RESIDENTIAL SATISFACTION IN THE NEW URBAN HOUSING PROJECTS IN ALGERIA

A Case Study of Ain-Allah, Algiers.

By

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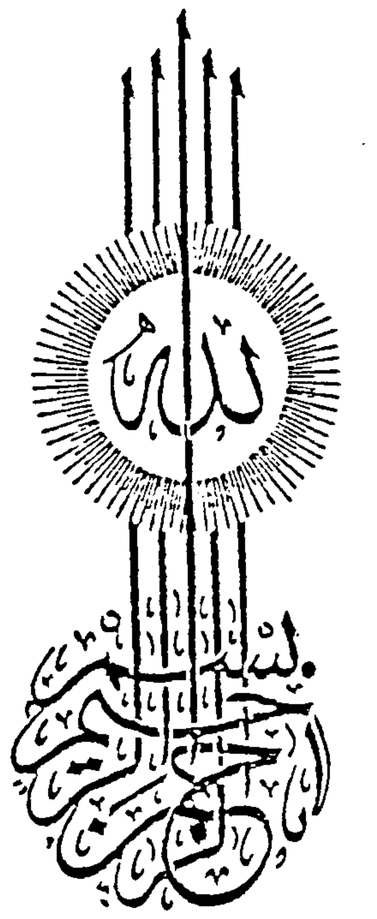

In The Name of God, The Mercifu.
The Compassionate

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ABSTRACT

During the last few decades most developing countries have experienced a rapid growth in population which has resulted in rapid urbanisation in the form of new towns and an expansion of existing towns, coupled with an increasing dependance upon developed countries for the implementation of the new housing programmes. In Algeria, since Independance the problems of the high population growth and the rural-urban migration have led to a rapid growth of cities and towns.

Since 1975 the Algerian government has been executing numerous housing programmes named ZHUN's (Zones d' Habitat Urbaines Nouvelles), the main objective being to build as many dwellings as possible in the shortest possible period of time to reduce the housing deficit. This policy has led to the construction of many new housing projects, consisting of stereotype "international style" buildings, very often built by foreign contractors with little appreciation of the life styles and requirements of the local people. This study is, in general, concerned with the effects of the problems of the new social and physical environments on the residents' level of satisfaction with the housing projects. The main objective of this study is to suggest a set of guidelines, or a development programme, for designing new urban housing projects which fulfill the requirements of the different socio-economic groups of residents and which will increase their level of satisfaction.

The case study (Ain-Allah) is one of nine new housing projects (ZHUN's) in Algiers, some of which are still being constructed. The case study has similar physical features to those of the majority of the ZHUN's. With regard to its social structure, however, it is occupied by residents with different social characteristics and backgrounds. The ZHUN's are generally occupied by people from the colonial areas, but residents in Ain-Allah are composed of two distinct groups; those who moved from the traditional area of Algiers (the Casbah) and those who moved from the Western style areas (Colonial areas). These two groups did not only move from two different physical settings, but they also have different socio-economic characteristics. The case study is representative of most social and physical features of the ZHUN's, as discussed in greater detail in the next chapter. In addition, it provides the opportunity to examine how different social groups react to the same physical environment.

Findings reveal that satisfaction with the new project is influenced by residents' previous experience. Residents originating from a traditional setting (Casbah) tend to evaluate their new environment mainly by the cohesion and level of friendship between neighbours, whilst those from the western style (colonial) areas tend to attribute more importance to quality of the physical environment. When planning a new project, emphasis should not only be placed on the spatial organisation of the built form, but also on the selection of the residents and their level of homogeneity.

Many researchers have argued that outdoor common spaces provide the opportunity for social contacts between residents, which in turn, encourage the process of friendship formation between them. In this research, however, findings show that the arrangement of the new buildings around large common outdoor spaces with direct visual contact affected the level of privacy of the flats. This has, consequently, hindered residents' familiar outdoor social activities and slowed down the rate of friendship formation between them. On account of the Islamic culture, based on segregation between males and females, spaces used by men (outdoor open spaces) should not be in direct visual contact with the flats which are mainly used by women, in particular housewives.

The process of friendship formation is also found to be much more rapid between neighbours who originated from the same area than between those who moved as strangers and did not work together. The latter required longer for integration to the new community. Also, people working together make friends more quickly than those who do not. It is also found that the new built form affects the rate of friendship formation. Proximity of the new flats and sharing the same landing, staircases and building access encourage social contacts between residents.

A comparison between a housing cluster (cluster three) occupied by heterogeneous groups (Casbah and colonial areas) and two clusters (clusters one and two) occupied only by homogeneous groups (cluster one occupied by people from the Casbah and cluster two by people from colonial areas) revealed that friendliness, but not necessarily friendship, existed between heterogeneous

residents living in the same cluster (cluster three). It was also found that physical proximity between homogeneous residents (in both clusters one and two) promoted friendship formation between them. However, findings show that no social relationships existed between the two heterogeneous groups living separately (clusters one and two). To promote friendliness between heterogeneous residents and friendship between homogenous residents, this research suggests that when allocating the flats, buildings should be occupied by homogenous residents, and basic housing units by heterogenous residents.

Findings also reveal that satisfaction with the outdoor spatial organisation is related to the function of the outdoor spaces. For example, when comparing levels of satisfaction with outdoor common spaces in a basic housing unit composed of residential buildings and a basic housing unit with facilities at the ground floor of its buildings, it was found that a higher number of people in the former were satisfied. The common space in the basic housing unit with facilities was transformed from a quiet semi-public space for local residents to a public space where people from all parts of the project come to do their shopping. This resulted in both a loss of privacy and noise disturbance.

According to the literature, the size of a housing area, or the catchment area, is determined by the location of the primary school and shops. It suggests that these facilities should not be located at more than 5 to 7 minutes' walking distance (around 500m) from the furthest dwelling. In this research, however, it is found that the majority of people living at less than 10

minutes' walking distance (650m to 700m) from these facilities were satisfied with their location. The new projects can, therefore, have a larger catchment area than those proposed by the literature and the CNERU.

Findings also suggest that it is more economical and satisfactory to locate the new housing projects as close as possible to existing commercial centres. This would not only reduce the cost of connecting a new project to water, gas, electricity and sewage systems, but would also ease the use of the facilities of the nearby commercial centre(s) by the new residents.

Finally, specific measures are recommended for planning and designing new urban housing projects. It is necessary to provide an environment which allows easy integration to the new community, and with which residents can identify and be satisfied. This is possible to achieve by understanding the socio-economic and cultural characteristics of the residents, by housing these residents in such a way as to encourage friendship formation between them, and by providing a new built form which fulfills the requirements of the residents and which does not hinder their familiar social activities.

1. INTRODUCTION

1.1 THE SCOPE OF THE RESEARCH

Development planning in Algeria is faced by problems of rapid population growth and industrialisation which have resulted in an overcrowding of the large towns and cities and a housing shortage. In the early 1970's, the national centre for studies and management of territories (CADAT) was set up. Its two main purposes were to control rural-urban migration by putting into operation a development programme for rural areas, and to relieve large urban centres of the pressures on housing and facilities by implementing a number of new housing projects.

For the rural areas, an important construction programme was put into operation as part of the agrarian revolution. This programme started in 1971 with the aim of constructing one thousand agrarian villages in different rural parts of the country. As well as aiming to increase agricultural productivity, the programme also had the purpose of raising the standard of living of the peasants by providing new houses, communal farms and farming material, schools, mosques and shops. It was also hoped that the programme would slow down and bring under control the peasants' migration to the cities.

The second programme is concerned with the urban areas, especially large towns and cities. The planning strategy was based upon the development of a number of new housing projects, equipped with all the necessary facilities, located on the outskirts of the city in order to lessen the congestion of the

centre. In Algiers, for example, nine such projects have been implemented since 1975. The aims of both the rural and urban programmes were to reduce overcrowding and housing shortage in large centres by encouraging the rural population to settle in the rural areas and thereby relieving pressure on the large towns and cities.

This research deals with the problems of the new urban housing projects in Algeria with regard to both the built environment's design and the new social structure. It is argued that a development should be a social process, in which people's opinions about the new built environment are taken into account (Cherry, 1970). Gans stated that the first step in planning for people is to give up all traditional planning concepts related to the physical environment, and to begin at the beginning by finding out the way people live, their aspirations and problems (1972). In one of his previous works, Gans had argued that it is difficult to design physical provisions for a population whose characteristics are not specifically known, and that residents feel frustrated at not being consulted by the authorities who make decisions about their residential environment (Gans, 1961).

In Algeria, however, there has been a major housing deficit, which has worsened and reached a critical point. This phenomenon led to an overcrowding of the large towns and cities and an urgent need for a large housing stock. A mass production policy was adopted using standardised buildings, whilst the human factor was not accorded much importance. The result was an inappropriate environment, which reduced the rate of occurence of traditional social activities and the number of people participating, which in

turn did not favour a rapid group formation process. The new outdoor and indoor spaces do not always fulfill the same functions as in the traditional and colonial spaces. For example, the traditional or colonial street is a space where many activities take place such as meeting, chatting and playing. However, the new street does not assume these functions but is limited to a single function: passage. Further problems are the insufficient facilities and their poor quality goods and services, together with the location of the new projects at a distance from the main transport network and regional centres. These problems underline the need for a full understanding of residents' social and physical requirements to provide a new environment which may satisfy them.

In the traditional urban areas, for example, the built environment is shaped according to people's social needs. The hierarchy of spaces follows an order from the private space represented by the house, which communicates with the semi-private space the "West Dar", in the form of a courtyard shared by the families living in the building. This space is used by the women for their daily housework activities as well as for resting and chatting. The West Dar gives access to the semi-public "Driba", which is the space between the entrance of the building and the West Dar. The Driba is a small space, well protected from visual contact from both the West Dar and the outside. It is generally used for receiving friends who cannot have access to the home, and also as a play area. The Driba communicates with the public space called the "Znika" which is a pedestrian street, along which facilities for meeting purposes, such as local shops, cafes, and mosques, are provided for adult males.

When people move to the new projects they are faced with a new physical environment. People who did not know any of their new neighbours before moving are all strangers and therefore begin to make social contacts. The arrangement of the flats and buildings has a strong influence on the occurence of these contacts and on the development of friendly relationships. The proximity of flats and the sharing of the same staircases, landing and building access increases opportunities for social contacts which may lead to friendliness, especially, with the presence of homogeneity (Gans, 1961). When people get to know one another they need semi-private, preferably outdoor, spaces to meet and interact which will help develop their friendliness into friendship. For this purpose, the layout of the built environment has a significant impact on friendship formation and development which, in turn, increases the level of satisfaction with the new social environment. For example, the local cafe, mosque, library and open outdoor spaces, if they ensure enough privacy from the neighbouring flats, represent spaces where meetings and social activities can take place.

The new projects represent a move for residents to new social and physical environments which are possibly unfamiliar to them. The level of satisfaction with the new project depends, to a large extent, on how far the new social and physical environments can fulfill residents' expectations and requirements. Both the needs inherited from the "familiar" way of life and those resulting from the new "unfamiliar" conditions should be met. For example, people from the traditional area are in need of open outdoor spaces which ensure sufficient privacy where they can carry out their usual social activities, as well as a good public transport

system linking the new project to the city where many of them work. Whilst it is important to understand people's cultural and physical backgrounds in order to define their requirements, it should also be mentionned that needs also differ according to the socio-economic characteristics of residents (Gans, 1961).

Galster and Hesser argued that two sets of factors play a key role in the process of residential satisfaction. They considered the first "contextual" and the second "compositional". They defined the contextual aspect as the physical characteristics of the individual's dwelling and the physical and ecological characteristics of the surrounding neighbourhood. The compositional aspect is considered as the characteristics of the individual household such as social class, stage in the life cycle and background (1981).

This research investigates the problems of the new social and physical environments which influence residents' satisfaction with the new housing projects. Although many studies have explored the aspects influencing satisfaction with housing projects, most of these studies have focused on just one aspect or a small combination of aspects, such as physical qualities, architectural desirability, location of the project, form of tenure, efficiency of social services and facilities, and so on. The assumption underlying these research studies is that these aspects determine or strongly influence the habitability of a public housing project or the satisfaction of residents with a housing project. While this assumption is quite valid, it overlooks the impact that residents' social characteristics (socio-economic status, stage in the life cycle, degree of social interaction, life style, etc.)

could have on their level of satisfaction with their housing (Onibokun, 1976). As a consequence of such an approach, only a small number of research works exist today on this human aspect of housing (Gans, 1962 and 1967; Michelson, 1966; Onibokun, 1976; Williamson, 1981).

The analysis in this study is concerned with two main issues; firstly, the exploration of the role and effects of the new built environment and group homogeneity on the formation of informal groups of friends among the new residents; and, secondly, the investigation of the effects of the design features of the new physical environment (form of the new flats and layout of the outdoor spaces and facilities) on satisfaction with the new project. The analysis aims to provide information and criteria which may assist in the design of new urban housing projects which encourage and facilitate the formation of informal groups, and provide a satisfactory physical environment.

1.2 RESEARCH OBJECTIVES

The main purpose of this research is to point out social and physical factors which may contribute to formulate a successful development programme for new urban housing projects. The recommended programme will suggest design guidelines which may assist in providing an environment which offers a satisfactory physical built form and facilitates social integration, and consequently, increases level of satisfaction with new projects. The objectives of this research is therefore:

- To explore the effects of residents' social characteristics and the new physical environment on their level of satisfaction with the new social relationships.

- To examine the relationship between residents' attitudes towards the features of the new flats (size, orientation, views, etc.) and outdoor layout (arrangement of buildings, size of open spaces, type of streets, etc.) and their level of satisfaction with the physical environment.

- To assess the impact of residents' attitudes towards the location and quality of the new facilities on their satisfaction with the new project.

1.3 RESEARCH HYPOTHESES

The main assumptions of this research are:

- Level of satisfaction with the new social relationships is higher in the cluster where residents of different socio-cultural backgrounds (from traditional and colonial backgrounds) are housed in the same basic housing units than in the cluster where the two groups of residents are housed in separate basic housing units.

- Residents from a traditional setting attach more importance to the arrangement of outdoor spaces than to the form and size of the flats; whilst those from a Western style (colonial) setting are more concerned with their flats than the spaces outside.

- Residents from a traditional setting attach more importance to the size of the flats than to their architectural features; whilst those from a colonial setting attach more importance to the design features (e.g. views) than to the size of the flats.

- There is a higher level of maintenance in basic housing units where informal groups are formed than in those where these informal groups are not yet formed.

- Residents living in basic housing units with shops at the ground floor of their buildings are less satisfied with the layout of the project than those living in basic housing units without shops.

- Residents' level of satisfaction with the outdoor spaces (playgrounds and streets) increases with a reduction in the number of cars entering the cluster housing.

- Residents attach more importance to the provision of commercial and educational facilities (shops and school) within a close distance than the facilities used for social activities (mosque, cafe, youth club, etc.).

1.4 THE CASE STUDY

The case study is one of nine new urban housing projects in Algiers. They have similar physical characteristics: standardised buildings of four storeys, linear layout with basic housing units arranged around common spaces, location on the outskirts of the city, etc.. They are mainly occupied by highly

ranked government employees from the colonial areas of the city. In the case study, however, residents are from both the colonial and traditional areas. These projects are not confined to Algiers but are built in all major towns and cities in the country. Their main objective is to reduce the present housing deficit. The new projects consist usually of one to two thousand flats and a number of facilities to support them. As mentioned earlier, the projects are composed of a number of standardised buildings. This practice aims at reducing both cost and time.

The project under study is designed and built by a Danish company. It is composed of 78 similar buildings, of 4 storeys each, containing a total of 1500 flats and 120 reserved spaces for small shops and amenities, located on the ground floor of the buildings. With regard to the new social structure, the new residents have moved from two different physical settings: traditional (Casbah) and Western style (colonial) areas, and have different socio-economic characteristics, for example, income, marital status, family size, age, etc.. Flats have been attributed in such a way that some buildings have people of one origin (Casbah or Colonial) and others of both origins.

1.5 RESEARCH METHODOLOGY

This research is concerned with measuring and comparing levels of satisfaction with the new social and physical environments between residents of different socio-cultural backgrounds. To achieve this comparison, the rate of group formation, development of friendship patterns, and attitudes towards the physical features, both indoor and outdoor, (such as

spaciousness, views, arrangement of buildings, size and situation of facilities) are used as parameters to measure the level of satisfaction with the new project.

The case study was selected on the basis that it provided "constant" features and "variables", which enable the reliability of the comparison to be assessed. For example, a number of buildings are arranged around common spaces with shops at the ground floor level and other buildings are arranged around common spaces with no shops. In assessing levels of satisfaction with the use and function of outdoor common spaces, four clusters were analysed, called, for example, "a", "b", "c" and "d". While buildings in "a" and "b" have the same arrangement (common spaces without shops), they are inhabited by different residents: in "a", residents originated from the Casbah and those in "b" are from both the Casbah and colonial areas. Similarly, while "c" and "d" were occupied by residents of the same origin (colonial areas), their arrangement differed ("c" was with shops and "d" without). The variables and constants in this example show how people of different backgrounds react to the same use of space, and how people of the same background react to different uses of space.

1.5 TECHNIQUES FOR DATA COLLECTION

The field work was carried out in two sessions. The pilot survey lasted two months (January - February 1986) and the final survey lasted four months (July - October 1986). The collection of the required data necessitated the use of various techniques, namely informants, questionnaire, observation and informal

interviews with residents and officials.

The data gathered was coded, processed and analysed with the use of the SPSS-X package (Special Package for Social Sciences) available at the University computing centre. Three main statistical techniques were used: regression analysis, correlation analysis and contingency table analysis. The results were in the form of a ranking of the various factors by their strength of predicting satisfaction and tables illustrating relationships between two or more variables.

1.6 STRUCTURE OF THE THESIS

The thesis is composed of eight chapters. Chapter 2 examines the problems facing the development of planning programmes in Algeria, the objectives of the new urban projects (ZHUN's) and their current problems, and a description of the case study. Chapter 3 deals with the relevant literature. It discusses studies that have analysed problems of residential satisfaction and the variables influencing satisfaction, together with the different approaches used for assessing residential satisfaction. Chapter 4 is concerned with the methodology of the research: field work and techniques of data collection, and with the measurement and analysis techniques. Chapters 5, 6 and 7 are concerned with the presentation and interpretation of the research findings. Chapter 8 is made up of an overview of the main findings and recommendations for planning and designing new urban housing projects. Finally, all the figures and tables used in this research are presented in appendices two and three.

2. PROBLEMS OF THE NEW HOUSING PROJECTS

This chapter discusses the housing crisis in Algeria caused by, in particular, the demographic explosion, and present planning policy. Importance will be accorded to the social and physical problems of the new urban housing projects (ZHUN's) resulting from the housing crisis. This chapter also presents a detailed description of the case study.

2.1 HOUSING CRISIS IN DEVELOPING COUNTRIES

The urban problem in Algeria is quite similar to that experienced in most developing countries. Population increases throughout third world countries average 2.7% p.a., compared, for example, with 0.2% in the UK (figures from Cameron, 1980). Asian populations alone are increasing by 1 million persons per week. This means that the 1975 populations of developing countries may have doubled by the year 2000. Maintaining the same rate of growth, these countries will double their population a generation or so later. In the light of such increases, it is particularly important to consider what impact essential physical development will have on total useable land areas in the future, especially the fertile land required for agriculture.

A further problem of the rapid population increase facing third world countries is providing homes and other facilities and services for the inhabitants. This represents huge financial and technological expenditure for these countries. All third world housing should therefore be designed to last as long as possible.

Much of the mass housing built in the cities of the UK well over a century ago, for example, is still structurally sound, and, with modest internal improvements could well continue to provide good accommodation for many years to come. Building housing which will last a long time will permit the planners of third world countries to determine the deficit in housing and lay down plans for the long term which may lessen the housing shortage in these countries.

