OPEN-SPACE SYSTEMS AND ENVIRONMENTAL QUALITY OF AN URBAN AREA: A CASE STUDY OF IBADAN.

BY

JOHN OLAPADE ADESIYAN
B. Ed, (Hone) Geog. University
of Ibadan, June 1973.

DEPARTMENT OF URBAN AND REGIONAL PLANNING,
AHMADU BELLO UNIVERSITY,
ZARIA.

JUNE 1960,

DEPARTMENT OF URBAN AND REGIONAL PLANNING,
FACULTY OF ENVIRONMENTAL DESIGN,
AHMADU BELLO UNIVERSITY,
ZARIA.

CERTIFICATE

This is to Certify that this Thesis has been submitted in partial fulfilment of the requirements for the award of the degree of Master of Science (Urban and Regional Planning).

APPROVED

JUNE 1980.

Head of Department.

DEPARTMENT OF PLANNING
FACULTY OF ENVIRONMENTAL DESIGN
AHMADU BELLO UNIVERSITY
ZARIA NIGERIA

This work is dedicated to my wife Christie, for her continuous love and ondurance during my trying period and to my Children, who during the whole period of the Course suffered a seeming neglect.

ACKNOWLEDGEMENTS.

My sincere thanks to Miss Bonfanti, Mr. Popoola my supervisors. My sincere thanks also goes to the following who have contributed immensely to making this study a reality. Mr. S.K. Kulshrestha, and Mr. C.P. Khanna. And finally Prof. S. Juchnowicz whose fatherly advice serves as an inspiration in carrying out the research work.

J.O. Adesiyan.

TABLE OF CONTENTS.

Contents		Page
DEDICATION	... ...	i
ACKNOWLEDGEMENT	... ...	ii
LIST OF MAPS	... ...	iii
LIST OF TABLES, GRAPHS, DIAGRAMS AND PLATES	...	iii-iv
CHAPTER ONE:	... ...	1-13
1.1 Introduction		
1.2 Research Question.		
1.3 Justification of the Study		
1.4 Aims and Objectives		
1.5 Urban Characteristics		
(a) General Description		
(b) Geographical Background		
1.6 Organisation of the Study		
CHAPTER TWO:	... ...	14-35
2.0 BACKGROUND INFORMATION: DEVELOPMENT OF URBAN OPEN-SPACES: HISTORICAL REVIEW.		
2.1 Introduction		
2.1(a) Greek Period		
2.1(b) Roman Period		
2.1(c) Mediaval Period		
2.1(d) Renaissance		
2.1(e) Modern Time		
2.1(f) Open Space in Nigerian Concept		
2.1(f)ii Influence of Colonial Masters on Traditional Open-Spaces.		

Contents Page

2.2 Open-Space Concept

2.3 Open-Space Viewed as a System

2.4 Hierarchy of Open-Space

CHAPTER THREE: 36-51

3.1 Concept of Environment

3.2 Environmental Quality

3.3 Environmental Quality Variables

3.4 Standard for Environmental Quality

3.5 Roles of Open-Space

CHAPTER FOUR: 52-55

4.1 Introduction

4.2 Scope of the Study

4.3 Basis for Data Collection

4.4 Data Collection Technique

4.5 Technique of Data Analysis

4.6 Difficulties.

CHAPTER 5: 56-79

... ANALYSIS OF DATA

5.1 Analysis of land-use

5.2 Analysis of Physical Survey

5.3 Analysis of Interview

5.4 Analysis of Natural Open-Space

5.5 Overall Environmental Quality of Rivers

5.6 River Flood Disaster

Contents Page

5.7 Forest Reserve - Natural Open-Spaces

5.8 Impact of them on Environmental Quality of the City

5.9 Incidental Open-Space Analysis

5.10 Impact of the Incidental Open-Spaces on Environmental Quality of the City.

CHAPTER SIX:

FINDING, RECOMMENDATION AND IMPLEMENTATIONS ... 80-94

6.1 Findings

6.2 Proposals

6.3 Ibadan Community Structure

6.3(a) Regional Organised Open-Space

6.3(b) City Organised Open-Spaces

6.3(c) Organised Open-Space at District Level

6.3(d) Organised Open-Space at Neighbourhood Level

6.4 Natural Open-Space and Incidental Open-Spaces

6.5 Details of Proposal - Organised Open-Spaces

6.6 Neighbourhood Organised Open-Space

6.7 Details of Proposal for Natural and Incidental Open-Spaces

6.8 Implementation of Proposals

6.9 Short-term Implementation

6.10 Long-term 1990-2000

6.11 Standards

BIBLIOGRAPHY ... ... 95 - 96

APPENDIX 97-106

LIST OF MAPS.

Map 1. Map of Ibadan - The Study Area.

2. Land use Organisation in Ibadan.

3. Existing Organised Open-Spaces

4. Ibadan Community Structure.

5. Regional Open-Spaces.

6. City Level Organised Open-Spaces.

7. District Level Organised Open-Spaces.

8. Overall Organised and

LIST OF TABLES.

Table 1. Maximum and Minimum Temperature of Ibadan

2.

3. Open-Spaces System

4. Organised Open Spaces

5. Incidental Open Space

6. Natural Open Space

7. Land use Analysis

8. City Population and Land use Analysis

9. Population Distribution by Wards

10. Land Use of Ibadan

11. Use of Parks.

12. Data in Swimming Pool

13. Data on Playfields

14. Data on Choice of Open Space

15. Minimum Required Distance to Open Spaces

16. Distance Covered

Table 17. Mode of Travelling

18. Existing Beneficial Uses of Water

19. Composition of waste in the city

20. Composition of Solid Wastes 1969

21. Estimates of River Flood.

22. Awareness of Open spaces

23. Uses of Open Spaces

24. Incidental Open Spaces' Condition

25. Condition of Open Space

26. Open Space Development

LIST OF GRAPHS:

Graphs:

1. Perception of Open-Space.

2. An Indication for type of Development.

3. Condition of Open-Spaces.

4. Type of Recreation to be Planned.

5. Value of Flood Damage.

6. Composition of Solid Waste.

DIAGRAMS:

1. Open-Space System.

2. Environmental Quality Factors.

3. Open-Space and Environmental Quality.

4. Hierarchy of Open Spaces.

PLATES:

1. Open-Space Greek Period.
2. Open-Space Medieval Period.
3. Open-Space Modern Period.
4. Open-Space in Nigeria -Playground.
5. Open-Space in Nigeria - Stadium.

6(a) River Ogunpa.

6(b) River Ogunpa.

6(c) Refuse on Rive Channel

7(a-c) Forest Reserves.

8(a-c) Incidental Open-Spaces

CHAPTER 1.

INTRODUCTION.

1.1 Introduction:

"Imaginative civic leaders have long been aware of a link between a city's amenities and the soundness of other aspects of its life. Efforts to restore and dramatize urban centres have almost without exception been accompanied by a feeling for the importance of well-used parks and other space".[1]

Many developed countries, like U.S. have percieved that the vitality of the city was related to park-building and park use, and to innovative planning of open space.

In developing world also, efforts are on the way to renew many of the traditionally built urban areas so as to make cities to function better by giving immediate satisfaction to their residents. In some cities open-spaces are used to make the population have sense of unity as well as of pleasure, in revealing to itself the varieties of age, class, nationality and race of which the great city is composed.

The future of the cities will be largely determined by the degree to which people develop a postive desire to live in them.

For a city to be functional, it has to take into consideration the housing quality, access to services and activities, environmental cleanliness; the city must show

---

1. August Heckscher: The Life of American Cities, (1977) Pub. Harp. Coy.

orderliness or diversity, sense of life and excitement, above all a stimulating environment which makes the residents therein feel happy to say, "My City", - a very satisfying association with the city.

1.2 Research Question:

In order, therefore, to have an insight into the environmental quality of Ibadan, there are some basic questions, eventhough not stated, but which form the background of the research exercise. These are:

Is the city of Ibadan Open enough for the people to move freely and the facilities and services - recreational - to function positively in the city?

Are the conditions of the open-spaces found in them create sense of life?

Do the people have access to nature and open-spaces?

Do the Open-Spaces have impact on the general structure and legibility of the city generally?

These questions are not stated in form of hypothesis but are reflected in the aims and objectives of the research work.

1.3 Justification of the Study:

It has been variously suggested that cities' future will be largely determined by the degree to which people develop a positive desire to live in them; this will be measured in terms of how cities can give immediate satisfaction to the individuals in the city. Therefore the need

to improve the environmental quality of Ibadan so that the city's form or structure may have the ability to give enjoyment to the residents of the city.

Secondly, as a result of the growth of the city in a choatic and unplanned manner during the past few decades, this has given birth to the growth of slum and poor environmental sanitation which in turn affects the overall quality of the city. The study of the open-space systems of the city, and their organisation will help to stablise the city's social and economic abse to certain extent.

Thirdly, the state governments efforts to give the city a face-lift through renewal activities and of improving the environmental sanitation of the city has prompted the thesis proposal which, I humbly submit, its findings and recommendations will be of tremendous use to the government in its efforts to improve the lots of the people living in the city.

1.4 In view of this background, the aims and objective of the study are as follows:

1.41 (a) Aim:

1. To review the concept of open-spaces and its implication on urban settlements.
2. To carry out survey of the open-spaces in Ibadan with a view to:
   (a) Assess their environmental quality.
   (b) Propose policy guidelines that would provide for a better environment for Ibadan.

1.41 (b) Objectives:

(a) To study the concept in terms of:

(i) definition of open-spaces.

(ii) historicity of open-space.

(iii) traditional concept of open-space.

(iv) modern development and open-space.

(v) environmental quality of open-space.

(b) To develop an open-spaces system that would be suitable for Ibadan.

(c) To identify and classify the open spaces in Ibadan.

(d) To identify uses and environmental implication of the open-space in Ibadan.

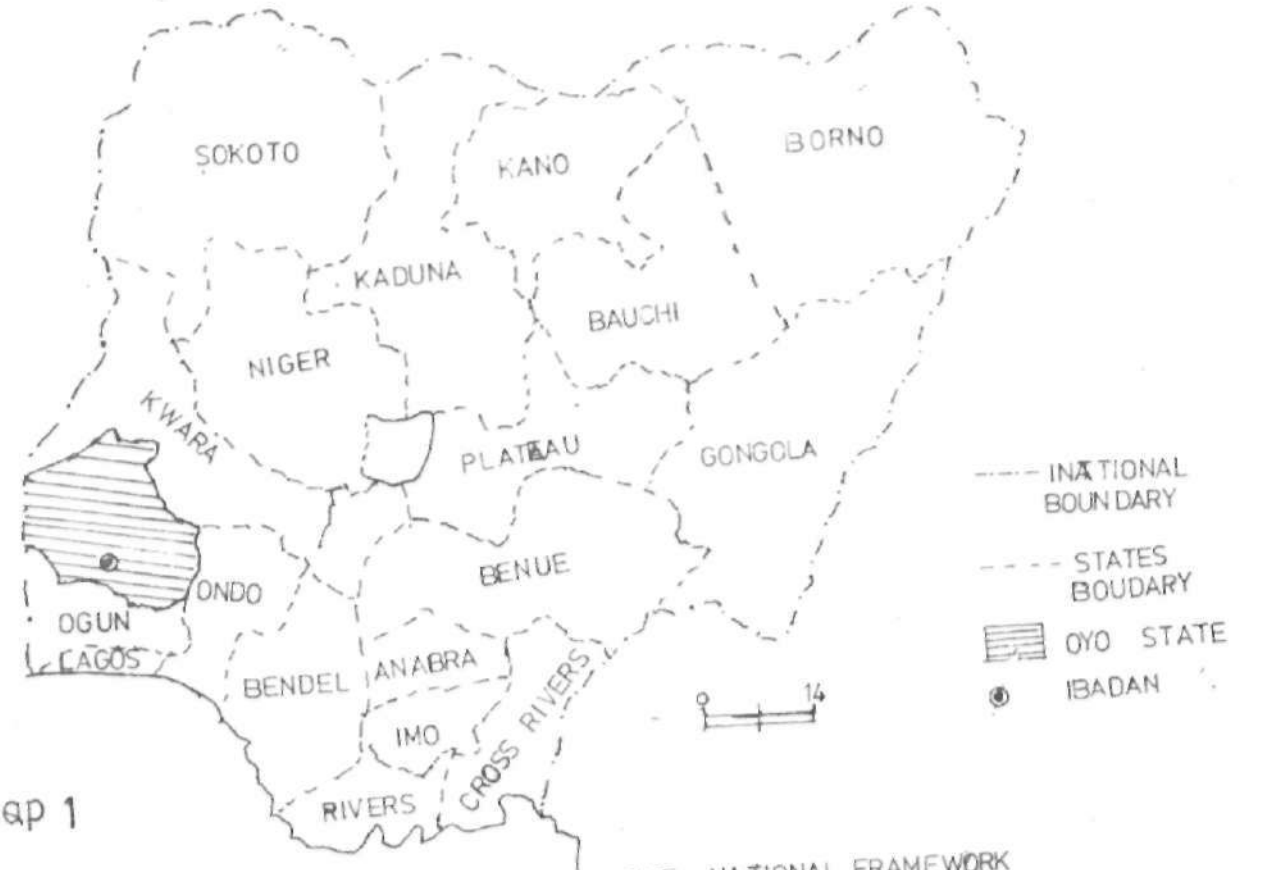
(e) To define a policy guidelines for implementation.

1.5 The Urban Character: A General Description.

1.5 (a) The History of the Town:

Ibadan is a traditiona urban centre. It is the administrative headquarters of Oyo State - one of the three states that emerged from the break-up of the former Western State. It is the largest city in West Africa; and one of the most populous cities in Africa south of the Sahara.

The history of the city is best understood in the light of the intral-tribal wars that occured during the middle of nineteenth century.



Map 1

LOCATION OF IBADAN IN THE NATIONAL FRAMEWORK OF STATE

The history of Ibadan has many versions but it is generally agreed that there are 'Three Ibadans'. The 'First Ibadan' was founded by Lagelu, an Ife Warrior and farmer. In his book, ('The Outline of Ibadan History' Lagos 1946) Akinyele writes, 'a man named Lagelu brought a group from Ife to establish a town at Ibadan.

The town grew from an immigration of Yorubas from Egba and later Ife, Ijebu, and Oyo.'

Because of its centrally - placed position between the hinterland and the coast, Ibadan attracted people with different motives - warriors and traders. This 'First Ibadan - the first camp - was originally known as 'Eba Odan' (meaning 'by the field') grew up to a large settlement, which, with time and usage became Ibadan as we know it today. One may start to wonder why Lagelu first chose Eleiyele Hill as the site of the 'Second Ibadan' but it would be understandable if one takes defence mechanism as the sole factor for the site selection. Intral-tribal wars was rampant during this period in review. To be saved from external aggression, and to be able to see enemies at a far distance - Eleiyle Hill then became a suitable site for the founding father of Ibadan.

Ibadan was formerly known as a war camp which emerged victorious after a war (the Apomu war) in which the united forces of its inhabitants, the Egbas, the Ijebus, and the Oyos refugees from the north (whose homes have been devastated by the Fulanis) were pitched against the Owus in a

siege that was said to have lasted five years.

After the period of unrest and instability caused by intral-tribal wars, there was a peaceful atmosphere and the people started to settle down.

The city is made up of many compounds. According to Awe, "the indlux of Yroubas from all parts was such that a survey of the various compounds in Ibadan indicates that every Yoruba town had a son - who was the early immigrant in the city of Ibadan, and where he first settled was named after the town from where he came from"[2]. Such compounds are Alli-Iwo; Isale-Ijebu. The Egnas from Abeokuta occupied Ago Tailor - Odo-Ona Sector of the city.

1.5 (b) Geographical Background.

(i) Location:

The city of Ibadan is located between latitude 7^{o} 19' and 7^{o} 29' north of the Equator and between longitude 3^{o} 47' and 3^{o} 59' East of the Prime Meridian.

It is the capital city of Oyo State.

Ibadan is located at a height between 600 - 1,200 feet above sea level. There are few hills "which according to R.K. Udo, (Geographical Region

---

2. Awe: Ibadan, Its early beginings, in 'The City of Ibadan'.

of Nigeria 1970 Heinemann Educ. Bks), are the prominent features of the physical landscape of the city". Such hills are Oke-Aremo Hill, Oke-Mapo Hill, Agodi Hill, Eleiyele Hill which ranges between 1000 - 1,200ft above sea level. From the top of these hills there is an excellent view over some parts of the city and surrounding country side.

"These hills, Udo goes on to say, 'have provided sites for such landmarks as Mapo Town Hall, Bower Tower, Premier Hotel, at Mokola."

(ii) Climate and Seasonal Changes.

According to Peters, "Climate is a most important factor in assessing the potential for recreation development" [4] which is a sub-system of the open-spaces.

Ibadan City has two main seasons like any other towns situated in the same geographical region (dry and wet seasons). These two seasons are influenced by two wind cuments. These are North-East trade winds, which prevails during the dry season. It prevails during the months of November to March. The wind which is hot and dry caries no moisture and it gives no rainfall.

---

3. R.K. Udo: Geographical Regions of Nigeria (1970).

4. A. Peters: Climate as a resource for open space management in Elinor: Planning for Parks and Recreation needs in Urban Area.

The sencond wind is the south-west monsoon wind which is warm and moist. It contains moisture simply because it originates from Atlantic Ocean. It prevails in the months of April to October.

The relative humidity is always high at Ibadan. This is so because the Inter-Tropical Convergence Zone (ITCZ) is situated north of Ibadan in summer time; and moves south of Ibadan in winter. The movement of I.T.C.Z. is cause by the meeting of the two different air masses already discussed.

Relative Humidity is high every morning and there is always high cloud cover.

August break occurs during late July and ends in September. Late December to January there is hazy weather. In some years it can extend to the month of February.

Temperature of the city of Ibadan is always very high. The table below shows means of daily maximum and minimum temperature as recorded over 53 years. It als includes the cloud cover.

TABLE 1: MAXIMUM AND MINIMUM TEMPERATURE OF THE CITY OF IBADAN AND MONTHLY CLOUD COVER.

Month	Max	Min	Monthly Cloud Cover
Jan.	90	69	49
Feb.	93	70	63
March	93	72	68
April	91	72	74
May	88	71	84
June	85	71	83
July	82	70	89
August	81	69	90
September	84	70	85
October	86	70	78
November	88	71	53
December	90	69	50

Source: Maclaren International Limited in Association with Urwick, Currie, and Partners, vol 2, 1971.

The cloud cover over Ibadan encourages the temperature to be high through out the year. This is so because the thick cloud cover would dis-allow outgoing solar energy from leaving the atmosphere thereby making its environment very hot all the time.

Ibadan enjoys tropical type of climate. Rainfall is almost throughout the year. The annual rainfall is 48.3 inches, and it is well distributed through-out the year. Relative Humidity is also very high. (See the table below).

TABLE 2:

Months	Rainfall	Relative Humidity
January	0.4	81
February	0.9	78
March	3.6	81
April	5.3	82
May	5.9	84
June	7.4	86
July	6.1	89
August	3.3	88
September	7.0	88
October	6.2	86
November	1.8	83
December	0.4	83

Source: Maclaren International Limited, vol. 2, 1971.

(iii) Vegetation:

The natural vegetation of Ibadan is deciduous forest which is a transitional forest between evergreen forest of the coastal areas and Savannah to the north.

The vegetation is not thick; trees always shed their leaves during the dry season and most of the shrubs require wetting to maintain their greenish during the dry season.

The natural vegetation has suffered serious degeneration as a result of human interference. The trees and bushes that could have formed part of urban green are cleared either for housing construction or for agricultural activities.

