation (I.L.O.) in 1920 organised the first international congress on workers spare time. It was resolved then that the need for organised leisure at free time will necessitate a reduction in working hours. The

pointer to all these is that leisure has emerged as an important element in day-to-day life.

Leisure in itself is a diversion from work and they are mutually exclusive in that one can be understood only on the basis of the other even though one has a upper hand in the hierachy of human needs or endeavours. Each is accepted in the role it plays in the life of people and society.

2.5 PEOPLE AND LEISURE

After a hectic day's work there is the need for people to shed away the friction and tension within the human system. This has resulted in the provision of leisure and recreational buildings to serve this purpose. There is the need for people to effectively spend their leisure time effectively. Leisure also provide the time and means for human development. The question of how and where to utilize the leisure time is a major problem for an increasing number of people. Depending on how it is perceived, leisure can up-lift or bring down a people.

CHAPTER THREE

LEISURE (PAST, PRESENT AND FUTURE

3.1 BACKGROUND

3.2 THE HISTORICAL PERSPECTIVE

- 3.2.1 Ancient Greece
- 3.2.2 The Romans
- 3.2. United Kindom
- 3.2.4 Western Europe
- 3. .5 Leisure - The Nigerian Context

3.3 LEISURE - ITS IMPORTANCE

3.4 RECREATIONAL FACILITIES

3.5 LEISURE - THE COMTEMPORARY TREND

- 3.5.1 Trends in Design of Recreational Facilities
- 3.5.2 Related Factors

3.6 FUTURE TRENDS IN LEISURE AND RECREATION

- 3.6.1 Automated Machine
- 3.6.2 A Micro-scopic View
- 3.6.3 Set-up

LEISURE: PAST, PRESENT AND FUTURE

3.1 BACKGROUND

Leisure has always been part of human activity since the time of the primitive man. Aside from serving the purpose of food hunting has always been the main hobby of the ancient people. With development in human consciousness, leisure has undergone several fundamental changes, innovations and development. Thus, it will be ideal to have an insight into the past as a means of projecting into the future with the present trend acting as the umblical cord between the two.

3.2 THE HISTORICAL PERSPECTIVE

In attempting to discuss civilization in whatever form one must not forget the Romans and the Greek.

3.2.1 Ancient Greece

Ancient Greece had a lifestyle comprising of political activity, self-fulfilment, enjoyment, etc. There was no clear-cut demarcation between leisure activities and other forms of activities as exemplified in its "Agora" and Acropolis. The "Agora" served as the market-centre and also as the centre of congregation even up till the modern time. The Agora and Acropolis are therefore, the centre of activities in both the modern and ancient Greece.

In ancient Greece commercial activities together with private were taking place side by side. The Platela was a large flat area, often just outside the centre for dancing, festivals, marriage celebrations, etc.

3.2.2 The Romans

The Romans on their part has a deep history of recreation in the form of horse-riding (calvary). Due to the existence of wars at that period, the Roman empire was particularly good in horse-riding. Apart from serving as an instrument to fight war it also serve as leisure purpose. Also, the Romans has a deep history of athletics. No doubt the modern day Olympics owes its background to the Romans even though it has passed through several stages of adjustments, modifications and modernisation. Also, dancing as a form of entertainment for the royalty was common then.

3.2.3 United Kingdom

Holidays, public festivals and other forms of entertainment were common in the agrarian period of medieval England. There was also the emergence of trade fairs which provided a forum for social interaction and entertainment. Religious drama also

formed an important features of some of the festivals. In the medieval cities this drama was performed in the open market place, against the back drop of the Cathedral where stages were on wheels for mystic plays.

These market places were replaced by bands of players and purposely built halls were created. This was due to the advancement of theatre arts resulting in greater number of artists, more equipments and scenes.

The early part of the seventeenth century witnessed a change in the taste of the Upper Class as well as the working class in terms of leisure context. This led to the loss of appeal in the public theatre and entertainment and sports were further restricted. Gambling, calvary and cock-fighting became part of the established past-time activities in the eighteenth century. Also, the development of recreational gardens like the Vanxhall in the eighteenth century provided avenue for aristocratic pleasure seekers and with time it was opened to middle class and subsequently to the working class group. Places like the Tunbridge and Harrogate also had concerts, games rooms.

Water and water sporting activities were popular in the early part of the nineteenth century out of the need to escape from urban and industrialisation problems. Each year, people drifted to the seaside during summer and towns, shops and trading activities grew out of this and this served as diversion for factory workers who patronised public inns for various types of activities.

In the eighteenth century the theatre was revived and play houses were being built in provinces and the boom in economy in the latter part of the nineteenth century increased attendance in public holidays and a subsequent reduction in working hours. Family entertainment, dancing and fun fairs, amusements in various categories were provided in the holiday resorts.

3.2.4 WESTERN EUROPE

Radical changes emanated from the urbanised and industrialised economy of Western European countries in the last two centuries. Increase in workers wages and rights to public holidays, less working hours have resulted in increased recreational activities both at home and at public places. Leisure activities

took different forms like popular bingo, marine and game park, cinema, amusement parks, etc.

3.2.5 Leisure - The Nigerian Context

Leisure in the Nigerian context can be easily classified into three different generations:

i. Pre-colonial;

ii. Colonial;

iii. Post-independence.

i. Pre-Colonial Era

Leisure in pre-colonial Nigeria was in response to the economic and social well-being of the people. Mostly people engaged in farming as the basic occupation and means of livelihood and sublemented it with hunting and craftmanship. It was total work throughout the day except for folklores, tales by moon-light which took place after dinner. However, certain periods of the year was regarded as the festive season. This was the time of harvesting of crops and food generally from the farms, the commemoration of certain events, rituals and sacrifices and certain ceremonial activities like marriages, death of an important personality, etc.

In the then set-up recreation incent different things to different people depending on their statuses, age classification or peer groups. There were certain characteristics of the local recreational activities then. Some activities normally took place at home usually in courtyards after dinner. These included folklore, playing of traditional games like "Ayo" especially in the evening supported by kegs of palm-wine.

Different peer groups also engaged in different activities. For instance the juveniles run around and perform the hide and seek tactics. On the other band, the grown-ups indulged in traditional forms of wrestling in demonstration of their strengths. Some engaged in other forms of recreation peculiar to its locality. The Elders on their parts congregation at the town Plaza or Hub and engage in conversations of both personal concern and of importance to the locality.

Also, since various professional bodies existed, they organise activities to commemorate certain festive periods like the farmers organizing the new yam festivals, fishermen engaging in

festivals like the Argungu Fishing Festival and the hunters going into the bush to see who will kill the largest animal among other things. Again, taking part in society weddings, crowning of Kings, and Chiefs, naming of new born babies, etc., also act as part of the socialisation process in pre-colonial Nigeria.

ii. Effect of Colonialism

The advent of colonial rule in Nigeria has a dramatic effect on our social, political and religious values. Certain new traits were infused and imbibed into the traditional set up, devalued some and introduced new ones. The introduction of Western Education alone modified our perception of certain values within the inherent social function and set up. In essence, colonialism was able to put to the background our traditional values with much influence at the urban centres. Social activities were then modelled after their own traditional system. The local activities gave way to new ones like football, cricket, hockey, tennis, polo, wrestling, etc., deliberately so as to perpetuate the evil tendencies of colonialism. At this period also many Nigerians through social

interaction or status got imbibed into these activities thus, promoting them.

iii. Early Post-Independence Era

Early independence saw the emergence of new sets of Nigerians in positions hithertho held by Europeans. Because of the social interaction that have existed between them the Nigerian elite took over where the Europeans left. The European legacy, even in recreation was adopted. Since the economy was managed indigenously, several public houses were built and the existing ones took in more Nigerian membership. Clubs like Tennis Club, Island Club, Ikoyi Club among others were popularised. The income or wage earning level of Nigerians increased and they could afford recreation that commensurate with their status and earnings. Reduction in the working days excluding Saturdays and Sundays means more leisure time for workers. Increase in mobility was another necessitating factor. Several Nigerians could buy cars of their own, abundance in public transport system and the oil boom, all served as pointers towards conducive leisure time. At this period also

several industries, firms parastatals, etc., organized staff clubs where their staff could dutifully enjoy their leisure period.

iv. Post-Independence

It is saddening to note that upon its endowment in Natural features the average Nigerian attitude to recreation is still passive. There is the general lack of apathy and appreciation on the part of the Nigerian populace. A survey carried out by Professor Ojo, an Educationist, indicated that among the workers of higher educational institutions, self-employed Nigerians and the government employed workers, the educationists consider recreation an important part of life most while the self-employed hardly have time for it. It is no wonder than that recreational facilities are provided on the school campuses. Another observation is that people preferred passive recreational activities. Of recent, the need for a properly sound body is being realised and there is a major improvement in the Nigerian populace's attitude to recreation.

3.3 LEISURE - ITS IMPORTANCE

Several people have emphasized the importance of recreational activities in terms of personal development and the overall consequence on the nation as a whole.

His Royal Highness (H.R.H.) the Duke of Edinburgh had this to say in 1963; "It is no longer a question of encouraging people to take part, from now on we have to concentrate on providing facilities, of the rght sort and the right place, and properly organised". Lydon Johnson, one time President of America said: "We do not intend to live - in the midst of abundance - isolated from neighbours and nature, confined by blighted cities and bleek suburbs, stunted by a powerty of learning and an emptiness of leisure". Here in Nigeria, the general attitude to leisure is still passive. Numerous factors are quite responsible for this inempt attitude. Lack of general understanding of leisure importance has been the major factor responsible for the apathy. But nowadays through enlightenment and necessity the situation has improved. A person who works tediously for 8 - 10 hours a day will definately seek solace somewhere else. With the increase in level of literacy and technology things have started to improve. People have generally resorted to visiting sea-side at weekends where they are available. Sporting centres are always being

patronized at weekends and week days. Presently, swimming, tennis and badminton have gained popularity among the older Nigerians. The youth on their part engage in more physically taxing activities like foot-ball, table-tennis, judo, wrestling, etc. Even the olderly are not left behind. It is just that they engage in passive activities like walking, reading newspapers or viewing televisions.

Also ugly incidents like juvenile deliquencies, robbery, thuggery and hooliganism are regarded as misplaced priority of recreational periods. If adequate planning of leisure time is pursued scientifically then these social ills could be curbed.

3.4 RECREATIONAL FACILITIES

Nigeria is blessed with so many rcreational facilities throughout the length and breath of the country. For instance, in the North-eastern part of Nigeria we have the Mambilla Plateau. The Plateau could be effectively tapped for recreational purpose. Up till now it still remain dormant. Something with the Jos Plateau with several hills. This could serve as picnic zones, mountain climbing activities. There is the Yankari Game Reserve which is the natural habitat of these animals. In the same Reserve there are many warm springs. These could be used for theraupeutic purposes as the

the water in Ogbunike Cave in the Eastern Nigeria and the Ikosi spring in Ondo State. These waters could be explored to greater heights. The Kainji Game Reserve is also part of the natural endowment. Towards the Nigeria/Niger border is Argungu where there is an annual fishing festival. This is a very popular festival even though it is seasonal. The most popular out-door recreation is swimming and beaching. These abound along the Lekki Peninsula in Lagos, the Bar Beach and also the Badagry Beach; all in Lagos State. These water zones draw a lot of people throughout the year with the holiday period serving as the peak. Also some parts of the country blexxed with water engage in water sports like boating, canoeing and river swimming where there is no barrier to the length and breadth of the pools. The Ijaws, Itsekiris and other riverine areas engage mostly in these activities.

Recently, the Federal as well as State Governments have promised to activate these natural resources as well as providing others. Tourist boards are being set up and Committees are also inaugurated to look solely into how these resources could best be tapped. Parks in major towns, recreation clubs are some of the fulfilment of government expectations.

Institutions of various sorts also provide recreational facilities for its clientele. Right from the very elementary level to the University these facilities abound. At the Kindergarden level running, skipping, hide and seek games, swings, etc., are provided for the kids. Specific times are set aside for this purpose - a testimony of importance of physical fitness. At secondary and high school levels these activities are provided with additional ones. Hurdles, athletics, soccer and some in-door games are some of the activities engaged in. Same thing applies with the University level. Some Universities even have games village. Staff Clubs are also provided in these institutions for the benefit of staffs and their families.

At the governmental level sports councils are set up. This organisation is expected to monitor, train and discover talents in all nooks and corners of the serving community by providing the right and conducive condition in terms of facilities, training and advice.

Voluntary agencies also engage in such prusuits. Rotary Clubs has been particularly active in providing essential facilities like Parks at various towns in Nigeria. Clubs like Ikoyi Club, Island Club, Tennis Club; all in Lagos provide facilities for activities like swimming, billiards, darts, golf courses and passive recreational facilities for

the benefit of the populace. Similar Clubs in Lagos, Jos, Zaria, Kaduna and some other Northern towns. Almost every major town in Nigeria has at least a Club providing some of these activities.

Nigeria also engage in passive activities. Cinema is one of them. All major towns in Nigeria have cinema houses. This is being patronized mainly by people at the lower cadre like taxi drivers, juveniles and other low and medium income earners. Most of these cinema houses are substandard. The abundance of video recorder has not reduced the clientele since majority of the patrons cannot afford the video machine.

Theatre going is another means by which Nigerians enjoy their spare times. Especially in Southern Nigeria most people engage in attending theatres. Notable among the theatre groups are Baba Sala, Aluwe, Chief Hubert Ogunde, Oyin Adejobi among others. This usually take place at night time and the theatre groups travel all over the country staging popular plays. Recently, some films of intellectual background and modernity have begun to appear in public halls. The pioneers of these are Professor Wole Soyinka, Dr. Ola Balogun and others.

The oil boom of the early 1970s put more money in circulation. People could afford television sets and with the boom in video machine in the recent years more people

engage in passive recreation by staying glued to the sets.

A minor or negligible percentage also patronize the museums and exhibition galleries and zoos. Not many zoos are around in Nigeria. The most notable ones are University of Ibadan Zoo, Jos Zoo, and Kano Zoo.

Traditional forms of activities are still being pursued in the rural areas, even though with less vigour. The local wrestling is still common in villages among the adolescents. It used to take place in the evenings with winners gaining the respect of the locality. This takes place in the open spaces usually in village squares. Other traditional activities like dancing for the females and story telling for the kids is still popular. In-door activities like "Ayo" in Yoruba land, ludo, draught, card are also common in the evenings. People even engage in bettings to show how serious they take the game.

The festive period is one of the most interesting periods in the Nigerian leisure period. People gather in tens to discuss, dance and excite one another. At this period there are drummer, traditional dancers, jest makers and other forms of "let-loose" events. The popular Argungu Festival in Sokoto State whereby people engage in fish-catching and display is very common. The new yam festival

in Igbo-land is another common phenomenon. In Yoruba-land remembrance of an important event in their culture or the yearly idol-sacrifice is a means of getting the steam out of the body si ce most people will participate. This could also engage the masquerades.

Certain obstacles or encumbrances militate against this much desired objective in Nigeria. There is the general lack of enthusiasm on the part of an average Nigerian to leave tis place of abate and seek recreation else where. He would rather make do with whatever is at his disposal.

Again, Nigerians love profit-oriented pursuits. The cost of attending some of these public places scare prople away coupled with the reservation for such places which are regarded as being elitist. The most reasonable solution would be to stress the importance of physical fitness and engage in a general enlightenment campaign so that more people will engage in participatory activities. Also, provision has to be made for kiddies events so that they will get used to participation from youth. Youthful organisations like boys scout, girls guides, etc., should be encouraged. Leisure education should also be pursued with greater vigour. Our institutions of learning should include it as part of curriculum.

3.5 LEISURE - THE CONTEMPORARY TREND

Perhaps, the greatest era in leisure and recreation occured after the World War II. Opportunities present themselves together with increasing understanding and appreciation of the leisure question itself. Huge sum of money is being pumped into recreation by both governments and private enterpreneurs all over the world. Growing awareness in the need to keep a fit body through physical fitness is gaining momentum. More people are shedding weight to avoid obesity, others engage in physical exercises for proper health balance as a precussionary move against pot-belly, heart failure and the likes.

Throughout the world, governments have taken directions that could improve the health situation of the citizens. In America several billions of Dollars was set aside for this laudable programme. Membership in recreational and health centre are increasing rapidly. More citizens jog around the streets and sporting areas daily. The situation is not peculiar to America alone. It is a common universal phenomenon of post-war as necessitated by various authorities.

The medical world is giving enough scientific data to support the need for physical fitness. The medical world recognise the fact that it cannot cure all diseases or that some diseases could be cured over a short period of time

with the effect on some non-medical attention. Diseases like pneumonia, heart attack, obesity, could easily be dealt with in conjunction with physical exercises. Regular physical exercise can help the lung to dilate and constrict thereby allowing for free movement of air in and out of the lungs. It also immune the body by strengthening the bones and get the system prepared for uneventualities. These facts were corroborated by Dr. Kenneth Cooper, an American Doctor of repute in physical fitness. Even psychiatrists believe physical exercise can deal with issues like frustration, depression of mild nature and some others. Exercising of the body is also good for meditation. Good self image is also affected by physical fitness. The question of whether physical fitness is necessary for day to day living is an accepted fact throughout the medical world as both complementary and alternative method. It is also ascertained that the best possible way to prevent some diseases or promote the health of citizens is largely determined by the individual as 90 percent of the usual health factors cannot be determined or directly controlled by medicine. Issues like dieting, smoking, physical fitness largely rest on individual shoulder.

It is also being stressed that fit citizens (through regular exercise) offer greater productivity at work than the lazy counterparts. Research finding corroborate the

fact that fewer heart attack strike the sporting citizens. The conclusion is that strenous, leisure time activity has a definite protective effect even for certain individuals prone to high blood pressure, or overweight.

3.5.1 Trends in Design of Recreational Facilities

An inventory of the leisure and recreational facilities indicates the following:

i. A deliberate approach to justify the amenities provided with the available material resources resulting in a marriage between the private enterpreneurs and the local council.

ii. The facilities are by nature social in context and flexi-use so that adaptation of one to another could easily be obtained.

iii. There is a general increase in the level of awareness as per qualitative provision of facilities as a basic pre-requisite for attraction.

A general increase in the level of people with more leisure time results in greater expectations from building facilities designed for leisure. There is also the competing factor of entertainment, cultural and educational activities with the traditional form of recreation.