With the rapid and large scale urbanisation that third world countries must undertake, two further problems arise: the use of land and the quality of the housing projects realised. Cameron defined three main uses of land, namely, agriculture, physical development other than housing, and net housing areas. He pointed out the importance of farming and suggested that 95% of useable land should be set as a minimum target for farming in any developing country. Physical development, other than housing, includes playing fields and parks, shops and offices, municipal and health buildings, industries, transport facilities and educational buildings. Cameron stated that a net housing density should relate to the total of the built areas, the private open space if any, and any local public spaces including the footpaths, and half the local road widths. A likely average net density for housing of all kinds in the UK is 40 to 50 persons per hectare with a maximum permitted ceiling of 500 persons per hectare. This contrasts with some high-rise developments in Hong Kong and elsewhere which house around 5,000 persons per hectare (Cameron, 1980). On the other hand, research works have revealed the social problems of high-rise buildings which are generally not socially desirable. Buildings over 5 storeys also require expensive lifts

with their attendant power requirements and maintenance problems. Thus, it is necessary to have buildings of 1 to 4 or 5 storeys only, as is the case in all the Algerian ZHUN's where the buildings do not exceed 4 storeys.

The problem of the quality of the housing projects built in third world countries mainly concerns the adoption of approaches which are not appropriate to the local needs. The lack of technical knowledge and the economic changes in most developing countries during the last few decades have forced them to be increasingly dependant upon developed countries. Rather than trying to develop approaches inspired by their own culture, tradition and social characteristics, third world countries are adopting methods inappropriate to their local needs and this results in a change for the population from a familiar to an unfamiliar socio-physical environment. The longer this process continues, the greater the disintegration of their socio-cultural identity will be.

2.2 CAUSES OF THE HOUSING SHORTAGE IN ALGERIA

Urban development in Algeria faces two major difficulties; Firstly, the demographic explosion, caused by the rural-urban migration phenomenon and the high growth rate of the population; and secondly, the repercussions of the present planning policy which led to inefficiency in certain institutions in charge of the definition and application of the planning policies.

2.2.1 The Demographic Explosion

Due to unfavourable ecological, physical, economic (especially the huge concentration of industry in the northern cities), and social conditions, rural-urban migratory flows in Algeria have resulted in an incredible growth of the large northern cities, especially Algiers, since Independence, as shown by Figures a1 and a2. The original French plan for Algiers was designed for 800,000 inhabitants. By 1976, the number of inhabitants had doubled to 1.7 million. The results of the national census of 1987 revealed that the capital was inhabited by 2,600,000 people. The other two large cities according to the census of 1987 are Oran (590,000 inhabitants) and Constantine (438,000 inhabitants). The number of cities with more than 100,000 inhabitants has doubled in the last 10 years, from 8 in 1977 to 16 in 1987 (figures from Le Monde of 21/09/1987).

The demographic problem observed in Algiers was not only due to the rural-urban migration phenomenon which began after the independence in 1962, following the hurried departure of all the French community. The extremely high growth rate of the Algerian population (3.2%, Cote 1983), one of the highest in the world, has been the other major problem affecting urban development. Although the census of 1987 revealed a drop in the growth rate to 3.06%, this is not considered a significant decrease.

There has, however, been only a slight increase in the number of dwellings constructed. In the national census of 1966, the population of Algeria was 12 million and there were 1,978,888 dwellings (all types included), which makes an average of 6 persons/dwelling. In the second national census of 1977,

however, the population had climbed to 17 million and the dwellings numbered only 2,015,000, taking the rate of occupancy of a dwelling to more than 8 persons/dwelling (figures from Benamrane, 1980). According to the official figures from the Ministry of Urbanism, Construction and Housing (MUCH), published by La Bruyere (1982), the rate of occupancy per dwelling climbed from 6.78 in 1966 to an astonishing 8.33 by 1977. At this point, large scale operations began, involving more and more foreign contributions, the sole purpose being to strike the appropriate balance between the size of the population and the number of dwellings, while social factors and residents' needs for appropriate physical features were generally ignored.

2.2.2 Repercussions of the Present Planning Policy

As a consequence of the rapid population growth in Algiers and other northern cities, many problems appeared regarding facilities. They varied from the inefficiency of the water provision services to the inadequacy of the telecommunication system and a dramatic increase in land and housing costs. A further major problem has appeared since 1970 with the application of the four year national plan (plan quadrienal, 1970-1973) which opened the door to rapid processes of industrialisation and urbanisation. The priority given to industrialisation has been at the expense of transportation, telecommunications, housing and associated urban infrastructure. It eventually became apparent that this was restricting further industrial expansion. Consequently, 1972 saw the first indications that physical planning had been recognised as an essential component in aiding

economic development. This saw the introduction at the urban level of the master plan (Plan d'Urbanisme Directeur: PUD).

The purpose of the PUD was to identify infrastructural needs, and produce plans for urban expansion, taking into account employment, housing, growth constraints and development priorities for the town concerned. Importantly, this was a physical guide to action which exercised legal controls on land use and construction, especially to save the fertile land for agriculture. A synthesis of the PUD is provided within the district plan for modernisation (Plan Communal de Modernisation: PMU) which allows the operation of the PUD through the provision of the financial framework. At the semi-urban level, the semi-urban communal plans (Plan Communal Semi-Urbain: PSU) were initiated, also with the objective of identifying the need for infrastructural and social facilities. The PMU and the PSU were to operate within the framework set by the State Secretary for Planning (Secretariat d'Etat au Plan: SEP), who is in charge of formulating the regional development policy and who has responsibility for the regional allocation of the national budget. At the regional and local level, the Algerian Centre for Territory Management (Caisse Algerienne d'Amenagement du Territoire: CADAT) has the responsibility of putting into affect the development plans proposed in the PUD's in accordance with 3 to 4 year financial allocations.

The introduction of this system of various plans did not significantly ease the planning crisis in Algeria. The system generally failed to reach its objectives in time, on account of several problems, for example, the lack of communication between

its various organisms and a lack of stability. By the 1980's the CADAT was replaced by the National Centre of Studies and Research in Urbanism (Centre National d'Etudes et de Recherche en Urbanisme: CNERU) which was accorded greater responsibility. The CNERU was in charge of studying and suggesting new PUD's and new developments required. The Direction of Urbanism, Construction and Housing (Direction d'Urbanisme, de la Construction et de l'Habitat: DUCH) was in charge of the application of the various projects. As a consequence of this change, Algiers benefitted from a PUD in 1981 determining the areas strictly reserved for agriculture and those to be urbanised. Algiers' PUD also suggested certain interventions to ease the problems of the capital, such as the proposal of a new road network which is now in its final stages of implementation.

A further obstacle is that the programmes defined by the plans have failed to be realised in time. The new 5 year plan foresees the implementation of 300,000 new dwellings, which represents an average of 60,000 dwellings, generally flats, per year. It is a very ambitious plan but it is the only way to reduce the housing shortage, or at least to prevent it worsening. However, taking into account that the number of dwellings built between 1967 and 1978 did not exceed 5,000 dwellings a year, and that even with the launching of the large scale operations involving more and more foreign contribution in the 1980's, an average of only 15,000 dwellings per year were realised, it is difficult to consider the 5 year plan's objectives realistic, especially taking into account the economic crisis the country has been facing recently following the sharp drop and instability of the price of oil.

The new developments are mainly concerned with the public sector, represented by the ZHUN's. The ZHUN policy began in 1975 and so far nine new housing projects are inhabited or at their final stage of implementation in Algiers (Figure a3). They have mostly been built by foreign enterprises as they have the necessary human and material resources to achieve one of the Government's main demands, namely finishing the construction of the ZHUN and making it habitable within the minimum possible time. The ZHUN which is being studied (1,500 flats) was ready to be inhabited after only 20 months from the start of work.

2.3 OBJECTIVES OF THE ZHUN'S

The social and economic developments and demographic growth in Algeria resulted in rapid urbanisation, especially during the last decade. The emergence of the housing crisis from the processes of industrialisation and urbanisation forced the political authorities to intervene and they proposed two broad paths of action:

- To put into action important housing programmes to reduce the critical housing shortage.

- To establish a policy which would determine the institutions in charge of urban planning and would define the tools of urbanisation necessary to reach the objectives of the housing programmes.

The authorities stressed the necessity of meeting the objectives of these programmes in the shortest time possible. Therefore the authorities ensured that administrative and technical procedures were eased as much as possible. As a result, almost all the development of the last decade was in the form of new urbanisation, because restructure programmes were considered to be time consuming and unable to provide a sufficient number of habitable dwellings. These projects were, therefore, mainly located on the outskirts of the cities where the land was free. 80% of the housing projects were located as extensions of the existing built areas, and did not look for possible free areas inside the city (Zakour, 1986).

These projects were put into operation using:

- The master plan (PUD), which indicated the free land which could be urbanised and suggested the programmes. The application of these programmes was carried out by:

- The distribution of plots of land and assistance to self-builders. This practice is limited as it is land consuming, especially with the shortage of land reserved for urbanisation.

- The ZHUN's are the most common form of urbanisation as they provide a large number of dwellings and are generally built quickly.

The objectives of the new urban projects (ZHUN's) were:

- To implement the housing programmes of the PUD in as short a time as possible in order to reduce the housing deficit.

- To allow the planning authority to organise the urban development in a coherent way.

- To avoid dormitory estates (cites dortoires) and create new projects with all the necessary facilities and services, and even a number of jobs which would not disturb the residential character of the housing project.

- To link the new projects to the existing areas and centres, and avoid all social or spatial segregation between the new and existing areas. The ZHUN's should, therefore, take into account the shortage of facilities and services of the existing neighbouring areas and provide them.

By the end of 1984, 202 ZHUN's were registered in the whole country, representing a total of 600,380 new dwellings. However, only 334,100 dwellings were distributed as some ZHUN's had not yet been finished. These 202 ZHUN's occupy some 20,680 hectares. A further 50 ZHUN's are under study which will occupy a further 3,900 hectares and will provide 105,468 dwellings, therefore, the new five year plan (1985-1989) foresees the reduction of the consumption of land by the new projects.

2.4 PROBLEMS OF THE ZHUN's

The ZHUN's programmes are considered by the Government to be the most effective way to ease the housing shortage. However, the problem which arises here is that the new housing projects do not fulfill the social and physical requirements of the residents. This research will, therefore, examine the problems experienced by residents, and will assess the effects of these problems on their level of satisfaction with the new housing projects.

The problems of the new urban housing projects discussed in this section are those defined by Zakour, architect in charge of the ZHUN's programme, in his report to the Ministry of Urbanism, Construction and Housing (1986), and those observed in this case study or pointed out by architects and planners during the pilot survey.

2.4.1 Social Problems

The main social problems in the new housing projects are the lack of friendly social relationships between groups of residents with different socio-cultural characteristics, and a low frequency in the occurence of outdoor activities.

The way in which residents are housed is probably a major contributory factor to the first problem. Some of the leading national companies are accorded quotas of flats which are distributed to the highly ranked employees. These flats are located in the same housing cluster. Flats allocated to people in urgent need by the local municipality or by ministerial decree, the majority of whom are lowly ranked employees, are located in a

different housing cluster. This results in two groups of residents with different socio-economic characteristics living separately and with no social contacts between them. Consequently, social relationships which develop between the new residents remain at a housing cluster level. This contrasts with the traditional and colonial areas where people have friendly relationships with or at least know most of, if not all, the residents of the area. It is thought that if the heterogeneous groups were housed together, residents may have more opportunities to know one another at the project level. For example, residents working together or those who moved from the same area living in different housing clusters would visit one another. This would represent an opportunity for them to know people from another housing cluster.

However, even though people working together or moving from the same area were housed in the same housing cluster, this does not ensure that friendly relationships will develop between them. It is argued in the literature that people of different age groups, marital status and life-styles have different interests and aspirations. This does not encourage the formation of friendship between them although a certain level of friendliness may exist. This research attempts, therefore, to examine the role of the way in which residents are housed and their level of homogenity in the friendship formation process, and also their effects on satisfaction with the new social relationships.

The second problem is related to the extent to which outdoor common spaces and facilities provided in the new projects can accommodate residents' social outdoor activities. In the traditional colonial areas, facilities such as shops and cafes are used by the local people for gathering, meeting, chatting and playing. In these areas the streets and squares are also spaces used for such activities. In the new projects, generally, only a few shops used for daily required goods are functional. In most new housing projects, the outdoor common spaces (courtyards) and the streets are not often used by the residents. The activities observed in the case study, for example, occured mainly in the evenings. Those which occured during the day lasted, in most cases, for a short time such as when a group of people met when going to work or waiting for the company bus. It is assumed that the design of the outdoor spaces in the new housing projects does not provide spaces suitable for socialising. This research will, therefore, explore the role of the layout of the physical built form in bringing the residents together, and its effects on their level of satisfaction with the social relationships.

2.4.2 Physical Problems

The physical problems encountered by residents of the new housing projects are related to both the indoor and outdoor built environments (flats and outdoor layouts).

a. Problems of the New Flats

With regard to the new flats, three main problems are observed; those related to design, those resulting from the flat allocation policy, and those associated with the residents' lack of choice of their preferred flats. Firstly, in most new housing projects, each group of buildings are arranged around a common space, or courtyard, forming a basic housing unit varying between 40 to 60 flats. This particular design poses problems of orientation. Some flats do not receive enough sun, whilst others are over-exposed; some flats face attractive and quiet green spaces, whilst others may face dull views or noisy roads.

Secondly, the policy of allocating flats to people without taking into account their family size resulted in disproportionate levels of density in the new flats. For example, it is found in the case study that some single residents were allocated three bedroomed flats. On the other hand, some residents with large families (more than 6 persons) were allocated two bedroomed flats. This imbalance may result in dissatisfaction among residents with large families.

Thirdly, the fact that residents did not get the opportunity to choose their flats according to their preferred storey or location of the building may result in problems. It is expected that elderly residents may prefer to live on the lower floors, whilst young residents may prefer the upper storeys. Residents with young children may be of great need to be located as close as possible to the school. Residents with grown-up children or single residents would have other priorities.

b. Problems of the Outdoor Layout

The major problems associated with the layout of the new housing project are the size and location of the open spaces designated for play and socialising, safety on the streets, and the arrangement of the facilities with regard to the basic housing units.

The CNERU recommends 1,000m^2 of open space reserved for play purposes in each basic housing units (40 to 60 families). Although most new projects respect this norm, the safety of these spaces and their locations are generally unsatisfactory. Playgrounds are mostly concreted and few green spaces are available. These concreted spaces are used by residents as car parks which significantly reduces both the surface of the playgrounds and the children's safety. The designation for play purpose of the spaces separating basic housing units does not facilitate an easy supervision from the flats.

The absence of a pedestrian network of footpaths or streets to link the basic housing units with the facilities, in particular those often used by children such as the local shops and primary schools, affects the level of safety in the area. In Ain-Allah, for example, a road with fast moving traffic (RN 36) separates the south part of the project from the north part where the primary school and most of the shops are located. The absence of a pedestrian bridge to link the two parts poses a serious danger to the safety of the children from the south part when going to school or to the local shops. It is also observed that these two facilities are sometimes located quite a long distance from some of the buildings. The literature and the CNERU recommend that

they should not be located at more than 5 to 7 minutes' walking distance (around 500m), but in many new housing projects, this recommendation is not respected. In Ain-Allah, for example, some buildings are located between 15 to 20 minutes' walking distance from the primary school or local shops.

2.4.3 Lack of Facilities

The new housing projects vary generally between 1,000 and 2,000 flats. The CNERU norms foresee for these projects a number of facilities, such as a primary school, a health centre units, ten local shops, a sports room, a multipurpose room for meetings and other activities, a cafe and a mosque (Figure b13).

During the implementation of the ZHUN's, these facilities are not purposely built. A number of ground floor spaces are reserved for the facilities without actually designating the type of activities each space will accommodate. In Ain-Allah, for example, if the required facilities had been foreseen by the contractors at the design stage of the project, they would have realised that certain institutions and specialised facilities could not fit in the ground floor of the buildings. Specific buildings with specific layouts and appearances, therefore, should have been integrated in the new projects.

The local authority in Ain-Allah used none of the reserved spaces for the facilities of which they were in charge, such as a health centre or a sports room. This is partly on account of the fact that it was impossible to use the ground floor spaces of the buildings for sports activities, for example, as their height

(2.80m) was too low for this purpose. It can also be explained by the inefficiency of the local OPGI in looking after the project. This explains why only small investments and businesses which did not need much space such as shops for daily goods, hairdressers, and a newsagent invested in Ain-Allah, and only a limited number of these small businesses did so. Consequently, the variety and quality of the facilities suffered.

A further problem that residents encounter after moving to a new project is that it takes a long time, often many months, for the local shops to start functionning. In Ain-Allah, the ground floor spaces reserved for facilities were not occupied by the shopkeepers immediately after completion, but the process was gradual. In fact, after two years, more than two thirds of the reserved spaces were still unoccupied. In other new developments worldwide, the opposite approach is taken regarding the period when the facilities have to be operational. The phasing plan should ensure that the facilities start functioning as soon as people move in (Shankland Cox, 1973).

Locating the new project close to existing housing areas or commercial centres may help residents to rely on the existing facilities at the early stage of moving to the new projects until their local shops are functional. This would also reduce the cost of creating new roads and public services, such as a sewage system, water, gas and electricity. These public services, however, are generally provided in all new housing projects before their occupation, although there are certain minor problems. The new project under study, for example, was built lacking outdoor lighting.

2.4.4 Form of Tenure

Tenure is generally used to denote the form of occupation or the interest held in the dwelling. Two main forms of tenure predominate in the new urban housing projects (ZHUN's), namely renting and home owning. The two forms of tenure share the same problem which is the expensive monthly payments.

a. Renting

Ain-Allah represents an example of the three ways to be eligible to rent a flat in the new urban housing projects (ZHUN's).

Firstly, some of the leading companies and ministries, such as Naftal (National Oil Company), BNA (National Bank of Algeria), MDS (Ministry of Defence), etc. take a certain quota of flats each, and distribute them to their highly ranked workers whose applications have been successful. (The companies and ministries cited had quotas of flats in Ain-Allah).

Secondly, legally people can apply to the municipality to rent a flat. The applications are considered on the grounds of urgency, and those considered eligible are entitled to rent a flat in a ZHUN. However, in reality, this method of distributing the flats is very inefficient due to two reasons. The number of flats that the municipality is given is negligible in comparison to the thousands of applications the municipality receives. The method used to select those most in need is generally bureaucratic and unfair. The very few residents in Ain-Allah who were allocated their flats through this institution are themselves working for

the municipality. This shows that it is not always the most needy who are awarded a flat.

Thirdly, it is possible to benefit from the very rare presidential or ministerial decrees in very serious situations where rehousing is urgently needed, as was the case for the people from the Casbah. Normally the way in which the flats are let excludes the low to medium income people from getting a new home.

Due to the poor housing market, and the economic crisis the country is experiencing, the Ministry of Housing introduced in late 1983 new tenure measures. It encourages all people renting their flats to become flat owners. Residents who could not afford to buy, faced sharp increases in their rents which have more than doubled. This is one of the reasons for the high rents in the new urban housing projects. The people most affected by this increase are those who were allocated their flats by the second or third routes as described above. The majority of these people are lowly ranked employees with relatively low salaries.

b. Home Ownership

Buying a home in Algeria always used to mean paying cash, although, since 1971, home buyers have had the opportunity of applying for a loan from the National Savings Bank (CNEP). The conditions for benefitting from such loans are numerous, and patience is required. Articles 4 and 9 of the ordnance of 19/02/1987 stipulated the system of saving for the entitlement of a loan (in Journal Officiel of February 1971). The loan cannot exceed 100,000 DA (around £14,000), and the applicant must have

had a savings account with the CNEP for at least three years, ensuring more than 350 DA interest from the account.