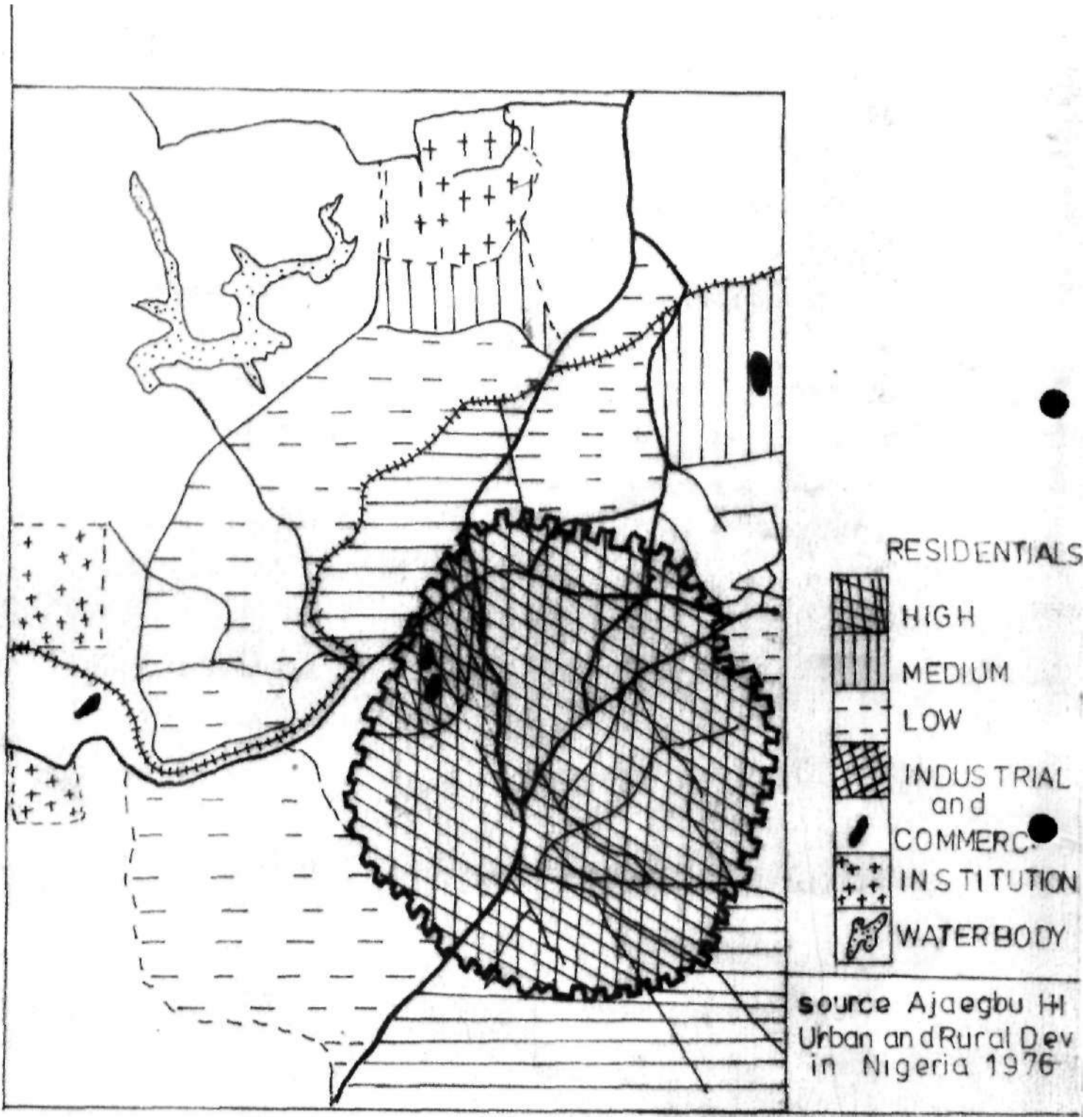
The pockets of vegetation along the river valleys are not un-affected by the human interference.

The nature of the forest around Ibadan city and the man interference have affected the use and management of the open-spaces found at Ibadan. Since the trees and shrubs shed their leaves during summer, any organized open-space in the city required water-wetting so as to keep its freshness and greeness.

(v) Population:

Ibadan is the most densely populated indegenous African city south of the Sahara and north of the Limpopo river.

In 1952 Ibadan has a population of 459,196. The 1963 census puts the figure at 627,379 while in 1973 it was



MAP 2 LAND USE STRUCTURE OF IBADAN

estimated to be 928,646 (at 4% annual growth rate and in 1979 it reached 1 million plus.

The city consists of six district (census districts) made up of 35 wards. They reflect the morphological, socio-economic and socio-cultural attributes of the city and its inhabitants.

(v) Funtions:

With the coming of self government, Ibadan became the capital of the the Western Region. In 1967 when Nigerian Military Government created states, Ibadan became the capital of Wester State and as from 1976, it finally becomes the capital of Oyo State.

It is a commercial, educational and industrial city. Most of them are sited at the periphery of the city.

(vi) Land-use Pattern:

Ibadan City, a traditional city, is not a well-layed out city. The distribution of land use does not follow any fixed organized pattern. The growth of the city is well ahead of development and Ibadan Planning Authority is just a young institution which is now groping in the midst of many problems - socio-economic - of how to curtail the planlessness of the use of land in the city. However certain concentrations of predominant uses can be identified in certain areas as can be seen in ...p 1.

1.6 Organisation of the Study:

The Report of the study is presented under six chapters in the following order.

Chapter I: deals with general Introduction to the Study.

Chapter II: deals with the concepts of open spaces and the historical review of the concept.

Chapter III: Reviews the Environmental quality concept and Open-Space System.

Chapter IV: Discusses the Methodology adopted in the Study.

Chapter V: Concentrates on the analysis of the data.

Chapter VI: Discusses the Findings, Proposal and Implementative of Proposals.

CHAPTER 2.

BACKGROUND INFORMATION.

DEVELOPMENT OF URBAN OPEN-SPACES HISTORICAL REVIEW.

2.1 INTRODUCTION.

The concept of open-space is as old as the first man who led a settled life by building houses to serve as shelter for himself and other members of his family. He built houses and partitioned them into rooms and court-yards. He had a special area where he cooked his food and some areas - backyard, set backs and the common residential lots where he could sit down and watch the movements of heavenly bodies - stars, moon, and sun which guides his day to day activities. The places also served his children where they played with their playmates. Even in the period before Christ (B.C) the importance of open-spaces was known by the people of that period. Prohet Isaiah says

> "Woe unto them that join house to house that lay field to field, till there be no place that they may be placed alone in the midst of the earth."[5]

2. (a) Greek Period:

The most important open-spaces during this period was the agora which was known as the main town square. It was the place to which free citizens gravitated, where goods were bought, sold or exchanged, where people not only met but got in each order's way. The second open-space was Palaestrae and Gymnasia area athletes, wrestlers, and

---

5. Isaiah: Old Testament Bible, Isaiah Ch. 5.8 in Symour M. Gold Urban and Recreation Planning.

swimmers could meet socially and take exercise.

Other form of formal open-space in Greek period were the stadium, hippodrome, theatre and library where he could pass much of the day in the open air (open-space) for social, physical and cultural pursuit. Perhaps the contribution made by the open-spaces during this period was that it gave the cities forms which were easily comprehensible to the residents.

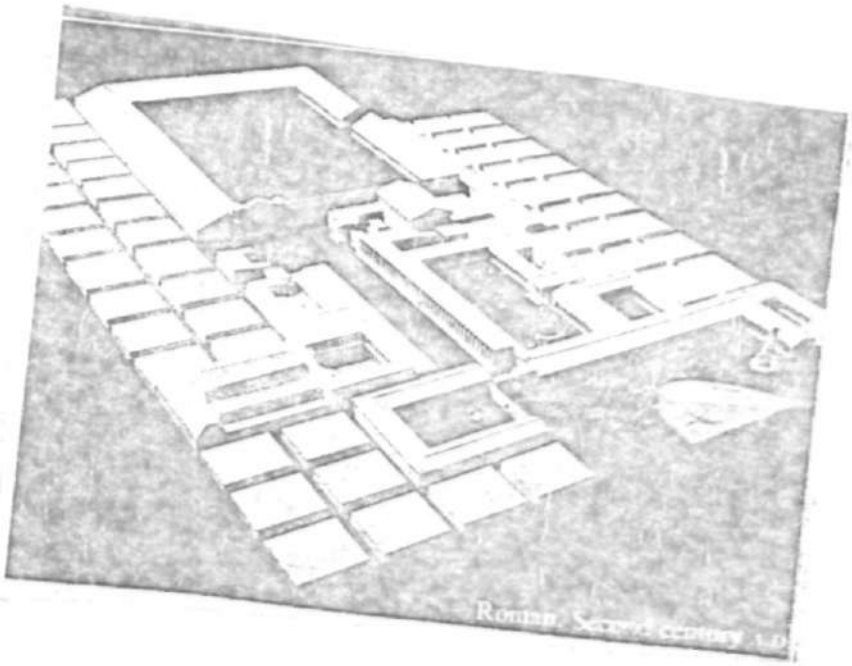
2.1 (b) Roman Period:

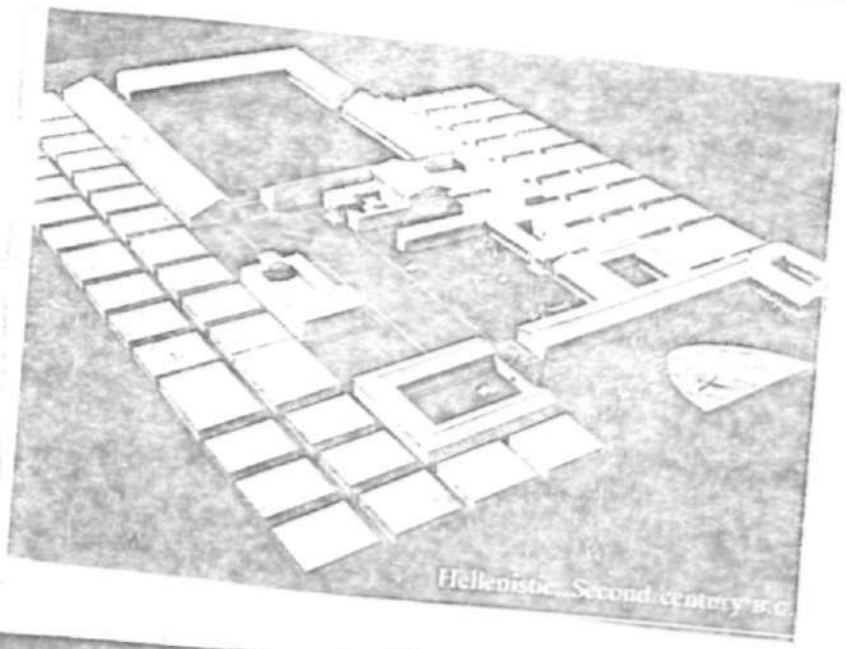
The Romans loved beautiful surroundings, and this they achieved by copying and adapting Greek architectural styles and perfected it. "At the heart of the built up areas of Roman cities were the forum which were formal open-space of regular shape, colonnaded, decorated with statues and flanked by public buildings"[6]. In the forum all sort of passive and active recreational activities were carried out.

To complement the organised open-spaces constructed by the Kings in the form of forum, sometimes baths and other open spaces were built by the wealthy citizens and a change for admission was made by the management".

---

6. Gerald Burke: Towns in Making, p. 31.





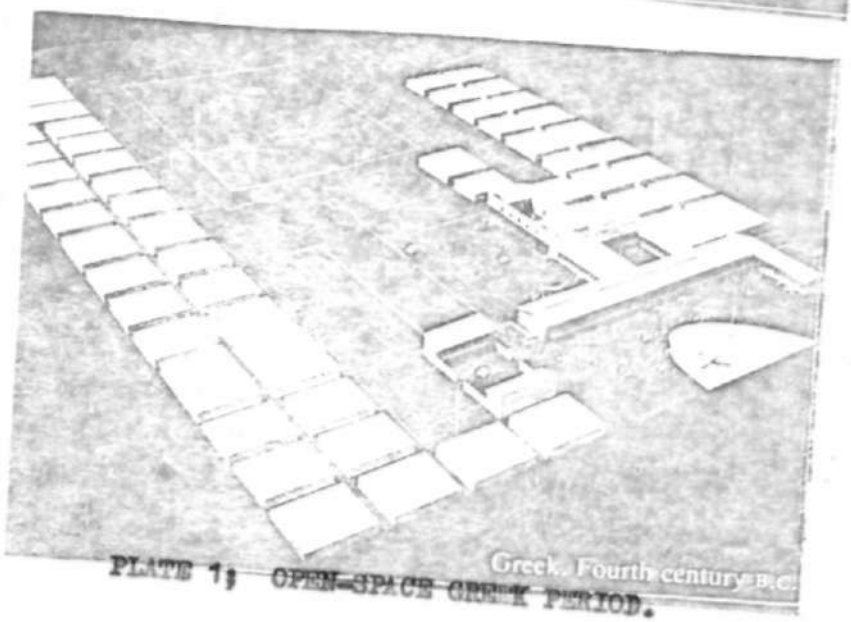


PLATE 1; OPEN-SPACE GREEK PERIOD.

were created in mediaval towns. Apart from creating formal open-spaces for social interaction, streets were constructed for easy accessibility to commercial centres of their cities; and open-spaces created in the centres were landscapped to add more beauty to the city centres.

To sum up, the concept of open-space in these periods, from early history, Greek-Roman, to Mediaval period was essentially a closed open-space for the people living within the city.

The Agora, Forum and other open-spaces were rarely dis-engaged from their surroundings.

2.1 (d) Renaisance:

"Subsequent development (of open-space) was almost entirely in the direction of openness. The Renaissance created in men sense of movement toward out-ward ends ... with the new constructions of the Baroque period, the city moved conclusively from the closed to the expanding space, from implosion to explosion, from the crystallising epiphany to the open-ended questions". This is a striking evolution in the history of Town Planning. The concept of the people of this period was 'man as the centre of the world'.[8] Open-spaces of different types were introduced.

---

8. August Heckschar: Open-Spaces. The life of American Cities, Publ. Harper, 1977.

Piaza, local squares and squares around the churches were introduced.

Alberti's opinion about the creation of open-space and their importance is best illustrated by one of his sayings:

City is not built wholly for the sake of shelter, but ought ot be so contrived, that besides more civil conveniences, there may be handsome spaces left for squares courses, for charriots, gardens, and places to take; for both Amusement and Recreation .

In this period also, town improvement saw to the widening of existing streets, setting out spacious Piazze surrounded by elegant new buildings; trees and flowers were also introduced in public open places.

2.1 (e) Modern time (20th Century) from closed system to open system:-

The open-spaces discussed earlier on were the spaces found within the walls that surrounded the city. Ironically, they are the open-spaces found in closed system. But the experience gained from the previous historical epoch had a lot of impact on the development of open-spaces in modern cities.

Besides the park, squares and piazza other form of open spaces are added to the ones known before. Technological development witnessed by this period has helped a lot in

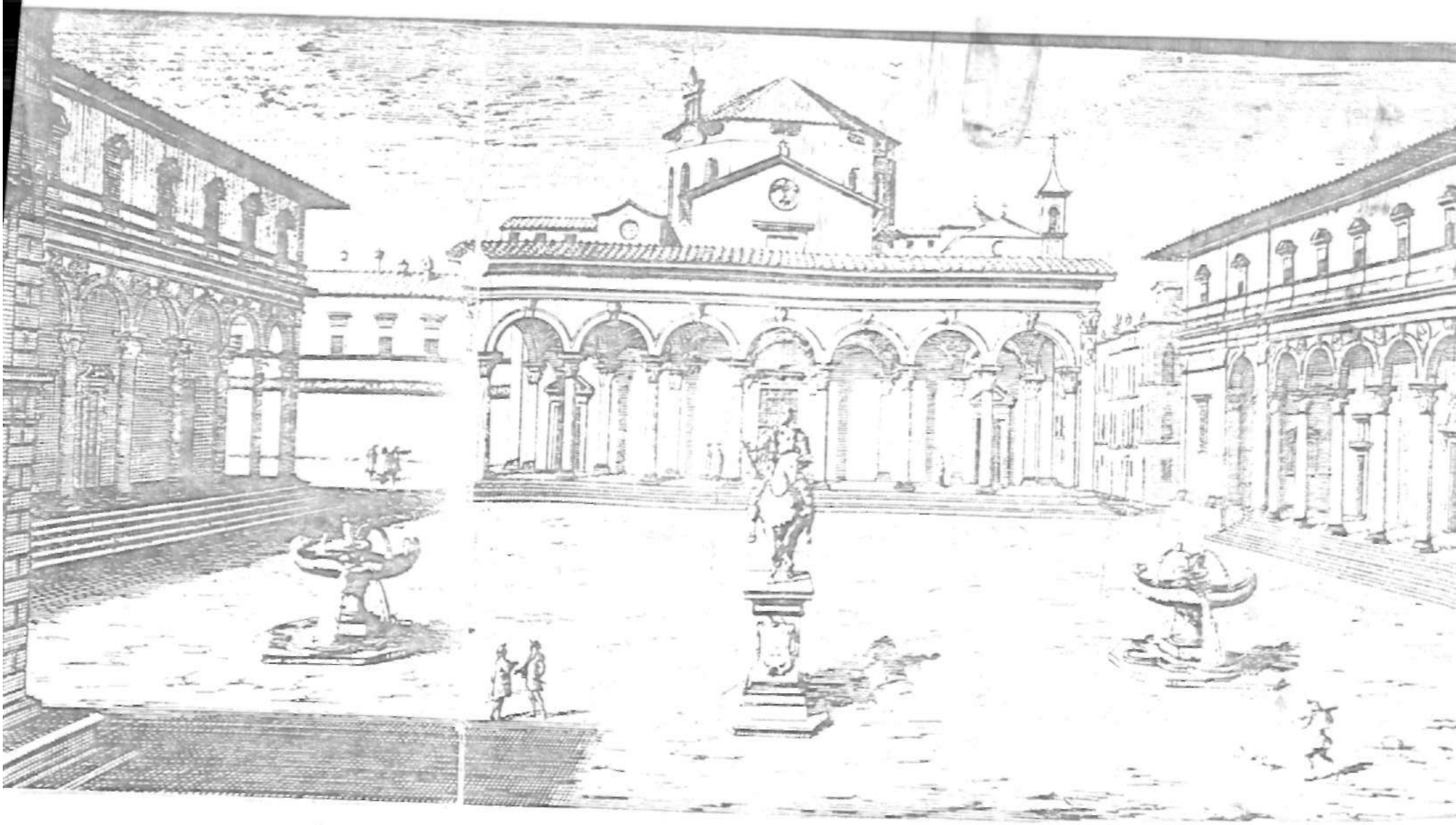


PLATE 2: OPEN [illegible] MEDIEVAL PERIOD.

changing the concepts of open space has known by Greeks and Romans. The highways, the strips of cities and pedestrian spaces are now added to the inventory of open-space resources.

The park ways and boulevards of the nineteenth century introduced the idea that in urban planning motion and space are complementary. The park ways became means of progressing through linear extensions of the romantically conceived country side, under shady trees and often along cooling water ways. Gone are the monumental buildings, with their open-spaces around them. In their places is the broad right of way lined by flashing signs and beautiful green that line them.

With the dissipation of the earlier conception of open space, modern cities had become too loose and open .