The present trend in design is to design the building so as to minimise its running cost and the ability of such buildings to generate enough fund is a great challenge to the proprietors. Hence, the need to balance the several facets of design especially at the initial design stage. An adequate case study of existing ones is also possible. An important factor affecting the design of recreational facilities is the general depression in world economy. Most designs are built on loans. The running cost of such a building and the initial capital coupled with the high interest of the loan skyrockets. The logical thing to do then is to design a smaller centre where the running cost such as salaries, energy, maintenance, etc., can be reduced. Also flexibility in design is an important factor as well as circulation system so that a function can easily serve several other functions thereby resulting in maximazation of a function.

3.5.2 Related Factors

Some basic factors determine or affect the recreation context of an area anywhere on earth today irrespective of the differences in cultural, geographical, social and economic position of that place. Some of these factors are space set aside

for recreational purpose, the demands for these provisions, use pattern of existing facilities, public transportation to the complex, cultural artifacts urbanization, location and accesses to them, clientele, vandalistic tendencies, assistance from authorities and many others.

It is quite ironical that the space set aside for recreational purposes in most places are rather inadequate either in terms of number of such spaces and the square area of that particular space. This resultant effect is that over stressing of the facilities occur and congestion thereby reducing the quality of benefit for every individual participant. The general level of economic recession coupled with higher rate of unemployment will reduce the demand for high cost activities like boating, yachts and result in other activities. Provision therefore, has to be made to provide the activities in relation to the yearnings of the populace.

The general attitude of users to many facilities is rather poor. Reasons accounting for this is improper inventory of the needs of the people and lack of enough attractions. People need to see new innovations in design and activities provided.

Lack of adequate transportation system to the recreational areas hamper effective use of these facilities. Since by nature these activities are located outside the hub effective means of transportation is needed for the public who do not have private cars. However, some places do not encounter such problem. The Watt Disney World is a perfect example. It has its own private transportation system.

In some places the provision of leisure activities is in terms of cultural artifacts in places like museums, libraries. Generally, people of low income and the less literate are disadvantaged as well as the rural populace. To grther enough resources is a problem on its own.

The problem of urbanization is an important factor. Mostly people want to forget about the life in these places whenever they think of recreation. They think of life different from the day to day one and live a life devoid of pollution, transport jam and other ugly scenes typical of the urban set-up.

The location and access to these facilities are necessary. Easy link with both local and outside patrons are necessary and this affects the success or

otherwise of the scheme. The population density of the localised area and its neighbourhood must be really considered. The problem of hooliganism is a great urban problem. Effective means of combating vandalism is of utmost importance. The aesthetic quality of many facilities have been defaced because of the need to combat vandalism.

Most recreational services are provided by the government since the local councils are unable to generate such funds thereby depriving some people of the much needed facilities. This is where the case of self help project comes in. A degree of commitment and responsibility to complement governmental efforts is needed wherever necessary. The dream expectation that the government will provide all resources is illusionary. These changing perspective or position gives opportunities of leisure services and indicate a growing awareness of the important implication for the entire community physical development, mental and physical health, the improvement or up-liftment of local economy and the general improvement of the quality of life of the citizenry.

The energy crisis which began in the 1970s is still much around especially in oil consuming nations.

The choice of activities consuming less energy is highly appreciated and improvisation of existing structures or forms. The clarion call to consider all and sundry is gaining momentum. Facilities have to be made for disabled so that they are not left behind in the provision of amenities. Presently, there seems to be a communication problem between the government and the private sectors. There should be a kind of effective avenue for joint planning of resources. Citizens must always be brought in at all stages so that they can be made aware of the expected provision of facilities and its beneficial effects. Citizen participation must be encouraged so that they can point out those that are really beneficial to the entire community. .

3.6 FUTURE TRENDS IN LEISURE AND RECREATION

The changing values of societies in terms of appreciation of better ways of living coupled with the increasing level of awareness, break throughs in technology, world economic order, new dispensations are emerging in the recreational context of the coming generation. Looking forward, one could really see the bright and optimistic future of leisure.

Increase in level of technology has jettisoned the traditional forms of recreation. The days of providing open spaces alone will no longer be of context. Certain factors will definitely determine the future of leisure and recreation. The role of information technology which is the acquisition, processing, storage and dissemination of information by a micro-electronics devices based on combination of computing and telecommunications. It creates time for leisure, how to go about it and desire the best out of it in the least exhaustive manner. There is no doubt about it that it will play a dominant role in the future trend of events. It will definitely contribute to a reduced working hours thereby increasing leisure hours. A general increase in qualitative and quantitative means of recreation will be produced for both passive and active recreational activities. At the administrative level of recreation, the impact will be felt more. Also, automatic data processing links will reduce interpersonal contacts hence isolating people more from one another. In essence, in order to see people one will have to go to public places. Satellite transmission could be brought directly to the homes. One would be able to tune to any part of the world and view the particular channel of interest irrespective of differences in language. Relevant informations concerning any activity, game or sport would easily be obtained on the fingertips.

Booking for holidays, theatres and sporting activities would be done at ones doorstep. In essence, more passive roles will be played by individuals.

As there will be a demand for leisure centres of immense spectable both the public and private sectors will be geared towards meeting the demands of the epoch. More recreational facilities both indoor and outdoor will have to be explored. More educational recreation would be pro-found as a passive activity and demand for water activities will increase. More of Disney land Productions will spring up every where. It could be envisaged that new fields like underground facilities will be provided.

At offices too, it is envisaged that more recreational facilities will be provided. Roof gardens would serve as play-area or other specially designated space for the purpose will be entrenched in the offices. Less of working hours as compared to now will surface as most activities would have been computerised.

In essence, the net effect of information technology is not likely to alter the basic activities but to modernise it and make effective use of resources in the best possible means. There will be less of maintenance cost as less individuals will be employed. Information technology could

also be used to measure or determine the effectiveness of an activity or a machine. Faults would easily be detected and where necessary quick evacuation of people will be performed.

3.6.1 Automated Machines

Automated machines or gadgets will be of use in theatres, leisure centres, sporting arenas to create more spectacles. More motion pictures will be brought to the door step of people. Audio-animatronic shows, lighting effects, micro-films would all be the common things of the generation.

A large area and activities could easily be controlled of monitored as examplified in Disney land. Automated machines will aid sporting events generally. In soccer for example, performances of individual plays would be rated with the positive and negative roles play by each player. Play-backs, speed of a particular shot, the excellence of goal, etc., would be easily analysed. Similar occurence will be obtained in athletics, swimming and others.

Also sinimumal game area would be in use. For example, the Japanese invention of playing Golf in a small room with recording being made on a computerised screen would be a common feature. It will even afford

one to play a game with an acclaimed star like Bjorn Borg. One can then measure his proficiency in the game as compared to the "unseen" opponent. There is no doubt that in the future lie Fantasy which has never before explored.

3.6.2 A Microscopic View

The future can be viewed in many perspectives. The humanist believe that more leisure time will be available, energy crisis would have been solved and that leisure would escape from the congested urban cities to either the surburb or rural areas where there will be enough spaces free of pollution and the general city encumbrances. By then, there will be little or no clear-cut distinction between work and recreation since the two would have almost become complimentary. In the sense except the state can provide the essential services, leisure would be very elitist and work ethic would be replaced by leisure ethic and open parks will be a public trust.

The pessimist believe that the effect of technology would be so severe that humans would be pawns on the board of technology. It feels that technology would rule and ruin man since he would hardly think for himself.

On the other hand, are the idealist who believe that sitting down at home, one could perform all the official functions and that life would be simplified thereby making people to discover themselves. Parks and open spaces would be given equal attention as the offices and residential areas. More money would be needed for recreation.

3.6.3 Set-ups

New bodies would be organised to cater for recreational needs of the society. They will monitor and direct these activities. Public enterprises would run the leisure affair with the same seriousness as other public activirties. The public would act as the custodian of these utilities and leisure co-operatives would be provided and leisure counsellers would be appointed.

In institutions of learning, leisure would be taught and much emphasis would be placed on individual achievements in them. New approaches to design of recreational facilities would work. Form will then dictate function and spaces on, below and above the ground level would be in use. There would also be a recycling process of facilities. Any abandoned building would easily be improvised and recreation

would be the core of existence then. Also, high rise structures would be built to contain several activities all linked to one another as in the present case of residential or commercial purposes or functions.

In terms of structures demountable or pneumatic structures would be highly favoured. One could also see the city as a recreational resort in that the roof of buildings, rooms in hotels, offices, top of car parks, etc., would be provided with recreational needs.

Living with nature in an organic set-up would be predominant. People would begin to integrate with nature and there will be a self-discovery of man.

Conclusively, new generqtions of leisure activities independent of other performers will surface with technology acting as the stimulant. Many of them will be self-programmed, non-competitive and will produce several individuals of eccentric thinking and ingenious conceptions. More of spiritual activities would gain momentum as well as health developing activities.

CHAPTER FOUR

DESIGN STUDY

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

4.2 ENVIRONMENTAL PROTOTYPE COMMUNITY OF TOMORROW (EPCOT)

- 4.2.1 Conception
- 4.2.2 Reality
- 4.2.3 Structure
- 4.2.4 Deductions

4.3 HOLIDAY DEVELOPMENT, PULCHEDU, SARDINIA

- 4.3.1 General Planning Arrangement
- 4.3.2 Deduction

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

The history of sport and recreation and its complementary facilities ante-dated modern times. Right from the period of the ancient Greece recreation has taken a great dimension in the life and well being of the citizens.

In the pre-civilization era it was used as an entertainment for the royalty and as a means of preparedness for inter-tribal wars.

In the modern generation it has assumed a greater and different dimension. Sports in itself has served as an avenue for galivating a country from relative obscurity and great recognition on the international scene. Recreation on the other hand has served as a source of foreign exchange earning for countries, an avenue for propagating its ideas, and capabilities. It has also served to promote a healthy and better citizens.

The growth or increase in the number of sporting and recreational arenas is on an up-ward trend. This lend credence to the fact earlier stated on their importance. It is imperative to observe that quite a substantial amount of State fund is allocated for the

improvement and promotion of these twin-activity. Apart from those built by the State, there is those being built by private individuals, or group of individuals for sole profit-making or business transactions.

Some therapeutic phenomena foremerly of medical use are now being incorporated into leisure and recreational facilities. Thermal bath, Sanna, general fitness exercises are now common in many recreational centres.

More people (whether individuals or groups) are now devoting a greater part of their time either when on holidays or afterwork. Hence, the need for a properly designed recreational centre is of paramount importance to all.

4.2 ENVIRONMENTAL PROTOTYPE COMMUNITY OF TOMORROW (E.P.C.O.T)

4.2.1 Conception

According to Watt Disney Environmental Prototype Community of Tomorrow will be "a place where people actually live on life they cannot find anywhere in the world today". To him it will be a 'blue print' of the future... "a fully operating community with a population of more than 20,000. Here American free enterprise will

constantly introduce, test and demonstrate new concepts and technologies years ahead of their application elsewhere".

Environmental Prototype Community of Tomorrow was the latest Disney spectacular uneveiled to the public in 1982. Master Planning of Environmental Prototype Community of Tomorrow started only in 1976 on a 580 acre site with 3,000 designers and 4,000 construction workers involved in the venture. The 1800 artists, designers and W.E.D. Enterprises are backed by over 1,000 consultants.

Environmental Prototype Community of Tomorror consist of two major parts: World show-case and future world. World show-case opened with nine nations. These are Canada, France, the United States of America, United Kingdom, Japan, Italy, Germany, China and Mexicco.

Future World has eight themed areas focussing on discovery and scientific achievement. Some of the sponsors are Bell System, Exxon, General Motors, Kodak, Kraft, sperry and General Electric.

The construction management is by Tishman Construction.

4.2.2 Reality

The original conception did not materialise because of the following reasons:

- The character of Environmental Prototype Community of Tomorrow is more akin to World Fair than another world, and a World Fair rarely combine innovation, cohesion and quality, even with the best architects in the world around.

- Environmental Prototype Community of Tomorrow has been unable to remain close to the original concept. It is more or less a demonstration rather than its realisation.

- American industry's enthusiasm, though prepared to underwrite many experimental and innovative techniques in communications, transportation, agriculture, energy and science, believe these innovation should be demonstrated as industrial show-cases in participatory exhibition rather than

in the Utopian setting indicated in the 'conception' analysis.

- In essence, Environmental Prototype Community of Tomorrow is another gigantic theme park. It has taken two distinct and perversely contradictory themes - Future World and World Show-case - as the generator for its formidable array of attractions.

4.2.3 Structure

The spaceship Earth presented by the Bell System is a eighteen-storey geodesic sphere. The geodesic structure is used to achieve a complete sphere encompassing 2,200,000 cubic of space. No doubt, it certainly pose an intruiging structural and general arrangement problem.

A 165 feet diameter geosphere poses some interesting questions about weather-proofing, with tons of water plunging down the globes 'equator'. To drain the water, a globe girdling gutter was developed to collect water at mid-point and channel it through the structure and the supporting legs down to the underground drains. Interestingly the dome is inside the other, i.e., two separate structures.

The inner sphere comprise of 1450 steel structural members arranged in typical geodesic form. The inner core also contain deckings at several levels and a spiral route for space ship Earth's ride system. The structure is covered by a waterproof membrane to protect the inner workings. The outer sphere is 2 feet apart from the inner core. It is held by aluminium hobs and contains aluminium support frame for the 954 trianulated aluminium panels.

Another interesting observation is that the upper portion of the dome's interior becomes a giant projection screen where a planetarium effect is achieved, one of the largest such show surfaces ever created.

The structure serves as service ducts for the ride system and consequently each leg becomes a part of another structure housing both service and show functions.

The two rear legs also become part of the Earth station, the city "Hall" of Environmental Prototype Community of Tomorrow. It also houses the world's key information system, service network and electronic service. The ride system track is 1520 feet long. It accomodates 152 guest vehicles and 76 spatial effects vehicles. The cars can rotate as necessary for maximum impact on show scenes.

Ascending the spiral trackway the ride vehicles, holding four passengers each, finally emerge into "outer space", then rotate 180 degrees, descending backwards down a slanting ramp structure.

4.2.3 Deductions

- There is an elaborate service system built with the latest technological innovations. Care should be taken about this in terms of repair and financial expenditure.

- There is adequate provision for waste treatment plants, generation of electricity and water supply.

- The level of technology is by far too high in terms of conception of Environmental Prototype Community of Tomorrow thereby making living very artificial without the necessary natural interjections.

- There is good innovation and ingenuity in the provision of things like the living seas, Leonardo da Vinci Studio, Dinosaurs, Primeval Dioroma Model, etc., which are all in the course of intellectual pursuit.

4.3 HOLIDAY DEVELOPMENT, PULCHEDU, SARDINIA

This was a holiday resort designed by Alberto and Aldo Ponis. During the 1960s, huge sketches of Sardinia's coast-line were largely obliterated by a layer of coarse buildings which left, only the most obvious features of the landscape intact: the biggest olives and the most dramatic rocks.

When the brothers Alberto and Aldo Ponis were asked to produce a scheme for holiday housing on the Gallora Peninsulla at the Northern tip of the Island, they were determined to create buildings which would "grow from the site and not be immersed on it".

The site of the building is on the Northern part of slopes of Mt. Pulchedu a few kilometres from Palou, is 28 hectares of high arid rocky scrubland smelling of thyme, junioer and heat. In former times it had been a combination of orchards and summer grasing dotted with a few stazzi (shepherd summer houses). The remains of an angular network of dry stone walls and prickly peer-edges criss-cross in site and views of the distant views, to minimise intrusion into the landscape and to obtain maximum protection from wind.

This meant that the development had to be divided into distinct chunks, in each of which buildings were

clustered to reduce land-take. (The architects called their development "urban" in contrast to the sub-urban sprawl of holiday housing which has disfigured the so much of the Italian landscape since the 50s; most of the Pulchedu site is to be left untouched by the building).

The clusters are linked by a road that crawls up and round the Plateau from the main highway, off which the little spurs extend to parking areas near but not connected to the buildings.

From the first architects and developers were agreed to that the development should as far as possible, not be just a two month; a year holiday village but a place which would be a continuing social life. So they have planned central facilities linked to the housing by a foot-path network. A club-house has been built in the first phase and a shopping square is proposed in the later phases.

The club-house has a bar, a kitchen, private dining room for parties, swimming pool, wooden bridge and a barbecue spot.

The buildings impose an unaggressive order on the surrounding natural chaos. Derived in part from the shepherds stazzi, they make no effort to emulate the savage natural forms, but their profiles do respond to

the site slopes, lines and structure in a quiet counterpoint that sometimes contrast with the sometimes complements the surrounding skylines. From within the building clusters and the buildings themselves, the architects have tried to frame and order the landscape: the architecture, says its designers, tries to become an instrument for reading the surroundings.

4.3.1 General Planning Arrangement

The whole holiday development is divided into five parts. Parts 1 and 2 comprise of stages one and two housing respectively. These housings are recognition of part of the development is easily achieved.

It also has condominium apartments as well as shopping and plaza facilities. Since some of the tourists would need one or two essential commodities the shopping facility is well appreciated. This in itself is situated centrally so that it can easily be reached from every part of the site.

Sporting facilities are also provided so that the tourists can exercise their bodies. The sporting centres will also serve as a convergence zone thereby promoting social interactions.

A large expanse of land is also reserved for recreation park. Several amenities usually in form of out-door recreation are provided here. Also, part of the complex is reserved for landscaping. These protected green areas are maintained and kept. The housing unit on its own has a good planning concept. There is effective utilization of space and not too many walls. The activity areas flows smoothly into one another hereby making the whole design as a unit whole. It has spaces for living room, dining, kitchen, open space for barbecue and bedroom.

4.3.2 Deductions

Due to the slopy nature of the site the building had to be integrated with the surrounding. Looking at the view, the impressions gathered is that the building grew out of the ground thereby marrying the two together. No doubt the concept of organic architecture is efficiently achieved in the environment.