The price for a two-bedroomed flat in the ZHUN's, however, is almost four times the amount of the maximum loan. Buying one's own flat is, therefore, difficult. In certain cases, however, the CNEP offers the possibility of borrowing the whole amount and repaying it monthly over a period of 25 years, if the purchaser is buying a home which belongs to the CNEP. This is the case in Ain-Allah where the CNEP financed a part of the project. The CNEP offers the purchasers loans with monthly repayment instalments, similar to mortgages in most Western countries, with the attractive interest rate of 3.5% per annum. Even with such a low interest rate, however, the monthly repayments are high, even for highly ranked employees.

2.5 THE CASE STUDY

The present study is concerned with the exploration of the effects of the social and physical problems discussed above on the level of satisfaction with the new housing projects among residents with different socio-cultural characteristics.

A case study method was chosen as this research is concerned with describing and diagnosing single, internally complex objects, such as individuals and buildings. A case study allows one to delineate boundaries of an object and then observe, for example, the elements it comprises, relationships between the elements, the development of the object, and contextual influences (Zeisel, 1981).

Some advantages of the use of a case study can be seen in the work of Nahemow and Downes (1979) and Snyder and Ostrander (1974), where a research/design team was asked to design a residence for older veterans in a small, rural New York town called Oxford. Ostrander and Snyder set about to provide information about one institution, its residents, its staff and its setting, in order to design another institution for essentially the same constituents. At Oxford, Ostrander and Snyder were particularly interested in what this specific situation was like and what was important in the lives of the users of this institution. This situation was prototypically appropriate to a case study.

Some researchers, however, have pointed out certain disadvantages of the case study method. Zeisel considered that a case study is not wholly appropriate for information easily generalisable to a large population. Bulmer and Warwick (1983) argued that a frequent criticism of a case study research is that its reliability can be poor since so much depends on the capacity and personality of the observer. In this research, these two weaknesses of the case study method were significantly reduced. The information collected about the new urban housing projects can be generalised as these projects represent the most widely used type of urbanisation. Most of the data in this research was quantitative and was, therefore, gathered by the use of closed-ended questionnaires. This technique eases the work of the interviewers. They have only to read the questions to the interviewees and mark the chosen answers. This significantly reduces the influence of the observer's judgements or personality on the reliability of the information collected.

The newly developed areas (ZHUN's) have similar principles, objectives and problems, as explained earlier. Physical characteristics they have in common include:

- The buildings and the layout of the flats in a ZHUN are all the same (stereotype), and all ZHUN's are composed of collective buildings.

- The new projects are situated on the outskirts of the city, at a distance from the centre.

- The new projects are mostly built by foreign enterprises and priority is given to the construction of dwellings, and only when this is complete, is consideration given to facilities.

- All new projects are built of concrete or prefabricated materials.

The newly developed areas also share similar social characteristics. The majority of the new flats are reserved for the highly ranked employees of national companies, the majority of whom used to live in the colonial parts of Algiers. In special circumstances, however, lowly ranked employees are allocated flats in the new housing projects, as is the case in Ain-Allah where people from the Casbah were moved to the new project. These people benefitted from a ministerial decision that they should be rehoused in the new project following accidents caused by the dilapidated state of many of the buildings in the Casbah.

The choice of Ain-Allah as a case study resulted from the fact that it has the typical physical characteristics of the ZHUN's and yet at the same time provides a statistically representative number of residents with different socio-economic characteristics and backgrounds. The majority of the residents of Ain-Allah are highly ranked employees (72% of the total residents) who moved from the colonial parts, but the remaining 28% of the residents are lowly ranked employees who moved from the traditional part of Algiers. Ain-Allah was originally reserved for highly qualified workers and the presence of the non-qualified workers from the Casbah was due, as explained, to urgent and necessary rehousing.

Ain-Allah does not only represent a rich human laboratory where the research's hypotheses can be tested, but, as it is a relatively new settlement, memory errors regarding questions concerning previous places of residence can be considerably reduced, as shown by Figure b1 (Moss and Goldstein, 1979). It is also appreciated, however, that as Ain-Allah is relatively young, there is a possibility that some of the residents may not have had sufficient time to integrate fully.

Ain-Allah is composed of 78 stereotype buildings containing a total of 1500 dwellings and 120 reserved spaces for small shops and amenities. It is located in the district of El-Biar, almost four miles from the city centre.

Ain-Allah is bordered, as shown by Figure a5, to the North by the communal road (CW 45), to the West by the military sports centre, to the East by the Olympic stadium (5th of July Stadium), and to the South by the motorway which is at the implementation stage. Ain-Allah is divided into two parts by a road with heavy traffic (RN 36) and is occupied in such a way that it is composed of three main housing clusters (Figure a5). The first cluster is made up of a number of buildings in the South part and is occupied by people originating from the Casbah. The second cluster, which is represented by all the buildings of the North part, is occupied by people from the colonial areas. The third cluster is a small number of buildings in the South part occupied by both groups of residents. The socio-economic characteristics of the residents are discussed in detail in Chapter 4 when the choice of a representative sample is discussed.

The concept of Ain-Allah's layout is inspired from the layout of most of the colonial areas in Algiers where the facilities are situated on the ground floor of the buildings along the main street. The implementation of Ain-Allah's buildings along a dangerous road with heavy traffic, not frequented by many pedestrians, however, makes it necessary to have the facilities inverted on an internal street. The way in which the buildings are implemented creates common spaces designed for the residents living around them, but creates no main street which links all the parts of the project which could therefore support the facilities. Consequently, certain common spaces are designated for this purpose.

The internal streets and the common spaces were, at first, designed to be pedestrian and consequently would have been used as playing areas for children and meeting spaces for adults (Figure a6). However, this design proposal was opposed by the fire safety commission as it did not conform to the required distance of a maximum of 150 metres between the furthest dwelling and the nearest fire engine access. To avoid the problem of redesigning the layout of the project and requesting the postponement of the date of its completion, designers allowed vehicular access to all the internal streets and common spaces (Figure a7).

2.6 SUMMARY

The rapid growth rate of the population in third world countries resulted in a shortage of housing and a lack of facilities and public services. In Algeria, the rural-urban migration and the high birth rate coupled with the inefficiency of the planning system are the two main obstacles facing urban development. This has led to an overcrowding of the major towns and cities, for example, the rate of occupancy per dwelling in Algiers climbed from 6.78 pers/dwel. in 1966 to 8.33 pers/dwel. in 1977.

In 1972, the Government introduced the master plan (PUD) which was a guide for exercising legal controls on land use and construction, especially to save the agricultural land. With regard to construction programmes, the main objective of the PUD was to reduce the housing shortage. Consequently, important housing projects started in 1975. So far, 202 new housing

projects have been built in Algeria.

The main priorities of these projects have been to implement as many flats as possible in the shortest possible period of time. By placing emphasis on the quantitative aspect, the quality of the new built form has suffered and residents' requirements have not been seriously taken into account. Consequently, social and physical problems have resulted. The way in which people are housed and the outdoor design affect social relationships between residents and the frequency of outdoor social activities. The outdoor spaces also lack pedestrian safety and are not arranged in such a way as to provide facilities used on daily basis within a short walking distance. A further consequence of this rapid urbanisation is the implementation of new housing projects lacking primarily needed facilities, such as shops, a mosque public transport, concreted footpaths, public lighting, etc..

The new housing projects share similar characteristics. They are composed of stereotype buildings, have similar layouts, and are located on the outskirts of the city. The new projects are mainly occupied by highly ranked Government employees. The case study has the physical characteristics described above, but with regard to the social structure, it is occupied by both highly ranked employees from the colonial areas and lowly ranked employees from the traditional area of the city. The case study allows the exploration of how people with different backgrounds, life styles, incomes and expectations react to the same physical built form, and to what extent the new housing projects meet the requirements of these different groups.

3. THEORETICAL FRAMEWORK

EVALUATION OF RESIDENTIAL SATISFACTION

The theme of the present research is satisfaction with the new urban housing projects. This research suggests that the level of satisfaction with a new housing project is influenced by both the new social and physical environments. This chapter will, therefore, review the literature relevant to these aspects. Findings of similar researches, definitions and measurements of the concepts related to these aspects will be discussed, as well as the approaches used in evaluating residential satisfaction.

3.1 ASSESSMENT OF RESIDENTIAL SATISFACTION

The issue of residents' satisfaction with their neighbourhoods is one of growing interest in various arenas. Many studies in this field have been conducted (Fried and Gleicher, 1961; Lansing and Hendricks, 1967; Smart et al, 1968; Lansing and Marans, 1969; Onibokun, 1976; Galster and Hesser, 1981; Williamson, 1981; etc.). Many of these studies, however, have focused only on the effects of the physical environment on satisfaction, not taking seriously the influence that the social factor may have (Onibokun, 1976).

Few researchers have, however, focused on the role of the social aspect in residential satisfaction. The main hypothesis of Onibokun's research was that there is an association between residents' social characteristics and their assessment of their

level of satisfaction. Williamson's research into satisfaction in highrise buildings among a German sample also focused on the variations in the responses between the residents with relation to sex, age, marital status and social class. In addition to these social backgrounds, Williamson's study sought to identify the types of people who are most and least attracted to the highrise and what factors relate to satisfaction with the highrise. Studies which aimed to discover how socio-economic characteristics such as age group, social class, life cycle, number of children, etc. create different needs and aspirations among people, were undertaken by Galster and Hesser (1981), Gans (1967), Onibokun (1974), and Michelson (1966 and 1976).

Discussing the aspects which affect residential satisfaction, Keller argued that satisfaction is closely related to the social characteristics of the residents, such as the family life cycle, family size, age and personal characteristics (1968). Gans supported this idea and stated that the physical aspects are of little importance for the satisfaction of the residents. However, a study of new estates in England conducted by Reynolds and Michelson (1972) revealed that a close relationship exists between the appearance of the estate, the way it is maintained, the detailed design of its blocks, and the satisfaction of the residents. With regard to the role of the physical environment, Blowers (1973) supported the argument that a close relationship exists between satisfaction and the physical form and the major components of design and layout (appearance, surroundings, layout of dwellings, etc.). On the other hand, in a study of housing satisfaction among new home buyers, Brink and Johnston suggested that building one's own home is a very strong predictor of

satisfaction (Brink and Johnston, 1979). They stated that satisfaction may be viewed as a function of realisation of housing aspirations, fulfillment of expectations and the degree of housing involvement.

3.1.1 Necessity of Discovering People's Requirements

Discussing the way in which planners should approach a new development or even a small scale project in an already established community, Gans argued that defining the community for which planners are building is of prime importance: "Ask how people live, what they want, and what problems they have which need to be solved. Different age groups and different classes have different life styles, goals and problems. When these groupings are identified, one can then develop plans which achieve their goals and solve their problems" (Gans, 1972).

Similar suggestions to the above were made earlier by Festinger et al (1950), who suggested that planners should consider the following points before designing a project:

- "Who will be housed - homogeneous group, people with the same ideas of prestige, luxury, privacy, etc..

- How many families - determine the size of the community.

- What family size - mixture or separation of the different sizes of families.

- Site selection - physical aspects and social integration.

- Dwelling unit - number and quality of dwellings to build. If density is high, will it affect privacy?

- Room ratio and area - room/unit and persons/room.

- Community facilities and maintenance - shops, social rooms, playgrounds, nursery, churches, libraries, etc.. Should these facilities be grouped in a community centre? Does their location affect the opportunities of meeting between residents"?

Many sociologists and researchers have suggested that public opinion should be taken into account at the beginning of the planning process by discovering people's needs and aspirations with regard to their neighbourhoods (Peterson, 1967; Lansing and Marans, 1969; Gans, 1961 and 1967). This could help in the design of new projects which may meet residents' requirements and, consequently, increase their level of satisfaction.

When planning the Durham County structure plan, the local authority in charge involved the residents in the early stages of the project by means of a survey. The purpose of the survey was to collect from the general public and from public bodies economic, physical and social facts, attitudes and opinions. The questions in the survey were designed to provide references or guidelines from the residents' responses for the programme to be established by the planners. Questions like "How can people have access to a satisfactory range of opportunities?", "How will people travel?", "How will educational and social needs be met?",

were asked and they received a good response and many suggestions from the local population (Durham County Council, 1976).

Friedmann proposed that planning should be partly an education process. Planners would learn context and value from the community, and the community would learn technology and management from the planners. By combining these two types of knowledge through the interaction of the two groups, planners and community would develop plans together (1973). Some researchers have suggested that public involvement should also include the design phase (Kuper, 1953), or even the implementation stage thus giving the public the opportunity to take part in building their neighbourhoods (Fathy, 1973; Kwok, 1983; McAuslan, 1985 and Sokari, 1985).

3.1.2 Aspects Affecting Satisfaction

The literature reviewed so far indicates that many aspects, such as the social relationships, the physical environment, the choice and control exercised over one's own dwelling, etc. affect residential satisfaction. The effects of these aspects may differ from one group of residents to another according to their sex, age, marital status, background, etc..

As already discussed, Galster and Hesser argued that residential satisfaction is related to both contextual and compositional factors. In their research, they attempted to determine the extent of independent effects which derive from both contextual and compositional levels of reality. In other words, they set two research questions. Firstly, are there certain

dwelling or neighbourhood conditions which all residents need to avoid and which they seem unable to adapt to, such as those whose presence generates dissatisfaction regardless of household composition? Secondly, are there certain types of residents who tend to manifest less satisfaction in any context, due to their greater needs, aspirations or inabilities to adapt? Many researchers such as Bauer (1951), Back (1962), Gans (1962) and Michelson (1976) agreed with the argument that the objective characteristics of the dwelling, neighbourhood and individual may not exclusively affect the overall residential satisfaction in a direct manner. They may partially or wholly operate through their effect on the individual's subjective assessments of more limited aspects of the social or physical aspect which, in turn, contribute to overall satisfaction levels.

Glasser and Hesser further stated that the process of overall residential satisfaction may be modelled with presumed causal paths emanating from objective independent variables, passing (sometimes) through subjective intervening variables, and ultimately having impact on the dependent variables measuring satisfaction.

Philips argued that what constitutes habitability varies according to the surrounding circumstances, and because the satisfaction of human beings cannot be absolute, the habitability of a housing unit or the satisfaction of tenants at a particular point in time can be meaningfully defined only in the relative, rather than in the absolute sense (Philips, 1967). In his research into evaluating satisfaction with housing of a Canadian sample, Onibokun applied an approach where he used the relative

habitability (RH) of housing and relative satisfaction (RS) of the residents. In some research works, the relative satisfaction approach has been applied (Reynolds and Michelson, 1972), where all the features affecting respondents' satisfaction with their dwellings and estate explained 56% of the variance, while the rest remained unexplained. In the present research the multiple regression analysis used to determine the predictory strength of the various factors regarding satisfaction with the new project under study, explained 64%. In social researches, this percentage of explanation is acceptable (Reynolds and Michelson, 1972).

3.2 SOCIAL RELATIONSHIPS AND RESIDENTIAL SATISFACTION

Some planners believe that the physical environment, natural and man-made, infringes directly on the residents. However, it was found in a number of studies examined by Rosow that the physical environment has less effect than often imagined (1961). Rosow found that the social environment has considerably more effect. This is best illustrated by Festinger's findings in his Westgate study where the social life was so rewarding that people paid little attention to the physical defects of the housing (Festinger, 1953). Similar findings were reached by Keller (1968).

In their study of Berinsfield, Morris and Mogey argued that the neighbour's role is usually one of crucial importance in a new project. Satisfaction with the neighbours consistently implied satisfaction with the residential community; while dissatisfaction with the neighbours almost always meant dissatisfaction with the residential community (1965).

Many studies have revealed that satisfaction with the social relationships on an estate is related to the level of friendship and interaction between neighbours and a feeling of belonging to the community. Untermann and Small defined a "sense of community" as residents of any neighbourhood wanting to feel part of the development in which they live, being proud of it, and identifying with it. In order to feel part of a neighbourhood, a resident needs to know his neighbours and interact with them (1977).

In this research, a distinction is made between "friend" and "known neighbour". Known neighbour is a person to whom the respondent would say hello, with whom he would chat or discuss the estate or general problems, or even someone with whom he would participate in outdoor activities. However, a friend is somebody with whom the respondent would discuss his problems, from whom he would expect to be able to borrow items, with whom he would go out, whom he would visit, and to whom he would go for help in an emergency. The more apparent these aspects between two people, the closer the friendship is.

The formation of groups requires a certain level of friendship between residents. Friendship is a voluntary and intensely personal relationship, subject to private negotiation to an extent unparalleled in most other social relationships (Suttles, 1970). On the other hand, Allan argued that friendship is a relationship between equals, and supported his arguments with the works of Blau (1961), Rosow (1970) and Turner (1974) who concluded that friends should have similar demographic characteristics (1979). Researchers generally agree that friendship development is related to a large extent to the

opportunities for social contacts that the proximity of the flats provide and to the homogeneity of neighbours.

3.2.1 Effects of Proximity

Whyte argued that people who lived closest to each other tended to be acquainted (Whyte, 1957). Similar conclusions were reached by Merton in his Craftown study. The closer together people live in terms of physical distances, the greater the chance is of meeting one another, and the greater the chance is for the formation of friendships and groups (Case, 1981).

Proximity here means the functional distance and not the physical distance, as Darke and Darke differentiated. Keller defined the physical distance as the measured distance from dwelling unit to dwelling unit. Functional distance depends on positional relationships determined by site design. These include such characteristics as the orientation of the dwellings to one another through front, side and back doors; the location of service units such as milk boxes and the paths residents follow to their daily activities, such as the bus stop. In his study, Kuper measured the effects of proximity on the type of social relationships existing between residents by three indices:

- Naming the neighbours - knowing of neighbours' names provides some measure of extensive, though at the same time, superficial relationships.

- Evaluating sociable relationships (going out, helping, visiting, etc.).

- Naming the good neighbour (side neighbour, party neighbour, etc.).

The influence of physical and functional distances on the process of establishing patterns of social relations results from passive contacts (Kuper, 1953). A passive contact is the unintentional encounter of two persons (Case, 1981). This unintended encounter presents the opportunity for acknowledgement of another's presence and a chance to discover the other's nature through observation and conversation. This process takes time, however, and is dependent on the recurring opportunity for passive contacts between the same persons. It is, therefore, in determining the repeated occurence of passive contacts among individuals that architecture through physical and functional distance is found to be an influential variable in the formation of social relations.

The physical built form can promote opportunities for contacts between residents through the common spaces and facilities it provides and their layout. In their site planning recommendations for housing clusters in the United States, Untermann and Small argued that meeting is more likely if residents spend a good portion of their leisure time in the development, and if the development is orientated to pedestrians. Pedestrian orientation requires compact arrangements and short distances between amenities and shared facilities, so people can meet freely and comfortably. Typical meeting places include a

common launderette, community mail boxes, car wash facility, car parking, cluster entrance, and common open spaces. A similar idea to the recommendation of Untermann and Small has already been adopted in Milton Keynes. The designers of Milton Keynes were influenced by American cities and American planners, in particular Melvin Webber (Consultant for the plan for Milton Keynes) whose work states that the finest characteristics of urban life are associated with a city's range and variety of opportunities for social contacts (Milton Keynes D.C. 1980).

Buchanan argued that the community develops and functions as social units which should provide easy access to a wide range of services, employment, recreation and other facilities (1966). Arguing a similar point, Kuper concluded in his study of Coventry that social contacts increased considerably with the provision of three types of facilities. Firstly, the same place of work was the source of an appreciable number of contacts between residents; Secondly, leisure facilities such as cinema, public houses, social clubs, etc. were places for contacts, and children's play spaces could stimulate relationships between parents; Thirdly, the daily requirements, such as shops, post office and other public facilities, offered a good opportunity for contacts. According to Kuper's argument, many opportunities for contacts in Ain-Allah can be expected. A large number of residents share the same place of work, and each basic housing unit is provided with a common space.

