TOWN CENTRE FOR ABAJI

DESIGN OF TOWN CENTRE FOR A SATELLITE TOWN IN FEDERAL CAPITAL TERRITORY: A CASE STUDY OF ABA JI

BY

MUSA ANINAVBI AUDU

B.A.(GEOG.) HONS.

DEPARTMENT OF URBAN AND REGIONAL PLANNING

FACULTY OF ENVIRONMENTAL DESIGN

AHMADU BELLO UNIVERSITY

Z A R I A

JULY, 1982

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 Master of Science Degree, Urban and Regional Planning.

Approved

Kulshreshtha Se.

ZARIA.
JULY, 1982

ASSOCIATE PROFESSOR S.K. KULSHRESTHA
HEAD OF DEPARTMENT.

DEDICATION

MY WIFE HAESAT ONLIVO

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CHAPTER ONE

1.00 INTRODUCTION

1.10 THEORETICAL BACKGROUND

Urbanisation is one important force which is rapidly changing this country from a predominant rural nation to one composed of townships and suburbs. The majority of our population is now concentrated in metropolitan centres which exhibit a wide range of social, economic and political diversity. The diversity is both the cause and effect of a complex series of human problems and issues. One area of current concern is the central area of our metropolitan areas. The central area's role as a focus for administration, commerce and culture is rapidly changing and this change coupled with diversity presents a challenge to Urban Planners. This challenge is efficient physical planning and design for providing a more functional town centre rid of traffic congestion and poor environment.

Nigerian towns can be classified into two major groups. The first are those traditional towns which developed organically and existed long before the coming of Europeans. Both their Layouts and the physical structures were basically determined by their traditional activities and institutions; and they reflected the then low level pre-industrial technology. With the coming of the Europeans they

have had substantial additions to their original sizes. These additions were due to massive introduction of new Urban activities and institutions. These were either accommodated within the existing structure like the towns of Benin, Ado Ekiti, etc or located at another and newly developed centres usually called Sabon Gari. Such towns include Kano, Zaria, Ilorin etc. which consequently have bi-focal or dual centres.

The Central areas of such traditional town are examples of the Urban nucleus which had existed from the very origins of the town, but its function in the town is not mainly in the economic sense. Instead the joint location of the main market, main mosque, the Oba's or Emir's palace makes the Central area of the town to be looked on to as a focal point of political, religious and socio-economic authority of the town. Suffice to say that the central area of any Nigerian Traditional town is a focal point which includes a spatial value gradient which occurs in that town. The town centre providing a higher level of services while the neighbourhoods (wards) provide lower level of services. These wards have their chiefs who are responsible to the Oba or Emir whose palace is located in the heart of the town centre. Hence a strong central area was conceived as the dominant

focus of the town's social, business and intellectual life radiating onwards along the main pedestrian routes into the inner residential areas.

On the other hand there are those Nigerian towns (contemporary towns) that had their development mainly due to European influence, such towns like Kaduna, Jos, Aba, Enugu, etc. They to some extent give the impression of early idea of physical planning in Nigeria, whereby there was functional segregation of different landuses. Their Central areas were designed (both in layout and structure) to accommodate 'modern' urban activities and institutions which the Europeans introduced into the Country. Examples of such institutions are the introduction of departmental stores, recreational areas etc.

The general planning principle of these towns is based on grid iron pattern of the British - our colonial master. The main characteristic of such towns' centres is the shopping streets, their major streets forming their commercial axis. "The form, character and functions of these modern centres is determined not only by the large size of population and its high concentration, but also by its heterogeneity which creates favourable conditions for diffusion of innovations and creating a high

tempo of modernization".[1] Footpaths from the neighbourhoods (wards) and the periphery of the town in different directions converge on the open spaces and markets at the central area.

1.11 EXISTING SITUATIONS IN NIGERIAN TOWN CENTRES

Many changes have taken place in most Nigerian town centres especially in the traditional town centres and changes have disrupted the existing pattern of such town centres. The vehicular traffic into the traditional town centre has completely displaced the former major mode of transport of beast of burden and pedestrians. This has called for the construction of highways/ transitways of two or three lanes through most traditional town centres. Examples could be found in Kano City having two-lane highway running from Kofar Mata through the Emir's palace, and an arterial road through the central part of Zaria City as the case in Ilorin.

The traditional market in traditional town centre was simply an open space with no buildings in the past. In recent years such markets have undergone some changes, e.g. stalls are laid out

[1] Yunusa, M.L.(Mrs.) 1980. 'City Centre for Greater Yola: An approach to the intergration of the traditional cities and the modern townships of the Hausa-Fulani settlements of Northern Nigeria' M.Sc.Thesis (U.R.P., A.B.U.)

or arranged in rows and are usually arranged and placed end on in parallel rows. Spaces are arranged between rows so that consummers can move freely around the market. Supermarket, stores and new commercial centres are coming up in the town centres where more varied and modern consumer items are sold. Consequently, these new commercial areas need some organised parking spaces for the customers.

As mentioned earlier, the Oba's or Emir's palace was formerly the symbol of traditional authority which was infact the sole authority governing the whole town and its suburbs. With the introduction of Local Government Areas and its administrative machinery in 1976, the emphasis on the traditional rulers as sole administrators become less. The centre of administration and political power have now moved to the local Government offices at the local level and the various Secretariat or head-quarters at the State Capitals.

Again high rise buildings are springing up in most of our town centres reflecting the intensive landuse of our town centres. For example, the major streets in most town centres are characterised by

four- or five- storey buildings with an open ground floor which in itself forms an arcade on which fronts different selling activities and perhaps, some of the personal services are being carried out. On the first floor both offices not requiring a shop front and some of the personal services be accommodated, with the top two or three floors given over to apartments for either the locally employed or businessmen and their families or those wishing to live within the central area.

The high traffic volume generated by such intensive landuse within our town centres have rendered our existing road capacities and parking spaces grossly inadequate. Couple with this is the indiscriminate on-street parking within the commercial area which is a common phenomenon in our modern town centres creating traffic hold-up everywhere in the town centres.

The electricity supply to our town centres is usually distributed to individual structures on overhead lines. With the high rise buildings coming up in most of our town centres it is no more safe using the overhead lines.

1.20 STATEMENT OF RESEARCH PROBLEM

Most Nigerian new towns like Jos, Kaduna and Enugu grow and function predominantly as administrative

and industrial centres and all have their central areas as commercial streets. This commercial streets system has posed some serious circulation problems in the central areas of such towns.

And Abaji one of the proposed satellite towns within the Federal Capital Territory (FCT) will function as an industrial and administrative centre whose central area requires special design attention to guide against the problems associated with the central areas of our contemporary towns. The treatment of these problems in this study provides one approach to suggesting a conceptual context for more extensive research.

1.30 AIMS AND OBJECTIVES

(i) To design a town centre for Abaji which will ensure proper functioning as a satellite town.

(ii) To design a town centre befitting a gate-way town to the Federal Capital Territory that will give the town a national identity.

OBJECTIVES

(i) Designing the centre to ensure af functional structural layout of the elements.

(ii) Creating a town centre of attractive environment which will generate human interaction by providing essential central facilities for the administrative, cultural and recreational activities.

(iii) Provision for free and safe movements of vehicles and pedestrian for Abaji with special reference to its proposals for the central area as a base for a better alternative centre.

1.40 LITERATURE REVIEW

Many research works have been done on city or town centres in both developed and developing countries. Such researchers include Barry Garner and Maurice Yeates (1976) whose works on American town centres concentrated on the landuse pattern within the town centre. Others like Juchnouricz[2] S. (1976) and Greater London Council (1965) focus their attention on newal and design of city centres to reduce the traffic problems being experienced by such centres, as well as maintaining the economic base, and increasing its floor space for maximum utilization. As observed by Juchnowicz. S. 'the traffic factor exercise an essential impact on the formation of the contemporary city centre and is the leading influence in the process of development of central areas.'[3]

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[2] Juchnowicz S. (1978) 'Problem of contemporary City Centre' Public Lecture delivered by NITPS, ABU Branch.

[3] Ibid.

In Nigeria some significant steps have been made on the studies of our town centres. Many of such studies attempting proposals for redevelopment of traditional centres. For example, Ganwa (1978) and Ayeni, M.A. (1975) studied the city centres of Yola and Ado Ekiti respectively. The two studies highlight the physical characteristics and associated problems of some traditional town centres in Nigeria. They also make some suggestions concerning minimising such problems. While the works of Kassem (1976) and Jibrin L.M. (1981) on Jos and Sabon Gari, Zaria, respectively, proposed masterplan for Kaduna by Max Lock and Partners (1967) and for Kano by Travallion (1967) shed some light on redevelopment and construction of contemporary City Centres in Nigeria.

Some specific works on central area design are those done for the Federal Capital City of Nigeria - Abuja - by Kenzo Tange and Urtec, Inc. in conjuction with Oluwole Ohinuyiwa and Associates; Benna and Associates; and E.A.D. Nsiegbe and Associates (1981-82) and for Kano City centre by Pate Jagiello M.M. (1981). Both of them dealt with the phsycal planning and the design of the centres on

on relatively undeveloped or 'virgin' land. Both projects make plans of landuse proposals for the centres which specify all the structural elements to be accommodated by the centres.

The research for Greater Yola and some consultancy works carried out by the department of Urban and Regional Planning of Ahmadu Bello University, Zaria on physical planning of some Nigerian towns emphasised integrating the centres of old cities and those of new townships which have grown out of such traditional cities so as to ensure continous efficient coordination of traditional city centres functions.

1.50 METHODOLOGY

All information for analysis are extracted from the proposed draft masterplan for Abaji by Inter Designs Partnership Consultants. Such information include location map, Topographical maps, slope analysis, existing and proposed landuse maps, etc.

Planning briefs for the planning of Abaji town given to the Consultants by FCDA form another source of information for my analysis. And finally I conducted some wind screen survey of the existing village and its surroundings.

1.60 SCOPES AMD LI I A.TIQNS

The existing village - old Abajl - as an organic small settlement has no defined central area. The need to integrate the new town centre with the existing town centre does not arise.

As at the time the project was being carried out, there was no planning and design briefs for Abaji town centre. hence there is no quantified analysis froi:) PCDA on which the design should be based.

Another limitation is the site selection and planning of the proposed town centre which should be within the conceptual planning framework of Abaji draft masterplan as proposed by Inter Designs Partnership Consultants. Since the town centre is not an exclusive entity on its own but functions within the structure of the town whose proposed master plan will be approved.

The appraisal of the draft master plan dcx not *!_;c* into the detailed site plan aid. design of the area. Rather a general appraisal is made of the landuse proposals for the town and a little detailed appraisal of its central area.

CHAPTER TWO

2.00 ANALYSIS OF THE STUDY AREA AND EVALUATION OF THE PROPOSED DRAFT MASTERPLAN.

2.01 LOCATION AND SITE CHARACTERISTICS

Abaji lies east of Lokoja-Kaduna A_2 highway where it crosses the river Okia, South of the junction of the A_2 and the Keffi roads. It is the first and major settlement at the Southern edge of the Federal Capital Territory. (See figs. 2.01 and 2.02).

As the fig. 2,02 shows the village as well as its planned area is situated on well wooded, relatively high ground overlooking the river Okia, which is the primary river that drains the area. Rising from the general level are five steep sided, flat topped hills. The Northern edge of the site is formed by a line of flat topped hills which produce an escarpment effect with the scarp slope facing the town. While the Southern boundary of the site formed by the steep sided valley of the river Okia. Generally the ground slope gradients vary from 3° to 5.9°.[3]

[3] Slope analysis of the site carried out by Inter designs Partnership Consultants.

FIG. 2.01

THE NATIONAL CONTEXT



Source: Abuja Masterplan pg. 28

KEY

FCT: FEDERAL CAPITAL TERRITORY

ROAD

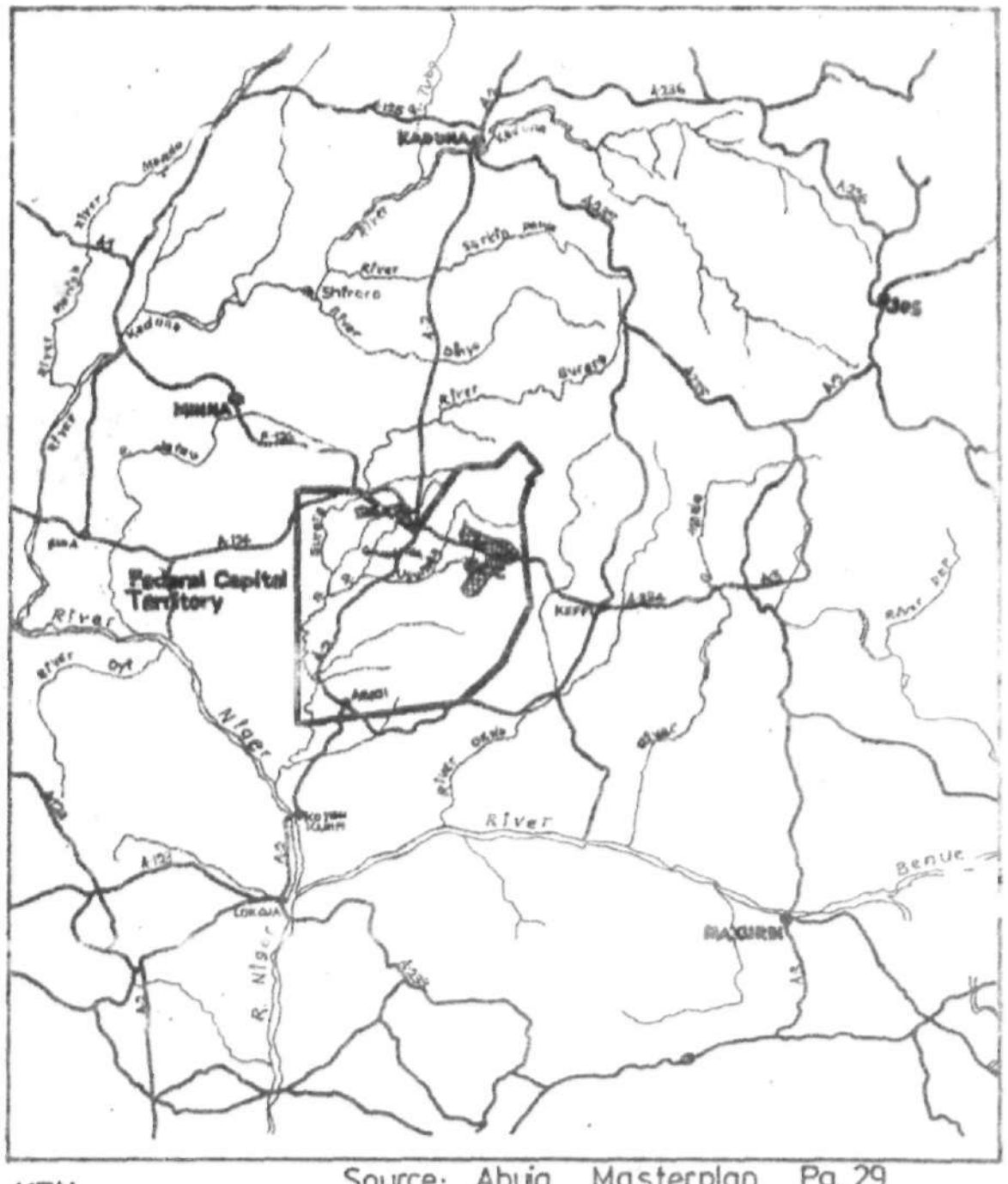
STATE BOUNDARY

NATIONAL BOUNDARY

scale

FIG. 2.02A

THE REGIONAL CONTEXT



Source: Abuja Masterplan Pg. 29

KEY

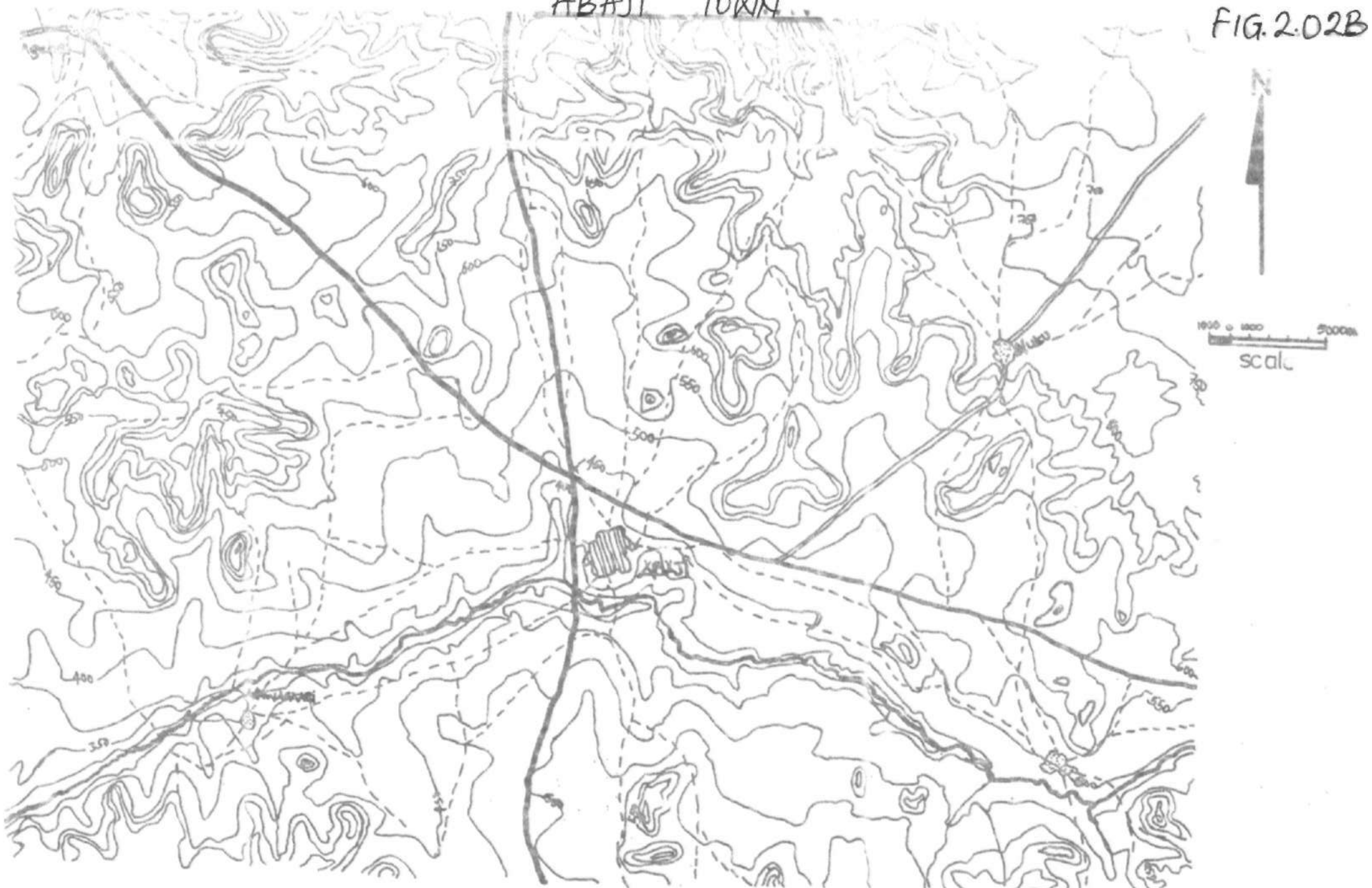
FCC: FEDERAL CAPITAL CITY

ROAD

RIVER

ABAJI TOWN

FIG. 2.02B



Source: Dept. of Planning & Survey
F.C.D.A. Abuja

Except for the river valley which is densely vegotacbed the area is a mixture of park savannah landscape and agriculture. The dense vegetation on the river banks is an evidence that the river has a steady flow.