CHAPTER FIVE

DESIGN PRINCIPLES

5.1 TOTAL PLANNING CONCEPT

5.2 BUILDING DESIGN CONCEPT

5.3 TRADITIONAL CONCEPT

5.4 CONCEPT EVOLUTION

- 5.4.1 The Plaza Concept

5.5 CONFIGURATION OF PATHS

5.6 THE BUILDING APPROACH

- 5.6.1 Frontal Approach
- 5.6.2 Oblique Appraach
- 5.6.3 Spiral Approach

5.7 STRUCTURAL SYSTEMS

5.8 GEOMETRICAL SYNTHESIS

- 5.8.1 Circle
- 5.8.2 Triangle
- 5.8.3 Square
- 5.8.4 Juxtaposition of Geometry

DESIGN PRINCIPLES

5.1 TOTAL PLANNING CONCEPT

The basic system in total planning concept is that the whole complex is viewed as a single organism. Functioning with other related organs which the activity cores. In this concept, similar facilities are grouped together under a number of interconnecting structural envelope which allow for expansion and development of the building in phases according to priority or any other considered factor. This concept also allow for organic kind of design in which the design is well integrated with the environment.

Location of each facility is determined by considering the characteristics of the site and its main resources.

5.2 BUILDING DESIGN CONCEPT

This concept aims to satisfy the goals and objectives of the design or project. It allows for flexibility in the use of spaces within safety limits. The complex should be planned in such a manner as to allow for ease of administration and ensure opportunity for its use by all members of the community taking into consideration the various age structures, physical fitness, etc.

With this concept the shapes and forms of buildings will be a part of the necessary whole resulting in the

concept of "unity in diversity". The design strive to encompass accepted aesthetic qualities which relate harmoniously to the surrounding landscape and buildings.

5.3 TRADITIONAL CONCEPT

The traditional forms of design by the use of local materials for buildings, use in decorative motifs and murals and sculptures should be adopted wherever possible. It should be blended with modern architectural materials in a harmonious contradictory juxtaposition. Use of materials like timber in cladding with fire resistance structure will further promote the use of local materials.

Also, the traditional courtyard system of design should be considered as an alternative to the use of artificially ventilated environment wherever possible.

5.4 CONCEPT EVOLUTION

The Plaza Concept

The design of Fantasyland will be based on the Plaza concept for the leisure complex. This concept is aimed at collecting people together at a focus within the complex. At the confluence of streets are spaces which could be developed as handsome and colourful incidents in the heart of the complex. Plazas can be minor or major.

A small Plaza can contain, in a relatively casual way, sculpture, fountains or decorations which are useful. A local plaza gives a sense of place and bec becomes a focus for its neighbourhood. It can also be a relying point for neighbourhood activities and establish a quality and character for its inhabitants. Such a gathering spot might be to commemorate a past occurence, individual or concept. Examples are the small mechanics plaza in San Francisco with its sculpture dedicated to the dignity of labour. There's also the small plaza and arcade in Portofino California. Several others exist which were either dedicated or left untitled. The greatest major Plazas in the world become civic symbols, not only because of the beauty of design, but because of the important civic events taking place in them. Notable among them are:

- The Plaza at Hebrew University, Jerusalem which is the nerve centre of Student activity.

- The Plaza at St. Peter's Square in Rome designed by Bernini having beautiful colonnades. This is as much a symbol of Catholicism as the Church itself. It is here that hundred of thousands of people congregate to listen to the Pope.

- There is also the Plaza at the Washington Monument in Washington D.C.

- The Plaza in Campo in Siena is not only the focus of governmental functions, but it continues to be the place where the famous horse races and festivals from medieval times are held.

Several numerous examples of Plazas with similar basic functions are scattered all over the world.

The Fantasyland Plaza has been conceived as total environment in which all elements working together create a place for participation. The locus is the termination of all seconding streets. There are main streets leading to the Plaza around which the building is divided into quadrants. There will be an enormous building complex around the Plaza with terraces, shops, offices, etc., focusing down to the plaza.

The Plaza will be a theatre for events to happen. The fountain and robe carriers will be the pivotal point of the plaza. The water in the Plaza will be released in jets. The great excitement of jets is that they defy gravity to explode into the air. This is the most unnatural of all the uses of water and at the same time one of the most dramatic. A series of small jets

forming a curtain of water contrast with the hard surface of concrete walls. The visual quality of water depends largely on its activation and the way it reflects light. It has lyminosity and brilliance and when caught in droplets, it sparkles like gems. As it falls, it moves the flat surface into ripples and corrugations, and these reflect the light with pin-points of brilliance. These qualities of attributes made water instead of vegetation as the attraction of the Plaza.

In Fantasyland Plaza the system of crowd flow is very simple. Main streets are at entrance corridor absorbing large masses of visitors. The guests move down the street to find a large hub from which the lands or scenes radiate like the spokes in a wheel. Each land featuring a visual centre piece is easy to leave since all paths lead back to the central hub.

5.5 CONFIGURATION OF PATHS

All paths of movement whether of cars, people, goods or services are linear in nature. All paths have a starting point to a sequence of spaces to our destination. The intersection or crossing path is always a point of decision making for the person approaching it. The continuity and scale of each path at an intersection can help to distinguish

between major routes leading to major spaces and secondary paths leading to lesser spaces. When the paths at a crossing are equivalent to one another, sufficient space should be provided to allow to pause and orient themselves. Wide streets should be provided to carry more people. Computer analysis indicated that its more complex layout would make visitors pause at diverse points and consume space.

Pedestrian, disabled and vehiclar accesses should be separated by bollards which can also be used to direct people to their destinations. A path can be widened not only to accomodate more traffic but also to create spaces for pausing resting or viewing. Within a large space, a path can be random without form or definition and determined by the activities within the space.

The design of urban spaces for pedestrians should be thought of in terms of the person in motion, and the environment he passes should be designed to fulfil certain functions.

Several approaches could be adopted depending on the design nature. Careful evaluation of pedestrian movement taking into consideration width criteria based on impulse shopping habits. In contrast to this was the static, axially oriented point of view popular in Renaissance and Beaux Arts planning. Their spaces were laid out as if

viewed in perspective from a fixed point. Even when designing for pedestrians who move at comparatively slow speeds, the environment relates to the person which is in motion constantly with a varied view point and a constantly changing position.

Thus, the beautiful street is beautiful - not only because of the fixed objects which line it - but also because of the meaningful relationships it generates for the person-in-motion. His movement is the purpose for the space, and it should therefore, function to activate his kinesthetic experience in a series of interesting rhythms and variations in speed and force.

Painters have been working recently towards a mobile rather than fixed view point Picassos painting of multi-faceted faces showing various aspects of a person at same time were an early attempt to convert this simultaneity into a fixed moment frozen in time. The futurists base their experiments on the notion of movement.

5.6 THE BUILDING APPROACH

Prior to actually entering a building's interior, we approach its entrance(s) along a path. This is the first phase of the circulation system, during which we are prepared to see, experience and use the building spaces.

The approach to a building and its entrance(s) may vary in duration from a very few steps ahead through a compressed space to a lengthy and circuitous route. It can be frontal to a buildings face or oblique to it. The nature of the approach may contrast with what is confronted at its termination or it may be continued on into the buildings' interior sequence of space, obscuring the distinction between inside and outside.

5.6.1 Frontal Approach

A frontal approach leads to a building's entrance along a straight axial path. The visual goal that terminates the approach is clear and the entire front facade of a building or an elaborated entrance within it, is visible.

5.6.2 Oblique Approach

In an oblique approach the advantage is that it enhances the perspective on a building's front facade and form. The paths can be directed one or more times to delay and thereby prolong the sequence or approach. If a building is approached at an extreme angle its entrance can project beyond its facade to be more clearly visible.

5.6.3 Spiral Approach

A spiral path prolongs the sequence of the approach and emphasizes the three-dimensional form of a building as it moves and the building's perimetre. The building's entrance night be viewed intermittently during the approach to clerify its position, or it can be hidden until the point of arrival.

The spiral approach is usually more appreciative in institutional complexes as this exhibit the architectural forms of the design.

5.7 STRUCTURAL SYSTEMS

In a design of such a magnitude like Fantasyland spanning various metres, different structural materials will be needed depending on span, aesthetic consideration and style. The structural systems represent the unity in diversity of the forms. It is expected to be the amalgamation or marriage of different forms and elements together to create rhythm, contrast, balance proportion, symmetry and harmony. In other words a juxtaposition of different forms brought together in light - architecture.

These structural systems will comprise of a number of different types of advanced building structures based on

modern technology. They are mostly space structures, space deck, space frames, which could span long distances without intermediate supports. Pneumatics structures, which are air-structures are also ideal. Another important material is tensile structures. These structures are always in tension and can span long distances. Various forms of this structure are available. All these three structural systems can allow for open plan system and flexible use of areas.

As the roof form is very important in institutional designs especially one that is profit-oriented maximum application of these forms is desirable.

Tensile structures can be used for exhibition spaces, picnic platforms, open air activities or on-site catering facilities.

Pneumatic structures can be used for theatres as in Osaka Exposition of 1970 in Japan where it was used to cover a floating theatre anchored a somewhere. It could also be used for restaurants, disco halls, etc.

Space structures are one of the most interesting forms that have became popular after the World Wat II. It was used in its most popular way as a geodesic dome in Montreal Exposition of 1967, in Canada. Since then it has gained World-wide momentum. Space structures can also be used for

covering swimming pools, use as a planetarium, pavilions and as a general building structure.

Plastic is another useful material. The basic bias against it is failure. Failure in laminated plastics are readily solved with the electron scanning microscope through plastographic analysis techniques and infrared spectroscopy.

As with natural composite such as wood, leaves, feathers, and bones, the resin-like component in modern synthetic composites transfer the stress to the reinforcing component.

Plastics can be in form of fibre reinforced plastics which consist of a special group of the reinforced plastics. They are a combination of flexible strands of fibrous glass and a plastic.

Plastic especially transparent one could be used as a geodesic dome for covering large surface area and for other architectural purposes.

5.8 GEOMETRICAL SYNTHESIS

Whatever kind of design one intends to do certain forms usually form the dominant part of the design. These forms have certain inherent qualities in them which project them above others. The orderliness and the visual symphony in

them is dramatic. Their application in design evoke some emotions and sentiments.

5.8.1 Circle

The circle is a centralised, introverted figure that is normally stable and self centering in its environment. Placing a circle in a field will reinforce its natural centrality. The centrality of a circule enable it to act as a hub and unify forms of contrasting geometry or orientation about itself. Associating it with straight or angular forms, or placing an element along its circumference, can induce in it an apparent rotary motion.

The sphere is the same from all points of view, around above and below. It is modified by perspective to form an oval shape consistently in relation to whatever distance the direction of observation. The consistency of a sphere has interested philosophers and artists for a very long time. Sphere can be modified usually by light and shade. It is the perfect nature of sphere which makes the dome the most interesting and strongest architectural form.

There is a complete unity in the sphere when viewed as plan, section or elevation. This has been

of great interest to architects over generations. Hence, by Alberti's deduction, the circue is the standard of perfection. Its mathematical properties are fascinating and it can contain or be contained by all the regular geometrical figures from the equilateral triangle to infinity. Even astronomers and theologians attest to its perfection by maintaining the concept of circular planetary orbits.

5.8.2 Triangle

The triangle signifies stability. When resting on one of its sides, the triangle is an extremely stable figure. When tipped to stand on one of its vertices, however, it can be either balanced in a state of equilibrium or be unstable.

5.8.3 Square

The square represents the pure and rational. It is a static and neutral figure with no preferred direction. Other rectangles can be considered as its derivative. Like the triangle, the square is stable when resting on one of its sides and dynamic when resting on one of its corners.

5.8.4 Juxtaposition of Geometry

Orientation or collision of two forms of different geometries results in their orientation,

hence, each will struggle for visual supremacy and dominance. The result is the evolution of any of these forms:

- The two forms can merge together to create a new composite form by subverting their individual identities.

- In any case the two forms can retain the individual identities and at the same time share a common portions of their volumes.

- The two different forms can separate and be linked together by a common element.

- One of the two forms can dominate or submarge the other.

CHAPTER SIX

DESIGN PROGRAM

6.1 THE DREAM

6.2 FACILITIES

6.3 THE ZONES

- 6.3.1 The Auxiliary Services Zone
- 6.3.2 Landscape Reservation Core
- 6.3.3 Out-door Leisure and Reservation Facilities
- 6.3.4 Central Leisure Provision Core
- 6.3.5 Aqua-Sports and Facilities Zone
- 6.3.6 Educational Services Core
- 6.3.7 Accomodation Zone
- 6.3.8 Car Emporium

DESIGN PROGRAMME

6.1 THE DREAM

It is assumed that Fantasyland will serve as a multi-themed resort centre where people of different generations race and interests will be able to explore the world of leisure to the fullest in the best possible and conducive environment devoid of the hazards and monotony of the city life. Life on Fantasyland will definitely be exciting, informing, entertaining and educating. It will play the dual role of effectively educating the clienteles as well as help him discover himself by revealing the recessive qualities of ones interests and abilities. Particularly for kids it will be an adventurous and probing arena for their inquisitive minds. This will be widely encouraged as it will open the "box of knowledge" hitherto concealed by the conflicting nature of the city.

Fantasyland will be a complete vacation land encompassing theme resort and featuring a wide variety of land and water recreational facilities. It will provide what people actually desire; pedestrian walkway with street scapes, elegantly decorated environment, cleaner and better than the cities. The place will be a whole public world and a living monument of what constitutes the good true and beautiful in an urban environment. In other words, a precusor of modern environment. That is the dream.

6.2 FACILITIES

In such a modern theme park so many factors act as determinant in the provision of the essential facilities. Age structure, socio-economic and educational groups, status of the visitors, philosophy of the design context.

No doubt, in Fantasyland emphasis will be on participatory rather than passive recreation. These will be either indoor or outdoor as trends in leisure and recreation indicate preferences for participatory sports. Medically, it is even the better to actively exercise the body and the brain together.

The provision of these facilities will be a marriage between some traditional forms of activities and modern one with a view to providing for both local and outside, interests with a view to integrating the two, relying on the concept of "unity in diversity". To facilitate orderliness and facilities are grouped or zoned according to the preferred areas in which the activity is best required.

6.3 THE ZONES

The facilities are grouped under the following zones:

i. Auxiliary Services Zone

ii. Landscape Reservation Core

iii. Outdoor Leisure and Recreation Facilities

iv. Central Leisure Provision Core

v. Agua-sports and Facilities Zone

vi. Educational Service Core

vii. Accomodation Zone

viii. Car Emporium

6.3.1 The Auxiliary Services Zone

The auxiliary services zone is an appendage supporting the main leisure complexes. Whatever is the objective of the complex, certain facilities are designated auxiliary. The are of secondary importance.

Whatever one intends to do in life, adequate planning is necessary at the initial stage of conception and construction. After this stage when the building is in use there is also the need for its smooth running. Certain individuals have to be charged with the responsibility of the day to day running of its affairs.

In Fantasyland the administrative part consists of the following:

Administration

(a) Entrance Hall

(b) Information Bureau

(c) Director of Affairs

(d) Secretary

(e) Assistant Secretary

(f) Accountant

(g) Public Relation Manager

(h) Graphic Artist

(i) Artists Studio

(j) Typists

(k) Clerks

(l) General Office

(m) Toilets

(n) Stores

(o) Cleaners Room

(p) Club Room

Other facilities apart from the administration also act as auxiliary services. Some of them are:

(a) Telephone Booth

(b) Postal Services

(c) Banking Services

(d) Travel Agency

(e) Dry-Cleaning Services

(f) Shops

(g) Saloon

(h) Maintenance

6.3.2 Landscape Reservation Core

Nature has endowed man-kind with two major elements which are irresistible. Wherever they are, they add beauty and life to the environment. Their integration brings up-liftment and neglect results in degradation. These two elements are water and vegetation. It is the latter that is of topical interest in this case.

Landscape create an atmosphere of orderliness, close proximity to nature, aesthetic appeal and general up-liftment of the mind.

In Fantasyland the importance of landscape is acknowledged hence certain area of the complex is reserved for the purpose.

Landscape core is where people go to admire nature, meditate and reflect on life and hereafter.

The amenities provided here are:

(a) Nursery

(b) Greenhouse

(c) Botanical Garden

(d) Landscape Pool

(e) Lawns

6.3.3 Outdoor Leisure and Recreation Facilities

(a) Basketball Court

(b) Children Playground

(c) Open Rest Area

(d) Kiddies Car Drive

(e) Tennis Court

(f) Badminton

(g) 5-a-side Football Pitch

(h) Barbecue

6.3.4 Central Leisure Provision Core

The central leisure provision core is the nerve centre of the complex. It will consist of several activities which are inter linked:

(a) Gymnasium

(b) Sanatorium

(c) Central Plaza

(d) Bar

(e) Restaurant

(f) Theatre

(g) In-door Games Room

(h) Kiddies Playroom

(i) Health Shop

(j) Shop (retail)

(k) Dart, Billiards and Archery Room

(l) Toilets

6.3.5 Aqua-Sports and Facilities Zone

As earlier stated water is an important element in our live. Withoug it we cannot survive. Too much of it is troublesome while too little of it is inadequate and painful. Human beings, fortunately have been able to tame it and let it dance to his music.

In Fantasyland activities taking place on water are:

(a) Large Aquarium
(b) Small Aquarium
(c) Boating
(d) Canoeing
(e) Fishing
(f) Whirlpool
(g) Discotheque (floating)
(h) Floating Bar
(i) Observatory Tower
(j) Roatating Restaurant

6.3.6 Educational Services Core

We should not forget the fact that it is the "developed human brain which place it above other animals". Certain basic knowledge remain as mysteries to humans and we are ignorant about some

regular occurences. At Fantasyland these inadequacies will be catered for; some of the provisions are:

(a) Television/Video Room

(b) Audio-animatronic Room

(c) Earth Station

(d) Computer Room

(e) Alexandria Library

(f) Leonardo de Vinci Studio

(g) Planetarium

(h) Children Hall

(i) Science Pavilion

(j) Art Room

(k) Curator

(l) Offices

(m) Shops

(n) Toilets

6.3.7 Accomodation Zone

Chalets which are self-contained will be provided for resident visitors to Fantasyland. Basic requirement stated below will be provided:

(a) Bedroom

(b) Living Room

(c) Dining Room

(d) Kitchenette

(e) Patio

6.3.8 Car Emporium

Fantasyland will have provision for both vehicular, cycle parks. Parking for public transport will terminate at the entrance to the complex while private car park which is sun-ken will be provided in the complex.