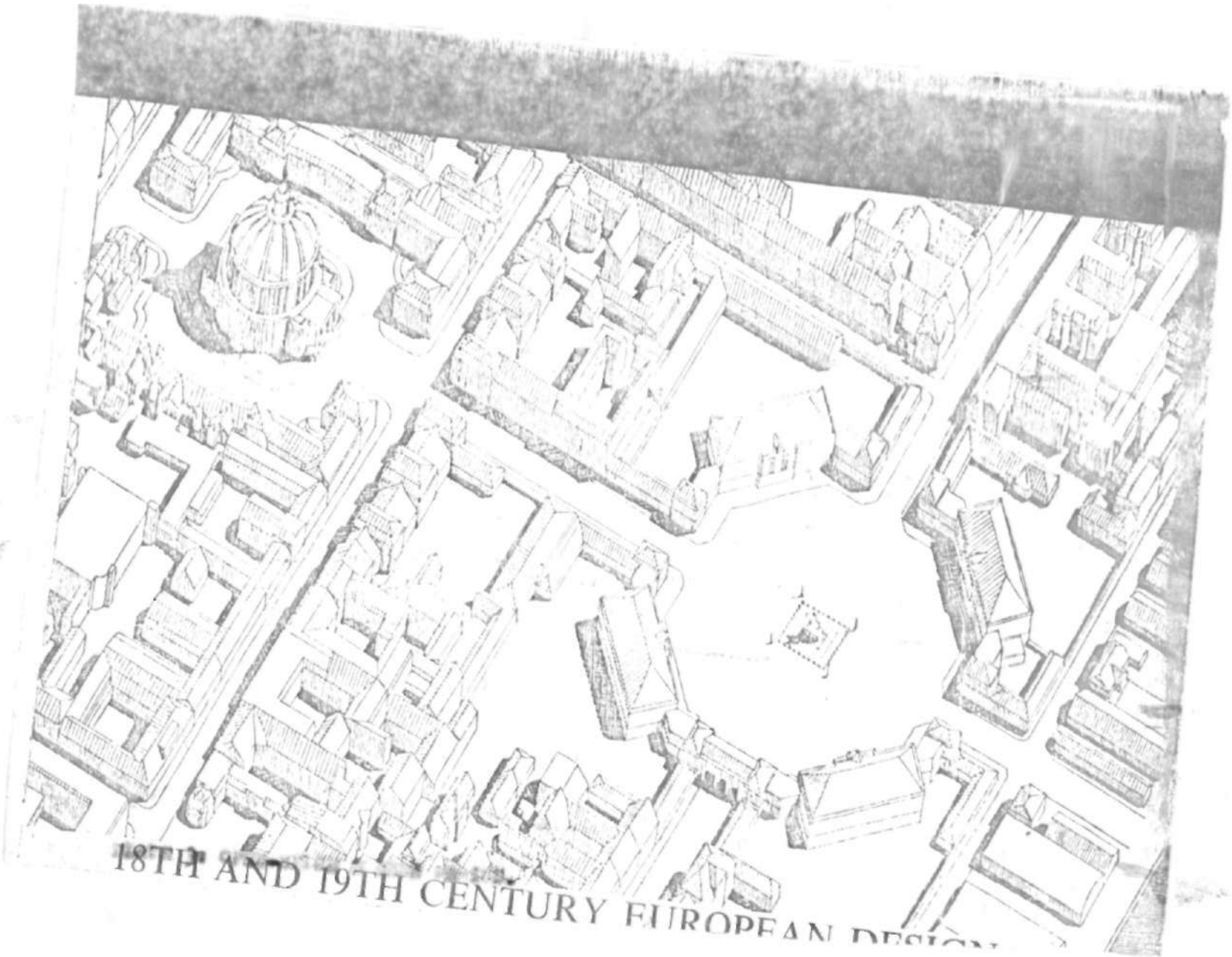
2.1 (e) Open-Space in Nigerian Concept:

Like his counter parts in both Mediaval and classical period, Nigerian also develop through ages the concept of open space as related to the socio-cultural meliu in which he was operating. No wonder then when the 'closed system' concept of open space was accepted to the people.

The concept of the form of human settlement formed from time immemorial by the people had a lot of impact on what the people knew to be the open-spaces and their functions. Some of the open-spaces are the following:

(a) Large open-space in front of Oba or Emir (Dandal).

Of greater importance is the large open-space consciously



18TH AND 19TH CENTURY EUROPEAN DESIGN

created infront of Oba or Emir's Palace. This open-space serves as a recreational area for the people in the city. In Northern Nigeria, for example, this open-space is used as Durbar for important festivals. In the Southern part of the country, this open-space contains most of the important ceremonies in the city.

(b) As Agora or Forum was to the Greeks or the Romans so also the markets sited near Oba's Palace are important to the people of Nigeria. The markets are at times referred to as Oba's Market (King's Market). This place is open to the inhabitants of the town where they could sell, buy and exchange their farm products. Apart from serving as commercial area, the market which is an open space, served as a social place where festivals, crowning ceremonies, political issues of the time are discussed, and where other social activities take place. Besides, in the evening, people from all walks of life congregated at the market places where social interaction was at its [illegible] looking for wives would go to market place to start the courting of girls. Artists who are renowned in the city perform in market places. Uptill today, markets, in some cities serve as an 'open-air' where cinemas are shown to the residents in the evenings.

PLATE 14 CHILDREN IN SCHOOL - PLAYGROUND



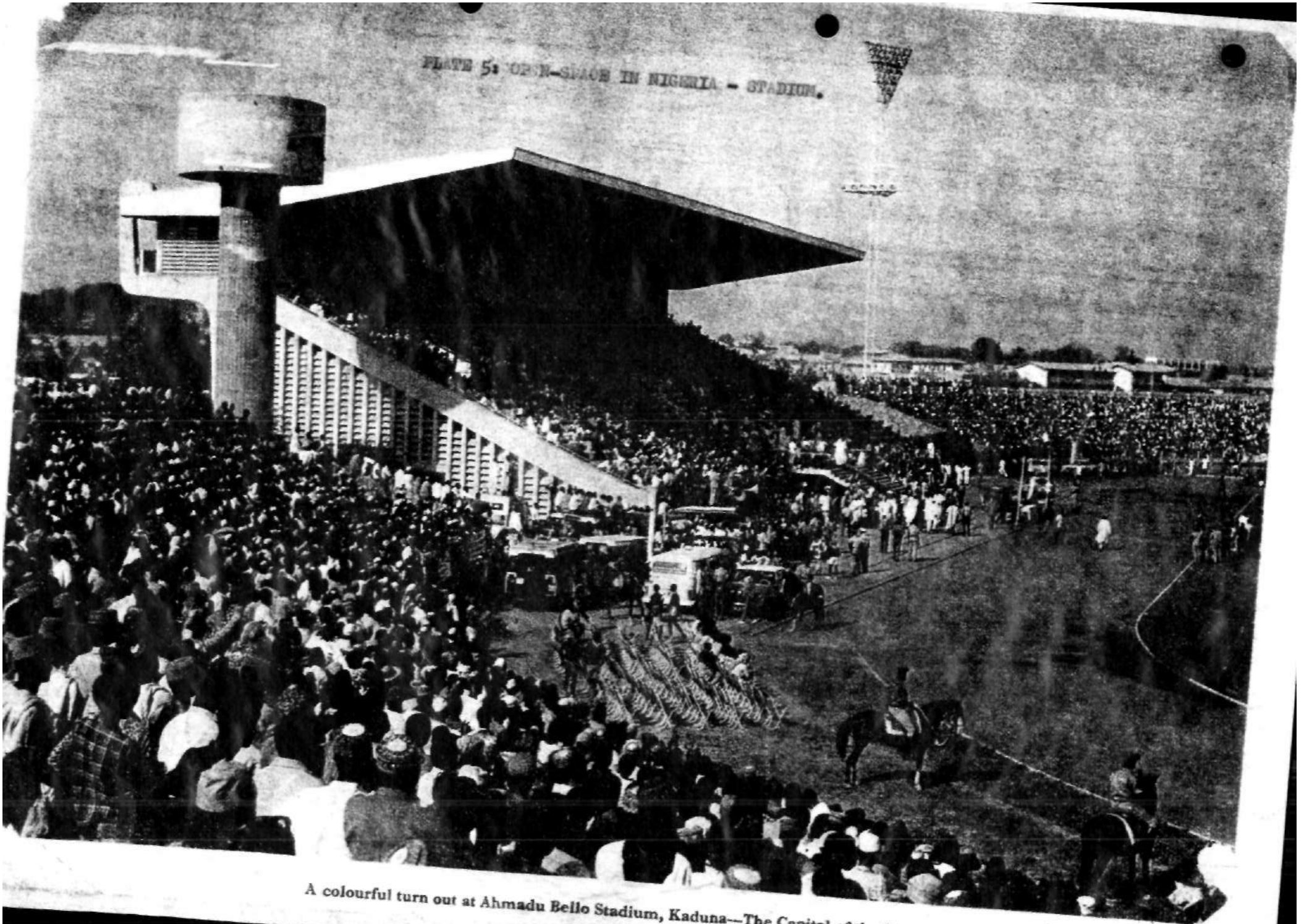
Third in the order of open-spaces as they were known by the people are those ones which they feel, and use in their day to day activities. These are the court-yards, backyards, residential commons found within residential areas. In some towns, larger open-spaces are created infront of chief's house. These open-spaces served various functions - for privacy, and for relaxation during the warm weather.

The open-spaces found at the periphery of the city (now called strips) served useful purpose. This class of open-space at times served as shrines of some gods; at times the corpses of persons who died of deadly diseases were buried in such bushes. At times the bushes were used for agricultural purposes.

2.1 (e) ii <u>The Influence of Colonial Masters on Traditional Concept</u>.

The Colonial Rule in Nigeria was primarily interested in the country's administration nevertheless their influence introduced some elements of urbanizztion in some Nigerian towns.

The coming of British rule in Nigeria brought with it the introduction of modern concept of open space in Nigeria society. The District Officers, after a day's work would want to relax, they would like to take to active recreation or passive ones; to be able to provide for their needs, areas were created for their houses and other facilities. This brought into the form of the city the concept of Government Reserved Areas (G.R.A). In those areas, large areas



A colourful turn out at Ahmadu Bello Stadium, Kaduna—The Capital of the State

were as open- spaces e.g Polo ground, Tennis Court; Playground, Garden and so on. Realising the importance of these facilities, efforts were made by Regional Governments in Nigeria to consciously plan for Urban Open-Spaces in Nigerian Cities.

United Nation Organization, recommended the preservation of land for recreational use distinct from land for housing, industrial and commercial uses. Hence Public Parks and recreational areas were planned for Lagos along the Shores of the Lagoon.

Efforts are being made by many cities in Nigeria to accord open-space recongition, and to use it not only to create space for recreational activities, but to use it to control the development and forms of urban centres in the country.

2.2 Concept of Open-Spaces.

Although various articles have been written on open spaces but the definitions many writers give open spaces connote that the writers, most of them, like town planners, designers, urban managers, architects and social workers, to mention a few, have not given us the true picture of what constitute the urban open spaces. Apart from the divergent views and definitions given by these specialists, the socio-cultural factors have introduced a complex dimension to the problem of given appropriate definition to open-spaces.

In his own approach, Keeble has this to say, "In my view the term open space should be applied only to Parks, Playing field and those areas of undeveloped land within a residential lay-out larger than the purely INCIDENTAL OPEN SPACES, to which the public have access".[9] (Capital letters are mine). In other words, a place to be given the name 'Open Space' to Keeble, should meet two criteria:

(1) It should be larger than residential common.

(2) Public should have access to it.

His definit on fails to give us what are those spaces branded incidental.

Stanley, B. Tankel, in his own romantic definition, has this to say, "Open Spaces include not only all land and water in and around urban areas which is not covered by buildings, but also the space and light above as well".[10] This is to say that not only places where we can get 'green' can be given the name 'open-space' but also the space between the limit of roofs of houses of urban centre and the sky. Seymour defines open spaces this way, "Open spaces are not merely places to visit, exercise in or learn from. They are areas in which one may encounter the aesthetic values of trees, sky, and the feelings of enclosed spaces".[11]

---

9. Keeble: Principle and Practice of Town and Country Planning.

10. Stanley, B. Tankel: The importance of Open Space in Urban Pattern.

11. Seymour and Gold: Urban Recreation Planning.

In their work, "Regional Plan for open-spaces of four counties - Hancock, Harrison, Jackson and Peal River Counties Johnson King and Associates define open-space to be a land or water area largely in its natural condition. Such areas include Parks, Parkways, Beaches, Lakes, Bays, and Rivers and insitutional lands".[12] Like Keeble, Johnson and Associates do not seem to give recognition to incidental open-spaces which have become part and parcel of the residents having them.

In their analysis of the framework of open-space design Christopher Tunnard and Boris Pushkarev have this to say, "We should be thinking of open space on the one hand as all the land which is not built upon, and on the other hand as sites which have a recreational potentials of some kind".[13] They go on further to explain what constitute the space which is not built upon, this is what they do by giving recognition to the house lot open-space which according to them occupies the lower hierarchy of open-spaces.

In her analysis of open spaces A. Omar Shittien defined open-space as "any piece of land area within the urban region which is predominatly in its natural conditon ... such

---

12. Johnson, King and Associates: The Regional Plan for Open Spaces, Recreational and Environmental Appearance, April, 1971.

13 Tunnard and Pushkarev: Man-Made America (Yale) 1963.

open space does not include specific land developed or being developed for residential ... eventhough OPEN SPACES AREAS MAY BE LOCATED INSIDE OR ADJACENT TO SUCH LANDS"[14] (Capital letters are mine). Like Keeble, Shittien does not recognise open-spaces - incidental open spaces - that affect the daily functions of man in the city.

Open-space means different thing to the landscape designer. In his work, 'The nature of landscape design.' Nan Fair Brother has this to say about Open Space. "In built-up urban landscape there are two completely seperate categories of open-space. One is those odds and ends of urban sloip; the other is parks and garden. It is not simple a question of size; these are essetially different types of open-space, their function and use is different, so is their place in the city. Parks are not incidental to the city's lay-out as are the bits and pieces; they are planned for an allotted space." Open-space could be classified as open or closed. Which category a space belong to depends partly on the extent of the landscape or our relationship to it, but chiefly on the proportion between the space and the boundaries that define it. When the open area is large in relation to the height of the boundaries this produces an open space. The third dimension, he went on,

---

14. A. Omar Shittien: A User Oriented System of Park and Open Spaces in Jos (Unpublished M.Sc. Thesis, Dept. of Urban and Regional Planning, A.B.U., Zaria.

15. Nan Fair Brother: The Nature of Landscape Design. pub. 1975.

is the sky, which cause us to experience the space as a positive free extent. On the other hand when the open space in small or the boundaries are high, this creates an enclosed space . To the landscape designers, the definition given to open space by Keeble is not complete since it does not include the incidental open spaces which the landscape designers recognise as open · space.

Lynch in his onw contribution to what people percieve to be open space in the city, he says, "A space is open if it allows people to move freely within it. Our list of open-spaces prototype are picnic ground, playground, meadow, beach, wood is too restricted and so is our focus on space standard. The openess of our open spaces is not so much a matter of how few buildings stand upon it,but rather how open it is to the freely chosen action of its user."[16]

But Reitz Jr. in his own definition completes the definition of what could be called open space resource in the city by including in the list of Lynch when he says, "Open-Space are also preserved by the imposition of minimum lot and yard requirement and setbacks ... as well as wilderness areas."[17]

In his own approach, August Heckscher[18] defines open-spaces through classification, those that are traditionally conceived as open-spaces e.g. parks and squares and also open-spaces include areas as large-scale natural features within cities and the open space pattern of crowded downtown.

16 . Lynch: Site Planning: end Ed. Pub. M.I.T. Press, Camb. London

17 . Reitz Jr. Law of Land and Resources in Environmental Planning Publ North Am. Inter. Washington D.C. 1974.

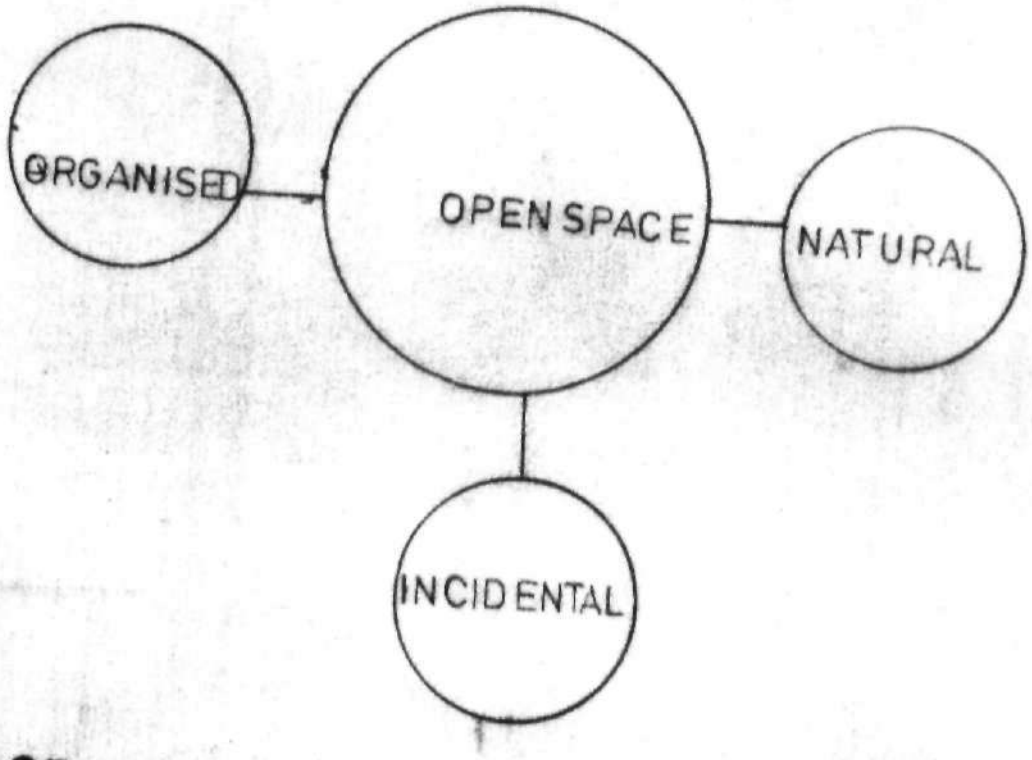
18 . August Heckscher: Open Spaces: Life of American Cities, 1977.

Going through the definitions thus so far given one could see that some of the definitions are general, in that they could not give the specific examples of those areas in the cities that could be called open spaces. Some definitions are too narrow as not to include those areas which ought to be given recognition to constitute part of Urban Open Space resources.

To be able to incorporate all urban open spaces which have impact on the environmental quality of urban areas which is the core of this research, open-spaces is defined as those spaces that remained after the construction of buildings, or tersely spaces left uncovered with buildings, be they organised, natural, or incidental spaces. The much emphasis given to recreational and open spaces used for strenuous physical exercises has beclouded the planners' thinking of given recognition to other open-spaces, be they small or large, accessible or inaccessible to the public at large. That is why Jane Canter Loeffler has rightly said that, "Recreation in this sense is distinguished from open space. One is a container or a setting, the other is a happening."[19] Open-space is a container of recreational activities eitheractive ones or passive ones. To neglect the incidental open spaces management in our urban areas or the planning of them for the promotion of environmental quality of our urban areas could be a great mistake which could pose a bigger problem in the nearest future.

---

19. Jane Canter Loeffler: Open Space, People and Urban Ecology, Planning, The ASPO Magazine, No. 218, October 1972.



OPEN SPACE SYSTEMS

DIAGRAM 1

2.3 Open-Space Viewed as a System.

"The ability of man to affect his environment is proportional to his technology, but man's ability to understand his environment is proportional to his ability to synthesize. It would seem that man's ability to plan future environment would also depend on an understanding of his present environment".[20] This is to say also that if we are ever to create an environment which satisfy all man's need, we must stop thinking in terms of solving isolated mechanical problems but more in terms of understanding the total biotope. "This may involve training minds that are capable of evaluating many aspects simulatancously and making judgements based on this broad view".[21] Hence the reason why open-spaces in urban area should be viewed by applying broad view approach - which will afford us the opportunity of evaluating many aspects of open spaces simultaneously and helping us to make judegment about the open spaces, the ways open-spaces promote or hinder the environmental wellbing of the people in urban centres and strategy, if any, of improving the open spaces in cities to enhance the environmental efficiency of urban centres.

---

20. R.J. Perkins: The Environment from system point of view. Inter. Journal of Environmental Studies, vol. 8, 1975.

21. Louis, B. Young: American Foundation of Continue Education

Since the open-space in urban areas could be looked at in terms of the total area of land of the city minus the ground areas of land covered by buildings and other infrastructures, it is better then to look at open spaces of different types that constitute the urban open-spaces. The table below shows the schematic illustrations of the system.

2.3(a) The System.

Table 3.

	1		
	OPEN SPACE		
2	NATURAL (OPEN SPACES	ORGANISED OPEN SPACES)	INCIDENTAL (OPEN SPACES

The step 2 of the table forms the subsystem of the (whole) main system.

In each of the sub-system; there are those items that could be found. Those items, to fulfil the "General Theory of System", form the elements of the sub-systems.

To have a grip understanding of the 'whole, the subsystems within the whole is then broken down to show the important elements in each. The tables below indicates the element found within each sub-system.

Table 4.

ORANISED OPNE SPACES						
Organised Play-grounds	Stadium Gulf-fields	Lawn Tennis field	Public foot-walk lawn	Parks gardens picnic-spots	Biological Garden	Com-etry

These are the elements consiously taken care of by the planning agencies. There is a lot of design work on those elements. Standards for each items have been well documented.