2.11 IIONS

TEMPERATURE

Like elsewhere in the country, the entire Federal Capita 1 Terribory rec *or*ds its highest temperature during the dry season months which are generally cloudless. Extreme maximum temperatures occur everywhere in the vicinity of the territory in the month of March which records about 37 C. The diurnal ranges of temperature drops as much as 17 C in a day. As shown in table 2.01 below this is hardly reduced and increased more than 7 C in July and August. Dry season lasts from Novembsr to April, but between December and April the area comes under the dominant influence of dry and heavily dust Ianden condition. This temperature is greatly, affected by the relative humidity. Table 2.02 below snows the monthly variation in relative humidity. During the dry season, relative humidity falls in the afternoon jso about 30 percent in the area.

MY.

TABLE 2.01

DAILY MAXBI1 lX°fii

	JAN	FEB,	MAR	APRI	MAY	JUL	YUU	CU	SEPT	tOCT.	ING	V,ᵢ	DEC.	YEAR
ʟx	33.	35.0	35^	134.2	36L.	31.3	30.2	29.81	30.0	31.3				32.7
MINI	21.1	234	S.O	23.7	23.8	(23.0.	22.9	22.6	23.3	22.2I	21.8	19.9		22.7

Source: Report of the Geological Survey of the Federal Capital Territory, p»27f

IDITY (%)

	0700 hr	TSocThrsI
JANUARY	86	1+3
FEFRUARYt	80	i+1
iCH	82	51
APRIL	86	*55*
MAY	89	61
JUKE	91	65
JULY	92	69
AUGUST	91	69
SEPTEMBER	93	71
OCTOBER	93	67
NOVEMBER	92	*5k*
DECEMBER	90	*hi*
YEAR	89	58

Lat.07 i 48 N | Long.06 j i|^E j Elev. 135 ft. j

Source: Report of the Geological Survey of the Federal Ca,-ital Terrjtory. p.29.

WIND

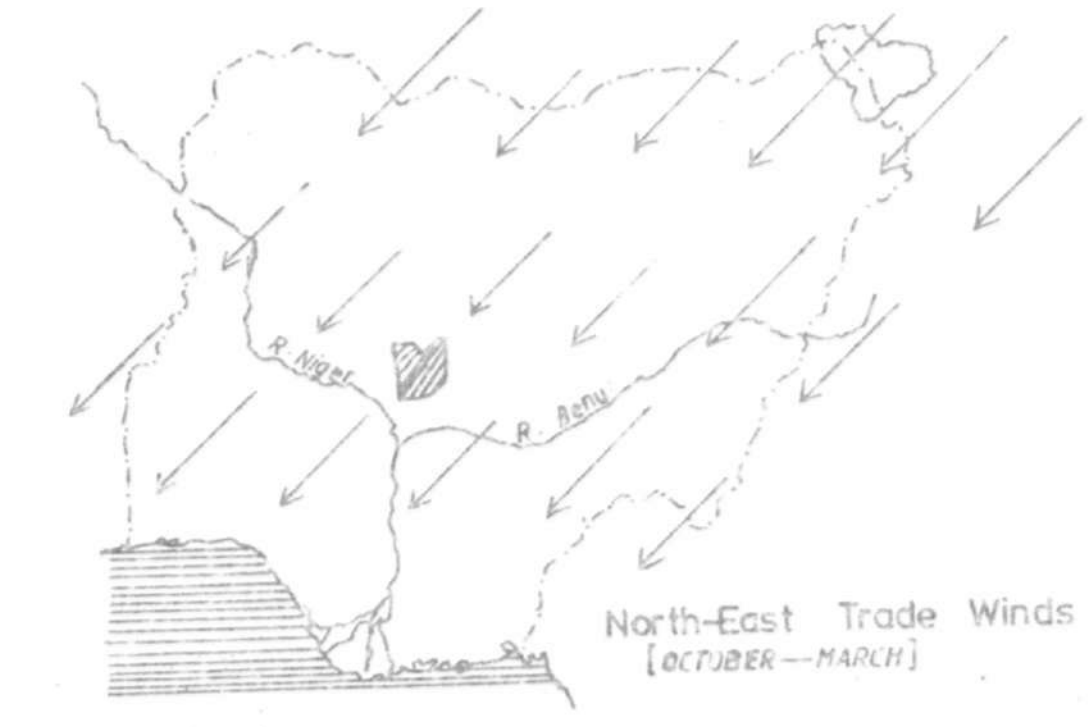
The characteristics ox[1] the prevailing winds that blow over this area are associated with the continental (CT) air mass and t aritime (MT) air mass. Associated trade with the CT air mass are the North-east^winas (NET) and with the MT air mass the South-West monsoon winds (SWM). In March, the prevailing winds are mainly southerly South-West (Fig. 203*) which dominate till September, while the North-east become dominant wind from October to March bringj ith it dry, cloudless but dust-laden conditions assocJ : with the harmattan.

RfclNgAJ

In terms of rainfall, the rains start about the middle oJ -oh or April every year and end between October and November, The duration of the rainy season refore varies from *2l\.0* - 230 days. The total annual rainfall however varies from Abaji to Abuja, for instance, Abaji has 32.4" (1132 mm) while Abuja has 61+.2[11] (1632mm) Though *th^.ve* is enn^j derable variability in these totals from year to year. The mean monthly distribution of raJ 1 (see table 2.03) shows a tendency to extreme concentration in two or three months, for ,. of the annual rains fall during the months of July, , August^ and September.

FIG. 2.03

PREVAILING WINDS OVER F.C.T



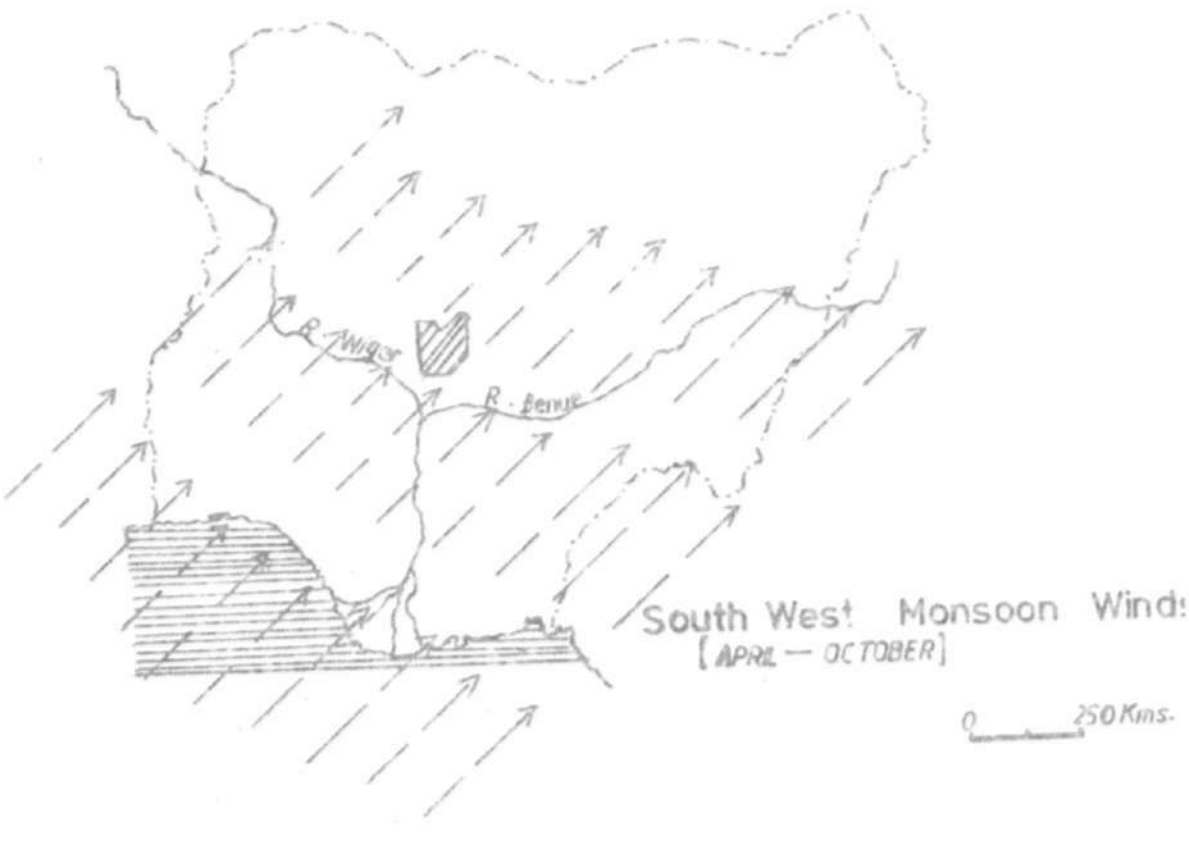


TABLE 2.03

MEAN MONTHLY RAINFALL

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	YEAR TOTAL	NO. OF YEARS
(Ins)	0.18	0.46	2.21	3.87	6.00	5.50	6.72	6.72	8.19	5.31	0.59	0.08	45.79	48 to
(mm)	4.6	11.7	55.25	96.8	10.0	137.5	168.0	168.0	204.8	132.8	13.8	2.0	1145.5	1976

Source: Report of the Geological Survey of the Federal Capital Territory, p.40.

SOIL

The soil characteristics of Abaji are generally of sandstone formation. (Fig. 2.C4). The soil's parent materials are all acidic; with a predominance of quartz in their composition. The soils are generally of sandy loam to clay loam. The soils are deep with abundant quartz and schist gravel. They have iron concretions and well drained.

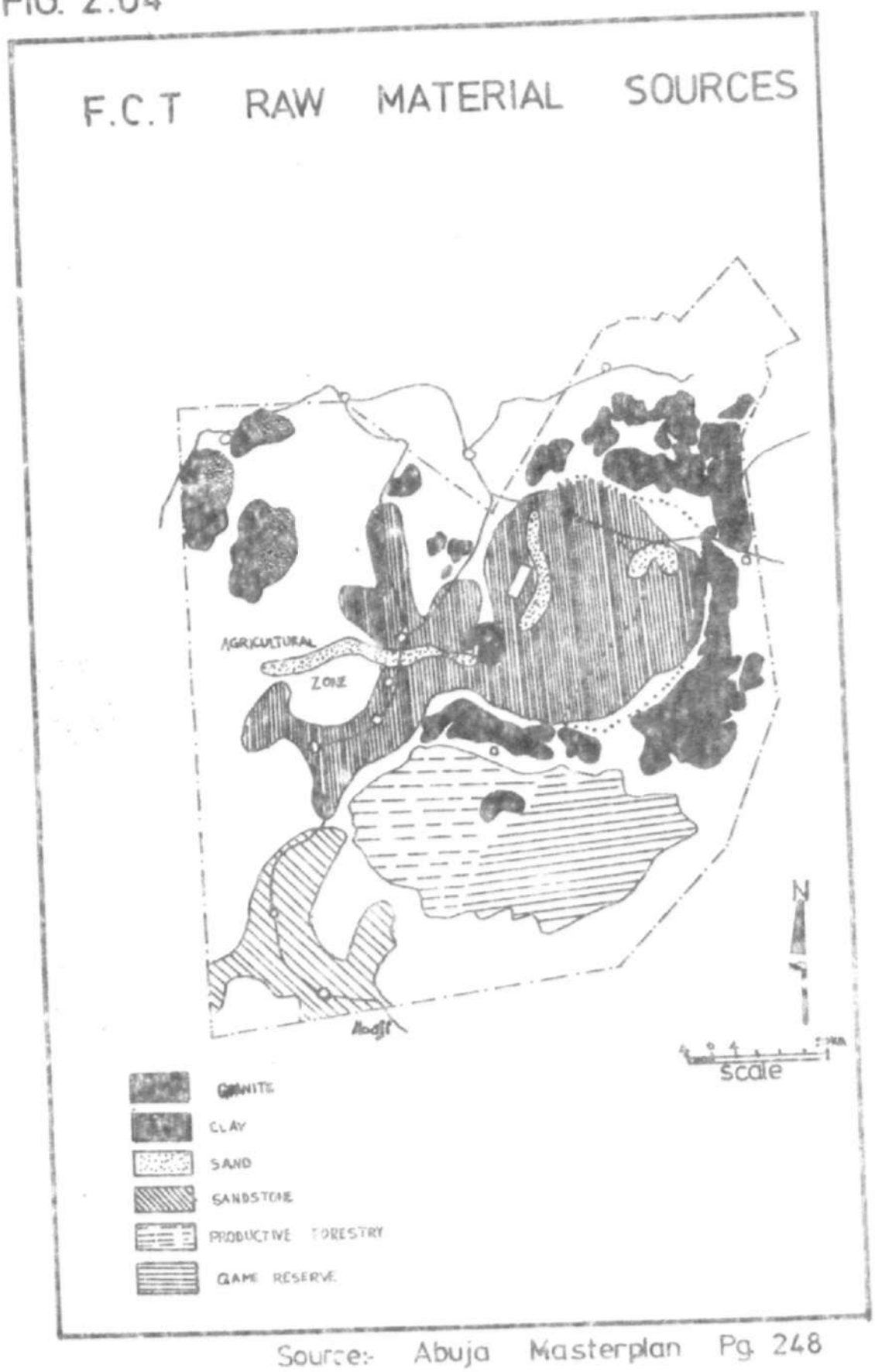
2.20 OLD ABAJI

The original siting of the village in such an hilly area must have got some defence or refuge considerations. And the inhabitants later decended to the low level area during the period of peace for agricultural activities.

The village is a small one with a population of about 11,000[4]. It is a nucleated type, i.e. compact. settlement which consists of disorderly laid houses, the narrow and irregular spaces between them passing for streets. Compounds with regular mud houses are surrounded by high mud walls with single entrance. The walls of the compounds are almost continuous. And some compounds have order in the layout of houses within them. The houses of female members of the compound joined together to form a continuous wall roughly semi-circular with the male's houses.

[4] FCDA Resettlement Survey conducted within the Federal Capital Territory in 1980-81.

FIG. 2.04



Source:- Abuja Masterplan Pg. 248

The economy of the inhabitants is rurally based, depending on small-scale or subsistence agriculture producing relatively very meagre income This state of low income is reflected in the settlement structure. The structure is that unplanned one of closely-packed and jambled buildings of low quality.

Generally, Abaji village is a stable traditional settlement with a village head and few community facilities like a primary school and a rural health centre.

2.30 PHYSICAL PLANNING CONCEPT OF NEW ABAJI

Abaji village is one of the few settlements within the Federal Capital Territory recommended by the masterplan for Abuja the new Federal Capital City of Nigeria to be developed as satellite towns. Considering its location[5] from the capital and the raw materials available within its environ Abaji is to be a major industrial centre with an agricultural and building construction base. (See Fig. 2.04).

Inter Designs Partnership Consultants are the Federal Capital Development Authority (FCDA.) appointed physical planning Consultants to handle the planning of the proposed new town of Abaji

[5] Abuja Master Plan recommends that all major industrial activities be located elsewhere within the Federal Capital territory but not within the City of Abuja.

ABAJI

TOWN LANDUSE

Proposed by Inter Designs Partnership.