Proximity, or "propinquity" as it is called by some researchers, however, may give rise to intense relationships or enmity (Brown, 1973). In his study, Kuper discovered that proximity provoked conflicts between the different social groups

rather than friendship. Gans found in his study of Levittown that, despite social similarities between residents, intense social relations among proximate neighbours dissipated with time as people became more selective and far ranging in their searches for friendship.

The literature suggests that proximity provides residents with initial contacts. Proximate dwellings and service units, such as walk paths, bus stop and shops encourage opportunities for contacts between residents. The recurrence of these contacts may lead to friendly relationships between the neighbours. However, on occasion proximity may lead to problems which may affect the relationships between neighbours.

3.2.2 Effects of Homogeneity

Certain studies have revealed that people tend to choose as friends those with whom they share interests or values, rather than neighbours who happen to live near them. Physical and functional distances do not alone have a strong effect on social relationships. Their effect is instead highly dependent on the prior conditions of social similarity and time, often referred to as intervening variables (Case, 1981).

An analysis of the characteristics of the people would show that homogeneity and heterogeneity explain the existence and absence of social relationships more adequately than would the site plan or physical proximity (Gans, 1961; Newcomb, 1961; Lee, 1971 and Pahl, 1968). They argued that familiarity with the neighbourhood, close physical and personal ties to family and

neighbours, and the availability of social supports can account significantly for satisfaction in residential areas. A similar study was carried out by Campbell et al and their data was described in greater detail by Marans and Rodgers (1975) and concluded that satisfaction with the immediate micro-neighbourhood was firstly predicted by the respondents' rated similarities to their neighbours.

Kuper (1953) and Newcomb (1961) argued that social similarity is a precondition for social relationships. These similarities in values and aspirations were used by many authors to describe homogeneity. Gans defined homogeneity in terms of shared values with respect to child rearing, leisure time interests, taste level and general culture references. Education, social class, age, marital status and age of children all influence these values (1961).

A homogeneous group is one in which all individuals share specific characteristics: demographics (such as age, stage in family life cycle, place of birth, education, occupation), and attitudes and aspirations (Blowers, 1973).

Festinger defined homogeneity by three characteristics:

- "Homogeneity of the people along sociological dimensions: class, economic status, age, occupation, education and marital status.

- Homogeneity of interests - sharing similar work interests and leisure time activities. In his study, the residents were all students of the technical college and their major area of concentration was focused on scientific and industrial fields. These were also reflected in their leisure time activities, which included amateur mechanics, dark room work, etc..

- Homogeneity of aspirations - future housing aspirations, number of bedrooms desired, quality of house, type of dwelling, etc.".

Homogeneity of members of a group may seriously affect the functioning and the pattern of life of the group (Festinger, 1950). Many researchers, including Rosow (1961), Wilson (1968), Gans (1962 and 1968), Suttles (1972) and Michelson (1976), stated that homogeneity is a prime contributor to social satisfaction. Their claim was based on an argument similar to that of Gans, who argued that greater homogeneity in the community, especially in age and class, makes it easier for people to find friends, get along with neighbours, and generally trust and help one another. However, works and statistical evidence provided by Goldsmith and Munsterman (1967) and Durand and Eckhart (1973) questioned the significance of such claims.

In his research, Kuper measured homogeneity using two techniques developed by Warner:

- The technique of evaluated participation: by measuring interaction in the social system of the community.

- The technique of index of status characteristics: based on four criteria, namely, occupation, source of income, house type and dwelling area.

House type and dwelling area are not relevant in Ain-Allah research as it is carried out in the same area and the dwellings are all identical. A group of residents, however, worked together and some moved from the same area. The remaining residents were those who moved separately and did not work together. The project was occupied in such a way that some basic housing units were inhabited by people from the same group, and others by people from both of the different groups. This allows the roles of both proximity and homogeneity on friendship formation to be assessed.

A research carried out in the Berinsfield study by Morris and Mogey, where people who lived together were called "locals" and the ones who moved separately were called "strangers", however, concluded that a physical segregation between two heterogeneous groups can negatively affect the social relationships between them. A similar idea was also argued by Gans.

The work on homogeneity reviewed so far suggests that a certain level of homogeneity on the estate is required to allow residents to know neighbours with similar characteristics and interests with whom they can get on and develop their relationships and this, in turn, will increase their level of satisfaction.

3.2.3 Level of Interaction and Friendship

A high level of friendship and interaction between residents may lead to the formation of a community. A community is the feeling of belonging to a particular territorial or social group within which there is a sense of identity and a high level of social interaction (Homans, 1965).

In his work, Homans chose the frequency of visiting as the criterion of interaction. He argued that the determinants of this interaction were:

- Certains characteristics of the individuals themselves (age, stage in the life cycle, work, social class, willingness to be a friend or neighbour).

- The physical environment in which the residents operate, influenced especially by proximity.

Kuper also argued that the level of interaction between residents can be measured by three indexes, namely, frequency of visiting, frequency of going out together, and expectation of help from the friend. In this research, however, it is expected that only a limited number of residents will be involved in visiting. In the Muslim society, segregation between men and women does not encourage visiting. The other criteria used for measuring interaction were participation in outdoor activities, expectation of help from the group's members, and going to places together.

3.2.4 Socio-Economic Characteristics and Friendship

The important role of the social characteristics, such as stage in the family life cycle, social class, age, level of education, etc., of the people in their behaviour, attitudes, perception and evaluation of their social and physical environment has been widely discussed by many authors and supported by many studies. For example, Michelson pointed out the role played by urban tastes and the position of the individual in the life cycle in determining residential preferences (1977).

Testing the effect of marital status on the source of friends among tenants of a high rise, Michelson discovered that single residents drew most of their friendships from outside sources, notably their work setting, whereas couples with children found themselves drawn to neighbours.

In his research, Allan found, when examining the effect of social class on the type of friendship the residents had, that while the middle class formed friendships with non-kin, some met in a comparatively wide range of contexts, working class people did not. Their recorded friendships tended to be restricted to a few specific categories of people: neighbours, work mates, but principally kin. As far as non-kin were concerned, Allan stated that most evidence suggested that middle class friendships tended to be less close knit than their working class equivalents. Williamson found in his research that the upper middle class tended to interact more on a weekly than a daily basis when compared to the lower middle or working class.

The stage reached in the life cycle is also considered to be a factor related to neighbourly relationships (Caplow and Foreman, 1956). Wilmott also found more cohesion when residents were in the same age range (1963).

In a research into the pattern of neighbouring relations in Dortmund-Nordstadt, Pfeil expected people to be friendly in the small tenements because they had been shown to have the greatest level of neighbourliness, but in fact friendliness was shown to be independent of the size of house or length of residence (Pfeill, 1968). His analysis showed that the social structure of the tenement and its age were the crucial variables.

It has also been argued that children can influence people's attitudes towards each other. Williamson argued that married residents, and especially those with children, had a greater opportunity to know their neighbours than did single people. He also suggested that being older or more established, this class had more children, and this promoted greater interaction. On the other hand, single residents were orientated more towards social relationships outside the complex.

Finally, Carey and Mapes (1972) and Blowers (1973) argued that the development and maintenance of neighbourly friendships depend on personality factors. It depends on whether the individuals are gregarious or solitary, friendly or hostile, and especially on their attitudes and values.

Generally, sociologists agree that the social characteristics of the individuals affect to a large extent their level of friendship. Marital status, class, age group, number of children and personal attitudes are factors affecting the level of friendship and interaction between neighbours. For example, single, high class or young residents, especially those with no children are less likely to interact with their neighbours than low, elderly or married residents, in particular those with children.

To sum up, the literature reviewed in this section suggests that friendship formation between residents contributes greatly to satisfaction with the social environment. It has been argued that proximity provides social contacts that can be developed into friendships with the presence of homogeneity. Sharing similar socio-economic, interests and aspirations encourages the development of friendship and the formation of informal groups. It has also been argued that levels of interaction between people differ according to their social class, stage in the life cycle, marital status and personal attitudes, for example, married people are more likely to interact with neighbours than single people.

3.3 THE PHYSICAL ENVIRONMENT AND RESIDENTIAL SATISFACTION

Many researchers have argued that the spatial organisation of the built form is strongly related to satisfaction with a housing area. The appearance of the area, the architectural features of its blocks, the layout of the dwellings, and the location and size of the open spaces and facilities are factors related to satisfaction with the physical environment (Blowers, 1973; and

Reynolds and Michelson, 1972).

3.3.1 Features Related to Flat Satisfaction

It has been argued that satisfaction with the flats is related to a set of features, such as spaciousness, views, orientation, etc.. Wilson argued that spaciousness was the most important attribute in flat satisfaction (1962). Some studies, such as those of Rossi (1955) and Foote et al (1960), have also revealed that the size of the dwelling and the amount of space are important sources of satisfaction with the dwelling.

In their guide for designing residential areas, Essex County Council recommended the provision of certain features in dwellings. For example, with regard to privacy, it suggests that if a dwelling is overlooked by an opposite dwelling, the minimum "eye to eye" distance between them should be 35 metres (Essex C.C. 1973). Also, a good sound insulation from outside noise (not more than 70 dB (A) on the (l 10) index), and the orientation of the dwellings in such a way as to receive sufficient sunlight and daylight in all the rooms are further recommendations of Essex C.C. (1973).

Runcorn D.C. emphasised that dwellings should not be wholly inward looking and that the kitchen, in particular, should be planned to enable housewives to enjoy a view and see their young children at play (Runcorn D.C., 1966). In Algeria, orientating the kitchen's windows onto outdoor spaces is undesirable, especially if it is in visual contact with a street or a public space, for reasons of privacy. If the windows overlook only

playgrounds, however, this would facilitate child supervision by the mothers.

Having an open space in the flat is also argued to be a related factor. In its recommendations for designing dwellings, the National Committee for Human Settlements emphasised that each dwelling should have direct access to a private, furnishable outdoor garden, court, terrace, balcony, or roof space, preferably open to the sky (NCHS, 1976). People who moved to the case study used to have large open spaces in their previous areas (large balconies in colonial areas and terraces in the Casbah). These spaces were mainly used for drying washing. In the case study, however, only a small partly enclosed loggia was provided.

Life cycle and socio-economic class factors are crucial determinants of general housing preferences, needs and aspirations, yet it is considered less clear what their ultimate effect on satisfaction levels might be, independent of the objective features of the dwelling and neighbourhood (Lansing and Kish, 1954; Foote et al, 1960; Michelson, 1976; Morris et al,1976 and Galster, 1980). Relating this argument to their research in America, Galster and Hesser gave the example of a residence occupied by low socio-economic status, black, unmarried, or large family households which may have been more a matter of "necessity" than of a relatively unconstrained "free choice" (due to income and/or discriminatory constraints), where less satisfaction may be manifested unless adaptation has occured (Galster and Hesser, 1981). On the other hand, higher status, white, or married households may have placed higher minimum standards of acceptability on their residential environment, where less

satisfaction may result, as argued by Lansing (1970). Glaser (1967) and Rent (1975) stated that the higher neighbourhood satisfaction observed in the case of owner-occupants may have been a function of the freedom of choice implicit in the house owning context, but it may have been also due to correlated life cycle and class features.

The importance of the effects of residents' social characteristics on their satisfaction with their physical environment is best illustrated by the findings of Williamson in his study into adjustment to the highrise (1981). Williamson found that the question of satisfaction with the design, construction and other structural features was related to the social backgrounds of the respondents. Not only did the reaction to highrise flats depend upon "subcultures", such as social class, but also on position in life cycle, orientation to change, and the reality of planning for a more suitable kind of dwelling. The study further suggested that marital status affected responses to the general settings. Single residents were more aware of the view, anonymity and lack of noise. On the other hand, the background of their neighbours and having balconies were more important to couples. Couples, particularly those with children, were more sensitive to the apartment itself, and to the room arrangement, for example.

To sum up, satisfaction with the flats may be affected by the design features, such as spaciousness, views and orientation. The effects of these features, however, depend on soco-economic characteristics. Literature reviewed in this section suggests that attitudes towards the design and physical features of the

dwellings are related to residents' backgrounds, social class, marital status and family size. For example, it is anticipated that the importance attached to spaciousness will differ considerably between large and small families.

3.3.2 Features of Outdoor Layout Related to Satisfaction

In the present research, the project layout means the way in which the various open spaces (playgrounds, green surfaces, streets, etc.) and buildings (dwelling units and facilities) are arranged.

The early British new towns, for example, stuck fairly rigidly to a set formula with residential areas disposed around a neighbourhood centre comprising schools, shops, pubs, churches and other facilities. Local centres in the middle of residential units are a feature of the Peterborough, Runcorn, Telford, and Washington plans (Figure a15). Apart from its economic advantages, such an arrangement may also serve a social function by bringing people in the community together at a central point and encouraging their social identities (Runcorn D.C. 1967 and Blowers, 1973). On the other hand, Milton Keynes offers a radical departure from the centralised residential unit scheme. Houses are not grouped to form an inward-looking neighbourhood unit, but are each part of overlapping catchment areas, according to different functions and the interests and requirements of each household, some, and the most needed, within walking distance and some within short car or public transport journeys. Milton Keynes is being designed as a flexible system in order to meet the planning goals of variety and freedom of choice (Milton Keynes

D.C. 1970).

The Dudley Report supported the idea that neighbourhoods should be built in units. Clarence Perry (as quoted in "Planning and the City", 1973) suggested the idea of the neighbourhood unit which he based upon the following:

- School: a centrally located elementary school within half a mile of the furthest dwelling. The school determines the catchment area, and the size of the neighbourhood together with the service area.

- Boundaries: to be formed by the major roads so that no through traffic should enter the neighbourhood.

- Open Space: 10% of the area should be devoted to open space (playing fields, small parks, etc.)

- Institutional Buildings: the community buildings, such as the school, library, church, club, etc. should be grouped.

- Retail Districts: neighbourhood shopping centres should be located on the periphery of each unit at junctions of boundary roads.

- Internal Street Layout: roads serving the neighbourhood should be of varying width and designed to accommodate intra-neighbourhood traffic.

The Dudley Report states that the sense of a neighbourhood should be achieved in a unit which is large enough to embrace a wide variety of experience and tastes, and yet small enough to provide easy accessibility between its parts and occasion for acquaintance.

The Irvine Development Corporation defined the urban form as a series of residential units based on walking distances, connected to each other or to a central or industrial area by public transport and footpaths (1971). The Irvine new town plan was based on basic units of 4,000 people, structured around a primary school and local shops, within a distance of 0.5 Km or 5 to 7 minutes' walking time from the furthest dwelling. Blowers similarly defined the neighbourhood as a series of residential units which support a range of locally based institutions and facilities, such as schools, churches and shops (1970).

One of Buchanan's suggestions for the Southampshire study was the creation of a social and physical community life with easy walking distances between residential areas, places of work and open country, with a freedom of choice for the residents in housing, place of work, shops and recreation (1966).

The walking distance is not the only criterion for a satisfactory layout. Researchers have argued that many other factors, such as appearance, hierarchy of spaces and location of facilities and open spaces, can influence satisfaction with the built form.

In his work on neighbourhoods, Wilson concluded that the ideal neighbourhood should be (in order of importance) spacious, beautiful, good for children, exclusive, country-like and close to nature (1962). In Reynolds and Michelson's study, it was found that the appearance of the estate, together with the way in which it was maintained, was a very important feature for satisfaction. The appearance of the estate was defined in that study by the colour and size of the buildings, the landscaping, the spaciousness of the surroundings, the variety of the buildings, and the level of maintenance on the estate. In the Algerian new projects, this definition requires certain alterations. The buildings are all the same and so no variety exists. However, informal interviews during the pilot survey revealed that people attach importance to the appearance of the buildings (form and architectural features of the elevations).

Unterman and Small argued that the housing clusters should be varied to increase individual identity and to reduce the monotony of repetitive units (1977). However, each variation increases the total cost, so the site planner must weigh the advantages and disadvantages of each variation to achieve a balance. This point was also made by the Milton Keynes D.C. which defined two ways of conceiving dwellings and residential units, and their advantages:

- Optimum planning conditions: East-West orientation, hierarchy of the public and private space. This is possible by simple repetition of the same dwelling plan. This approach may be useful for the Algerian new projects, as they are composed of repetitive buildings.

- Visual references to an old village: Housing clusters and a great variety of small scale spaces increase social value of visual grouping and proximity, and produce a variation in appearance, access, privacy, etc.. This approach, however, would be considered in Algeria to be costly and time consuming, both sensitive factors in the present housing shortage.

The CNERU's guidelines for designing new projects are based on walking distances between facilities and residential buildings, and on a hierarchy of spaces (Figure a16). A new housing project is equipped with a centre comprising institutional, commercial, cultural and religious buildings, a clinic, a school and sports facilities. The centre should not be located more than 600 metres from the furthest dwelling. A street running through the centre and serving each housing cluster is also recommended. This main street should support facilities, such as a primary school, creche, shops and play facilities. Every four or five buildings should be arranged around a common space for playing and meeting purposes and form a basic housing unit. These spaces should not be located more than 200 metres from the furthest dwelling.

A primary road network forming a boundary for the project is recommended, as it would provide a quick and easy access to all housing clusters and would keep the vehicular circulation outside the basic housing units. In order to implement as many buildings as possible in as short a period of time as possible, new urban housing projects in Algeria are built mainly by foreign contractors, as is the case in Ain-Allah. These contractors do not generally take into account the CNERU's recommendations. In

Ain-Allah, for example, no purpose built facilities were provided, but some spaces were reserved at the ground level of the buildings for this purpose. Therefore, no centre or commercial street, as recommended by the CNERU, exists.

The provision of a hierarchy of spaces and streets in Algerian new housing projects is important. The streets and the local square in Algerian neighbourhoods, both traditional and colonial, are the vital spaces where all the outdoor activities and meetings take place. The residential units and facilities in the colonial areas are organised along streets which play the role of a neighbourhood centre. On the other hand, the pedestrian streets (Znika's) in the traditional area (Casbah) are, in addition to space for circulation, safe play areas for children and meeting places for adults. The Casbah layout provides a variety of buildings, a very well integrated development on the slope, with beautiful views of the beach from the terraces, and a well defined hierarchy of spaces: Private (house), semi-private (West-dar), semi-public (Driba) and public (Znika), as discussed earlier (see Figures a11, a12, a13 and a14).

When discussing the role of the streets, many researchers have also pointed out the need for pedestrian safety (Jacobs, 1962). In most new developments worldwide, designers have acknowledged the importance of ensuring maximum safety for the residents from cars, mainly by providing a network of pedestrian streets and footpaths linking the dwellings with the local amenities, in particular with the primary school and the shops. In Milton Keynes, for example, houses, schools, places of employment, bus stops and parks are joined by a safe citywide

network of footpaths and cycletracks known as "Redways". In Cergy-Pontoise, cars were separated from pedestrian footpaths, which linked the dwellings to each other and to the local facilities, by having the vehicular roads communicating only with the boundary of the basic units where the garages, situated at the back of the houses, were located.

The idea of segregation between the pedestrian and vehicular roads is not a new concept. Clarence Stein and Henry Wright in the 1920's built Sunnyside, Long Island and, more importantly, Radburn and New Jersey, with a layout especially designed to segregate pedestrians from traffic and to stimulate social interaction. Radburn's layout, with car parking at the rear of the dwellings and pedestrian paths at the front, was incorporated into many neighbourhood schemes in the USA and Britain (Blowers, 1973), and other parts of the world such as, Cergy-Pontoise new town in France described earlier, despite the fact that such a physical arrangement has been questionned by a number of designers (Jacobs, 1962).

Other factors related to satisfaction with outdoor physical built form discussed by researchers are, for example, the location of the school, shops, green spaces and bus stop. In a new housing project in Jamaica, Shankland Cox Partnership suggested pedestrian routes on which the school and local shops should be situated at not more than five minutes' walking distance from the furthest dwelling (1973). In Algeria, the CNERU recommended that the school should not be located more than 600 metres from the furthest dwelling.