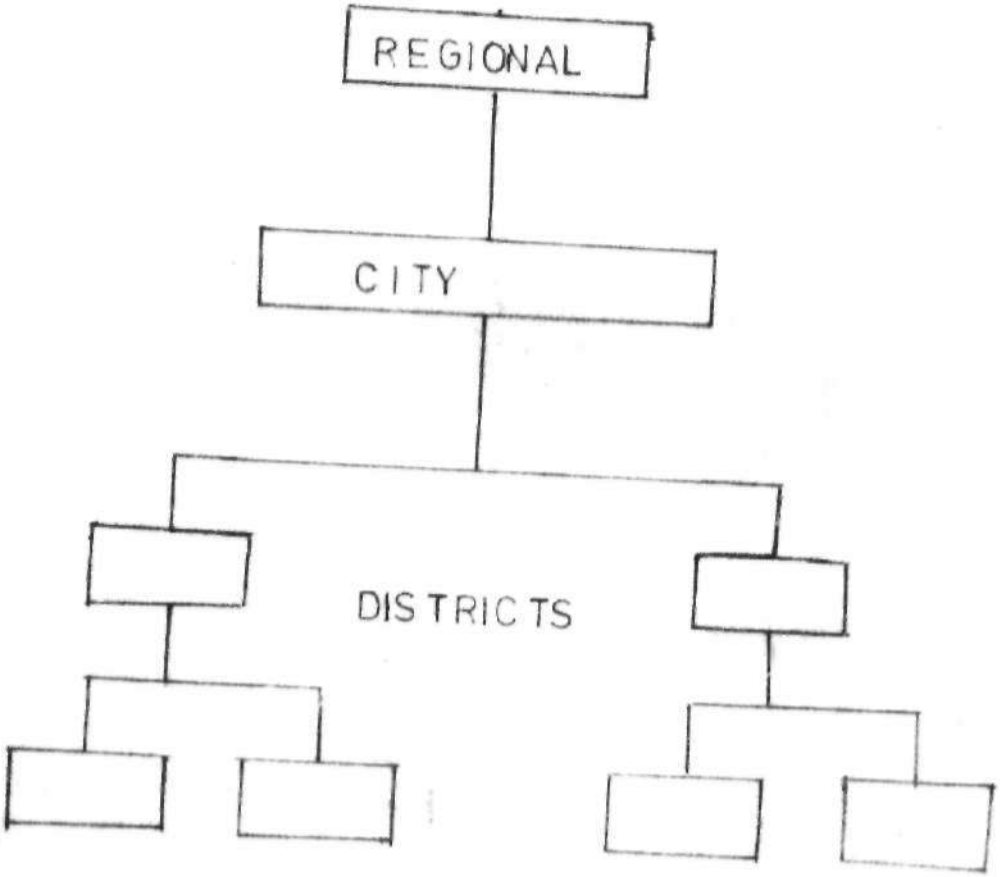
Table 5.

INCIDENTIAL OPEN SPACES				
Set-back Bacjtard Areas	Vacant lots	Sidewalk	Space adjoining comm. facili-ties tot-lots	Residential commons

This are consciously or unconsciously planned; they are not recognised as being part of the open-spaces in urban areas; but their impact on environmental quality of an urban area cannot be over-emphazized. This is the more reason why recognition must be accorded them.

Table 6.

NATURAL OPEN SPACE				
River Channels Flood Plain	Lakes (Pools) Reservuire	Forest, Wilder-ness Areas Strips	Mountain Areas	Coast-al Area



HIERARCHY OF OPEN SPACES

DIAGRAM 2

These are the open-spaces created in the city by nature. They are at times incorporated in the design concept the designer of urban areas thereby adding to the diversity, constrast and flexibility of city, thereby creating a balanced environment. But in some cases they are tampered with by man who is facing shortage of land to use in the city.

2.4 Heirarch of Open Space in Urban Areas.

The open-spaces in the city could be arranged hierarchically either using the area they serve as a criterion to group them into kinds (distance or catchment areas of the population that visits the open spaces), or using physical size as another parameter for arranging the open spaces found in urban areas.

In this research, the physical size of the open-spaces and population would be used to classify the urban open-spaces into class or order. These parameters would take into cosideration the informal open-spaces that are available, but are not having standard measurements in the city.

Basing it upon the physical size and the population they serve, urban open space could be grouped into six orders

2.4 (a) Open-Space at Regional Level.

These are the open-spaces found at the fringes of urban builtup areas. They support largest population; such open spaces are the National Park; Games Reserves Stadia, etc. They are at times referred to as Green belt. These open spaces are subject to strict development control. The at times form the limit of growth of cities.

2.4 (b) Open Space at City level.

This is the 2nd level or order of open spaces found in the city. These open spaces are larger than the district level open spaces in sizes and in terms of population they serve. There is a sort of overlap between Regional and City levels at the city level are: Mountain and Valley fllor;

(ii) Wilderness areas;

(iii) Central City Park;

(iv) Stadium;

(v) Large Institutional Open-Spaces;

(vi) Historical and Natural Landmark;

(vii) Sports Arena and Race Course.

2.4 (c) Open-Space at District Level.

The third level are the open-spaces which are planned. They are formal open spaces unlike some of the open spaces at the neighbourhood level. The district open-spaces serve larger population then at the neighbourhood level. These open-spaces are:

Playfields; Parks upto 100 acres; civic centres recreational road or paths, garden, golf courses, and large stadium. Along with these formal open-spaces at this level are the mountain and valley floor, park, minor conservation areas, large lake, large rivers and water reservoir which are the naturally created oepn-spaces at this level.

2.4 (d) Community Open-Spaces.

In the neighbourhoods of cities, certain open-spaces occupy the fourth order in the hierarchical arrangement of open-spaces in the cities. These open-spaces are:

(i) School ground.

(ii) Playground.

(iii) Small park.

(iv) Gardens.

Side by side with these formal open-spaces at this level are the naturally created open-spaces. These are: small lakes, ponds, streams and lagoons.

They may be landscapped or consciously planned for the people in the neighbourhood.

2.4 (e) Open-Spaces at Neighbourhood Level.

The open-spaces that are in this order of the hierarchy are street scale open spaces. These include the following: Right of way, Pedestrian ways, Street paths; Play lots; and Playgrounds for children.

They form the open-spaces that encourage easy movement in the city. They are free from traffic flow. They take care of accessibility which is one of the qualities the open-spaces in the city gives to its form.

2.4 (f) Open-Space at Sub-residential level.

These spaces are courts, yards, gardens, tot lots and residential common. These are very close to the residents of the city. People in the city feel their presence, view them; and operate in them. They are part of the life of the people in the urban areas.

CHAPTER 3.

ENVIRONMENTAL QUALITY AND OPEN SPACE.

3.1 Concept of Environment:

"Man's Environment is the combination of those physical circumstances in which he lives which are essential to his health, enjoyment of life and the opportunity to develop his individuality and purpose of life".[22]

The economists and social workers see environment as "both the source of materials and the sink of the waste or by products of production and use; at no step in the flow system do material and environment fail to interact. The continued yield of materials are extracted and then restored to environment".[23] This definition of environment takes into consideration the activities of man - both economic, social and political. For example his economic activities include manufacturing, whole-saling, retailing and other services which endeavour man to consume a lot of environmental materials such as - water, land, biological materials such as wood; and also his discharge such as used - fouled water, wastes of raw materials, gas and industrial waste. The Biologists look at the environment of man to constitutes the physical setting where man interacts with nature - plants, animals, and the landscape - and where he carries out his day to day activities. The environment could be likened to be the study of ecosystem or the parent discipline

---

22. J.B. Adeyeri, Problem of Environmental Pollution in Town. A paper

23. Natural Commission on Material Policy, 1973.

of ecology. The environment of man also constitutes a place where man applies his cultural rituals with the production of artifacts and the institution of socio facts based on mentifact developments - which may lead to the use or abuse of the resources of the ecosystems that our cultures have learnt to exploit. Environmental crises, therefore, emanates from how man manages his immediate sphere of operation.

To the geographers Environment of man can be natural and social. The natural environment constitutes a store-house of certain source material that will be consumed ultimately by man; it also provides certain physical and biological conditions within and on which man's consumption, production, and exchange occur. And the social environment constitutes where man interact among themselves; this includes demographic nature of the population and the cultural characteristics of man's population. He sends smokes into the same environment which is the sphere of his influence. In carrying out his day to day activities, th re is a lot of impact thrusted on his environment. His action may turn his environmenta a worth living one, or may reduce the environment to a state of slum.

Urban environment, therefore, could be seen as a place where human activities take place and where man produces and in which he discharges the waste of his productive activities.

Another perspective in which we might look at the environment is that which consists of both publicly and

individually owned resources - a democratic environment. "The ownership right of individually owned resources can be well defined and enforced whereas in the case of atmosphere and other environmental resources over which private property right cannot be well defined and enforced. Given this lack of private property rights and any other form of restriction on use, any individual or business firm has the 'right' to use the environment AS HE SEES FIT"[24] (Capital letters are mine)

This is the crust of the whole environmental quality problems exhibits by urban centre. In this way of use, environment is not used efficiently, the level of effluent discharge into it result in social cost that are greater than th marginal social benefit of using the environment as a receptor for efflient.

3.2 Environmental Quality:

The environmental appearance of urban areas constitutes the quality of the environment. The word 'quality' introduces a new dimension into the understanding of the environmental appearance of the cities. It quantifies and evaluates the appearance of the city as a whole.

The quality of urban area is misconstrued by looking at it in terms of money, car, television, and house hold fadgets! Some urban dwellers or individuals look at these

---

24. Schleiber/Gatons and Clemer: Economics of Urban Problems Pub. Houghton Miffling Coy.

facilities and relate these to measure the quality of the cities; The real standard of living of urban dwellers should be measured in terms of housing quality access to facilities or services, how clean his environment is, and whether his city exhibits the attributes of orderliness, flexibility and diversity. In this regard, the standard of living of an average urban dweller is not as high as we think it to be. The real standard of living in U.S. measured not in terms of money, cars, television and household gadgets but in terms of housing quality, access to services and activities, environmental cleanliness, orderliness or diversity - is far beneath that of serveral 'poorer' nations .

3.3 Environmental Quality Variables:

There are certain variables which their qualities affect the appearance of the city at large. These variables should be described, appraised and evaluated to give us the thorough udorstanding of what constitute the quality or appearance of urban area.

Environmental quality concerns urban structure or legibility, urban form, accessibility, comfort and convenience, conservation, openess vitality, diversity, congruence, health and safety and maintainance. Under each head, are some variables studied and which give insight into what really is environmental quality in qestion.

(a) Urban Structure, under this head, the following variables are important:

(i) Clear boundary of urban area.

(ii) Visual connection with adjacent areas.

(iii) Clearity of street pattern.

(iv) Memorable sequence.

(v) Landmark visibiltiy.

(vi) Emphasis on natural form.

(b) Form of the City:

To find out whether the form of the cities exhihits high quality of environment, the following questions are posed.

(i) Is the form of the city harmonious?

(ii) Is there any visual interest in the city?

(iii) Is there any presence of street trees?

(iv) Are there parking lots?

(v) Are there unsightly streets?

Accessibility is measured in terms of whether services and facilities in urban area are within easy reach of the dwellers.

(c) Openness of the city is measured in terms of:

(i) General openness of the city.

(ii) Whether the city is explorable.

(iii) Is there presence of open-space?

(iv) Is there any opportunity for participation?

(d) Vitality of the City

(i) Sense of life, and excitement.

(ii) Stimulating Environment.

Comfort and Convenience: are measured in terms of:

(i) General Convenience.

(ii) General Comfort.

(iii) Minimal Traffic in Residential Areas.

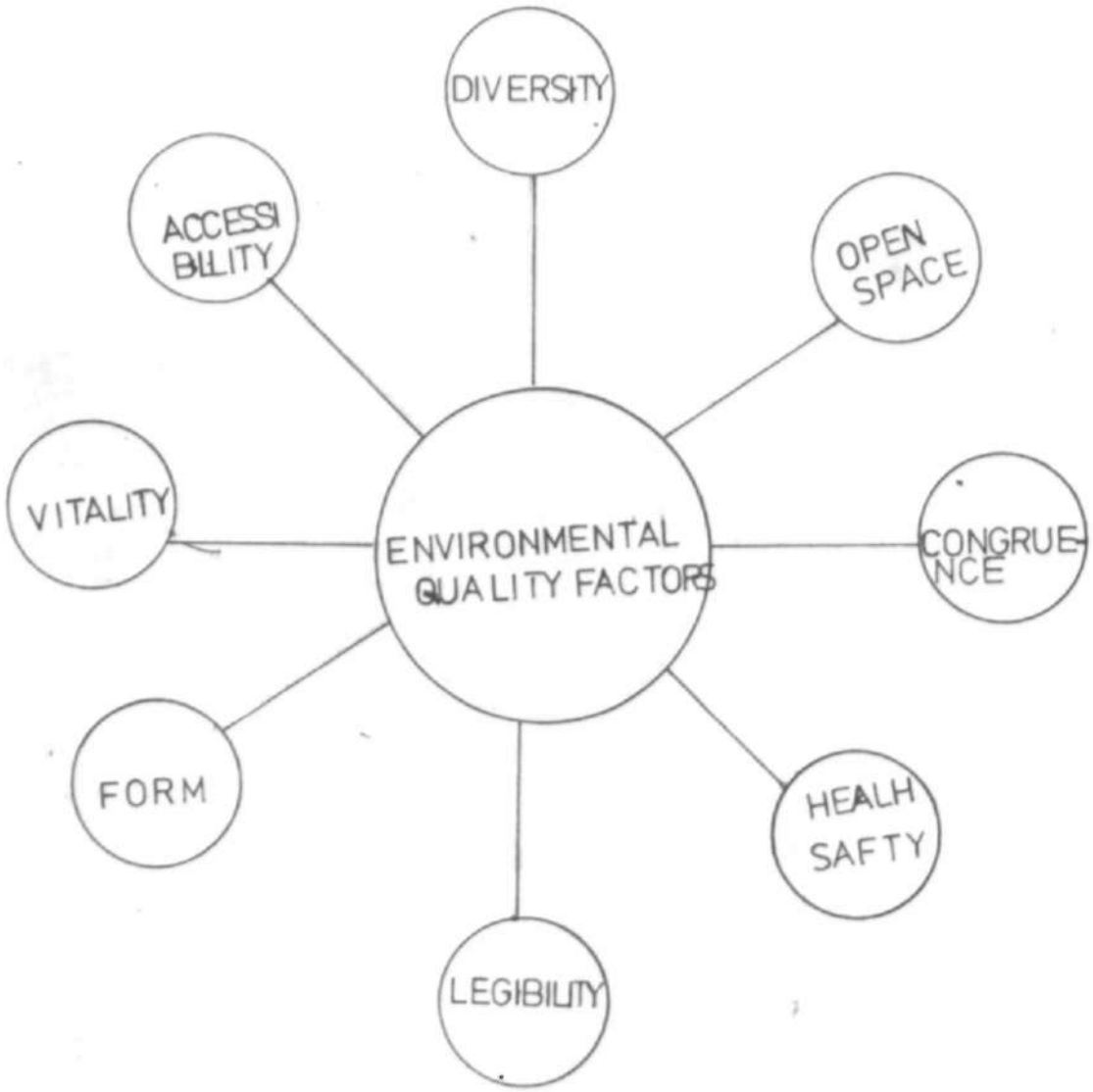
(iv) Weather Protections.

(v) Minimal Noise.

(vi) Minimal Glare.

(vii) Minimal Stress, Congestion, Easx of movement and

(viii) Presence of Strect Amenities.



ENVIRONMENTAL QUALITY CONCEPTUAL FRAMEWORK

DIAG 3

3.4 STANDARD FOR ENVIRONMENTAL QUALITY.

Achieving the efficient level of environmental quality at lowest social cost first involves setting the environmental standard to be achieved.

"But the standards are not available at the present time; it is unlikely that the current determination of environmental standard through the political process will fortuitously set the standard at the efficient level. All we really know about the efficient level of environmental quality is that it is a higher level than presently prevails, and that it does not imply zero pollution."[25]

In other words, while it would be ideal to be able to determine the efficient standards, the likelihood of this is slim given the present state of knowledge, but the secondary criterion of achieving any standard at lowest cost is still possible.

If quality can be operationallly defined and methods of measurement developed, then it is more likely that something can be done about the quality within the public sphere. Through the setting of the standard the quality measurement of urban area will be removed from the realm of intuition and enforceable controls will then be established and reference point can be provided for public debate.

---

25. Schbeiber/Gaton and Clemer: Economics of Urban Problems An Introduction Pub. Houston Coy, Boston.

However, recent "works" carried out by some cities in U.S. tried to quantify and operationalise some of the environmental auality factors. For example street activities, or off-hour activities of the city are related to 'sense of life'; clarity of street pattern, or route identification are used as variables of city structure.

Accessibility is relatively easy to define and measure operationally. This can be done by studying access to open-space from all points in the city in terms of walking time to open-space from each point in the city.

Note: Studies of Environmental Quality are carried out by twelve states in U.S.

3.5 Roles of Open-Space:

Perhaps where the impact of the open-space systems of the city on the environmental quality of urban areas could be easily felt and recognised is by having a look at the roles it plays to affect the physical and social form of the city.

3.5.1 Open-Space and Urban Form:

Open space can be the structural framework to which various forms and activities can relate to produce edges, foci, nodes, districts and ultimately regions of different sizes, scale and character." [26]

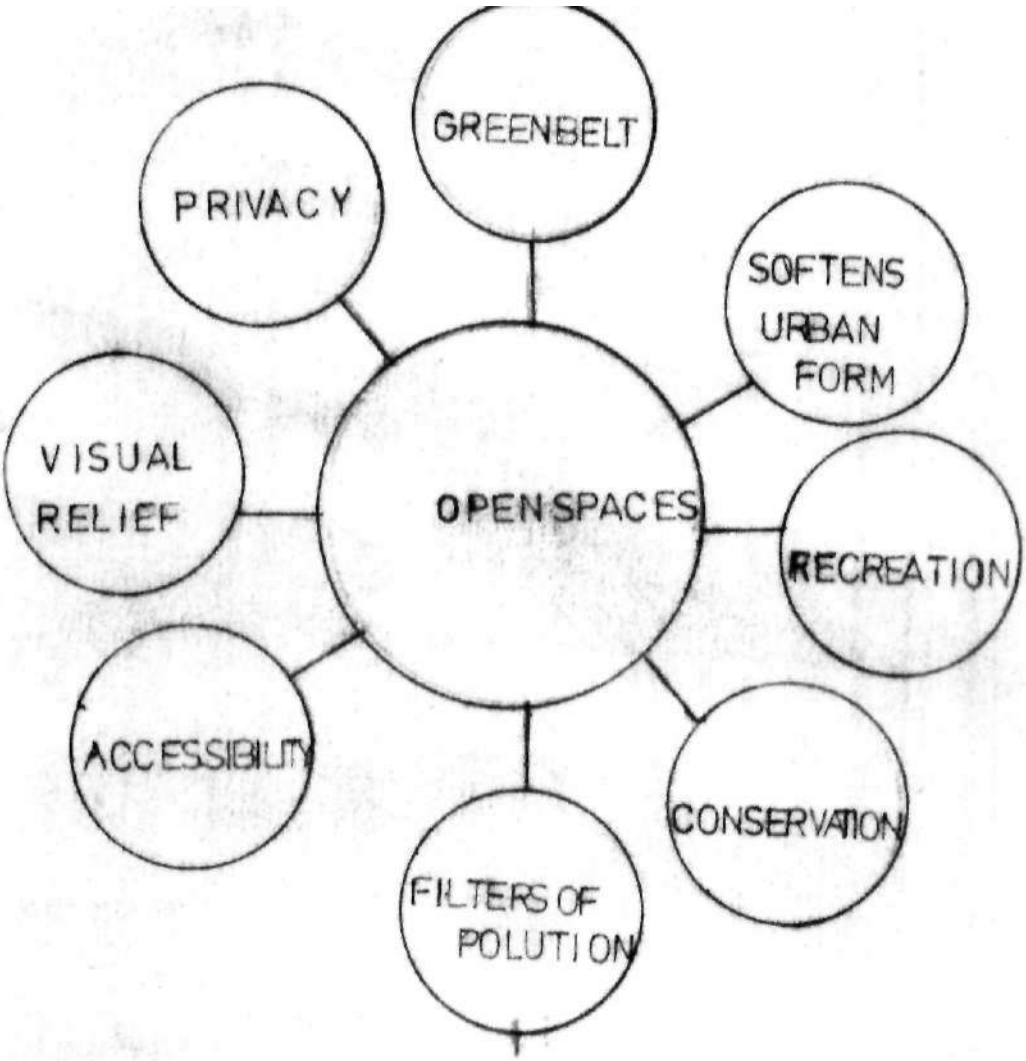
"The opportunity to experience an architectural element from the vantage point of open space and vice versa is a unique visual quality. Perhaps no single element can better shape and compliment urban form than well placed open space." [27] Its ability to differentiate, integrate or buffer various urban elements is unsurpassed. If there were ever an urban status symbol it is the amount and treatement of public open-space . "Sensitively designed public open-space can also give the urban resident and visitor a sense of identity, association and direction. It can be one dramatic key to a viable urban environment." [28]

---

26. Kevin Lynch, The Image of the City (Boston Combridge Press 1960.

27. Seymour, M. Gold: Urban Recreation Planning (LEA and FEBIGER Philadelphia, 1972.

28. ibid. p. 49.



