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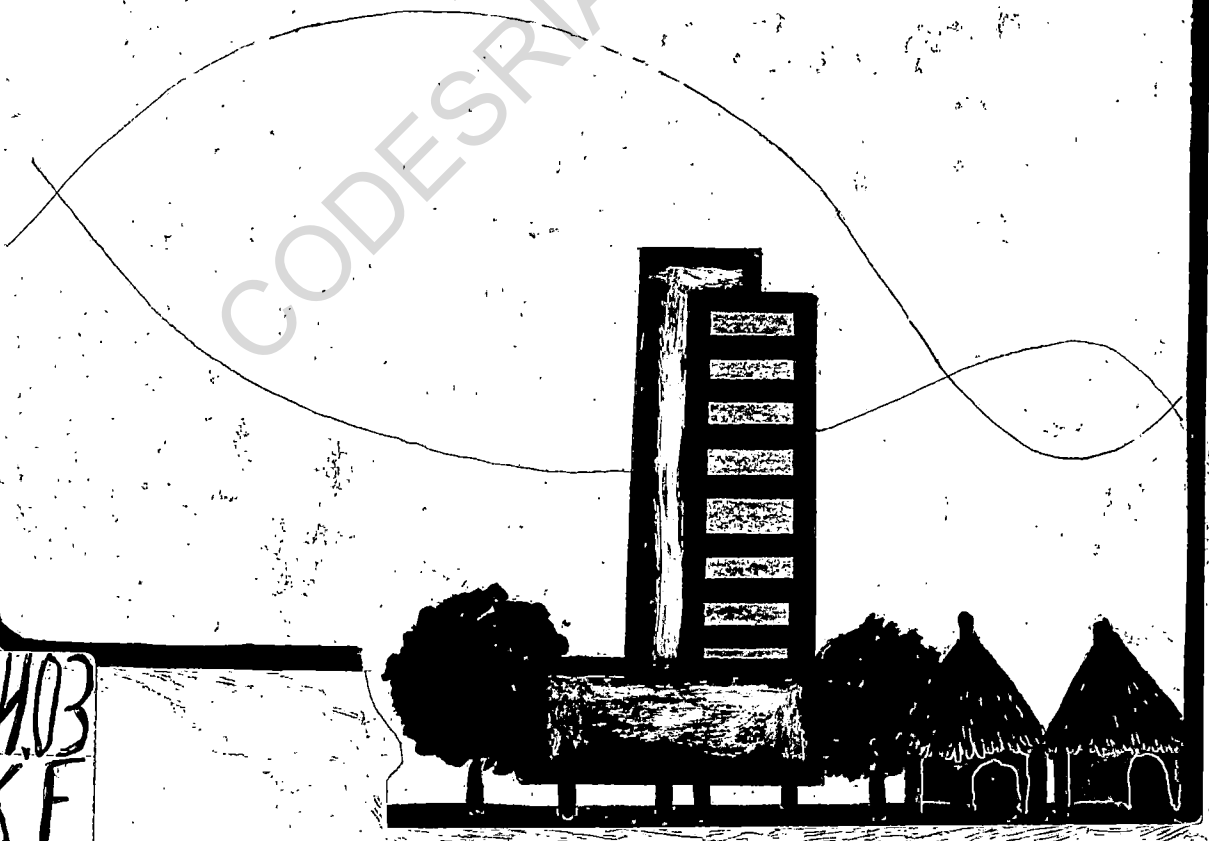

CULTURE AND DESIGN DECISION IN URBAN HOUSING: AN APPRAISAL OF THE NIGER BRIDGE-HEAD HOUSING ESTATE, ONITSHA

BY

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B.Arch Hons (Nigeria)

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DEDICATION

To

GOD,

for making everything possible.

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C. Uchenna Ikejiofor

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ABSTRACT

Research has established conclusively that user satisfaction in housing is culture-conditioned. It has also been overwhelmingly demonstrated that the participation of the real users of housing in the conceptual design phase of housing programmes is perhaps the only strategy that can guarantee ultimate success for such programmes in terms of their being capable of satisfying the real needs of housing consumers. However, recent trends in designer-user relationships indicate a growing alienation of the designer from the users of housing, with the result that the culture-conditioned housing needs of these users are often ill-comprehended and thus improperly addressed in the design of housing schemes.

This study investigates, against the given background, some theoretical and practical imperatives in the quest for a functionally and socio-culturally satisfying housing, using one urban housing estate as case study. Employing the social survey research methodology, the study articulates user needs and preferences in housing within the study area and uncovers new attitudes which can form the basis of new hypothesis. It identifies the implications of research findings for future housing policy and for further research and proposes strategies for achieving greater success in governments' urban housing development efforts.

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CHAPTER ONE

INTRODUCTION

1.0 RESEARCH BACKGROUND AND FORMULATION

Recent studies indicate that most developing countries (that is, countries in Latin America, Asia and Africa) today face acute shortage of housing units and a consequent overcrowding of the existing stock. Researchers are overwhelmingly agreed on the fact that the situation is getting worse owing to the impact of its causes - rapid urbanisation, low per capita income and population explosion as a result of high fertility rates, improvements in health standards and a corresponding reduction in the death rates (Adeniyi 1972, Hornsby-Odoi 1975, Acquaye 1985, Abiodun 1976, Onibokun 1985).

Research has also revealed that the magnitude of the housing problem varies from city to city. Without deliberate under-estimation of the inadequate housing condition in the rural areas, it is felt that the housing problem in most developing countries is basically an urban one. Rural people, living at reasonably low densities, are often able to meet their own needs, though at a less sophisticated level than city dwellers. According to Adeniyi (1972), it is in the cities - where the legal acquisition of land is far beyond the means of most people; where the traditional forms of building are often not acceptable; where the opportunities for employment are limited; and where the population is rising - that the problem of housing is more acute. A crying need therefore exists for the

acceleration of construction activities especially within the public sector, firstly to make up for existing arrears of housing, and secondly to keep pace with the accelerated growth of urban population.

Various governments in Nigeria have not only appreciated the problems posed by population movement from rural to urban centres, but have also addressed themselves to the equally important task of playing a far more direct and active role in the provision of housing. This is illustrated by the following extract from the Housing Development Programme of the Third National Development Plan (1975-1980):

> "Private investment in housing ... has been growing too slowly to be able to meet demand because of well-known problems and bottlenecks such as insufficiency of private savings, inadequate credit facilities, the high cost and difficulties of obtaining land in some urban centres, and the sharp increase in the cost of building materials. ... The government now accepts it as part of its social responsibility to participate actively in the provision of housing for all income groups and will therefore intervene on a large scale in this sector."

It is the modus operandi adopted by successive governments in Nigeria (at both Federal and State levels) in the pursuit of this identified social responsibility that gives designers and academic scholars of housing a serious cause for concern.

1.1 OUTLINING THE PROBLEM

The response of most governments to the urban housing crisis has often been in form of a set of panic, short-term measures directed at alleviating the immediate pressures on the existing housing stock. Emphasis is therefore wrongly placed on the number of housing units to be provided rather than their types and quality. Often, technological solutions are proposed which neglect the finer socio-cultural aspects of housing completely. The consequences of this misplaced emphasis have always been unfortunate due to the fact that these neglected socio-cultural factors are tied inextricably to the capacity of housing to satisfy its eventual users.

In spite of the multiple cracks on the stand of housing experts on several issues, there exists an overwhelming concensus on one point: that user satisfaction in housing is culture-conditioned (Rapoport 1969, Alexander 1966, Dorsey 1978). In Nigeria for instance, the failure of numerous housing programmes could be traced to the fact that the contemporary housing forms have evolved in response to pressures from higher densities without reference to previous traditions or serious attempt to really understand the range of needs to be answered in the human habitat. This view is informed by the eloquent failure of such projects as the ₦10 million Housing Estate in Sokoto, the Resettlement Schemes at Surulere and New Bussa and the several unoccupied Low-Cost Housing projects

scattered across the country. Onibokun (1985) accused both the Federal and State Governments of indulging in a "number game" in which the nation is entertained by the mere magnitude of the number of houses proposed and, in particular, by the relatively colossal amount budgeted.

It is clear from the foregoing that the issues involved in achieving success in government's urban housing programmes go beyond the immediate problems of housing supply logistics. It includes such culturally-determined factors as norms, aspirations, security, status and identity. However, the preoccupation of this study with culture and urban housing design should not be misconstrued as advocating for a return to our cultural heritage in housing, but rather a return to first principles: to see what patterns persist amidst all the changes, and the continuities that are unaffected by time. It is clear that a purely traditional environment can no longer serve the needs of a contemporary Nigeria because we are grappling with new realities and forces generated by rapid urbanisation, population explosion, a backward and unproductive economy and the complexities of modern technology. According to Seyer (1966), the complexity of our society and the tremendous advance in science not only permit, but also require man's shelter to be much more than mere protection against the elements; it must satisfy his economic, social and psychological needs as well.

1.2 UNIQUENESS OF THE STUDY AND CONTRIBUTION TO PLANNING KNOWLEDGE

Several studies have identified the lack of attention to socio-cultural issues due to the non-involvement of the real users of housing at the conceptual design phase of public housing projects as the major reason for their declining performance. Apart from the general information they provide, most of these studies are not very useful to the design professional. They invariably stop at problems analysis without demonstrating how research results can be subjected to a test of practical application.

Not much has been done in the form of stating the modalities and nature of the required research or how the socio-cultural needs of the real users of housing can be articulated concretely and given a spatial interpretation and architectural expression in housing design. This study will address the above issues and in the process will, hopefully, contribute ideas that might prove useful in our quest for a functionally and socio-culturally satisfying housing for users of public housing estates both in Nigeria and elsewhere. This will be a worthwhile contribution to planning knowledge.

1.3 RESEARCH AIM AND OBJECTIVES

The broad aim of this study is to propose guidelines for the development of a functionally and socio-culturally satisfying housing for users of public housing estates based on empirical observations

from field research.

Specifically, the study intends to achieve the following objectives:

(i) Identify the dominant culture-conditioned housing needs of the residents of the study area and the implications these have for spatial arrangements in housing design.

(ii) Determine to what extent these needs have been satisfied in the layout and design of completed and occupied housing units in the study area.

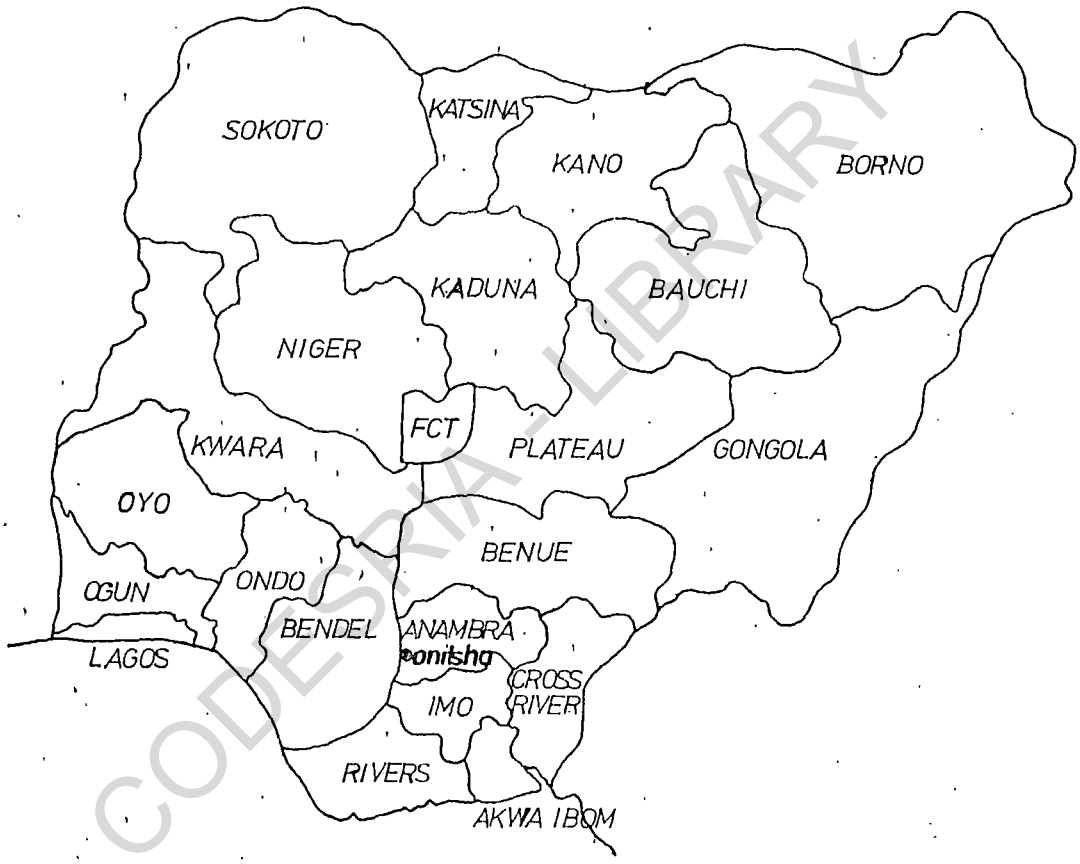
(iii) Recommend viable alternative strategies to governments' urban housing development programmes based on research results.

(iv) Identify the implications of the research for future housing policy and define the targets for further research.

1.4 THE STUDY AREA

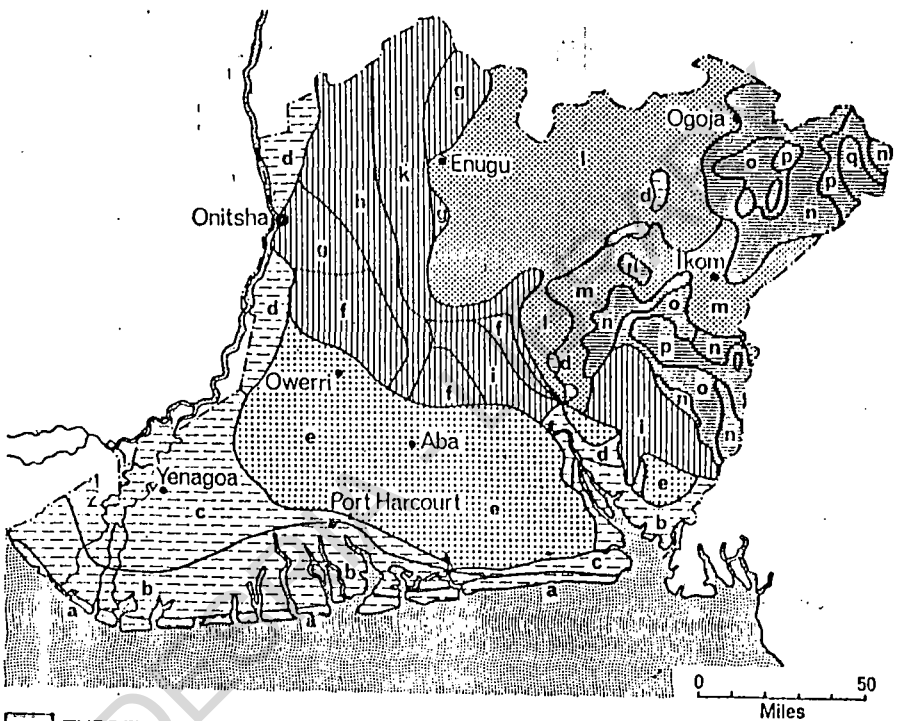
Onitsha lies between latitude 06° 10'N and longitude 06° 45'E and is approximately 90 metres above the sea level. Physically, Onitsha is situated on the left bank of the Niger River, about one kilometre south of the confluence with the Anambra River. It is located in a narrow basin between the Nkissi River to the North and Idemili River to the South, on land which slopes gently down to the Niger Flood Plain (Onitsha Master Plan Surveys, 1978).

FIG. 1a: POLITICAL MAP OF NIGERIA SHOWING THE LOCATION OF ONITSHA METROPOLIS IN ANAMBRA STATE



SOURCE: MODIFIED AFTER BARBOUR, K.M. ET AL (1982).

FIG. 1b: LANDFORM MAP OF EASTERN NIGERIA SHOWING THE LOCATION OF ONITSHA.



1 THE DELTAS AND RIVER PLAINS
- a Sandy beaches and ridges
- b Tidal creeks and mangrove swamps
- c Sandy delta plains and freshwater swamps
- d River flood plains

2 THE COASTAL PLAIN
- e Flat coastal plain

3 ZONE OF PLATEAUS AND ESCARPMENTS, WITH ASSOCIATED LOWLANDS
- f Rolling dissected lowlands
- g Strongly dissected plateau, medium slope
- h Undulating lowlands

3 (continued)
- i Incised diversified lowlands
- k Plateau extending above 1200 feet, gentle dip slope

4 CROSS RIVER BASIN
- l Slightly incised plains
- m Rolling plains and dissected hills, above 400 feet

5 EASTERN UPLANDS
- n Rolling plateau above 800 feet
- o Dissected plateau above 1200 feet
- p Strongly dissected plateau above 1600 feet
- q Rugged mountains above 3000 ft.

SOURCE: FLOYD, BARRY (1969).

POPULATION

No accurate figure for the post-war population of Onitsha is available. The 1963 census put Onitsha at 163,000 people. But with the influx of people from other parts of Nigeria during the Nigerian crises and with normal growth rate, the population may well have increased by more than 200% over that of 1963. The latest population estimate was done in 1978 and it put the population at 300,000. But estimates based on trend projections from the 1963 figure are extremely unreliable particularly in view of the disruptive effects of the civil war which led to a declining birth rate and an increasing death rate, and which also caused massive short-term migration movements sometimes leaving the town almost devoid of its civilian population.

OCCUPATIONAL DISTRIBUTION

The occupational distribution of household heads in Onitsha reflects its economic base which is essentially business/commercial.

Table 1: Occupation of Heads of Households in Onitsha (in % of Household Heads)

Occupational Group	Percentage
Businessmen/traders	47.5
Civil servants including teachers	26.2
Private company employees	5.4
Other self-employeds (including artisans - carpenters, motor and allied mechanics, shoe makers, welders, masons, drivers, etc.)	20.9
Total	100.0

Source: Okpala, D.C.I. (1980)

HOUSING CONDITIONS IN ONITSHA

The problem of acute overcrowding in Onitsha is found at the most depressed end of the housing market where large families in a desperate housing situation cram into very confined space.

Table 2: Conditions of Overcrowding in Onitsha, 1978

Living Conditions of Families	% of Population Surveyed
Acute overcrowding (i.e. 5 persons + per room)	17.4
General overcrowding (i.e. 3-4 persons per room)	45.5
No overcrowding (i.e. 1-2 persons per room)	37.1
Total	100.0

Source: Onitsha Master Plan Surveys (1978), p.97.

1.5 THE NIGER BRIDGE HEAD HOUSING ESTATE, ONITSHA

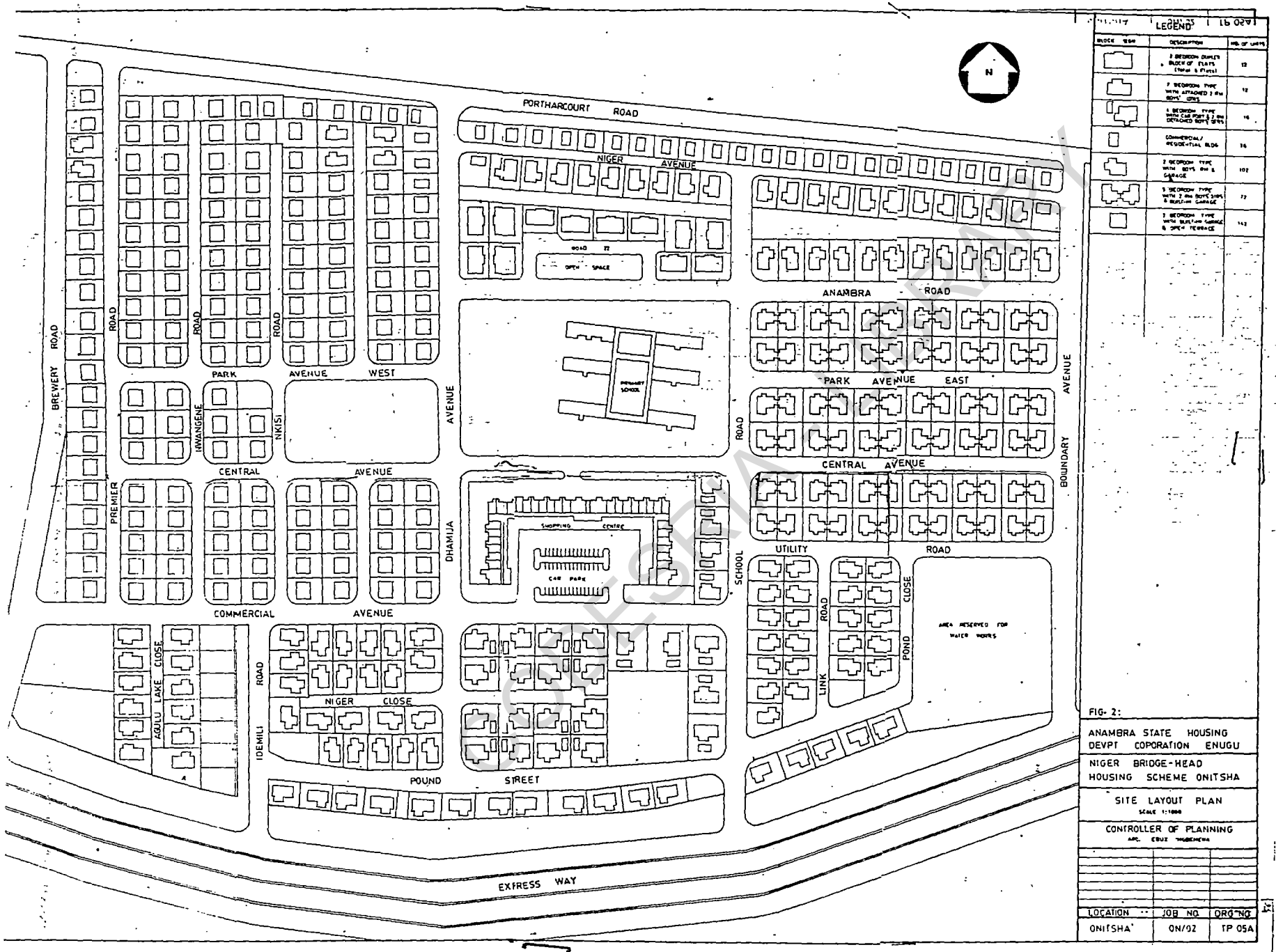
This housing estate which is the project site for this study, was conceived in 1978 as part of the urban housing development programme of the Anambra State Housing Corporation. It was, until recently, the only public housing estate serving the Onitsha Metropolis. A new model housing estate which will also serve Onitsha is now being constructed on a 133-hectare land at Nkwelle-Ezunaka (a hinterland of Onitsha).