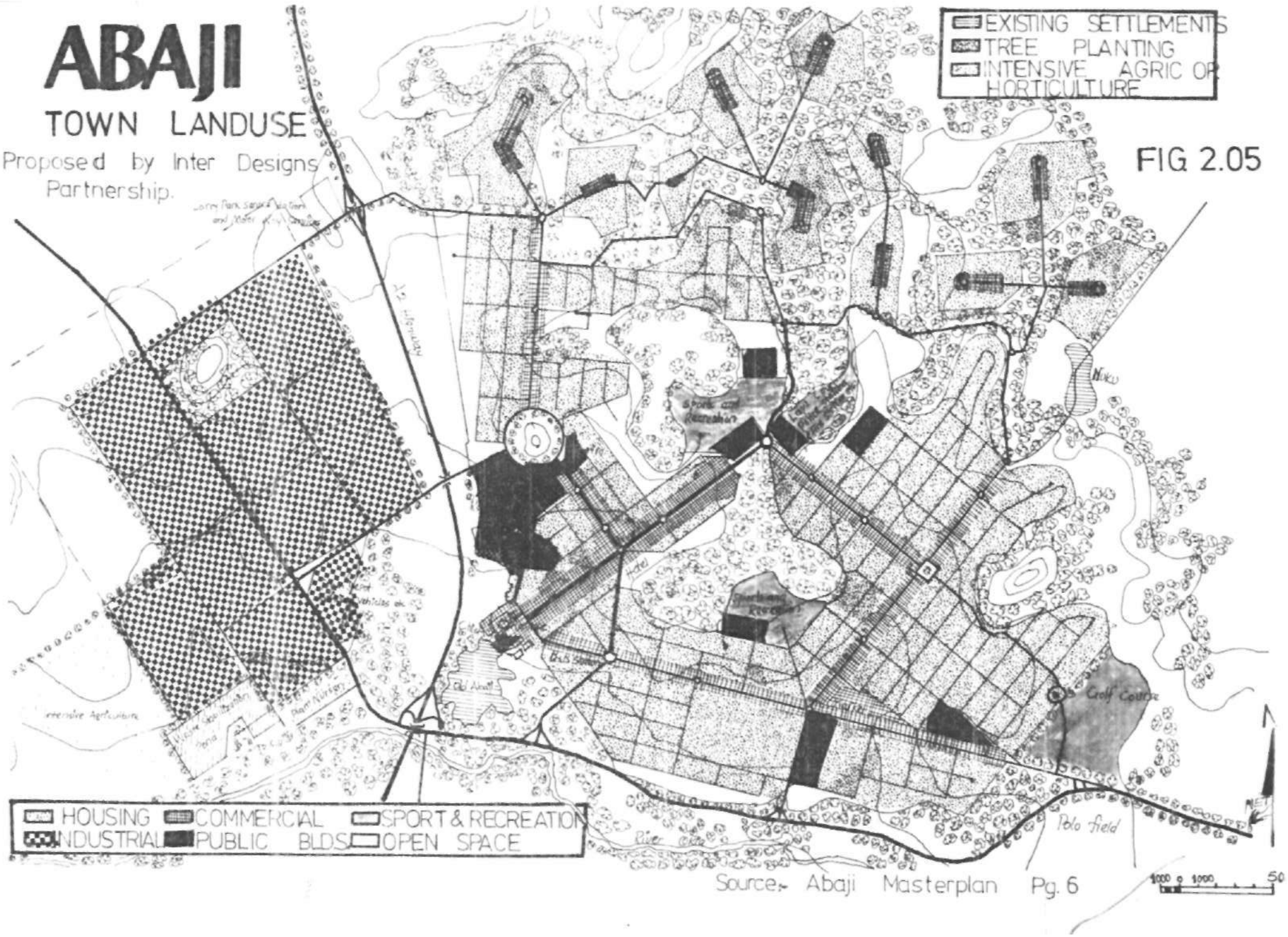


FIG 2.05

Source:- Abaji Masterplan Pg. 6

The basic concept adopted by the consultants has attracted some comments and suggestions.

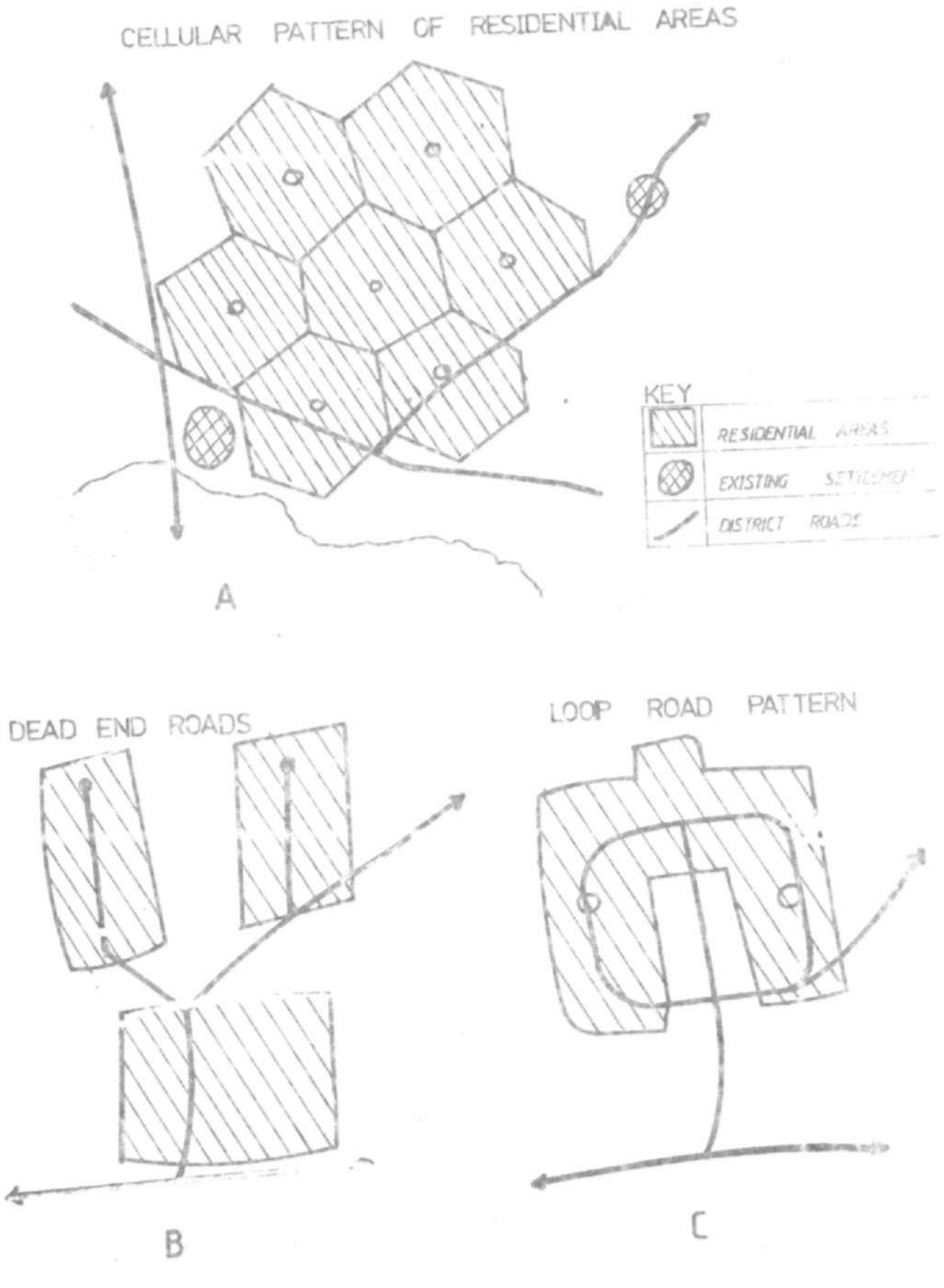
Street Pattern

Though the grid pattern system of town has some advantages like its regular pattern of streets and blocks aiding easy street address system, enabling implementation works to be set out, constructed and extended easily; It is highly undesirable for residential areas. It allows traffic to travel at speed. The numerous cross junctions arising from this pattern are not encouraged in any residential area. Also there is a problem of uncontrolled infilling of the green belts as population increases unless there is effective development control. Experience has shown that infilling proved often to be out of keeping with the original grid pattern plan.

Furthermore, a grid of any kind appears to be rigid imposition on the natural landscape which encourages grading and filling giving rise to formations for rows of monotonous streight streets and pits of erect building.

Considering the site conditions of Abaji a land mainly hilly and of dissected terrain, cellular (Fig. 2.06) Planning Pattern should have been adopted here. This cellular pattern gives a

FIG. 2.06


CELLULAR PATTERN OF RESIDENTIAL AREAS
KEY
RESIDENTIAL AREAS
EXISTING SETTLEMENT
DISTRICT ROADS
A
DEAD END ROADS
B
LOOP ROAD PATTERN
C

traditional pattern of roadnetwork defines clearly the planning units (neighbourhood, community units). It will make the Plan form to be compact.

Industrial area

The idea of dividing the town into two distinct categories of residential and industrial with a major highway is not all that desirable. The industrial area is the major source of primary employment which generates alot of both vehicular and pedestrian traffic crossing from one part of the town to the other. Though there is a provision for two under-passes often people tend to neglect them and cross the highway indiscriminately at other points. To arrest this situation an alternative site could be sought for the industrial area which should be on the same side of the highway with the residential section of the town.

The proposed location of the Industrial area by the consultant is an oversight without considering the direction of the prevailing wind over the area. The location of the industrial areas in relation to the residential areas of the town is not conducive but injurious to human health. Hence my proposal for new industrial location as shown in Fig. 2.37.

FIG. 2.07 PROPOSED NEW INDUSTRIAL AREA



Commercial area

The commercial areas are placed along all the district streets of 80 meters right of-way running through the whole of the town. This is a similar situation that exists in Kaduna Town at present. This system of distribution of commercial areas within the town does not allow the urban system to function well. The streets will be filled up with hawkers, encourages street parking both causing some traffic holdup all over places in the town. There will be no free movement for the pedestrians. Commercial activities should be concentrated in specific places in hierarchies consciously planned for the uses.

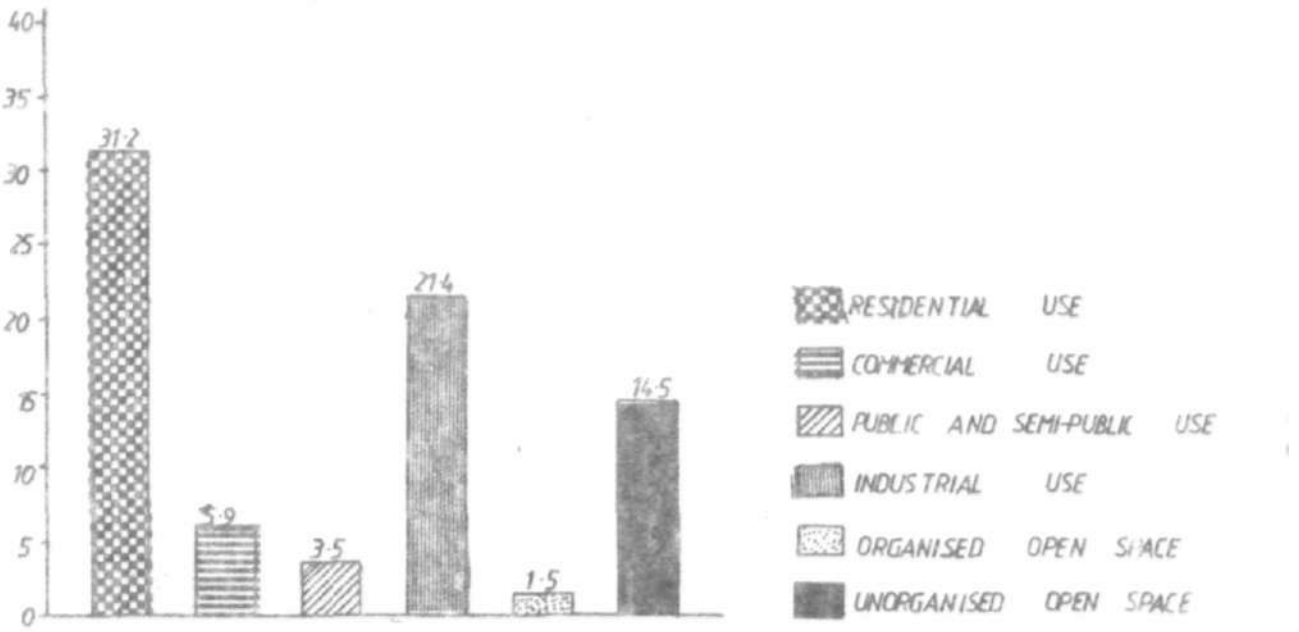
3.32 PROPOSED GENERAL LANDUSE OF THE DRAFT MASTERPLAN

As shown in Fig. 2.05 the table below shows the percentage of land allocated to various uses. The percentage of the proportion of these landuses is also shown in a graph form (see Fig. 2.08) to show vividly their relationships.

EVALUATION OF INTER DESIGNS PARTNERSHIP PROPOSAL

FIG. 2.08

PERCENTAGE OF PROPORTION OF LANDUSES



PERCENTAGE OF CENTRAL AREA USES



TABLE 2.04

Evaluation of landuse proposed by Inter Designs Partnership Consultants.

FUNCTIONS	AREA IN HA	% OF TOTAL AREA	REMARKS
Residential	639.46	33.65	less
Commercial	121.00	6.37	More
Public & Semi public	71.41	3.76	less
Industrial	440.00	23.16	More
Parks and Open spaces	335.13	17.64	The nature of the area naturally increases it.
Roads and Streets	293.08	15.42	Adequate.
Total	1,900.08	100.00	

The above table shows that the total land area for the proposed new town is 1,900.08 Ha. While the town is proposed for 150,000 people. This shows an average density of 78.94 persons/ha. This density is too high for any Nigerian town. The general situation obtained in Nigeria is allocation of large plot sizes hence department of Urban and Regional Planning, A.B.U., Zaria uses an average density of 55 persons/ha in preparing some master-plans for some Nigerian towns. While in India - a

developing nation - with much higher population than Nigeria and favours smaller plots uses 75 persons/ha.

Using 55 persons/ha as a standard the total area of land for the new town is 2,727.27 ha. But considering the nature of the topography of the area which is rugged with steep slopes the total area of land for the town should have been 3,000 ha. of an average density of 50 persons/ha.(See Appendix 1)

Remarks are based on the standards used in allocating land to various uses in an industrial based town.

Based on two basic parameters, i.e. 50 persons/ha and acceptable standards for allocating land to different uses in a town that is industrially based, table 2.05 below shows suggested landuse proportions for the new town.

TABLE 2.05

SUGGESTED LANDUSE PROPORTIONS FOR ABUJI NEW TOWN

FUNCTIONS	AREA IN HA.	% OF TOTAL AREA REQUIRED.	% ADOPTED
Residential	1,350	42-45	45
Commercial	120	3-4	4
Public & Semmi Public	360	11-12	12
Industrial	420	12-14	14
Parks and Open Spaces	270	8.5-9	9
Roads and Streets	420	13-14	14
Others	60	2	2
Total	3000	88.5 - 100	100

Land allocation is based on standard proposed by Kulshrestha,[6] S.K. for Indian Urban Centres for classifying their different landuse categories by their functions.

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TABLE 2.06

Proposed Landuse Proportions for Abaji Town Centre

FUNCTIONS	AREA IN HA.	% OF TOTAL AREA
Commercial use	43.2	60
Mixed uses	24.48	34
Public and Semi Public use	4.32	6
TOTAL	72.00	100

The consultants submitted only two reports by the time this project was been undertaking by me. These are Preliminary and Draft Master Plan reports. My review and analysis is based on the proposed draft masterplan of Abaji.

2o31 GENERAL *LU*[]) \\ \J!] j _ . OF THE DRAFT MASTERPLAN

The physical planning concept adopted for the planning of New Abaji is that of grid pattern Street planning. As shown in Pig. 2.0!$ the proposed new planned town of Abaji is a grid town divided into sections by A2 highway, running north-south at this point. The western half of the town Las tiie main industrial areas while the eastern half contains the central area, the residential and the main recreational area;',.

The main roads running through the town form the district streets according to the report. These district streets link up to form a ribbon of commercial and administrative activity areas running throughout the town.

There is a generous provision of open spaces within the grid system owing to the topographical characteristic of the site.

ABAJI

TOWN LANDUSE

Proposed by Inter Designs Partnership.