OPEN SPACE AND ENVIRONMETAL QUALITY

DIAG 4

The green belt or urban strips can give definition to urban form and limit the physical size of a city or a neighbourhood.

3.5.2 Open-Space and Social Interaction:

Man, by nature is a social animal. Most organised or public open-spaces serve as points for the social interaction matrix. The stroll in the park, sandlot base ball game are virtually non-existent in most urban areas where there is no public open-space.

Apart from this, people need an out-door medium in which to interact or watch others. The urban public open-spaces can provide the facilities for this medium of interaction; also sub-urban backyards can adequately provde for primary social interaction of this nature.

3.5.3 Open Space - Recreational Function:

Recreatopm is a vital need in today's world. It is perhaps the greatest opportunity for self-expression, for doing what one really wants to do, not what one is forced to do to earn a living. "The very phenomena that have brought leisure and income have also brought serious tesion for every day life - both working and living take place hurriedly, under crowded and noisy conditions. Recreation under conditions of one's choosing is necessary to relieve these tensions"[29]. Recreation also has important value in

---

29 Regional Plan Association, The Rall for Open Space (N.Y 1960).

reducing delinquency which is one of the factors that affect the environmental quality of an urban area. All these activities could not take place if there is no open space.

3.5.4 Open-Space and Aesthetic Value:

When aesthetics is related to outdoor recreation a more intangible, but nevertheless important, type of justification can be associated with some types of urban open space.

"Woe unto them that join house to house that lay field to field, till there be no place that may be placed alone in the midst of the earth."[30]

Open-spaces are not merely places to visit, exercise in or learn from. They are areas in which one may encounter the aesthetic values of trees, sky, and feelings of enclosed space.

Emphasizing the role of open-spaces, Seymour has this to say "We live most of us in a noisy world - a world full of hurrying to and fro, of rattling machinery, of changing bells, of shrieking whilstles - the world of business. In the midst of this tumult and confusion, we lose our grip upon ourselves, and feel the strain so keenly that we realise we must break under it unless we find relief".[31]

---

30. Isaiah: Old Testament Bible Isaiah Ch. 5.8. In Seymour M. Gold: Urban Recreation Planning, p. 53.

31. P.M. Hauser: Handbook for Social Research in Urban Areas.

We find this relief in open-spaces which cool down tension.

"Living in ugly surroundings has a bad effect on the physical balance of man. Having green trees and grass around is good for the mind and increases susceptibility to beautiful things."[32]

3.5.5 Open-Space - Conservation:

Natural open-space found in the city play three important roles:

1. They retain water and conserve water for people in the city.
2. Alleviation of air pollution.
2. Provision of a limited habitat for natural flora and fauna.

Water bodies in the city give pleasure by its ability to reflect and enhance surrounding colour and texture. It gives symbolically and often literally, a refreshing sense of coolness and cleanliness.

Forest reserved in towns break the monotomy of knitly built up areas of the city.

3.5.6 Open-Space - Management:

The appearance of urban open-spaces is a significant aspect of environmental appearance of the urban areas. Well located and maintained urban open-spaces is without doubt a major means of improving and maintaining the quality of environmental appearance of urban areas.

---

32. P.M. Hauser: Habdbook for Social Research in Urban Areas.

3.5.7 Open-Space - and Environmental Change:

Public open-space can be used as tools of environmental change, especially in the inner city or in cities that have withnessed a chaotic and unplanned features which were brought about by the phenomenal growth of the population within the cities.

Open-spaces, in this situation, can as both a stabilizing and dynamic force to either maintain or radically change an urban environment. Its presence can consciously promote human scale, recreational activities, urban renewal and an awareness of the quality of life and environment still possible in cities.

"As an element of change, it can be a focus for visual relief, social interaction and community identification. The provision of adequate and sensitively designed public open-space can be framework for the needed re-development or conservation of blighted areas."[33]

Environmental Problems Associated with the use of Open-Spaces in the Cities.

The excessive concentration of material and human resources in a few growing urban centres in Africa has led to the emergence of a number of physical, social and economic problems in the large cities.

---

33. Seymour, M. Gold: Urban Recreation Planning, p. 58.

These include un-employment, housing shortages, traffic jams, the in-adequacy of public utilities such as water, electricity and communication, above all poor environmental sanitation which is the cumulative effect of poor environmental quality exhibited by the cities.

There are two major types of environmental sanitation patterns which are associated with the open-spaces. The first one is the urban organised open-spaces' management problems which reduce the efficiency of the open-spaces. Some organised open-spaces in cities are badly located; they are not always accessible to the urban dwellers. As a result of poor road networks which abound in cities, users of the open-spaces are put at a disadvantage of deriving maximum benefit from the open-spaces.

Apart from the fact that some are badly located, there is the problem of in-adequacy of facilities such as water, car parks, kiosk, toilet facilities and sitting facilities that may enhance the quality of the so-called organised open-spaces.

The problem of location is well illustrated by Ellinor C. Guggenheimer who says, "Some parks in urban areas have not been constructed in any planned ratio to the population needs but rather on a hit-or-miss basis where spaces happened to be available". 34

Poor location is attributed to the little effort on the part of the city planners to layout an orderly array of facilities both indoor and outdoor, to serve the needs of all

---

34. Guggenheimer, Elinor (1969) - Planning for Parks and Recreation Needs in Urban Area.

the various neighbourhoods and communities "As a result, the development of community centres, playgrounds, and parks has not borne any discernible relation to population densities, age factors or neighbourhood tastes and preferences."[35]

Poor location, arrangement, design, construction and inadequate maintainance of open spaces contribute indirectly and proportionately to a low quality appearance of the urban environment.

The second type of environmental sanitation problem relates to solid and liquid waste disposal in the cities. There is no area other than the incidental open-spaces which receive the excessive effluents discharge of man in the cities.

Vacant lots in densely crowded areas are used as dumping grounds and garbage heaps. The residential commons are always left untamed wild growth of unkempt vegetation grows in open-spaces aroung residential common which makes the residential areas look ugly. The side-walk and the right of way are not left behind from sharing from the effluent discharge of man. The abandoned vehicles and other non-combustible materials are dumped in these areas.

In his attempt to use any available vacant land for his economic activities man converts undeveloped plots to mechanic work-shop and dumping grounds for refuse thereby creating unsanitary appearance for oth r residents in that areas.

Due to uncontrolled landuse pattern in some historical cities of the world where uncontrolled building of houses and compounds took place, there are no planned open-spaces

---

35. Tunji Odugbesan: Making Use of Public Open Spaces, Punch April 12, 1979.

in their core, "where such open-spaces existted either by accident or by design many families dump their garbage in these designated backyard found in the area. This lower the environmental appearance of urban areas.

The impact of open-spaces on the environmental quality of an urban areas cannot be over-stressed.

It cuts across the whole factors of environmental quality. It affects all the variables concerned with the environmental quality. The high quality of open-spaces can soften the urban form, decrease the monotomy of knitly built up areas. Conversely, poorly managed open-spaces can adversely affect the quality of a city which has tidy land-use pattern and good circulation layout. Above all, the roles played by open-spaces in urban renewal exercise is very important. Therefore, if the cities are to maintain high standard of environmental quality greater attention is necessary for the urban open-spaces planning and management.

CHAPTER 4.

METHODOLOGY.

4.1 Introduction:

The quality of urban area depends, to a large extent on the distribution and management of the urban open-spaces. Efforts have been made by many cities to look into the quality of urban areas, but more often than not description of many parts that make up the cities are given. The conclusions reached by this method is vague because analysis is often crude. Thus, while the analysis probably has served to identify general problem areas it would not appear to be as useful as an information source in day to day environmental decisions.

A good analysis of any environmental quality factor is both descriptive and evaluative. It depends upon a good description but goes beyond it to identify problems and potentials. In many works on environmental quality of urban areas it has been found out that many descriptions did not lead to evaluation as well as evaluation not having little descriptive basis.

In the study of this nature, therefore, the methods adopted were both descriptive and explorative to be able to have analysis that would serve as information source for day to day environmental decisions

4.2 Scope of the Study:

The study area is within the existing Ibadan Urban Development. This area is specified by the temporary Ibadan Development Plan prepared by the Ibadan Municipal Area Planning Authority. In the development plan the Ibadan Urban Development extends to the urban sprawl at Ojo village on Ibadan - Oyo road to the north; at the southern end it extends to confluence of River Ogunpa and Ona on Ibadan - Lagos road; and Federal Housing on Abeokuta road.

The study limits itself to the organised natural and incidental open-spaces which form the urban open-space system within Ibadan Urban Development.

4.3 Basis for Data Collection:

The guiding principle behind collection of data are:

(i) To know the factors having direct influence on the open-spaces in city which form one of the factors of environmental quality affecting the urban areas.

(ii) There is the need to evaluate the open-spaces in terms of distribution pattern, their quantity and quality. Also to know the various ways in which they are being used with the view of evaluating the planning principles behind their distribution.

(iii) Data are also collected to be able to have insight into problems and prospects of organised natural and incidental open-spaces with a view to making useful recommendation on the use of urban open-space system.

4.4 Data Collection Technique:

This range, from identification and evaluation of open-spaces on the spot to the using of questionnaires to collect useful information from people. To this end, people were sampled using stratified random sampling technique. Questions directly affecting use of open-spaces, and also demographic data that can help were gathered for analysis. Landuse map, pedestrian survey and extended observations of some open-spaces techniques were used. stop here

4.5 Technique of Data Analysis:

The data collected were analysed in the following ways:

(a) Data are tabulated to be able to give useful information concerning the data.

(b) Graphs method. At times the data are graphed (bar graph mostly) to show relationship or to give visual impression about certain factors dominating each aspect of the variables used.

(c) Plates: To be able to qualify the data; and, or to be able to evaluate and assess the impact or roles played by man on open-spaces photographs of both organised, natural and incidental open-spaces were taken. This technique gives immediate visual impression and at the same time helps one to be able to evaluate and describe the open-spaces.

4.6 Difficulties:

In the study of this nature one cannot but come across certain difficulties.

The first of such difficulties was getting up-to-date base map of Ibadan. This was not possible, I relied on the 'latest' map which was made in the late 60s.

There was also the problem of nonresponse on the parts of the people interviewed. There was non-response to certain questions specially based on method of waste disposal lots. This was so because it was during the electioneering campaign the collection of such data took place. Another serious limitation is lack of documentation in the offices of Ministry of Works and Ibadan Municipal Planning Authority.

CHAPTER 5.

ANALYSIS AND SYNTHESIS OF SURVEY DATA.

5.1 Analysis of Land-use:

The opnness of cities depends on how much of the over-all landuse is devoted to open-space. The amount of open-spaces directly and indirectly have a lot of impact on other factors of environmental quality of urban areas.

To know and to determine whether the city of Ibadan is open enough, the standard used by many planning agencies which determined the percentage of land required for open-spaces in cities were studied. The table below indicates the standard used for Ibadan to determine the openness of the city.

TABLE 7: LAND-USE ANALYSIS FOR IBADAN CITIES.

Land Use	Industrial	Mining	Trans-port	Commerce	Multi
Residential	42-45%	35-42	47-51	46-49	51-57
Commerce	35-40	2-3	2.5-3.0	6-7	2-3
Public	11-12	10-11	19-20	13-14	10-11
Industrial	12-14	18-24	6-8	7-9	3-3.5
Open Parks & Spaces	8.5-9.0	5-6	3-5	4-5	6-7
Roads	13-14	11-13	10.5-17	15-16	10-12
Others	7-5	8-12	2.0-0	3-6	12-13.5

Source: Institute of Town Planning India.

5.1(b) Apart from the function of the city population of the city is studied.

TABLE 8: CITY POPULATION AND LAND USE.

Population/ Landuse %	1 Million +	100,000- 1 mill.	50-100,000	20- 50,000	Less 20,000
Residential	41-45	46-51	42-45	53-60	36-37
Commerce	4-5	3-4	3-4	3-4	2-1.0
Industry	6-8	7-9	9-10	5-8	30-34
Parks & Open Spaces	5-7	7-9	7-8	3-5	2-3
Public	17-19	14-17	12-14	9 -10	11-14
Roads	14-16	12-13	13-14	12-14	12-15
Others	6-9	3-6	8-11	6-8	2-3

The Projected population for Ibadan in 1979 was put at 1.009 million, using growth rate 2.6 - 8.5% annually, see the table for the population distribution by wards.

TABLE 9: POPULATION DISTRIBUTION IN IBADAN.

No.	Wards	Population (1979
1	East	135,942
2	South	117,149
3	Central	41,946
4	North West	101,963
5	North	221,426
6	South West	390,988
TOTAL		1.009

Besides, Ibadan is serving many functions educationa, commercialm industrial, etc. Hence it is a multi city. The percentag of landuse recommended for open-space therefore is 5-6% of the overall landuse for Ibadan. Looking at the analysis of land-use in Ibadan as at 1976, see the table below.

TABLE 10:

No.	Land use type	Area in Hect.	%
1	Residential	2,437	61.6
2	Industrial	75	1.89
3	Commercial	96	2.43
4	Public	71	1.79
5	Semi Public	549	13.87
6	Transport	532	13.45
7	Recreation and Water Body	45	1.12

Source: Nigeria Institute of Social Economic Research, University of Ibadan, 1976.

The percentage of the land earmarked for open-spaces falls short of the standard.

This has a lot of impact on the environmental quality of the city. Large areas of traditional residential core of the city where population is very thick is closely and knitly built up. There are not enough green to break the monotomy of built-up area. As a result of this, accessibility within and between residential area is very low indeed.

5.2 During the course of physical survey, the following organised open-spaces were identified in the city.

5.2(a) Parks/Garden:

One major public park - Agodi Garden; and Membo village were identified. Agodi Garden which is located at the northern part of the city and very close to the State Secretariat is about 130 acres in extent, out of which only 30 acres have been developed for public use. It contains park and children play ground. It also provides small zoological garden but the collections there are not many. The utilization of the park has increased of recent as a result of good road networks which connect it to many parts of the city. The presence of the newly built Cultural Centre very near it has enchanced the importance of the park to the city and its environs.

5.2(b) Its Physical Environment:

The park is accessible to all parts of the city. The location of the park introduces a break in the monotomy of built up areas of Mokola and the Secretariat.

The picnic spot inside the garden is very small indeed; it cannot take many picnickers at a time. The necessary infrastructure like shady trees, cooking ovens, public faucets playground, swimming pool have not been adequately provided.

The gardn at times is crowded during Easter or Chrismas times of the year, the whole area, however, is littered during this special occasions mentioned above.

Other facilities that were absent during the time of survey are adequate parking lots, comfort stations and kiosk. The shortage of facilities notwithstanding the number of visitors has increased over the year. The table below illustrates this.

TABLE 11:

Month	Year		
	1977	1978	1979
June	681	759	795
July	882	901	922
August	992	1224	1396

5.2(c) Picnic Sport:

There are two picnic spots, apart from the one at Agodi Garden already mentioned, in the city. These are located at Bower Tower in Oke Are area, and Thompson Cottage. The site areas of the spots are small; and the necessary infrastructure like shady trees, cooking area, children playground, swimming pool were conspicuously absent during time of survey.

It would have been nice if the managers of the spots could provide necessary facilities because the demand for this type of recreation is increasing.

5.2(d) Zoological and Botanical Garden:

Two zoological gardens were identified: Agodi Garden - already discussed - and zoological Garden of the University of Ibadan. University of Ibadan's garden is very popular among the people of the city and beyond.

The number of people visiting it is increasing every year. The garden is a regional; open-space. Like the Agodi Garden the garden lacks the following facilities. Car park, where visitors could park their cars, Zoological Garden lacks also children playground. Children have only the opportunity to watch the animals. The management of the garden should provide children playground, lover's garden so as to vary the activities of the visitors. Picnic spot may also be encouraged.

5.2(e) Swimming Pool:

Most of the swimming pools are owned and operated by hotels and clubs which charge substantial fee for the use of the facilities. There is no single public owned swimming pool in the city.

There are altogether ten (10) swimming pools. They are un-evenly distributed. Six (6) out of the ten were located in the Northern Ward of the city, two in south-west ward, and one each in the east and north-western wards of the city.

Traditional areas like southern and north-western wards have no swimming pool at all. The table below illustrates this point.

TABLE 12:

No.	Location	City Ward
1	Premier Hotel	North
2	University College Hospital	North
3	Recreation Club Kokola	North
4	Staff Club, University of Ibadan	North
5	Police Training School	North
6	Army Barraks Eleyeile	North
7	Cocoa Dom Gbagi	North-West
8	Lafia Hotel, Apata	South-West
9	Green Spring Hotel	East
10	Thompson Cottage	South-West

Source: Technical College: Ibadan and Environs, A Study of Recreation and Entertainment Facilities.

5.2(f) Play Ground:

There are very many playing fields in Ibadan but most of them are attached to schools and colleges. They are 75 in number. There is concentration of them in the south-western part of the city.

Most of the playing fields are not accessible to the users; and not many of them have parking facilities. Few of the fields have athletics facilities provided. Such fields are Ibadan Gramma School field, Government College field, Loyola College field, Baptist Teacher's College Elekuro field. The distribution of the playing fields according to census wards are as follows.

TABLE 13:

No.	Wards	Pop. (1979)	No. of Play Fields
1	East		6
2	South		21
3	South-West		26
4	North		17
5	Central		-
6	North-West		5
	Total		75

The playing grounds provided are not enough to cater for the population of the users.

5.2(g) Stadia:

There are two stadia in Ibadan; Liberty Stadium which is a regional organised open-space. It serves the whole of the state and at times the country as well. It is located at the south-western district of the city. It has a capacity to hold over 30,000 spectators. The stadium could be used during the day as well as during the night. Apart from the fact that it is used for playing football, other facilities that can be found in it are rugby, table tennis, lawn tennis, and athletic fields.

The second stadium is Olubadan Stadium. It covers an area of 8 acres of land. It is a stadium which is being used at city level. It has a capacity of about

5,000 spectators.

On the spot assessment of the stadium indicated that the seating facilities are at a state of poor condition. The seats need a lot of repair to make them suitable for human use. Besides, the surrounding greens are not well kept. It makes the whole environment of the stadium looks untidy.

During the time popular matches are played in the stadium, it is a common sight to see cars parking on the road disrupting the flow of traffic. Parking facilities of the stadium need to be improved and planned.

5.3 Analysis of Interview:

To have more insight into how the identified open-spaces are being used and their environmental quality impact. The following questions and the respondence are recorded.

5.3(a) Choice of Open-Space:

450 respondents who were asked to indicate choices of open-spaces (organised) among the following. The table shows the distribution.

TABLE 14:

No	Organised Open-Spaces	No. of Indicators	%
1	Stadium	102	22.6
2	Play Fields	51	11.6
3	Picnic Spots	59	13.1
4	Botanical Garden	11	2.4
5	Swimming Pool	23	4.8
6	Zoological Garden	88	19.7
7	Relaxing at home	116	25.7

Though the percentage for people relaxing at home is the highest but the figures however show that quite appreciable consciousness is now developed towards recreational activities by the residents of the city and hence open spaces for recreation cannot be overlooked when planning for an urban area.