As the name suggests, the Niger Bridge-Head Housing Estate is located close to the Onitsha end of the bridge across the River Niger.

It is bounded to the West by the Niger Bridge-Head Market, to the East by private residential developments, to the North by Port-Harcourt Road, and to the South by the dual-carriage Enugu-Onitsha expressway (Fig. 2).

Actual construction work on the site began in 1980 and by December 1981, a number of completed buildings have already been occupied. As of today, construction work is still going on at the estate as some areas of the estate are still being developed. Information from the Anambra State Housing Corporation, Enugu shows that the project, from inception, was not targeted at any specific socio-economic group. There are no subsidy elements from the government to assist the low-income group in procuring houses at the estate and market forces are allowed to completely determine the beneficiaries. The tenure characteristics in the estate is solely owner-occupier and potential purchasers are chosen on a first come, first served basis. A purchaser is required either to make complete down payment for a house or, in the alternative, to enter into instalmental payment arrangements with the Housing Corporation before taking possession of the house.

The estate is managed by the Anambra State Housing Corporation, Enugu - the supervisory work being carried out by the Development Control Unit of its Town Planning Department. Residents of the estate are required to channel complaints about their dwelling units and/or its environment to the Housing Corporation through written petitions.



LEGEND

BLOCK TYPE	DESCRIPTION	NO. OF UNITS
	2 BEDROOM DUPLEX & BLOCK OF FLATS (Three & Five)	12
	2 BEDROOM TYPE WITH ATTACHED 2 No BOYS' UNITS	12
	4 BEDROOM TYPE WITH CAR PORT & 2 No DETACHED BOYS' UNITS	16
	COMMERCIAL/ RESIDENTIAL BLDG	16
	2 BEDROOM TYPE WITH BOYS' QTR & GARAGE	102
	3 BEDROOM TYPE WITH 2 No BOYS' QTRS & BUILT-IN GARAGE	72
	3 BEDROOM TYPE WITH BUILT-IN GARAGE & OPEN TERRACE	162

FIG. 2:

ANAMBRA STATE HOUSING DEVPT COPORATION ENUGU

NIGER BRIDGE-HEAD HOUSING SCHEME ONITSHA

SITE LAYOUT PLAN

SCALE 1:1000

CONTROLLER OF PLANNING

LOCATION	JOB NO	DRG NO
ONITSHA	ON/02	TP 05A

Because of the desire to maintain character and uniformity in the estate, the Corporation prohibits residents from making any form of additions or rearrangements to their dwelling units and/or its surroundings without obtaining permission from the Corporation. Erection of fence by residents along respective plot boundaries, for instance, has to be approved by the Corporation before it can be made. The most consistent complaint from residents has to do with space deficiencies within dwelling units in the estate. To a large extent, the day to day administration of the estate is done by the residents themselves through a functional Residents' Association.

CHAPTER TWO

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

2.0 THEORETICAL BASIS FOR THE STUDY

This study is built upon the concept of citizen participation and responsive planning. The premise is that the process of design decision-making in urban housing development should be responsive to the preferences or needs of the ultimate users of housing if such users are to have confidence in the capacity of the housing to satisfy.

Epictetus, a First Century A.D. Greek philosopher was quoted (Guardian February 16, 1987 p.9) as saying that wherever a man is against his will, there to him is prison. This statement vividly depicts the crucial role of choice in man-environment interactions. It also points to the grim implications of the present situation in Nigeria where the people most needful of housing (the low-income group) are incidentally those with the least choice. It is becoming more apparent that, in spite of evidence of increasing research, the community is not getting the house it wants and that the gap between the providers of housing and the consumers is widening. Aedile (1972) observed that public policies are not satisfying environmental and aesthetic needs in the widest context and that in practice, for a variety of reasons, many people are being forced to live in housing and environments which they will not choose.

Pahl (1970) made a number of very significant observations: that a house could be a shelter, a base for operations, an aggregation of resources, a status device or a means of expressing identity; that the relative importance of each of these functions will change as the socio-cultural context changes; and that these variations in priorities are crucial in determining housing satisfaction. It is evident that these views are mostly ignored by government agencies concerned with housing provision in our urban centres. These agencies often regard users of public housing as a homogeneous group without any personality or individuality differences.

The resultant undifferentiated housing prototypes as found in most public housing estates in Nigeria often fail to address the salient culture-conditioned housing needs of would-be users and consequently perform poorly in the long run. This declining performance shows that it is neither the presumption of the architect nor the value judgement of the planner but rather the viewpoint of the would-be user that must guide research. Several scholars have therefore called for some form of user-input into the project conception and design phases of the housing delivery process.

Agbola (forthcoming, 1990) evaluated citizen participation variously as a means to an end, an end in itself and as a basic need, and concluded that citizen involvement in any decision-making process should be regarded as a basic need. He argued that the perception and

understanding of the citizens are the most important variables in any participatory effort. A stronger theoretical claim however is that increasing levels of participation increases levels of utility by more effectively channelling preferences (possibly sifted in terms of their intensity) into decision-making. This argument falls into the utilitarian tradition framework. According to Allison (1975), increasing the level of participation in planning policy formulation can improve decisions by maximising the detail of information assumed by the decisions. Only the wearer knows where the shoe pinches. In this sense, only by allowing participation can the full practical implications of a policy be grasped.

In another sense, Levin (1976) argues that participation makes citizens become committed to planning proposals. The need for commitment stems from the observationt that people who take decisions become in some way bound by their decisions: they acquire a certain disinclination to go back on it without a plausible reason for doing so.

Experts in planning process modes have variously attempted to conceptualise the notion of citizen participation in the planning process. Graves (1972) described citizen participation as a device to make the government responsive to the needs of all people, particularly those who are left out of the formal governmental decision-making process. Mogulof (1970) defined participation as an act or a series of acts by which the citizen has the opportunity to influence the distribution of

benefits or losses which may be visited upon him or upon those he represents. Burke (1968) viewed the citizen as the ultimate voice in community decision-making and argues that citizens should share in decisions affecting their destinies. Pateman (1976) looked at participation as any activity or action which enables individuals to have an input into the decision-making process and to play a role in improving the quality of life in their environment. Perin (1971) argued for participatory design and the institutionalisation of behavioural research for planners. She believed that planners must have "man in mind" in performing their professional duties.

Participation is necessary because the physical planning process concerns us all in a very thorough-going and permanent way. Aldous (1972) says that planning decisions can sometimes have a greater effect on the life of an individual than a prison sentence. In particular, housing, which does not evolve from properly articulated user needs and preferences, can result in what Gauldie (1974) refers to as "cruel habitations", due to an imperfect knowledge of user needs and consequent misplacement of emphasis.

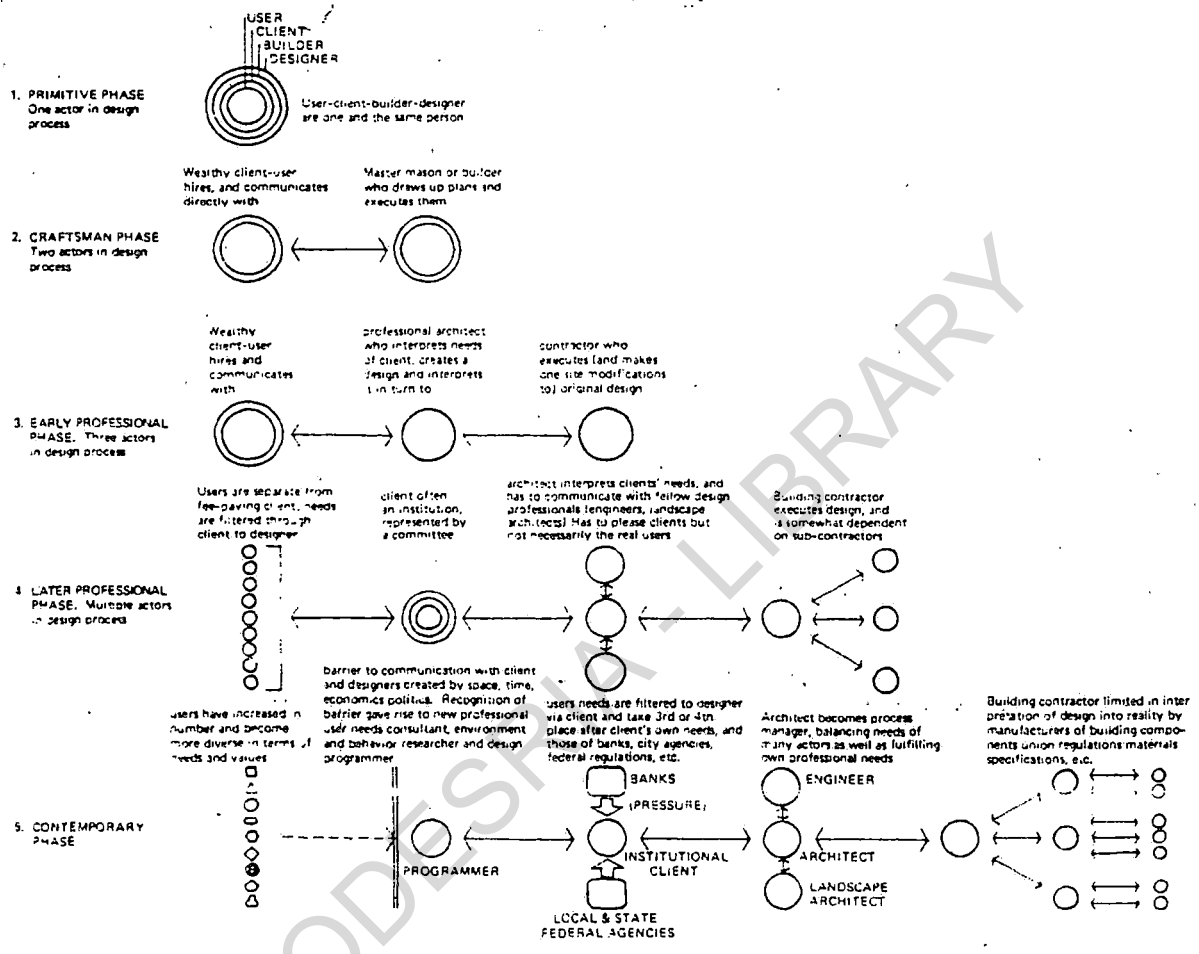
Throughout history, the individual has participated in the design process in varying degrees. Alexander (1966) describes the excellent fit between traditional peasant housing and their way of living. At the other extreme, castles, cathedrals and palaces were under the control of kings, priests and noblemen who directed the designers of that era. Technological advances in the twentieth century tended to take the

building out of the hands of the user and to transfer it almost entirely to the technologist and the designer. According to Bell et al (1973), zoning ordinances, building codes and complex construction systems have pushed the client aside. The poor cannot build their own houses (except in the most rural areas) as these codes and specifications cannot be met by them. The poor are also not incorporated into the design phase of housing schemes meant for them, but are moved in to inhabit the buildings after the designers had done their job.

Cooper-Marcus (1977) identified five phases in the evolution of designer-user relationships at different periods in history and went on to illustrate the changing phases graphically. He labelled these the primitive phase, the craftsman phase, the early professional phase, the later professional phase and the contemporary phase (Fig. 3).

The negative impact of these trends on the performance of housing has led, since the 1960s, to the evolution of approaches for developing methodologies so that non-technicians can have significant inputs into the design process. Since the first major article on advocacy planning by Davidoff (1965), evaluations have focused on new ways for planningsocial and physical design simultaneously and not on the resulting physical structure. It is argued that advocacy planning can provide the means by which physical attributes and conditions can be related to the way they serve their users.

Fig.3: Designer-user relationships at different periods in history.



Source: Cooper-Marcus, Clare (1977).

2.1 LITERATURE REVIEW

The volume of bibliographic materials on the subject of man-environment interactions is so staggering that searching and bounding them require considerable efforts. For clarity and brevity therefore, this review is structured in three parts, each addressing a basic theme of the study.

The first part, which is essentially a background appraisal, deals with the cultural determinants of house form. This is to demonstrate the overwhelming evidence from research findings in support of the view that culture is the most important consideration in determining the house form and level of residential satisfaction. It is the apparent neglect of this fact in Nigeria's public housing development efforts that motivated this study in the first place. The second part deals with cultural issues in housing and residential environment among some Nigerian ethnic groups, with emphasis on the Igbos who constitute about 99% of the residents of the housing estate under study. The third part addresses previous design approaches to housing and residential environment, highlighting their strengths and weaknesses and the gaps in knowledge which necessitated the present study.

2.2 CULTURE AND HOUSE FORM

Housing constitutes one of the most universal forms of material culture, being found in all except normadic societies. It is the most significant part of the built environment, being the single context in

which the largest range of human needs are met and the largest part of human life is lived. Studies indicate that more activities begin and end in a house than in any other single location. At present, however, there is no concensus among social scientists as to how far the build environment can influence human behaviour. But two views are widely held by housing researchers. Agbola (forthcoming 1990) summarised one position when he observed that the fundamental assumptions underlying ecologically-oriented research have been that an understanding of the relationship between organisms and their environment, gained through scientific enquiry, will provide guidelines for social planning and urban design. The other view is that housing and residential environment provide an extremely rich and fruitful area for the study of the interplay of socio-cultural factors and environmental form, because socio-cultural influences on housing are more direct than those on, for example, industries and are thus more easily identified and understood (Vapnarsky 1966).

Several scholars have worked on the cultural basis of our housing and environmental perceptions. Such works are unanimous in their conclusions that the changing behavioural patterns of users of housing is a reflection of their cultural background, indicating that if designs violate the socio-cultural or psychological needs and expectations of the people, they will be rejected outright or at best converted to suit the needs of the people. Using traditional architecture around the world, these works illustrate that while other factors such as site,

technology, climate and economics are important, the more significant factor in determining the form of the built environment is culture. They argue that for satisfying house forms, the culture of the people should form an important part of architectural programming.

Rapoport (1969) wrote that house form is highly cultural. In the face of constraints of climate, materials and technology, house form has evolved in various cultures as a set of beliefs bundled into a given understanding of what a house ought to be. In the same vein, Dorsey (1978) noted that if the residents of a community have a positive perceptual understanding of the cultural integrity of their dwelling unit and its place in the community, then the residents will accept their environment as being satisfactory; conversely, if their perceptual understanding is negative, their environment will be rejected.

Social anthropological studies have shown that it is the variability in response to the physical environment arising from individual and societal differences which makes socio-cultural factors the most important explanatory factors in determining house forms. Societies have responded to their physical environments according to the dictates of their cultural traits and unless people can give their personal meaning to their physical environment, they are alien to that environment and are likely to react violently or dumbly to it. It is also believed that the impact of form varies with the relationship of the society to its built

environment. It is strongest in those societies which have a unitary symbiotic world view and whose built forms often contain many symbolisms. Gyuse (1979) warned that ignoring these relationships could have undesirable physical, social and psychosomatic consequences.

Pahl (1970) added emphasis to the function of housing as a physical symbol of one's position in the social structure. Depending on culture and the social class system prevailing in a given society, the location of a house, its physical appearance and its furnishings may be directly related to the social status of those living there. Hence, the house is an instrument of self expression. In addition, there is something conveyed about the individual by the kind of house he chooses or the shrubbery he plants in the yard. The dwelling, like the clothes, is a badge of identity.

Research has also revealed that housing satisfaction is related to cultural values and social situations, sometimes in defiance of physical housing standards. Onibokun (1976) advised that housing must be thought of in its whole social context because preferences as to housing gain or loose salience depending on the terms set by the social situation in which people are trying to make their living, housing standards being in many situations a peripheral issue. He cited a number of cases to illustrate this view: For the peasant immigrant of Latin America, housing - even of excellent quality and very inexpensive -

does not satisfy his needs unless it enables him to live and go about his daily routine in the presence of large numbers of friends and relatives. For a working Swedish family, social prestige is so important that the living room will be preserved even if family activities will have to be crowded into one other room in a two-room dwelling unit.

2.3 CULTURAL ISSUES IN HOUSING AND RESIDENTIAL ENVIRONMENT IN NIGERIA

Although no attempt has been made by way of research to articulate these peculiarities and determine their precise design implications, the different ethnic groups in Nigeria exhibit eloquent manifestations in housing forms and residential environments of the cultural differences among them.

The socio-cultural values of the Hausa-Fulanis of Northern Nigeria are bound inextricably with Islamic norms and traditions. There is a pronounced concern for privacy in traditional muslim housing and this is reflected in the physical form in two ways. The first is the placement of doors within the building and the architectural treatment of windows while the second is the limit on building heights. According to Al-Hathloul (1978), doors and windows are placed in such a way as to prevent direct visual access by passersby into dwellings and building heights are very consistent within each district or block in a residential layout.

Historical accounts demonstrate that the Yorubas of Western Nigeria have a long history and are a highly cultured people. They had organised and enjoyed socio-economic and political institutions even before their first contact with the western world. The struggle ever since the time of initial contact has been against western domination. According to Ademuwagun (1965), during the colonial days and especially since independence, the struggle has been expressed in Yoruba efforts to be as original as possible in thought, word and deed, and, at the same time, to keep abreast of modern times. A harmonious coexistence of traditionalism and modernism tends to characterise the aspirations of the average Yoruba man today. Unfortunately, no research has been undertaken to determine the implications of these attitudes to housing development in Yoruba cities.

Gyuse (1979, 1980) studied residential habits among two ethnic groups in the middle belt of Nigeria. Among the Tiv of Benue State, the spatial organisation of living units in the compound reflects closeness within family relationships. The oval arrangement of buildings gives each member of the compound equal physical and visual access to the central courtyard area. This arrangement emphasizes Tiv egaliteranism. Among the Sura who live near Panyam on the Jos Plateau, there is great need to protect granaries from thieves. It is noteworthy that traditionally, the need for security is dictated by the

real and symbolic importance of certain elements in the build environment. For the Sura therefore, granaries are placed in the safest location, namely, the centre of the compound and surrounded by other units.

The heartland of the Igbo nation is East-Central Nigeria. Chubb (1971) identified the main characteristics of the Igboman's personality as marked individuality, self-assertion, adaptability, a great capacity for physical labour and a strong dislike and suspicion of any authority other than his own. Ilogu (1974) studied the Igboman in society and observed that the cultural pattern that emerges through looking at the traditional social structures of Igboland as well as the institutions of family, religion and economic pursuits could be termed 'communalist'. Emphasis is placed on the commune rather than the individual, and moral obligations are regulated more by the demands of moral codes, tradition and custom than by the exercise of individual moral judgement and conscience. The conflicting views of these two scholars tend to suggest that the Igboman as an individual is different from the Igboman in society.

Environmental perception among the Igbos is essentially holistic. This, according to Ifemesia (1986) is in accord with the general Igbo cosmology which is in many respects universalist in perspective - being a world view that does not place its concepts of various activities of life in hermetically-sealed cubicles. The traditional residential environment of the Igbos is such that encourages humane living among

the inhabitants. Ifemesia (1986) defines humane living as "a way of life emphatically centred upon human interests and values, a mode of living evidently characterised by empathy and by consideration and compassion for human beings." Due to its infinite range, a study of the Igboman's environmental perception calls for a multi-disciplinary approach, demanding inputs for historical research, religion, bio-technology and parapsychology.