CHAPTER SEVEN

DESIGN ANALYSIS

7.1 GENERAL

7.2 THERMAL CONTROL

7.3 WIND CONTROL

7.4 Z O N E S

WATER AND WATER SPORTING ACTIVITIES

7.5 AQUARIUM (The Living Seas)

7.6 TYPES OF AQUARIA

- 7.6.1 Definition
- 7.6.2 Aquarium Equipment (Setting up the Tank)

7.7 CONTENTS OF THE AQUARIUM

- 7.7.1 Plants
- 7.7.2 Snails
- 7.7.3 Fishes
- 7.7.4 Food and Feeding

7.8 DISEASES

- 7.8.1 Fish Rooms
- 7.8.2 Water in the Aquarium

7.8.3 Depth of Tank

7.8.4 Number of Fish in a Tank

7.8.5 Aquarium Aesthetics

7.8.6 General Maintenance

7.8.7 Siphoning

7.8.8 Introducing New Fish

7.8.9 Indication of Hazards

7.9 GENERAL INFORMATION

7.10 R E N D E R I N G

7.10.1 A Historical Perspective

7.10.2 Importance of Rendering

7.10.3 Why Colour Rendering

DESIGN ANALYSIS

7.1 GENERAL

In the design of a complex like Fantasyland, certain basic considerations are necessary. Before designing, certain influencing parameters must be adequately catered for. Some of these parameters are planning related and they they are:

- Expansion potentials
- Safety of users
- Accessibility to site
- Provision of essential services
- Services

Other considerations has to do with the environment; these are:

- Thermal Control
- Wind Control

7.2 THERMAL CONTROL

It is quite possible to provide a comfortable environment without the use of artificial means through effective control by effective design. In this case effective use of space and form in an harmonious manner taking into consideration the general thermal factors of the area.

The choice of right material and methods of construction affects the productivity of the design. It is necessary in this case to keep the internal temperature lower by carefully designing the roofs, walls and openings so that thermal comfort is guaranteed. The orientation of the buildings so that those that would mainly be used for night activities would be oriented towards beneficial breezes so that stored heat built-up in the structures can be reduced by cooling as well as by radiation. On the other hand, for day-time activity it is possible to utilize heavy construction techniques which allow a build-up of heat during the day. By the time the heat is released the participants would have left. At certain periods of the year in Ilorin it is very difficult to achieve thermal comfort by air movement alone. The alternative is to induce air into the environment either through moisture or induced air. This can be achieved either through natural or artificial means. Trees, lawns, shrubs, ponds, etc., are part of the natural means of thermal control in an environment. The use of water fountains, pools are part of the artificial means of controlling the environment. An architectural means is through orientation of the buildings. The use of shading device, both external and internal, are also recommended. These block out the sun-rays from penetrating into the interior. The external shading devices could be in form of vertical or horizontal sun-breakers while the internal ones could be in form of blinds or curtains.

7.3 WIND CONTROL

The control of wind within the building is very important. It could either be beneficial or harmful. For instance, strong winds during the harmathan increased the rate of heat loss from the building through infiltration through the building structure and by increased convention. These could be effectively checked through effective landscaping of the environment.

Out-door comfort conditions depend on a combination of the air temperature and relative air movement. It is imperative for designer to understand the principles involved in order to effectively counter it.

In Ilorin, the North-east trade wind blows for about three months. Designers should consider the openings, planting of tree to control the effect of these winds to prevent dust from getting into the interior. Also openings should be located at places where it could avoid the direct effect of the wind. The buildings also need be designed tangentially to the wind direction. The external features of the building also help in controlling the wind effect.

7.4 Z O N E S

In Fantasyland the design is divided into three major parts. There is the leisure complex on one side and the

educational core as well as the residential quarters on another side. In between the two is the water activities. This comprises of water sporting activities like water polo, canoeing, boating, the small and large aquarium, the disco hall as well as rotating picnic spot.

WATER AND WATER SPORTING ACTIVITIES

7.5 AQUARIUM (The Living Seas)

The setting up of aquaria is one of the attractions of Fantasyland. In most recreational areas aquaria are generally lacking. The provision of aquaria is usually done exclusively on its own without any integration with other recreational facilities. In Fantasyland recreation and education will be going on simultaneously. It is intended to enlighten the public more about what goes on below the surface of the earth. The need to explore the frontiers of water and make it part of human daily life is part of the objectives of setting up the living seas.

Aquaria are common scenes in Europe and America. In Britain aquaria can be found in the London Zoo, Tower Aquarium, Blackpool, in Brighton and other places. In the United States of America, aquaria are in the Bronx Zoo in New York, National Aquarium in Washington D.C., etc. The latest and most technically sophisticated and perhaps most

aesthetically successful public aquarium built is the Monterey Bay Aquarium located at about 200 kilometre South of San Francisco. This was opened in 1984 and built at the cost of $40 million. The history of aquarium dated back to 1596 and the first public one was built in 1853 at London ecological garden.

7.6 TYPES OF AQUARIA

There are basically two types of aquaria; the public and the private aquarium. Public aquaria throughout the world have an obvious advantage over the ordinary aquaria in that they can afford the space to keep many larger and exotic specimens of tropical fishes. Also, the fishes in public aquaria are of scientific interest. The services of all public aquaria are large. They must, for instance, be reserve tanks for new fishes to be quarantined and acclamatized and possible quarantines. Many public aquaria have breeding section to reproduce and have complex systems of water filtration and aeration.

7.6.1 Definition

An aquarium is regarded as an artificial pool or tank for keeping of live aquatic plants and animals. It is also regarded as any container

capable of holding water, fishes and or plants and being inside a building. Definitely, with so many tanks to choose from, money is bound to be the decisive factor. The metal-framed tanks usually the cheapest in the range and the chromium-plated and fibre glass types being the most expensive.

Another important consideration is the dimension of the aquarium as it affects the number and health of the fishes it contain. Fishes, like all animals, take in oxygen and give out carbon dioxide through a process called respiration. Dissolved oxygen is extracted from water and carbon dioxide, a waste product from the fish is released in the water and finally escapes in the air. The amount of water level becomes critical except under very unusual circumstances, even though a high level of carbon dioxide can become poisonous to the fishes. This occur when there are many fishes in a small tank with each fish producing its own quota of carbon dioxide. Since the carbon dioxide cannot escape easily enough, it accumulates in the water eventually killing the fishes. This hazard can be combated by aeration which allows the carbon dioxide to leave the water easily.

The shortage of oxygen rarely occur except in conditions of gross organic pollution of a tank, by

over-feeding or dry foods or of Daphnia, which have subsequently died. The rotting of this food by millions of bacteria and protozoa make considerable biological demands on the oxygen supply.

7.6.2 Aquarium Equipment (Setting up the Tank)

i. Composts

An aquarium compost is the gravel at the bottom of the tank in which plants can be grown. These comprise of a mixed gravel, usually fairly light in colour and about 3/16 inches in diameter. Coarser gravel makes rooting difficult and excess food and fish droppings tend to fall between the pieces and rot anaerobically; usually becoming smelly and black. If the gravel is too fine all the residue rests at the top of the gravel.

ii. Lighting

Lighting display fishes to best advantage and help plant growth. Most aquarists prefer artificial lighting that can regulate, rather than relying on day light or ordinary room lighting. In any case, room lighting is useful for lighting an aquarium and a tank placed in strong sun light will encourage algae growth, turning the water green. Different kinds of

lightings can be used to light the aquarium. Incandescent light can be used. Flourescent lights have longer life span and can be used also. Specific tube for encouraging plant growth, e.g. "Gro-Lux" which has been marketed in recent years. The use of decorative lighting is also popular with many aquarists. In some instance, underwater lighting helps to heat the water as well as providing light.

iii. Air Pumps

Air pumps are used in the aquarium for two purposes: to force air into tanks and to work filtration systems. Aeration consists of forcing air by means of the pump through a small porous stone (diffuser). The stream of small bubbles formed agitates the surface of the tank allowing exchange of oxygen and carbon dioxide. There is usually no need for aeration in a properly kept tank which is not over stocked with fishes.

iv. Tank Covers

It is essential to cover the tank in an aquarium as many species of tropical fishes enjoy a quick jump from one place to another. These covers hold lighting tubes and they are normally made from

aluminium since it does not corrode easily and also reflects the light fairly well. However, in the special fibre glass tanks now produced the hoods are made of the same material. When made with a small lip on the bottom edges to fit neatly into the tank top, any evaporation condenses on the cooler metal and runs back into the tank. To prevent rusting a growed rubber strip can be fixed around the frame edges, or alternatively, the top frame can be treated with a cold galvanising preparation.

In general, the following major steps are necessary in setting up a tank:

(a) Sand must be thoroughly washed.

(b) Heater and thermostat should be fitted in tropical tank to the lower level. The thermostat should not get in contact with sand otherwise it would give a false reading.

(c) The sands and rocks must be arranged to taste.

(d) Tank must be gently filled.

(e) The amount of greenery needed to balance tank must be planted. It is preferred

if they are in bunches but they should not be too thick or deeply inserted into the sand.

It is advisable to wait for five days or even a week to allow plants to grow before introducing the fishes. It is necessary for the water to get "old" as water which has been standing for some time under the action of light has microscopic life born into it; a fact greatly appreciated by the fishes.

7.7 CONTENTS OF THE AQUARIUM

7.7.1 Plants

Plants are generally essentials to complete the scientific balance of the aquarium. Plants of the gems Vallisneria are populat for aquaria. This genus originates mainly from tropical regions and although it is flower producing, seeds do not form in this country and it is propagated by runners.

7.7.2 Snails

Malayan snail can also be used for aquarium. They spend the day burrowing into the gravel in search of food but at night comes out, climbing all over the tank. It does not appear to eat living

plants and as it reaches food which could otherwise decay in the gravel, it can be tolerated. It is live-bearing and therefore, does not spoil the appearance of the tank with the eggs.

7.7.3 Fishes

Different kinds of fishes could be used in an aquarium. Some of the most popular are:

i. Mollies (Mollienesia Spp)

This is obtained in South and Central America. To maintain the fishes in the aquarium it is advisable to provide a special tank and a small quantity of salt, say one spoonful to a gallon.

ii. The Guppy (Lebbistes Reticulatus)

This is the most common of all tropical fishes seen in aquaria because of its low cost and hardness. It is very beautiful and various hybrids evolve from them.

iii. Swordtails and Platies (Xiphophorous Spp)

This has produced a wide variety of colours without changing the basic body and fine shape. To obtain the best result when keeping sword tails, large tanks should be used to allow

space for the fishes to move and grow. As with the mollies some algae should be included in their diet. It must be remembered that if more than one type of sword tail or for that matter two different members of this genus are in the same aquarium, cross-breeding will take place. If the types are to remain pure then a separate aquarium for each is essential.

iv. Gyronecheilus Aymonieri

This is one of the most useful fishes for aquarist and nearly every tank should have it. It eats all algae on the glass and plants leaves and does not grow too big.

v. Electric Cat-fish (Malaplerurus Electrius)

This type of fish comes from Africa and as its name suggests is capable of discharging an electric current. It grows to about two feet in length and lives exclusively on small live fishes.

7.7.4 Food and Feeding

All foodstuffs contain varying amounts of the following substances: protein, fats, vitamins, carbonhydrates and they are all capable of being

used by the fish to give it energy. To ensure healthy growth, therefore, the fishes must have a mixed and balanced diet containing both dried food and various live foods such as white worm, tubifex, daphnia, earth worms and mosquito larvae. If there are algae or plants in the tank for the fish to eat, it is better. This diet can be supplemented by protein foods such as liver, beef, and heart to provide variety. Usually, fishes prefer to have the protein in the form of living mosquito larvae rather than pieces of cooked liver. Changes in diet help to avoid boredom from one type of food however.

The commercially prepared dried foods are of great importance to the aquarist. This generally consist of a mixture of cereal, milk powder, prepared egg, dried daphnia, shrimp. These are dried and mixed together and presented as a fine powder or as flakes. Others have various chemicals added which are reputed to give colours to the fishes. Liver is particularly good. The yolk of hard boiled eggs can be frozen in the refrigerator and served.

7.8 DISEASES

Fishes like all animals, are subject to diseases, the most serious of which are infectious. Dieseases through injuries, fighting, when being caught and infectitions in the tank caused by Protozoa, Bacteria or Viruses. All infections diseases are introduced into a tank from another infected fish either directly or by transferring the infection via duct.

Aquarists with special tanks should always have a quarantine tank with its own nets, fedding forceps, etc., which should never be used in other tanks. New fishes, after a quarantine of six weeks, should be carefully examined in a good light before being placed with healthy fishes. The major diseases are white spot disease and velvet.

7.8.1 Fish Rooms

Whatever the type of aquarium accomodation, conservation of heat by double-glazing of windows, building with insulating blocks, cavity walls filled with polyurea foams, etc., are all very helpful and are to be recommended.

7.8.2 Water in the Aquarium

In a modern aquarium the water need not be changed. Fish consume oxygen dissolved in the water and give out harmful carbondioxide. All that is

needed is to provide the oxygen supply and to get rid of the gases, and this can be done in four ways:

i. Sufficiently large air surface of the water so that the fresh oxygen is taken in and bad gases escape at a fast enough rate. This is probably the most singular important factor.

ii. Relative to the size of the air surface, i.e., the area of water in actual contact with the atmosphere, there should not be too many or too big fish, otherwise the oxygen is consumed and the bad gases are produced too fast.

iii. Growing plants to break down the carbon dioxide gases to turn them into oxygen and into nitrates; the oxygen helps the fish and the nitrates act as fertilizers for the plant themselves. These plants are known as oxygenerators.

iv. Light to make the plants grow. Filter should be provided to get rid of dirts and 30 - 40 percent of water from the tank base and top up with clean water, to replace the tank water thus removed.

Modern power filters are now so much that there should be no problem.

7.8.3 Depth of Tank

The depth of the tank adds little to its fish capacity, as the vital factor is the opening of the air, that is the length and the width from back to front. Plant grown in too deep tank tend to struggle due to extra water pressure or failure of light to penetrate down.

7.8.4 Number of Fish in a Tank

The table below is a guideline principle for the number of fish in a community tank. Filters increase this capacity by 40 percent, power filters by 100 percent.

Number of Tropical Fish, Average Body Length 3cm.	Area of Tank Water Covered	Suggested Depth of Tank, Top to Bottom
18	45cm x 30cm	30cm x 38cm
24 - 28	60cm x 30cm	30cm x 45cm
36 - 40	90cm x 30cm	30cm x 50cm
48 - 55	120cm x 30cm	30cm x 60cm

7.8.5 Aquarium Aesthetics

Shells, ornaments and rocks plus vegetation

is that within reason it is not the volume of water which counts but the area in contact with the air. Thus, if a tank is lavishly decorated with sand and aquatic rocks, giving a beautiful effect but displacing some of the water there is no harm done because the air surface has not been reduced. Pilling the sands in hills and dales so that the fish have varying depths of water to choose from is helpful to their health, in addition to being decorative.

In general, the aquarium in a bright room should have about four hours artificial light and strength of 25 watts/foot^2 of water surface.

7.8.6 General Maintenance

The general maintenance of an aquarium is virtually nil. The two golden rules are not to over feed and not to over-crowd. From time to time the tank water will evaporate and should be replaced gently, with water of same temperature, once a week or forthnight, the inside of the aquarium glass can be wiped slowly, to clean it. Skin the top of the aquarium water frequently especially if the smell of paint or vanish has done harm.

7.8.7 Siphoning

With proper care and no over feeding there should be negligible amounts of sediments to remove and this should be done once a month. Many "automatic" types of siphon are available or siphoning with rubber and bucket.

7.8.8 Introducing New Fish

When a new fish is to be introduced it is good to plan to feed the existing ones in the tank very well and while they are eating one can gently slip in the new fish at the other end. This new arrival is thus given a chance to acclamatize, to find hiding-laces and generally to take stock of the situation before meeting the crowd as it were.

7.8.9 Indication of Hazards

Cloudy Water

The first and most obvious sign of trouble is the water becoming cloudy, as normally it is never changed. The cloudiness may be of white, brown or green colour. While cloudiness in aquarium is dangerous it often means that for some reason the oxygen content of the water is too low and carbon dioxide content is too high. Brown cloudiness is nearly caused by dirt or excessive food that has

not been eaten and lies around the tank, often turning the sand black. Green cloudiness is healthy. Nevertheless, since green water is not perticularly visually appealing it should not be permitted in a show tank. To cure it, the amount of light received by the aquarium should be reduced irrespective of whether it is sun-light, day-light or artificial. The green algae can be cleaned in 2-4 days by adding chemicals like pottasium permangande ($KMNO_3$).

7.9 GENERAL INFORMATION

- Minimum Wall Thickness: 30cm.
- Depth of the Tank: 25cm - 125cm.
- Capacity of Tank: Length x Breadth x Hight x $6\frac{1}{4}$. All multiply by $4\frac{1}{3}$ to convert to litre.
- Water Media: From Hard to Soft.
- Accessories: Plants, Rocks, Shells, Ornaments and Sand.
- Temperature Difference: 1 C, Difference from one Pool to another.
- Material of Construction: Chrome Plated Fibre Plastic.

- Building: Double glazing of windows, Buildings with Insulation Blocks, Cavity Walls fitted with Polyurea Foams, Aquarium not facing direct Sun-light, not too few Plants, Efficient Cleaning of Inside.

7.10 RENDERING

7.10.1 A Historical Perspective

Art has been practised by man-kind in various forms since Paleolithic times. In the beginning it was confined to achieving beauty and symmetry in the tools he used. Later on, he found enjoyment in the use of colour of his body and in his clothing, as well as in ornament.

Rendering as it is today, was a product of Fifteenth Century Renaissance which stimulated a new interest in classical antiquity and an upsurge in the activity of the building.

Discovery of printing machine and paper further helped to promote rendering at that period in history.

Because England was far from Rome the rendering affair took a longer time and English Renaissance drawings were linear in quality. In

Europe there was a period of revolution and invention towards the end of Eighteenth Century. Architectural Education was formalised in France and this influenced delineation. The Ecole des Beaux Arts School stressed beauty of delineation in the study of designs. It has a great influence on rendering and created the climate for the development of many of the advances in delineation in France.

7.10.2 Importance of Rendering

i. Rendering serve as the bridge between the client and the Architect. It is a common meating ground without hard to understand technicalities. Usually the finished drawings represent the amalgamation as well as refinement of the ideas of the client and the Architect.

ii. It permits the Architect to "sell" his job to his client. Many projects had been abandoned in the sketch design stage because the client was not impressed.

iii. Also, rendering offer an opportunity for determining textures and colours of materials. Assuming the colour appear well on paper,

definitely they will be handsome when built. Rendering is more than a pretty picture but a guide for actual construction.

iv. If the rendering is important in communicating with an individual client, it is doubtly helpful in dealing with building committees, juries or committees since an adequate picture serve as convincing by providing an equal opportunities for each individual to see for himself what the finished building will look like. Equally, it evokes an approval and eliminates hours of haggling. Consequently, a bad design or too sketchy or badly drawn rendering will fail to impress anybody.

v. Assuming the structure is for a large organisation it can be used to convince the "Head" for his approval. After then the drawing can be used as a propaganda to promote the project. Such a picture has definite advantage and prestige and advertising value to the company itself.