With regard to green spaces, in American cities, urban designers conceive them by hierarchy from the private space to the semi-private to the public space. They also suggested that when planning a development, 20% of the developed site should be green, for recreation and pleasure purposes, although this percentage has been questionned. The site planner should choose how it will be divided, where it is to be located, and the size of each space (Unterman and Small, 1977). The CNERU, however, recommended a surface of 1,000m^2 be reserved for greenery and play purposes for each basic housing unit (40 to 60 dwellings).

It was argued in the Westminster District Plan that play is an essential element in the healthy development of children. There is a need to provide a safer and better environment for them. Therefore every opportunity should be taken to provide play facilities in association with new residential developments where these include a significant number of family units. In addition, the National Playing Fields Association, in Britain, suggested that no child should have to walk more than a quarter of a mile to a play area, taking into account physical barriers such as roads, etc. (Westminster District Plan 1982).

Providing a layout based on walking distances which ensures easy access to nearby facilities is important as it can affect the social relationships between residents. Discussing the relationship between the social and physical environments, Cherry stated that planning is not only a physical exercise related to, for example, town planning or allocation of land use, it is also concerned with meeting social needs, aspirations and interests, in part through intervention in the environment, and this

relationship affects the nature of the whole process (Cherry, 1970). Social planning policies for the neighbourhood extend to the micro-level in the design of the built environment. For example, there is design for visibility and for privacy by allowing for maximum contact between individuals but yet ensuring privacy when demanded; then, there is design for facilitating casual contacts away from home but within the immediate surroundings. This might be achieved by a layout of well planned footpaths and common spaces designated for playing or recreation.

The literature reviewed concerning the physical environment suggests that the features of both the flat and the outdoor layout are related to residential satisfaction. Although evaluation of a project's layout can differ according to social characteristics and backgrounds, it has been argued that there are certain features which people, in general, consider important in a housing project. It is suggested that a pleasant appearance of the project, safe streets, and nearby playgrounds and facilities (school, shops, etc.) located within a walking distance are all related to satisfaction with the layout of a housing project.

3.4 PROVISION OF SUFFICIENT FACILITIES

Some authors have argued that public facilities are of prime importance when planning any new development. In Cergy Pontoise, near Paris, a centre with all the shopping, cultural and social facilities for the entire town was the first part of the town to be built, then each of the residential areas followed. Public transport services ensure a link between the town and the whole region, and also the centre of Paris. The internal bus system

links the town centre to all the residential areas and also links all the residential areas themselves. Primary needs (shops, schools, etc.) and jobs were created at the same time as the houses in every residential area. On the other hand, new housing projects in Algeria are implemented lacking primarily needed facilities, as already discussed. In the case study, for example, only a few shops were found to be functionning during the survey, more than two years after the occupation of the project.

The provision of amenities such as shops, institutional buildings and recreational and health facilities is necessary but this alone does not ensure satisfaction. Other factors such as their number, size and the quality of the services they offer have a significant impact on satisfaction with facilities. Blowers, for example, stated that it is not enough to designate a park and expect the need of play spaces to be satisfied. Its functioning depends on its situation, size, maintenance and various other factors (1970).

The basic objective of the Runcorn new town was to achieve maximum convenience of facilities combined with maximum choice for the residents (Runcorn D.C. 1966). This view was supported by Merlin (1971) in his work on the new towns. The Irvine New Town plan suggested that the first objective regarding community facilities is to ensure the availability of the necessary range of facilities and services as and when they are required, and to ensure that the quality of these services is as high as possible (Irvine D.C. 1971).

Irvine D.C. (1971) suggested a number of recommendations regarding community facilities:

- "Ensure the availability of the necessary range of facilities and services, and ensure the highest quality possible.

- Locate facilities so that they are easily accessible to the catchment of the residents required to support them.

- Associate facilities with shops and public transport so that multi-purpose trips can easily be made.

- Locate establishments not normally visited by the public, such as fire and police station, at strategic points on the primary road network".

A reliable and efficient public transport linking a housing project with the main centres of the city is necessary and influences satisfaction with the location of the project. One of the major goals of Cergy-Pontoise, for example, was the provision of a very fast and reliable road and rail link between the new town and Paris, and a frequent and fluent bus service inside the town (I.A.U.R.I.F. 1981). Similarly, a local bus service, a bus service to the city centre, and long distance buses were provided in Milton Keynes (Milton Keynes D.C. 1980). The Irvine new town plan did not only state the importance of the provision of a reliable communication system, but also suggested a hierarchy of roads and public transport routes, and pointed out that the communication system should be fluent and flexible to allow for changes in use and future development.

In Algeria, all large towns and cities experience traffic congestion. This results in unreliability of public transport, and consequently, an unsatisfactory link between the new project and the main centres of the city. The transport problem in Algiers reached a critical stage. 500,000 people every day could not catch their buses. There was a shortage of 25,000 parking places in the city, and the average speed in the city was 6 Kms/h (figures from AA No.1091 of 11-17/09/1986). The solutions proposed by the public transport authorities were to extend the system already operating in the city centre where a part of the road is reserved for public transport only, to provide a greater number of buses, to increase the frequency of buses on every transport line, to possibly re-introduce the tramway in certain parts of the city, and finally to encourage a new idea of "taxi-buses" by putting into service 225 comfortable 12 seater mini-buses to link different parts of the city, especially with the new housing projects (ZHUN's).

The provision of public services is also important. Milton Keynes D.C. stressed that public utilities such as gas, electricity, water, sewage, telephone, pylons, plants, roads, etc. are of prime importance when planning any new development. In the new housing projects in Algeria, some services, such as gas, water, sewage and roads, are part of the agreement with the contractors. These services are, therefore, provided before the residents moved to the project.

One of the first major steps designers take when planning a new project is the choice of a site. The choice should be made in such a way that the project benefits from its immediate environment. A project located near an existing centre, for example, would benefit from existing facilities, as well as an existing road network and gas, electricity, water and sewage systems which would considerably reduce the cost of linking the project to these services.

When planning Cergy-Pontoise, the site was chosen very carefully. The selected site offered fabulous natural scenery. Its location at only 30 kms from Paris and the very efficient transport system linking it to the capital made Cergy-Pontoise a regional centre attracting the residents of the North West of Paris and so easing the centre of the capital. The choice of the location of Cergy-Pontoise cannot, however, be compared to that of Ain-Allah, as the scales of the two projects are very different, but it demonstrates that a good location of a project can provide many advantages for the project itself and for the areas around it. Theoretically, Ain-Allah could be considered well situated as it is located a relatively short distance from some centres, such as El-Biar, Cheraga, Ben-Aknoun and Dely-Brahim (Figure a4), and is surrounded by green space. The lack of an efficient public transport, however, makes reaching these centres on foot very difficult.

To sum up, literature recommends that required facilities, such as shops, a school, health centre, library, etc. are provided before the residents move to the new project. It is preferable to locate these facilities along a main street, or in a

centre if the project is concentric, within walking distance of all the dwellings. Locating the new project close to major centres and linking them by a reliable transport system would ease commuting to those centres and the use of their facilities.

3.5 THE RESEARCH APPROACH

Miller et al defined satisfaction as an attitude; in other words, the evaluation of an object. Attitudes are the familiar topic of much social psychology (1980). Miller argued that research into satisfaction has tended to follow either of two classic models of attitudes. One is the "Belief-Affect" model, which proposes that people combine their evaluations of a set of beliefs about an object to arrive at an overall attitude. To define the sources of an attitude, one must identify the aspects of the object about which people have beliefs and examine how the evaluation of each belief contributes to the evaluation of the whole. This model has been applied to communities in the work of Campbell, Converse and Rodgers (1976). The second model of attitudes describes how attitudes can function as expressions of one's values or as utilitarian devices. Community research using this model has studied satisfaction as an expression of one's identification with a neighbourhood.

Recent work, especially that of Tversky and Kahneman has challenged the classic attitude models and questioned the extent to which human judgements involve careful or complete analyses of information (1971, 1973, 1979). In his work, Zajonc questioned the existence of a link between beliefs about an object and its evaluation (1980). Basing his suggestions on data from the

studies of Moreland and Zajonc (1977) and Wilson (1979), Zajonc proposed that evaluations of objects are processed more quickly than factual beliefs about objects, and that beliefs and evaluations may actually be processed in separate portions of the cognitive system. The factors that govern (non-affective) recognition of an object are poor predictors of affective responses to the object (1980).

In their study of the explanation and prediction of neighbourhood satisfaction among 550 New York City residents, Miller et al suggested a third approach - the Availability Approach. The definition, use and results of each approach are discussed next.

3.5.1 The Belief-Affect Approach

Miller et al argued that the affect-belief approach proposes that people act as if they evaluate their neighbourhood by retrieving their subjective evaluations of a number of its aspects, weighing the aspects for their importance, and then summing the weighted evaluations to achieve an overall estimate of satisfaction. The most extensive attempt to apply this approach was made by Campbell et al in their research into perceptions, evaluations and satisfaction regarding the quality of American life. Their data on residential satisfaction was described in greater detail by Marans and Rodgers (1975). Marans and Rodgers stated that satisfaction with a particular life domain, such as one's community, is primarily dependent on various attributes of that domain. Miller et al argued that people compare their perception of each domain's quality against their standard for

that domain to arrive at an evaluation. They, therefore, warned that a test of the importance of specific predictors of satisfaction within this model would require that evaluations of a wide variety of neighbourhood aspects be gathered. Otherwise, the particular aspects that are shown to be most important to overall satisfaction may depend on the researcher's selection criteria rather than the respondents' beliefs.

In their research, Miller et al applied the belief-affect approach with questions concerning 22 aspects of a neighbourhood. They drew up an initial list of neighbourhood aspects from Campbell et al's research questionnaire (1976). Additional items specific to urban living, such as access to mass transit, were then added. Respondents were asked to rate each of the items in three ways, making each rating on a seven-point scale. Firstly, respondents had to describe each of the neighbourhood aspects. Secondly, the respondents had to rate how satisfied they were with each aspect. Finally, respondents had to rate how important they felt each aspect was.

The results of Miller et al's analysis using this approach revealed that attitudes towards certain aspects are related to people's perceptions of and expectations from these aspects.

The relevance of using the belief-affect approach to this research is the possibility of using it to compare residents' responses concerning features of the new housing project that they had experienced differently. Residents from the Casbah and from the colonial areas came from different social and environmental backgrounds and, therefore, have different standards regarding some of the aspects of the new development.

3.5.2 The Commitment Approach

The commitment approach was defined by Miller et al as an approach which proposes that people like a neighbourhood to the extent that they are economically or emotionally linked to it. Many studies, as already discussed, have revealed how, for instance, social ties affect satisfaction with the community (Gans, 1962 and 1967; Suttles, 1972; Williamson, 1981). For example, people who participate very often in community meetings and outdoor activities are more likely to be satisfied with the housing project.

The commitment approach substitutes assessments of the degree of one's involvement in a community for assessments of satisfaction with its elements. The commitment approach emphasises the role of objective processes in determining subjective evaluations. Fried and Gleicher argued that commitment variables are generally offered to explain why people like their neighbourhoods, even though these variables do not always account for substantial amounts of variance in correlational studies (Fried and Gleicher, 1961).

In their study, Miller et al applied the commitment approach by using a variety of items measuring economic investment and social involvement. This variety of items included questions concerning length of residence in the neighbourhood, form of tenure, a set of items inquiring about the use of the community facilities, and where one's job, dentist, church, etc. were located, and so on. The effects of socio-economic characteristics, such as sex, age, race, education, occupation, income, marital status, and number and ages of children on

satisfaction were also explored.

Although, the results of Miller et al's research revealed that the effects of the items selected by this approach were not highly significant, some of them were found to have an impact on residents' satisfaction. It was found that owning one's own home increased commitment to the area and increased the level of satisfaction. The degree of satisfaction was also found to be affected by three demographic characteristics, namely, age, income and education. It was discovered that the younger, better educated and wealthier residents were more satisfied.

The relevance to this research of the variables selected by this approach is in the help they provide when comparing the responses of the two groups of residents with regard to their social characteristics. The use of this approach will reveal the possible effects of the residents' demographic characteristics, such as income, marital status, age, background and number of children, on residential satisfaction.

3.5.3 The Availability Approach

This approach was described by Miller et al as an approach which proposes that searches of memory for the characteristics of objects that result in overall evaluations are dominated by a small number of evaluations that are particularly salient or available to the individual. Following Zajonc's suggestions that the factors which define an object may not fully determine its evaluation, it is proposed that satisfaction is based on a combination of evaluations of the neighbourhood's actual qualities

and more general beliefs about it. Such beliefs may be popularly shared and may not be objectively verifiable. The availability approach suggests that the elements of satisfaction judgements will be chosen for their availability in memory, rather than for their ability to provide an accurate model of the full range of neighbourhood qualities. In a sense, the availability model specifies the belief-affect model by saying more about the selection of predictors.

Miller et al applied the availability approach by using several scales. Variables were developed to measure the neighbourhood qualities and general beliefs which were emphasised in community group meetings which had been observed in each of the neighbourhoods. The selection of these variables was on the grounds that they were those most likely to be important in residents' judgements. Among the aspects of the neighbourhood that Miller et al used in this approach, fear of crime appeared to be the most salient issue. For measuring this variable, a five item fear of crime scale was formed from residents' ratings of how safe they felt in their block and in their neighbourhood at day and at night and how safe they felt at home at night. This measure had a reliability (alpha) of .922. The other salient variable used was the expectations for the neighbourhood's future. The authors also measured the extent to which racism may contribute to urban dissatisfaction using a four item scale drawn from McConahay and Hough (1976) and Hamilton and Bishop (1976).

The findings of Miller et al's study suggested the variables defined by the availability approach -fear of crime, predictions for the neighbourhood's future, political cynicism, block association efficacy, and symbolic racism- all significantly correlated with satisfaction with one's block. All these variables, with the exception of symbolic racism, contributed significantly to predicting satisfaction when entered in a regression equation.

The relevance of this approach is the fact that factors, such as privacy, feelings of safety, attitudes towards neighbours, etc., are taken into account as well as the manifest factors. Latent factors were found in many researches to have an impact on residential satisfaction.

3.5.4 Comparison of The Three Approaches

In order to discover the extent to which the three approaches account for unique portions of the variance in satisfaction, Miller et al entered the independent variables which had been significantly related to overall satisfaction in the tests of the specific approaches in a regression equation. The objective of this procedure was to test whether variables from each model could significantly add to the variance explained by predictions from the other models. The results from the overall regression equation revealed that both availability and commitment variables significantly increased the explained variance beyond that which was explained by belief-affect predictors.

The belief-affect, commitment and availability approaches suggest different possible interventions for increasing satisfaction among urban dwellers. Generally, although some researches have tended to favour one of these approaches, presenting it as the best method of predicting and assessing urban satisfaction, most agree that the variables of the three approaches are inter-related. This argument can be supported by the findings and suggestions of many researches, discussed in detail earlier in this chapter. Some emphasised the importance of the variables of the belief-affect approach, such as the spaciousness of the dwelling, the appearance of the estate, relations with neighbours, etc.. Others suggested that the commitment or involvement variables such as age, stage in the life cycle and education level were important in predicting urban satisfaction. However, most of these researches agree that the variables of both approaches and of the availability approach, such as fear of crime, all have some strength in predicting satisfaction, and are in general complementary.

In a research into satisfaction among urban residents in five English estates, Reynolds and Nicholson entered all the variables of the three approaches in a regression equation. Some variables they selected were on the belief-affect basis, but commitment variables, such as number of children, age, social class and income, and availability variables, such as feelings of loneliness, feelings of pride with the estate and desire to move, were also included. The results of the research revealed that feeling of pride with the estate was the main predictor of satisfaction among the residents, resulting from satisfaction with the appearance of the estate and the features of the dwelling.

The research also found that the age and stage in the family life cycle of the respondents particularly affected their responses concerning certain variables which were found to be closely related to overall satisfaction. This study and many others (Galster and Hesser (1981), Williamson (1981)) selected physical and social variables of various aspects, such as satisfaction with the dwelling, the social relationships and the facilities and services provided. These variables were then entered in a regression equation with the dependent variable of overall satisfaction with the housing project. The effects of the residents' social characteristics were then assessed by controlling these variables with the various results obtained. A similar approach to the one discussed above which included variables from the three approaches was used in the Ain-Allah study.

Using only one of the three approaches discussed above would not have yielded significant findings. However, each approach provides a set of variables which may affect residential satisfaction. When the variables of the three approaches are taken together, a greater explanation of satisfaction is obtained. Using the variables of the three approaches in the same research was tested by Miller et al and was also used by other researchers, for example, Reynolds and Michelson. Their findings explained to a large extent the variance in evaluating satisfaction.

SUMMARY

The purpose of this chapter was to review the literature relevant to the subject matter. Researchers have pointed out the necessity of discovering residents' characteristics, requirements and wishes before the design stage of the project. They have also argued that designing a project by taking into account residents' opinions may help increase their level of satisfaction with the project.

It has been argued that a project should provide satisfactory social and physical environments for residents. It is necessary that the new physical environment should be arranged in such a way as to encourage friendly relationships. Friendship was said to be encouraged by the contacts provided by the physical proximity and the degree of homogeneity of the residents. Other factors, such as feelings of safety, loneliness and level of privacy were also said to have an impact on attitudes towards the new social environment. These attitudes were also strongly related to the socio-economic characteristics of the residents (age, marital status, number of children, sex, etc.).

Features of the physical environment, both indoors and outdoors, are related to satisfaction with a housing project. It has been suggested that satisfaction with the flats is related to the level to which they fulfill residents' expectations with regard to spaciousness, views, orientation, internal layout, etc.. Satisfaction with the outdoor space, on the other hand, is argued to be influenced by the way the open and built spaces are inter-related, the types of streets, situation of playgrounds and facilities, etc.. With regard to facilities, researchers stressed

the need for the provision of a sufficient number of amenities and public services located within walking distances, offering high quality goods and services. It has also been argued that the location of a new housing project can influence people's attitudes towards it. The choice of a suitable site for a new project is, therefore, important.

The literature discussed three main approaches. The belief-affect approach is mainly concerned with people's experience and perception of their environment. The commitment approach concerns the role of the ties the residents may have with their housing area; for example, residents with children generally feel more settled than single residents. The availablity approach suggests that residents' opinions regarding the features of their environment may be affected by their evaluations of those features available in their memories.

Researchers have suggested that the three approaches all have advantages and disadvantages. The selection of variables from the three approaches and their use in one single approach has been the work of some researchers, such as Miller et al and Reynolds and Michelson. This single approach, resulting from the combination of the three, when tested in some research works yielded significant results and was, therefore, used in this research.

4. DATA COLLECTION AND MEASUREMENT TECHNIQUES

This chapter deals mainly with the way in which the research is approached and carried out, and explains the various techniques of measuring, sampling and collecting data. It discusses the main variables and parameters used in this research, the measurements techniques, the construction of indexes and scales, and the choice of categories regarding some of the controlling variables, such as age and income groups.

The sampling techniques used and the choice of a representative sample and the techniques of data collection are also reviewed. This part of the chapter deals mainly with the role of the pilot survey and the main sources of data, both primary and secondary. The primary data was gathered using informants, questionnaire, and observation, and the secondary data was gathered from articles, books, maps and meetings with the authorities in charge of the project. The interviewing technique used, the testing of the content of the questionnaire and the problems encountered during the pilot survey, and the improvements required for the final survey are also reviewed.

This chapter also discusses the techniques of testing the reliability of the data collected and, the validity of the techniques used. Finally, the techniques used in analysing the data are reviewed. The majority of the analysis was carried out using statistical techniques such as correlation analysis, factor analysis, stepwise regression analysis, and various statistical tests such as the chi-square and F-test. The use of these statistical tests was facilitated by the use of the SPPS-X package

available at the computing centre of the university.

This chapter also presents the first findings on which the structure of the next chapters which deal with the analysis and interpretation of findings are based.

4.1 RESEARCH APPROACH

The approach to the study is very similar to that used by Reynolds and Nicholson (1972) and Galster and Hesser (1981) in their studies, as explained in the previous chapter.