5.3(b) Distance Cover to reach open-space:

The aim of using distance is to test whether these organised open-spaces are within the reach of the residents. Two criteria are used. First the acceptable standard for the distance to cover to reach open-spaces. Secondly question was asked on how far they travelled to reach open-spaces of their choices.

TABLE 15: MINIMUM REQUIRED DISTANCE TO PLANNED OPEN-SPACES.

No	Facility	Distance to Users
1	City Parks	8-10km
2	District Parks	3-8km
3	Athletic Fields	Planned with High Schools
4	Play Field	3-5km
5	Swimming Pool	3-8km
6	Golf	Easy Driving Distance

To reach open-space. Out of 324 who indicated going to open-spaces; the response is as follows.

TABLE 16: DISTANCE COVERED.

No	Distance	Number of Respondent	%
1	Over 10km	180	55.5
2	6-10km	69	21.2
3	4-6km	21	6.48
4	2-4km	27	8.3
5	0-2km	27	8.3

Source: Field Survey.

Table 15 and Table 16 indicate that open-spaces are not within reach of the users. Users travel a long distance to reach recreational open-spaces.

5.3(c) Mode of travelling to Open-Spaces:

In another study conducted to know the means by which the residents get to these open-spaces that are not within easy reach. The following reseult was got.

TABLE 17: MODE OF TRAVELLING OF RESPONDENTS.

No	Mode of Travelling	Respondents	%
1	Private Car	137	42
2	Bus/Taxi	112	34
3	Motorcycle	36	11.1
4	Foot	39	12.9

Possible explanation here is that car owners participate more in visiting open-spaces because they could travel any distance to get to the open-spaces of their choice.

5.4 Natural Open-Spaces:

During the course of pedestrian survey, the following natural open-spaces were identified.

5.4(a) River Channels:

There are two main rivers deaining Ibadan Cities with many tributaries. The main rivers are River Ona (Odo-Ona) and River Ogunpa (Ogunpa). Their tributaries are Gege Stream, Amole Stream, Olokun Stream, Labelabe Streams. These streams also have their own smaller streams draining into them. For example river Labelabe has Balogun Stream, Koteyemum, Onireke, and Onikoko Stream.

These streams serve as lungs for the city because through their channel greens are naturally provided in many parts of the city.

The table below illustrates how various streams of the city are being use and their impact on the environmental quality of the city generally and severally.

TABLE 18:

EXISTING BENEFICIAL USES OF RECEIVING WATER.

	Receiving Stream	Potable Water supply	Industrial Water supply	Agric.	Recreation	Habitat for Aquatic life	Environment Aesthetics	Transport and Assimilation of Wastes
1 (a)	River Ogunpa Confouence of River Ona to southern limit of Urban Dev. of Ibadan City.	-	-	-	-	Natural habitat for indigenous fishes. Water fouls No commercial fishing	Adjacent are agricultural and undeveloped forest areas	Receiving all water wastes, urban and rural run-off generated in Ogunpa and Kudeti Catchment area
(b)	Limit of Urban Development to Elizabeth II Road	-	Gravel, Washing, Concrete block making	-	-	Limited habitat for indigeneous fishes. Water fouls	Adjacent land is predominantly residential. Some undeveloped flood plain. Commercial in Gbaji	Receives water borne wastes from catchment sceptic tank effluents receive refuse from residential area.
(c)	Elizabeth II Road to head water	Emergency source of potable water supply. Exclusive use for washing - Lake water	Vehicle washing	Water from Ogunpa Lake used for irrigation of forestry land	Agodi Garden State Park	Ogunpa Lake Commercial fish farming Demonstration by Min. of Agric.	Adjacent land are Forest Reserve and Park land Residential and undeveloped land.	Receive effluents from U.C.H. Treatment work to Ogunpa Lake

TABLE 18 Cont'd.

	Receving Stream	Potable Water supply	Industrial Water supply	Agric	Recreation	Habitat for Aquatic life	Environment Aesthtics	Rransport and Assimilation of Wastes
2.	Gege Stream Junction with Ogunpa to Head Water	-	-	-	-	Limited habitat for indigenous fishes and other aquatic life because of Natural condition and existing water quality	Adjacent lands are residentials commercial with some agric land use of flood plain near Ogunpa	Waste water exclusve of WC from catchment area effluent from septic tank adjacent residential houses
3.	Kudeti River confluence of Ogunpa	-	Gravel Washing Concrete block making	-	-	Limited Habitat. Poor water quality	Adjacent land are residential	Waste Water from W.C Urban solid wastes and other refuse.
4.	Eleta Stream	Emergency use in upper level. Cloth washing	-	-	-	Private commercial fishing pond at Idiaro	Adjacent land residential	Receives wastes and refuse from residential area
5.	Ona River	Municipal Water supply from Eleyele reservoir	Boiled foul water from Streams	Water for Irrigation			Natural Habitat for indegineous fishing 1 Foul water	Recevies water borne effluents from U.I & NTC.
	Olojuoro Yemetu	Emergency use in upper reaches	-	-	-	As for Kudeti	Adjacent land residential	Refuse and Wastes from residential area.



PLATE 6(A) RIVER OGUBEA.



PLATE 6(B) RIVER OCUNDA



PLATE 6(C) REFUSE ON RIVER CHANNEL.

5.5 Overall Environmental Quality of the Rivers:

5.5(a) To illustrate the environmental quality implication of the use of the river channels by the residents, some photo graphs were taken. These photographs are on River Ogunpa alone; it is intended to be used as a case-study for all other rivers in the city.

5.5(b) Plate 6a

This shows River Ogunpa and its confluence River Kudeti. The adjacent land are agricultural and there is undeveloped forest area.

5.5 (b)i It provides green belt around the surrounding.

ii. Its water gives pleasure by its ability to reflect and enhance surrounding colours and texture.

iii. It symbolically give a refreshing sense of coolness and cleaness.

This is the area where River Ogunpa naturally exhibits her natural beauty; beauty un-altered by human activities of the urban dwellers.

5.5(c) i. Plate 6b

River Ogunpa at Gbagi. The adjacent land is predominantly residential and commercial. There is limited Habitat for fishes. River banks are hemmed by buildings. The green is conspicuously absent. The water of River Ogunpa is very dirty at this section of the valley.

5.5 (c) ii The sense of coolness which goes with water is killed here.

iii. The 'lungs' of the city is choked up.

iv. Environmental sanitation of the area is very poor.

v. The 'Hard Texture' of urban form is conspicuously emphasized here.

5.6 River Flood Disaster:

5.6(a) Flood disaster in the cities is naturally caused by heavy down-pour of rainfall but severally by poor management of river channels by city residents. River Ogunpa and others in the city always flooded the city.

The are the receptor of urban waste water and refuse 'tanks' for the people of the city.

Perhaps the following data can illustrate the fact that the river receive much effluent and waste, hence they are always refuse ladden which resulted in river flooding.

TABLE 19: COMPOSITION OF WASTES IN FLOWING WATERS (1966).

	Old Town	New Town
Leaves	354 ton	42 ton
Paper	15	44
Food waste	39	308
Tin Cans	10	6
Glass	2	11
Rags	18 ton	7 ton
Total	438	418

Source: Maclaren Interaation Limited and Warwick Currie and partners: 'Master Plan for Drainage in Ibadan. Basic Data

TABLE 20: COMPOSITION OF SOLID WASTES IN WATER AS AT 1969. (In Tons) IN THE CITY.

Items	Old Town
Leaves	100,00
Paper	7,500
Foodwastes	13,600
Tin Cans	3,000
Glass	7,000
Rags	5,200

Studying the two tables, it can be deduced that refuse wastes of the city increased tremendously within three years (1966-1969).

5.6(b) River Ogunpa, as a result of its being overloaded with refuse within residential area, flooded the city in 1960, 1963, 1969 and 1973. The recent one was 1978. The table below indicates the estimate of value of flood damage.

TABLE 21:

Year	Old Value	Present Value	Source
1960	₦10,000	₦200,000-₦300,000	Report of Ove Hrubs and partners, Ibadan
1963	₦200,000	₦260,000-₦400,000	Oyo State Min. of Health.
1969	₦ 10,000	₦208,000-₦312,000	Oyo State
1973	E S T I M A T E N O T A V A I L A B L E		



PLATE 7(a): FOREST RESERVES.



PLATE 7(b): FOREST RESERVES.

5.7 Forest Reserve - Natural Open-Space.

The following Forest Reserves are identified.

5.7(a) Oke-Aremo-Sapati Forest Reserve Area:

It extends from Oke-Are and flows through Bishop Court to Bodija Housing Estate.

5.7(b) Along Ibadan - Abeokuta road, starting from Odo-Ona to Apata Ganga is another area covered with forest that is mainly reserved for Federal Ministry of Agriculture, Forestry Division. It extends to Eleyele.

5.7(c) There is also an open-land covered with green. It is found along Oyo road near Railway Level Crossing. It is owned by Nigerian Airways Authority. It extends to Agbowo.

5.8 Impact of them on Environmental Quality of the City:

(a) i. Sapati - Festac Forest Creates an interesting inter-play of urban and forest shapes.

ii. It serves as a visual relief from the monotony of continuous building.

iii. It makes the air a little cooler and cleaner for those living nearby.

(b) Apata Ganga - Plantation serve as green belt between commercial and industrial areas on one side and residential areas on the other side.

(c) Sapati-Agodi section of the forest reserve is used for passive recreation (Agodu Garden).

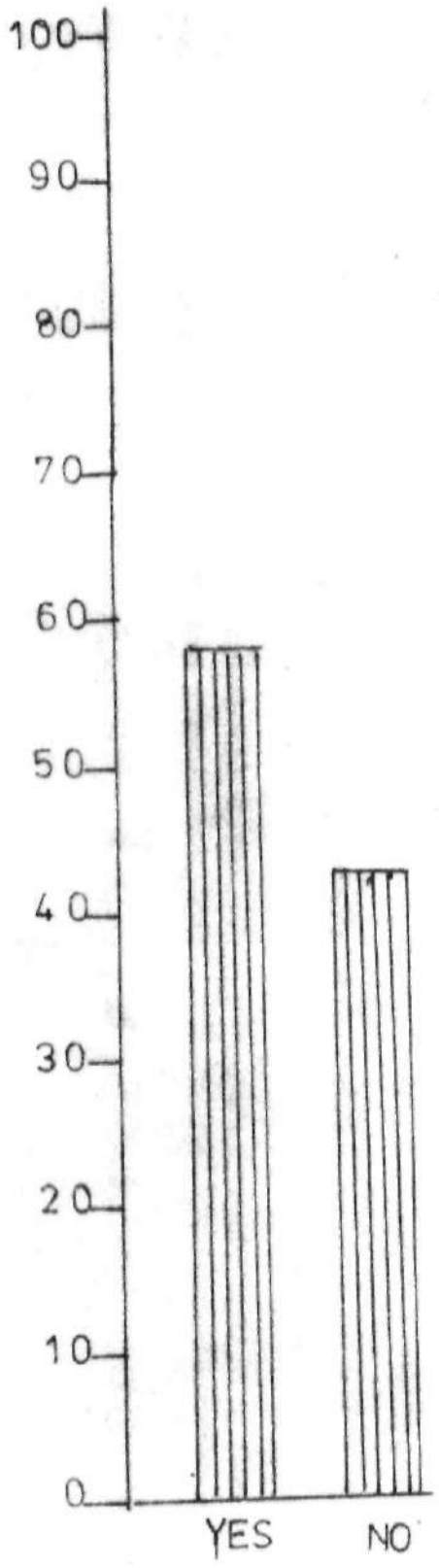


FIG 4 PERCEPTION OF OPEN SPACE

(d) The Bower Tower in the midst of the Forest Reserve provides a vocal element of historic importance. It is one of the dominant features that give the city its form.

Festac Cultural Centre on top of the hill in the Forest Reserve is also a dominant feature.

However the forest reserves are being tampered with by urban residents. Mechanic workshops are always sited at their periphery.

5.9 Incidental Open-Spaces:

In trying to identify the ways incidental open-spaces, which have a lot of impact on the environmental sanitation of the cities, are used, three incidental open-spaces which are within the residential areas were selected and studied. Two in traditional area and 1 in medium residential area. 200 respondents were interviewed.

5.9(a) Perception of the incidental open-spaces:

Respondents were asked whether they were aware of an open-space in their area. The following table illustrates their stand.

TABLE 22:

Aware of an Open-Space	No. of Respondents	%
Yes	115	57
No	85	43
I don't know	-	-
Total	200	



PLATE 8(a): INCIDENTAL OPEN-SPACES.



PLATE 8(b) INCIDENTAL OPEN-SPACES.

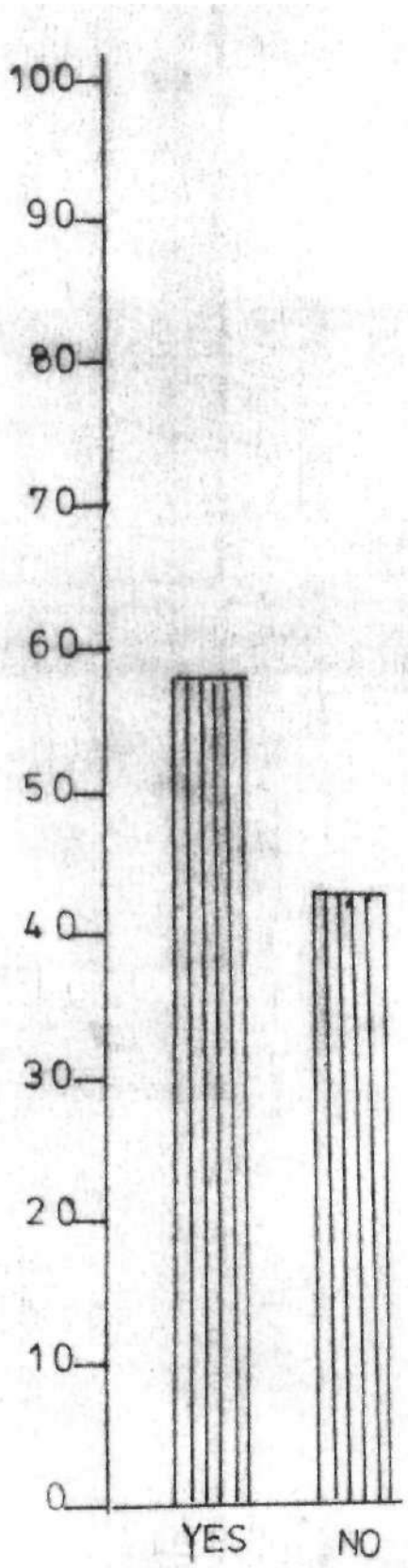

100
90
80
70
60
50
40
30
20
10
0
YES
NO

TABLE 24: INCIDENTAL OPEN-SPACE.

No.	Uses	No. of Respondent	%
1	Dumping Ground	180	40
2	Children Play ground	138	30.6
3	Agric Purposes	112	24.88
4.	I do not know	20	4.44

It is most likely that many such open-spaces in the city are used as dumping ground and for children playground.

5.9(b) iii. Condition of the Open-Space:

TABLE 25: SATISFACTORY?

	No.	%
Yes	32	16
No	148	74
I do not know	20	10
Total	200	

The reason for the high percentage of the people not recognising the open-spaces is due to the fact that undeveloped land areas are not open-spaces but belong to certain individuals who could develop them any time.

5.9(b) Use of the Open-Spaces:

To be able to get information about the open-spaces, those who did not perceive the openspaces were told of the open-space (vacant land) in question. Then their statements were recorded.

TABLE 23:

No.	Use of the open-space	No. of Resp.	%
1	Social activities	-	-
2	Children Playground	8	4
3	Public Latrine	56	28
4	Refuse Dumping Ground	136	68
		200	100

5.9(b)ii. People of the first population survey (450 in size) were asked to indicate ways the open-spaces that are incidental are being used.

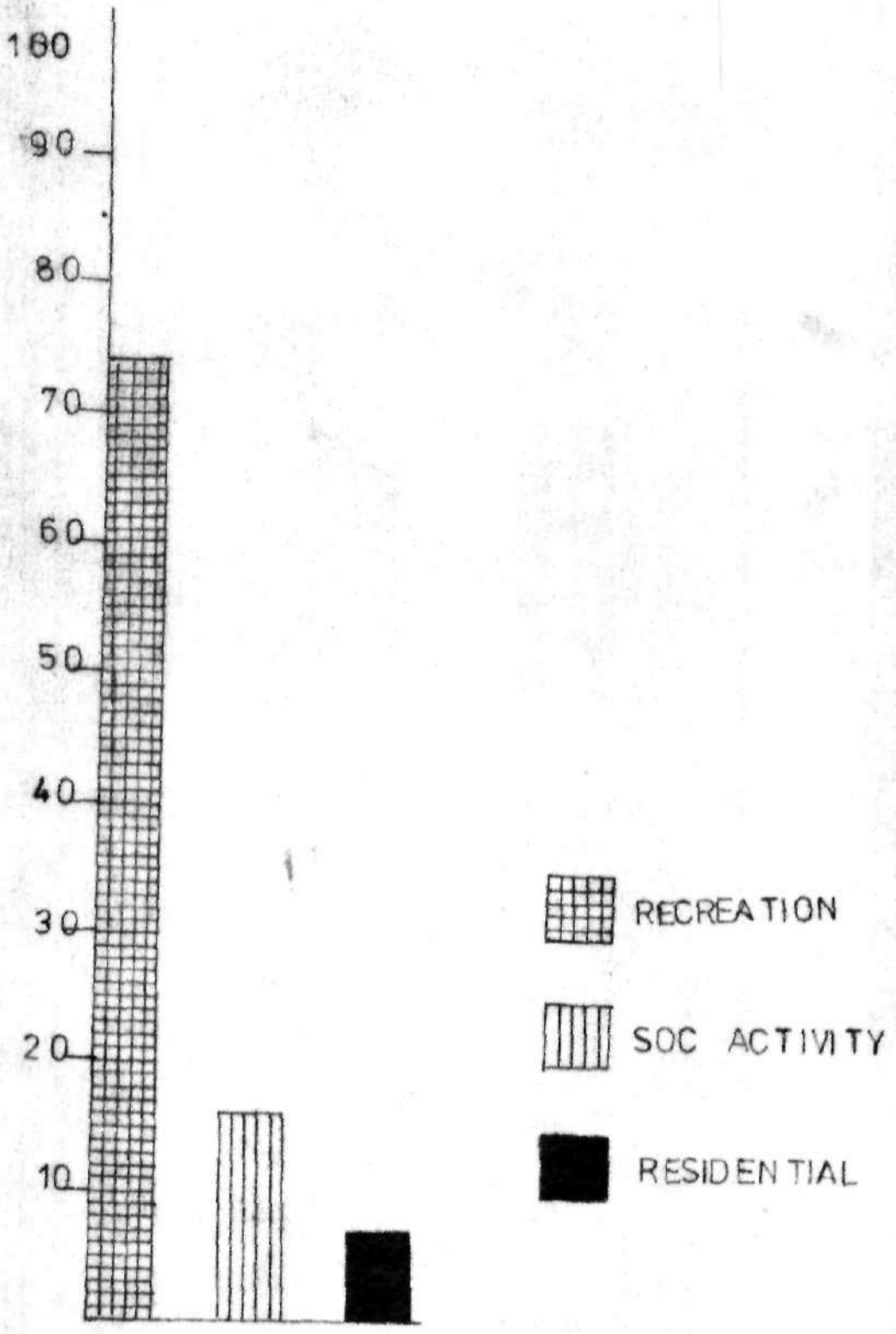


FIG 2 INDICATION OF OPEN SPACE DEVELOPMENT

5.9(b) iv. Could it be Developed?

Response	No.	%
Yes	148	74
No	32	16
I do not know	20	10

Source: Field Survey.

5.9(b)v. Developed for What?