Rendering, therefore, is an indispensable practical item for both the Architect and Owner. Also, it gives emotional satisfaction to the client if it makes his dream come true.

7.10.3 Why Colour Rendering

"With colour you accentuate, you clarify, you disentangle. With black and white you get stuck in the mud and you are lost. Always say to yourself drawings must be easy to read. Colour will come to your rescue".- Le Corbusier. This was a comment of one of the greatest Architects of modern times.

Generally, people have come to accept black and white in pictures as reality instead of mere abstraction of reality, which it is really is. Yet the delineator usually finds that a rendering in colour has a much greater impact and appeal than one in black and white.

Colour rendering brings to mind real things and similar scenes that the spectator has experienced. With colour the delineator can identify variations and textures in a rendering and help convey the message better.

A logical prove of the difference in appeal is to hang two skillfully drawn renderings of the same subject side by side. One should be in black and white and the other in colour. Invariably, the eye will first go to the one rendered in colour, and only afterwards when it has been satisfied will it go back to the black and white drawing.

CHAPTER EIGHT

PROJECT ANALYSIS
(I L O R I N)

8.1 PROJECT LOCATION

- 8.1.1 Demography
- 8.1.2 Climate
- 8.1.3 Recreational Facilities in Ilorin
- 8.1.4 Stadium Complex
- 8.1.5 Contributory Infrastructures

8.2 THE SITE (ASA RESERVOIR NATURE RESERVE)

- 8.2.1 Site Location
- 8.2.2 Site Selection Criteria
- 8.2.3 The Chosen Site (Asa Reservoir Nature Reserve) Site-II

8.3 SITE STRUCTURE

- 8.3.1 Relationships
- 8.3.2 General Information

8.4 SITE ANALYSIS

- 8.4.1 Introduction
- 8.4.2 Climate and Micro-Climate
- 8.4.3 Dry Season
- 8.4.4 Rainy Season
- 8.4.5 Temperature

8.4.6 Micro-Climate

8.4.7 Vegetation

8.4.8 Significance of Vegetation

8.4.9 Geology

8.4.10 Hydrography

8.4.11 Morphology

8.4.12 Ingress and Egress

8.4.13 Sunrise and Sunset

8.4.14 Views

8.4.15 Effect of Water

PROJECT ANALYSIS

8.1 PROJECT LOCATION

Ilorin is a town located on the West Central part of Nigeria. It is the capital of Kwara State by virtue of the State creation decree of 1967. Before then it served as the Capital of Ilorin province in the old Northern Region. It is a town founded several hundreds of years back. Originally, it was occupied by the Yoruba. The eighteenth century Sokoto Jihad which extends its frontiers to many parts of Northern Nigeria reached Ilorin. The Fulanis later inhabitated the town as a result of the spread of Islam to the Southern part of Nigeria.

Ilorin is generally regarded as the gateway between the Northern and Southern part of Nigeria. It is classified as a middle-belt area. Its central location accounts for its moderate climate as the effect of both the North-easterly winds and the South-west trade winds are felt at one time or the other in a year.

Generally, the lands there are flat in nature except form some inselbergs like Sobi Hill and flowing rivers like Asa, Aluko among others.

8.1.1 Demography

The population of Ilorin by 1980 was 436,000. It is estimated that it would be about 537,000 by the

year 1990, an increase of 100,000 people in a space of ten years.

The active population, that is the labour force population ratio is estimated to be roughly 45 percent of the total population. This ratio is quite high since it is generally accepted internationally that the labour participation can seldom rise to more than 44 - 45 percent. This high labour force participation is due to the special structure of employment associated with low income level which is expected to change with economic development.

8.1.2 Climate

Ilorin is moderately hot with an annual temperature varying from 75 F - 85 F. Ilorin and its environ is well watered. Average annual rainfall is 125cm. There is a marked dry season between November and March. This period is dominated by North-easterly wind or harmathan with a speed of about 1.41 mile per second. The wind originates from the Sahara with the characteristic of being dry, dusty and hazy.

The period April - October is dominated by the South-westerly wind. It originates from the sea, thus, moisture laden resulting in rainfall. The speed is

about 1.6 mile per second. The wind is desirable as compared with the other. The weather at this time is generally conducive to living.

INCOME GROUP	PERCENTAGE OF INCOME	PERCENTAGE OF INCOME	CUMMULATIVE PERCENTAGE OF POPULATION	CUMMULATIVE PERCENTAGE OF INCOME
Very Low	25	13.6	25	13.6
Low	25	19.8	50	33.6
Medium	25	24.1	75	57.5
High	18.5	23.9	93.5	81.5
Very High	6.5	18.1	100	100

SOURCE: Income Group Distribution, 1984.

8.1.3 Recreational Facilities in Ilorin

In Ilorin presently, several recreational facilities are available ranging from government provided ones to those serving various institutions.

On the governmental level there is the Amusement Park as well as the government garden. These two are in form of parks or passive recreational areas. The Amusement Park is situated in the hub and it effectively serve the function for which it was intended. In this park, swings are provided for the

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Mean Maximum	92.3	96.2	95.6	92.5	90.4	87.8	84.5	83.9	85.8	88.1	92.1	92.7
Mean Minimum	65.0	70.1	72.3	72.3	71.3	70.1	68.8	69.6	69.5	69.4	67.3	66.6
Air Temperature	78.6	83.2	83.9	82.4	80.3	79.0	77.1	76.7	77.6	78.7	79.7	79.6
Range	27.3	26.1	23.3	20.2	19.1	17.7	14.7	14.3	16.3	18.7	24.8	26.1

SOURCE: Magnitude and Seasonal Changes in Temperature Prevailing Over Ilorin

kids and few animals are caged. There is also the drinking area as well as snacks which is the only built up area. The other part is just the landscape lawns where people sit and relax. This recreational spot is mainly patronised by juvenile or teenagers due to its nature. The peak period is during the festival periods like Id-el-Kabir or Fitri or Christmas period. At these periods the youth from different parts of the town gather there to celebrate by taking pictures, buying snacks and drinks and relaxing generally on the lawns.

The government garden is located in the government residential area 9G.R.A.) hence it draws its crowd from people around that environ. The major attraction in that place is the undulating or slopy nature of the site coupled with the flow of water which divides it into two parts. Concrete seats are provided all over the place with trees planted all over thereby providing shades. Aside from these, there isn't any major attraction in the government garden.

Another area where government is involved in the provision of recreational facilities is in the government owned Kwara Hotel. Here facilities like lawn tennis court, swimming pool are part of the facilities around.

Except for the stadium there is no other place where the Government is involved in recreational facilities.

Private or institutions make their marks through the provision of staff clubs. The University of Ilorin Staff Club, School of Technology and Education Staff Clubs are also part of it. Voluntary bodies like Ilorin Club, Golf Club are some of the places where one easily spend one's leisure time conveniently. These places operate on membership basis and due to its elitist nature very few members of the society really benefit from it. Sobi Hill is another landmark where recreation can be pursued. The hill can be used for picnics and other light activities. Unfortunately this has not been fully explored. It is hoped that with time the potentialities of the hill will be fully tapped to complement other facilities available in the town.

8.1.4 Stadium Complex

The Stadium complex in Ilorin is the major leisure complex around the town. The major facilities provided are the football main bowl, practice pitches, basket ball courts, in-door sports hall and the gymnasium. In the gymnasium activities like wrestling and boxing take place while the sports hall cater for activities like table-tennis, badminton, squash racket, etc.

8.1.5 Contributory Infrastructures

Basic infrastructures in any locality affect the social and economic well-being of the town. The industrial nature of a town affects the provision of presence of these facilities. In Ilorin there are certain number of industries which help to boost employment opportunities and strengthen the need for recreational needs. The availability of other commercial infrastructures more elites abound in the town and the yearn for recreation needs of their statuses is on the increase.

8.2 THE SITE (ASA RESERVOIR NATURE RESERVE)

The site has the following data:

- Length: 402 metres
- Maximum Height: 27 metres
- Storage Capacity: 43 Cubic metres
- Treatment Plant Capacity: 55,000m^3/day

8.2.1 Site Location

Fantasyland will be sited, along the bank of Asa Dam on the part allocated for recreational purposes on the land use proposal for Ilorin. Asa Dam is a few kilometres outside Ilorin Township and it is quite accessible for both local and outside visitors.

On the land-use master plan, the whole town is zoned into different related divisions. There are the residential part, the industrial or commercial area, the institutional area like the University, Colleges of Education and Technology, etc., and also the recreational zones.

8.2.2 Site Selection Criteria

Asa Dam Natural Reserve was chosen as the most ideal site after a through comparative analysis of the available sites and its ability to satisfy the design objectives and the availability of other features on the site compare to the other site available.

The Dam was constructed principally to provide portable drinking water to the Metropolis and its environ. It was to pump drinking treated water to the Water-works in the Government Reservation Area (G.R.A.) and another one off Unity Road. The Water Distribution to all places in town will then commence from the two Water-Works.

On the land-use plan two areas were earmarked for recreational purposes. The first one is the already existing Amusement Park. This is along Unity Road off Ibrahim Taiwo Road. It is bounded by Unity Road, New Yidi Road, Stadium Road and on already existing untarred road.

The Site used to served as the old praying ground during Muslim Festivals. Due to its compactness and

and inability to contain a large percentage of people it was abandoned. Also, traffic situation there was terrible during the festive periods. It was as result of these inadequacies that it was converted to a recreational spot. Mainly, passive activities like relaxation on the lawn drinking, taking of photographs and swings for the little ones are the major activities going on there. Going by the name (Amusement Park) It was not designed for active recreational purposes. On the other hand Fantasyland will be a unique assembly of activities both passive and active that help to develop the physical, mental and spiritual well being of every individual.

Generally sites for recreational purposes are selected on criteria of geographical suitability, available land area, suitability for the intended purpose, availability of essential requirements whether natural or artificial and other related factors. Since it is a recreation sport of the calibre envisaged in Fantasyland two major natural features are necessary. These are vegetation and water.

There is a quality about water which calls to the most deep rooted and atavistic part of our nature. In the deep canyons of our cities, three main elements water, fire and trees are the major elements linking us to our primitive past, of all these, water and fire both evoke the most direct respiness. Fire is dangerous wherever it occured in the city,

negative and evil, while water is positive and life giving. In any case it is positive and life giving. In any case it is an element from which we all come from. The wilderness and exuberance of water stirs us with its qualities of non conformity and vigour. Even when captured, contained and confined in pools, water affects us in as much as a caged animal in the zoo, pacing back and forth in his cage, beatiful and desperate, controlled but with implications of wildness.

Water reminds us of high mountains and the streams, of deep spasms and gurgling brooks and the quiet sounds of the wilderness. Even in a city, the mere sight or sound of water stirs the most elemental and basic roots of human natures.

For centuries, men in one way or another has brought water into their cities for aesthetic appeals, bathing and drinking purposes. From history, the East used to channel water for irrigation purposes running down the mountains along the curb lines of the streets into cool, green, gardens enclosed by walls.

Since that time, each people has then developed a strong expression about water and the way it has been used, in each period the greatest inventiveness and higher talents have been lavished on the intricate and exciting

use of water. In both the persia and the Middle-east, Water has always been treated in flat pools, trimming full and almost running over like wine in a goblet.

Generally, the edges of these pools have always been carefully sculpted and controlled, so that the container carried the major design impact. The water was also used for its reflective purposes and qualities and its cool impact.

Initially, the water gardens were more exuberant and active. Starting high on mountain streams, the water was brought in across country in flumes, running hard and swift into the upper courses of the terraced slopes, and then these pressures were channeled into hundreds of different effects-water falls, great jets, cascades, sprays from walls, even surprise fountains which wet unsuspecting guests at parties. The Italian Civic Fountains appears in most places and squares usually combined with sculptures in a newer-ending fascinating inter play of morarble and water, so often and so baroguely intertwined as to make it difficult to discover which was more active, the figures or the water.

The waters of France were quieter with great reflective and symmetrically organised and curbed basins; their control like the control of their trees and ground planes-expressed the French attitude about nature. To be beautiful, there

is the need to control the natural elements. On the other hand, the Japanese have a diametrically opposite attitude to this. Each pool was a miniature of nature, each stream concealed its sources, each lake was surrounded by hills and rocks as an expression of the essence of wilderness, the ineffable quality of mens relation to wilderness in capsule.

Now, advances in technology have opened great new possibilities, for the use of exciting water effects in our cities. One of the most difficult and trying considerations, that of bringing inadequate water supplies, have been overcome by the new pumping systems. Louis the fourteenth assigned three Thousand mercenaries, to dig canals to bring water for the fountains of Versailles. Our new recirculating pumps have overcome all these difficulties and have made it possible to re-use the original supply of water without any loss or refilling, and in any amount desired. The use of control valves, jet sizes orifices and shapes can be fabricated in an innumerable variety of sizes and types designed to produce any desired hydraulic effect.

The most recent advance of all is in the programming of changing water effects. The use of new time clocks, tape devices, electronic controls and computers, the most elaborate and complex mobility and changes in water effects can be carefully programmed and controlled. These water

effects can be interwoven with sound and lighting into a new and multi-dimensioned series of fascinating relationships which can be invilved or simple, and which consists no longer of water alone, but of a vast Kaleido-scope of diverse element.

There is real danger, however, of losing sight of the inherent quality of water in these exuberant amusements of that very quality of chance which brings water to us. When we control too much, we have lost the great virtues of unpredictability and have made instead a static form our of a wild and mobile element.

Thus, the subsequent landscaping and seascaping of the site and creations of features of attractions whether in form of open spaces, thus, become an important aspect of site determination.

In selecting sites suitable for recreation, whether active or passive certain criteria are relied upon. The composite suitability is thus, arrived at by combining these criteria together. Some of the active criteria are:

i. Bays and Beaches

Because of the linear expense of land along the beaches suntanning, resting, picknicking, and other light related activities, could take place. The Beaches also

provide scenic attractions, through viewing of the sea with various colours lining the periphery of the ocean.

ii. Exp nse Recreational Water

The availability of expanse land recreation also aid the development of recreational need. So many activities could take place wherever water is available. Apart from the common swimming pool which could be provided through claiming of part of the water activities like water polo, boating, canveing could also be explored. Even aquarium could be built on the water after it has been purified.

iii. Potential Recreational Areas

Any area of potential recreational need the site chosen is an added advantage to the site. Such an opportunity boost the opportunity of choosing such an area for the proposed recreational facilities.

iv. Space

The amount of space available must correspond with the activity to be sited on the particular location. It is generally required that at least one and half times the used area should be available for whatever structure is intended for the site. This is in conformity, with the future need for expansion. In a recreational area the open area could be designed for out-door

recreational purposes, part of which could be reclaimed for built-up whenever desired.

v. Location

Specific functions require specific location. An industry for instance has to located where there will be availability of water supply, electricity, raw materials, labour and market force. On the other hand a recreational complex has to be at a location where it will satisfy the basic requirements of such a purpose. For instance, it must be at a place where there will be enough land allocation. It must not be in the hub as this is not desirable. An ideal example is the Disney Land that is located on a large expanse of land in Orlando, Florida.

vi. Special Features

The presence of a special scenic features also add to the criteria for location of recreational facility. These help in no small measure to boost the attraction of such places.

vii. High Quality Landscape

The provision of essential landscape elements like grasses, forests or tree could help in the choice of site. Since in passive recreation people will need to sit or relax at conducive places, the need to have

a wide expanse of green lawn is necessary. Also, in places where jungle trecking is desirable, thick forests or large expanse of trees are also desirable.

viii. Scenic Attractions

Scenic attractions like historic mountains wherever available could further highlight the intrinsic quality of the site. Also, the presence of water bodies could brighten and liven the environment. Presence of unique historic values like hills could also keep people busy while enjoying their recreational time.

ix. Access

Access into any site is very important. The placement or location of an access to a site can determine how effective the site can actually be used. Consideration has to be given to other parameters like traffic from other sources, the topography of the site, i.e., whether the located access will enhance the aesthetics quality of the design or not. An illustration of example that readily comes to mind is the Frank Lloyd Wright's "Taliesin East" where the entrance is at such a position that one will have to journey round the complex in perspective before actually parking.
A situation in which a site is bounded by roads is

not too ideal. One, it does not give room for enough future expansion. Lack of freedom of design form is another constraint. The mere sight of traffic from all directions is another diversion from the activity in question is not too good.

8.2.3 The Chosen Site (Asa Reservoir Nature Reserve) Site II

Asa Reservoir nature reserve has been selected for the purpose of building a recreational structure(s) called Fantasyland after a thorough and comparative analysis of it with the other site available, the Amusement Park, it was after a critical assessment that it came to a logical conclusion that Asa satisfy the latter, i.e., the Amusement Park that it was wisely chosen as the most ideal site for Fantasyland.

In Ilorin, capital of Kwara State of Nigeria, certain basic supporting infrastructures were developed to complement the healthy existence and living of the people. Asa Dam was one of them. It was built to help reduce the scarcity of portable drinking water around Ilorin metropolis. It was to serve both the residential, commercial and industrial needs of the entire populace. The site in itself is an interesting one. The water divides the site into two parts and creates an architectural challenge in the intergration of the two

parts into a unit whole. Because of the following reasons Asa Reservoir was chosen at the expense of the other site.

i. Access

Asa Dam is highly accessible to both local and outside visitors. Visitors arriving from the Western part of Nigeria can approach the site through Ilorin-Ibadan Way without having to go into Ilorin metropolis. Also, visitors coming through the Air-port will pass through the same way. The site is linked by various interconnections of road networks. There is also the perimeter expressway.

Visitors from the Northern part could easily come through the New Yidi Road. Another good things is that traffic flow along these roads are smooth and there is no delay whatsoever. All these advantages cannot be said to be available in the other site.

ii. Space

In Asa Dam there is a large expanse of land which could conveniently, contain all the activities envisaged in Fantasyland. The land on both sides of the Dam would conveniently harbour the facilities. Unfortunately, Site I cannot boost of same.

iii. Location

Location of such facilities are usually in a virgin large expanse of land usually outside the metropolis. By nature,

people want to get out of city life and seek solace in a completely different atmosphere. This cannot be achieved within the hub.