The invention of agriculture is the most fundamental of human discoveries. It marked the watershed between the hazardous wandering life of the hunter and collector of wild edible plants and a settled, more comfortable life, which in turn made the development of further skills possible. Isichei (1976) showed that this discovery, especially the learning of how to plant yams, formed the economic basis of Igbo civilization. It was of supreme importance and was given ritual and symbolic expression in many areas of Igbo life.

In line with Chubb's (1971) theory of individualism for the Igboman's personality, the Igbos traditionally are very reluctant to engage in residential clustering. This results from their adaptation to a harsh, stingy environment in which food gather is precarious. The shunning of togetherness is therefore a basic survival norm aimed at increasing the amount of space available to any one family and, by implication, its opportunities for survival.

Traditionally to the Igbos, the house is predominantly a status

symbol and, in most cases, offered little or no major opportunities for economic pursuits. This derives from the Igboman's psychology which favours the idea of a place of work which is distinct from a place of abode. There is, in Igbo cosmology, a very clear distinction between the concept of work and the concept of leisure. This is the reason for the distant farmlands and the clear separation between farming seasons and seasons for festivities. There is evidence, however, that this attitude to the dwelling unit is changing and that people are becoming more utilitarian with respect to their dwelling units and its environment.

2.4 DESIGN APPROACHES TO HOUSING AND RESIDENTIAL ENVIRONMENT

At various times in the past, scholars have proposed different design approaches to housing and the residential environment. Although these studies provide invaluable background information to the designer, none of them went beyond the problem identification and appraisal stages to actual professional application of research findings. Because they are not subjected to a test of practical application, most of these recommendations are bogus and of doubtful authenticity and may even be impossible to practicalise. This is where the present study differs from previous efforts in this area. It seeks, through research, to identify the culture-conditioned needs and preferences of respondents in their dwelling units and to give such findings spatial interpretation

and architectural expression.

Kunze (1970) studied nine similar residential settings in four rural towns in North Carolina, United States. Age, sex/race, site activities and physical implements used in the settings were classified for participant groups in each setting. The major utility of this research is that it evolved an index which described parts of the physical environment in terms of their ability to support various physical and social activities. Perin (1972) finds people to be objective actors in the utilization of housing space. This is in line with the basic trait of man as an actor who can articulate his needs rather than a simple adapter to given environments. This work reflects a growing sophistication regarding man's spatial requirements.

Hirschon et al (1970) investigated a refugee settlement of Turkish Greeks established in Athens in 1927. In that investigation, in-depth surveys of thirty households were made and detailed houseplans, familial relationships and observations of the use of space were obtained. The detailed findings provided a unique anthropological - architectural case study, bringing out the shaping of habitable space by specific cultural norms. Scott (1970) carried out a pilot study on housing in London to ascertain the qualities that can be itemized as relevant criteria in assessing the success of a housing area. The study also tested features of the designed environment against a range of social criteria. Hoinville (1971) evolved a new method of research - the

priority evaluation approach - which is a communication process with the public that allows one to understand the nature of behavioural attitudes and possible trade-offs. The objectives of the research was to determine measurements of community preferences so that priority values can be identified for future use in community and social planning.

Alexander (1966) described the excellent fit between traditional peasant housing and their way of living. He proposed an innovative analytical approach to design developed in a way to represent design problems to make them easier to solve. He viewed design as an effort to achieve "fit" between the form and its context. The process of achieving good fit is viewed as the process of neutralising misfits between the form and its context. In primitive cultures, this process of fitting is adaptive. But in western civilization, adaptation cannot keep pace with the changing culture with the result that the complexity and interaction of problems become unmanageable. Design solutions lie in forming a formal picture of the designer's mental picture which is based on subjective concepts. The process is one of analysis and synthesis in reaching the final form.

Onibokun (1971), Kazuo et al (1976), Aminu (1977) and Ohiaegbunam (1984) all used the five-point scale developed by Likert in measuring the level of satisfaction enjoyed by the inhabitants of the various housing projects which they evaluated. The five-point scale ranges from "very satisfied", which is scored five points, through

"satisfied" (four points), "I can't say" (three points), "not satisfied" (two points), to "poor" (one point). This method appears to be an effective and objective way of measuring such an attitudinal parameter as satisfaction. It is noted however that the five-point scale as employed by the scholars is somewhat too generous (and hence a bit confusing) in its array of choices.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 PECULIARITIES OF THE RESEARCH

This study attempts to give social anthropological insights (gained through research) a spatial interpretation and architectural expression. The underlying hypothesis is that the extent to which the culture-conditioned housing needs of a given person are addressed in a given dwelling unit is critical in determining the level of satisfaction which such a person can achieve in the dwelling unit in question. The major difficulty in the study is that certain aspects of the methods and demands of social anthropology and architecture are strange to one another. For example, the empirical observations and theoretical analysis consistent with the social anthropological tradition is not very easily transferable into the numerical forms in which architectural data usually exist.

3.1 THE PRIMARY SOURCE OF DATA

This study is based on data collected through two methods, namely, a structured interview of some staff of the Anambra State Housing Corporation, Enugu, and a questionnaire survey administered to the residents of the Niger Bridge-Head Housing Estate, Onitsha, which is the project site.

A total of 452 households heads in the housing estate under

study were covered in the questionnaire survey. The questionnaire was designed in such a way as to elicit free-flow of information from the respondents on all the issues which it addresses. It seeks to identify the level of importance which each respondent attaches to the housing variables used in the study and also the extent to which each variable was successfully attended to in the design of each dwelling unit.

In summary, the questions asked and data generated pertain to the following:

(i) data on the user groups (the major socio-economic characteristics of the respondents, such as household size, highest level of formal education attained, stage in life cycle, income level and occupation of the household head);

(ii) evaluation of selected variables concerning the dwelling unit and residential environment;

(iii) preference patterns of residents for housing variables.

3.2 THE VARIABLES

Among the Igbos who, as previously mentioned, constitute about 99% of the residents of the housing estate under study, the major components of design and layout of dwelling units (appearance, internal subdivision of space and external environment) are all interdependent. To identify the variables which tend to contribute to an image of a

socio-culturally satisfying housing, one has to rely heavily on bibliographic search and personal experience.

Rapoport (1969) conceived of these variables as needs and stated that what is important with regard to the built form is the culturally defined way in which needs are handled. He stated that it is not whether there will be a door or a window, but their form, placement and orientation which are important; it is not whether one cooks or eats, but where and how.

Three major housing variables which are considered to sufficiently articulate users' culture-conditioned housing needs are selected for this enquiry. These are:

(i) size and organisation of space;

(ii) the external environment of the dwelling unit; and

(iii) economic opportunities attached to the dwelling unit.

For the first variable, questions were framed in such a way as to obtain the respondents' assessment of their dwelling units as it concerns the size and organisation of space within the dwelling unit. The questions asked pertain to such basic space units as bedrooms, living room, kitchen and toilets as well as to the layout and flexibility of these spaces in relation to daily routine of occupants of the dwelling unit.

To operationalise the environment variable, questions were framed to assess the opportunities which the residential environment offers

for private as well as for social contact with neighbours in terms of community facilities, recreation opportunities, etc. Also neighbourhood characteristics in terms of cleanliness, density, reputation and architectural quality of buildings are assessed. The desirability or otherwise of a private garden for agricultural purposes as part of the residential plot and a corner store and/or workshop attached to the dwelling unit itself are used to assess the importance of economic opportunities in housing.

3.3 THE QUESTIONNAIRE PRE-TEST

The questionnaire was pre-tested on 28 dwelling units made up of four dwelling units randomly selected from the seven different house types in the estate under study. Field assistants were instructed to take very careful notes of their experiences in the field. The purpose of this was to identify the problems that were likely to arise during the actual field work and so to nip them in the bud. More importantly, the pre-tests sought to find out the relevance of the selected variables and the adopted methodology to the respondents, the ambiguities that might be present in the questionnaire and the best time to locate potential respondents.

The variables in use were found to be very relevant to the study. Apart from those whose dwelling units and its surrounds also served as business or commercial premises, all other respondents could be located as from 7.00 p.m. (i.e. after working hours). It

was also discovered that some of the field assistants needed further training.

3.4 SAMPLING METHODOLOGY

Table 3 shows the various house types with the number of units of each in the housing estate under study.

A 100% sample size was used in the survey. This eliminated the difficulty that would have arisen in determining what constitutes a fairly representative sample size for those housing types with few number of dwelling units. Also the problem of generalising sample results for the entire study population does not arise as every household is surveyed. Since the sample size is large, the use of powerful statistical techniques for data analysis becomes unnecessary. It is perhaps not the general impression as conveyed in statistical averages that matters but individual feelings in different dwelling units in different parts of the estate. It is also thought likely that a large sample size would contain sufficient variations in types of households and dwelling units to enable some of the popular myths about residential attitudes to be put into perspective.

The nature of the questions required that respondents be matured and knowledgeable enough about the living conditions and residential aspirations of the household being surveyed. The most preferred respondent usually is the household head. If he or she is unavailable however, anybody residing with him or her who is up

Table 3: House Types in the Niger Bridge-Head Housing Estate, Onitsha

	House Type	Number of units
1.	2-Bedroom Duplex Block of Flats (Six flats).	12
2.	7-Bedroom House Type with attached 2-Bedroom Boys' Quarters	12
3.	4-Bedroom House Type with Car Park and 2-room Detached Boys' Quarters	16
4.	Commercial/Residential House Type	36
5.	2-Bedroom House Type with Boys' Room and Garage	102
6.	5-Bedroom House Type with 2-room Boys' Quarters and built-in Garage	72
7.	3-Bedroom House Type with Built-in Garage and Open Terrace	142
	Total	392

Source: Field Survey by the Author (1989).

to twenty-one years of age is interviewed. A household is defined as all persons living under the same roof and eating from the same pot (Aminu, 1977).

To achieve spatial harmony in the layout of the various house types, the estate is designed in such a manner as to have dwelling units of the same type in the same block of residential plots. The strategy employed in this study is to deploy a group of field assistants to cover a particular house type in all blocks of plots in which it is found. The number of field assistants covering any house type depends on the number of dwelling units involved.

3.5 A PREVIEW OF THE ANALYSIS

The goal of data analysis is to find answers to the research questions previously posed and to ascertain whether those questions are valid in themselves. In addition to adducing evidence to support pre-conceived relationships, it is hoped that new attitudes might be uncovered which can form the basis of new hypothesis. Afterall, culture is dynamic and the study is aimed not only at what the cultural attitudes towards the dwelling unit and its environment was, but also at ascertaining the nature and extent of its dynamism.

Data analysis will also attempt to determine the relative importance of each variable employed in the study and to ascertain whether the socio-economic characteristics of a household affect their attitudes towards their dwelling unit and its environment. It will

relate responses to questions on residential environment, internal organisation of space within the dwelling unit and space sizes to the layout map and floor plans of house types in the estate.

Simple percentages and Chi-Square Distribution Analysis of some respondents characteristics and living room size are the statistical tools employed for the data analysis. Also tables, graphs, pie and bar charts and histograms are used to illustrate the research data graphically.

3.6 LIMITATIONS TO THE STUDY

It is recognised that the method employed in the selection of housing variables to be investigated can lend itself to abuses. The approach may not be entirely scientific because the choice was made based on the researcher's observations, experiences and literature review. Furthermore, there is the tendency to become subjective and sentimental about concepts and beliefs concerning residential attitudes, especially when one is part and parcel of the population he is studying. The authenticity of the researcher under these conditions faces challenges, but they are challenges which do not necessarily invalidate the information supplied until otherwise disproved under a better scientific approach. It can also be argued that since the entire concept of culture is about values, there is probably no objective and value-free way of selecting the variables to measure the cultural attitudes to housing.

Other limitations imposed upon collected data can arise from three possible sources:

(i) the traditional etiquette of the Igbos to give the kind of answers considered pleasant and welcome to a strange enquirer;

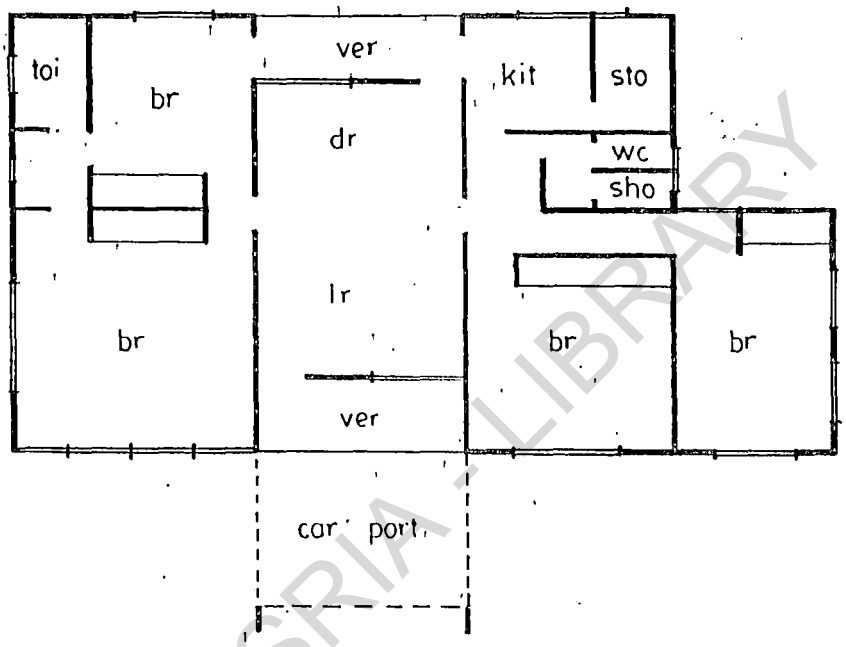
(ii) claims of superiority by one household over another by which some facts are deliberately exaggerated by respondents; and

(iii) the general lack of coherence in housing concepts leading to surprise reactions when research enquirers seek for deeper and more involved information from respondents. Such further questionings are either dodged or the answers obtained become vague and difficult to analyse. This lack of knowledge especially on the technical aspects of the housing subject, has led to the fear that respondents often tell us little about their real needs since they base their responses only on those features they happen to know about. A person cannot be a judge of something quite outside his experience.

There is also the common problem associated with all social research surveys. This concerns the tendency of respondents to be rather secretive about some aspects of social enquiries. The danger of this situation arising in the present study is real because

of the rather probing nature of some of the questions posed. For example, questions on family size, family income and relationships with neighbours are personal details which may not be truthfully supplied, no matter the amount of assurance given as to the confidentiality of supplied information. Added to this is the belief among the Igbos that it is a bad omen to divulge one's aspirations to things in general (including housing) as this is believed to hamper their ultimate realisation. Where necessary, therefore, this study has tried to supplement questionnaire data with personal field observation to minimize the effect of the above eventualities on the final results. According to Ademuwagun (1965), the use of personal experiences in any study is vital because they are basic to the construction of one's ideas about reality, values and knowledge. They are also basic to problem identification, definition and solution.

FIG·4: FLOOR PLAN FOR THE 4 – BEDROOM HOUSE TYPE WITH CAR PORT (1:150)



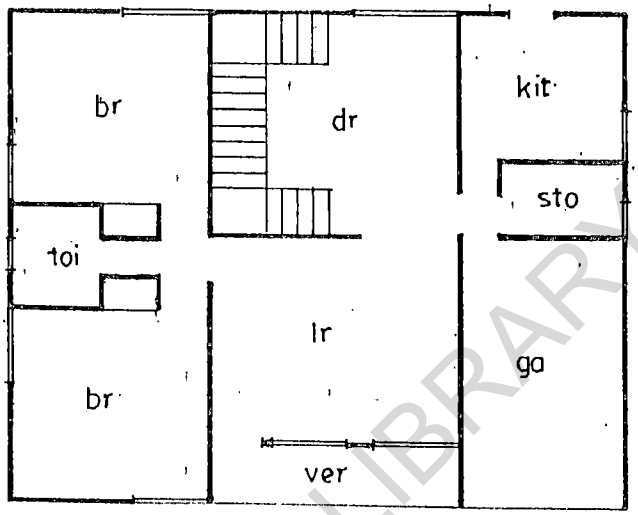
KEY

br — bedroom
dr — dining room
kit — kitchen
toi — toilet
wc — water cistern
sho — shower
ver — veranda
lo — lobby
ga — garage

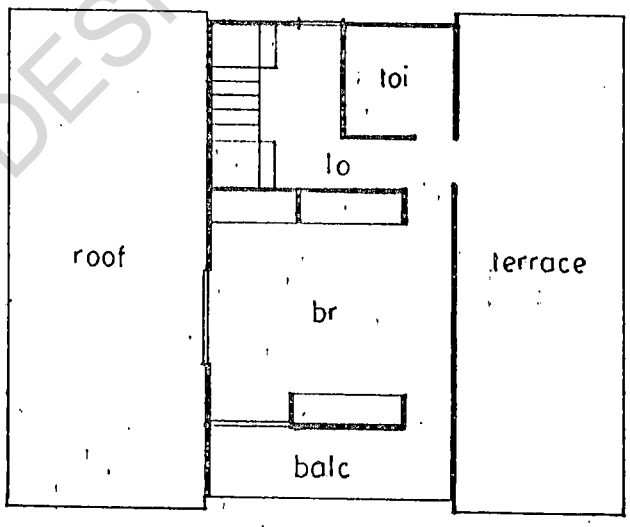
SOURCE: ANAMBRA STATE HOUSING CORPORATION, ENUGU (1978).

FIG.5: 3-BEDROOM HOUSE TYPE WITH BUILT-IN GARAGE AND OPEN TERRACE (1:150)

(i) GROUND FLOOR PLAN

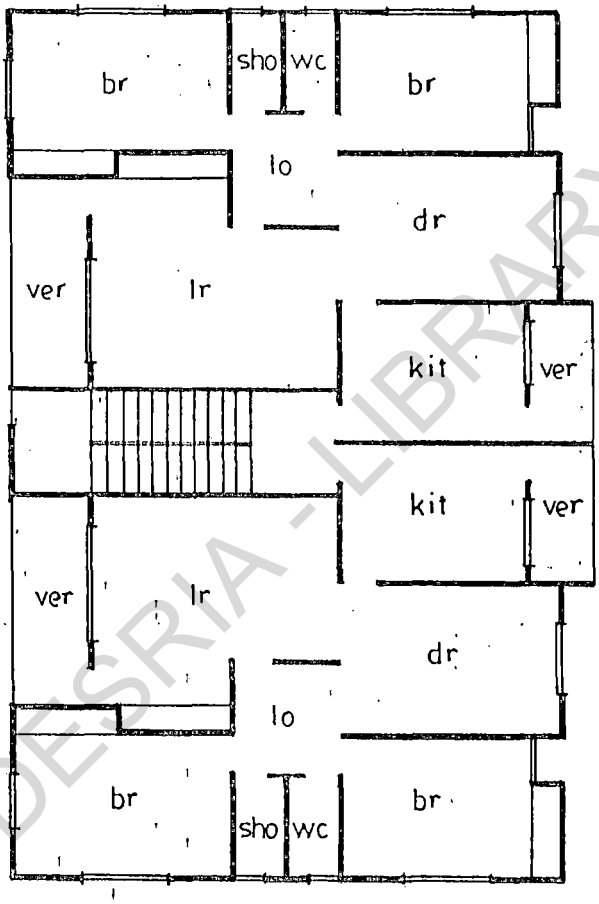


(ii) FIRST FLOOR PLAN



SOURCE: ANAMBRA STATE HOUSING CORPORATION, ENUGU (1978).