The pilot survey and the literature review suggested that four main aspects could be closely related to satisfaction with the new project. These aspects were the new social relationships between neighbours, the features of the flats, the layout of the outdoor physical environment and the facilities provided. These four aspects constituted the main variables of the research (Figure b2).

Residents were asked to indicate their degree of satisfaction with each aspect and with the estate as a whole. The aspects identified above were entered in a stepwise regression equation as independent variables to establish a ranking by strength of prediction of the dependent variable which was the overall satisfaction with the new project.

Residents' evaluation of each aspect is primarily influenced by their degree of satisfaction with the parameters composing the aspect (Marans and Rodgers, 1975). For example, evaluation of the flat characteristics was a result of the cumulative degree of

satisfaction with different characteristics such as spaciousness, views, noise and orientation. Satisfaction with the social relationships was affected by parameters such as the number of friends on the estate, the degree of interaction, participation in the community's activities, feelings of trust and safety, and privacy. These parameters were established from both the literature review and the findings of the pilot survey, where the use of open ended questions and informal interviews raised some important parameters affecting the residents' degree of satisfaction, for example vehicular safety, lack of meeting places and noise disturbance (Figure b2).

The number of parameters for each aspect was, however, too large to yield any significant results when applying statistical tests. Therefore, in the next step of the analysis, only the parameters of each aspect which could have greatly influenced satisfaction with their relevant aspect were selected.

Residents' social characteristics such as age, income, marital status, etc. which were defined as the commitment variables by Miller et al were used as controlling variables for every aspect related to evaluation of residential satisfaction. This approach is designed to meet one of the important objectives of the study, namely, to assess the effect of the individuals' socio-economic characteristics on their evaluation of the new social and physical environments.

4.2 INDEX CONSTRUCTION AND SCALING METHODS

It has been argued that when investigators decide upon a research problem and begin to specify the hypotheses which need to be examined, they are immediately confronted with the problem of how to design the study and how to measure the variables included in the hypotheses. This measurement is closely related to the way in which the responses are scaled and how accurately the qualitative variables, or the attributes as they are usually known, are categorised.

Nachmias and Nachmias stated that measurement may be viewed as a procedure in which one assigns numerals, numbers or other symbols, to variables. The term "variable" is used to describe empirical observations of concepts. Mueller and Schuessler stated that any object or event which can vary in successive observations either in quantity or quality may be termed a variable (1961). A quantitative variable represents a concept that may take on various values of greater or less; these would include age, income, size of family, etc.. Variables which differ in degree or quality and not in quantity are qualitative in nature, such as sex or nationality where one cannot be considered as greater or less than another.

Indexes and scales are measuring instruments. They are constructed to represent the complexities inherent in human behaviour with greater validity. Concepts such as sociability, interaction and quality of facilities are extremely difficult to measure because, amongst other things, they are composites of several empirical properties. How can we measure the amount of contact with one's neighbours? How can we measure the degree of

friendship between residents? What categories of age groups should be determined?

Scales differ from indexes by the greater rigor in their construction. Whereas indexes are constructed by the simple accumulation of scores, greater attention is paid in scales to the test of validity and reliability. Moreover, most scales involve the underlying principle of unidimensionality. This principle implies that the items comprising the scale should reflect a single dimension and belong on a continuum presumed to reflect one and only one concept (Nachmias and Nachmias, 1981).

4.2.1 Index Construction

In this research, three types of indexes are used, termed adopted indexes, suggested indexes and ameliorated indexes. Adopted indexes are those constructed for measuring concepts and are used in similar researches. These indexes have, in general, a high reliability value (alpha). Using scales from other studies is a common practice, as this goes some way to ensuring the reliability of this measurement tool. The suggested indexes are constructed in this research for specific concepts where an adopted index would not have reflected the true characteristics of the concept measured. The third type of index used in this research is termed "ameliorated index", combining the two previous types of construction.

a. Adopted Indexes

The main advantage of an adopted index is that its reliability has already been tested in other researches. However, this does not mean that all concepts measured by these indexes are reliable. Reliability also depends on other factors, as will be discussed in the next section. Many researches take indexes from literature when the concept measured and circumstances in which the concept is tested are similar.

For example, social involvement in this research was measured by the amount of contact with one's neighbours and friends and the level of participation in block meetings, as used by Miller et al (1981). The amount of contact was measured by the five item "Neighbouring" index drawn from Hunter (1974) and questions asking whether one's friends lived inside or outside the neighbourhood. This scale measuring social involvement adopted from the literature was found to be reliable in this research. It had a reliability (alpha) of .651.

b. Suggested Indexes

The purpose of this type of index is to suit the specificity of some of the concepts being measured. However, their use may give rise to problems of reliability. Therefore, these indexes are very few, and are restricted to the concepts where no problem of reliability should arise, such as the socio-economic characteristics of the respondents.

In order to establish the social class of the respondents, for example, most studies have used the householder's income as the main indicator and included other indicators such as the level of education. However, among the population of this research, it was felt that questions regarding income would have altered the attitude of many of the respondents towards the interview, and they may even have refused to be interviewed. Therefore, for measuring social class in this research, a new index was developed and applied.

Respondents were asked to indicate their final educational level, their actual occupation and their number of years at work. By learning the degree held by an employee, his position in the company and his experience, the National Scale of Salaries (S.G.T.) can reveal his salary range. With this scale, the income of each respondent can be discovered without asking the question direct.

c. Ameliorated Indexes

Certain indexes from the literature measured concepts similar to those in this research, however further detail or specific characteristics of the concept in this research are needed. Therefore, some indicators of the adopted index are eliminated and/or some new indicators are added to suit the purpose of the study. Due to the difficulty and the possible problems of this construction method, only very few indexes of this type are used.

In a study of neighbourhood and community satisfaction in new towns and less planned suburbs, for example, Zehner (1971) measured satisfaction with the location of the area by an index composed of three indicators: proximity to work, proximity to shopping and entertainment in the town, and proximity to country and outdoor recreation (nature). This scale suited the Ain-Allah study, but the third indicator did not appear to have any significant effects on residents' responses in the pilot survey. People in Algeria have more urgent worries than the proximity to the country. However, the location of the nearby centres on which the new project depends for most of the facilities was found to be an important indicator. Consequently, Zehner's scale was chosen but was altered slightly to suit the specificity of the research. The index developed is, therefore, based on the location of the new project with regard to: place of work, city centre and neighbouring centres.

d. Example of Interpreting an Index

For example, the scale used for measuring the level of interaction between residents is based on four indicators: frequency of visiting, frequency of going out together, frequency of borrowing items, and expectation of help if required. Each indicator was measured on a five Likert scale varying from a very low level or complete absence of occurence, such as never visiting, never going out together, etc., coded by 1, to a very high level of interaction, such as visiting each other very often, going out together very often, borrowing items very often, etc., coded by 5. 2, 3 and 4 represented the intermediate choices of

the Likert scale. The level of interaction can be assessed by applying the following basic equation:

$$Y = a + b + c + d$$

With:

Y = level of interaction

a = score of frequency of visiting

b = score of frequency of going out

c = score of frequency of borrowing

d = score of expectation of help

The two extreme levels of interaction are defined by a very low level or an absence of any form of interaction when:

$$a = b = c = d = 1$$

$$Y = a + b + c + d = 4$$

A very high level of interaction is when:

$$a = b = c = d = 5$$

$$Y = a + b + c + d = 20$$

A medium level of interaction is 12. Therefore, a general interpretation can be made: scores between 4 and 12 support an absence to a relatively low level of interaction, and scores between 12 and 20 support a relatively high to very high level of interaction. The score of each equation reveals the extent to which the respondent interacted with his neighbours.

Summing up, three types of indexes are used. Adopted indexes are used the most frequently, as they ensure a high level of reliability. The remaining two types are the suggested and ameliorated indexes. Before using them in the survey, it was ensured that their level of reliability was sufficiently high.

4.2.2 Scaling Method

Three scaling methods are widely used in social sciences, namely the Thurstone, Likert and Guttman scales. As most data required in the analysis of the Ain-Allah study is ordinal, the most appropriate scale to use was the Likert scale, which is widely used in professional literature. In this scale, generally, five categories of responses are provided for each item: strongly agree, agree, undecided, disagree, and strongly disagree. Other expressions such as: almost always, frequently, occasionally, rarely, and almost never are also used. In this five point continuum, weights of 1, 2, 3, 4, 5 or 5, 4, 3, 2, 1 are assigned, the direction of weighting being determined by the favourableness or unfavourableness.

The Likert scale is not restricted to five points. Many studies have used three or seven point scales (for example Mayo, 1979 and Dorfman, 1979) depending on how detailed the required data is. The five item scale is, however, the most widely used in research works. In the Ain-Allah research, three and seven point scales were tested in the pilot survey together with a five point scale to determine the most appropriate. The five point scale achieved the best results, the three point scale being too general, and the seven point scale providing such a broad choice that many respondents were confused. The five point scale is therefore the scale used for most of the questions in this research.

Certain questions relating to the socio-economic characteristics of the residents, such as age, number of children and class needed to be put into categories, which were determined by the strength of explanation that each category contributes within the analysis. The way in which the age categories were determined is explained as an example to review the criteria and the method of constructing categories used in this research. During the analysis of the data from the pilot survey, respondents' socio-economic characteristics were controlled for different variables, such as satisfaction with the location and size of the playgrounds, and location of the school, shops, and other facilities.

It was discovered that residents' responses were greatly affected by their social characteristics, such as marital status, number of children and age group. Findings suggested, for example, that the respondents who did not socialise on the estate were generally young people, usually single or young couples. This group of residents were all highly ranked employees who had been to University. Generally, students graduate at 25. Taking into account an additional two years' military service and the period of work necessary before being entitled to a flat, it is understandable that the residents under 30 were generally single or young couples. This category provided many specific findings and explanations for many concepts, as explained in greater detail in the analysis chapters.

The next age group which affected the results was composed of the residents who had young children or those planning to become parents. They pointed out for example, the urgent need for safer playgrounds and a creche. As the young lowly ranked workers were unable to get a flat from either their companies or from the rehousing operation, the householders who had children under 6 were the highly ranked employees. Their age group was therefore between 30 and 35.

The next age category was defined from the effects of having children at school, needing certain facilities in the area, and the fact that the family size of some of the residents revealed problems concerning the affordability of the rent and local shop prices. This category varied between the ages of 36 and 50. Most of the residents over 50 and under 60 years of age, from the low income group had generally one or more children of a working age, if they were not attending university, and so they contributed to the family income. This age group did not worry too much about the safety of their young children outside, and complained little about the location of the facilities as their grown-up children assisted with the shopping and provided supervision for their young brothers and sisters. The residents over 60 years of age were retired, and so were the most involved in community activities and outdoor activities.

This method of selecting and defining categories based on the cumulative explanation that each category can contribute was applied to determine the categories of other characteristics. The number of children, for example, was divided into five categories (1-2, 3-4, 5-6, 7-8 and 8 and more children).

To sum up, the five point Likert scale is used in data collection. The three item scale is too general, and the seven item scale too detailed and provides many cell frequencies smaller than five in the contingency table analysis. The categories of certain controlling variables are determined according to the role of each category in adding further explanation to the findings.

4.3 THE SAMPLE

The choice of a representative sample in the final survey was a comparatively difficult task due to the specific characteristics of the respondents required to reach the research objectives. It was necessary that certain characteristics were represented in the sample, such as:

- Respondents representing residents who moved from both the traditional and colonial parts of the city.

- Respondents representing occupants from the three clusters of the project discussed earlier.

- Respondents representing various socio-economic characteristics (age groups, marital status, occupation, number of children, etc.).

A sample chosen at random would have created a problem of effective sampling, and would have led to a heterogeneity of the data and small size cells in some contingency tables in the analysis, which could have invalidated some of the findings.

A stratified sample was necessary. The correct percentage of respondents for each of the main characteristics described above, proportionate to the percentage of each of the characteristics in the population was then established. This was the hardest task which, without the very useful help of the information lists on the residents provided by the local authority, would have taken a very long time to complete. In order to have statistically significant results, the number of respondents selected was 300 representing 20% of the new project population. Compared to similar researches, this percentage is considered significant. 40 respondents were added in case of problems with some of the responses on the questionnaires. These 40 respondents represented an additional security, as around 10% of the questionnaires tested in the pilot survey could not be used in the analysis on account of errors in completing the questionnaires, omitting the age group or forgetting the number of the building, for example. The total number of interviewees was therefore taken to 340. The number of respondents for each category was then determined and was selected at random from the population of this category. This technique of sampling provided the advantages of both stratified and random sampling. It provided a statistically representative sample of the different categories of the population and offered at the same time the chance for every resident to be selected.

32 questionnaires were eliminated after the survey for incomplete responses, as already discussed. A sample of 308 respondents remained, representing the various characteristics needed to be tested for the hypotheses. This elimination did not affect the proportionality of the percentages of the different categories, as a precaution for this purpose was taken by adding

the 40 questionnaires.

The mathematical method developed to determine the number of respondents required for each characteristic as discussed earlier, was based mainly on the suggestions of several researchers who recommended that in the case of quota questionnaires, each group of residents should be represented proportionally to their number in the community (Stoodley et Al, 1980; Nachmias and Nachmias, 1981, etc.).

For example, the figures provided by the local O.P.G.I. revealed that the Casbah residents represented 28% of the total residents, and the remaining 72% was composed of those who had moved separately. The proportionate numbers of people to be interviewed were, therefore, 96 residents originating from the Casbah and 244 from the colonial areas. This kind of calculation was carried out to determine the number of respondents required for all the other characteristics (Figure b3) ensuring, however, that all these numbers did not fall into a non-representative percentage.

To sum up, a stratified sample was necessary in this study as residents differed in their socio-economic characteristics. 340 respondents were selected, proportionately representing both the two groups of residents.

4.4 DATA COLLECTION TECHNIQUES

This section explains the techniques of gathering data, the use of the questionnaire and the sources of data collection. Before the final survey, a pilot study was carried out to gather more information on the case study and test the reliability of the data collection techniques to be used.

4.4.1 The Pilot Study

Before an actual survey is carried out on an unresearched housing area, it is usual to carry out a pilot survey. Warwick and Lininger stated that one point that cannot be over-emphasised is the absolute necessity of pre-testing the questionnaire and other critical parts of the survey (1975). While the pilot survey is a general exploration to determine the focus and approach of the study, the pre-test is a final "dry run" of the entire survey (Kane, 1985).

The purpose of the pilot survey was to test the reliabilty of the techniques used, to ascertain whether the concepts and language used in the questionnaire were comprehensible to the people representative of the case study, and whether the question order would influence residents' responses. The pilot survey did not only evaluate the questionnaire items, but also:

- the adequacy of the sampling instructions

- the quality of the interviews

- the effectiveness of the field organisation

- the length of the interviews

- the overall appropriateness of the survey method to the problem in question.

The result of the analysis carried out on the pilot survey responses revealed the need for certain alterations to the questionnaire which were made for the final survey, as explained in greater detail in the section dealing with data collection by questionnaire. The pilot survey allowed the collection of valuable information which helped in understanding the community and selecting the sample by the use of informants, as will be explained in the sampling techniques section. The pilot survey also revealed that the scheduled-structured interview had more interesting results than the administered questionnaires where residents had to complete them by themselves.

4.4.2 The Use of the Questionnaire

The questionnaire was the most appropriate technique for collecting the quantitative data required for this study. It was designed with two major objectives. Firstly, to obtain information relevant to the purposes of the survey, by collecting most of the various information needed for each stage of the research, and ensuring that sufficient data was collected to reach the objectives and test the hypotheses; and secondly, to collect this information with maximum reliability and validity. These two

goals were termed by Warwick and Lininger (1975) "relevance" and "accuracy".

To ensure relevance, the final questionnaire was not designed until the exact forms of data required in the study were clear. It was decided, for example, that data concerning the level of satisfaction with the social relationships, flat characteristics, layout of the project and so on should be collected. Comparisons between the previous areas of residence (representing colonial and Casbah areas) and the new project with regard to residents' satisfaction with all the aspects discussed above was thought to be necessary and so was included. When all the factors and variables to be included in the research were established, the various relationships and tests required for the study were considered. When establishing the questionnaire, the purpose of asking the question and what would be achieved by the information was always borne in mind. This required decisions concerning coding and analysis techniques, as will be explained in greater detail in the next section. Some dummy tables and cross-tabulations between questions were formed, in order to help construct indexes and scales of the questions such as with the controlling variables: family size, age group, etc., as explained earlier. This helped greatly to avoid the response options to a given question being too general, or unnecessarily detailed.

Accuracy is enhanced when the wording and sequence of the questions were designed to motivate the respondent and facilitate recall. Warwick and Lininger stated that co-operation would be highest and distortion lowest if the questionnaire is interesting and avoids items which are difficult to answer, time-consuming,

embarrassing or personally threatening. The questionnaire was made as brief as possible but at the same time ensured the collection of all the necessary data.

Before collecting the final data, the questionnaire was tested in the pilot survey and certain problems were encountered. Ways of avoiding these problems during the final survey were suggested.

a. Results of the Pre-Test of the Questionnaire

The analysis of the responses collected during the pilot survey revealed certain areas of the questionnaire which could affect the reliability of the data collected. These areas were concerned with :

- Language: Similar words in the questions and in the measurement scales sometimes confused interviewees.

- Specification: Specifying a group of people to answer a particular sensitive question can be offensive.

- Length of the questions: Long questions and complicated tables were found to be undesirable.

- Content: The pilot questionnaire was too general. Certain specific problems discovered during the pilot survey were included in the final survey.

- Order of the questions: Sensitive questions were found to be better answered when asked towards the end of the interview, as by this time a level of trust has been established between the interviewer and the interviewee.

The above points which became apparent during the pilot survey were taken into account and were found to be of great help when formulating the questionnaire to be used in the final survey.

b. The Final Questionnaire

The questions were, in general, short and composed of simple words used by the general public. The order of the questions was, in the main, the funnel sequence which was one of the two general patterns of question sequence defined by Nachmias and Nachmias (1981), the other being the inverted funnel sequence. The funnel sequence approach helps the respondent to recall details and answer the questions more efficiently, when the objective of the survey is to obtain detailed information and when the respondent is motivated.

At the beginning of the questionnaire a paragraph explaining the objectives and purpose of the research was included. This explanation of the study to the respondent before he actually began the questions created in most cases motivation as the respondent felt that he was part of the research. "Factual" questions, so called by Nachmias and Nachmias, asking about general data, which are easy to answer, such as age, marital status, etc., were placed at the beginning of the questionnaire to make the respondent at ease.

The funnel technique was used in this research, where the entire sequence of the questions follows a logical order. The procedure of deferring sensitive questions for as long as possible was generally adopted, as suggested by many researchers. General and simple questions were posed first. The specific questions were put in order following the aspect they intended to measure. For example, questions concerning attitudes towards the features of the flat were all put in sequence, followed by the questions concerning the layout of the project, and so on. The questions which may have affected the respondent, as mentioned earlier, were avoided as far as possible by using other approaches or by measuring them by other simple questions. For example, income, as already explained, was not asked as a direct question. Residents were asked instead about their profession, present occupation, and years of experience. This was enough to determine the monthly income of each working respondent from the National Salaries Scale (S.G.T.).

Closed-ended questions were used the most frequently in order to have the quantitative measurements required. Some open-ended questions were included to obtain qualitative data which helps to explain the quantitative data. Finally, to test the reliability of the data collected, "tests", or "related questions" as some researchers have termed them, were included (techniques also used by Festinger in his Westgate research).

After designing the final questionnaire and selecting the sample, the next stage was to decide on the appropriate technique for data collection by questionnaire. By "appropriate", a technique which could yield a high rate of responses and reliable

data is meant.

4.4.3 Interviewing Techniques

Collecting reliable, valid and useful data by questionnaire does not only require designing it carefully, the way in which the interviews are carried out should also be carefully planned.