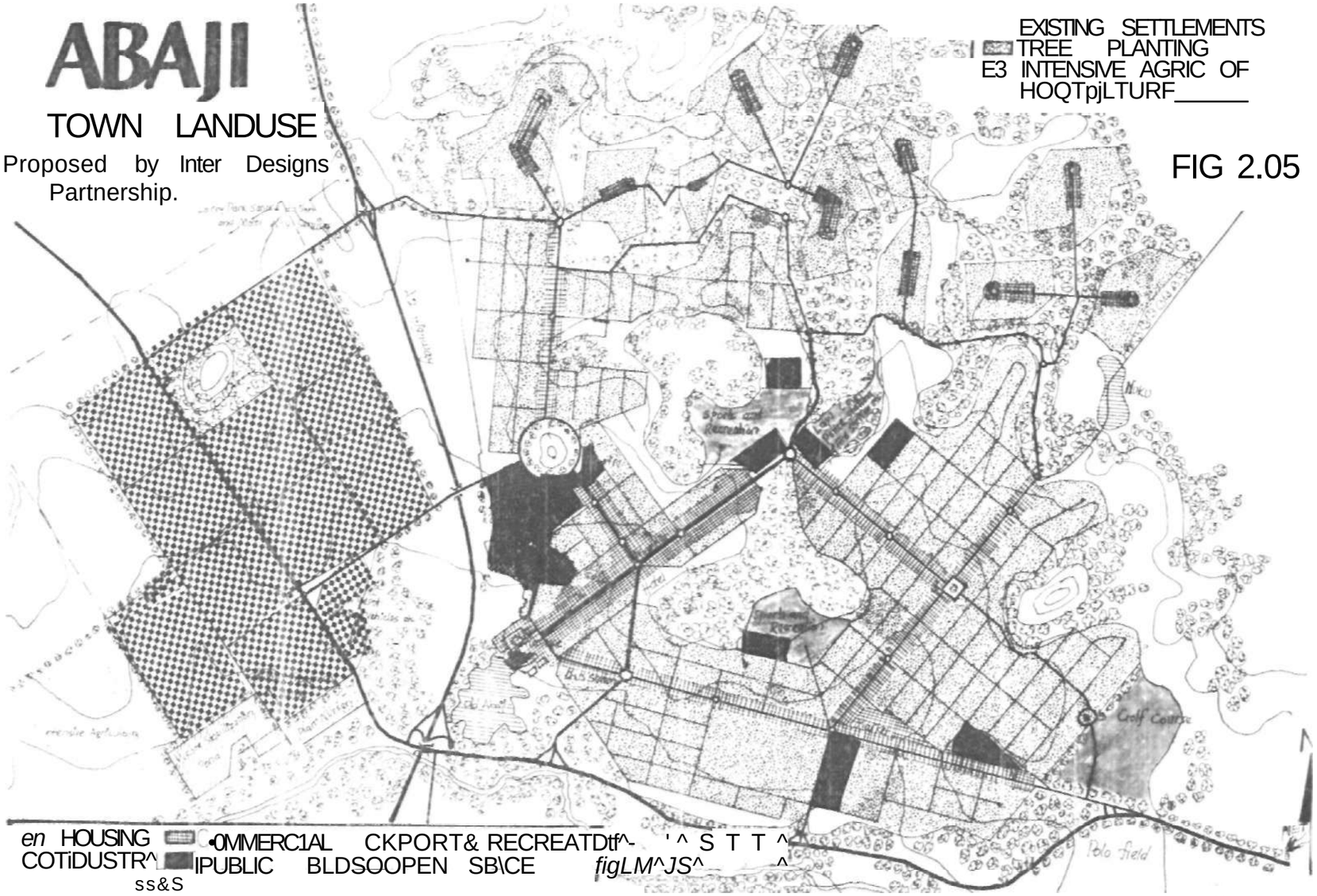


FIG 2.05

en HOUSING •0MMERC1AL CKPORT& RECREATDtf^- ' ^ S T T ^
COTiDUSTR^ IPUBLIC BLDSOOPEN SB\CE figLM^JS^ ^
ss&S

Source- Abaji Masterplan Pg. 6 /*&! %™ >-4c

The basic conce] t adopted by the consultants has attracted some comments and suggestions.

Street .Pattern

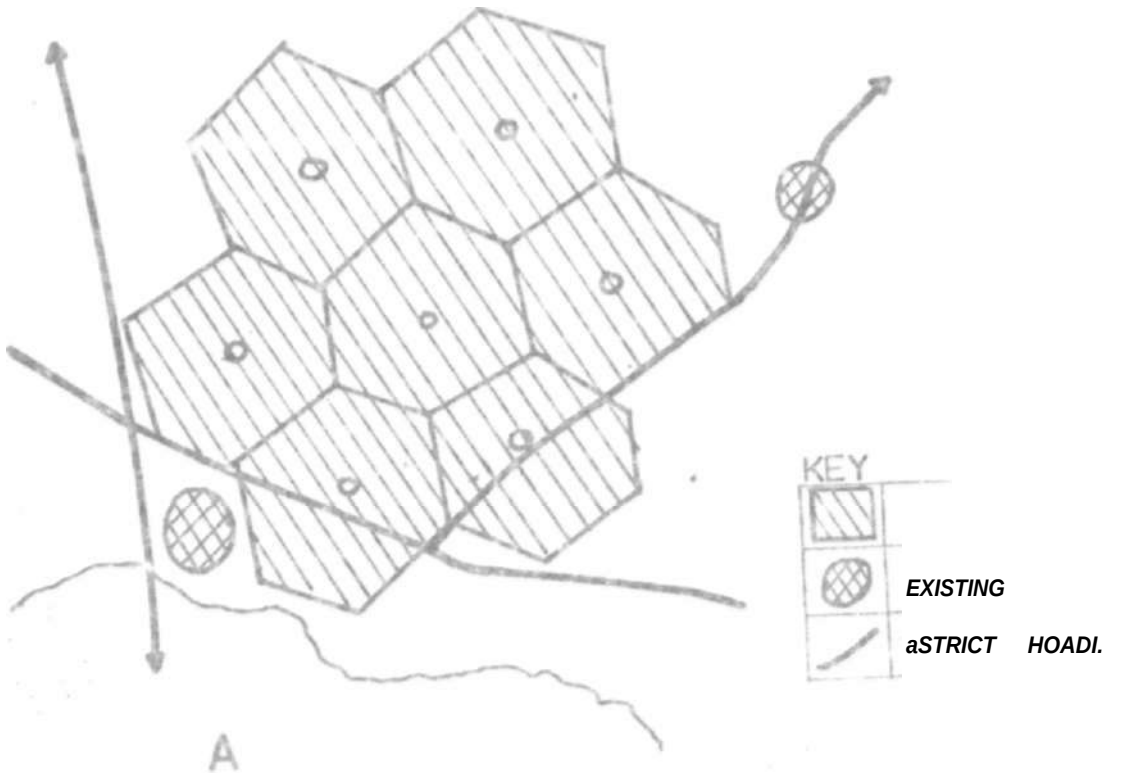
Though the grid pattern system of town has some advantages like its regular ixittern of streets and blocks aiding easy street address system, enabling implementation works to be set out, constructed and extended easily; It is highly undesirable for residential areas. It allows traffic to travel at speed. The numerous cross junctions arising from this pattern are net encouraged in any residential area. Also there is a problem of uncontrolled infilling of the green belts as population increases unless there is effective development control. Experience has shown that infilling proved often to be out of k< aping with the original grid pattern plan.

Furthermore, a grid of any kind appears to be rigid imposition on the natural landscape which encourages grading and filling giving rise to formations for rows of monotonous streight streets and pits of e PEO t bu iId in- .

Considering the site conditions of Abaji a land mainly H-illy f dissected terrain, cellu-lar (Pig. 2.0:6) Planning Pattern should have been adop tc d he re. This cellular pa t te rn give s a

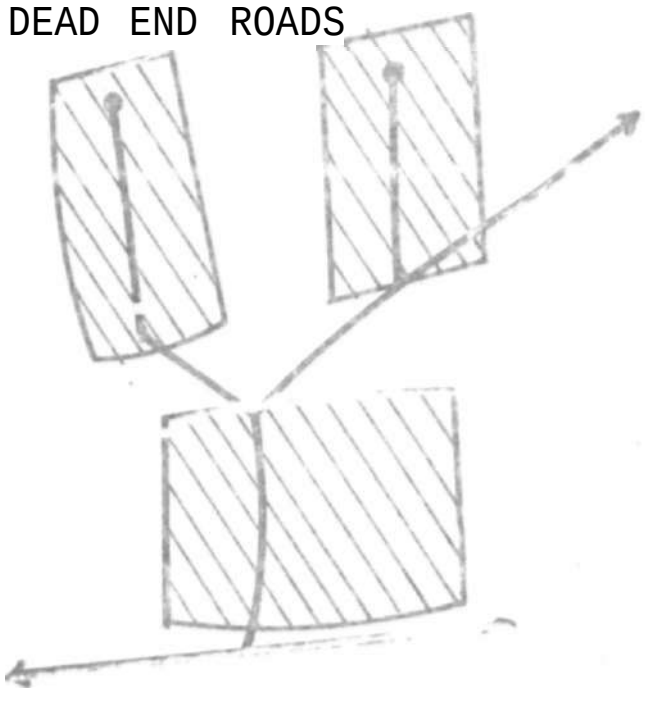
F1G.2.06

CELLULAR PATTERN OF RESIDENTIAL AREAS



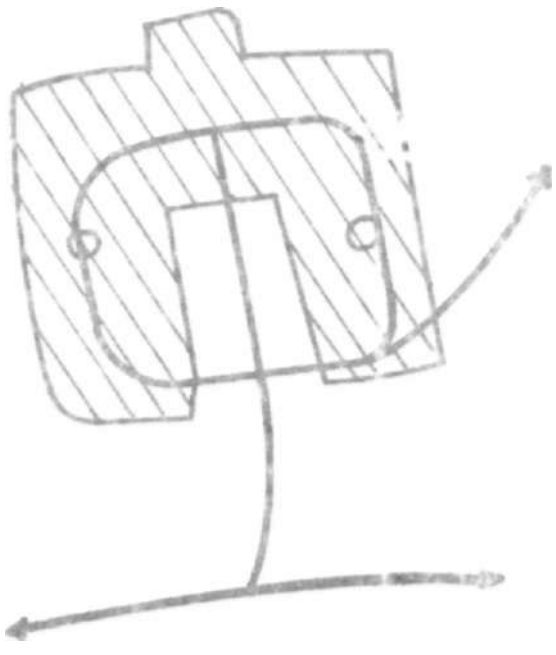
A

DEAD END ROADS



B

LOOP ROAD PATTERN



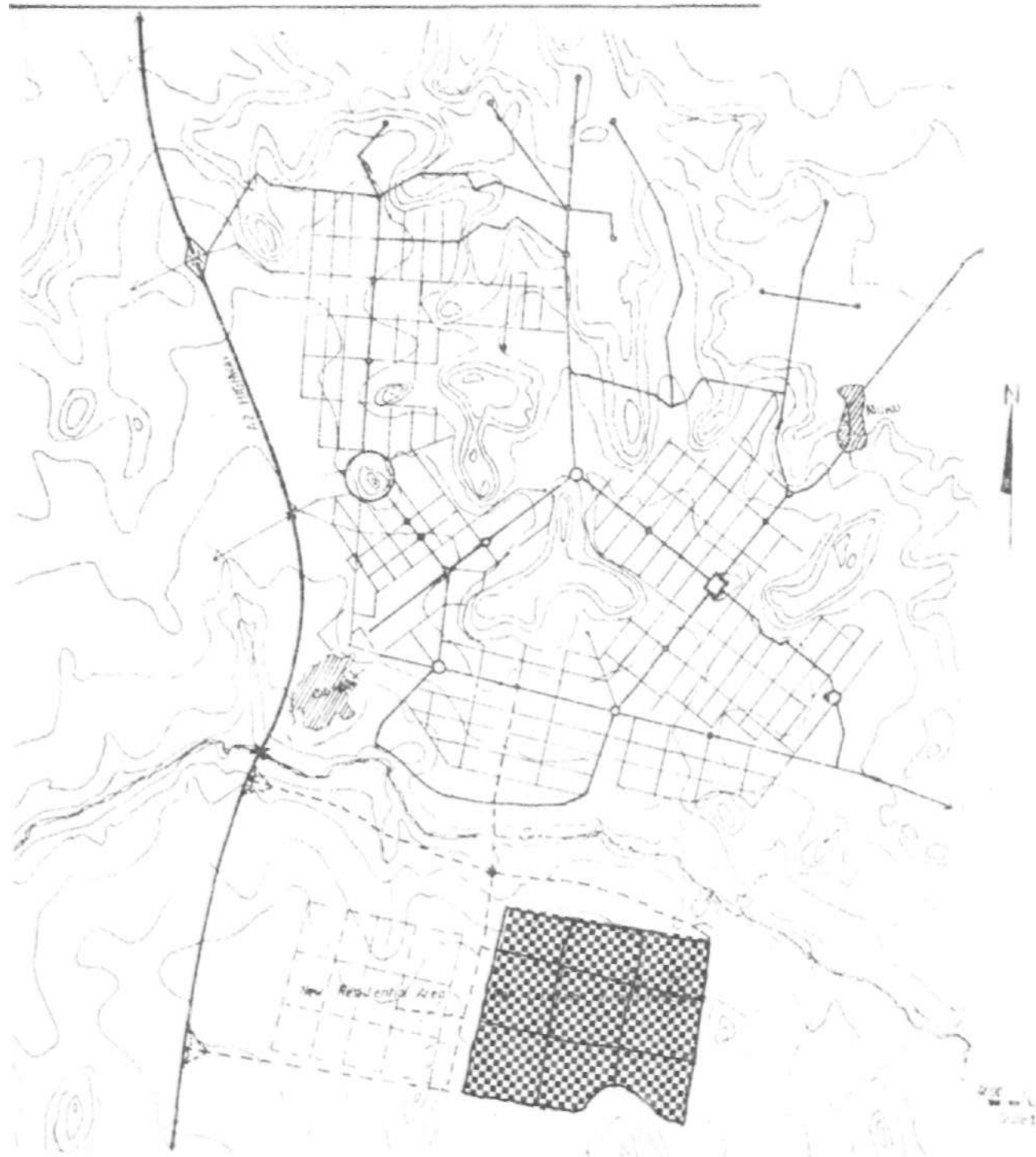
traditional pattern of roadnetwork defii clearly the planning units (neighbourhood, community units). It will make the Plan form to be compact.

Industrial area

The idea of dividing the town into two distinct categories of nesidontial and industrial with a major highway is not all that desirable. The industrial a is the major source of primary employment which -venerates alot of both vehicular and pedestrian traffic crossing from one part of the town to the ether. Though there is a provision for two under-passes often people tend to neglect them and cross the highway indiscriminately at other points. To arrest this situation an alternative site could be sought for the industrial area which should be on the same side of the highway with the residential section of the town.

The proposed location of the Industrial area by the consultant is an oversight without considering the direction of the prevailing wind over the area. The location of the industrial ai 8 in relation to the residential areas of the town is not conducive but injurious to human health. Hence ny proposal for new industrial location as shown in Fig, 2.C?'.

PROPOSED NEW INDUSTRIAL AREA



The industrial area being located here will have the advantage of nearness to water than the former.

Residential Areas.

The plan of the new town does not consider the groupings of residential areas into communities of different hierarchies. The modern concept in planning emphasizes concept of groupings, the settlement being subdivided into subunits which are hierarchical inter-related like districts, communities, residential sectors and sub-residential sectors. This concept is desirable as it shows a polynuclear structure with one prominent centre. Not only has it been found useful in modern planning, it has a cultural under-pinning here, this would tend to reinforce the traditional socio-spatial structure of our people.

From the proposed landuse of the draft master-plan some residential areas in the northern part of the planned area are served with dead and stread without any connection between the residential areas (Fig. 2.C6) Loop pattern of road should have been planned for connecting the residential area (See Fig. 2.C5).

Commercial area

The commercial areas are placed along all the district streets of 80 meters right of-way running through the whole of the town. This is a similar situation that exists in Kaduna Town at present. This system of distribution of commercial areas within the town does not allow the urban system to function well. The streets will be filled up with hawkers, encourages street parking both causing some traffic holdup all over places in the town. There will be no free movement for the pedestrians. Commercial activities should be concentrated in specific places in hierarchies consciously planned for the uses.

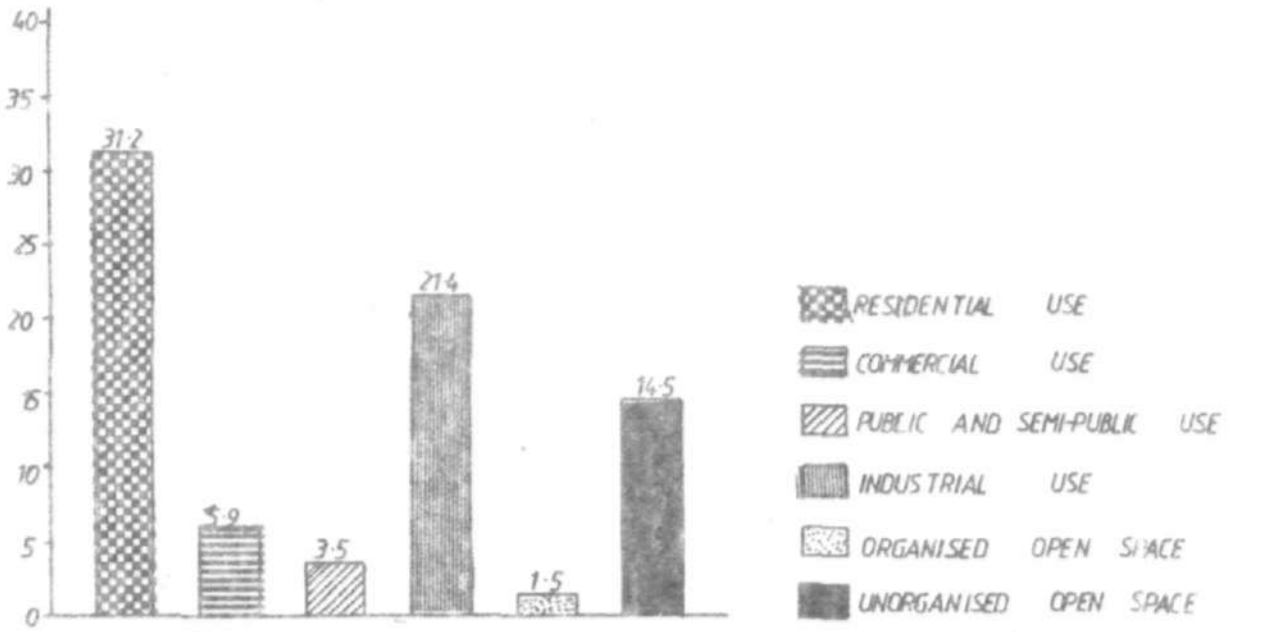
3.32 PROPOSED GENERAL LANDUSE OF THE DRAFT MASTERPLAN

As shown in Fig. 2.05 the table below shows the percentage of land allocated to various uses. The percentage of the proportion of these landuses is also shown in a graph form (see Fig. 2.06) to show vividly their relationships.