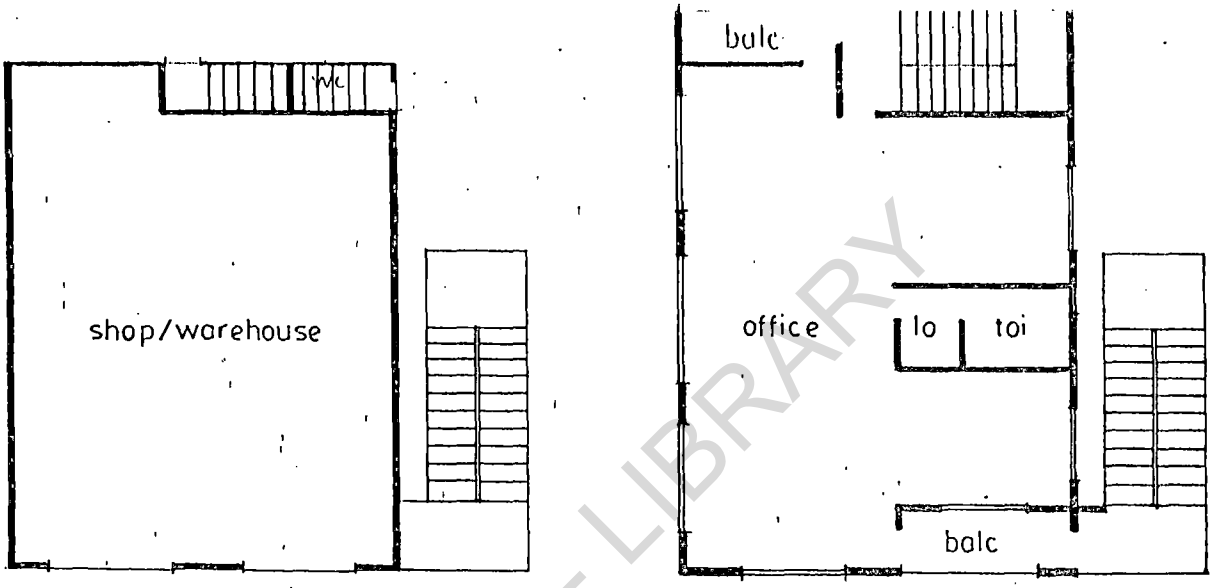
FIG. 6: FLOOR PLAN FOR THE 2 – BEDROOM DUPLEX BLOCK OF FLATS (1:150)



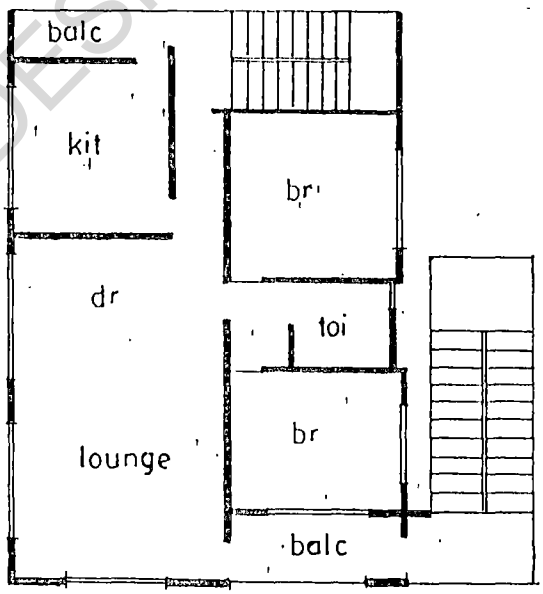
SOURCE: ANAMBRA STATE HOUSING CORPORATION, ENUGU (1978).

FIG.7: COMMERCIAL / RESIDENTIAL HOUSE TYPE (1:150)

(i) GROUND FLOOR PLAN (shop/warehouse) (ii) FIRST FLOOR PLAN (office)

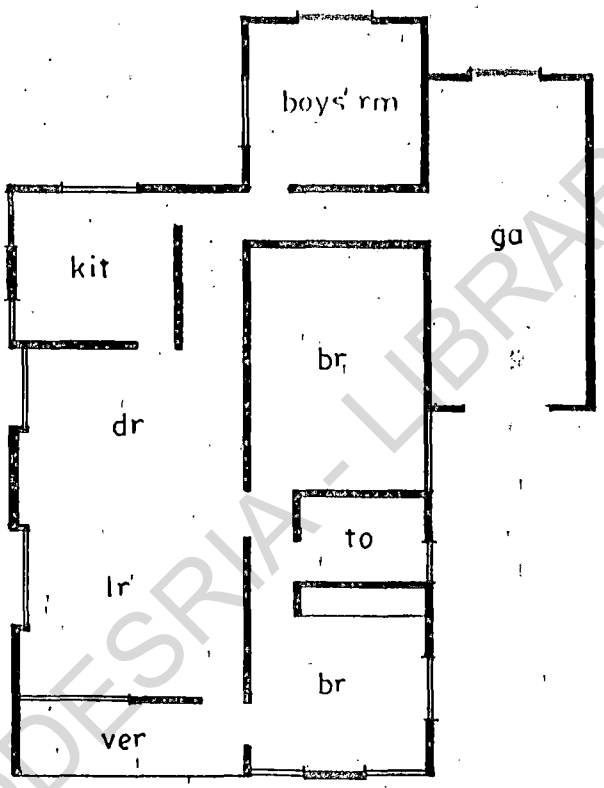


(iii) SECOND FLOOR PLAN (residential)



SOURCE: ANAMBRA STATE HOUSING CORPORATION, ENUGU (1978)

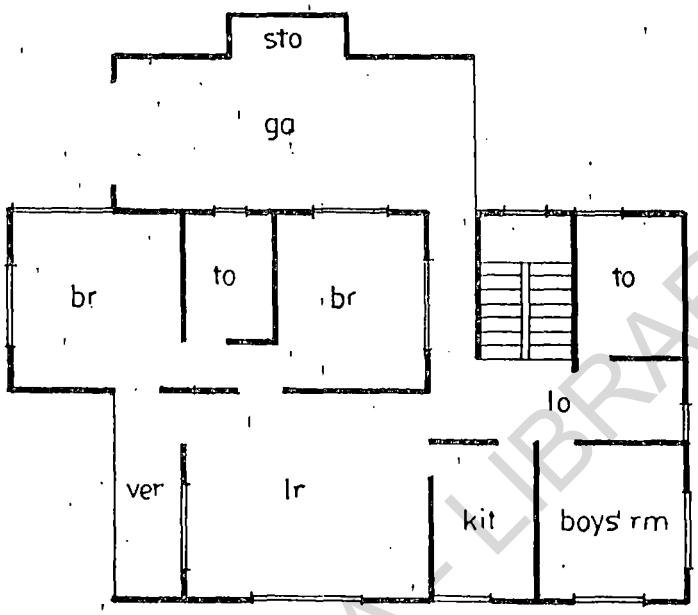
FIG. 8: FLOOR PLAN FOR THE 2 - BEDROOM HOUSE TYPE WITH BOYS' ROOM AND GARAGE (1:150)



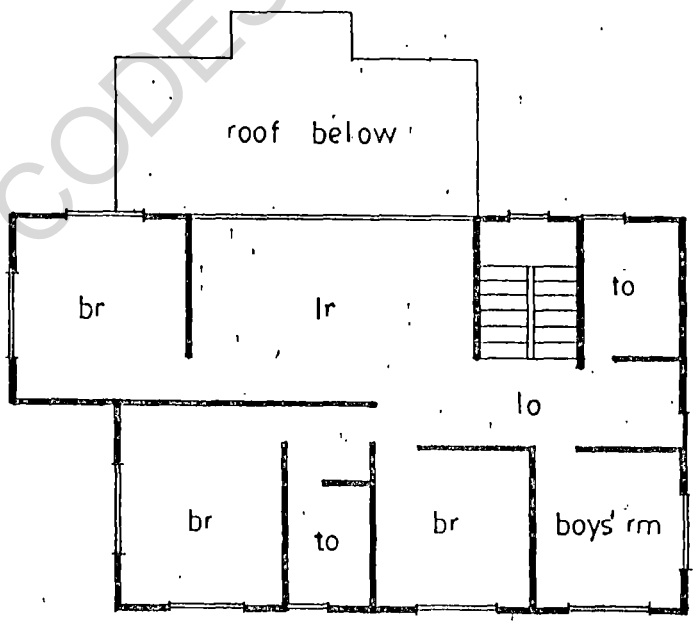
SOURCE: ANAMBRA STATE HOUSING CORPORATION, ENUGU (1978).

FIG. 9: 5 – BEDROOM HOUSE TYPE WITH 2 – ROOM BOYS' QUARTERS AND BUILT – IN GARAGE (1:150)

(i) GROUND FLOOR PLAN



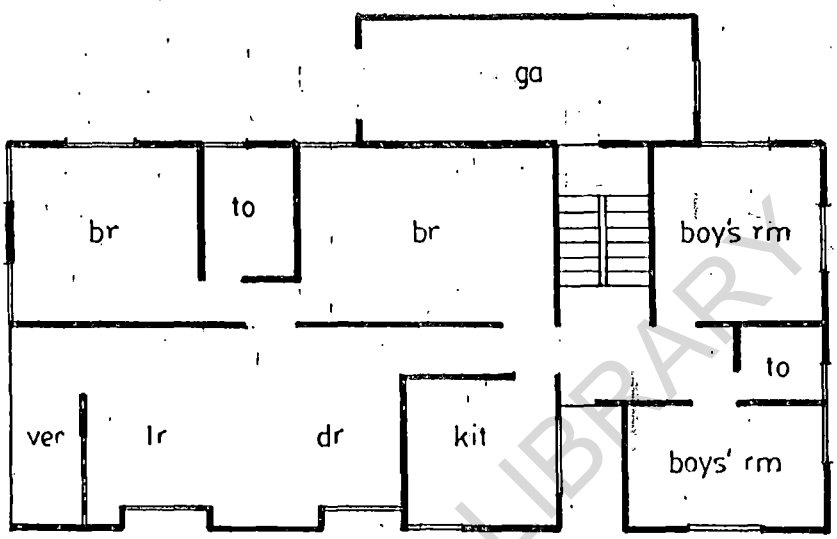
(ii) FIRST FLOOR PLAN



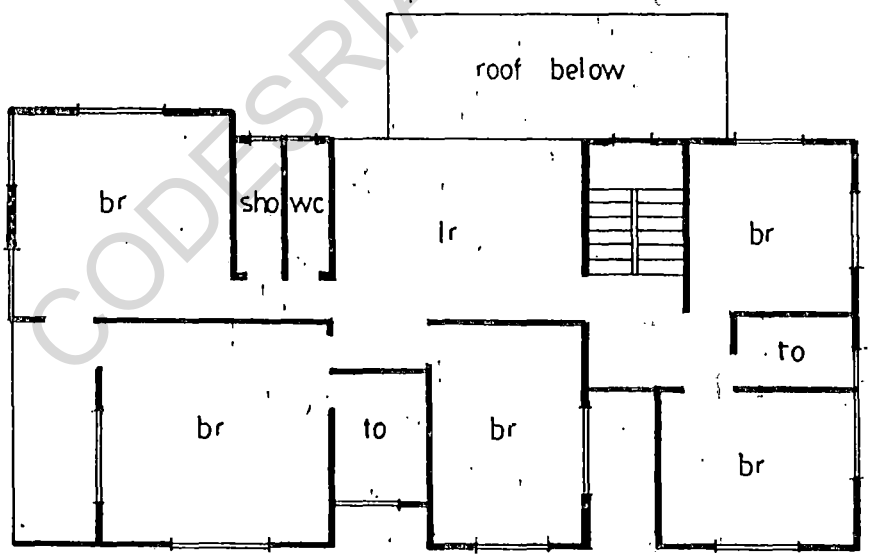
SOURCE: ANAMBRA STATE HOUSING CORPORATION, ENUGU (1978).

FIG. 10: 7 – BEDROOM HOUSE TYPE WITH ATTACHED 2 – ROOM BOYS' QUARTERS (1 : 150)

(i) GROUND FLOOR PLAN



(ii) FIRST FLOOR PLAN



SOURCE: ANAMBRA STATE HOUSING CORPORATION, ENUGU (1978)

CHAPTER FOUR

DATA ANALYSIS

32 out of the 452 questionnaires administered to various household units in the estate under study proved inconclusive and difficult to analyse. They were therefore rejected. This left the number of questionnaire responses used for the analysis at 420.

4.0 SOCIO-ECONOMIC CHARACTERISTICS OF RESPONDENTS

Since socio-economic characteristics have direct bearing on housing needs and domestic habits, it is apparent that the respondents' evaluation of the housing variables employed in this study will largely be influenced by the intrinsic characteristics discussed hereunder.

OCCUPATION

Table 4: Occupation of Household Heads at the Niger Bridge-Head Housing Estate, Onitsha (in % of 420 Household Heads)

Occupational Group	Percentage
Businessmen/traders	58.2
Private Company employees	27.8
Civil Servants	3.4
Other self-employeds (including artisans)	5.6
Total	100.0

Source: Field Survey by the Author (1989).

The trend manifested in the table is the product of market forces which determine who gets a house in the estate. As a result, there is a dominance of relatively rich businessmen and private company employees in the estate. There are also a few senior civil servants and fairly successful artisans.

INCOME LEVEL

Table 5: Distribution of Household Heads by Total Annual Income (in % of 420 Household Heads)

	Below 5,000	5,000-9,000	10,000-15,000	Above 15,000
Percentage of Household Heads	7.7	57.2	20.0	15.1

Source: Field Survey by the Author (1989).

Income level is directly linked to the occupation of household heads. As a result, there is a similar trend of the dominance of the relatively rich in the estate.

EDUCATIONAL LEVEL

Table 6: Highest Level of Education Attained by Household Heads (in % of 420 Household Heads)

Level of Education	Percentage
Primary School	51.6
Post-Primary School	26.4
University	6.7
Other Post-Secondary Education	13.2
No formal education	2.1
Total	100.0

Source: Field Survey by the Author (1989).

Onitsha, being essentially a commercial town, education is not a strong criterion for most jobs there. Hence, there is a dominance of household heads with only primary education (51.6%). Only 2.1% however are without any formal education.

STAGE IN LIFE CYCLE

(a) Marital Status

79.8% of the household heads at the estate are married while 20.2% are either single, widowed or separated.

(b) Age of the Household Head

Table 7: Distribution of Household Heads According to Age (in % of 420 Household Heads)

Age (in years)	Percentage
Below 25	2.8
25-45	41.2
46-60	42.3
Above 60	13.7
Total	100.0

Source: Field Survey by the Author (1989).

The dominance of a population in the most active phase of the life cycle (25-60 years) is manifested here. This is in keeping with the practice in Igboland where the old and the ageing retire from the hustle and bustle of city life to the peaceful and serene

environment of their respective villages of origin. Since most people achieve success relatively late in their respective professions and vocations these days due partly to the difficult and challenging economic climate, the percentage of household heads under 25 years of age is small.

HOUSEHOLD SIZE

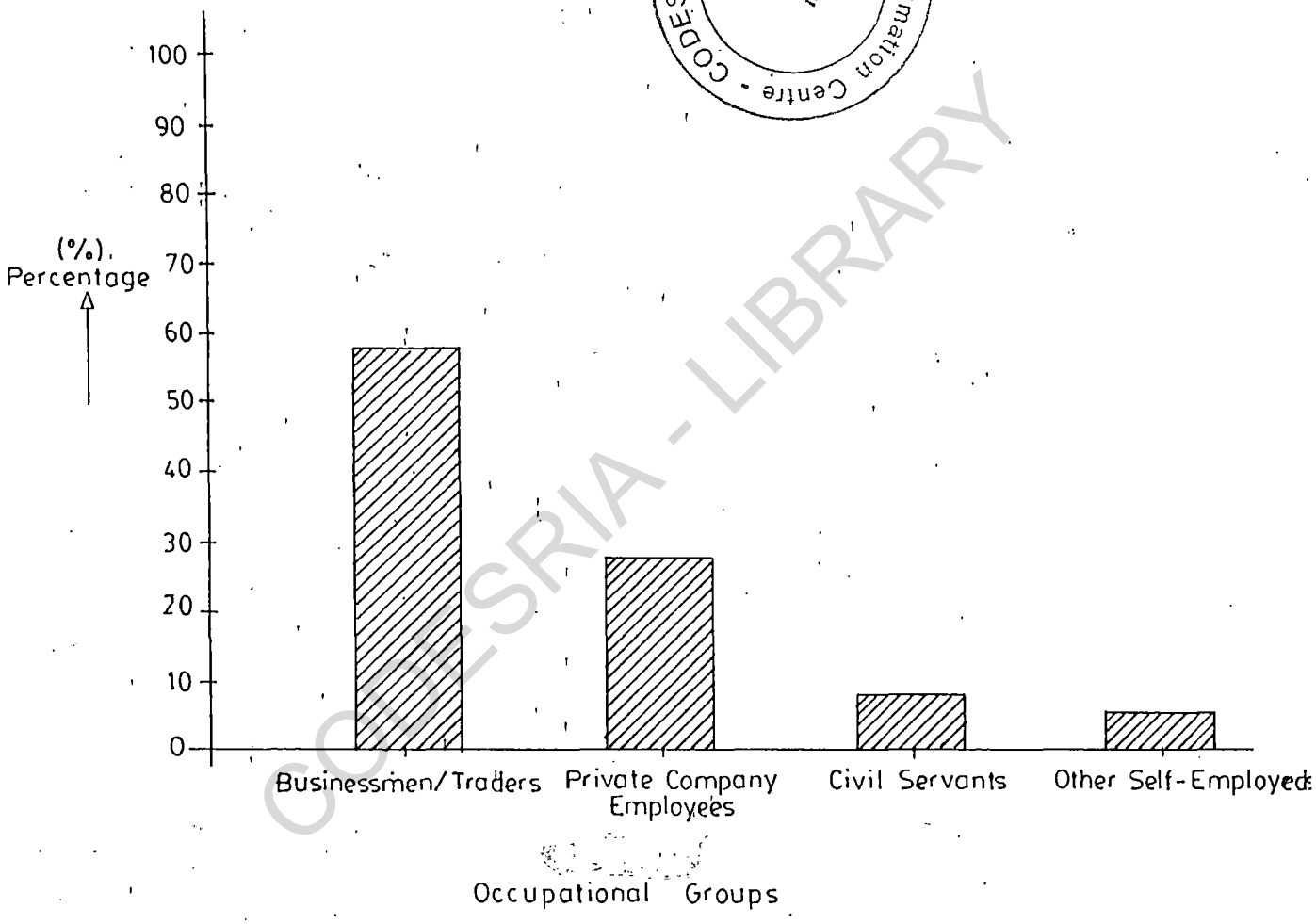
Table 8: Distribution of Household Heads at the Niger Bridge-Head Housing Estate, Onitsha According to Household Size

Household size (in Persons/ Household)	1-3	4-5	6-8	9 and above	Total
Number of households	12	60	272	76	420

Source: Field Survey by the Author (1989).