TABLE 26:

Response	No.	%
Recreation	128	64
Social Activities	32	16
For Trading	28	14
For Building	Nil	Nil
For Refuse Dump	12	6
Total 200		

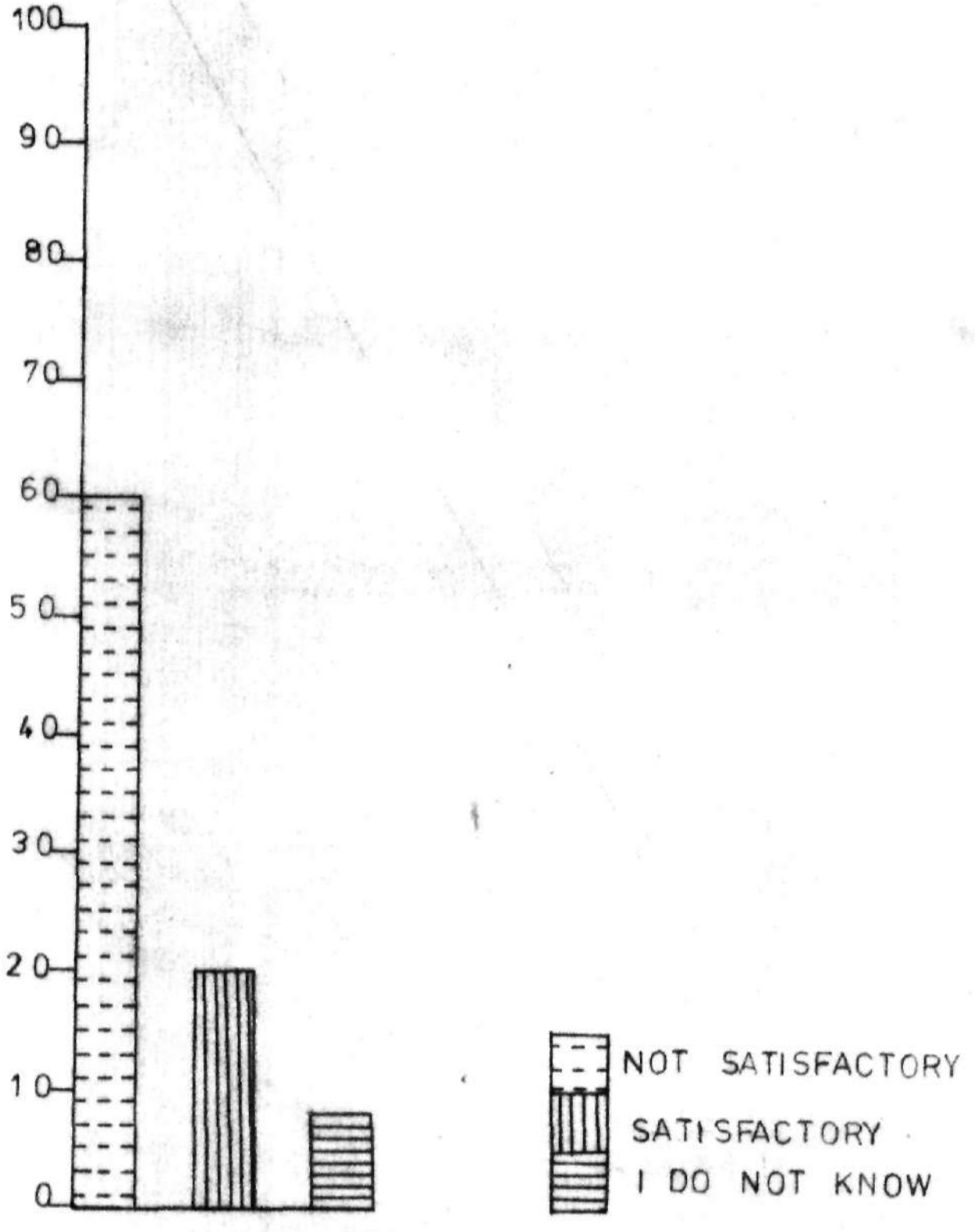


FIG 3 CONDITION OF OPEN SPACES

5.9(b) vi Type of Recreation to be Planned:

TABLE 27: OUT OF 128 RESPONDENTS.

Response	No.	%
Planned for Children	100	78
Planned for Adult	24	18.7
Planned for both	4	3.1
Total	128	100

5.10 Impact of the Incidental Open-Spaces on Environmental Quality of the City:

Pedestrian Survey of some open-spaces were carried out. Some photographs were taken.

5.10(i) The incidential open-spaces found in residential areas were badly managed. The major purpose they are serving is that of absorbing the urban wastes of which the chief composition of it were leaves and food wastes. In low density residential areas, the condition of the open-spaces were not as appauling as the traditional incidental open-spaces which by 1979 along received as much as 100,000 tons of leaves which later found their ways into the streams.

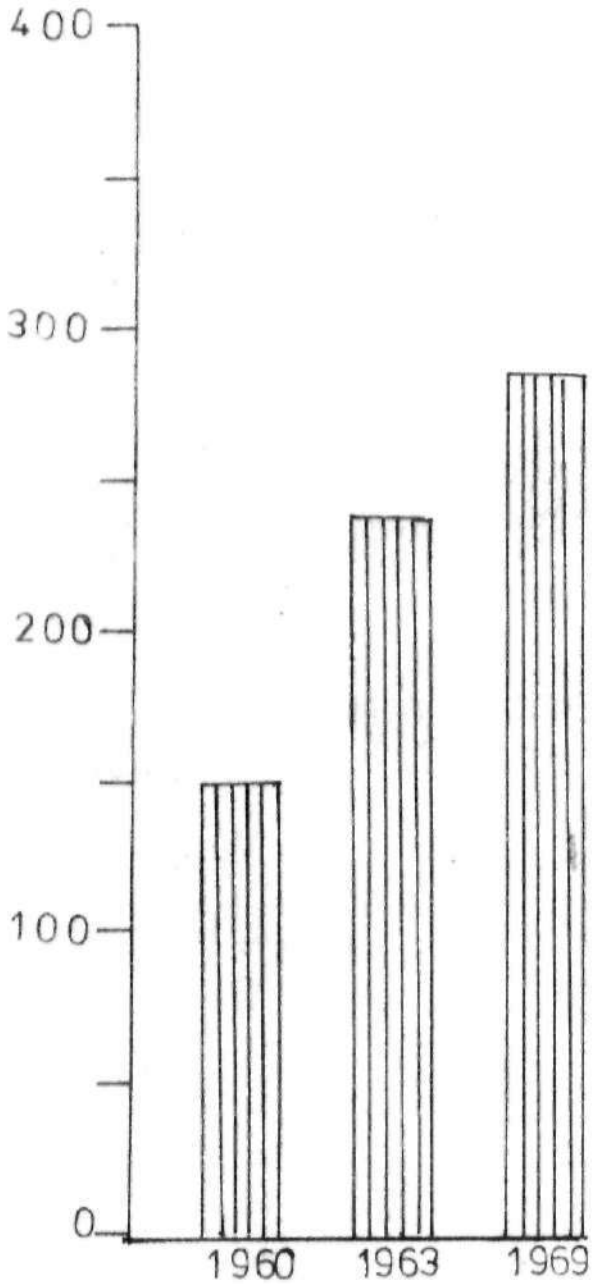


FIG 5 VALUE OF FLOOD

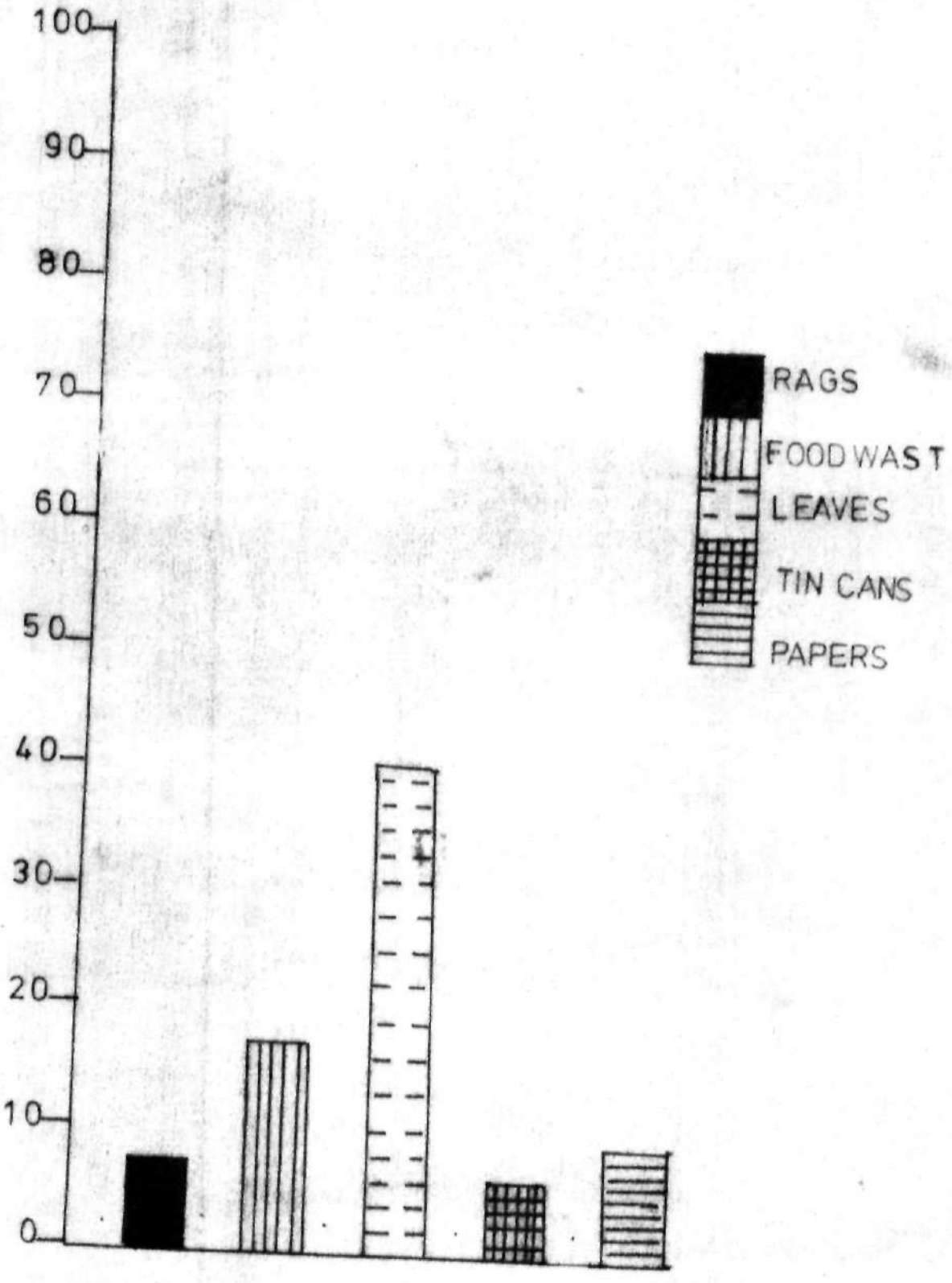


FIG 6 REFUSE COMPOSITION OF THE CITY

5.10(ii) The streets and major roads are not landscapped. The asphalt surface increases the rate of run-off which swells up to volume of water in rivers.

iii. Incidental open-spaces in residential areas have refuse collection points built on them. The wastes disposal system was not functioning well because the refuse were not cleared in time. Hence the chickens and animals that arekept within the area always spread the wastes on the roads. This lowers the environmental sanitation of the city; hence poor environmental quality of the city.

iv. Large sign boards arranged and road sides covered by the wares of the traders narrow the pedestrian ways which in turn lowers further the level of accessibility in the city.

CHAPTER SIX.

FINDING, RECOMMENDATION AND IMPLEMENTATION.

6.1 Findings:

On the basis of the analysis of the survey of Ibadan, certain findings were made which are vital for the understanding of the roles open-spaces with their management and use can play in improving or lowering the environmental quality of an urban area.

Firstly, that the percentage of land allocated to open-spaces in the city is small relative to the physical size of the city. This is an indication that the city is not open enough to exhibit the good quality of urban form.

Secondly, with regards to the existing organised open-spaces found in the city, they fall short of the required number that can positively serve the residents in the city. For example there are only two public parks serving the population of 1.09 million whereas there is increase interest in picnicking in the city. Besides, people travel to between 6-10km before they reach the organised open-spaces of their choice. The organised open-spaces such as playfields are not accessible to the residents simply because majority of them are attatched to the various primary, post-primary and post-secondary institutions in the city. Many of the parks, and Olubadan Stadium lack adequate facilities.

Thirdly, the natural open-spaces are poorly managed. There is a lot of man encroachment on these open-spaces which could have broken the monotomy of the knitly built up residential areas of the city. Mechanic workshos, basalt structures litter the forest reserves of the city. The worst hit of those category of open-spaces are the river channels found in the city. They are always the receiver of human wastes and refuse of the city. Besides, the river channels are hemmed by residential buildings on their both banks thereby causing the rivers to flood. The use and the management of this category of open-spaces in the city lowers the environmental quality of the city generally.

Forthly, like in many other cities, due recognition is not accorded the incidential open-spaces found in the city. They are more often than not poorly managed. Instead of forming the open-spaces which enliven and satisfy the residents at neighbourhood level, they constitute health hazard. The incidental open-spaces are used mostly for refuse disposal. However, the result of the survy indicates that people want this category of open-spaces to be planned and use for children play ground.

And finally, the physical survey of the city and its analysis indicates that the city is operating bad systems of refuse disposing; and this in turn has direct effect on the poor environmental quality exhibits by the city. Stop here

6.2 Proposals:

The proposals which are meant to reflect the aims and objectives of the study are guided by the findings of the survey work. On that basis, I have in the programme of proposals sub-divided organised open-spaces to be provided into four categories: Regional, City, District and Neigbourhood levels open spaces in this hierarchical order conforming with the proposed city structure for the city. Also my proposal reflects the use and the management of both natural and the incidental open-spaces of the city.

6.3 Ibadan Community Structure:

Ibadan Community as a unit is regarded as the city. The community structure is then divided into communities known as the districts; the city districts are in turn sub-divided into smaller communities known as neighbourhoods (see map).

This structure is strictly followed when making proposal for the organised open-spaces.

The hierarchy of organised open-spaces to be provided are:

6.3(a) Regional Open-Spaces:

These are the major open-spaces. These should attract users from within and outside the environs of the city. It should also attract week-end and occasional visits by car, buses and public transport. The regional open-space should provide facilities for boating, fishing, swimming, picnicking, camping, hiking, zoo activities, etc. The require area is 100-120 ha/as per the region.

6.3(b) City Organised Open-Spaces:

These are also the major open-spaces. The difference between this and the regional open-spaces is tenuous; however the difference is only in terms of the population they serve.

At the city level, organised open-spaces should contain the following city parks, city stadium; and the facilities to be provided for are golf, large parks, park ways, camp sites, etc. The area required is 80-100 Ha/300,000 inhabitants.

6.3(c) Organised Open-Spaces at District Level:

The open-spaces at this level should provide gardens, swimming pools, athletic fields, football fields, etc. The area required is 40-50 Ha/100,000.

6.3(d) Organised Open-Spaces at Neighbourhood Level:

These are the neighbourhood level recreational open-spaces especially for children. Hence the open-spaces should be free from vehicular flow. The open-spaces should provide: gardens, sitting out areas children play ground, court games and landscape environment. Area required is 6-7 Ha/14,000.

6.4 Natural Open-Spaces and Incidential Open-Spaces:

Also the proposals which are meant to reflect the aims and objective of the study are guided by the findings of the survey work carried out on these categories of open-spaces.

6.4(a) Natural Open-Spaces:

These are broken down into: River Channels, Forest Reserves and Lakes.

(i) River channels should be channelized and landscapped to provide green and lungs for the city so as to break the monotomy of the built up areas. River channels also should be prevented from refuse and wastes of the city.

(ii) Forest reserves: Their conservation is recommended. Also they should be prevented from man encroachment.

(iii) The existing water bodies - which are potentials should be planned and be made to serve as recreational areas.

6.4(b) Incidential Open-Spaces:

These are the open-spaces which the people use, feel and interact with in their daily activities. They should provide children play ground, sitting area, landscape environment, etc.

6.5 Details of Proposal:

6.5(a) Regional Open-Spaces (Parks) (see map 5).

Existing: Two were identified:

1. Zoological Garden.
2. Agodi Garden.

Proposal: I propose that the number should not be increased rather Agodi Garden should be

expanded and the cultural centre popularly known as Festac Cultural Centre be an annext to it.

6.5(b) City Level Organised Open-Space (Parks):

(i) Parks Existing: 2. I assume also that the two regional parks also serve the city population.

Proposal: I propose one more park which should be sited at a place in such a way to bring the neglected parts of the city nearer the park facilities.

Potential: On the basis of survey and observation a potential area for this facility was identified. It is astride the confluence of rivers Odo-Ona and Ogunpa along Ibadan - Lagos road.

(ii) Stadia: Existing: 1. Olubadan Stadium.

Potentials: University of Ibadan Football field and an open land near the proposed Ibadan Airport.

Proposal: I propose two more stadia, to the existing one at city level one to be located near Airport (Ibadan East) and the remaining one at Ibadan North. The expansion of University of Ibadan Sport Centre will take care of this.

6.5(c) District Level Organised Open-Spaces:

Existing: These include district park, sport fields, swimming pool.

(i) District Parks:

Existing: 1

Potential: The green strip along the catchment area at Eleiyele, the Gbanda hill off Ojoo-Igbo elerin road; the green strip between River Olajuoro and Elegun catchment areas, and green land around Labo community fish pound.

Proposal: I propose five more district parks to the existing one. Each potential identified should be the sites for all the proposed parks.

(ii) Swimming Pools:

Existing: 10 swimming pools - that are attatched to private club houses and hotels.

Potentials: District parks already proposed.

Proposal: I propose five more swimming pools of Olympic standard. They should be planned within the district parks.

(iii) Sport Facilities:

With the regional stadium, the three city stadia proposed , the golf course, and also athletic centres at city level which are already existing



Map 5

EXISTING REGIONAL OPEN SPACES IN IBADAN

if efforts are made to upgrade some colleges' sport field to altramodern district sport field then they should be enough organised open-spaces for sporting activities in Ibadan.
All these open-spaces should be meant for daily and occassional uses.
Fields to be expanded are Wesley College, Ibadan Grammar School Fields.

6.6 Neighbourhood Level Organised Open-Spaces:

Existing: 74 Play fields were identified.

Potential: By nature and size of the neighbourhood open-spaces, any available space within the residential areas of the city serves as potentials.

Proposals: Provision of open-spaces of this hierarchy should include the existing football fields attatched to primary and post-primary institutions. Other open-spaces to be provided should reflect the variations in the socio-economic characteristics of the various areas. These activities should include out-door games (tennis, valley ball, tenniquoit lawn) relaxation and social gatherings.

The facilities to be provided should be games court, green for shade general landscape, children play ground and sitting out facilities.

TABLE 28: EXISTING AND PROPOSED ORGANISED OPEN-SPACES FOR IBADAN.

Type	Existing	Proposed	Total	Remarks
Regional level Organised Open-Spaces	2	-	2	Agodi Garden should be expanded and well equiped with varied activities
City Level Organised Open-Spaces	2 Parks 1 Stadium	1 1	3 2	New one to be sited along Ibadan-Lagos Road. One at Ibadan East.
Organised Open-Spaces District level	1 Park 10 swimming pools	5 5	6 15	Each district provided with a park. The existing ones are privately owned.
Neighbourhood	74 play fields	50	124	Each Neighbourhood to have at least one major organised open-spaces.

I propose the use of the forest reserves for recreational activities like hunting, hiking, and picnic sport for residents.

6.7(c) Natural Lakes/Pools:

Existing: i. Labo Fish Pond.
ii. Eleyele Water Works.
iii. Agodi Garden Lake.

Proposal: They should be planned for recreational activities. The facilities to be provided for are fishing, boating, swimming pool.

6.7(d) Incidental Open-Spaces:

Existing: They abound in the neighbourhood areas.

Potentials: There are many large residential commons (200ft by 100 ft).

Proposals: I propose children playground, courts, green shade, general landscape and sitting out facilities.