Asa Dam meets up with this requirement. It is located at a few kilometres outside Ilorin Township. With its location Fantasyland will enjoy the benefit of being a secluded environment devoid of city wranglings. The contrast is the case with Site I. It is located within the nerve centre of Ilorin which places it in a great disadvantage. Even recreational resorts of lesser quality than Fantasyland are not usually located within the metropolis. All the recreational areas built by Walt Disney are outside the cities. Fantasyland is also located at a site where the basic ingredients necessary for its operations would be available.

iv. Special Features

In an environment like Fantasyland certain features are very necessary. They help to complement the complex. The presence of Water body help to strengthen the choice of site. In Fantasyland water will be needed in large quantities.

Activities like Swimming, Water Polo, Boating, Canoeing will require a large volume of water. The aquaria will also be located on the water thereby creating a pseudo

impression that he (the observer) is actually immensed in the water.

In all these major factors are responsible for the choice of Site II; Asa Reservoir Nature Reserve as the ideal ingredients necessary for such a project in terms of waters availability, large expanse of land, accessibility, location, and other necessary paraphenelia surrounding such a project.

The success or otherwise of such a project depends so much on how the natural and man-made resources can be gathered together in the best useful and conducive manner for the realisation of the project.

8.3 SITE STRUCTURE

When planning a project or structure in relation to a land area, we should first analyse and determine all the site functions. On the site analysis diagram we would indicate, use-areas of logical size and shape in studied relation to each other and to the natural and man-made features of the total project site. In the Fantasyland site-structure diagram, six different zones are considered. These are:

i. Central Leisure Complex

ii. Auxiliary Services — Noise Zone

iii. Out-door Leisure Complex

iv. Educational Core

v. Accomo

vi. Aqua-sports and Aqua-facilities

8.3.1 Relationships

The central leisure complex is the built up area of Fantasyland. It contains in-door activities like games, health station, shopping offices and the like. It is situated close to the out-door complex since the two naturally merged into one another. They play complementary roles.

The anxiliary services provide the necessary infrastructure in terms of administration, and provision of other services like telephone, laundry for the in guests, banking services and postal services so that visitors do not have to go to town to cash cheques or post letters.

There is a common parking facilities for all these activities. These facilities are all grouped together on one part of the site and are designated noise zone.

On the other part of the complex is the quiet zone comprising of the educational core and the accomodation facilities and its related ancillaries.

This zone also has its own parking space which is sunken.

The two parts are connected together through the pedestrian and vehicllar accesses provided and through the bridge linking them linearly.

On top of the water is the aqua related activities like the two aquaria. Also, the disco hall and the picnic spots are raised on the water level.

For a continuous flow of activities the landscape reservation core is integrated into the space between the noisy leisure zone and the water. It serves as a visual continuity for people moving between the complex and the water. Along the banks of the river is the harbour. Boats will be anchored at the banks and all necessary boating facilities will be provided here.

The pedestrian accesses into the site is separated from the vehicular access to avoid pandemonium. There is an overhead bridge for the pedestrian to approach the site. Standing on this bridge one can have a panoramic and kaleidoscopic view of the site. This in itself attracts the pedestrian to all parts of the site as he/she would have seen all the zones immediately.

To protect the pedestrians against solar intensity, trees are provided along the pedestrian paths to shade them.

Vehicles enter the site and leave through the only entry into the site. From there it disperses into either of the two zones of the site.

8.3.2 General Information

As the brief is being studied one need to investigate and analyse the profit site. Not only the specific site contained within the properly boundaries, but the total site, which includes the site environs to the horizon and beyond.

One effective way of understanding the site is to prepare a site analysis diagram. A topographic survey is taken from actual site observation and all site features that supplement or interpret it are plotted on it graphically.

8.4 SITE ANALYSIS

8.4.1 Introduction

The site analysis represents the general appraisal of the conditions and elements which directly or otherwise influence the project site and its execution. It generally fall into categories:

- That which is in existence through the intervention of already existing and planned features by man. This category is referred to as the imposed features.
- That which is inherent in the site through the natural and environmental conditions.
- These natural elements can be sub-divided into six major sub-headings:
    - Climate and Micro-climate
    - Vegetation
    - Geology
    - Soils
    - Hydrography
    - Morophology

8.4.2 Climate and Micro-climate

Climate is defined as the atmospheric condition of a particular area at a certain period of the year. Certain factors influence the climate of an area. Different places have different climates.

The project area falls between the Southern rain forest which is moisture laden and the Northern dry dusty harmathan.

The weathers over Ilorin is seasonal in response to changes in periods of the year and this has a great

effect on the locality. The change of season is attributed to the migration zones of the North-south zones between the two major interplaying air masses. The meeting part of these two air masses is referred to as intertropical discontinuity.

These two air masses are the humid atlantic air stream otherwise referred to as the South-west moonsoon wind and the other is popularly referred to as the North-east Trade Winds originating from the Sahara in the Northern part of Nigeria.

The air mass coming from the atlantic is generally moisture laden with dew point exceeding 14 C and the accompanying wind are Southerly or Westerly. The other air mass, is generally dry since it originates from the Sahara. The accompanying wind in this case is Northerly or Easterly. The two air masses affect the climate and weather of the area in question. The North-east Trade Wind is generally associated with the tropical contimental air mass while the South-west Monson Wind is regarded as a phenomenon of the tropical maritime air mass.

In magnitude and direction, these two air masses exhibit considerable difference. The wind strength of North-east Trade Wind are stronger and more frequent

than that of the South-west moonsoon. This difference can be explained in terms of the difference due to the attitude and surface relief.

8.4.3 Dry Season

This is a by-product of the North-easterlies Trade Wind otherwise referred to as the harmattan.

The dry season starts between November extending into March or April. There is no significant rainfall during this season except for some sporadic showers once in a while. The prevailing air mass at this period is the North-east Trade Wind. It brings cloudlesskies and cooler nights with very low humidity. The trade wind originates from the Sahara hence it is dust ladden resulting in harmathan wind which brings fogy atmosphere particularly in December. At this time there is a significant drop in temperature as insolation is decreased by the filtering effect of the air borne sand particles which settles eventually as fine deposit over all horizontal surfaces. This intensity decreases until the emergence of the warm tropical maritime air mass which results in rainfall and cool atmosphere. The weather at this period is not too good on plants. One to inadequate rainfall hardly will plant germinate.

8.4.4 Rainy Season

The rainy period is normally between April - Early November, it is a by-product of the South-west moonsoon wind originating from the ocean. Generally rainstorms and cool breeze ante-date the rainfall. The peak period for the rainfall is between May - September. The presence of the rainfall results in remarkable difference. The weather at this period is generally cool and the sun intensity is reduced. Flowers glow and vegetation as well as farm land increase in yield. The effect of rainfall brings new leaves and shades of decilous, trees, followed by the glowing of flowers and seeds. All the dry grasses turn suddenly into green vegetation. Another change is in the cloud cover which becomes humid particularly when its about to rain.

During this rainy season two major rainfall period are experienced. There is one that is characterized by heavy downpour. This occur een June and August. At this period growing pla osper very well. During this period the rainfall is ally short, heavy downpour often of large dro zes. This is because the high e ergy content of the rainfall system result in a high amount of water held and high rates at which they are shed.

The high rate of energy release of heavier rainfall on exposed surface soil particularly on steep slopes result in detachment and destruction of soil aggregates, with consequent soil compaction, surface crushing and accelerated soil erosion.

Throughout the year there is variability in annual rainfall and also changes in the length of the rainy season and the magnitude of the components constituting the annual water budget, can vary greatly from year to year.

The advantage of Wet Season for recreation is that it provides water for recreation in rivers, streams, dams, oceans or seas and enable considerable areas of landscape to be established. The annual rainfall forms an important part of the ecological systems that form the stable natural landscape of the site such as the green vegetation, cool breeze from the water and the presence of large volume of water for recreation.

8.4.5 Temperature

Temperatures are constantly high in Ilorin throughout the year. The highest temperature reading is between March and April; a few months before the rainy season.

Throughout the rainy season the relative humidity is high due to a high rate of water in the atmosphere. It falls considerably during the dry season.

The rate of evaporation is much lower during the rainy season as compared to the dry season. This is a testimony of the length of the rainy season decreasing north-ward rather than of a genuine decrease in the rate of evapo-transpiration. Contrary the average rate of evapo-transpiration increases with latitude during the wet season.

8.4.6 Micro-climate

The presence of certain features on a site can affect the local climate of that environment certain elements like hills or rocks, water-body, thick forest, etc., can have a tremendous impact on the environment.

In Fantasyland and presence of the Asa Water Reservoir in such a large quantity to constitute a Dam will definitely have an impact thereby creating a micro-climate for the site. The net effect is that there will be a considerable reduction in temperature of the surrounding environment as compared to the general climate. It thus, makes the environment more conducive to living and recreation. The vegetation

here will remain bouyant for a longer period. A cool land and sea breeze will be experienced on the site.

It is test to utilize this advantage to the fullest by allowing for cross-ventilation and an open design concept. This also, call for includion of various out-door recreation spaces for effective or maximum benefit of the breeze. The effect of courtyard approach will further strengthen this concept.

8.4.7 Vegetation

Ilorin falls within the Southern guinea Savannah Zone. All vegetational types are of visual climatic protectional and ecological importance, supporting a great variety of birds and wildlife.

Generally, the vegetation consists of barked trees (Daniella Oliver) of up to 12 - 15 metres high with tall grasses (Andropogon Tectorum) of between 1.5 metres and 3 metres high growing in bussocks.

Several types of vegetation are present on the site. Along the bank of the river are tall, slim grasses often growing into about 2 metres high. From a far these grasses prevent sight into the river. Going outwards from the sea is another vegetational type thick in nature but quite short. Closely following

this is the less compact brittle green grass scattered along the bank of the river further inland. These types of vegetation could be referred to as (Reverside Vegetation).

There is also the presence of decidous open woodland and with trees shading leaves simultaneously with the dry season. At same places few ever green sparsely around the site. Formation of human activity like grazing and cultivation, burning, etc., by the farmers is also evident on the site.

8.4.8 Significance of Vegetation

The vegetation on the site are of great potential landscape and shades for Fantasyland. Part of the trees will be preserved while some would be cut to give room for the built-up area. The vegetation will also help to prevent soil erosion.

The riverside vegetation on its own part would be integrated with the design so as to farm a continous juxtaposition with the entire built-up area. Also, part of the vegetation would serve initially as the dominant vegetation in the landscape reservation core. They will be nurtured until old enough for transplanting to the appropriate place on the site.

8.4.9 Geology

Alluvio soil deposits are located along the river courses and river banks in limited deposits. It consists of various combination of sand and silt and dry and are derived from lateritic element and weather crystalline bedrock basement complex materials sedimented by the waters. Hydromorphic soils are found in the lowest lying areas where drainage is poor.

The soil generally around Ilorin are well drained and thought to be fairly fertile. Assuming the soils are well conserved and improved upon it could be good for landscaping.

The effect of the micro-climate on the site results in a slightly different soil types on the site. Various types of soils abound the site. At the river bank lies the find and sandy textured soil while at the extreme edge the soil gets red and course. It becomes dark brown at the swampy part close to the water.

Most part of the site contains soils developed above this material, although, the soils are derived mainly from residual laterite overlying the bedrock usually in very thin layers. These results in varying textures mainly loamy and sandy soils. They are

generally of medium depth and well drained of low to moderate erosive power and run off potential.

The presence of surface washed areas due to low organic content is also evident. The underlying horizons are typically lateritic impeding drainage and plant growth, under the influence of high rainfall and lack of protective tree cover.

8.4.10 Hydrography

Fantasyland locating is on the bank of Asa Reservoir nature reserve. The site drains forward the water as there is a general down slope towards it. A section across the site reveals such as illustrated in the site section diagram. The site towards the water is more drained. The plains lying close to the river may exhibit swampy tendencies especially at peak rainy seasons. This is due to the falling of the excess water droping at this period. Flooding of the banks of the river is also noticeable on the site. This could be due to the proximity of the water table to the surface which could stop infilteration of water into the ground. Erosive control are highly recommended to stabilize the soil nature of the site.

8.4.11 Morphology

Generally the project site is very flat in nature with few undullations. The general trench is a downward

slope towards the water. The present situation of the site is conducive for flat design and this can either be retained or altered to enhance the panoramic view of the spaces within the complex.

8.4.12 Ingress and Egress

In the site analysis diagram it was shown that only an access would be used for both automobile ingress and egress. That is the already existing road into the site. This is adopted to facilitate easy check of all moving vehicles. It is believed that, that is the best possible point of ingress and egress to the site.

8.4.13 Sunrise and Sunset

The most reasonable form of design is the one that will keep the sun as much as possible from obstructing the spaces provided. Wherever possible the effect of sunrise and sunset would be utilised to the fullest in Fantasyland. The sunrises as early as 7.00a.m. during the year except for during the harmathan when it comes out later. It sets between 6.30p.m. - 7.00p.m. for most periods of the year. Activities would be provided tagentially in accordance with the solar requirements.

8.4.14 Views

With the nature of the site all parts of the site is quite visible from any other part. Wherever one stands

on the site there is a good view towards the water which is the main attraction of the complex.

8.4.15 Effect of Water

The presence of water on the site has a tremendous impact on the site:

i. The presence of water on the site is one of the principal site selection determinant factor. It helps in boosting the position of Asa Dam as a condusive place for recreation. With the conception of Fantasyland as a complete holiday resort, the site automatically qualify for the location of such a project.

ii. The general micro-climate effect of the site is due to the presence of water. It gives a good visual symphony from whatever part of the site. The effect of land and sea breeze created is of immense value to the human system as it aids respiration and promote the general well-being of individuals.

iii. It could also be observed that there is no marked distinction of boundary site. The boundary chosen is only schematic as water has divide the site into two parts.

iv. In such a large accumulation of water the tendencies for water related diseases cannot be ruled out. Adequate arrangement would be made to eliminate the presence of any water-borne disease present. This could make the water safe for swimming, splashing and drinking purposes. The presence of water treatment plant on the site is very desirable.

CHAPTER NINE

DESIGN REPORT

9.1 FANTASYLAND AQUARIUM

- 9.1.1 Motivation
- 9.1.2 Large Aquarium
- 9.1.3 Sunken Aquarium
- 9.1.4 Small Aquarium

9.2 DISCO RESTAURANT

- 9.2.1 Lower Level
- 9.2.2 Disco Restaurant Level

9.3 EDUCATIONAL CORE

- 9.3.1 Introduction
- 9.3.2 Ground Level Plan
- 9.3.3 Underground Level
- 9.3.4 Planetarium Level

9.4 SCHEMATIC LAYOUT OF LEISURE COMPLEX

- 9.4.1 In-door Games Room
- 9.4.2 Health Station/Sanatorium
- 9.4.3 Theatre
- 9.4.4 Restaurant
- 9.4.5 Gymnasium
- 9.4.6 Swimming Pool
- 9.4.7 Multi-Use Hall

9.4.8 Out-door Games

9.4.9 Others

9.4.10 Auxiliary Services

9.5 SITE PLAN

9.5.1 Vehicular Storage - Car Emorium

9.5.2 Bicycle Parks

9.5.3 Landscape and Landscape Reservation Core

9.5.4 Design

9.5.5 Prunnings

9.5.6 Planting

9.5.7 Furnishing the Streets

9.1 FANTASYLAND AQUARIUM

Fantasyland aquarium is located on top of the Asa Dam Reservoir. It is the major attraction on top of water. The design consist of both the small and the large aquaria. They are designed separately with interconnecting common and related activities in between them. The aquaria can be approached both from the leisure complex site or the educational and accomodation side of Fantasyland.

The entrance to the aquaria is by boats from either or through the pedestrian bridge. A trip through the aquaria is planned to give the visitors the feeling of having made a journey to the bottom of the sea. The interior walls, the ceiling as well as the floors are made of glass tanks containing animal life and under-water plant. In order words they are aquaria in themselves. Thus, the tanks are above below and on all sides of the walls. This kind of arrangement create an illusionary feeling of being engulfed by the water animals instead of looking at tanks containing fish. Instead he is within the tank with the fish surrounding him.

9.1.1 Motivation

The motivation behind the design of the aquaria is to create an environment for understanding part of

aquatic life and how to make the best possible use of the knowledge. It is to explore the frontiers under-water bodies in quest for terrestrial knowledge.

9.1.2 Large Aquarium

Entrance

There are actually two entrances into the aquarium. There is the spectators entrance through which observers enter the aquarium. Before they enter there is the ticket or box office where tickets are being sold. It is after one has obtained the ticket that he's due to enter into the aquarium. The other entrance through which workers will enter the aquarium. It is necessary to separate the entrances which workers will enter the aquarium. It is necessary to separate the entrances because of differences in functions. Workers need to carry equipments either to collect preys for the fishes or to catch new fishes. The foods as well as the new fishes are brought into the aquarium through this service entrance. Other related equipment and services are provided through this entrance.

9.1.3 Sunken Aquarium

The large aquarium is sunken below the ground to give a good aerial vision to spectators. The aquarium is built of chrome plated fibre plastic and slightly

coloured in green bronze to obviate glare. It is about 5 metre by 12 metres in dimensions. The aquarium will contain several fishes of visual attraction of varying colours and sizes. This will be complemented by landscape and adequate pieces of stones to act as rocks. The whole idea is to create an impression similar to the natural habitat of the fish beneath the water surface, The aquarium will be lightened by either the under water lighting to heat the water as well as provide lighting or by special tubes like "Gro-Lux". Adequate lighting will be provided to give a good view of the fishes and to encourage plant growth.

i. Seating

Seats are provided at different levels for people to view the fishes. The rows of seats are arranged in such a way that disabled people will occupy the frontal seat(s) so that in case of pandemonium they can easily be catered for. Ventilation in the hall is mainly through artificial ventilation.

ii. Holding Tanks

The purpose of holding tanks is to keep new fishes until they are quarantined and guaranteed safe for viewing. Newly caught fishes are kept in the

holding tank to get them acclamatized with the new environment. There are several holding tanks to cater for different species of fishes. The holding tanks are located in close proximity to the aquarium and the service entrance.

iii. Isolation Tank

Either through difference in environment, fighting, natural body defect, the fishes may fall ill. It is very necessary to isolate such fishes so as to prevent the spread of the epidemic to other healthy fishes. Sick fishes are recognised by inability to feed very well and the flapping of the fins.

iv. Others

There is an office for the currator who is the overall overseer of the aquarium. He is a specialist in aquarium and takes care of the administration of the aquaria. A store is provided for the storage of equipment. Lavatories are also provided for the spectators.