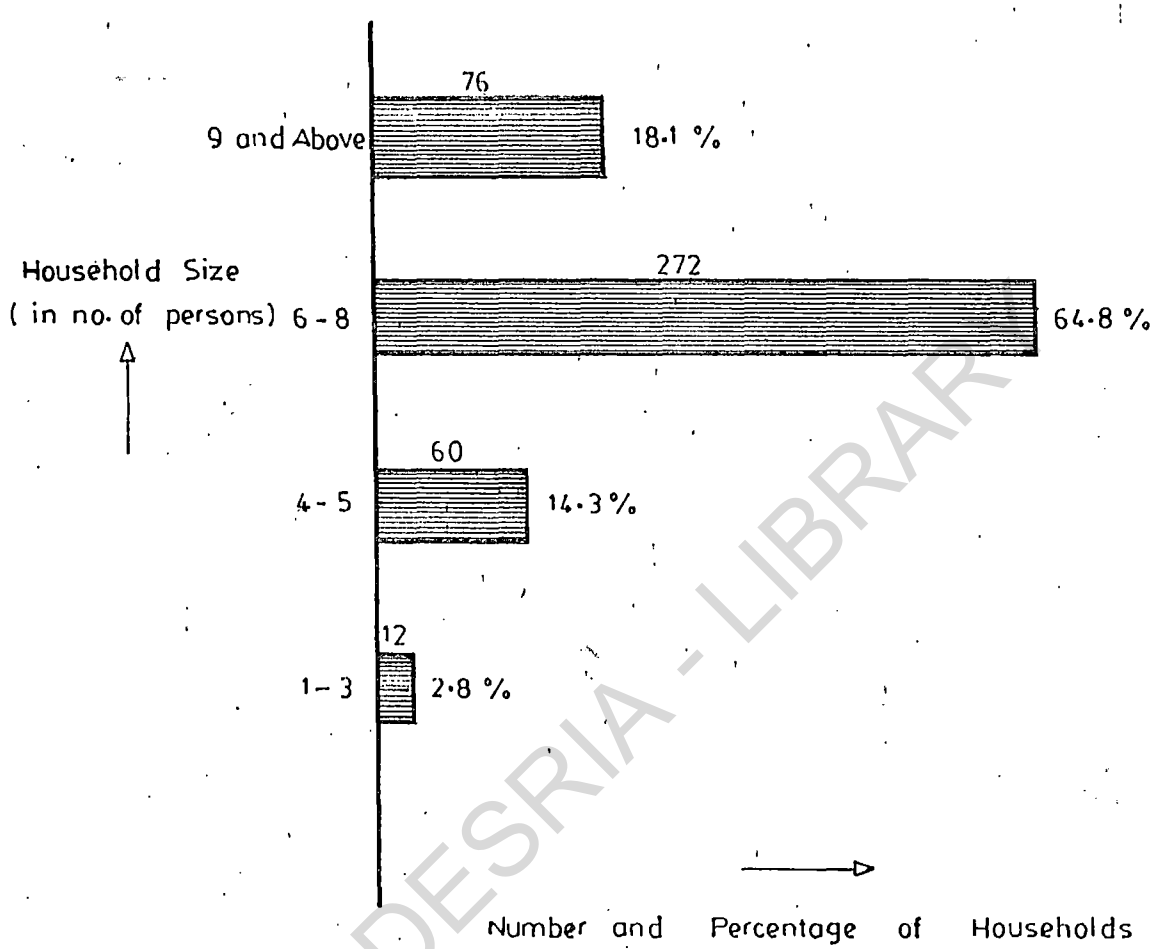
The table shows a dominance of large size households in the estate. This is easily explained by the fact that Onitsha is predominantly a commercial town populated mostly by traders and businessmen (refer to Table 1). It should be noted that most businessmen marry earlier than civil servants (since they do not have to spend so many years in school), and so have many more children. In addition to the large number of their own children, businessmen and traders usually keep and live with their assistants

FIG. 11: BAR CHART SHOWING THE OCCUPATION OF HOUSEHOLD HEADS IN THE STUDY AREA



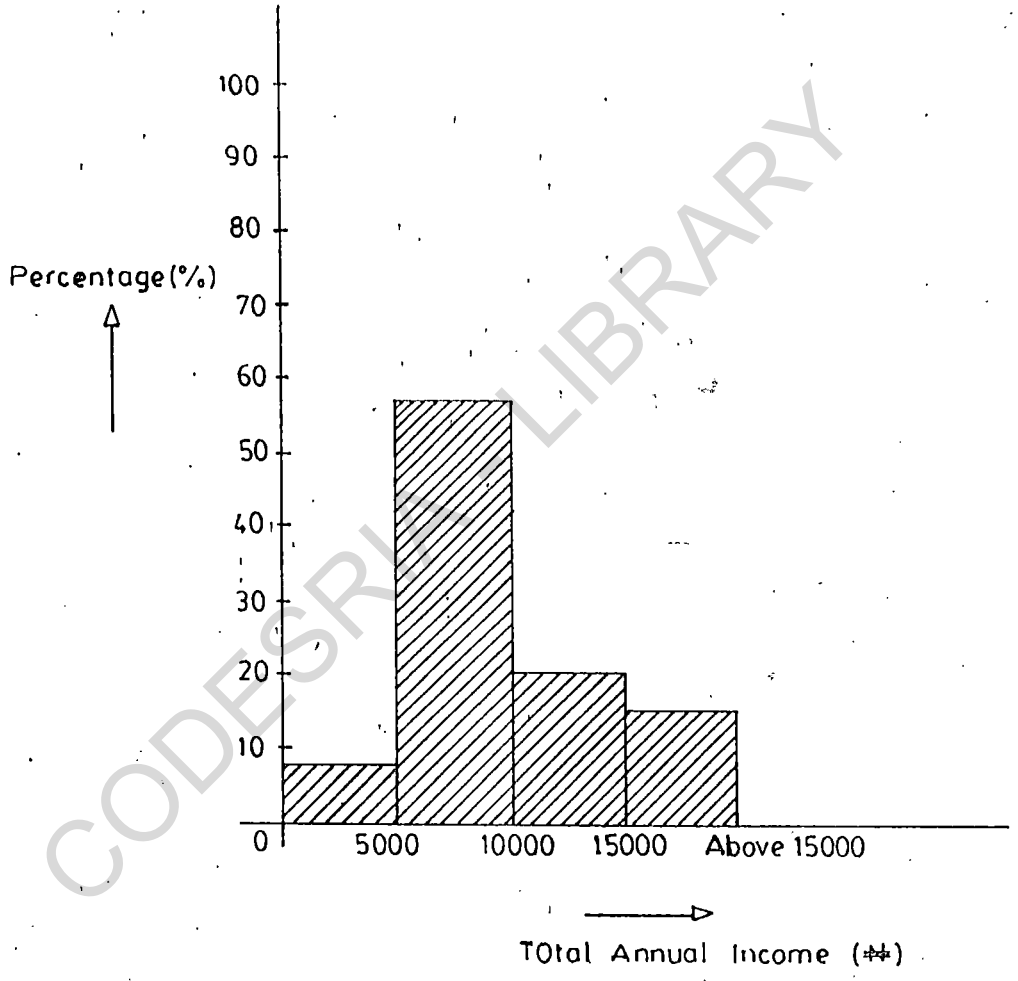
SOURCE: FIELD SURVEY BY THE AUTHOR (1989).

FIG. 12: DIAGRAM SHOWING THE DISTRIBUTION OF HOUSEHOLD SIZE IN THE STUDY AREA



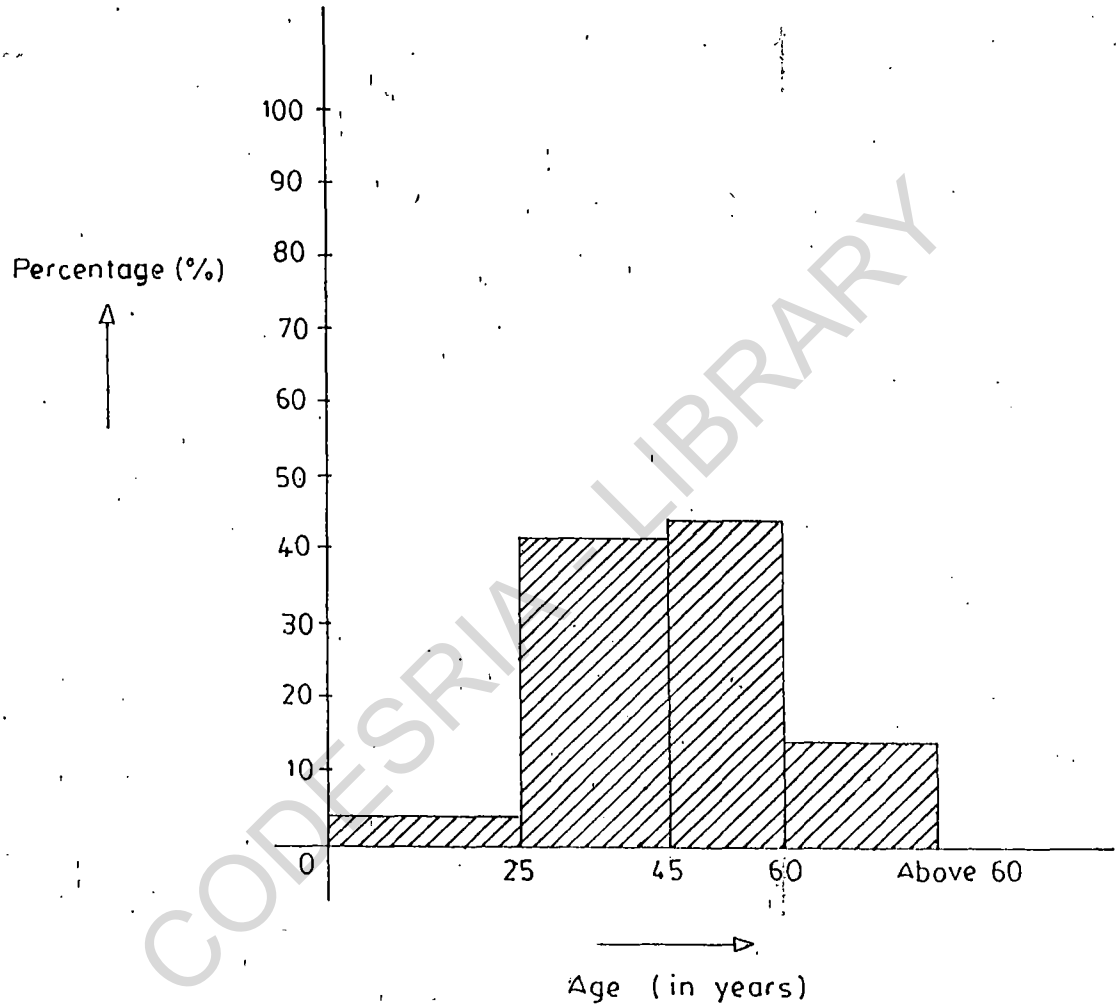
SOURCE: FIELD SURVEY BY THE AUTHOR (1989).

FIG. 13: HISTOGRAM SHOWING THE DISTRIBUTION OF HOUSEHOLD HEADS ACCORDING TO INCOME



SOURCE: FIELD SURVEY BY THE AUTHOR (1989)

FIG. 14: HISTOGRAM SHOWING THE DISTRIBUTION OF HOUSEHOLD HEADS ACCORDING TO AGE



SOURCE: FIELD SURVEY BY THE AUTHOR (1989).

and business apprentices. Hence the average household size in the estate is 8 persons per household.

4.1 SPACE DIMENSIONS

A striking feature in the research is the unanimity of critical views on deficiences in the dwelling units. The constant complaints are shortage of space and faulty internal layout of rooms.

BEDROOMS

45% (189) of the respondents consider their bedroom sizes as good. 100% of this number use their bedrooms exclusively as bedrooms (that is, for sleeping and resting). Out of the 55% (231) who consider their bedroom sizes as poor, 72% (166) put their bedroom to additional uses like ironing, workroom for the housewife, study, playroom for children, etc.

Analysed along income lines, 53% (145) of those who consider their bedroom sizes as poor earn ₦10,000 and above per annum, 40% (109) earn between ₦5,000 and ₦10,000 and 7.0% (19) earn below ₦5,000 per annum. Hence it can be concluded that there is a positive correlation between demand for space and income.

Analysed according to house types, 87% (63) of those who reside in the 2-bedroom duplex block of flats described their bedroom sizes as poor. 94% (34) of those who live in the commercial/residential house type also consider their bedroom sizes as poor. Bedroom dimension in the 2-bedroom duplex block of flats is

420mm x 2700mm while for the commercial/residential house-type, it is 4200mm x 2775mm.

61% (256) of the respondents consider the number of bedrooms in their dwelling units as insufficient. 100% (72) of those who live in the 2-bedroom duplex block of flats belong to this group. Analysed according to family size, 83% (213) of those who consider the number of rooms in their dwelling units as insufficient have six or more persons per household. Analysed according to the age of the household head, 189 (74%) out of the 256 respondents who described the number of bedrooms in their houses as insufficient are above 45 years of age. This age group understandably have become established and are more likely to have large families.

It can be inferred from these figures that 2-bedroom residences are unsuitable for the large family sizes that are characteristic of the study area.

LIVING ROOMS

100% (420) of the research subjects used the living room as the principal room of the house and from the 420 responses analysed, the following usages were listed:

Reading, resting, listening to radio, watching T.V.	97%
Receiving visitors	100%
Sitting together as family	98%

FIG. 15: PIE CHART SHOWING THE EVALUATION OF THE NUMBER OF BEDROOMS IN DWELLING UNITS BY RESPONDENTS

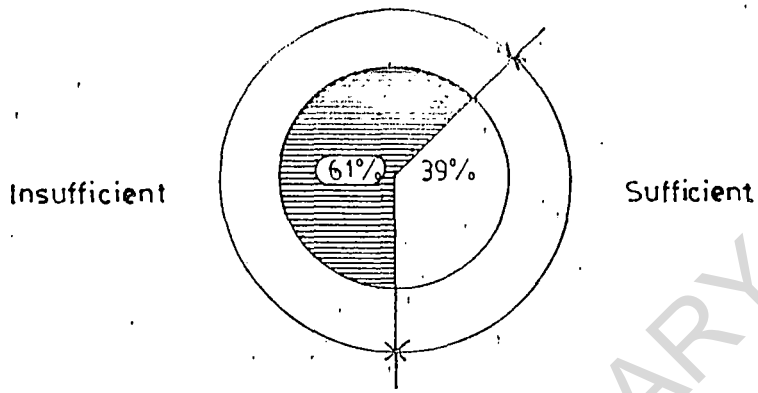
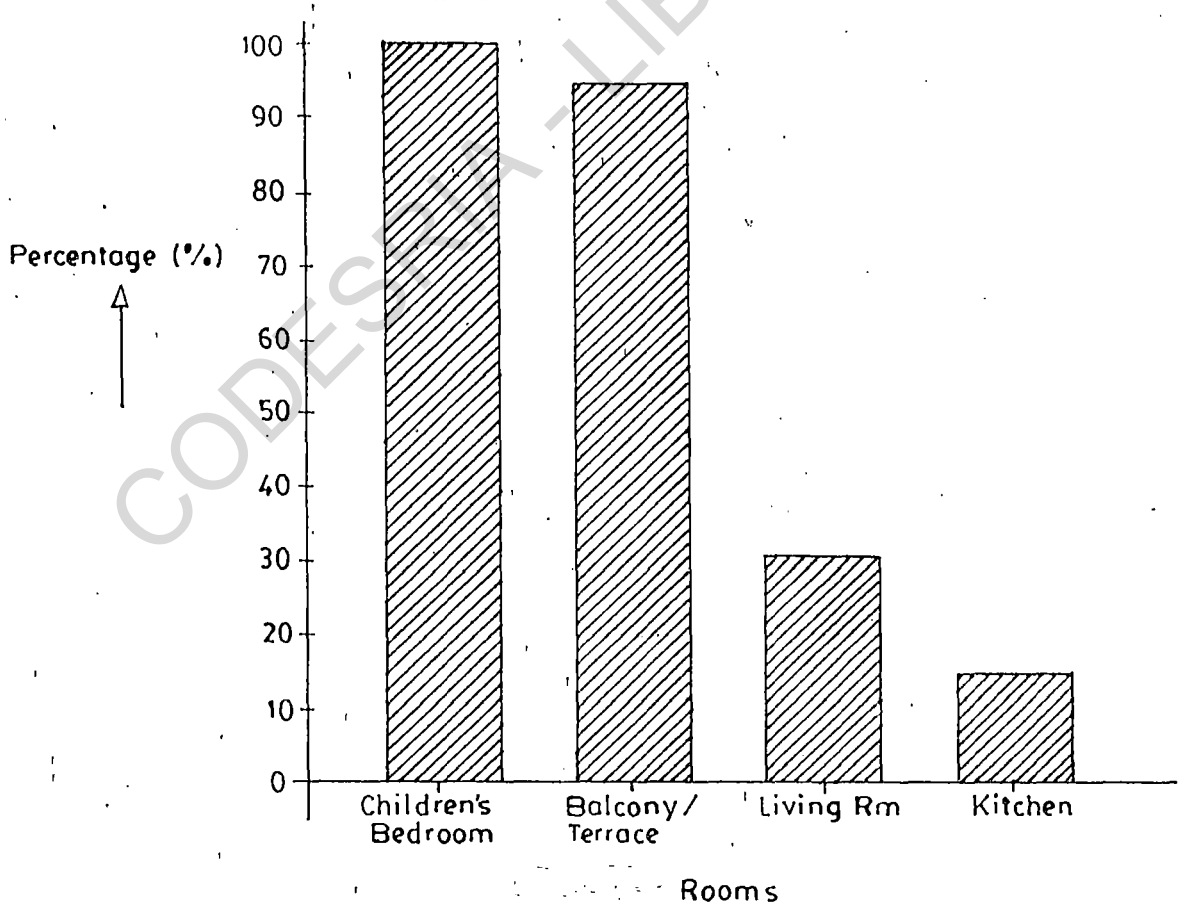


FIG. 16: BAR CHART SHOWING ROOMS IN WHICH CHILDREN ARE ALLOWED TO PLAY



SOURCE: FIELD SURVEY BY THE AUTHOR (1989).

Workroom for the housewife (for sewing, mending, knitting, etc.)	10%
Sleeping	3%
Children's play and homework	15%

36% (151) of the respondents consider the size of their living rooms as poor. Analysed according to house-types, 49% (74) of this number live in the 3-bedroom house-type where the living room dimension is 4800mm x 4800mm with a separate dining room. 44% (66) live in the 2-bedroom duplex block of flats where the living room dimension is 5125mm x 4800mm also with a separate dining room.

Table 9: Chi-Square Distribution Analysis of Relevant Respondents' Characteristics and Living Room Size for 420 Respondents

Characteristics	High		Low		Calculated X^2 Value	X^2 Value on X^2 Table	Degree of Freedom	Significance level	Remarks
	Observed	Expected	Observed	Expected					
1. Household size and living room size	348	250	72	170	93.94	9.24	5	10	Reject Ho
2. Income level and living room size	147	250	273	170	103.82	9.24	5	10	Reject Ho
3. Occupation and living room size	244	250	176	170	0.30	9.24	5	10	Accept Ho
4. Level of formal education and living room size	194	250	226	170	30.44	9.24	5	10	Reject Ho
5. Age of respondent and living room size	235	250	135	170	2.10	9.24	5	10	Accept Ho
6. Marital status and living room size	335	250	85	170	70.56	9.24	5	10	Reject Ho

Source: Data Analysis by the Author (1989).

The formula given below is used in calculating the Chi-Square (Yemane, 1964):

$$X^2 = \sum_{i=n}^{n} \frac{(ni - npi - \frac{1}{2})^2}{npi}$$

where

ni = number of observed frequencies

npi = expected frequencies in which the pi are the theoretical probabilities

$\frac{1}{2}$ = Yate's Correction for Continuity.

Degree of freedom (for two sample test) = (C-1)(R-1), where C refers to the number of items in the Column (6) and R refers to the number of items in the Row (2).

For the household size of respondents, the "high" classification refers to households with six members and above while "low" refers to households with below six members. For income level, "high" refers to respondents who earn ₦10,000 per annum and above while "low" refers to those who earn less than ₦10,000 per annum. For the occupation of respondents, "high" refers to businessmen/traders while "low" refers to other occupations. For the level of formal education, "high" refers to respondents with post-primary school, University and other post-secondary education,

while "low" refers to those with primary school school education and those with no formal education. Also, "high" classifies respondents above 45 years of age while "low" classifies those below 45 years. In the same way, "high" refers to married respondents while "low" refers to single ones.

For each respondent characteristic, for example household size, the Null Hypothesis (Ho) is of the form: "There is no relationship between family size and living room size". The remarks column indicates acceptance or rejection of the Null Hypothesis at the given significance level. It is important to emphasize that since our concern is the design of dwelling units, there is nothing absolute about values obtained from statistical analysis. The employment of the Chi-Square test (a non-parametric statistics) for the analysis shows that what is intended is not a rigorous manipulation but rather to have a casual "feel" of the research data - what in statistics is otherwise known as a "goodness-of-fit" test. The values and inferences obtained are merely indicative and as there is no risk involved in the outcome of the analysis, a low level of significance (10) is acceptable.

The Chi-Square analysis indicates a relationship between household size and living room size. It is logical that as the size of a household increases, the number of people who make use of the living room for various purposes also increases, thereby

necessitating a desire for more space. The relationship established between the marital status of the household head and living room size by the Chi-Square analysis also makes some sense. A married household head is likely to have a larger family size than his counterpart that is single. The Chi-Square analysis also indicates a relationship between income level and afinity for living room space. It is a common tendency for the affluent to desire bigger room spaces. This same tendency was established in the analysis of responses on bedroom sizes. This is partly explained by the association in human psychology, of space with security and fuller life and confinement with repression.

It is noteworthy that the Chi-Square analysis showed no relationship between the age and occupation of a respondent and the living room size. It could be argued that below a threshold size, the desire for additional space is common to all individuals regardless of age or occupation. However, nothing conclusive can be stated on this issue here because of the limited extent of the research in the present study.