One of the purposes of the pilot study was to test different ways of using the questionnaire. Previous researches used one of or a combination of three methods: the mail questionnaire, the telephone questionnaire and the personal interview. The telephone interviewing method was not considered, not only because of its very low rate of responses, but because the area under study has not yet been provided with telephone lines. The two remaining methods were both tested to determine the one which provided a wider range of responses and an easier way of manipulating the information collected.

Of the three types of personal interviews, namely the scheduled structured interview, the nonscheduled structured interview, and the nonscheduled interview, only the first was tested, as it was the only personal interview technique capable of collecting the type of quantitative data required for this research. Therefore the methods to test were finally reduced to two: the mail questionnaire and the scheduled structured interview.

Questionnaires were distributed to respondents who were asked to complete them in their homes and hand them back on the next visit, representing the questionnaire by post. Other respondents, on the other hand, were interviewed in their homes and answered the questions asked by the interviewer, representing the scheduled structured interview. The so-called mail questionnaire provided an advantage with regard to time, as all the questionnaires were distributed in a very short period of time. However, the disadvantages were the low rate of responses and the confusion of some responses. Only 54% of the questionnaires distributed were returned. This rate was considered fairly low. The other major problem of this method was the fact that of the questionnaires returned some were not reliable. Some respondents omitted certain questions and did not complete some of the tables.

In the scheduled structured interview, the questions, their wording, and their sequence are fixed and are identical for every respondent. Denzin (1970) and Nachmias and Nachmias (1981) stated that the purpose of this type of interview is to develop an instrument which can be given in the same way to all respondents. All the questions are comparable, so that when variations between respondents appear, they can be attributed to actual differences in responses, not in the instrument.

The main disadvantage of the scheduled structured interview was the fact that it was time consuming. Only one respondent could be interviewed at a time and each interview lasted approximately half an hour. Furthermore, more than one visit was required for some residents as they were not always at home. However, this method involved no problems concerning response rate

or omission of questions. Questions were answered properly and were ready for coding. This method also gained further information concerning some of the issues raised in the questionnaire during the informal discussion about the research between the interviewer and the interviewee which sometimes took place after the interview. Taking into account the type of data to be collected and the advantages of this method, it was applied during the final survey.

4.4.4 Other Sources of Data Collection

Almost all the data gathered was from the field investigation, however some secondary data was collected and was found to be useful, especially the data providing a greater understanding of the problem, such as some studies and statistics regarding the urban housing situation in Algeria and meetings with those people in charge of the project. Together with the questionnaire, other techniques were used to collect primary data, namely, observation and informants.

a. Observation

This technique was used in both the pilot and the final survey. It was used instead of questions which may offend the interviewee, such as those related to visual privacy. This technique was also used to study people's behaviour and outdoor activities. The data gathered by observation produced a coherent picture of what was happening in the community.

The data also suggested a series of insights and hypotheses, such as the effects of participation in outdoor activities and the use of meeting places for group discussions on the process of group formation, which were verified by the quantitative data collected using the questionnaires. Observation was also a way of maximising the degree of validity of the questionnaire by observing factors such as the frequency of outdoor meetings and comparing this to the interviewees' responses.

Important information concerning, in particular, sociability and the activity system in the area was collected by the observation of outdoor activities, such as the data concerning the relationship between the size of the group and the occurence of outdoor meetings among the two groups.

Observation in the final survey was carried out during eight weekdays and two weekends for an average of eight hours per day. Observation during the pilot survey revealed that the outdoor activities observed differed in their type, occurence and the sex of the people involved, during the weekdays and weekends on one hand, and during the working hours and non-working hours of the weekdays, on the other. Some informal interviews were conducted with people met at random and this method disclosed many explanations and interpretations of the phenomena observed. The observation points selected were in the different parts of the area, in order to be representative of the whole population (Figure a5).

b. Use of Informants

The research required direct contact with the residents. It was necessary during the early phase of entering the community to use informants. This was in order to obtain specific information (residents' characteristics, dates of residents' meetings, if any, etc.) and to make sufficient contacts within the community to provide a variety of informants and a choice of a representative sample.

Festinger et al (1950) also used this technique in their Westgate study, pointing out the advantages of this technique in obtaining sensitive information about the community that a stranger would not be able to disclose. This technique was used during the pilot survey and provided much information that the pilot survey questionnaire did not investigate. The data from informants offered a better understanding of the community and revealed certain specific characteristics which were taken into account during the final survey.

During the first visits to the case study, contacts with the residents were made and information regarding their backgrounds was collected with the help of two friends living in the area. It was discovered, for example, that residents' meetings at the building level were held whenever a common problem arose, and that some Casbah residents organised community work to clean their housing cluster, or to plant flowers at the weekends. With regard to the form of tenure, informants explained the reason why some of the buildings in the high part were not fully occupied. These buildings were not for renting but for sale to people having an account with the National Saving Bank (CNEP).

c. Secondary Data Collected

Some secondary data was needed to get information about the new project under study, such as the layout and size of the flats and the percentages of the different groups of residents. The secondary data was collected from various sources, namely:

- Official publications concerning the urban housing problems in Algeria.

- Studies, reports and particularly the P.U.D. (Master Plan of Algiers) from the National Centre for Studies and Research in Urbanism (C.N.E.R.U.).

- Relevant articles from national and international papers.

- Maps and reports from the D.U.C.H.

- Unpublished studies and relevant work from the C.R.A.U. (Centre for Research in Architecture and Urbanism), and from E.P.A.U. (School of Architecture and Urbanism).

- Figures and statistics from the M.P.A.T. (Ministry of Territory Planning and Management).

- Data regarding certain social characteristics of Ain-Allah's residents and the buildings in which they were living, which facilitated the stratification of the sample, from the local O.P.G.I. (Office of Promotion and Management of Housing Projects).

- Meetings with local authorities, architects and especially the Director of the Danish enterprise which implemented the new project under study.

Summing up, the questionnaire was the technique whereby most of the primary data was collected. The remainder of the required information was collected through the use of observation, informants and by secondary data. The questionnaire was first tested during the pilot survey, to assess its validity and reliability. For the final survey, the scheduled structured interview was the interviewing technique applied, due to the positive results obtained with its use during the pilot research.

4.5 VALIDITY AND RELIABILITY

The problem of validity and reliability returns the investigator to the interactional nature of his research. Theory dictates a sampling model, which in turn demands certain empirical observations. Denzin stated that these observations must be reliable and valid and they must flow from the theory (1970). Validity arises out of the interactions between a researcher's definition of a theory and his attempts to translate that theory into concrete empirical activity.

4.5.1 Validity

The question of the validity of an instrument asks to what extent the event being measured corresponds to what is intended to be measured. For example, when testing hypotheses concerning the level of interaction between residents, it must be ensured that the instrument used measures the level of interaction in the field as it is defined theoretically. In developing the "Who Am I?" test, Kuhn and McPartland used the method of validation linking the empirical measurement of a concept with its theoretical definition (1954). Three basic kinds of validity can be distinguished, each of which is concerned with a different aspect of the measurement situation: content validity, empirical validity and construct validity.

In this research, validity is tested by the first and second methods, as they are both concerned with empirical tests, unlike the construct validity which relates a measuring instrument to an overall theoretical framework in order to determine whether the instrument is linked to the concepts and to the theoretical assumptions.

With regard to content validity, two common varieties exist: face validity and sampling validity. The first involves judges and therefore there are no replicable rules for evaluating the measuring instrument, and one has to rely entirely on subjective judgements. Therefore, only the sampling validity was tested. This was concerned with two facts: Did the instrument measured represent all the characteristics of the population? Is the sample chosen representative of the whole population?

The answer to the first question lies mainly in the questionnaire construction and the approach chosen in this research, as already explained. Several questions were chosen from the literature, but some questions specific to the project and its population were included, as explained earlier. Even in the index construction and the determination of the scales, the specificity of the case study was taken into account. The second question was discussed in the sampling technique section. A simple mathematical equation was developed to ensure that the sample was representative of the whole population; thereby, all the social characteristics composing the case study were selected, and the content validity in this research was verified.

The empirical validity is concerned with the relationships between the measuring instrument and the measurement results. Of the various tests designed to evaluate empirical validity, predictive validity is the most widely used. Predictive validity is characterised by prediction of an external measure referred to as a criterion and by checking a measuring instrument against the outcome. In other words, predictive validity is the correlation between the results of a given measurement and an external criterion. The correlation obtained is usually called the "validity coefficient". A series of correlations between the results of the measurement instrument used in this research were computed by the SPSS-X package, and most of the correlation coefficients obtained were significant. The correlation coefficient of the indicators of participation in community meetings was .68 for example. This value is considered to be significant when compared to the correlation coefficient of this same index when used in other researches, such as in Miller et al

(.718), as explained previously under Adopted Indexes.

3.5.2 Reliability

The subject of reliability would not occupy a central place in the methodological literature if the measuring instruments used by social scientists were fully valid, but in many instances, validity evidence is almost entirely lacking. One has to evaluate the measuring instrument with respect to other characteristics and assume its validity. A frequently used method for evaluating an instrument is its degree of reliability. Bulmer and Warwick defined reliability by asking two questions: Would a method used, if repeated by a different person at the same time, or by the same person at a later point in time, yield the same results on a second occasion? Are the results achieved reproducible under other circumstances? (1983).

There are three basic approaches to the determination of reliability. The first is the test-retest method. This means the scale is applied twice to the same population and the results compared. A high correlation between the two measurements must be established before reliability can be assumed. This method, however, suffers from the problems of testing effects. That is, the first application of the instrument may influence responses to the second measurement. The second technique is to construct multiple forms of the same instrument. The alternative forms are administered successively to the same sample. This method also suffers the problems of testing effects. A high reliability is represented by a high correlation between the two applications. The third method removes the problem of testing effects. This is

the split-half technique. The instrument is randomly divided into halves. Each of the halves is treated as a separate scale. The two subscales are then correlated and this is taken as a measure of reliability.

In this research, the first and third methods were applied. With regard to the test-retest method, the questionnaire of the final survey contained a number of questions which were unchanged in both wording and scaling compared to the questionnaire applied in the pilot survey. The problem of testing effects was greatly reduced as a long period of time (6 months) separated the administration of the two instruments. The correlation between the two sets of observation (scores) was then computed. The coefficient obtained is termed the "reliability estimate". Nachmias and Nachmias defined error, in this method, as anything that leads a person to get a different score on one measurement to that which he obtained on another measurement. Symbolically:

$$Rxx' = \frac{St^2}{Sx^2}$$

where x = performance on the first measurement

x'= performance on the second measurement

Rxx'= correlation coefficient between x and x'

St^2= estimated variance on the true scores

Sx^2= calculated variance of the observed scores

The correlation Rxx' provides an estimate of reliability defined as a ratio of the true variance to the observed variance. The reliabilty measure varies on a scale from zero to one, having the value of zero when the measurement involves nothing but error and reaching one when there is no variable error at all in the

measurement. The coefficients obtained in this research using the SPSS-X package were mostly satisfactory compared to the coefficients obtained in other researches. These coefficients varied between .71 and .92, suggesting that a percentage of error did exist, but that its level was not excessive.

The split-half technique was a further technique used to ensure that data was reliable. This technique was applied using the SPSS-X package. The 308 questionnaires were divided at random into two halves (154 each). It was found that the mean of the responses in the first half was 2.31 and in the second half 2.38. The difference in the two values is very small and, this suggests a high level of reliability.

To sum up, tests of validity and reliability were carried out to ensure that the data collected was statistically significant. Content and empirical validity were the two tests applied in this research. With regard to reliability, the test-retest and split-half methods were judged to be the most appropriate. After ensuring that data gathered would yield significant results, the analysis was carried out.

4.6 LIMITATIONS OF THE DATA COLLECTED AND AREAS FOR FURTHER RESEARCH

As most householders interviewed were men, little information about the women's degree of satisfaction with the new social and physical environments was collected. Most of the women, especially those from the Casbah, are housewives and do not go out. If the survey were to be carried out on women, there would

not be much data collected on the use of outdoor spaces, friendship patterns outdoors, and the use of facilities. A further research could be carried out to explore the effects of the arrangement of the new flats and lack of semi-private spaces, such as the West-Dar of the Casbah for example, on social relationships between women, the change in their familiar sociable activities, and the effects on their satisfaction with the new project.

Another factor which could prompt further research is the relatively young age of the ZHUN's. With regard to the reliability and validity of the data collected, the younger an area is, the less likely the respondents are to experience memory errors concerning questions dealing with their previous places of residence. However, it is not possible to accurately assess the effect of the length of residence on respondents' attitudes towards their new environment. It is also possible that some residents did not have sufficient time to integrate fully into the new community, and their degree of satisfaction could therefore have been affected. With regard to social relationships, the Ain-Allah study is more concerned with determining the factors which affect group formation. However, it was not possible to examine the various patterns of friendships and groups after formation, and their impact on both the residents belonging to a group and those who had not integrated.

A research into the same case study using a similar approach and techniques after a certain period of time may reveal the role of the length of residence in residential satisfaction. Emphasis should be put on discovering the various patterns of group

formation, and the degree of interaction within each social group, and the activities carried out and places used by each social group. The dimensions and nature of these spaces should be examined. This task would require different data collection techniques, such as non-scheduled interviews and participant observation.

4.7 TECHNIQUES OF DATA ANALYSIS

The data collected was analysed by the statistical techniques provided by the SPSS-X package. The analysis required by this research was based on discovering relationships and measuring the strength of factors (such as attitudes towards spaciousness of flats, views, orientation, etc.) in evaluating dependent variables (such as attitudes towards the flat form). The appropriate statistical techniques for such analysis were correlation analysis, regression analysis and contingency table analysis.

4.7.1 Correlation Analysis

As defined by Reynolds and Michelson, a correlation is a measure of the association between two characteristics, or variables. From the correlations it is possible to discover what proportion of the variation in a response to a question can be explained by differences in other responses to another question. For example, there would be a variation in residents' satisfaction with the safety of the playgrounds from cars and it could be expected that some of this variation would be due to life cycle differences. The correlations would indicate whether there was an

association between life cycle and satisfaction with safety in the playgrounds and what proportion of the variation in playgrounds could be explained by life cycle. If this is done for a number of variables it then becomes possible to see which variables taken together explain the largest proportion of the variation and are the best predictors of satisfaction with the playgrounds.

Correlation is simpler than contingency tables because it deals with a single statistic: the correlation coefficient, rather than with a matrix of cell frequencies and their column totals. However, from a different viewpoint, it is more difficult because the researcher must learn how to properly interpret the correlation coefficient obtained, sometimes without making direct reference to the original distributions of scores.

A correlation coefficient expresses both the strength and the direction of a relationship. With regard to the degree of strength, coefficients range between -1.00 and +1.00. The closer to "1" in either direction, the stronger the relationship is. A coefficient close to "0" in both directions signifies an extremely weak relationship. The positive or negative sign indicates the direction of the relationship. A positive correlation is represented, for example, by the relationship between satisfaction with the new social relationships and participation in community meetings. The more the respondent participates, the more satisfied he is. A negative correlation represents, for example, the relationship found between the income of respondents and their participation in outdoor activities. The higher a respondent's income is, the less likely he would be to participate in the outdoor activities. Correlation analysis reveals the closeness of

the relationship, but does not indicate the cause and the effect; but it is assumed that it is logical that feelings about specific features affect the overall satisfaction with the aspect (dependent variable) being measured rather than vice-versa. The analyses in other studies indicated that these hypotheses are usually valid (Reynolds and Nicholson, 1972).

4.7.2 Regression Analysis

As discussed by Reynolds and Michelson, in social research variables very often are inter-related or overlap, the appearance of the project and arrangement of buildings, for example. The technique of regression analysis discovers the additional independent contribution of each variable to the variation. If variables are related to others the analysis selects the one which accounts for the largest proportion of the variation and depresses the others. The regression analysis also shows the proportion of the variation that all the variables together account for. If this proportion is very high, it means that the variables have explained most of the variation, but if the proportion is low, the variables taken were not the main reasons for the variation, and more explanation could be obtained from other variables.

A regression analysis investigates relationships between several variables in the presence of random error and is a model in which one of the variables (the dependent variable) is expressed as a linear combination of the remaining variables (which are referred to as the independent or explanatory variables). The unknown parameters in the model are estimated, using observed values of the dependent and explanatory variables.

The dependent variable could, for example, be the degree of satisfaction with the dwelling, and possible explanatory variables could be attitudes towards spaciousness, views, orientation, etc.. The stepwise regression analysis was used in this research, and the SPSS-X package provided the various tests needed, such as the F-test, and the analysis of variance.

4.7.3 Contingency Table Analysis

This technique presents all the possible combinations of the score values or categories that result when two or more variables have been related. It not only provides the scores, but also the percentages of the categories, or cells, obtained in the table. To find out whether a relationship between variables found in a sample actually reflects a relationship in the population, a test of significance is used. The test used in this analysis was the Chi-Square (X^2). It is based upon comparing the cell frequencies of a contingency table that can be "expected" on the basis of chance if there is no relationship (f_e) and the cell frequencies "observed" in a random sample of respondents (f_o). The greater the difference between f_e and f_o, the more likely it is that the relationship found in the sample is representative of a relationship in the population. The Chi-Square (X^2) is represented statistically:

$$X^2 = \sum \frac{(f_o - f_e)^2}{f_e}$$

In social sciences, if a sample relationship could occur by chance (or sampling error) five times or less in one hundred ($p = 0.05$) it is generally regarded as being statistically significant or

representative of a relationship in the population (Ferman and Levin, 1975).

In order to conclude that a statistically significant result has been obtained, the value obtained for X^2 must be equal to or exceed the critical value of X^2 ($p = 0.05$) : if $X^2 > X^2$ ($p = 0.05$), the results obtained are statistically significant.

To sum up, the analysis was mainly carried out by computer using the SPSS-X package. Correlation, regression and contingency table analyses were the main techniques used to determine the various relationships between variables.

4.8 FIRST FINDINGS

Analysis of the data collected suggests that the Ain-Allah new housing project has certain positive features as well as a number of problems concerning both the new social and physical environments.

The stepwise regression analysis suggests that the nature of the social relationships in the new project is the primary aspect related to satisfaction with the new project (Table 1 and Figures b4 and b5). This aspect alone explained 25% of the variance in the prediction of satisfaction with the new project. This finding does not only support the argument of researchers who have stated that the social aspect is strongly related to residential satisfaction, but it also suggests that it may be the most important aspect.

Findings also support the hypothesis that people attach more importance to their indoor private spaces than to the common outdoor spaces. Results show that satisfaction with the features of the flats added 14% in the explanation of the variance, while satisfaction with the outdoor spaces added 10% of explanation.

The number and the quality of the facilities were also found to be significantly related to the residents' evaluation of the new project (results significant at 0.05 level). Together, the aspects discussed had a cumulative explanation of 64% of the variance, leaving 36% of the variance unexplained, as illustrated in Figure b4. In social researches there is always some unexplained variance, and the level in this survey compared to results of other research works, such as Reynolds and Michelson's, does not seem excessive.

It is also found that background is related to evaluation of a new project. People originating from the western style (colonial) areas tend to attach more importance to the quality of the physical environment, in particular their private space (flats), than to the social environment. People originating from the traditional area (Casbah) attach more importance to the social environment (cohesion and friendship) than to the physical features (Table 1).

4.9 SUMMARY

The pilot survey and the literature suggested that four variables strongly affect residential satisfaction. These variables are the social relationships between residents, the form of the flats, the layout of the outdoor physical environment, and the location and quality of the facilities. The effects of each variable are assessed by satisfaction with a set of parameters. For example, satisfaction with the new flats is related to satisfaction with their size, views, orientation, noise disturbance, etc..

To measure the various concepts required in this research, three types of indexes were used; Firstly, adopted indexes which are those used in other similar researches; Secondly, the ameliorated indexes are drawn from literature, but altered slightly to suit the concept measured in this research; and thirdly the suggested indexes which are those constructed in this research for measuring some of the specific concepts. For all indexes used, it was ensured that they were reliable. With regard to scaling, the Likert scale was mainly used, as most of the data required was ordinal.