9.1.4 Small Aquarium

This is to complement the large aquarium. It is linked to it by a large corridor so that the whole complex look like a unit.

i. Lower Level

The main aquarium here is circular in shape. There is the absence of seats here. Instead a large ramp goes to the upper level where a panoramic birds, eye view of the circular aquarium below can be achieved. The aquarium can also be viewed at the lower level as well as by resting on the balcony of the ramp while climbing up. The ramp is slightly gently to allow for ease of movement from one level to another.

The objective of the ramp is to show an entire collection and at the sametime the development of a pointer of arts. In other words it is meant to express continuity, change and totality at once, for sequential and continous viewing.

ii. Upper Level

The upper level of the aquarium exhibits several small pieces of aquaria in circular forms as a conformity of the general structure. In these small aquaria, different fishes will be exhibited and a synoptic information about them will be provided side by side. This level can also be used for exhibition purposes and can also serve to educated and enlighten the public about aquarium.

iii. In essence, the aquaria serve as the ideal museum for educational and entertainment spot. It is a place for contemplation and excitement. The whole place gives off a sense of order, grandeur and harmony.

iii. Common Facilities

In between the two aquaria are the common facilities. These comprise of the following:

- Food preparation room;
- Refrigerator room for storing cold foods;
- A library where information about aquarium can be obtained;
- An aquarist who advises on how to maintain a private aquarium;
- A snack bar for taking of light refreshments;
- A laboratory where pathology work is performed on the fishes;
- The sales shop cater for aquatic toys, equipment and books

9.2 DISCO RESTAURANT

As it indicates, it performs the dual functions of a restaurant and a disco hall. This activity is also on top of water. Because of the attractive nature of the two main

functions and the effect of locating them on the water it is hoped that they will be patronized. The disco restaurant can be approached by the walkway linking the two aquaria through the steel bridge from the shores or through cances or boats as in the case of the aquaria.

In approaching the disco restaurant one either go down into the lower level or go to the disco hall and restaurant level.

9.2.1 Lower Level

One gets to the lower level through a straight flight stair that goes down the restaurant. This level is below the water level. The walls of this level is made of transparant plastic materials so that one could actually experience the life under water. The advantage here is that one can see the movement of water and the aqua-life present. On this level is the drinking areas designated as cool rooms because of the nature of the environment. Artificial ventilation and lighting are provided for this level.

The kitchen level of the upper level restaurant is provided at this level. Dish washing and food preparation takes place there. Here, ordered foods are passed through conveyor belts to the upper level where the attendants collect it and pass it to the

person requesting for it. In a similar manner, used plates are passed down the belt to the lower level where they are washed.

In essence, the cool room is an under water drinking place suitable for amusement where expanse is no particular object, provided a unique result is obtained.

9.2.2 Disco Restaurant Level

This level is approached through a slight ramp. The following facilities are provided at this level:

i. Drinking Pavilion
ii. Tea/Coffee Pavilion
iii. Eating Platforms
iv. A Dance Hall

i. Drinking Pavilion

The drinking pavilion serve the disco hall mainly as well as the eating platforms. It is believed that the people patronizing the disco hall as well as the eating platform might intend to have a drink or two. Two opposite pavilions are provided for soft and hard drinks.

ii. Tea/Coffee Pavilion

Because of the location of the disco hall and restaurants people might begin to feel cold at

late hours. It is believed that the provision for tea or coffee will keep them agile. It is also possible that after eating certain individuals might like tea or coffee to complete the diet.

iii. Eating Platform

The eating platforms are located diagonally to each other and side by side at the same time. There are three of them. Because of the expected patrons, provisions are made for both local and continental dishes. A separate area is designated for each variety with the third hall serving a combination of both local and continental food depending on the choice of the individual involved. The eating platforms are raised to a higher level than the disco hall.

The restaurant's greatest novelty is that the entire structures slowly revolves, so that during a meal restaurant patrons get a panoramic view of the entire site.

iv. Disco Hall

The disco hall is located at the centre of the building. It could be approached through the path to the disco restaurant or boats. Certain things were considered in the design of the disco hall.

- Planning

In the planning of the disco hall flexibility was taking into consideration with provision for storage of equipment and stage provision for live bands and disc jockey. It is aimed at a sense of together so that all patrons will have a close contact with the centre. This is one of the reasons why the circular concept was used so that from all points of the hall, audience would be at equal distances to the centre. Proper consideration was given to the acoustics as well as the decoration of the hall in very attractive colours with planting to create a natural set up. With the set up it is quite possible to dance round the stage.

- Lighting

The lighting of a disco hall is very important. Ultra-violet lights and special lightings are recommended. Pulsating stroke lights and mirror ball are of particular interest. Others live coloured filters, rotating lightings are mounted on the walls and ceiling of the hall. At the centre of the dance/disco hall is the circular concrete tube which goes deep into the lagoon. This tube holds the neon tubes and these provide the major source of illumination to the dance/ disco hall.

9.3 EDUCATIONAL CORE

9.3.1 Introduction

One of the major objectives of Fantasyland is to design an environment where leisure and informal education will go hand in hand. The world is getting to a stage where every human endeavour is viewed in a scientific manner. Ratings in football is being computerised. The level of thinking of a person is now being measured. Even in passive recreation like swimming and archery the prowress of a competitor is being determined by computers. In essence, the whole human life is governed by one form of intellectual parameter or the other. Humans are now getting more conscious of their environment. People everywhere are asking why, how, where and when. It is no longer the period of dark age where people accept the positions of mediocres and leave questioning to the scientists. Everybody in his little way wants to be a participant in every discussion irrespective of their little knowledge. People are getting more aware of their environment. Inquisitiveness is the watchword of this generation. Right from kids to old man, from Australia to Casablanca, from Siberia to South Africa the story is all the same. It does not matter whether it is black or white. The search for knowledge in this

modern time is colour blind. From the deep ocean to the frontiers of space, everybody wants to know what has happened, what is happening and what is likely to happen. We all want to know how it (the world) started, what factors affect it and how it will end.

Fantasyland intends to make its own contribution to this search for the ultimate - knowledge by providing a section specially designed for the purpose. Our youths must from infant get accustomed to the basics of science which is questioning, logic, methodical approach and an open mind. Fantasyland must take the initiative. We can recreate and educate at the same time!

In the educational core, three major parts are involved. Part of the structure is stationed on the ground level. Because of the dramatic nature of the zone part of it is stationed below the ground level, to really show that most, if not all activities on the earth level can take place below it. This in itself might serve to open the brains of the kids who might come to the conclusion that after all anything is possible on earth. Also there is a structure suspended in the air. The understanding of the mystery of the forces at play here will further help to promote science, which is the frontier of modern knowledge.

9.3.2 Ground Level Plan

On the ground level the following are available:

- Exposition Hall
- Bookshop
- Computer Room
- Television/video Room
- Club Room
- Aviary
- Botanical Garden
- Stair to the Planetarium
- Tunnel to the underground level.

i. Exposition Hall

The main purpose of the educational core is to promote science and technology. Science being the frontier of modern knowledge has to be popularised. The Fantasyland exposition hall will feature from time to time works of great scientists, artists and numerous other scholars of world wide phenomenon. Their works would be exhibited here. Recent discoveries in science and technology will also be brought to focus at this hall. Events of the moments will also be highlighted. Works of people like Leonardo da Vinei, Albert Einstein, William Shakespeare, etc., would be on display. Informations

about Halley's Comet for instance could be displayed for indebt knowledge about it. Slides could also be shown here. The exposition hall will in summary expose people to works of great men who dedicated their lives to the cause of up-lifting the level of humanity and promoting it to greater heights; to people whose intention was to leave this world in a better position than they met it.

ii. Bookshop

The Fantasyland bookshop will serve as avenue for one to get collections of different species of man and animal that have inhabited this planet. Science encyclopaedia of different types and forms would be sold at give away prices here. Most especially books would be written in an informal manner to bring it to the level of not too academic people. Kiddies books could be in a form of cartoons or any other level at which they can conveniently relate. The bookshop is to compact the wide gap that have existed between us and the events of the past. It will form an important part of Fantasyland Educational Core.

iii. Computer Room

Computers have become the holybook of modern man. Hardly is there anything that is not computerised. Events of thousand years can be demystified by computers and several informations can also be stored in it.

Various forms of computers are available. From elementary to very complex ones. Kids need to be introduced to this ultimate ingenious machine. informations about events, peoples and places can be stored here and disseminated whenever required. It can also be used to programme events.

In short, the computers would be used to aid learning.

iv. Television/Video Room

Mainly science programme would be screened here. So many elementary things are still mysterious to people. Right from kids we need to expose the kids to the understanding of the phenomenon governing and affecting their lives. Here, both adults and kids will explore the world of science in its entirety. The tropical interests like the Cosmos, the origin of species and the likes would be viewed here and wherever necessary explanations would be provided by a tutor.

Games that help to promote intellectual pursuits and those that are computerised or programmed for television would also be available here.

v. Club Room

This is a room where members will register for any Club of his interest. Clubs like Science Club, Art Club,

Video Club, etc., would be available. For instance the Video Club can be a place where people will register and exchange Video Tapes. If any member has any tape he thinks could be of interest to the members he could bring it along for others to see. This in essence is to promote exchange of ideas and an atmosphere of friendliness.

vi. Aviary

Several hundreds of birds are available on earth. Perhaps it is one of the most friendly domesticated animals. It is then surprising that we know little about them. In Fantasyland different birds from tropical to temperate origin would be provided. Relevant informations about them would be inscribed near the cages. The aesthetic colour of birds skin, eyes and their songs are always appealing to the humans. Such an attachment or contact with nature is what is sought to be provided here.

History has also shown that some species of birds are getting extinct. Particular interest would be taken to preserve such birds in Fantasyland for posterity.

vii. Botanical Garden

The symbiotic relationship between plants and animal seem to be overlooked or taken for granted by humans. The due respect plants deserve are not been given. Humans have taken for granted that plants will always

be there for humans to exploit for respiration, medicinal purposes or aesthetic appeal.

Here, special attention would be given to medicinal plants and to those plants that are getting extinct. Some plants have lived on earth for millenia and it seems they are rarely seen anymore. These "twin" brothers of human should be glorified.

viii. Stair

There is a stair leading to the planetarium on the upper level. This stair can be approached along the walkway. It is situated at a convenient place for all people and located at strategic position for both coming through the bridge or car park.

ix. Tunnel

There are actually two tunnels. One is located in the centre of the ground level plan for those already inside the building to take to the lower level. The other is situated along the walkway. It is meant to serve those approaching the complex through the car park and the bridge. This could also serve as emergency exit for people inside the tunnel or at the underground level. This other tunnel leads into the open air.

x. Synopsis

The ground level plan can be approached from two ways. People approaching the site from outside the complex have a way into the complex and another is provided coming through the water or car park. The walk ways lead to a circulation space. From here one can then approach the destination. The bookshop, exposition hall, botanical garden, computer room, etc., can easily be reached. Also, at the centre of the circulation space is the tunnel leading to the underground level.

9.3.3 Underground Level

The following major activities are provided on the underground level among others:

- Leonardo da Vinci Studio
- Alexandria Library
- Animatronic Room
- Music Room
- Hall of Memory
- Clean Air Room
- Eartti Station

i. Leonardo da Vinci Studio

Leonardo da Vinci was an architect, artist, philosopher, scientist, anatomist, and a host of

others. He lived in the period of Renaiscance; a period regarded as the rebirth of ideas and knowledge after the darkages.

Leonardo da Vinci was known more as an artist and as an architect. He was the famous artist of the famous painting of Mona Lisa, wife of a rich Italian merchant. His major architectural work was in city planning and anthropometrics. His contribution to humanity was immense. As early as the 15th century he started dissecting human dead bodies. It is in recognition of his contribution that a studio is being dedicated to him. His works would be exhibited here as a challenge and inspiration to posterity.

ii. Alexandria Library

In Fantasyland educational complex there will be the need to have a comprhensive library where various subjects of interest will be kept. Relevant informations about every facet of science, technology arts and social sciences would be available. Kids in particular will be encouraged to actually patronize the library. Parents can always leave their children there and pick them up when going home.

iii. Animatronic Room

In the evolutionary chain certain animals have played important roles. Unfortunately, most of them are departing this world. For example the Dinosaurs are extinct. Several explanations have been propounded for this. It is hoped that in Fantasyland, these animals will be replicated and be on display for people to see. Several other animals, several skeletons of different animals would be on display.

iv. Music Room

Music is one important part of passive recreation. There has been an upward craziness for music all over the world since the mid 70s. In Fantasyland there will be opportunity for people to listen to music of their choice. All one need to do is to obtain a ticket, enter the music room and press the computerised button. Simultaneously the music would be on the air. In this room also one can learn how to be a disc jockey.

v. Hall of Memory

The hall of memory is a circulation space in which one is reminded about the past. The art of writing started thousands of years ago. Before the advent of paper and Egyptian Papyrus there was a method of writing. This method was called hieroglyphics. In hieroglyphics

writing was in the form of arts. Various objects were used to signify or connote certain meanings. This form of pictorial writing seems to have received strongest encouragement from the erection of the great monuments of ancient Egypt. Here, in the ancient Kingdom (4400 - 2466 B.C.) architectural hieroglyps invented. It is in the memory of the human first attempt at writing that this hall was dedicated to it. Moving round the hall, one could see the hieroglyphics art on them.

vi. Clean Air Room

In the elementary science we are taught that the air we breathe in is pure. But going further one observes that the presence of certain impurities like atmospheric pollution, discharges from waste substances, decay of matters, etc., constitute a certain percentage of impurity. This in essence is to say that the air we breathe in is not completely pure. In the clean air room. the air there is filtered and free of impurities. One can at least for once in life take in 100 percent air free of any impurities. This is one of the mysteries of Fantasyland.

vii. Earth Station

Our lives is being affected one way or the other by communication. We listen to radio, watch television without actually understanding the intrigues involved.

Here, the basic concept of satellite telecommunication is explained and illustrated on screen boards. From here we can then understand how it is possible to monitor rockets, jets and activities taking place elsewhere, even in space.

9.3.4 Planetarium Level

Astronomy is experiencing a golden age of discovery. Physics -(science of fundamental matter and energy) is at the heart of the second half of the astronomy frontier. The search for the origin of the universe. Through Mathematics and experimentation Scientists are constructing a theoretical frame work which may explain the behaviour of matter from the smaller subatomic to the galaxies, from the present moment back to when the universe was created.

Space is humanity's high frontier. Like all frontiers, space has produced unexpected treasures, generated strong enthusiasm, spawned wild speculations in myth and false promise. Today, space is the arena for both exciting, exploration and economic exploitation. Humans have dreamed of travelling to celestrial bodies for millennia, Not until the twentieth century were the technical solution

to earth's gravity solved - the building of rockets - in October, 1957.

The most valuable contribution space activities have made is information they have produced about the universe and the earth. Scientists are having answers to some critical life - and death questions about the Earth - how the atmosphere oceans, sunlight and life forms interact to make the planet habitable and how human actions are altering those systems. If one considers the fact that only a handful of human beings have ever been in space and yet space activities now affect the routine existence of most people one would then appreciate the need to study and understand space. This will be done in a specially designed planetarium through special effect photography to simulate the theoretical sequence of events since the universe was born - time zero.

9.4 SCHEMATIC LAYOUT OF LEISURE COMPLEX

The leisure complex comprise of the in-door and out-door recreational zones as well as the anxilliary services. The three are juxtaposed together in an orderly manner into a unified structure to form a whole.

The concept of the complex is a plaza concept. The plaza is centrally located at the centre to act as the hub

from which all other facilities radiate. It is more or less the convergence zone of the complex. The circular form was chosen because the centrality of a circle enable it to unify forms of similar and different geometry or orientation about itself. The plaza acts as the central axis of the design. The Plaza itself soars out of the ground in obeyance of the organic concept of architecture. It leaps straight out of the ground, ascending full height without a break in profile

9.4.1 Indoor Games Room

Because of the nature of the traditional African Society adequate provision has to be made for in-door recreational purposes. In Fantasyland the following facilities have been incorporated into the design for the purpose of meeting the local requirements:

- Ayo
- Draught
- Card and Whot
- Monopoly, etc.

These facilities and others are easily located on the leisure complex.

9.4.2 Health Station/Sanatorium

Health station is a place usually in the country, where one goes to improve ones health by dieting, exercise, etc. It is believed that passive or active

recreation alone cannot always meet the requirement of the system. A specialised in depth of medical fitness is very much required. It is in the light of this that health farm is provided in Fantasyland. Nigerians generally do not take adequate care of their sizes thereby leading to obesity, ill-health and general weakening of the system.

At the health station or Sanatorium, there will be the attendants and co-ordinators to take care of the station. Normally people will register and get appointment date. On arriving they will enter the changing room to change their clothes. From there they will pass to the massage room where the whole body will be massage by experts.

After having exhausted this system they will pass to the bath platform which is an a higher platform. Here the body will be washed with hot water to relax the bones and strengthen it. They will then proceed to the rest room where professional advice would be offered about dieting and on general body fitness. At the centre of the Sanatorium is a Jacuzzi Pool and a hot water tank which will be constantly filled with hot water.

9.4.3 Theatre

The theatre is meant for performing arts, drama, concerts, film shows, etc. It is believed that in the design of a theatre certain considerations are considered:

i. Safety

The safety of the participants must always be guaranteed. Here the disabled have their seats in front so that in case of pandemonium they can easily leave the theatre. At the upper level there are ramps on the two sides leading into the open air outside the complex. These escape routes are strategically located. On the ground floor level, there are two wide doors leading into the open air.

ii. Acoustics

Since the theatre is multi-functional, every activity should be adequately catered for. The audience should be able to clearly hear the sound produced on stage. Different activity require different reverberation time. This should conveniently be taken care of. The sound should be free of intereference like echoes and flutters. Also, the actors should be able to adequately hear themselves.

iii. Visibility

All members of the audience should have a clear and unobstructed view of the occurences on stage. All sight angles should be within the comfortable limit for both vertical and horizontal inclirations of the eye. In theatre design there are usually different angles of design. 140°C seems to be the best.

iv. Comfort

The seats of the theatre are considerably comfortable. It is operated by a hydraulic system so that when it is lifted up for another person to pass through it does not make noise. They are of optimum height, width and inclination. Adequate ventilation of the theatre is provided through windows. Ample allowance is available for circulation within the theatre.