KITCHEN

83% (349) of the research respondents described the size of their kitchen as poor. Only 7% (29) considered the kitchen size as good. The remaining 10% are indifferent as to the size of their kitchen. 24 (82%) out of this 29 who consider their kitchen size

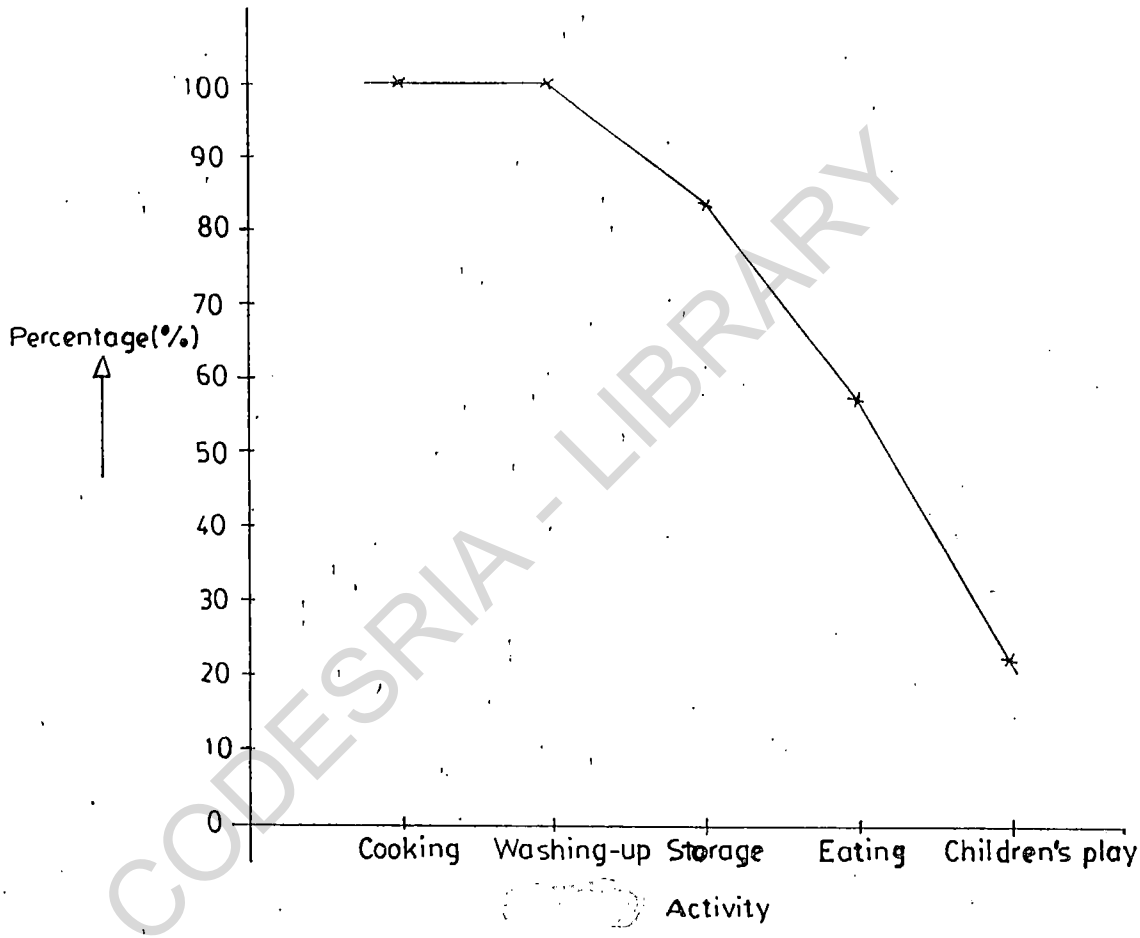
as poor have 2 to 4-member family size. Analysed according to house types, 100% (36) of those who live in commercial/residential house type consider their kitchen size (2775mm x 2900mm) as poor. Also 100% (16) of those who live in the 4-bedroom house type with car-port described the size of their kitchen (2400mm x 2400mm) as poor. 60% (85) of those who live in the 3-bedroom house type with built-in garage and open terrace also regard the kitchen size as poor.

Table 10: Use of the Kitchen by 420 Respondents (given as Percentage of 420 Respondents)

Activity	Percentage
Cooking	100
Washing-up	100
Eating	57
Children's play and home work	25
Storage	84

Source: Field Survey by the Author (1989).

FIG. 17: GRAPH SHOWING USES OF THE KITCHEN BY RESPONDENTS



SOURCE: FIELD SURVEY BY THE AUTHOR (1989).

It is apparent that the kitchen is increasingly being used for additional purposes. 70% of those who eat in their kitchen earn below ₦10,000 per annum. There might be some correlation between eating in the kitchen and income level although this calls for further studies.

Table 11: Rooms in which Children are Allowed to Play (in % of 420 Households)

Room	Percentage
Children's bedroom	100
Balcony/terrace	94
Living room	31
Kitchen	15
Parent's bedroom	1

Source: Field Survey by the Author (1989).

BATHROOMS AND WCs

90% (378) of the 420 respondents consider the size of their bathrooms and WCs to be good. It is in the layout of that a lot of complaints are observed.

4.2 LAYOUT OF ROOMS

100% of the 420 respondents made one complaint or another about the internal layout of spaces within their dwelling units. The complaints here are as varied as there are households. The most persistent complaints are discussed hereunder.

91% (382) of the respondents prefer a combination of the living and dining rooms into a large living space. Analysed according to house-types, 76% of those who live in the 2-bedroom duplex block of flats and 68% (97) of the residents of the 3-bedroom housetype (with built-in garage and terrace) all prefer a combination of the living room and dining room to the separation of the two spaces as obtains in these house-types.

98% (412) of the research subjects welcome the extension of the living room into an open balcony or terrace for relaxation and children's play. 97% (407) desired a separation between the bathroom and the WC. Analysed according to house-type, 109 out of the 142 residents of the 3-bedroom house-type favour the separation between the bathroom and the WC. Also 73.5% (27) of the residents of the commercial/residential house-type support his arrangement. Analysis along the line of family size shows that 94% (383) of all those who favour a separation between the bathroom and WC have 3 or more persons per dwelling unit.

87% of 420 respondents favoured a separation between

bedrooms and communal areas in order to achieve noise reduction in the sleeping areas. For reasons of privacy and security, 92% of the respondents desire a frontal location of the living room in such a way as to be the first room a visitor comes into on entering the dwelling unit. 94% would want a direct access of bedrooms to bathroom and WCs. 72% agreed that the layout of rooms and balconies in their dwelling units does not enhance the supervision of children's play.

77% of the 420 respondents consider the flexibility of rooms (possibility for conversion to other uses) very important. Analysis according to family size shows that 82% of this number have more than 5 persons per household and 63% are above 45 years of age. It is logical that the larger the size of a family, the more flexible it wants its rooms to be. There is however no direct connection between the age of a respondent and the desire for flexible space apart from the fact that older families tend to be larger in size in most cases.

100% of the 420 respondents indicated that they would want freedom to be able to effect changes they desire to their dwelling units without seeking permission from the Housing Corporation.

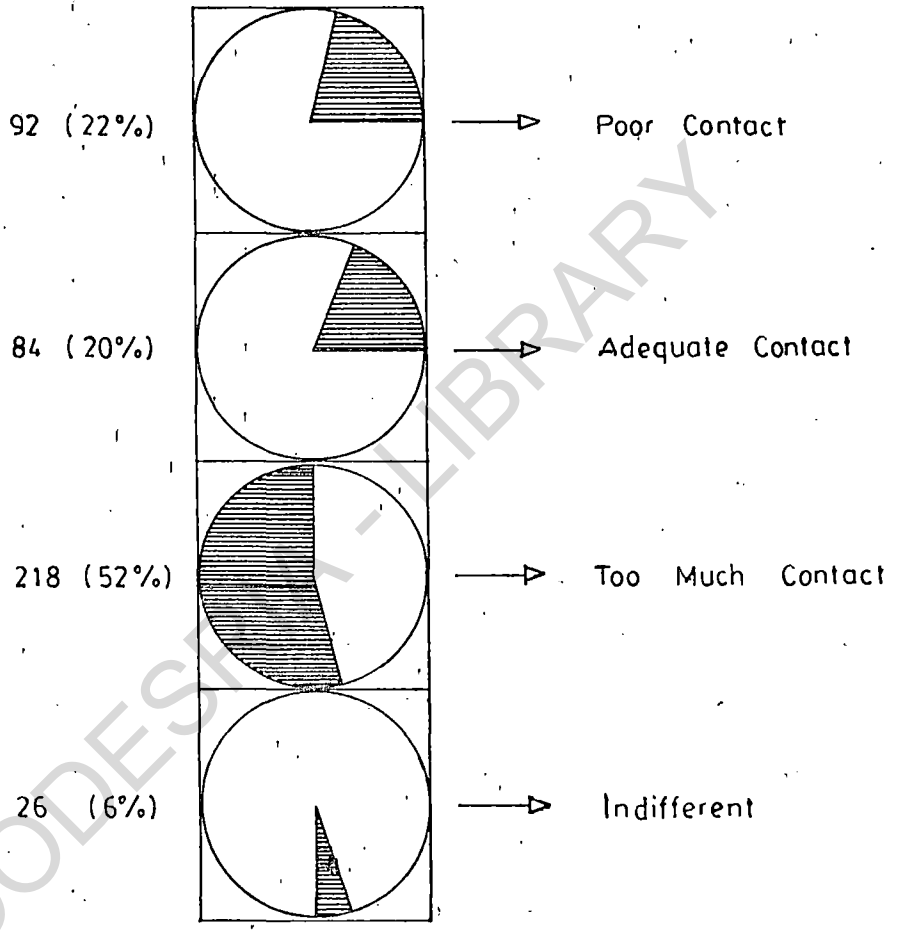
4.3 EXTERNAL ENVIRONMENT OF THE DWELLING UNIT

81% (340) of the respondents consider the density of dwelling units in the estate to be high and the plot sizes to be consequently poor. Analysed according to income level, 92% (29) of those who earn below ₦5,000 per annum belong to this group. This trend challenges the notion that it is only the affluent that have an affinity for outdoor space. The urban poor desire large outdoor space these days for private gardens and other economic opportunities it offers. This is a survival strategy in the face of harsh urban economic climate.

22% (92) of the respondents consider the opportunities existing for social contact among residents of the estate as poor; 20% (84) think it is adequate while 52% (218) think there is too much contact. 90% (28) of the residents who earn below ₦5,000 are among the 92 residents desiring more social contact. For those who think there is too much contact, 60% (131) earn above ₦10,000 per annum. This finding supports the view that while the less affluent are more gregarious, the rich tend to desire more exclusiveness in their residential environments.

80% (336) of the respondents consider the security and safety measures for crime and accident prevention within the estate as good. 94% (395) desired a fence around their respective residential plots. For other neighbourhood characteristics within the estate

FIG. 18: PIE CHART SHOWING RESPONDENTS' RATING OF OPPORTUNITY OFFERED BY THE DWELLING UNITS FOR SOCIAL CONTACT



SOURCE: FIELD SURVEY BY THE AUTHOR (1989).

(such as cleanliness, neighbourhood reputation, quality of neighbours, architectural quality of buildings) 82% (344) consider them as good.

4.4 HOUSING AND ECONOMIC OPPORTUNITIES

30% (126) of the research subjects consider the opportunities existing in their dwelling units for economic activities as good. Analysed by house-type, 90% (32) of those who live in the commercial/residential house-type belong to this group.

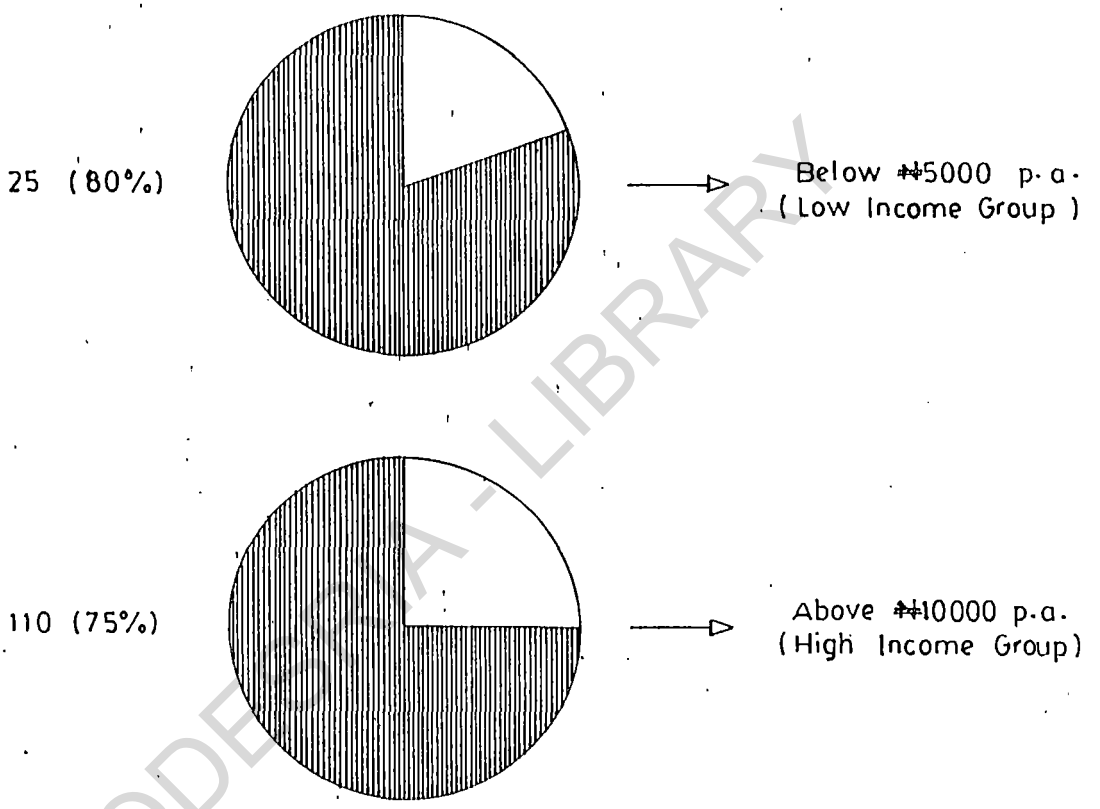
92% (386) of 420 respondents wanted an additional space for gardening attached to their respective residential plots. Analysed according to income level, 80% (26) of those who earn below ₦5,000 per annum belong to this group, so also does 75% (110) of those who earn above ₦10,000 per annum. Hence it can be concluded that both the rich and the poor are developing interest in private gardening within their residential environments.

In spite of all the complaints raised by respondents concerning their dwelling units and residential environments, it is noteworthy that only 5% (21) of the 420 respondents indicated a desire to move.

4.5 SOME CULTURAL AND EMPIRICAL EXPLANATIONS OF RESEARCH FINDINGS

In every household unit, the following forms of activity were performed: sleeping; eating and drinking; leisure-time activities; housework; personal toilet; care of children.

FIG. 19: DIAGRAM SHOWING THE DEMAND FOR GARDENING SPACE ALONG SOCIO-ECONOMIC DIVIDE



SOURCE: FIELD SURVEY BY THE AUTHOR (1989)

Most of the activities arise naturally in one particular room of the house, and only house work and childcare take place in several or all rooms. Furthermore, the rooms may be categorised as those which exist primarily for individual activities and those which cater for the joint activities of several persons (family rooms). Sleeping and personal toilets are essentially individual activities; and so bedrooms, bathrooms and lavatories might be put into the first group. Eating and drinking, and many leisure-time activities are preferably carried on in the company of several other persons. These activities are provided for by the living room and the dining room when appropriate. Most of the house work finds its natural place in the kitchen, which used to be the domain of the housewife, but which is nowadays becoming more and more a communal room - being used for many additional purposes other than that for which it is traditionally known.

The living room, the principal room of the family, is little used during the daytime, but in the evening it becomes the centre for leisure activities. The modern living roomhas taken over the functions of the "Obi" in Igbo traditional housing. The "Obi" served as the communal room of each household and areception room for visitors to a household. Because of this latter function, it was a status symbol of individual families where age-old traditional artifacts (sometimes dating back to several generations in the family lineage) were displayed.

The modern living room still retains the function of the "Obi" as a status symbol. It is in the living room that the modern household exhibits its fine pieces of furniture, pictures and carpets for guests to admire. This role of the living room as a status symbol partly explains why in most households, as the research findings indicate, the housewife usually does not work in the living room and the children are prevented from playing there too. In terms of layout, the "Obi" is the housing unit that confronts a visitor to any traditional residential compound in Igboland. This unique frontal position is necessary in order to confer both visual and physical security to other dwelling units in the compound in which some privacy is needed and where visitors may not be wanted. Research findings from the present study also indicate that the majority of the respondents desire to have their living rooms in a frontal position in such a way as to be the first room to be entered by a visitor to the dwelling unit. Respondents also desire to have the living room and other communal areas separated from bedrooms for reasons fof privacy.

The overwhelming demand for more room space among the respondents is not necessitated only by physiological factors but also by irrational psychological factors. These include the association, in Igboman's psychology, of space with security and fuller life, and confinement with repression. Again, the Igboman's natural inclination

to outdoor recreation manifests in the high demand for open balconies and terraces for relaxation.

A radical departure from past attitudes to the dwelling unit is observed in the high demand by respondents for private gardens and cornershops to be attached to the dwelling unit. This development which might be traced to the recent unfavourable turn in the economy, shows that people are becoming more utilitarian with respect to their dwelling units and residential environments, emphasising those activities which may take place there more than the attributes of the house itself. This new attitude accounts for the relative popularity enjoyed by the commercial-residential house-type on account of its inherent economic opportunities. In another sense, the clamour for private gardens is indirectly asking for bigger plot sizes and reduced densities in the estate. It would appear therefore that the Igboman's tendency to shun residential clustering is still very much with him.

The high rating of neighbourhood characteristics by respondents may have derived from the Igboman's communalist ideology when living in a group. As Ilogu (1974) observed, moral obligations are regulated more by the demands of moral codes, tradition and customs than by the exercise of individual moral judgement and conscience. Since each individual tries to suppress his irrational tendencies in the interest of the common good, goodwill and orderliness

permeates the neighbourhood.

The overwhelming clamour of respondents for freedom to effect desired changes to their dwelling units stems from the natural tendency in man to create his own meanings in his place of abode. This tendency provides a powerful tool for examining the relationship between users and their buildings. If a designer observes all the changes users have made to a particular building - from adding an extension to changing a lampshade - he shall learn a great deal about where the original building failed to match users' requirements. It is regrettable that the administration of public housing estates often forbids tenants from effecting any such changes either within the building or to the building fabric, thus denying designers this potentially powerful tool for assessing user-satisfaction in public housing.

The near concensus on the desirability of a fence around residential plots needs a special mention. On its face value, this would appear as a natural safety precaution to prevent thieves and other society's undesirables from having easy access to the dwelling unit. But to the Igbos the reasons for this go deeper than that. The compound wall is a very important element in Igbo residential architecture. Apart from the obvious privacy and protection which it bestows on both the indoor and outdoor household activities, it is also traditionally believed to shield the household which it encircles from all sorts of evil spirits which roam the unguarded environment.

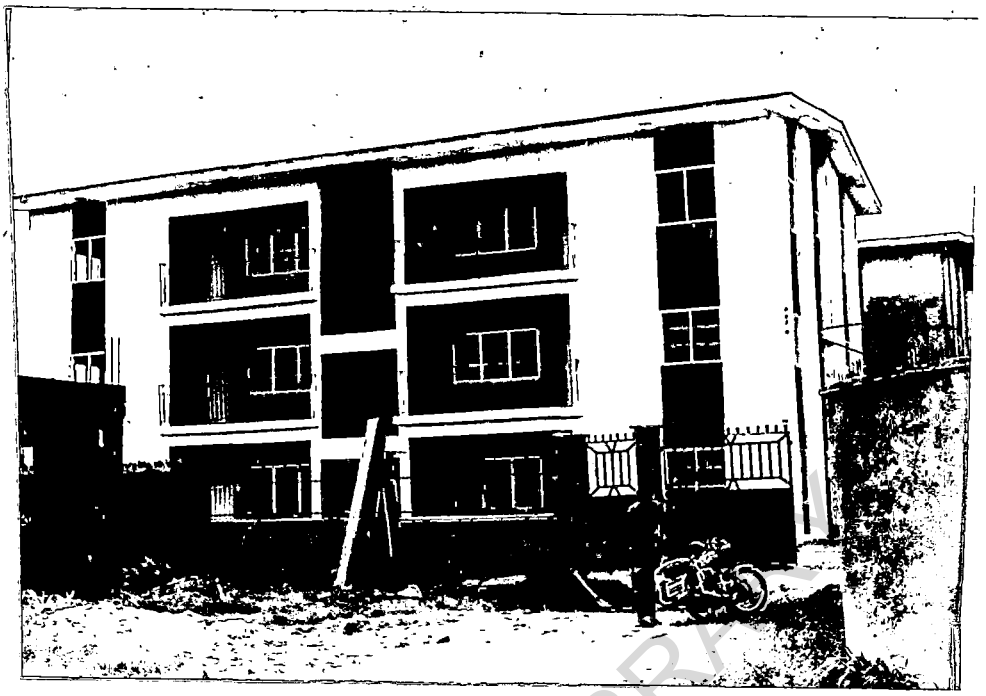


PLATE 1: The 2-Bedroom Duplex Block of Flats (Six Flats) - Beautiful farcade but deficient in bedroom sizes and number.

PLATE 2: The 7-Bedroom House Type - Beautiful farcade but poor space organisation within the dwelling unit.