EVALUATION OF INTER DESIGNS
PARTNERSHIP PROPOSAL

FIG. 2.08

PERCENTAGE OF PROPORTION OF LANDUSES



PERCENTAGE OF CENTRAL AREA USES



TABLE 2.04

Evaluation of landuse proposed by Inter Design Partnership Consultants.

FUNCTIONS	AREA IN HA	% OF TOTAL AREA	REMARKS
Residential	639.46	33.65	less
Commercial	121.00	6.37	More
Public & Semi public	71.41	3.76	less
Industrial	440.00	23.16	More
Parks and Open spaces	335.13	17.64	The nature of the area naturally increases it.
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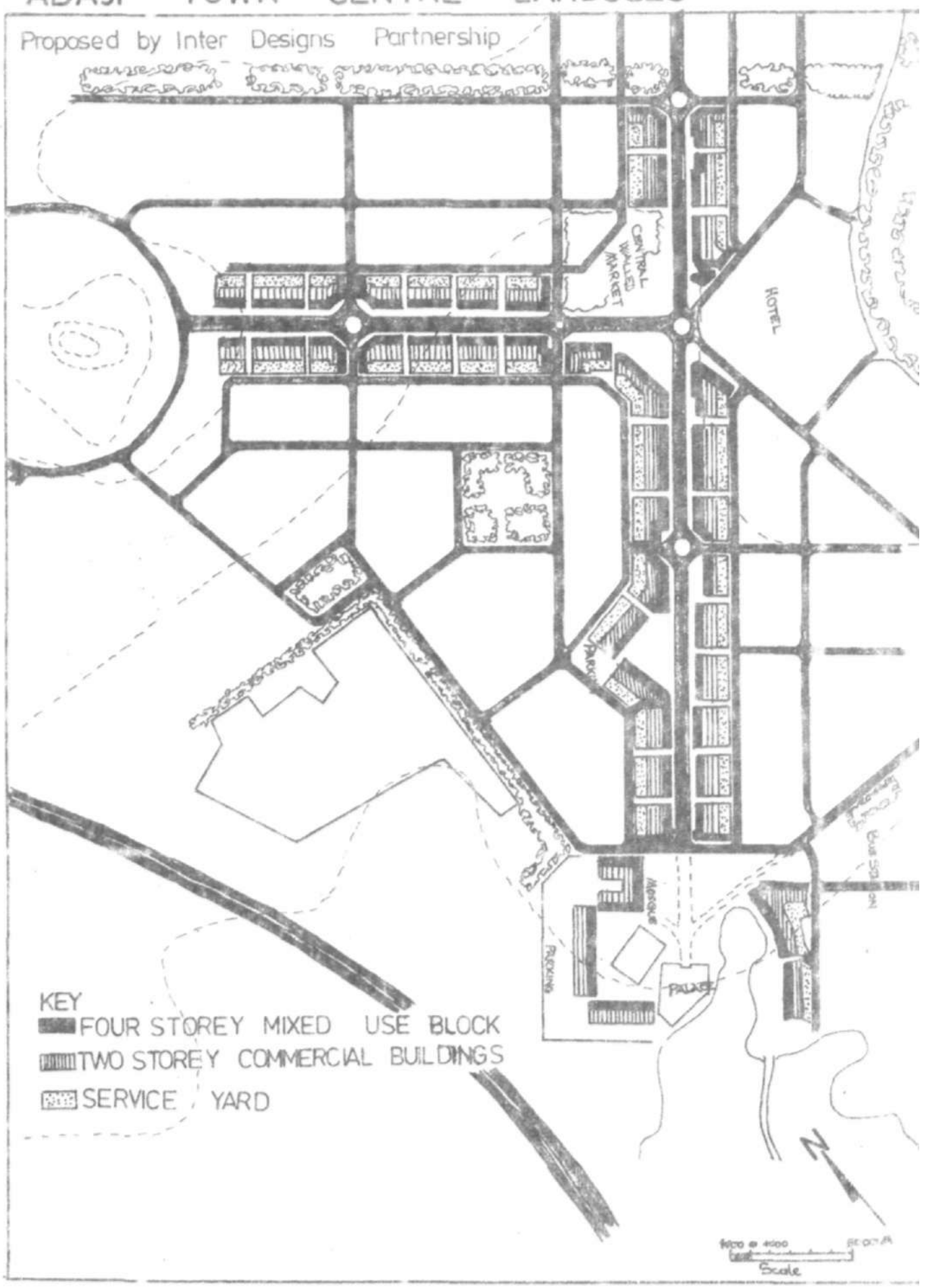
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Mixed uses	24.48	34
Public and Semi Public use	4.32	6
TOTAL	72.00	100

FIG. 2.09

ABAJI TOWN CENTRE LANDUSES



The arrangement of buildings in the town centre shown in fig. 2.09 could be seen as a short sight on the part of the Consultants. The throughfare strects of the town centre filled up with four-storey buildings all through look rather monotonous. And closely following behind are series of two-storey buildings and the service yards next. The arrangement would have been tolerable if the lower building front the higher ones, and more desirable if the buildings were mixed.

For a town centre to perform its functions as the nerve head of the town's cultural socio-econonic and business life it should accommodate such essential central facilities as civic square, cinema/theatre, town hall, library, offices, mosque/church, etc. The proposed town centre in the draft masterplan lacks these facilities.

The idea of having a town centre which is bisected by a dual carriage highway is undesirable. Under no circumstance should such a small town centre for small town be planned in that manner. This type of road will only encourage hawkers and consequently causing traffic congestion in the town centre.

The centre lacks pedestrian walkways and this makes it highly unsafe for the pedestrians to move within the centre.

The proposed centre has no defined function that makes it different from the rest parts of the town. The district roads or streets that make the town centre are same running through the town and they are lined up with commercial activities just as the town centre.

The only green area within the vicinity of the central area is not functionally integrated in the town centre as a whole.

However, the consultants have achieved some success to certain extent in their site location for the town centre in terms of centrality and integrating the new town centre with the existing settlement.

The proposed town centre lacks the flexibility for future expansion incase the need arises. The short arm of the 'T' shape town centre ends at the foot of a knol while the ends of the long arm terminate in the south at the existing settlement and in the north-East at the round about abruptly. The numerous and big round abouts proposed for the central part of the town are undesirable, "T" junctions are rather preferable.

ROPOSED SITE FOR TOWN CENTRE : ALTERNATIVE ONE

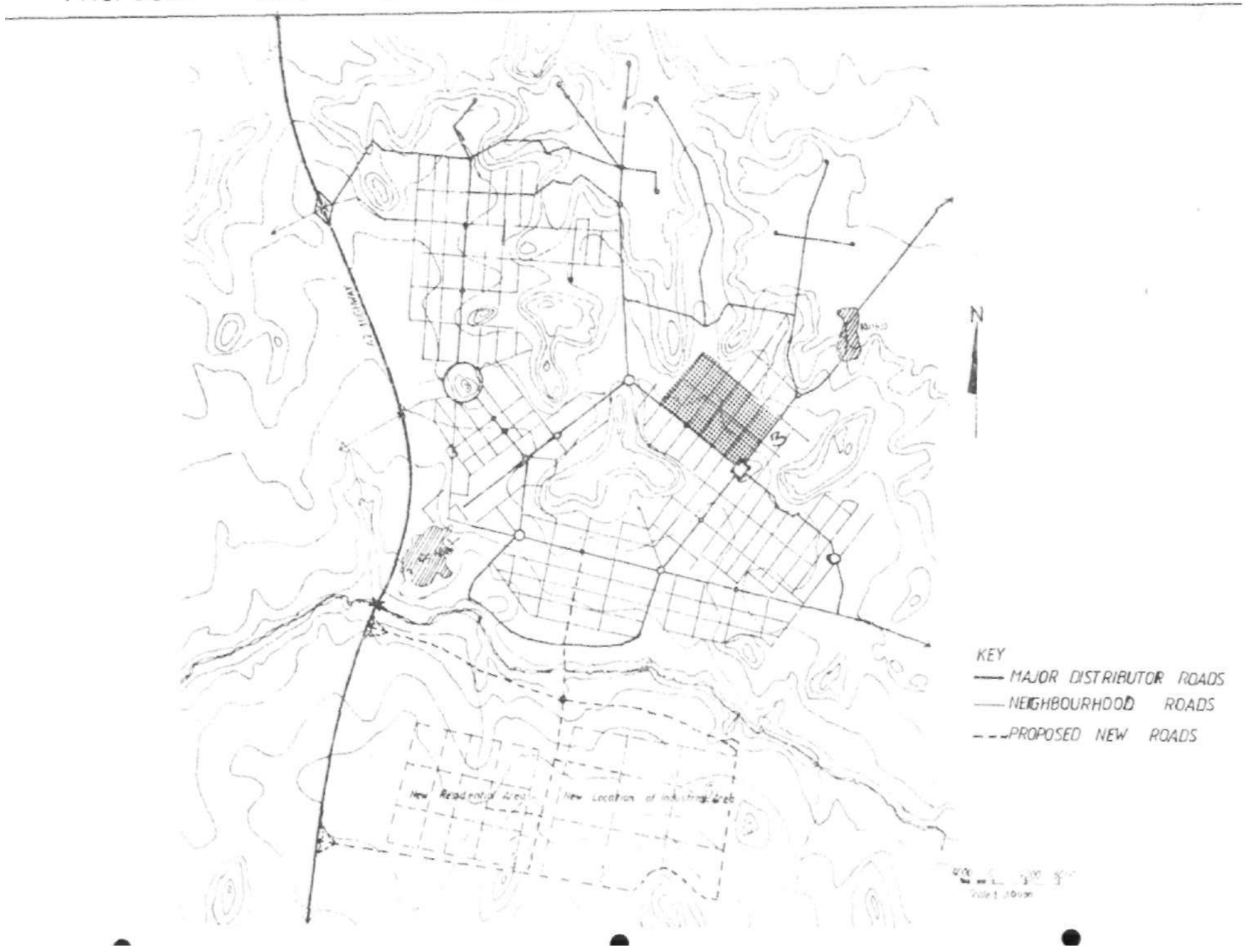
FIG. 2.10A



PROPOSED SITE FOR TOWN CENTRE : ALTERNATIVE TWO FIG. 2.10B



PROPOSED SITE FOR TOWN CENTRE : ALTERNATIVE THREE FIG. 2.10C



(v) That the site should be centrally located, and

(vi) That the site should have less physical constraint for future expansion.

Site 1 shown in Fig. 2.10A does not satisfy conditions (ii) and (vi). Site 2 shown in Fig. 2.10 B satisfies all the locational conditions while site 3 shown in Fig. 2.10C does not satisfy conditions (i), (ii) and (v). Therefore, the site for my proposed town centre for Abaji is located at site 2 as shown in Fig. 2.10 B.

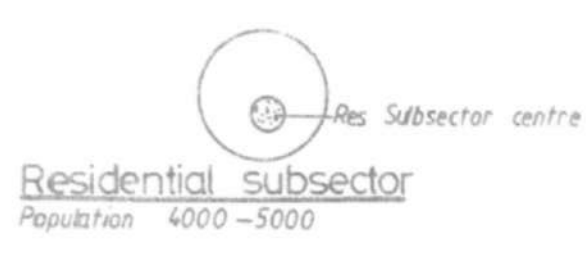
CHAPTER THREE

3.00 PLANNING PROPOSALS AND REQUIREMENTS

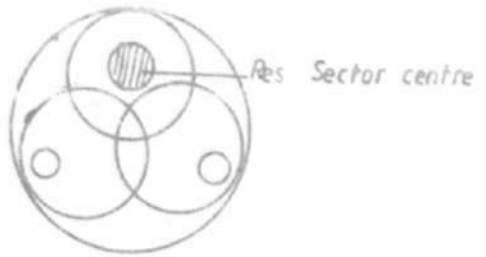
3.10 PLANNING PROPOSALS AT THE TOWN LEVEL

As earlier stated in chapter two, the planning proposals for Abaji town as evident from the draft masterplan neglected the considerations for hierarchical planning units. Hierarchical planning units of the town have direct relevance for the proposed town centre. The units give the town some urban structure of spatial value gradient which makes it possible for the central area of the town to be looked upon as a focal point which provides higher level of services than the centres of the planning units. The units have their own centres which provide some level of services at different parts of the town. The town centre is the top hierarchy of centres within the urban structure which performs all the functions of lower level places plus a group of central functions that differentiates it from, and sets it above, the lower level places. Abaji town is therefore divided into community structure.

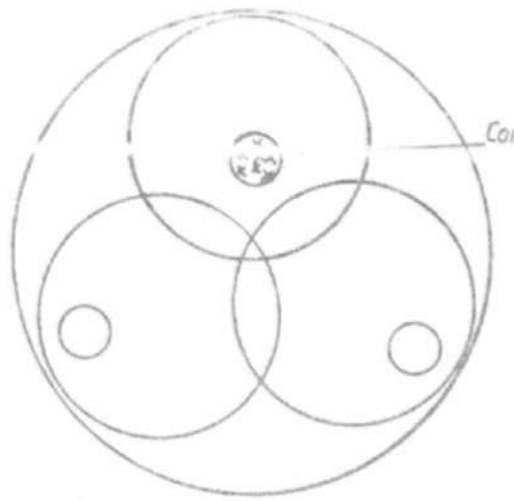
Based on the proposed masterplan the following hierarchy of units is proposed as shown in Fig. 3.01.



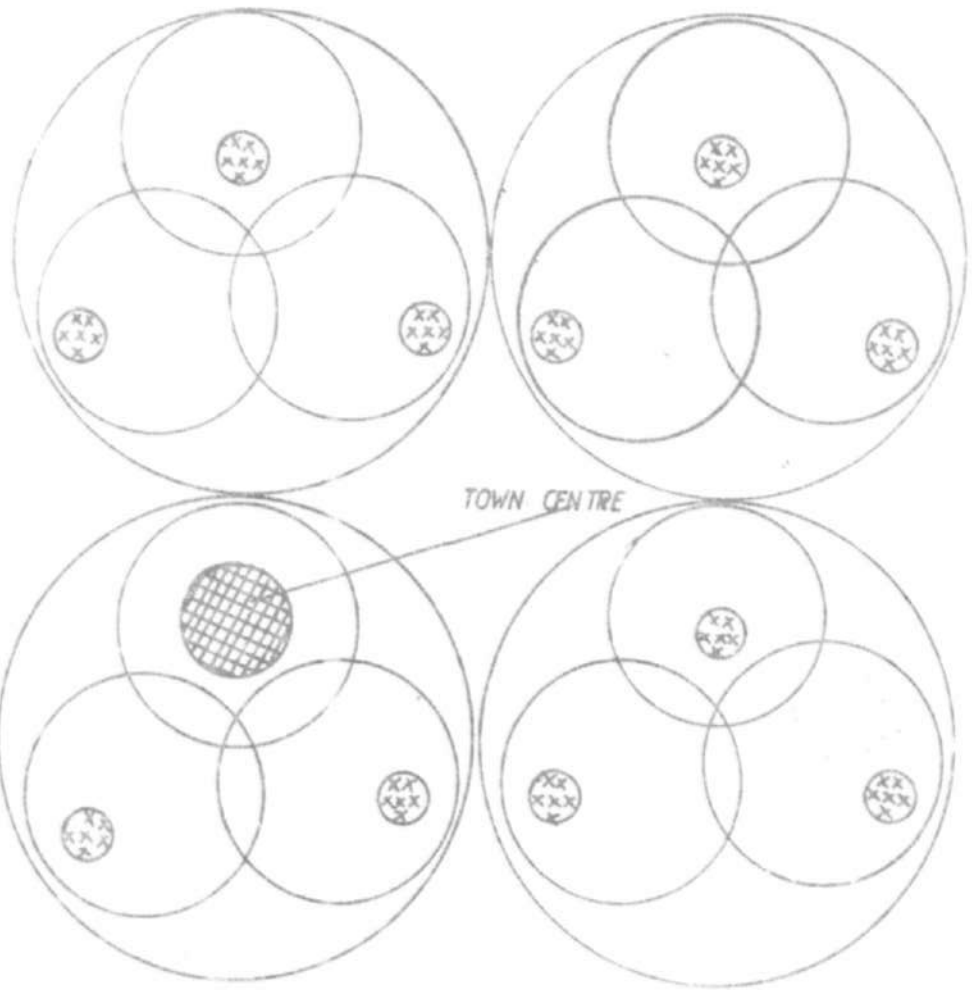
Residential subsector
Population 4000 – 5000



Residential sector
Population 13000 – 15000



Community
Population 40000 – 45000



ABAJI TOWN projected population 150 000

KEY

- Residential Subsector centre
- Residential Sector centre
- Communit centre
- Town Centre

COMMUNITY STRUCTURE
ABAJI TOWN

3.11 HOUSE OR COMPOUND

This is the smallest unit which provides shelter for the family.