Within the theatre provision is made for the following facilities:

i. Box or ticket office where spectators collect their tickets before entering the theatre;

ii. Offices for curators and theatre production manager. He overseas the entire working system of the theatre.

iii. Separate dressing and make-up rooms for female and male actors and actresses.

iv. Cleaners store for storage of cleaning equipments.

v. Stair leading to the upper level where accomodation facility is prodided for the actors and actesses.

vi. Stage and back-stage.

9.4.4 Restaurant

i. Sitting Arrangement

The planning of the seatings can be altered at any particular time to avoid monotony. Maximum seating arrangement would be better achieved by use of square tables. Diagonal layout of tables gives the most economical use of space. Reasonable space is allocated for circulation of customers and attendants.

ii. Location

The restaurant is located at a convenient place. Approaching the site from the pedestrian access (Entrance B), the restaurant is clearly visible. It is sited where there will be enough room for odours or aroma to get carried off the complex. The restaurant is located quite close to the banquet hall.

iii. Kitchen

The kitchen is designed in such a way that it could serve the restaurant, banquet hall as well as the barbecue spot. The advantage of this is that it reduces the duplication of services. The kitchen area is divided into:

- Area for preparation of ice cream, pasteries, sweets and desserts.
- Cold buffet (salads, meat, fruits, and beverages)
- Cooking area, frying, grilling and preparation of soup and vegetables.
- The servery.
- The scullery for washing plates.

Close to the kitchen is the store. The store is partitioned into cold and dry areas. Wet foods like tomato, vegetables, meat, etc., would be kept separated from the cold store.

iv. Delivery

There is ample parking spaces for lorries or buses to park when bringing loads to the restaurant. The area provided is big enough for maneouvring and off

loading of goods. The store is very close to the delivery for easy transportation.

v. Barbecue

The barbecue spot is mainly to complement the banquet hall. There is a direct access to it and it is located in such a manner that the smoke of burning the meats would be carried by air away from the building complex.

vi. Bar

Because of the close relationship between the restaurant and bar they are situated close to one another. It is designed to over-look areas of interest within the complex and seats arranged to enhance social interaction. Straight from the Plaza, there is direct view of the bar thus, making it easy for quick recognition. The bar is on two level. The semi-circular part on the ground floor has another similar form at the upper level, the two joined together through a spiral staircase. The upper part is cantilevered. Adequate spaces is provided for storage and the drinking rooms are quite comfortable.

9.4.5 GYMNASIUM

The gymnasium is designed to cater for a lot of activities like badminton, basket ball, etc. Adequate area is provided for these activities. The walls of the gymnasium are smooth, hard wearing and easy to clean. There is provision for storage for equipments. The floors are resilient, break and splinter proof, stable, hard wearing, non-skid and insulated for sound and heat. Other facilities provided are male and female changing rooms, male and female lavatories, ticket room, etc. The gymnasium is located at a position where it can be approached from many directions. Out-let and in-lets is provided for people coming into the gymnasium alone and leave. Hence, the need to provide route for them. It is easily accessible from the complex itself. Provision is also made for ambulance and first aid in case of accident.

9.4.6 Swimming Pool

There are two types of swimming pools provided in Fantasyland - the in-door and out-door pools. The out-door pool is in between the gymnasium and the in-door pool. It is a pool that is not too deep and provided for people who are solely concerned with sun-tanning.

The in-door pool is covered from the top. There is a direct access to the pool from the Plaza. Another

access is from the outside the complex. The pool have the following accessories:

i. Plant room for draining and recycling and replacing the water.

ii. Separate male and female changing rooms.

iii. Storage for equipments

iv. A refreshment area for sales and eating of snacks, soft drinks, etc.

v. Adequate male and female toilets.

9.4.7 Multi-use Hall

These multi-use halls are for in-door activities like archery, billiards and darts. It is located in close proximity to other active recreational facilities.

9.4.8 Out-door Games

Out-door recreation areas are provided in the following manners:

i. Rock climbing area which is an out-growth of the wall and not taught of as a separate element in space. It is an environmental event in which water, light, and people are as much a part of the rock as are the solid forms.

ii. Sculptured garden in which various sculptures depicting the works of great indigenous sculptures will be displayed. Sculptures to commemorate an event of personality will also be exhibited.

iii. Open air exhibition space for the display of Nigerian cultural arts.

iv. Cave-adventure where people will travel several caves at ground and underground levels.

9.4.9 Others

i. Retail shops where essential goods could be purchased. These shops are located close to the Plaza so that everybody will have contact with them.

ii. Ice cream pavilion where sales of ice cream of different flavours ranging from Vanile, Strawberry, Chocolate, etc., would be provided. This will be of particular attraction to the kids and help to beat down the effect of the wind during the hot season.

iii. Museum for display of Nigerian arts and artifacts and shops for sales of arts and crafts.

9.4.10 Auxiliary Services

i. Banking Services

It is envisaged that certain individuals would want to buy things and ran into monetary problem. These kind of people can easily collect money through the banking facility provided. It even saves tourists the hazard of carrying money about without actually knowing whether it will be useful or not. Foreign visitors can also cash in their local currency here. All cheques of various banks will be honoured here.

ii. Boutique and Saloon

Most resident female visitors as well as non-resident might want to retouch their hairs or have a touch of Afro hair-do. It is hoped that various African and European hair styles would be done under the watchful eyes of specialists.

iii. Air Booking Office

Since Fantasyland is sited at several kilometres outside Ilorin township it will be difficult and inconvenient for resident visitors who intend to return by air to go to the town. The aim is to provide all needs of the visitors on site without necessarily having to go to the township if not

desired. The air booking offices will cater for local as well as international air-lines. All tickets of different air-lines would be adequately honoured.

iv. Postal Services

This is meant to serve mainly the resident visitors. Many of them might wants to send Fantasyland cards to friends and relatives to give impression of how it looks like. This will also help to publicise Fantasyland to the outside world.

v. Phone Booth

Both local and international telephone services will be provided for customers at a cheaper rate here. Mostly resident visitors will want to contact home. This will help to generate revenue for the complex.

vi. Maintenance Services

Due to possible breakdown of essential social services, the maintenance unit comprising of the electrical and mechanical units will cater for such inadequacies. Fixing of new gadgets will also be done by these group of specially trained personnels.

vii. Studio Complex

There are basically two studios in this complex. The first is the painting studio and the other is the graphic studio. Officer are also provided for the graphic designer who is in charge of the corresponding studio as well as the artist who caters for the art studio. The main function of this section is to take care of the advertising and promotion of Fantasyland and Fantasyland ideas. The latest innovations will be designed, tested and released to the public through this section. Promotion works like printing of tee-shirts, labels, car stickers, board advertising, kiddies flasks and playing equipments will be the sole responsibility of this section. It's main function is to boost the image of Fantasyland.

viii. Administration

The administrative sector of Fantasyland caters for the day-to-day running of the complex. It comprises of:

- A conference room where official deliberations about the working and activities of the leisure complex will be determined. Board of Governors will be

elected and they will govern the day-to-day running of the complex.

- Director

  This will be a full time participant in Fantasyland. He is the overall boss of the complex and is directly responsible to the Proprietor and the Board of Governors. He has a Secretary attached to him.

- Production Manager

  This man is to take care of the studio work and make sure that the objectives of the complex are fully carried out.

- Accountant

  He takes care of the daily money collected through gate-takings and sales of items.

- Archive

  Informations about the working of the administration of Fantasyland will be kept here.

- Cafeteria

  This is to serve mainly the administrative part of the complex. It is not open to the public.

9.5 SITE PLAN

9.5.1 Vehicular Storage - Car Emorium

Automobile has introduced another more compulsive dimension of speed into our lives than the pedestrian. While driving a car, the mobile view-point actually becomes physically essential. Here, the ever-shifting relationship to surroundings is more franetic, adjustment to shifts in speed and position in relation to other moving objects is more demanding and more dangerous. As a result, design for movement becomes a function of safety, and not only a matter of aesthetics. It is impossible to think that the sole concern of freeways is to bring automobiles quickly into cities with no concern for aesthetics, environmental impact or scale. There is the need to integrate the roads into the fabric of the complex without destroying it. It is the fragmentation of out-look, and inadequate attention to integrated overall environmental planning, rather than the architectural design of the structures, that has resulted in errors. It is impossible to think that the sole concern of vehicular ways is to bring automobiles quickly into the site with no concern for aesthetic, environmental impact or scale. It is important to make a difference between qualities of speed movement through space, our problems in cities

begin when streets for pedestrians and these designed for automobiles - the one designed for small scale, very detailed and close-in and leisurely experiences, and the other for high speed transit - interfere with each other and are used at cross purposes. There is the need to differentiate in cities, just as in private living quarters, between functions and speeds and their hierachy of importance.

In this design the vehicular zone is separated from the pedestrian. The vehicular parking space is integrated with the vegetation of the environment to provide shelter and screening for the cars. The parking is generally sunken so that the whole complex does not look like a car assembly park when viewed. The parking area is covered in concrete as against the normal use of dark bitumenous surface. The parking facilities are also closed to the areas they serve so that people do not have to walk for long after parking their cars.

9.5.2 Bicycle Parks

First came the person waling in the street, and then he rode on donkeys, a horse, or possibly a camel. These older methods have given way in modern times to the bicycle. Halfway between the motorist and pedestrians, bicycles give a mobility, an ease of negotiating traffic quickly, and an individuality and choice of movement when

mass transportation cannot equal. It is furthermore inexpensive and easy. Aside from the fact that it is easier to get out of traffic situation, doctors have made clear the value of the bicycle as a healthful method of exercising.

Like automobiles, bicycles require notionly special pathways to travel, but parking areas for their storage. While a car require about 350 square feet park, bicycles require about 20 square feet. They demand less space and simpler, less costly facilities, to which a great deal of design thought and ingenuity is being devoted.

9.5.3 Landscape and Landscape Reservation Core

There is an old chinese proverb which say: "No shade tree? Blame not the sun mut yourself". Trees are vital part of the city. Trees give people contact with nature, establish a relationship with primitive needs and soften the hard, unyielding surfaces of urban construction with their green leaves, texture and its shadow. Again, it performs the dual function of removing carbon dioxide from the atmoshpere and giving off oxygen for human use. Throughout history, designers have two major different attitudes towards planting of trees. Long before Le Notre made his beautiful gardens in France, trees had been planted

architectonically. In Persia, ancient Eygpt and India trees were grouped formally in precise rows, which derived from the linear qualities of irrigation systems. The French also had ordered gardens. French garden was a place of spaces which used trees: trees pleached a high hedges or pollarded for continous canopies. To these designers, plants were materials which the employers employed in the careful delineation of spaces, not because they loved or even respected nature, but because the enjoyed domination over her.

The other landscape attitude in history has been romantic, soft, naturalistic - trees used as organic forms untrimmed, unprunned, left to grow naturally in clumps or groupings. In these are Chinese and Japanese gardens.

9.5.4 Design

Whichever groupings of trees seem appropriate, several basic physical demands become clear in inserting trees in the cityscape. Street trees are normally 25 to 40 feet apart, but this has to be varied a great deal to conform buried utility lines, driveways and other factors. Sometimes, they can be planted much closer together, especially when kept fed and trimmed. Plantings in rows 10 feet apart, in bosques, create a handsome canopy

which are strongly massed and very effective in establishing a street facade of trees. Trees in Plazas and parks have more flexibility in their placement. Their grouping in bosques, either pollarded or pleached, can define a space for more successfully than the linear quality of trees in rows.

9.5.5 Prunnings

Trees in the cities experience specific and difficult conditions which are directly opposite to its natural environment. City air is usually polluted by smoke, coal dust, smog, gas fumes, etc. These coat the leaves and prevent transperation and the absorption of carbon dioxide from which the leaves manufacture food through photosynthesis.

Inspite of all these difficulties, trees can be successfully planted in urban conditions. With proper care and understanding of their needs, one can make successful urban green belts to help soften the overwhelming scale of hard, unyielding materials in our cities. The trees deserve careful attention to the physiology and technical requirements of city trees by careful planting, maintenance and feeding.

City trees demand prunning which is the selective removal of wood. When transplanting, it is wise to

remove about one-third to one-quarter of the trees wood to reduce water loss through the leaves, since the roots are unable to off-set this loss.

Trees need to be watered, sprayed, and extravagantly admired.

9.5.6 Planting

The best size for normal planting is 2 to 3 inches calliper and 10 to 12 feet high. These trees are large enough to be seen, but do not suffer great shock in moving. However, where special and immediate need arise full sized trees can be planted. For these category of trees (6 to 10 inches calliper, 30 to 35 feet high) the ball size should be up to 6 to 10 feet in diameter. In transplanting trees, points to be considered are as follows:

i. Measure and specify sizes correctly. Size of a tree is indicated by calliper, height and ball size, i.e., 6 inches calliper, 24 feet high, 6 feet ball. Normally the ball size in feet equals the calliper of the trunk in inches.

ii. To do this, square the diameter of the ball, subtract one-third from the total, multiply the total by 0.75.

After transplanting trees, they should be wrapped to prevent sunscald, and following this, they should be guarded with tree guards to prevent vandalism. The landscaping core is also to improve the appearance of the buildings and the environment landscaping is an evenue to extend the in-door facilities to the exterior in terms of lawns, courtyards, paved areas, etc.

9.5.7 Furnishing the Streets

i. General

In the urban set-up there are spaces between buildings which are the paraphernalia of urban living. These are the furniture which makes these spaces inhabitable: space itself is only an envelope within which events happen, and the city, like a staget set, demands modulators for people in motion-objects of use and comfort and artistry guides for activities, etc. There are also elements which we constantly use and see which form the dominant quality of streets and plazas, and by their ubiquity, become the street. They tend to proliferate, like furniture in the house, at times to help litters of new objects.

The fact is that attention to street furnishing is so important to the qualities of Fantasyland

aesthetics as the whole building complex themselves. These furnishings need to be designed for public enjoyment. There are needs for small benches and places to sit, handsome light fixtures, brilliant and scaled to human and pedestrian needs. There is the need for drinking fountains, bollards to control traffic, bicycle holders and flower stalls.

Fantasyland is a kaleidoscope of overlapping interrelated activities and people in motion. As the people move in a multifaceted series of actions, the street furnishing or decoration becomes the fixed point which can guide and enrich their movements.

(a) Light

Light is the medium through which most of us perceive and experience the world around us. The qualities of light are non-static. Objects are seen in different lights through seasonal, diurnal and weather changes. Colour itself, seen in shadow, is more intense than seen in flat sunlight. Buildings acquire varying dimensions, weights, and silhouettes when viewed through oblique or horizontal light. Light in essence, imparts a mobile quality to even the most static objects.

Light can become mobile especially at night. Light must be geared towards specific uses as well. Quiet residential neighbourhoods, small squares and parks, need a warmer, simpler lighting geared to their own pace. Here, low keyed incandescents more attractive for ladies and more human in scale, closer spaced and lower is preferred to the 100 Watt mercury vapuur lamps. Each light must be attractive to look at during the day when the pole, base and transformer add a dimension to the street scene.

(b) Benches

In a city, Plaza, leisure complex, benches are focal points. For elderly gentlemen, they can be a place to sit in the sun and pass the time of the day. Benches are also where lovers sit and embrace, a place for mothers to sit, nurse babies and enjoy seeing kids play. For the elderly statesmen, the city benches are a symbol of wisdom and thought.

- Kinds of Benches

The back benches; and the backless benches. The flat bench is adequate for short rest periods and enable the pedestrian to get

off his feet. In architectural composition, flat benches are more popular when they are placed as sculptural element in a Plaza to imply amenity without actually providing comfort for long periods of time. These are usually made of hard mansory materials - concrete, stone, tiles.

The back benches are the most comfortable and most flair in design. It encourages the sitter to stay and spend sometime in comfort in an handsome environment.

Design of Benches

There are several possibilities with the main criterian being the comfort of the sitter. It support the body properly by distributing the weight evenly over the seating surface and incorporate an optimum seat - to faot rest distance, so that the feet can rest easily on the ground. It should also support the back of the sitter.

iv. Pots

Flowers are grown in pots and containers on the hard, unyielding surfaces of the streets. Their bright splashes of colour do much to bring a quality of life

into the environment. Pots have many advantages for the display of flowering plantings. They are readily moved, can be easily filled with seasonal flowers which can be replaced whenever such is desirable. When they are properly designed, they add sculptural elements to the floor surface.

Many materials like cast stone, glazed or unglazed clay, wood, metal, cement asbestos mixtures and fibre glass are used. The size and depths of the pots are determined by the type of plants to be grown in them.

B I B L I O G R A P H Y

Aplegron, I.: Leisure Research and Policy, London Scottish Academic Press Limited, (1974).

A. R. Architectural Review, Volume LIXX, No.1013, July, 1981.

Atkin, W. W.: Architectural Presentation Techniques, Van Nostrand Reinhold, (1976).

Bacon, E. N.: Design of Cities, New York, The Viking Press, 1967.

Bucher, C. A. and Thaxton, N. A.: Physical Education and Sports change and Challenge C.V. Mosby Company, St Louis.

Butler, D. G.: Recreation Areas: Their Design and Equipment, New York, the Ronold Press Company, (1947).

De Chiara, I. and Koppelman, B. L.: Site Planning Standards New York, McGraw Hill (1978)

De Chiara, I. and Callender, J.: Timesaver Standard for Building Types, New York, McGraw Hill.

Djuevitche, A. B.: Experimental Leisure Centre, Abuja, Unpublished M.Sc. Thesis, (1984).

Gold, M.S.: Recreation Planning and Design, New York, McGraw Hill, (1980).

Halprin, L.: Cities, M.I.T. Press Revised Edition, (1976).

Halse, A. O.: Architectural Rendering McGraw Hill, (1972).

Izenour, G. L.: Theatre Design, McGraw Hill Book Company, (1977).

Kraus, R.:Social Recreation, The C.V. Mosby Company St Louis.

Oles, P. S.: Architectural Illustration, Van Nostrand Reinhold, (1979).

Otto, F.: Tensile Structures, Vols. (II & II). M.I.T. Press, (1962).

Sky, A. and Stone, M.: Unbuilt America McGraw Hill Company, (1976).