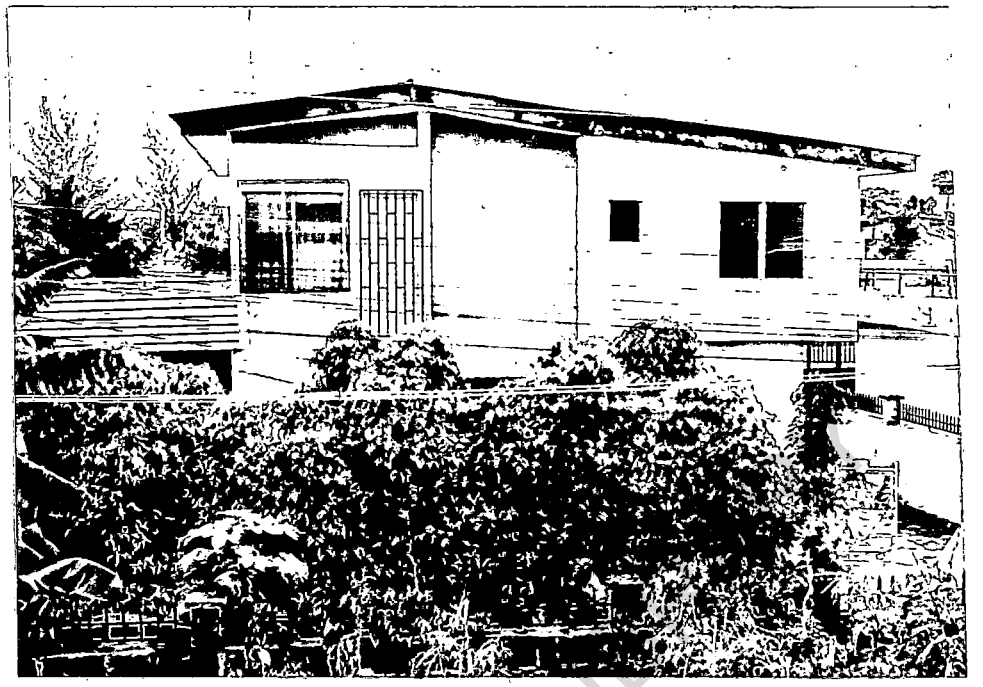


PLATE 3: Conversion of rear set-back of a dwelling unit into Yam Farm - A desire for private gardens as part of residential plots.

PLATE 4: Conversion of part of a Dwelling Unit to Commercial Uses. A desire for economic opportunities in housing.

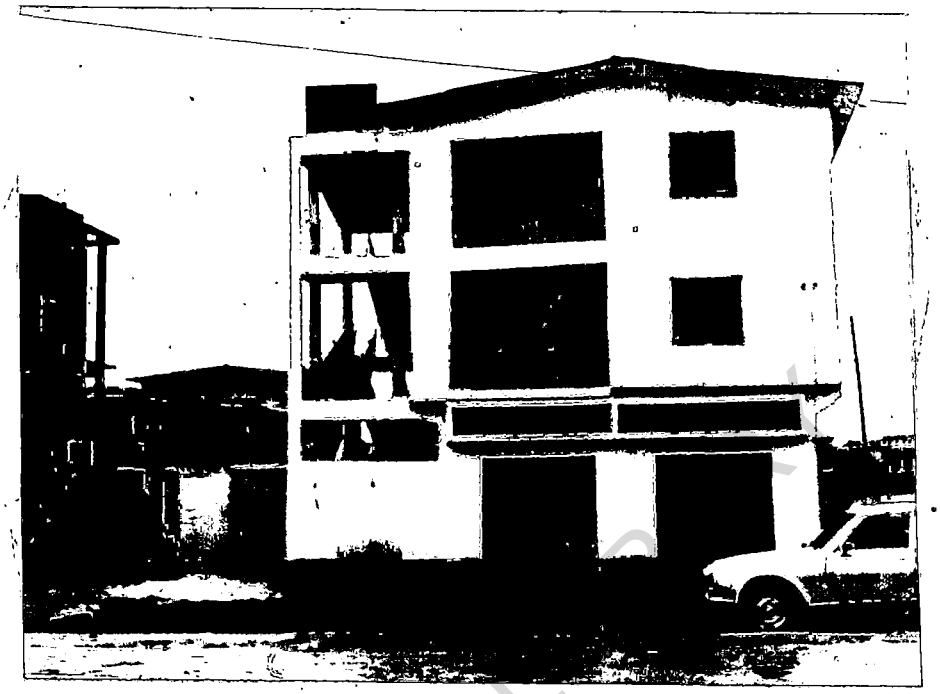


PLATE 5: The residential/commercial house type - deficient in bedroom sizes but popular because of the economic opportunities it offers.

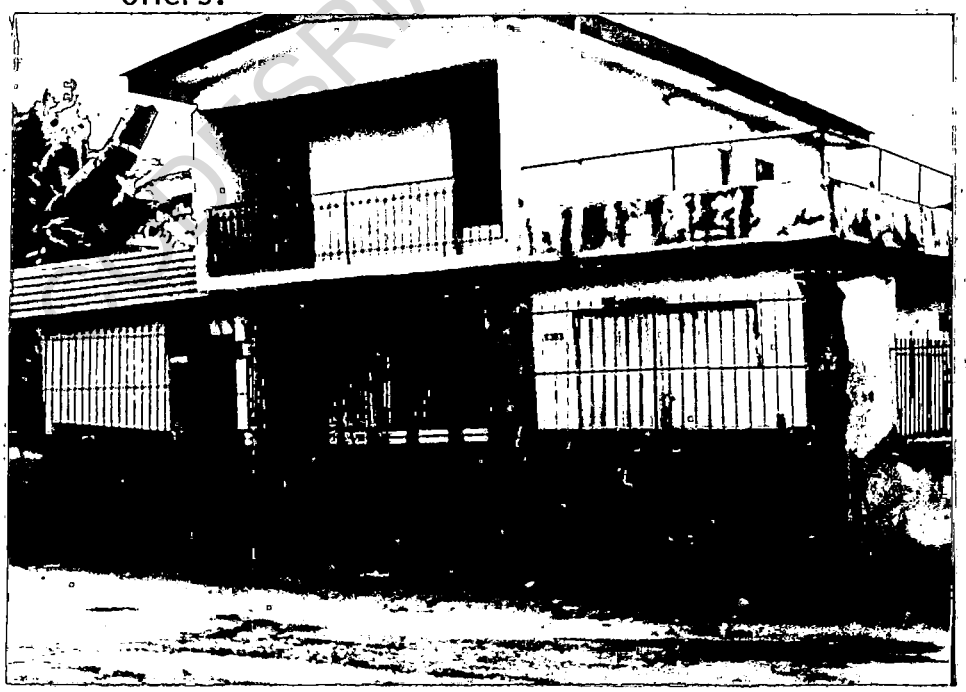


PLATE 6: Erection of fence around dwelling units - A desire for privacy and protection in residential design.

CHAPTER FIVE

RECOMMENDATIONS AND CONCLUSION

5.0 SUMMARY OF RESEARCH FINDINGS

(i) Since education is not necessarily a criterion for most jobs in Onitsha owing to its business/commercial economic base, there is a dominance of household heads with only primary education in the study area.

(ii) Residents of the estate are relatively financially well-to-do, with an average income of ₦8,000 per household head per annum.

(iii) The average household size in the estate is 8 persons per household.

(iv) There is a dominance of the 25 to 60 year age group in the estate.

(v) The bedroom dimensions are inadequate in all cases where the bedroom is being put to additional uses.

(vi) The 2-bedroom residences are unsuitable for the large family sizes that are characteristic of the study area.

(vii) The living room is the principal room in all dwelling units.

(viii) A large, multi-purpose living room with a dining alcove is preferred to the physical separation of eating and living areas into two rooms.

(ix) The extension of the living room into an open balcony for relaxation is also desired in all dwelling units.

(x) The separation of the WC from the bathroom is desirable in dwelling units with more than 2 persons.

(xi) Since the kitchen is increasingly being put to other uses such as storage, eating, children's play and housewife's chores, a large-sized kitchen is desirable.

(xii) For reasons of privacy and security, respondents prefer a frontal location of the living room nin such a way as to be first room the visitor comes into on entering a dwelling unit.

(xiii) To reduce noise in sleeping areas, respondents prefer a separation of bedrooms from communal areas like kitchen and living room.

(xiv) A direct access from bedrooms to WC and bathrooms is desired for greater privacy in the dwelling units.

(xv) To facilitate the supervision of children's play, rooms should be laid out in such a manner as to overlook areas where children's play take place, such as balconies and children's bedrooms.

(xvi) Majority of the residents consider neighbourhood characteristics like neatness, reputation, architectural quality of buildings and quality of neighbours as good.

(xvii) Most respondents desire to have economic opportunities such as private gardens and cornershops attached to their dwelling units.

(xviii) Nearly all the respondents desired a fence around their respective residential plots.

(xix) In spite of all the complaints raised and the high level of dissatisfaction with the dwelling units in some cases, only very few of the respondents indicated a desire to move from their dwelling units.

(xx) All the respondents wanted freedom to be able to effect desired changes to their dwelling units without interference from the Housing Corporation.

5.1 ALTERNATIVE SOLUTIONS AND RECOMMENDATIONS

The natural inclination in problem-solving is to select the first solution one generates for further development. Clearly, the disadvantage of this approach is that the first solution forecloses other possibilities, and it may not be the best solution after all. The strategy for maximising performance, according to Sanoff (1977), is to select the best alternative solution from a wide range of conceptual possibilities. Hence the two proto-designs discussed below seem to satisfy, to a large extent, most of the expressed user needs as identified during the research. They provide us, together with the existing solutions, with an inventory of ideas from which

to select the best alternative solution.

(i) The Core-Housing Alternative

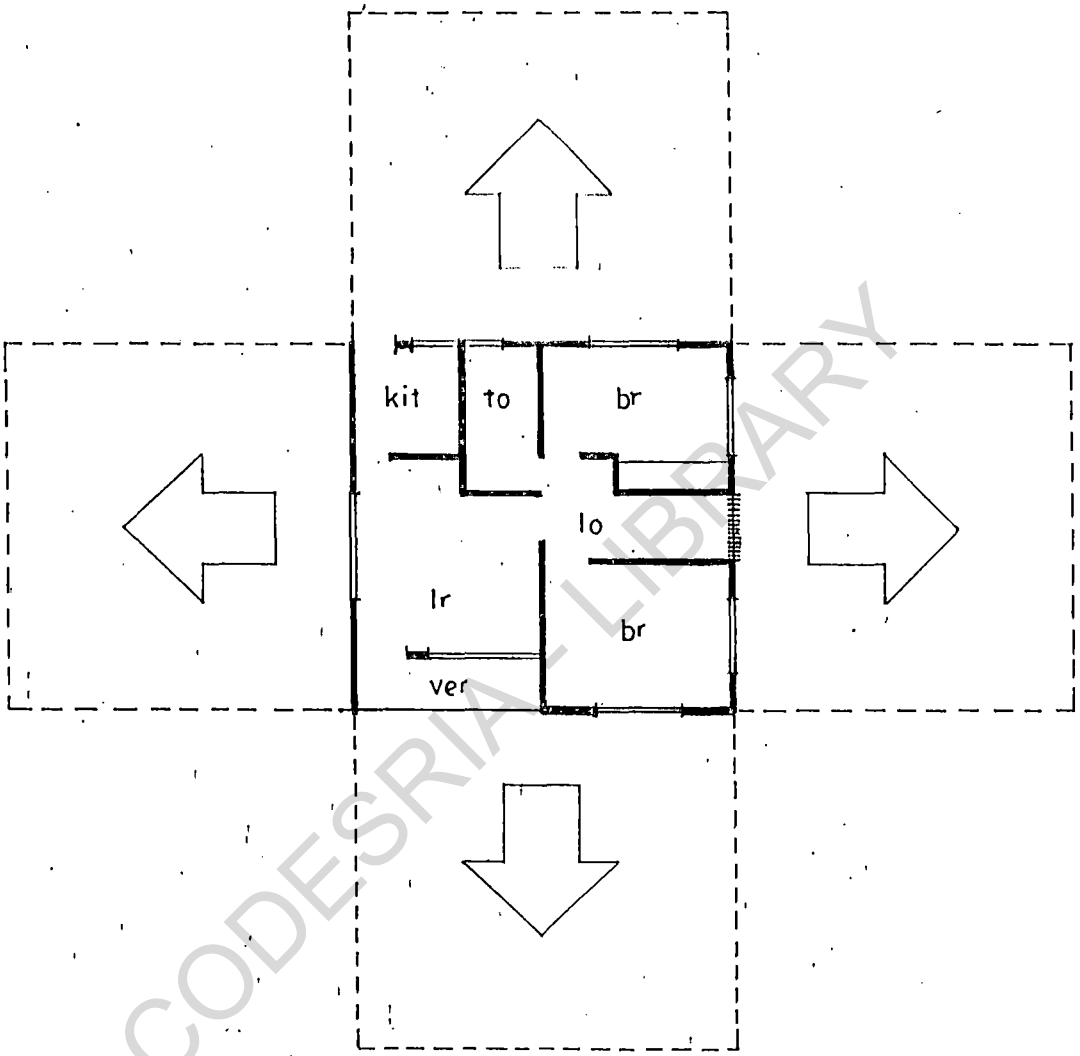
The main attributes of this housing strategy are flexibility and openness. The core house is open-ended and unspecialised such that more rooms and other spaces can be added to it if and when the need arises. These attributes are vital in the quest to make a given housing unit capable of accommodating changes according to different family structures, personalities, spatial priorities and changes over time in family composition (Fig. 20).

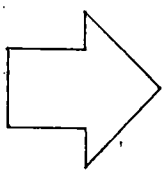
The philosophy behind the core housing concept according to Rapoport (1969) is that if a building is completely finished and controlled, it cannot act as a setting within which people can create their own meanings. In design, the subsequent addition of phases to the core unit will be as desired by the family concerned and will not affect the structural stability of the resulting house. A flexible and open arrangement permits rearrangement of furniture, formal or informal, as the occasion demands. Broadbent (1975) wrote that changes in furniture arrangement, decoration, lighting, ventilation and so on may lead to apparent changes in the size and shape of a room.

(ii) The 3-Bedroom Block of Flats

This solution is informed by the belief that government's efforts in housing supply should focus predominantly on the

FIG. 20: CONCEPTUAL SKETCH OF A 2 – BEDROOM CORE HOUSING UNIT (not to scale)

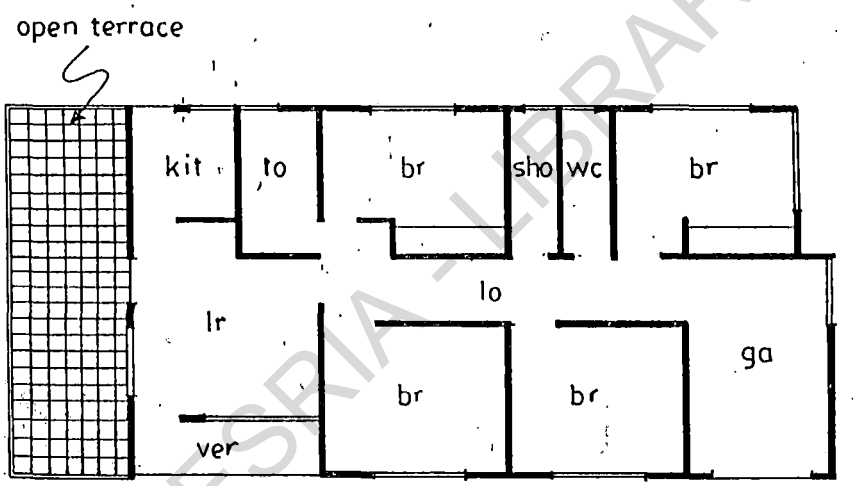




directions in which the core unit can expand depending on shape of plot and/or client's choice.

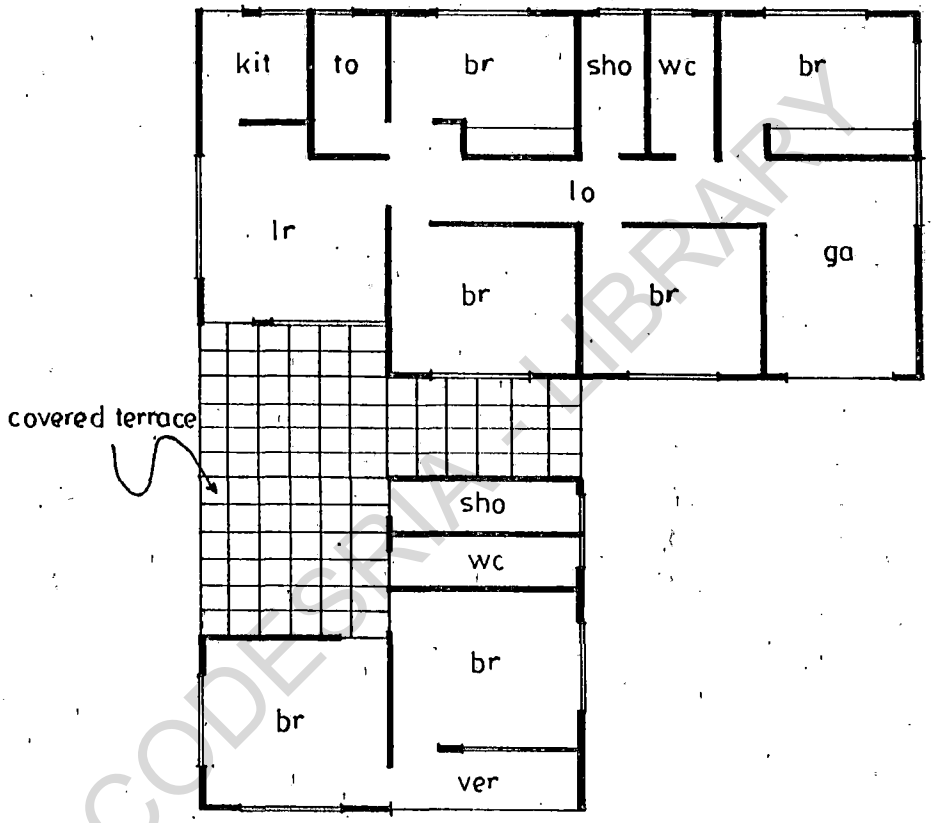
SOURCE: DEVELOPED BY THE AUTHOR (1989).

FIG. 21: 4 - BEDROOM I-SHAPED HOUSE TYPE WITH BUILT-IN GARAGE AND OPEN TERRACE
(developed from the core housing unit)



SOURCE: DEVELOPED BY THE AUTHOR (1989).

FIG. 22: 6-BEDROOM L-SHAPED HOUSE TYPE WITH BUILT-IN GARAGE AND COVERED TERRACE
(developed from the core housing unit)



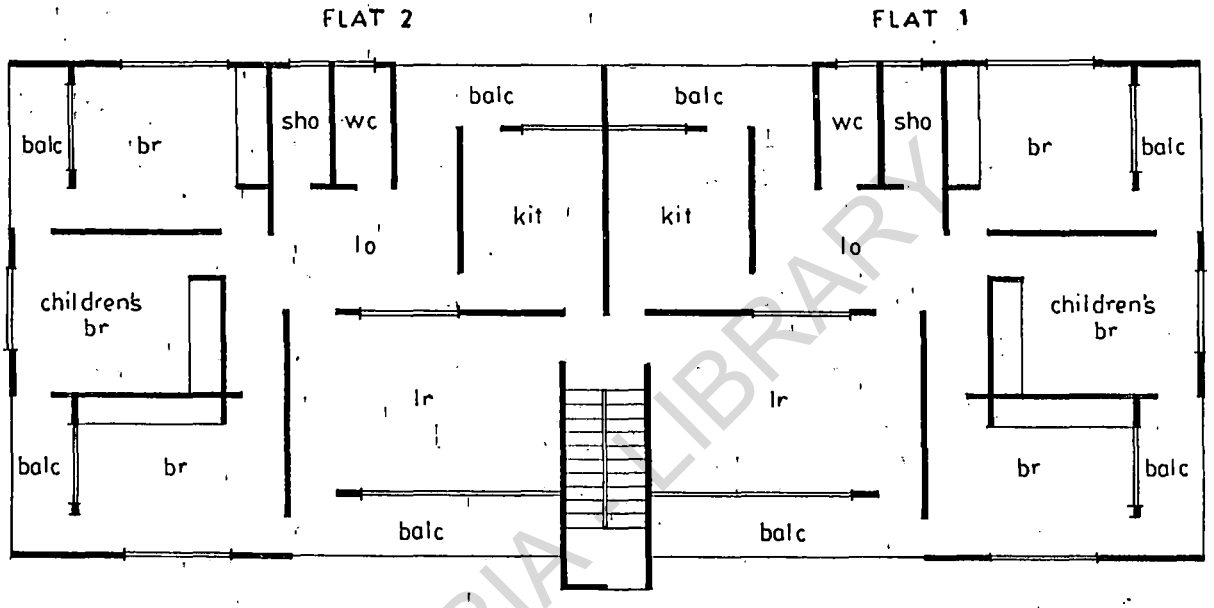
SOURCE: DEVELOPED BY THE AUTHOR (1989).

provision of rental accommodation. Okpala (1980) was thinking along the same line when he wrote that "direct public policy encouragement for home ownership should not be more than 5% to 10% of its total efforts. The remaining 90% of public policy efforts in the realm of housing should be directed at encouraging builders of rental housing - and more particularly, builders of apartment forms of housing".

A block of flats is one form of apartment housing. The features to be addressed in the design of a functional block of flats are space dimensions and organisation. First, we have to determine from research findings a threshold size common to all house-types below which rooms will invariably be regarded as too small.