3.12 HOUSING CLUSTER

It is a group of residential houses providing accommodation for 750-1000 people.

3.13 RESIDENTIAL SUB-SECTOR

It has a population of 4,000 - 5,000 with a small centre.

3,14 RESIDENTIAL SECTOR

It has a population of 13,000 - 15,000 and is made up of three residential subsectors.

3.15 COMMUNITY

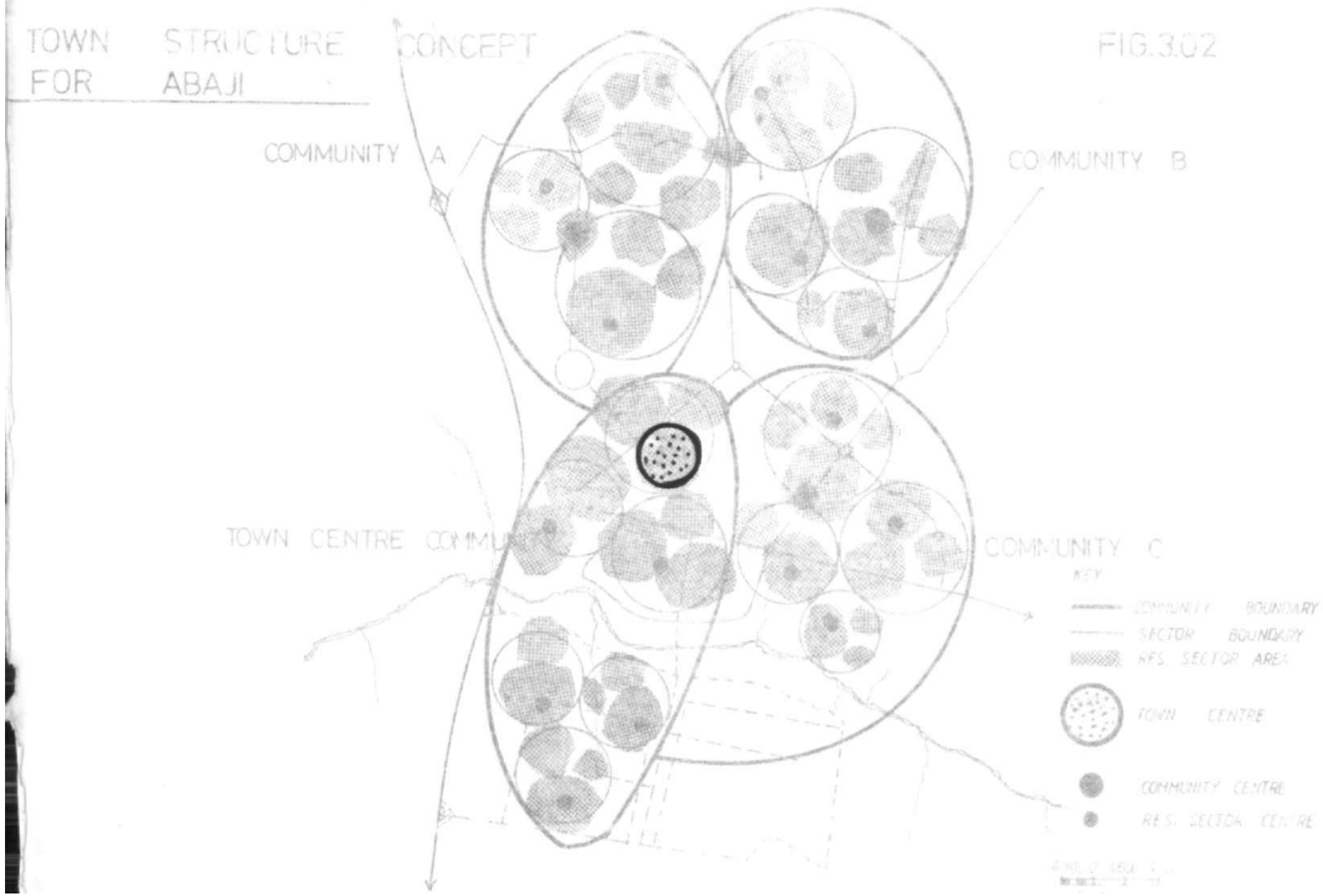
This is the highest level of the planning units hierarchy. The community unit as applied here has a population of 40,000 - 45,000 which comprises of three residential sectors.

3.16 TOWN STRUCTURE CONCEPT

Based on the projected population for Abaji which is 150,000 when it is fully developed and on the proposed units of proposed community structure for the town, four community Units of 35,000-40,000 population each is basically proposed for the entire town as in Fig. 3.02.

TOWN STRUCTURE CONCEPT FIG.3.02

FOR ABAJI



Considering the topography of the area and planning pattern of the town, greater proportion of the inhabitants would reside at the northern part of the town. Even future expansion will take north-east direction hence the proposed two community units called community A and B. It is also envisaged that gross density pattern would be high along the district road running parallel to the river starting from old Abaji or existing settlement. The community proposed around the spine is called community C.

To give a chance for rehabilitation and development of the existing settlement another one is proposed embracing the settlement and the most likely residential area that would grow very close to the industrial area. This unit is called the town centre community.

3.20 PROPOSED ROADNETWORK

As shown in Fig. 2.07 arterial road of 60 metres right-of-way (R.O.W.) have been proposed. One running north-sough connects the proposed new industrial site with the town centre. This is joined to two other proposed arterial roads connecting the industrial site to the A2 highway Right-of-Way of 45 metres and 30 metres for sub arterial and feeder roads are proposed for the new residential area close to the industrial site.

The proposed arterial road connecting the industrial area with the town centre releases traffic load on the A2 highway and also increases accessibility from the industrial area to residential sectors of the town. A bridge that would be provided across the Okia river on the arterial road would provide an alternative route for the north-south movement from and to Abuja City incase the only proposed one across the river on the highway breaks down.

3.30 HERARCHY OF CENTRES

Based on the proposed structure of the town there are four obvious hierarchicy of centres. These are: the residential sub-sector centre, the residential sector centre, the community centre and the town centre.

These centres distributed all over the town are important for they provide the essential public facilities, utilities and services which serve the people surrounding them.

The residential sub-sector centre is a very small one and the public facilities should be mainly nursery and primary school and a health clinic.

The residential sector centre should have such public facilities like:- Secondary School, Primary health centre, religious places, police station, sport fields, small shopping centre and small market.

While the community centre should have such public facilities like:- Branch Library, Post Office, religious areas, market of 320 stalls, shopping centre of 64 shops, Burial ground and comprehensive health centre.

The town centre is a higher level centre which offers more central functions, has more establishments and functional units, and normally is larger in population size than the lower level centres.

3.40 SCHEDULE OF REQUIREMENTS FOR THE TOWN CENTRE

3.41 COMMERCIAL AND BUSINESS FACILITIES

The central place of any urban settlement its function primarily is to provide goods and services to the entire urban consumers and consumers residing in areas surrounding them. Besides, the proposed satellite towns among which Abaji is one should provide commercial services to help decongest such services provided in Abuja City. The need to provide

adequate space for commercial activities in Abaji town centre is highly necessary. The centre will account for about 20% of the total area allocated to commercial activities in the town. The central elements that come under this category of uses are:- Central Market to meet the more traditional forms of trading with standard stalls, shopping centre, commercial buildings for banks, insurances and other allied businesses.

3.42 CIVIC FACILITIES

The new town will be an administrative centre that will help to decongest services provided at Gwagwalada (the administrative headquarters for Federal Capital Territory). This will reduce the discipline of space and time intravelling to Gwagwalada or Abuja City to obtain these services by the inhabitants. Hence the justification for siting some civic function in its town centre. Abaji is the administrative headquarters for Abaji Development Area (i.e. Local Government Area) and its centres of administration and political power are in the Local Government offices or secretariat. Therefore the location of some civic functional elements like L.G. Offices, the town hall and civic square where political rallies and ceremonial activities are held, in the town centre gives the centre the image of centre of administration and power.

3.43 PUBLIC AND SEMI-PUBLIC FACILITIES

The provision of public and semi-public functions in the town is of great importance. These include police station, post office, fire station, motor park, filling station, etc. For instance, the nature of the town centre which is of intensive mixed landuses generates alot of traffic, therefore, the demand for service and filling station is expected to be high. Similarly, that a large percentage of trips made to and from this area will be by public transport, loading and off-loading station must be provided. Considering the high rate of incident of fire outbreak and various crimes in our town centres call for the provision of police and fire stations here.

3.44 CULTURAL FACILITIES

For the town centre to perform one of its functions as a focus of cultural centre it should contain some cultural elements. Such elements will reflect the cultural image of the town.

3.45 ENTERTAINMENT FACILITIES

These are facilities for recreational activities. It is increasingly important that urban dwellers need some recreational facilities like open air theatre, cinema halls, clubs, etc. Recreation in a socially

acceptable sense involves constructive activities for either the individual or community. Such facilities are medium through which the Urban dwellers make self-expression, exercise his physical self, release pent-up emotions, work off nervous energy, seek challenge and enrich his personality in an urban complex.

3.46 PARKS AND OPEN PLACES

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 size, scale and character'.[7] The town centre needs these open spaces more as they will give the centre a very strong identity and a visitor to the centre a sense of association and direction. Perhaps no single element can better shape and compliment the form of the town centre than well-placed open spaces.

3.47 ROADS AND STREETS FACILITIES

The town centre will not function well if these facilities are not there to facilitate movement within and around the centre.

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[7]Kevin Lynch, 'The Image of the City' Boston: Cambridge Press, 1960 p.18.

3.50 SPACE REQUIREMENTS

3.51 SIZE OF THE TOWN CENTRE

The size of any town centre is based on the projected population of that town by the time it is fully developed. Denver Planning Office use this method for determining the space requirement for the centres of American Cities:

Projected population X 32.5sq.fit (3.0225 sq. metres) while in Britain the Leicester Town Planning Office recommend 1 acre (0.4047 ha) per 1,000 persons to determine the space requirement for the town.

A town with a projected population of 150,000 using the first method has space requirement for its centre as 45.3375 ha. and by the second method as 60.705 ha.

Based on these standards with modification 72 ha. space requirement is recommended for Abaji town centre. This is rather too big a space but this is fair considering the hot climatic condition of our region. This is to adequately cater for open spaces for the town centre. And in addition the excess space is to compensate for the horizontal parking we do in developing countries as opposed to advanced countries' vertical multi-storey parking lots.

3.52 LANDUSE PROPORTIONS AND THEIR SPACE REQUIREMENTS

The table below shows the landuse proportions in the proposed town centre and their space requirements.

TABLE 3.01

Landuse Proportions in the Proposed Town Centre

FUNCTION	AREA IN HA.	% OF TOTAL AREA
Commercial and Business	22.35	31.04
Civic	6.68	9.28
Public and Semi Public	7.39	10.26
Cultural	6.89	9.57
Entertainment	4.4	6.11
Parks and Open Spaces	2.7	3.75
Roads and Streets	8.602	11.95
Others	12.988	18.04
TOTAL	72.000	100.00

Land allocation is based on calculations of space requirements for various elements to be accommodated by the town centre. Space standards

for those elements are based on Professor Vagale[8] recommended space stands and those used for all the Masterplans prepared in the Department of Urban and Regional Planning, Ahmadu Bello University, Zaria.

3.60 SCHEDULE OF REQUIREMENTS AND SPACE STANDARDS.

The space requirements for various functions and their elements are based on calculations on recommended standards by Vagale and the Department of Urban and Regional Planning. The table below shows the summary of the calculations.

The standard used for calculating the parking space for various uses are shown below:-

The base space requirement for a car is 25 - 30m^2 including manoevreing.

For commercial and Business functions 1 car per 92.9m^2 of the total floor area.

For civic functions is 4 car spaces/232.25m^2 of the total floor area.

For Entertainment functions is 1 car space/5-8 seats. For Cultural Functions is 5 car spaces/ 1000 visitors. Same as in cultural for the parks while that of hotel is 1 car space per 5 bedrooms.

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[8] Vagale, L.R. 'Manual of Space Standards for Urban Development in the Western State of Nigeria' Feb.1971, Ibadan.

FUNCTION	ELEMENT	NUMBER REQUIRED	STANDARD USED	AREA IN HA.	PARKING SPACE IN HA.	TOTAL AREA IN HA.	% OF AREA COVERED
Commercial	Control market	1	1 Stall/40 persons 1 ha.for visitors $12m^2$/stall, 1 shop/	4.55	2.45	7	9.72
Business	shops/Stores	1500	100 persons, 30-200 m^2/Shop	8.4	2.71	11.11	15.43
	Banks/Insurance	4	1 bank/15-40,000 people,0.5ha/bank	2.0	0.65	2.65	3.68
	Hotel	1	150 rooms/1.5 ha	1.5	0.09	1.59	2.21
Civic	Magistrate Court	1	1/town	1.0	0.52	1.52	2.11
	Town Hall	1	1/town	1.0	0.52	1.52	2.11
	L.G. Secretariat	1	1/L.G.Area	1.2	0.62	1.82	2.53
	Civic Square	1	1/town centre	1.2	o.62	1.82	2.53
Cultural	Central Mosque	1	1/town,1.5ha/150,000 inhabitants	1.5	1.13	2.63	2.65
	Museum	1	1/town; 1.2ha/50-150 000 inhab.	1.2	1.13	2.33	3.24
	Public Library	1	1/town centre, 0.84 ha./50-150,000 inhabitants	0.8	1.13	1.93	2.68

Public & Seni Public	Fire Station		1/50,000 popn. :f 0.8 ha.	1.6	0.83J	2.U3	3.36	1-2 with a tower.
	Post Office		1/50-150,000 3pn. of 0.8hc	0.6	*Q.kS*	1.26	1.75	1
	Police Station	1	-ditto-	0,8	0.9	1.7	2.36	1-2
	Motor Park	1	1/town centre	1.5		1.5	2.08	
	Pilling 3tation		1/to wn co ntre			£&_	0.69	1
Entertaim::ent	Cinema	1	1/town centre, 1 seat per 150 rsons	1.6	0.6	2.2	J».0o	1
	'Theatre		1/1ov.n centre, 1 seat/150 rsons	J1.6	0.6	2.2	3.06	1
Parks and Crpen Spaces	Parks		1.Ijha./town centl1.I4.	*C.6*		2.0	2.78	–
	Flayfield		0.6 ha/ town cent > 0.6 I		0.1	0.7	0.97	–
Roads and Streets			*12%* of the total! area for town u centre.	J8.6		8.6	11.94	–
	Bus Stops		Width of bus = 2-3 m + 1.5-2E for platforn. So, 5n and rows of ; 2 2 buses^at ati			0.002	0.003	1
Others		T~				12w988—	**18.05**	–
Total						4—LL4 **^6.34 | 15.66; 72.**ooc	**jioo.ooq**	–

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3.61 THE CENTRAL BUSINESS USES

Table 3.03 below shows the landuse proportions of various central business uses and their Floor Area Ratio (FAR) and Ground Floor Coverage (GFC).

TABLE 3.03

Floor Area Ration and Ground Floor Coverage of Commercial and Business Functions.

FUNCTION	FAR	TOTAL FLOOR AREA IN HA.	MAX. GF COVERAGE IN HA.	% OF G.F. COVERAGE ADOPTED
Market	50	3.0	3.0	50
Shops	150	16.68	5.56	50
Banks/Insurances	150	3.99	1.33	50
Hotel	150	2.4	0.8	50
Cinema	50	1.1	1.1	50
Filling Station	60	0.3	0.3	60
Total		27.47	12.09	

$$FAR = \frac{\text{Total Area Under each floor}}{\text{Plot Area}} \times \frac{100}{1}$$

G.F.C. = Modified and adopted as used by the Department of Urban and Regional Planning, A.B.U., Zaria.

From the analysis above the Central Business Height Index is 2.27 while that of Central Business Intensity Index is 91.2%. These standards could be used in delineating the central business area of the town.