6.8 Implementation of Proposals

To propose the creation of organised open-spaces and also the management of both natural and incidental open-spaces, is one thing, to implement the proposal is another. The question that always follws the planning proposal of any king is who are to implement the proposals. The exist-



Map 6

EXISTING AND PROPOSED OPEN SPACES AT CITY LEVEL

ing project of Ogunpa Channelization has been grounded for lack of money; Waste Disposal Board is incapacitated in its effort to clear Ibadan environment of waste and refuse. With this background I suggest that a State Commission on Urban Environmental Management be established. This commission will be charged with the responsibility of preservation, development and management of urban open space system of cities. The commission should be funded by Federal and State Governments through the departments of Housing and Environment. Ibadan Municipal Council also should play a major role in implementation of the proposals.

For practical purposes short-term and long-term proposal have been adopted for the implementation phases:

Short-term up to 1990.

Long-term 1990-2000.

6.9(a) Short-term:

i. Organised open-spaces: more emphasis should be placed on the development of the city park along Ibadan-Lagos road;

ii. District Park at Ibadan East should receive attention also.

iii. Existing playfields should be increased by creating them in newly established institutions.

6.9(b) Natural and Incidental Open Spaces:

i. River channelling should receive immediate attention. They should be landscapped.

ii. Clearance of mechanics workshops in forest areas and they should be provided alternative places.

iii. Inventory of incidental open spaces as large as 200 by 100 feet by made and acquired for neighbourhood recreational activities for children.

iv. Refuse depots should be built within residential areas to collect refuse and clear it immediately.

v. Public comfort stations should be provided by Ibadan Municipal Council to prevent incidental open-spaces from being the receptor of the waste.

6.10 Long-term 1990-2000 for population of 1.8 million.

6.10(a) Organised Open-Spaces:

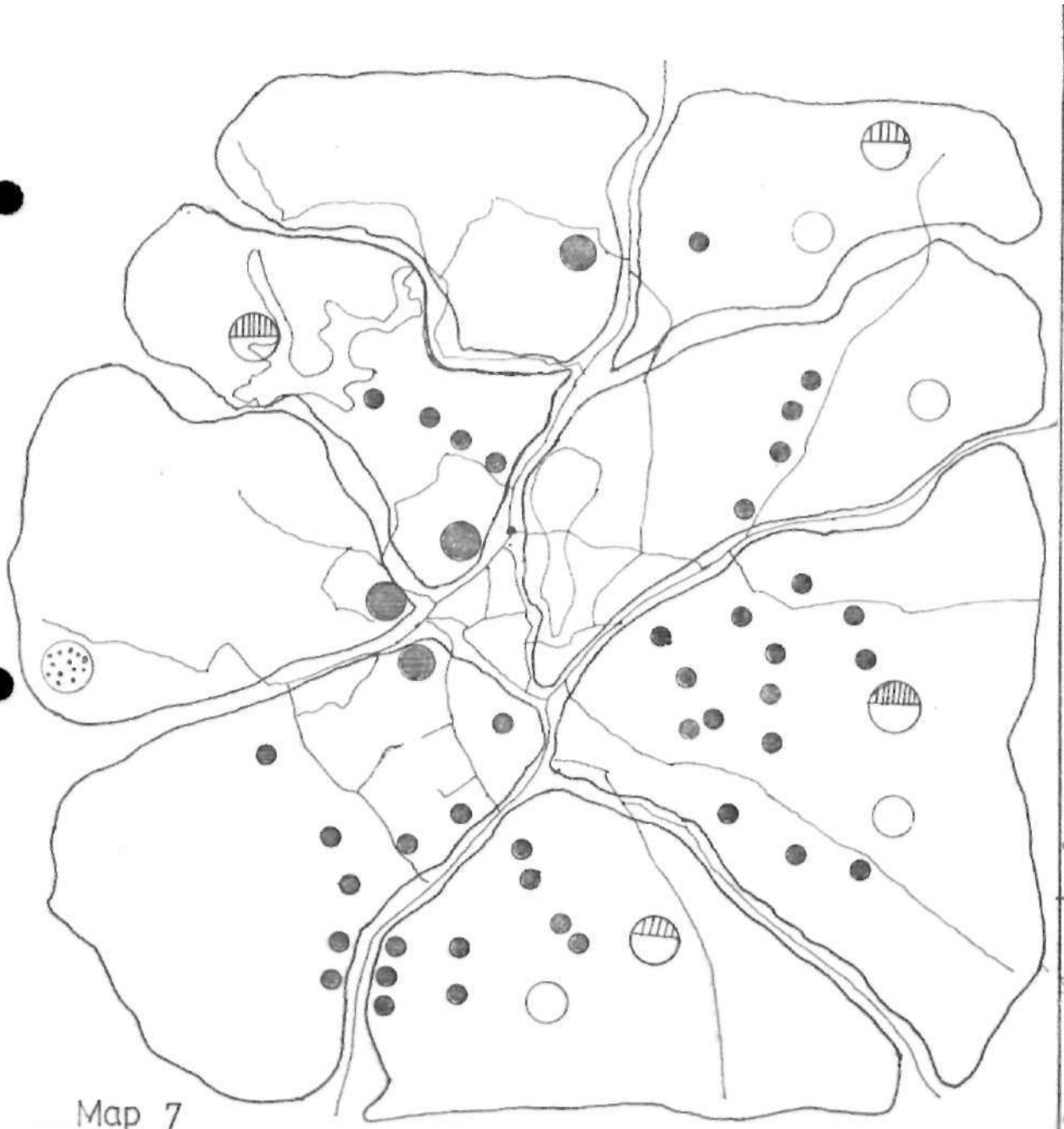
i. Stadium at Ibadan East should be emphasized.

ii. The remaining 4 (four) district parks for the districts should be implemented.

iii. Swimming pools should be fully developed in each of the parks.

6.10(b) Natural and Incidental Open-Spaces:

The conservation, and management of these open-spaces be intesified, planning control should be strictly adhered to for keeping high good quality of urban environment.



Map 7

PROPOSED AND EXISTING OPEN SPACES DIST. LEVEL

6.11 Standards:

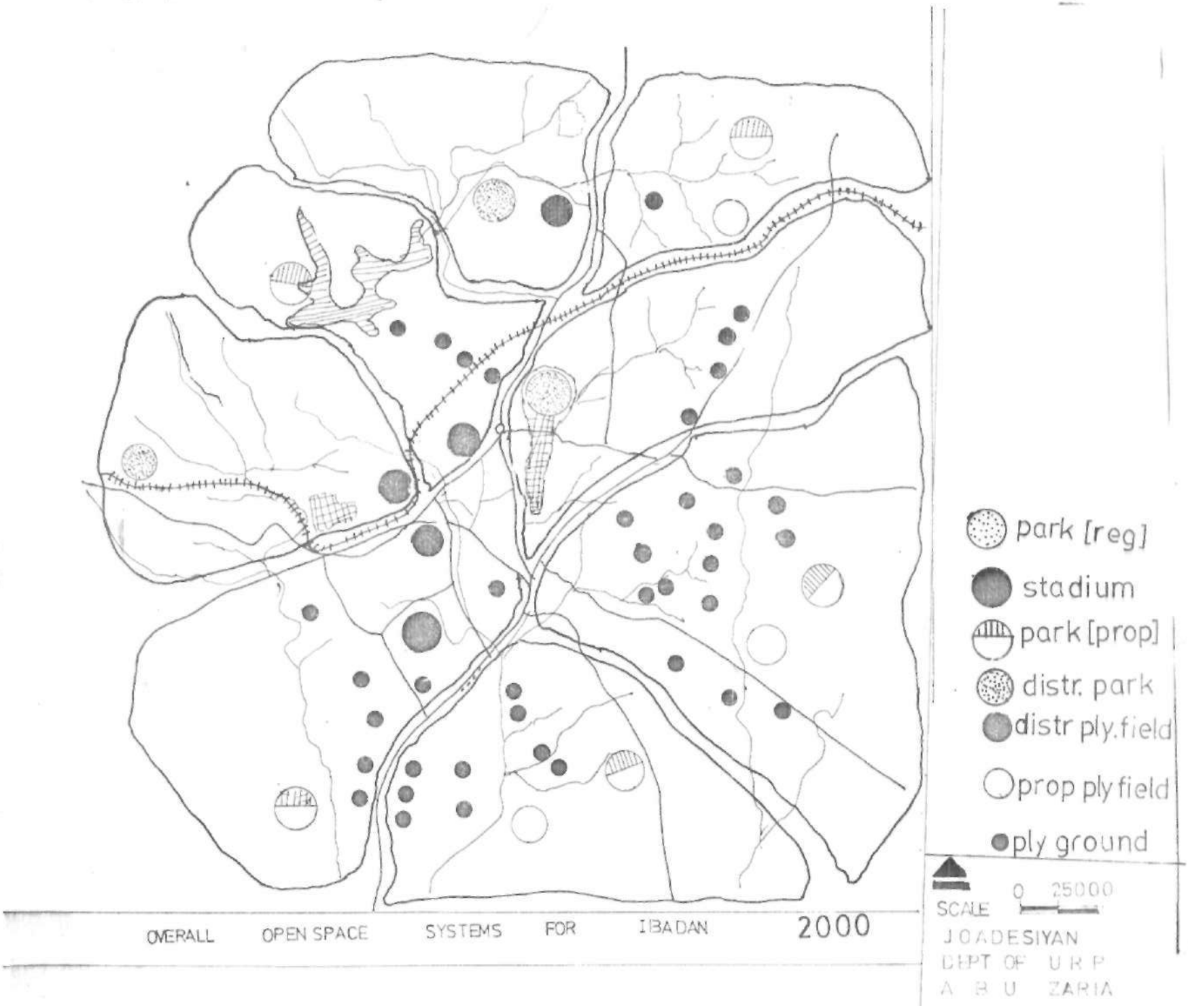
The setting of standard for provision of organised open-spaces is a problem in a situation where accurate data is absent. Therefore, the arrived at standard, after studying the standards suggested by many planning agencies, should be seen as a guideline for the implementation of the proposal. The table 29 shows the standard recommended for the provision of open-spaces for Ibadan.



OPEN SPACE SYSTEM FOR IBADAN 1990

TABLE 29:

TYPE	BUTLER	ASPO	INSTITUTE OF TOWN PLANNER INDIA	NATIONAL RECREATION ASS. U.S.A.	MUNICIPAL CORP. OF GREATER BOMBAY	RECOMMENDED FOR IBADAN
CITY PARK	1 for 5000 persons Area 41 Ha	0.41 Ha for an average city above 50,000	80 Ha is recommended for 100,000 pop.	4.1 Ha per 100,000 pop.	1.2 Ha to 1000 pop	Built up area 0.41 Ha/20000 - 25,000 pop. 0.8 for new areas.
DISTRICT PARK	1 for 2000 persons Area: 1.3 Ha	0.41 Ha/200 persons for city of 50,000	For 100,000 pop. 400 Ha be provided for recr. purposes 15% of it for Park	Out of 4.5 Ha/1000 pop. 0.8 should be for district park	0.41 Ha to 1000 persons	0.4 Ha for 4000 pop.
PLAYING FIELDS	0.4 Ha/800 person	41 Ha for the city and neighbourhood	-	1/10 of the city developed area	-	Built up area 0.4/1000other area 0.4 Ha Ha/5000
STADIUM	Not less than 2.05 Ha for each stadium	4.1-8.2 is desirable for 1/4 of the total pop.	2.0-8.2 Ha per stadium with a sitting pop. 10-20,000	-	-	0.4Ha/20000 pop. sitting capacity of 8000 pop.
SWIMMING POOL	0.41 Ha for every district 450sq. ft/ 1000 person	-	-	-	-	There should be 33.6 sq.m for 1000 pop.



OVERALL OPEN SPACE SYSTEMS FOR IBADAN 2000

REFERENCES

1. Adeyeri, J.B.

2. American Society of Planning Officials - Recreational Facilities Standard.

3. Awe (19) Ibadan, The Early Beginnings in 'The City of Ibadan.

4. August Hecksher (1977) Open Spaces: The Life of American Cities.

5. Akinyele (19) The Outline of History of Ibadan

6. Bombay: Municipal Corporation of Greater Bomba: Institute.

7. Burks (1971) Towns in Making.

8. Hitler George (1959) Introduction to Community Recreation.

9. Elinor C. Guggerheimer (1969) Planning for Parks and Recreational Needs in Urban Areas.

10. Hauser P.M (1973) Handbook for Social Research in Urban Areas.

11. Ibadan and Environs (1969) A Study of Recreational and Entertainment Facilities (Technical College, Ibadan).

12. Institute of Town Planning, India.

13. Isaiah: Old Testament Bible Revised Edition.

14. Jane Canter Loeffler: Open Spaces, People and Urban Ecology, Planning. The ASPO Mag. No. 218 (1972).

15. Johnson King and Associates (1971) The Regional Plan of Open Spaces, Recreational and Environmental Appearance.

16. Keeble (1968) Principles of Practice of Town and Country Planning.

17. Louis B. Young: American Foundation of Continue Education.

18. Lynch K. (1971) Site Planning Analysis (2nd edition).

19. Maclaren International Limited vol. 2, 1971: Data on Sewerage System of Ibadan.

20. Natural Commission on Material Policy (1973).

21. Natural Recreation Association: Standard on Recreaction Open Space.

22. Odugbesan Tunji: Uses of Open Spaces: Punch April 12, 1979.

23. Omar Shittien (1975) A User Oriented Systems of Park and Open Spaces in Jo: (M.Sc. Unpublished Thesis, Dept. of U.R.P., A.B.U., Zaria.

24. Perkings, R.J. The Environment from System Point of View: International Journal of Environmental Studies, vol. 8, 1975.

25. Peters: Climate as a Resource for Open Space in Elinor Planning for Parks, and Recreational Needs in Urban Areas.

26. Reitz Jr. (1971) Law of Land and Resources in Environmental Planning.

27. Scheiber, Gatons and Clemor: Economics of Urban Problems (Pub. Houghton Miffling Coy).

28. Seymour N. Gold: Urban Recreation Planning.

29. Stanley B. Tankel: The Importance of Open Spaces Planning in Urban: In Cities and Space Edited by Wingo Jr. (1963).

30. Tunnard and Pushkarev (1963) Man-Made America.

APPENDIX.

ORGANISED OPEN SPACE - IBADAN CITY - MANUAL.

1. Name/Identity .....
2. Location/Adress .....
3. Physical Features:
   - i. Terrian (a) .....
   - ii. (b)
   - ii. Vegetation type .....
     - No. of tress .....
     - Any flower? .....
     - Shrubs .....
4. Aesthetic Condition
   - i. (a) Air pollution ..... Yes/No
     (b) if any, source (i) Industrial work
   - ii. Water Pollution .....
     (b) if nay, source .....
   - iii. General Condition .....

     Good, Fair, Bad).
5. Accessibility
   1. Mode ..... A ..... Road Foot
   2. Location (a) Is it near residential area?
      (b) Is it near industrial area?
      (c) Is it neas business district?
   3. Catchment Area
      - A. All Sectors
      - B. Immediate Area/surrounding area
      - C. Outside the city
6. 4. (i) Structure of the visitor's population
      - men
      - women
      - children

   (ii) Peak period of visiting
      - i. - Wednesday
      - ii. - Saturday
      - iii. - Sunday

7. Facility

1. Native: Chairs/Stools/Forms/Bench,etc.
2. Qunatity .....
3. Quality A. Good
   B. Fair
   C. Bad
4. Other Services e.g. Kiosk, Toilo, Car Park, etc
   A. ..... Nil
   B. ..... Available
   C. ..... Not all available
5. Essential Facility not available

.....

8. General Impression - Is it centrally placed in relation to its catchment area?

A. Yes
B. No
C. Fairly placed

7.	Source of the load	A.	Household
		B.	Industrial
		C.	Commercial
8.	Water Quality	A.	... Pure
		B.	... Rough
		C.	... Rough and Smelling
9.	Uses of the Water	A.	... Washing
		B.	... Cooking
		C.	Agriculture
		D.	... Fishing
10.	Land use along the Basin		
		A.	... Agriculture
		B.	... Industrial
		C.	... Residential
		D.	... Nil.
11.	Aesthetic Value Generally		
	Landscaping	A	... Well cared for.
		B.	... Uncared for.

PUBLIC PERCEPTION OF INCIDENTAL OPEN-SPACES IN IBADAN.

1. General

   a. Mark of Open Space ...

   b. Approximate area .....

   c. Nature of buildings surrounding open space

      .... wholey residential

      .... residential/commercial

      .... residential/industrial

      .... commercial

      .... Others

2. Perssonal Details

   a. Sex: Male/Female 20-26 years.

   b. Age group 13-19 years ... 20-26 years ...

      21-35 years ... 36-45 years ...

      45-60 years .... Above 60 years ...

   c. Place of work ....

   d. Nature of employment

      ... Schooling ... Trading

      ... Teaching ... Government Office

      ... Industrial ... Self-employed

      ... not employed Others .....

3. Perception of Open Space

   a. Do you notice any open space near you? Yes/No

   b. Do you use the open space for any purpose ? Yes/No

   c. What use? ... Trading ground

      ... Social gathering

      ... Refuse disposal

      ... Public Latrine

      Others .....

f. Are you satisfied with the condition of the space as it is Yes/No
Reason .....

g. Should the area be developed? Yes/No.

h. What sort of development could your prefer?
... Building
... Trading ground only
... Social ground only
... Recreational ground only
... Motor park only
... others
... Mixed Development

i. If mixex development what sort? .....

j. If social ground what sort of activities do you envisage? .....

k. If Building only what type?
... Residential only
... Commercial only
... Residential/Commercial
... Industrial
... Others

l. If recreation, what sort of games facilities do you prefer.
... Planned playground for children only
... Planned playground for adults only
... Planned playgrond for both
... Marked out pitches and fields for games and sports.
... Others.

4. Daily activity analysis

a. How do you use your leisure time?
... Recreation
... Visiting friends
... Social activity

... Business
... At home working
... At home doing nothing
... Others

b. If recreational facilities are provided would you use the facilities Yes/No. When .....

c. Usual Daily Activity Chart

Morning						Afternoon						
7	8	9	10	11	12	1	2	3	4	5	6	7
MONDAY WEDNESDAY SATURDAY												

PUBLIC USE OF ORGANISED OPEN-SPACES.

1. Marital Status
   A. Married
   B. Single
2. Size of the Family
   A. 0
   B. 2
   C. 3-4
   D. 5-6
   E. 7+
3. Sex of the member of the family/ages
   Female ..... No. .... ages
   Male ..... No. ..... ages
4. Occupation
   A. Business
   B. Teaching
   C. Farming
   D. Civil Servant
   E. Schooling
5. Level of Education
   A. Primary
   B. WASC
   C. Diploma/Grade II
   D. HND/NND
   E. Degree
   F. Illiterate
6. Income Per Month
   A. Less than ₦10.00
   B. ₦10-49
   C. ₦50-99
   D. ₦100-200
   E. ₦201-300
   F. Over ₦300

7. Native of Open Space you always visit.

A. Stadium
B. Play grounds
C. Picnic Spot
D. Notanical Garden
E. Swimming Pool
F. Zoological Garden
G. None

8. Distance of the Open Space to your house

A. 0-3 kilometres
B. 3.1 - 4
C. 4.1 - 5
D. 5.1 - 6
E. Over 6 kilometres

9. Mode of Travelling to the Open Space

A. By foot
B. Bicycle
C. Auto cicycle
D. Bus/Taxi
E. Private Car

10. Company to the Open Spaces

A. Spouce
B. Sponse and Cjildren
C. With adult member of the household
D. With work mate
E. Alone

11. Which day of the week do you visit the open spaces?

A. Monday
B. Tuesday
C. Wednesday
D. Thursday
E. Friday
F. Saturday
G. Sunday.

2. If you do not go to the open space, give reason why

   A. Lack of Interest
   B. Use of the time for another economic activities
   C. Open Spaces are far away from my home because of traffic jam
   D None of my age group

13. Facilities available for refuse disposal

   A. Basket or rubber bucket
   B. Dust bin
   C. Refuse truck
   D. None

14. Where refuse are dumped

   A. Bake yard open space
   B. Undeveloped piece of land
   C. Delapidated Building
   D. Incinerator
   E. Refuse dump built by Ibadna Municipal council.
   F. Flowing River.

15. The Open Space, such as vacant lots, backyard open space, available in your area what way are they used?

   A. Dumping ground
   B. Agri. purposes
   C. Play ground for children.
   D. Not used at all.