The biggest complaint as to the smallness of bedrooms came from the 2-bedroom flat types and the 3-bedroom house-types - where the bedroom dimensions are respectively 4200mm x 2700mm and 4200mm x 2775mm. For living rooms, most of the complaints against came from the 2-bedroom flat types and 3-bedroom house-types with dimensions 5125mm x 4800mm and 4000mm x 4800mm respectively. It looks reasonable to take the threshold dimension for bedrooms as 4500mm x 3000mm. Since research findings indicate that most of the respondents favour a combined large space to serve as living cum dining room, a threshold size of 6000mm x 4800mm, seems to be reasonable.

FIG. 23: FLOOR PLAN FOR THE PROPOSED 3 - BEDROOM DUPLEX BLOCK OF FLATS (1:150)



SALIENT FEATURES:

- large bedrooms
- large living room
- large kitchen
- every room extends into a balcony for relaxation
- central location of children's bedroom for easy supervision
- use of corridor as separator between communal areas and bedrooms
- proximity of wc and shower to bedrooms
- wc and shower in separate rooms
- frontal location of the living room

SOURCE: DESIGNED BY THE AUTHOR (1989)

Most complaints as to the smallness of kitchen sizes came from the commercial/residential house-types, the 4-bedroom and the 3-bedroom house-types with dimensions 2770mm x 2900mm, 2400mm x 2400mm and 2925mm x 2700mm respectively. It thus looks reasonable to assume a threshold dimension of 3000mm x 3000mm for the kitchen. With appropriate room sizes, it is possible through design to come up with an arrangement that will satisfy most of the user needs as identified in the research in a 3-bedroom block of flats (Fig. 23).

It is my belief that the 3-bedroom duplex block of flats and the core housing alternative are among the few viable options to government's urban mass housing programmes. Their major advantage is that they provide a variety of tenure and types of accommodation to allow a reasonable choice of home and environment to housing consumers. The adoption of these solutions will save a lot of funds hitherto wasted on unviable housing schemes. The modalities for implementing these options are thus: 90% of governments efforts will be devoted to the provision of 3-bedroom block of flats which will operate on rental basis only, while 10% will go to providing core-housing units to operate on owner-occupier basis. The idea is that a family first starts with the 3-bedroom flat type. As the family appreciates in income level, status and size, the 3-bedroom flat will no longer meet its needs. The family will therefore seek to own the core housing unit which it can develop without

restrictions to meet its housing requirements. What is needed is a relatively large plot size on which high income families will have the freedom to develop the core-housing unit to match their tastes and housing aspirations. Because this solution involves some element of choice, which is important in any one's satisfaction with his environment, it can lead to the emergence of more satisfying housing. Also the 3-bedroom flat which the family vacates filters down to a lower income group. In this way a steady vacancy rate will be maintained and the housing market will remain functional.

5.2 IMPLICATIONS OF RESEARCH FOR FUTURE HOUSING POLICY

This study seems to have focused more on the design of individual dwelling units within an estate than on the layout of the dwelling units in the estate. This is based on the belief that the design of dwelling units and the layout of estates should not be treated as separate elements, for the estate is the sum of its dwellings and is conditioned by their design and disposition. As Blowers (1970) observed, many planning errors have resulted from such compartmentalised thinking and have been repeated through lack of reasoned information.

It is clear from the present study that for total success in future public housing programmes, users must be in total control

understand the possibilities and limitations inherent in the programmes and to set the priorities possible within the limitations. The result of the alienation of the designer from the real users of housing is that members of the ill-comprehended culture are often treated as a homogeneous group without any individuality or personality differences. To discourage user-input in design and construction of public housing because of its cost in extra time and possible variety of house models is to deny people that dignity and self-respect which arises only out of people playing an active role in solving their own problems, and who are not passive recipients of public services. To provide people with help while denying them a significant part of the action contributes nothing to the development of the individual.

Research findings from the present study also call for a re-thinking of current emphasis on tenure characteristics in public housing. In recent times, government policies have tended to encourage and emphasise home ownership schemes instead of the provision of rental housing units. For instance, the Anambra State Housing Corporation, like many other such corporations, presently offers its houses to owner-occupiers only. The problem with this policy is that it tends to trigger off low vacancy rates, thereby impeding the smooth functioning of the housing market. Home owners or owner-occupiers rarely

move even when their accommodation has become inadequate for their needs. Emotional attachment to the house constrains movement from it. This is supported by the very small proportion of respondents (5%) in this study who expressed a desire to move from their dwelling units in spite of the numerous complaints.

Emphasising home-ownership in housing policy implies constraining residential mobility in a way and this implies the intensification of the urban housing problem. Rental accommodation on the other hand encourages the process of filtering through which housing gets to the low income group at the most depressed end of the housing market. Renters move when either their incomes improve or the character of their families changes. Such residential moves create vacancies that other families could pick up (McCough, 1980).

In another sense, rental housing should attract stronger public policy emphasis and encouragement because there are always more people who require houses for rent and can rent them than there are those who require houses to own and are financially able to own them. It should be emphasised that the United Nations objectives in its "Shelter for all by the Year 2000" might be difficult to achieve unless there is a change of policy emphasis. In this wise therefore, the House Ownership Finance Organisation (HOFO) - a recent scheme evolved by the

Anambra State Housing Corporation to bring house ownership to the reach of the low income earners in the State - can be seen to be very unlikely to achieve its stated objectives. This is because the HOFO Scheme will operate as a low income direct housing subsidy which is shown later in this section to be unviable as a strategy for solving the housing problems of the urban poor.

Okpala (1980) identified the forms of public encouragement which rental housing require as follows: facilitating Mortgage Bank and other commercial bank credit, provision of infrastructural facilities and easying the bureaucracies involved in obtaining building plan approvals and other complicated requirements, including standards, involved in such approvals.

Lack of space and inflexibility are consistent dweller complaints in the study area. Inflexibility is a function of arrangement and structure of the dwelling unit. Inflexibility means that the dwelling cannot change as the family changes; that it cannot be adapted for meaningful avocations; that it cannot readily be modified to project self image. Inflexibility in our dwellings can be a serious hinderance in our striving for self-actualisation, for self-esteem and consequently for a truly satisfying housing. It might be necessary therefore to try the core-housing concept as enunciated in this study in our future

housing supply efforts as it possesses the potentials for flexibility and adaptability which are the hallmark of successful housing.

Judging from the average income level of residents and the prize-tags on each dwelling unit in the study area, it appears the urban poor (who incidentally are the ones most needful of housing) have been prized out completely in the urban housing market. This situation is likely to worsen in the future given the general climate of soaring inflation on the one hand, and increasingly diminishing earnings on the other. There is an urgent need for government to strongly intervene in order to correct this anomaly. A new housing package should be evolved and specifically targeted at the urban poor. Agbola (1986) identified four housing subsidy types as follows:

(i) employer staff housing programmes,

(ii) housing allowance in lieu of staff housing,

(iii) staff housing loan scheme and below market interest rate loans, and

(iv) new housing cosntruction.

Some theories doubt the effectiveness of direct subsidies in alleviating significantly the housing problems of the urban poor. A central assumption of the filtering image for example, is that a cheaper and more politically acceptable alternative would be to accelerate the filtering process so as to free up

housing for low-income households much sooner than is now possible (Grisby and Rossenburg, 1975). This can be achieved by subsidizing new construction for middle-income families. Such a strategy would be superior to direct subsidies to the low-income because at any given subsidy level, it could induce a greater amount of new construction than could low-income subsidies, and therefore could solve indirectly through the filtering process, more of the low-income population. If the same total subsidy were distributed to the same number of low-income families, it would not be sufficient to enable them compete in the new construction market.

Government should review the present situation where the various Housing Corporations operate purely as commercial outfits to build and sell houses to the highest bidders. This practice takes the erroneous and often dangerous position of looking at housing more as an economic good than as a social good. Research has shown that although the mechanics of housing policy may be economic, its objectives should always be social. Good housing is tied inextricably with good health, increase in productivity, increase in income, increase in community pride and reduction in the tendency towards crime. It is true that housing, like other social overhead projects, provides little or no dividend in foreign exchange, yields low returns and takes time before its real

benefits can be realised. Nevertheless, housing is indispensable to proper balance of development and to those economic activities that require it. It is only through a rational housing policy which strikes a balance between social and economic considerations that a nation can demonstrate to its peoples that it is interested in their needs and thereby bolster the political and social stability required to make economic investment safe and viable.

As most people seem to desire housing that also provide opportunities for economic activities, future housing policies should consider reducing the density of dwelling units in housing estates such that the resultant bigger plot sizes will accommodate private gardens for agricultural activities. Also a large setback at the frontage of the house will offer the occupier (if he happens to be an artisan) enough space to practise his crafts without necessarily getting too close to the road.

5.3 TARGETS FOR FURTHER RESEARCH

People's domestic needs can be classified into physiological, psychological and social. A multi-disciplinary approach in housing research is important because man is an integrated whole, and to define his needs from a one-sided viewpoint of any single scientified discipline would be to give an incomplete picture. There is need therefore for research to focus on developing appropriate methodologies for this multi-disciplinary approach to

the study of man-housing interactions. Research should also focus on the infant field of environmental psychology and on ways of applying the results of the research to housing design. We need general theories on which to build. We must develop better techniques for allowing people to participate in the design of their environments. Hietbrink et al (1973) observed that evaluation techniques need to be developed to monitor successes and failures, and to feed information back into the system so that adjustments can be made.

Can we achieve the best of two worlds by successfully combining the pleasures of the country with the amenities of the town in the design of our urban housing estates? Is a hybrid possible between our traditional housing heritage and modern architectural styles without doing any damage to either? In other words, can we accomplish the kind of creative mission which an author like Chinua Achebe has fulfilled in the realm of language and literature, where he has successfully made English the changed language for the traditional literature of a non-English people. Wrote Achebe (1975): "I feel that the English Language will be able to carry the weight of my African experience. But it will have to be a new English, still in communion with its ancestral home, but altered to suit its new African surroundings." Can we evolve a design process for manipulating modern residential architecture in such a

way as to make it suited to our peculiar cultural environment and capable of accommodating the vernacular traditions of our folk dwelling architecture? Gyuse (1979) observed that a recurrent theme in Nigeria's traditional housing is the centrality of the internal courtyard. While its specific uses differ among various ethnic groups, its presence appears essential to the proper functioning of the compound. Can we successfully exploit this amenity to achieve a more socio-culturally satisfying housing?

All these posers point to possible directions along which further research in this area can proceed. They present, without doubt, a big challenge to architects, planners and academic scholars of housing.

5.4 CONCLUSION

It seems logical to conclude with an evaluation of the research to determine the achievement of objectives and contribution to knowledge. While the study cannot claim to have exhausted all there is to the issue of culture and housing, it certainly has uncovered a number of new trends in the ever-changing relationship between man and his built environments. Although some sociologists have maintained that architectural design cannot bring about changes in a people's way of life, and have ridiculed architects' pretentiousness in attempting this, it has been shown in this study that an inappropriate design can

prevent its users from living as they would wish. There is need therefore for the recognition of the relatedness of architecture to its socio-cultural context, of the need to incorporate the ultimate user as a vital ingredient in design decision-making, and of the multi-disciplinary nature of the required research into residential environments. The experience of most residents of the estate we have studied underlines the necessity for careful planning based upon social investigations. It should be noted however that considering the cultural and functional needs of users in housing is more than just accepting the traditional living patterns of a people presented in studies which are oriented to what the culture was rather than towards what it is evolving. Since most indigenous cultures are in transition from a tradition mode of life to one strongly influenced by consumer-urban societies, it is a fallacy to base design decisions in housing even on the most recent studies of a culture.

There remains the question of what improvements can be made to the Niger Bridge-Head Housing Estate, Onitsha. Some of the problems, particularly those directly related to layout and design, could only be solved by costly redevelopment. Such a radical solution is neither feasible in the present circumstances nor is it supported by contemporary paradigms in urban renewal. However, a number of modest changes like proper

furniture arrangement in individual dwelling units together with judicious space management might improve the tight space situation in some dwelling units. The author observed a lot of instances of space wastage due to improper furniture arrangement in various dwelling units during the research. The ultimate utility of the research is encapsulated in the philosophy that it is in the recognition of past failures that future planning can hope to be more successful.

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APPENDIX I

Questionnaire Survey Administered to Residents of the Niger BridgeHead Housing Estate, Onitsha

Dear Sir/Madam,

This is a postgraduate research survey supervised by the Centre for Urban and Regional Planning of the University of Ibadan. The survey is aimed at appraising the performance of dwelling units in the Niger Bridge-Head Housing Estate, Onitsha from a socio-cultural perspective.

We are therefore requesting for information on your dwelling unit and its environment as well as the socio-economic characteristics and housing aspirations of your household. Be assured that the purpose of the survey is purely academic and that every information you supply will be treated in strictest confidence.

Your cooperation will be highly appreciated.

Thank you.

Date of Interview: _____

House Type Occupied by Respondent: _____

A. Socio-Economic Characteristics of Household

1. Please list all persons, including children, living in this dwelling unit and state their relationship to the household head (e.g. wife, son, daughter, brother, apprentice, etc.)

Person	Age	Sex	Relation to Household Head
1.			
2.			
3.			
4.			
5.			
6.			

2. Which of the following applies to the household head? (Tick the appropriate option)

   (a) Single (including widowed or separated) ( )

   (b) Married ( )

3. What is the occupation of the household head?

   (a) Business/Trading ( )

   (b) Private Company Employee ( )

   (c) Civil Servant ( )

(d) Other self-employeds (including artisans) ( )

(e) Any other (specify) ( )

4. What is the highest level of formal education completed by the household head?

(a) Primary School ( )

(b) Post-Primary School ( )

(c) University ( )

(d) Other post-secondary school ( )

(e) No formal education ( )

5. What is the approximate total income of the household head per year in naira?

(a) Below 5,000 ( )

(b) 5000-9999 ( )

(c) 10000-15000 ( )

(d) Above 1500 ( )

6. Which of the following age groups does the household head belong to?

(a) Below 25 years ( )

(b) 25-45 ( )

(c) 46-60 ( )

(d) Above 60 ( )

7. What is the total number of persons living in the dwelling unit?

(a) 1-4 persons ( )

(b) 4-5 persons ( )

(c) 6-8 persons ( )

(d) 9 persons and above ( )

B. Space Dimensions

8. How would you describe the size of the bedrooms in your dwelling unit?

(a) Good ( )

(b) Average ( )

(c) Poor ( )

9. Do you put your bedrooms to other uses in addition to sleeping and resting?

(a) Yes ( )

(b) No ( )

10. If the answer to question (9) is 'Yes', please specify the additional uses.

_____

11. Do you consider the number of bedrooms in your dwelling unit adequate?

(a) Yes ( )

(b) No ( )

12. If the answer to question (11) is 'No', please state the number of bedrooms that would be ideal for your household:

_____

13. What is the principal room in your dwelling unit?

(a) Dining room ( )

(b) Bedroom ( )

(c) Living room ( )

(d) Kitchen ( )

(e) Others (specify) _____

14. How would you describe the size of your living room?

(a) Good ( )

(b) Average ( )

(c) Poor ( )

15. Which of the following activities take place in your living room?

(a) Reading ( )

(b) Resting ( )

(c) Receiving visitors ( )

(d) Sitting together as family ( )

(e) Listening to radio/watching T.V. ( )

(f) Work room for housewife (for sewing, mending, knitting, etc.) ( )

(g) Sleeping ( )

(h) Children's play and home work ( )

(i) Others (specify) _____

16. How would you describe the size of your kitchen?

(a) Good ( )

(b) Average ( )

(c) Poor ( )

17. Which of the following activities take place in your kitchen?

(a) Cooking ( )

(b) Washing-up ( )

(c) Eating ( )

(d) Children's play and home work ( )

(e) Storage ( )

(f) Others (specify) _____

18. How would you describe the size of your bathroom and WC?

(a) Good ( )

(b) Average ( )

(c) Poor ( )

C. Layout of Rooms

19. Which of the following arrangements would you want in your dwelling unit?

(a) Living room that is separate from the dining room ( )

(b) A combination of the living room and dining room into one large living space ( )

(c) The extension of the living room into an open balcony or terrace for relaxation ( )

(d) WC and bath in separate rooms ( )

(e) WC and bath in one large toilet room ( )

(f) Others (specify) _____

20. How do you rate the level of privacy in your dwelling unit?

(a) Good ( )

(b) Average ( )

(c) Poor ( )

21. Which of the following arrangements do you think will achieve improved level of privacy and noise reduction in your dwelling unit?

(a) A separation between bedrooms and communal areas (like living room, kitchen, dining room) ( )

(b) Frontal location of the living room for easy accessibility to visitors ( )

(c) Direct access of bedrooms to bathrooms and WCs ( )

(d) Others (specify) _____

22. In which of these rooms are children allowed to play?

(a) Children's bedroom ( )

(b) Balcony/terrace ( )

(c) Living room ( )

(d) Kitchen ( )

(e) Parents' bedroom ( )

(f) Others (specify) _____

23. Does the layout of spaces in your dwelling unit enhance the supervision of children's play?

(a) Yes, to a large extent ( )

(b) Only minimally ( )

(c) No ( )

24. Would you want to convert some rooms in your dwelling unit to other uses?

(a) Yes ( )

(b) No ( )

25. If the answer to question (24) is 'Yes', please specify the rooms and the new uses you would want to put them to:

_____

26. Would you want the freedom to be able to effect desired changes to your dwelling unit without having to seek permission from the Housing Corporation?

(a) Yes ( )

(b) No ( )

D. External Environment of the Dwelling Unit

27. How would you describe the density of dwelling units (closeness of one unit to the other) in the Estate?

(a) High ( )

(b) Medium (average) ( )

(c) Low ( )

28. How would you describe the size of your residential plot?

(a) Good ( )

(b) Average ( )

(c) Poor ( )

29. How would you describe the opportunities existing for social contact among residents of the Estate?

(a) Too many ( )

(b) Adequate ( )

(c) Poor ( )

(d) Indifferent ( )

30. How would you describe the security and safety measures for crime and accident prevention within the Estate?

(a) Good ( )

(b) Average ( )

(c) Poor ( )

31. How important do you consider the erection of a fence around your residential plot?

(a) Very important ( )

(b) Indifferent ( )

(c) Not important ( )

32. Please evaluate other neighbourhood characteristics like cleanliness, neighbourhood reputation, quality of neighbours and architectural quality of buildings in the Estate?

(a) Good ( )

(b) Average ( )

(c) Poor ( )

E. Housing and Economic Opportunities

33. Are there activities which you engage in within your dwelling unit or its surroundings which yield financial returns?

(a) Yes ( )

(b) No ( )

34. If the answer to question (32) is 'Yes', please enumerate such activities.

---

35. How would you describe the opportunities offered by your dwelling unit and its surroundings for carrying out these activities?

(a) Good ( )

(b) Average ( )

(c) Poor ( )

36. Would you want your plot size increased to accommodate some space for private gardening around your dwelling unit?

(a) Yes ( )

(b) No ( )

37. Would you want a retail shop or a workshop to be attached to your dwelling unit?

(a) Yes ( )

(b) No ( )

38. Finally, are you planning to move from your present dwelling unit due to its shortcomings?

(a) Yes ( )

(b) No ( )

APPENDIX II

Structured Interview Schedule for Collecting Secondary Data from the Staff of Anambra State Housing Corporation, Enugu

Date of Interview: _____

1. In what year did the Housing Corporation commence operation in Anambra State?

2. How many housing estates has the Housing Corporation in the State?

3. Please list the housing estates as shown in this table:

Name of Estate	Location	Year Started	Whether completed or not

4. Are there any criteria guiding the sub-division of plots in your estates?

5. If the answer to question (4) is 'Yes', please specify:

_____

6. Was the Niger Bridge-Head Housing Estate, Onitsha, targeted at any socio-economic group or groups at inception?

7. If the answer to question (6) is 'Yes', please specify.

8. What house types are available in the estate?

9. Are there problems of affordability associated with any particular house type?

10. What basic facilities are provided in the estate (e.g. water, light, telephone, refuse collection, etc.)?

11. What are the tenure characteristics in the estate?

12. If there are more than one tenancy type, what is the percentage of each?

13. If the tenure is wholly or partly owner-occupier, what are the criteria for qualifying to purchase a house?

14. What modes of payment for purchased houses are approved by the Corporation?

15. What subsidy elements (if any) are built into the housing scheme?

16. Who bears the cost of the subsidy?

17. How is the estate managed?

18. How is residents' dissatisfaction identified and articulated?

19. What are the most common complaints by residents of the estate about their dwelling units?

20. How does the Corporation handle such complaints?

21. Does a resident have the freedom to make additions to or rearrange his dwelling unit and/or its environment as he desires without obtaining permission from the Corporation?

22. What other rules guide residents' behaviour in the estate?

23. How are these rules enforced?

24. What part do the residents themselves play in the day-to-day administration of the estate?