CHAPTER FOUR

4.00 DESIGN PROPOSALS.

4.10 SITE CHARACTERISTICS.

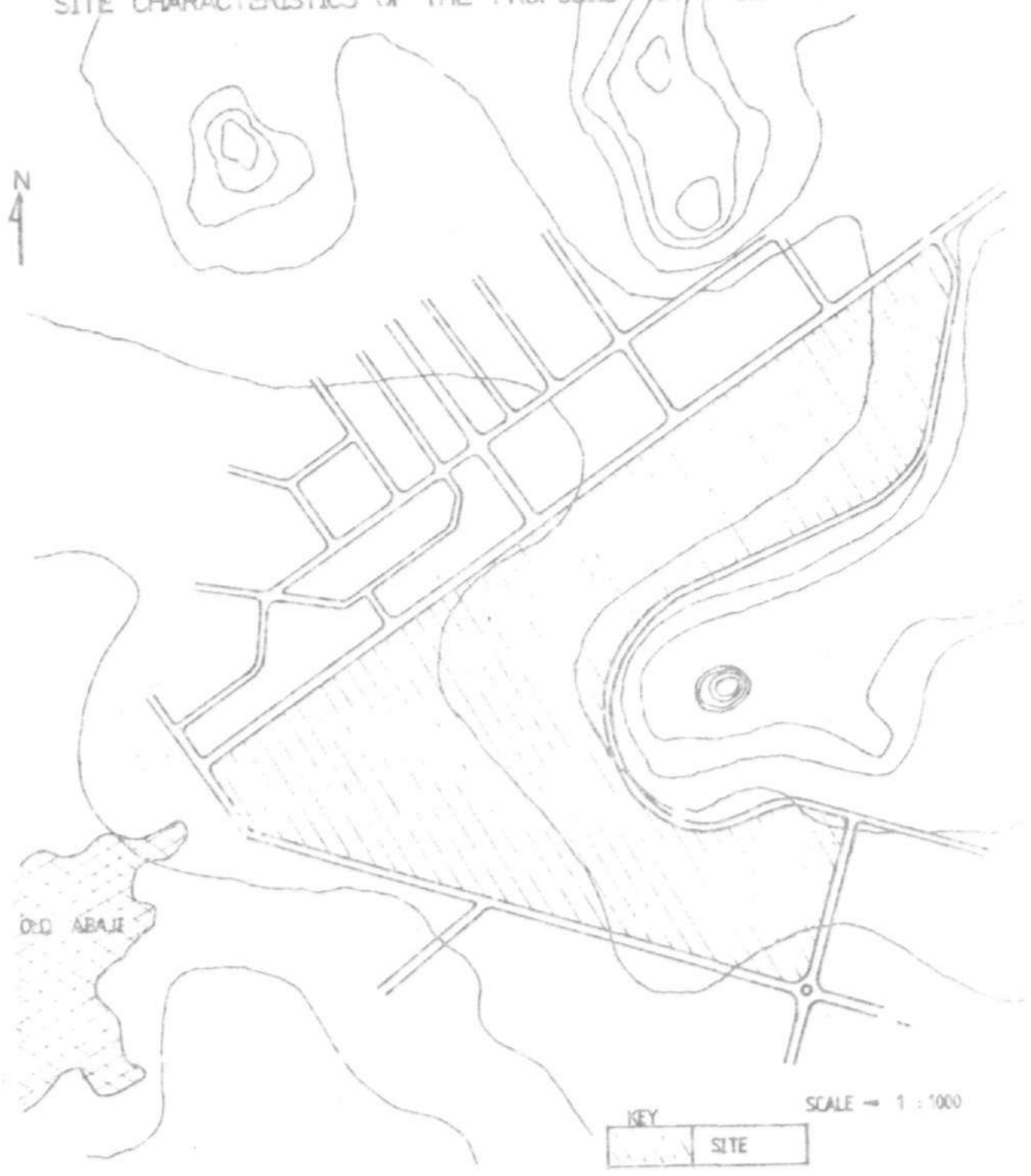
The site is located north-east of the existing village (old Abaji). It is on undulating plain terrain (Fig. 4.01) taking a 'C' shape round a hill which forms its background to the north-east. The south-west facing slopes of the hill touche the north-eastern fringes of the centre. Overlooking the site are two hills, one on the north and the other on the north-west which provide strong and continuous visu landmark to the site. The plains on which the site is located opens towards Old Abaji and Okia river in the south. The average slope gradient of the site is 1°.

4.20 GENERAL CONCEPT OF THE DESIGN

4.21 GENERAL CONCEPTUAL FRAMEWORK

In order to have a functional coordinated and efficient town centre design for any new town in Nigeria certain conceptual design framework has to be evolved to bring about the desired central area design that will be acceptable to the inhabitants of such town. This will enhance quick implementation of the design through active participation of the public in the implementation programme. This conceptual framework is shown in Table 4.01 below.

FIG. 4.01
SITE CHARACTERISTICS OF THE PROPOSED TOWN CENTRE FOR ABAJI



GENERAL CONCEPTUAL DESIGN FRAMEWORK FOR ABAJI TOWN CENTRE

INFLUENCING FACTORS	PLANNING REQUIREMENTS	DESIGN PRINCIPLES	DESIGN INSTRUMENTS	DESIGN PROPOSALS
Socio-Cultural and Economic heterogeneity. Quick dynamic growth Symbolic specialised functions e.g. government and cultural functions. Size of the town. High growth of automobile and technological development. New concepts of social order and organisation.	Of non-basic employment and services. Of modern administration functions. Of diversified economic activities. Of varied engineering considerations. Of organised open spaces. Of traffic separation i.e. pedestrian and vehicular.	Imagibility to give the town a strong identity Flexibility to accommodate growth and reorganisation. High accessibility and parking to ensure efficiency. Different Structural forms to give variety. Delimitation of the town centre.	Grouping of functions according to their functional relationships. Economic flexibility of various landuses locations. Grouping of buildings and their relationships with each oth other. Size, shape and height of buildings. Landscaping and decoration of buildings.	Integration of design Components, principles and concepts to effect a desirable town centre which is characterised by: Relationships between adapted spaces (i.e land and buildings) and channel spaces (roads etc). Mixed landuses. Containment of communal functions with Modern architectural forms. Functional relationships with various municipal entities.

4.22 DESIGN CRITERIA.

The following design criteria are considered in designing the centre.

(i) Accessibility

(a) This is achieved by locating the central area at a site where it is effectively linked with other parts of the town by the network of district roads used by public and individual transport. The district roads are the major routeways forming loops serving all parts of the town.

(b) Introducing a network of pedestrian walkways within the central area.

(ii) Functionality.

(a) In order to attain this in the design the central area is located close to the existing settlement for easy integration of the new centre with the settlement.

(b) There is a conscious attempt in the design to separate the pedestrian from vehicular traffic completely to ensure effective functionality of the town centre.

(iii) Attractiveness

(a) This is achieved by means of determining and obtaining a suitable level of spatial organisation of high architectural values and other important elements.

(b) Introduction of green spaces all over the central area to give the centre a pleasant scenery.

(c) Arrangement of building sizes and styles to accommodate a variety of activities and uses.

(iv) Flexibility

(a) Creating some flexibility through allocation of land generously for specific use incase such use needs an expansion in future so that the centre could stand the test of changes over time.

(b) Grouping the central elements so that such grouping will allow the development of the centre in stages.

4.30 ALTERNATIVE DESIGN CONCEPTS FOR THE CENTRE

The alternative concepts are based on certain basic design principles. These principles are related to:

(i) the general planning concept of the town in the draft masterplan so that it does not conflict with it;

(ii) the site of the centre, taking advantage of the available natural landscape features to enhance the design quality of the centre; and

(iii) paying special attention to ordering of the circulation system to attain free movement of both pedestrians and vehicles.

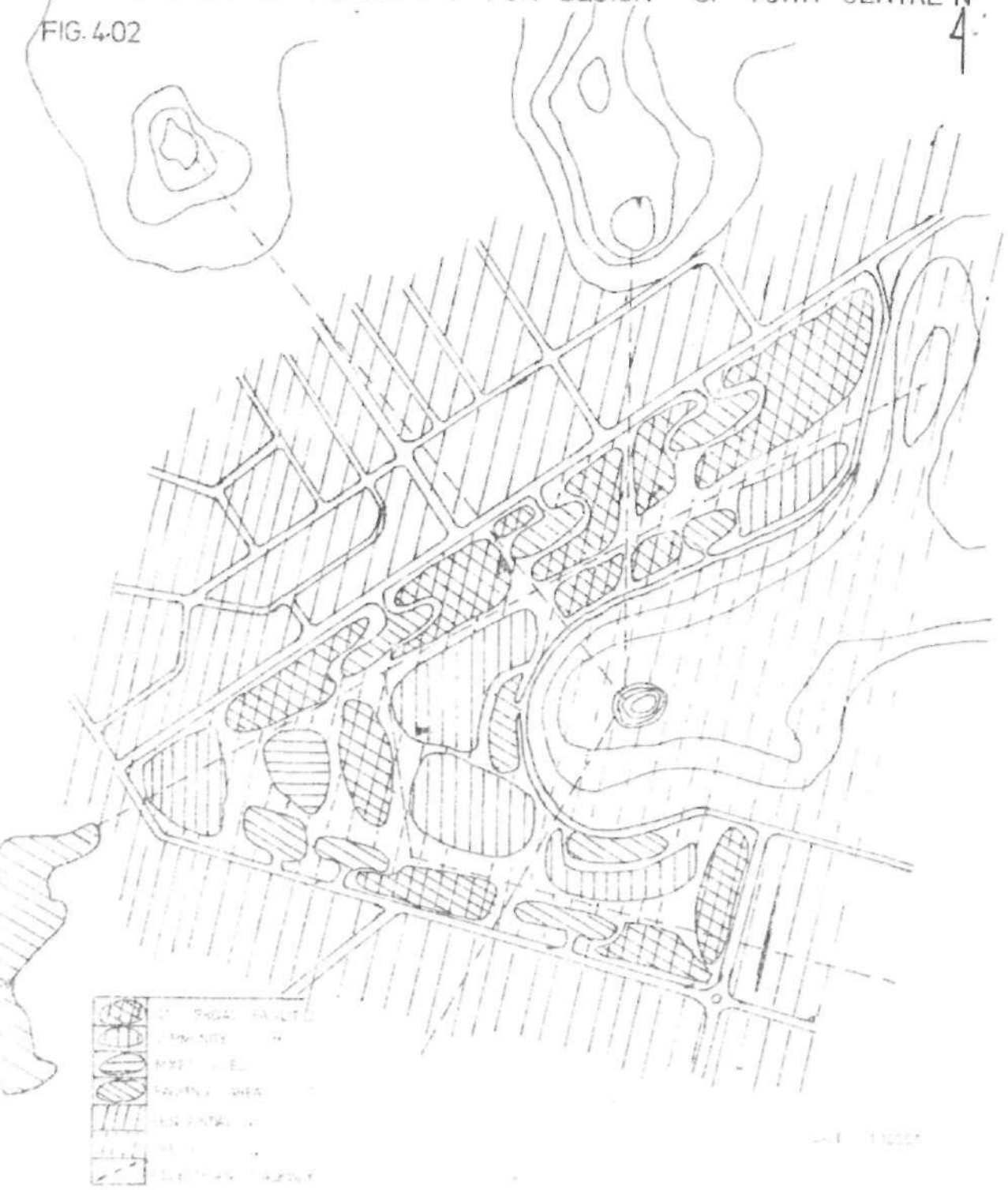
Fig. 4.02 shows a precint concept which emphasises basically total pedestrian movement amist generous open spaces within the centre. The parking lots are located at the edges of the centre which stop the entrance of vehicles into the core of the central area. The networks of pedestrian walkways are meaningfully linked in a natural progression towards the focal points in the centre which also direct the pedestrians' view to the natural landscape features. The commercial facilities are mainly located along the district roads that define the edges of the centre to the north and south.

In alternative concept 2 (Fig. 4.03) a circulation pattern for both pedestrians and vehicles is emphasized concentrating the parking spaces within the core of the centre. The commercial facilities also concentrated along the major road spurses as in concept 1.

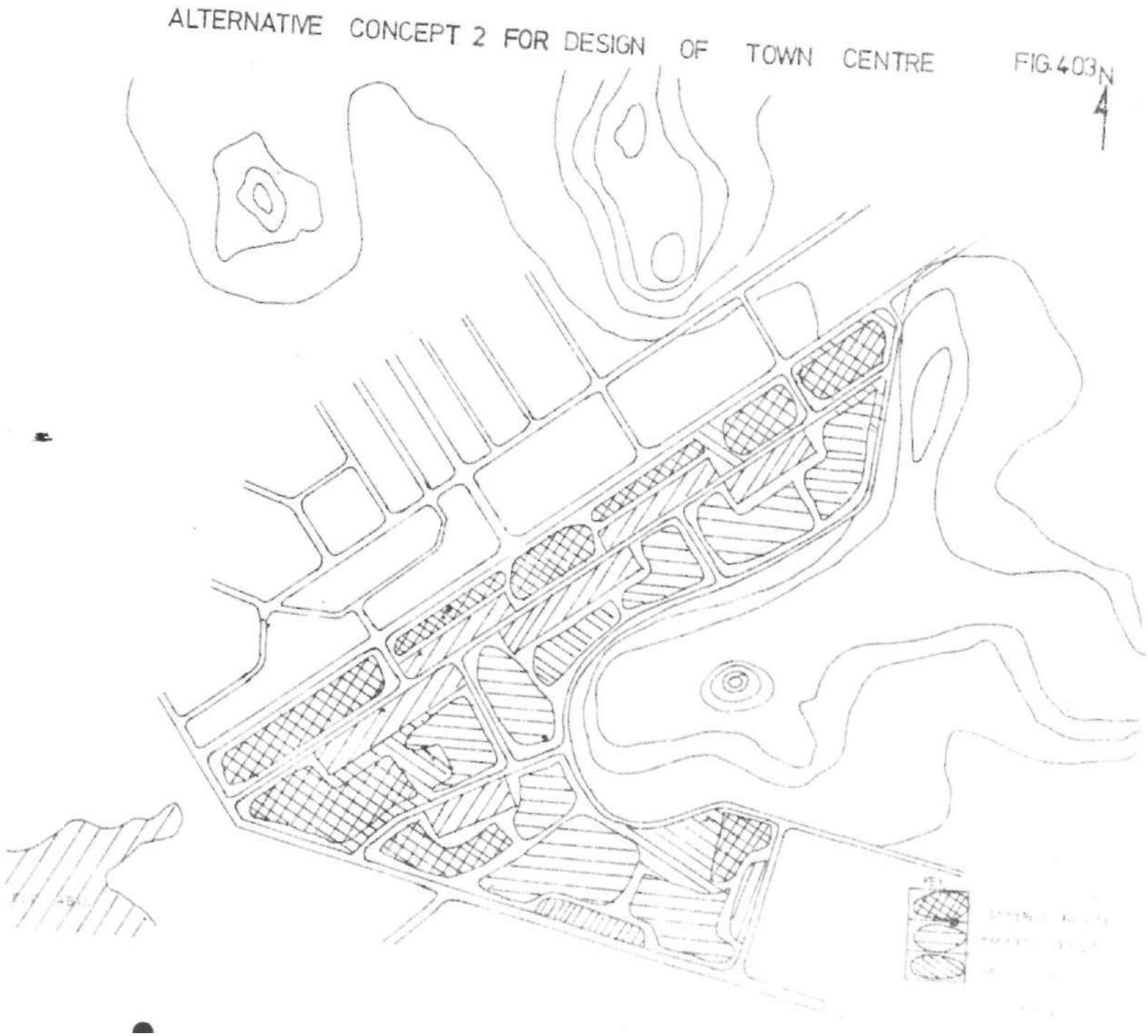
The third alternative concept (Fig.4.04) concentrates it parking spaces in front of the properties along the major road spines while its circulation pattern is similar to that of concept 2 and the commercial facilities mixed with community facilities.

ALTERNATIVE CONCEPT 1 FOR DESIGN OF TOWN CENTRE N

FIG. 4.02



ALTERNATIVE CONCEPT 2 FOR DESIGN OF TOWN CENTRE FIG. 4.03



ALTERNATIVE CONCEPT 3 FOR DESIGN OF TOWN CENTRE

FIG. 4.04



Evaluating the above alternative concepts the first one satisfies the basic design principles for a town centre on the chosen site for Abaji town for some reasons. First and foremost, movement of people, service vans, traffic and so on, is an intricate part of activities in a centre. Studies on town centres have shown that various methods adopted in solving the traffic problems posed by such methods include construction of bye-pass to remove thorough traffic through the town centre, and that of overhead bridges. A town centre whose internal circulation is purely pedestrian will solve the perenial traffic problems being experienced in most of our town centres. Secondly, concentrating wide open spaces as parking lots in the town centre core distorts the fabric of the central area of such town, such parking lots should be enclosed by buildings or structures. Thirdly, the cost of land is generally high in the central area of the town especially plots along the major roads in the central area, such plots will be underutilized economically locating parking spaces in front of the structures on them. And finally, alternative concept 1 is the only concept that utilizes the available natural landscape around the centre.

4.40 THE DESIGN: ITS BASIC PRINCIPLE AND ELEMENTS

The basic principle underlying the structure of many Nigerian traditional towns and their centres is particularly found in the socio-cultural and administrative institutions within that society. These are more often than not expressed in physical form like the palace being the focal point which usually occupies an extensive area of land and serves as symbol of Urban Status. Also an ample open space for religious and socio-cultural functions exist side by side with the palace.

However, Abaji town does not exhibit such urban structure as mentioned above as a small settlement. In the design of the town centre for Abaji emphasis is placed on linking the town centre with the existing settlement.

To accomplish the set aims and objectives that the project seeks to do, the following central area elements are incorporated in the design as seen in Fig. 4.06.

(i) Market

An open market with locked stalls with properly slotted open spaces with the stalls is most desirable for any Nigerian town. To ensure the integration of the existing settlement (old Abaji) with the town

ABAJI TOWN CENTRE LANDUSE PROPOSAL

FIG 4.05



SCALE 1:2000

LEGEND

- COMMERCIAL AREAS.
- PUBLIC AND SEMI PUBLIC USES.
- GREEN AREAS.
- PARKING AREAS.
- ROADS.
- WALKWAYS.

centre, the market is located such that it forms the immediate point of contact with the town centre for the people coming from the existing settlement.

(ii) Central Mosque

Next to the market along the pedestrian walkway axis which terminates at the club house which forms the focal point of the centre is the central mosque. The nearness of the central mosque and the market to each other is in line with the arrangement of these elements in the centres of most Nigerian traditional towns. The location of the mosque where it is, does not only symbolise the importance the inhabitants of old Abaji attach to Islamic religion but also serve as a break up of monotony of open spaces stretching from the market to the civic square behind the mosque.

(iii) Motor Park

The function is complimentary to the market hence its location to it to cater for the inter-town passenger interchange as large percentage of trips are made to and from this centre by public transport. The park could also be used by users of the mosque during Friday prayer which normally draws a large number of worshipers.

(iv) Parking Spaces

Parking spaces are skillfully slotted into the spaces around or enclosed by buildings. The avoidance of large open car park is essential to prevent a break up in the Urban fabric. Vehicular entrance to any property is from the back from service areas which are provided close to the parks or car parks. Definition of these parking places is achieved by landscaping then, by using 'soft' method (i.e. use of trees) in some cases and 'hard' method (i.e. use of bricks and granite).

(v) Focal Points

Opportunity for developing focal points or landmarks in the centre is highly encouraged. A prime site on the hill at the back-ground of the town centre is of unique location, visual quality and outlook hence the siting of a club with a fountain tower on it. The nature of this landmark is particularly significant as it articulates itself above the scale of the surrounding area and be seen from all points in the area. This prime site is regarded as a vacant land to be planted with trees in the draft masterplan, it is suggested, therefore, that the club will make use of the ample greenary around it for recreational purpose.

(vi) Commercial Spines

The commercial spines are along the two district roads one running north-wards and the other eastwards both starting from the existing settlement. The buildings are of various sizes and heights, enclosing parking lots and the pedestrian walkways that pass in between them. The set backs of the commercial buildings and other properties along these roads are given some stree furniture and appropriate landscaping introduced so that shoppers can rest and refresh themselves.

(vii) Services

Public services are essentially important elements of the town centre. Because of the nature of their functions they need to be located where they are easily accessible to everybody. The police station is removed from its other sister functional elements - the post office and fire station to ensure easy identification by people coming into the town centre for the first time.

(viii) The Administrative Area

In the design of the administrative area as a political power and civic centre has been given some importance. Emphasis is placed on the mall (open square) which brings the focal character

of the entire of the entire civic centre flanked by important civic buildings like the Local Government Secretariat, town hall and open air theatre.

(ix) Circulation System

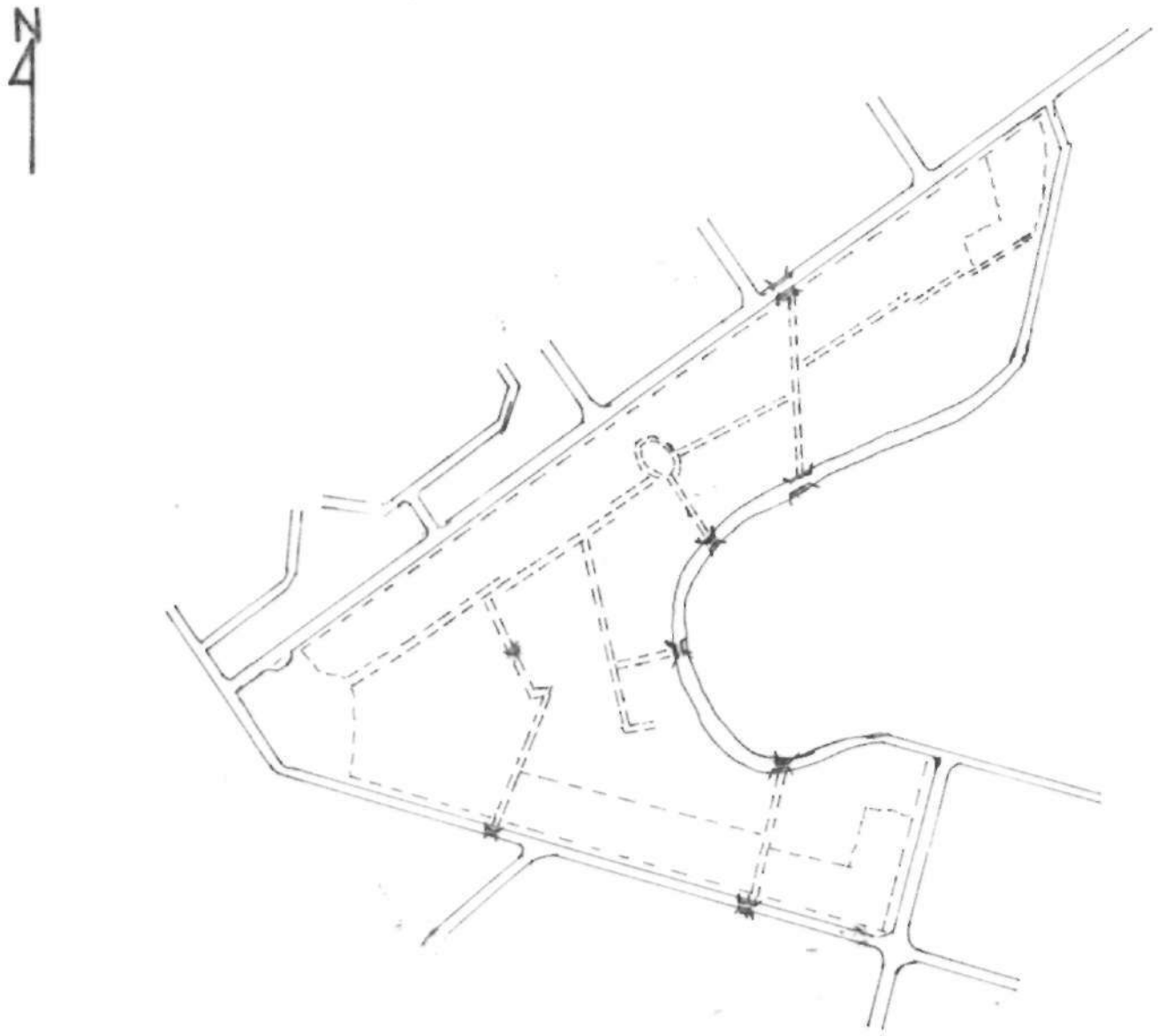
As shown in Fig. 4.07, in accordance with the draft masterplan the centre is surrounded by district roads of 80m (R.O.W.) on the north-west, south and east sides, while the northeast and west sides are bounded by neighbourhood arterial roads of 40m (ROW). It is suggested in the design that these roads surrounding the town centre be 80m (R.O.W.), within this loop the town centre will be clearly defined.

Pedestrian walkways form the main circulation networks within the centre. Vehicular traffic is limited to the district roads surrounding it in order to crate a confortable pedestrian environment as services and delivery access is provided to all the major activity points. The department stores, banks, shops and cultural area are provided with adequate parking spaces. Pedestrian walkway of 5m is proposed, and two of them reflect the major desired view lines, one from the club house to the hill north-west of the centre and the other from the existing settlement to the hill north of the centre. Their

ABAJI TOWN CENTRE

PEDESTRIAN WALKWAY NETWORK

FIG. 4



SCALE 1:2000

======= WALKWAYS

- - - - - - FOOTPATHS

point of intersection landscaped into a park having some historical status.

(x) Cultural centre.

The cultural centre is located at the end point of the thorough walkway from the existing settlement. The walkway links it with the existing settlement. The Library, museum and the magistrate court are located here because of the quiet environment their functions require.

(xi) Green System

The green system fig. 4.08 is incorporated into the design to give some natural beauty to the centre. The green introduced along the walkways not only give some edges to them but also directs the view of the people to the natural landscape feature around the centre which give natural site.

(xii) Infrastructural Services

All proposals regarding the infrastructural services are based on the alignments of all the infrastructure networks as in the draft masterplan.

(a) Drainage channels:- To maintain a neat environment in the town centre covered channels be used, while for ease of maintenance open channels could be used where possible in other parts of the town to transport the surface water run-off. Fig. 4.09 shows the types of

channel and the district channels.

(b) Water Supply:- The water feeder and distribution mains follow the principles established in the draft masterplan as in Fig. 4.10.

(c) Sewage: The sewage system is also indicated in Fig.4.10.

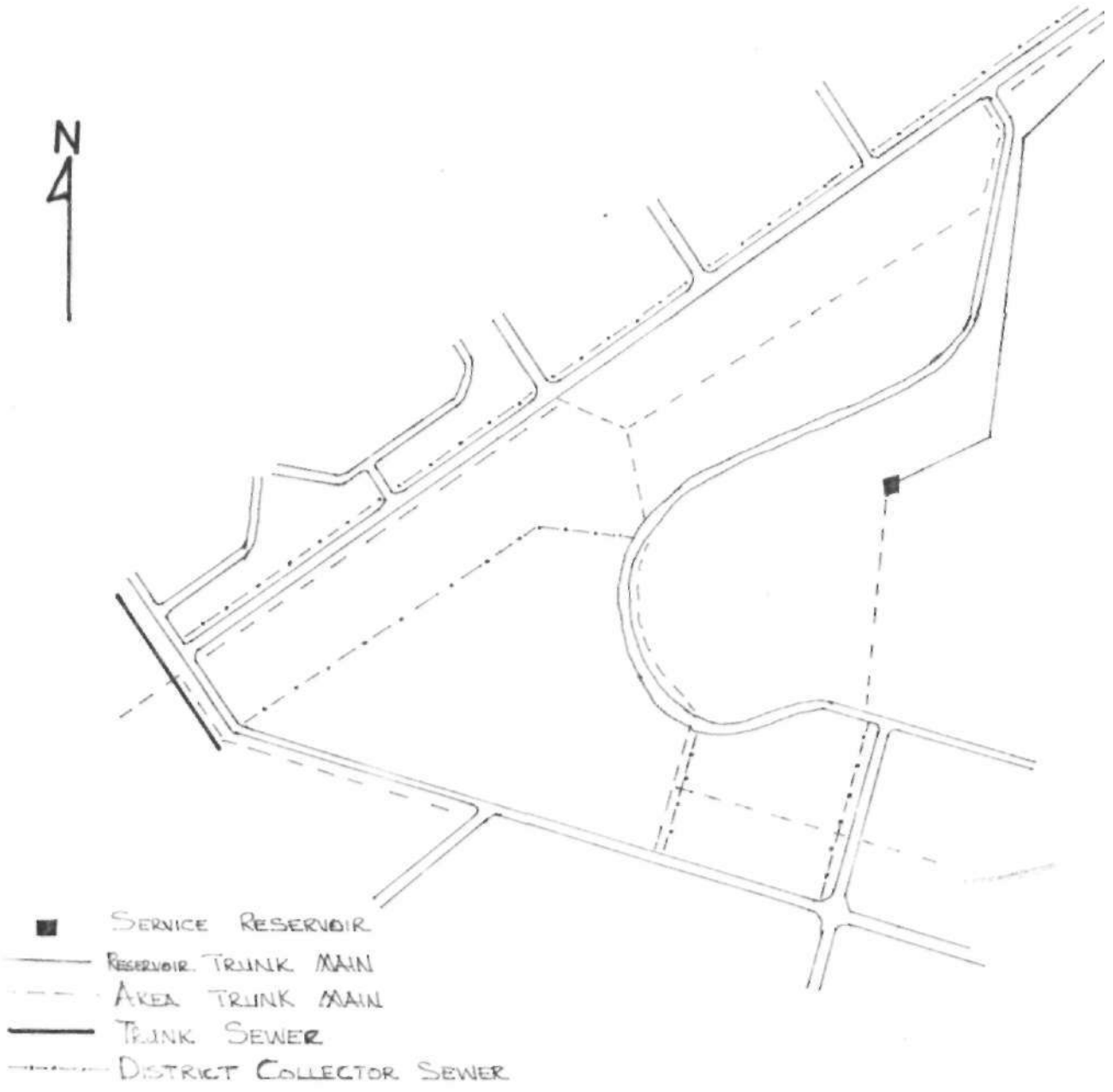
(d) Electricity Supply:- The supply of electricity to Nigerian town centres is usually distributed to individual structures on overhead lines. With the proposed high rise buildings in this centre, it is not safe using the overhead lines system, therefore, it is suggested that power supply in Abaji town centre be entirely underground system.

(e) Telecommunications:- Though there is no place in the draft masterplan talking of this facility for the town, it does not mean that its provision is not necessary. The general trunk telecommunications routes should follow the district roads while the secondary and local exchanges are located adjacent to the district roads. Local line routes follow the neighbourhood roads, while, in case of the centre, the local lines follow the pedestrian walkways.

FIG 4.08

ABAJI TOWN CENTRE

WATER & SEWAGE SYSTEMS



SCALE 1:2000

CHAPTER FIVE

5.00 IMPLEMENTATION POLICIES.

More often than not a large percentage of physical development plans are not properly implemented, the causes could include:

(a) Lack of efficient and sound administrative machinery.

(b) Lack of finance

(c) Lack of skilled manpower to supervise the project, and

(d) Lack of willingness on the part of the public to participate in the implementation programme.

Implementation of a development plan of a town is not a project that can be accomplished within a short time even with all that is involved in executing the project in favour of the body handling the project - such as sound administrative machinery, skilled manpower, finance and active participation of the public. Therefore, for such a long term development plan of a town centre to be meaningfully implemented the project should be carried out in stages of short time duration (short term) plan. It is suggested that the implementation of the plan for the town centre be divided into phases.

5.10 PHASING PROPOSALS

Federal Capital Development Authority (FCDA) responsible for the implementation of all physical development plans within the Federal Capital (FCT) has not indicated any time schedule within which the masterplan of Abaji town be implemented. Whatever the time schedule that is later decided by the Authority the following phasing proposals hold.

Phase I

In the beginning FCDA shall advise and assist the development area administration in provision and development of the central area infrastructure and public facilities while some shops and other facilities will be handled by private organisations. This will be the case because the supporting residential population would be at its lowest. The projects to be executed at this initial stage as in Fig. 5.01 are:

(a) Construction of the district roads surrounding the centre and motor park.

(b) Construction of the market, Government Offices, Post Office, Police Station and fire station.

(c) Provision of site and services on the first district site which is very close to the town centre to quicken development around the centre.

Phase II.

A second level of development occurs when the residential population and shopping increase and justify further investment in public facilities. Fig. 5.02 indicates the projects to be undertaken during this period.

Development of commercial establishments like shops, commercial services, banks, hotel, and construction of Cinema.

Phase III.

This is the final stage which illustrates the development of projects when the centre attains its planned capacity as in Fig. 5.03. The projects here include construction of cinema, library, theatre, museum, town hall and so on.

However, several small areas will remain free from development to be infilled at a later period in time.

5.20 MANAGEMENT BODY OF THE TOWN CENTRE

Federal Capital Development Authority's (FCDA) department of Planning and surveys shall be the competent Authority for controlling the implementation of the central area plan. The authority may make some modification regarding the proposed uses as the

town grows and responds to changing economy and socio-cultural situations, but the functional integrity and design quality of the centre should be retained. All development plans should be duely submitted to FCDA for their approval which shall only be approved if they fall within the framework of the development plan of the centre.

5.21 CO-ORDINATION POLICY

In order to avoid haphazard and uneconomical development, it is a felt desire that all departments under FCDA be effectively involved in all the development efforts with a view to achieving best results during the course of the plan implementation. Therefore, it is suggested that there be co-ordination committee which may have the following composition: The Chairman and Secretary of the Development Area Administration, representative from departments of Engineering, Development, Administration, Architecture and finance and economic development all of FCDA.

The Committee coordinates all development efforts by different local bodies and organisations at Abaji, identifies various means of implementing Abaji Master-plan and set pricrity projects, and advises FCDA through Executive Management Council (EMC) of FCDA and Federal Capital Territory Administration (FCTA) in matters concerning with Abaji masterplan implementation relating to development control.

5.30 FINANCING THE PROGRAMME

The implementation programme of the development plan of Abaji town centre could be financed through four principal sources.

(i) Through FCDA grants in form of loan, the money the Coordination Committee have to invest in profit yielding venture in the town centre. For example, the committee may construct the filling station and some department stores and shops which could be rented out to private organisations. The rent paid to the Committee they use to offset the loan and the profit realised from such lent be re-invested in other profit yielding projects.

(ii) Another source is through the fund allocated to Abaji Development Area Administration by FCTA for town planning and provision of infrastructure.

(iii) Revolving fund managed by the co-ordination Committee. Money realised from plots allocation, issuing of certificates of occupancy and of issuing certificates for sign boards could be re-invested in provision of site and services furthermore in the town centre.

(iv) And finally, through private investment by different organisations.

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APPENDIX 'A'

LAND USE CHARACTERISTICS OF URBAN CENTRES OF INDIA (CASE STUDY OF 122 URBAN CENTRES OF VARIOUS SIZES AND FUNCTIONS)

Table A-1 Range of percentage of Developed Area Devoted to Different land Use Categories in Case of Urban centres classified by population size.

	1,000,000	100,000 to 1,000,000	50,000 to 100,000	20,000 to 50,000	Below 20,000
Residential	43.0 - 41.0	51.0 - 46	45.0 - 42.0	60.0 - 53.0	36.0 - 37.0
Commercial	4.0 - 5.0	3.0 - 4.0	3.0 - 4.0	3.0 - 4.0	2.0 - 2.0
Industrial	6.0 - 8.0	7.0 - 9.0	9.0 - 10.0	5.0 - 8.0	34.0 - 30.0
Public and Semi-Public	17.0 - 19.0	14.0-17.0	12.0-14.0	9.0-10.0	10.0 - 11.0
Parks and Playfields	5.0 - 7.0	7.0 - 8.0	7.0 - 8.0	3.0 - 5.0	2.0 - 3.0
Roads and Streets	16.0 - 14.0	12.0-13.0	13.0-14.0	12.0-14.0	12.0 - 15.0
Other Uses	9.0 - 6.0	6.0 - 3.0	11.0 - 8.0	8.0 - 6.0	3.0 - 2.0