The sample was selected in such a way as to be representative of the whole population. A statistically significant number of respondents representing all the social characteristics which needed testing was selected. Quota sampling was, therefore, used.

Before the final survey, a pilot research was carried out to test the reliability of the techniques used, to ascertain whether the concepts and language used in the questionnaire were comprehensible to the people in the case study, and whether the question order could influence residents' responses. The results of the pilot survey revealed certain areas requiring alterations. For example, it was found that the specification of a group of respondents, the use of tables, and asking sensitive questions at the beginning of the interview, were undesirable. The final questionnaire was, therefore, amended according to the findings of the pilot questionnaire.

Most of the data required in this research was quantitative. The use of the questionnaire and the scheduled interview technique were, therefore, the most suitable. Observation, informants and secondary data were the other techniques used to collect information which was not possible to gather by questionnaire, such as the occurence of outdoor activities, data on spaces' dimensions, densities, etc..

After its collection, it was necessary to ascertain that the data was valid and reliable. Validity in this research was assessed by content and empirical validity as this research is concerned with empirical tests. It was found that the level of validity was acceptable. To test the reliability of the techniques applied, the test-retest method was used, as a relatively long time had elapsed between the pilot and final surveys. The problem of testing effects was, therefore, significantly reduced.

Finally, the analysis of data was carried out using the SPSS-X package. Three main techniques were applied, namely, correlation analysis, contingency table analysis and regression analysis. These techniques can test the existence of relationships and their strengths between various parameters and variables, as well as rank a set of independent variables by their degree of influence on a dependent variable. This type of analysis was appropriate to this research.

5. FRIENDSHIP FORMATION AND SATISFACTION WITH THE NEW SOCIAL ENVIRONMENT

This chapter examines the relationship between friendship formation and level of satisfaction with the social life in the new housing project under study. It attempts to discover the factors influencing the rate of friendship formation among the different social groups, and their effects on satisfaction with the new social relationships.

The first section is concerned with two issues. Firstly, the role of physical proximity in providing opportunities for social contacts; the effects of the arrangement of the flats and buildings on encouraging the creation of friendly relationships between the new neighbours will be particularly emphasised. Secondly, the role of homogeneity in promoting social contacts into friendship will be discussed. Emphasis will be put on the effects of place of work, background and socio-economic characteristics on the rate of friendship formation.

The second section examines the factors which influence the level of interaction between friends, in particular, the role of common spaces and outdoor activities in bringing friends together and strengthening their friendships. The level of satisfaction with the new social life among people who are engaged in friendly relationships and people who are not will be assessed.

It is found that the majority of people who make friends are satisfied with the social life in the new housing project. It is more likely that because people form informal groups of friends, they like the social relationships in the new project, rather than vice-versa. This chapter, therefore, explores the process of group formation and its relationship with satisfaction with the social environment. This analysis aims to suggest planning recommendations which may help to promote and accelerate the rate of friendship formation in new urban housing projects. This would in turn increase residents' level of satisfaction.

5.1 EFFECTS OF FRIENDSHIP ON SATISFACTION WITH SOCIAL ENVIRONMENT

As discussed previously, residents in the case study can be categorised into two groups. The first represents those who knew some of their neighbours before coming to the new project through moving from the same area or working together. The second group consists of people who moved separately and, therefore, knew none of their new neighbours. The latter moved to an unfamiliar community where everybody was a stranger; their first task was to get to know some of their new neighbours through the passive contacts that occur between them. For residents moving as strangers, this is considered to be the first stage of group formation, referred to here as the "birth" of the group (Figure b6).

Having become acquainted, neighbours may develop their relationships into friendships if they share similar interests and aspirations. This second stage is called the "development" of the group's relationships. However, for people who knew some of their neighbours before moving to the new project, this can be considered as the first stage in the process of group formation. The final stage is the "maintenance" of these relationships, which is determined to a large extent by the level of interaction between the group's members, as discussed in the next section.

This section is concerned with exploring two main issues; firstly, the effects of the arrangement of the new flats and buildings on initiating social contacts for people who moved separately to the area and on maintaining friendships between a group of friends; and secondly, the effects of group homogeneity on friendship development will be explored. Emphasis will be put on the role of socio-economic characteristics, such as background, income, marital status and place of work, in the process of friendship formation.

5.1.1 Social Contacts and Friendship Formation

This study revealed that opportunities for social contacts between neighbours are provided by both the proximity of the flats and by the formal community meetings held by residents.

a. Proximity and Social Contacts

When relating the physical structure (proximity) to the formation of groups, the functional distance is meant and not the physical distance (Darke and Darke, 1969). Functional distance is measured by the number of passive contacts offered by the position, orientation and design of the flats, as defined by Festinger, 1950). With regard to physical measurement, the functional distance is generally measured by the nearest distance between the front doors of the flats.

In order to establish the effect of proximity on friendship formation, only people who moved separately to the new project were asked where their closest friend(s) live (s): was it on the same, upper or lower floor of their building, in another building in the area or any combination of these. This measure is similar to that used by Festinger (1950).

Data suggests that proximity provides social contacts which may then develop into friendships. 23.3% of the respondents claimed that their best friend was their opposite door neighbour with whom they shared the same landing. 18.6% and 17.4% of the respondents claimed that their best friend(s) lived on the floor above or the floor below, respectively, with whom they shared the same staircase.

Social contacts may start by just exchanging greetings and then develop into a closer relationship (Pahl, 1968). Wives and children may get to know one another and this may then involve the householder. 12.8% of the respondents stated that they knew each other through their children playing together. Formal meetings

held by residents living in the same building to discuss common problems such as repairing the light timer on the staircases or the common aerial, are also very fruitful opportunities for contacts between residents. Other studies such as those by Homans (1954), Festinger (1959), and Kurth (1970) have also found that people tend to interact most frequently, at least at first, with individuals in physical proximity.

b. Formal Community Meetings and Social Contacts

Formal community meetings in Ain-Allah are not organised at the project level as the necessary facilities, such as clubs, a mosque, cafes, etc. for such use do not exist. Community activities are generally organised at the block level, or at the basic unit level, depending upon which residents are interested in the activities or concerned by the problems to be discussed. In most cases, the residents of each building meet when a problem concerning them arises or in order to improve the state of their building and carry out the necessary work. However, residents might meet at the basic housing unit level, as in the case of some residents from the Casbah who planted trees and flowers in the places reserved for the green spaces and put fences around them.

Participation in formal community meetings offers more direct contacts for residents than the passive contacts that can occur through living in physical proximity. People are expected to be active, put forward their ideas, and exchange opinions. From here, people who have similarities get to know one another and may develop their relationships into friendships. The more people participate, the more neighbours they get to know, the more

friendly relationships they can develop, and therefore the greater the level of satisfaction with the social life.

Analysis shows that residents who "always" or "often" took part in community meetings knew at least three to five neighbours, while people who "rarely" or "never" took part knew an average of less than two neighbours (Table 3). The important impact of participation on satisfaction with the new social life is supported by the findings. The great majority of respondents who stated that they took part in community meetings, at least from time to time, were satisfied with the new social relationships (Table 4).

Data suggests that frequency of participation is higher among people who knew some of their new neighbours before moving to the new project (Table 3). This suggests that people moving as strangers need some time for integration to the new community before taking part in the activities. This argument may provide a basis for further research. For example, a survey could be carried out in the future to assess the extent to which and the speed at which the strangers adapt to the new community.

To sum up, a group of residents moved separately to the new project where to them everyone was a stranger. The first stage of friendship formation for this group of residents is to get to know some of their new neighbours. The arrangement of the flats around shared landings, staircases and building entrances increased the occurence of passive contacts between neighbours, which facilitated their getting to know one another. A further source of contacts is the formal meetings between residents. Having got to know the new neighbours, friendly relationships may result

which may then develop into friendships. Generally, people who know many neighbours tend to be more satisfied with the new social life than those who do not.

5.1.2 Homogeneity and Promotion of Friendship

Social contacts enable residents to get to know one another. However, development of these relationships usually depends upon other criteria such as personal characteristics and the willingness to be friends. It is, therefore, assumed that neighbours living in physical proximity who have become friends may share similar social characteristics and aspirations.

To assess the extent to which homogeneity encourages the development of social contacts provided by proximity into friendship, a comparison between homogeneous and heterogeneous people living in three housing clusters was carried out. The first cluster is occupied by people originating from the Casbah. They share the same background and similar socio-economic characteristics and are, in general, lowly ranked employees with large familes. The second cluster is occupied by people who are from the colonial areas and those who share the same places of work. In addition to sharing similar backgrounds and work interests, these residents are, in general, highly ranked government employees with high levels of education and high incomes, who usually have small to medium sized families. The third cluster is occupied by people who originated from both the Casbah and the colonial areas, who have different backgrounds, levels of education, incomes, family sizes, etc..

Informal interviews with heterogeneous people from cluster three suggested that residents did get to know one another. Some of their wives even visited each other's homes and their children played together. However, discussions and relationships between householders generally remained at the "polite" stage, although there were a few exceptions where heterogeneous resident householders became friends as their families became involved with one other, and "friend" here indicates the existence of friendly relationships rather than friendships, as Kurth (1970) differentiated. Findings suggest the existance of friendliness between the heterogeneous residents who live in physical proximity in cluster three. 56.4% of them indicated that their neighbours were friendly. They stated that they knew and had conversations with their neighbours. However, only 11.2% of them, had become friends.

Data also reveals that the percentage of the homogeneous residents living in physical proximity in clusters one and two who became friends is higher than that of the heterogeneous residents in cluster three. 63% of the residents from cluster two (from the colonial areas) stated that their neighbours were friendly, and 54.6% of them became friends with some of these neighbours. 73.2% of the residents from cluster one (from the Casbah) stated that their neighbours were friendly, and 59% of them developed their relationships into friendships.

It was argued earlier that many heterogeneous neighbours have good friendly relationships but do not have close friendships. However, it appears from the informal interviews that heterogeneity in the same building does not always lead to

friendly relationships. Some respondents, albeit not many, in the buildings of cluster three shared by heterogeneous people pointed out certain problems between them. For example, the children of the highly ranked employees had bicycles and other toys that those of the lowly ranked employees did not have. In some cases this led to fights between the children which resulted in problems between the parents. This, in turn, could have affected their level of satisfaction with the social relationships. Recommendations on block homogeneity by Gans (1968) can, therefore, be supported.

Comparing levels of satisfaction with the social relationships in homogeneous and heterogeneous buildings, it is found that there are more satisfied people in the homogenous than in the heterogeneous buildings. In buildings occupied only by Casbah people, 73.5% were satisfied. 71.2% of the residents in buildings occupied by people from the colonial areas, who generally worked together, were satisfied. On the other hand, in buildings occupied by both groups, the percentage of satisfied residents was lower (48.6%).

In general, relationships between residents from clusters one (from the Casbah) and two (from the colonial areas) existed and most respondents stated that they had no friends from the other cluster. The physical segregation between the two clusters has probably led to a mutual rejection between the two groups. In a similar case study to the one in Ain-Allah, Morris and Mogey found there was hostility in segregated areas. The segregated areas were those where white and coloured residents were housed in separate parts of the project (1965).

Some observations can be made from the above findings. Firstly, it is preferable to avoid the housing of groups with different cultural, social and economic backgrounds in clusters separate from one another or divided by streets. Secondly, it is also desirable to avoid in a housing arrangement scheme the letting of blocks of flats to heterogeneous people. A more appropriate solution may lie in homogeneity of the block of flats and heterogeneity of the basic housing unit. This type of solution is referred to in this research as "Relative Homogeneity". In Ain-Allah, for example, each building would be composed of 10 to 20 homogeneous families. The basic housing unit would have between 40 and 60 heterogeneous families.

Relative homogeneity may encourage friendly relationships between heterogeneous people as they live in physical proximity (basic housing unit) while avoiding group segregation. Relative homogeneity would also offer the opportunity for residents to find neighbours with whom they share characteristics and interests in close physical proximity (block level), and would avoid the problems which may occur if the block were occupied by heterogeneous residents, as discussed above. However, it can be argued that segregation by building may lead to rejection between residents occupying them. Further research in an area where people are housed in block level homogeneity and basic housing unit heterogeneity may support or reject the suggestion of relative homogeneity, or may suggest some amendements.

To sum up, heterogeneity at the block level may lead to friendliness between neighbours but not necessarily to friendships. It may also create problems which may affect the residents' level of satisfaction with the social relationships. Homogeneity at the block level, however, facilitates friendship formation, and consequently, increases the level of satisfaction.

Housing two groups with different socio-cultural backgrounds in different clusters situated a distance from one another or separated by streets can lead to mutual rejection. In order to promote friendship formation between homogeneous residents and avoid rejection between heterogeneous residents, this research suggests a type of housing occupation termed relative homogeneity. It recommends that residents are housed in such a way as to have homogeneous blocks (10 to 20 families) and heterogeneous basic housing units (40 to 60 familes).

5.1.3 Homogeneity Factors Related to Friendship Development

The above findings suggest that a certain level of homogeneity is necessary in a new housing project. This part of the section aims to discover which of the variables composing homogeneity are closely related to friendship development. The object is to discover which particular socio-economic and cultural characteristics affect the process of friendship formation. For example, in cluster two (from the colonial areas) it was observed that the groups were mostly composed of married residents, as the single residents spent most of their time visiting their parents in their previous place of residence and were not committed to the

area. This finding is similar to that of Morris and Mogey who suggested that social class and family cycle are influential homogeneity factors in group formation, alongside common values between the residents. The analysis of the Ain-Allah data suggests that the following homogeneity factors contribute most to the group formation process in the new project:

a. Social Class

The way in which social class in Ain-Allah is defined is similar to the definition of many other researchers. The most important determinants of class are occupation, income, and education (Blowers, 1973). In the Ain-Allah study, social class is measured by profession, occupation and number of years at work, as discussed previously, which avoided asking indiscreet questions concerning income during the survey.

Analysis of the friendship pattern in cluster three (people from the Casbah and the colonial areas) seems to suggest that people make friends according to their income category. Data shows that most of the lowly ranked employees (73%) indicated that their friends were from a similar income group, and 62% of the highly ranked employees also chose their friends from the same category. Friends with low incomes (generally Casbah residents) have similar interests and hobbies, such as playing bowls and chess or discussing current affairs. Residents from the high income group have different interests to the low income group. It is found that they generally go out together to places such as sports events, parks, cinema, theatre, etc..

b. Place of Work

The present Algerian policy of placing the national companies in charge of housing their employees, especially the highly ranked employees, led to the formation of small groups of people who work for the same company, share the same interests, and live in close physical proximity.

It is found that 78% of the respondents who obtained their flats from their companies had at least one or two friends, and knew, on average, three to five neighbours, in the area. Place of work accelerates the rate of friendship formation among the people who work together. It also helps to maintain friendly relationships between them as it ensures a homogeneity of social class, occupation, and similar interests and qualifications regarding their occupations. Similar results are reached by other research works. Kuper, for example, discovered in his research that work relationships were a source of an appreciable number of contacts between residents (1953).

c. Marital Status and Age

Results of the observation carried out in the case study suggest that the majority of married respondents with children spent much of their time in the area, especially in cluster one (people from the Casbah). Consequently, they became involved in the community life. On the other hand, the single people or the young couples spent most of their time in their previous homes, where they already had a circle of friends. This also explains the findings that middle-aged people were more involved in group

activities. The younger people who are mainly from the colonial areas did not spend so much time in the new project and did not need new friends. Older people, who are in general from the Casbah, preferred to meet in specific places, such as the mosque or the local cafe as they had done in their previous place of residence. These facilities, however, are not provided in Ain-Allah, so residents sometimes had to commute more than twice a day to the nearest centre of Dely-Brahim in order to find these facilities.

It appears from the findings that married residents had, on average, more friends (3 to 5) than the single residents (1 to 3). This may explain the difference in the levels of satisfaction with the new social life among these two categories. 72.4% of the married residents were satisfied with the new social relationships compared to 43.6% of the single residents.

d. Cultural Background

Differences in cultural backgrounds between the two main income groups in Ain-Allah are obvious in the difference in the degree of socialisation and the activity systems observed in clusters one and two.

The correlation between the number of friends and the group to which residents belong reveals that the residents with low incomes tend to have more friends in the area than those with high incomes. In cluster one (from the Casbah), respondents were found to be at home or outside on the estate chatting with neighbours at the first, or, at the most, at the second, attempt to interview

them. However, in cluster two (from the colonial areas), respondents arrived home late and many more attempts were required to reach them as they were often not in the area. These findings may be on account of the effects of previous place of residence. For example, people in the Casbah spend most of their time outdoors socialising, as suitable meeting places were available, such as cafes and shops. In the colonial areas, however, suitable meeting places as in the Casbah are not often provided. Streets and local squares are used for this purpose, but they do not ensure a great deal of privacy from the neighbouring flats, and this discourages outdoor socialisation.

It is also found that people who moved together from the same area and those who shared the same place of work were more socially satisfied in the new project than those who moved separately and did not know any of their new neighbours. As discussed earlier, people who moved separately need some time for integration and for making suitable friends. However, some of the people who moved from the Casbah or worked together were friends before moving to the new project. They remained friends and thus formed their own informal groups in the new project.

Findings show that 66.4% of the residents who moved from the Casbah and 71.6% of those who worked together were satisfied with the social life in the new project. Data also reveals that the majority of the residents of both these two categories (82.3%) knew more than three neighbours. However, only 44.8% of the residents who moved separately and did not have workmates living in Ain-Allah were satisfied with the new social life. Of all the residents who moved separately, it is found that 36.7% of them

knew only three neighbours or less.

It is argued that new planning interventions can destroy communities. One way of avoiding this is to give the residents the opportunity to move together (Blowers, 1973). Clearly, it is not expected that all newly developed areas be reserved for people moving together, but it would be easier for people to get on well together if they were to share similar backgrounds and especially if they were to know some of their new neighbours before actually moving. This would also accelerate the rate of friendship formation between the residents, and consequently, would help to increase the level of satisfaction with the new social environment.

e. Personality Factors

Data concerning the size of the groups in the first cluster (from the Casbah) where residents are homogeneous, shows that some residents (8.3%) had very few friends (less than three), whereas others (12.9%) had a large number of friends compared to the average size (five). Informal interviews carried out suggest that the explanation of these findings may lie in the difference in the personalities of individuals. Some residents did not want to socialise, and may be solitary, whilst others may be very friendly and enjoy socialising.

Summing up, findings suggest that similarities in social class, age group, marital status, place of work and background encourage the formation of friendships between residents and increase their level of satisfaction with the new social life. It

is, therefore, suggested that people sharing similar social characteristics are housed in physical proximity, as discussed earlier.

5.1.4 Number of Friends and Satisfaction

The number of friends the respondent has is found to be closely related to the number of neighbours he has had the opportunity to know. In general, the more neighbours a resident has had the opportunity to know, whether it is through participating in formal meetings, living near them, moving from the same area or working with them, the more friends he has (Table 5).

Data in Table 5 shows that the group size is larger among friends who meet in the outdoor spaces than among those who meet at home. Meeting outside provides a resident with opportunities to get to know new neighbours and he can then feel and behave like a member of the group, while meeting at home limits the extension of the group as only selected neighbours/friends can be invited into the home. Residents who did not socialise outdoors argued that it was due to the lack of suitable outdoor spaces and facilities. By suitable, is meant places providing comfort and privacy.

It is found that the more friends residents have, the more satisfied they are with the new social life. 72.5% of the respondents who stated that they had three friends or more in the new area were satisfied with the social life in Ain-Allah, compared to only 41.7% of respondents who had less than three

friends.

To sum up, findings in this section show that the proximity of the flats and participation in formal community meetings provide contacts between residents. Sharing common car parks, footpaths, staircases and landings increases the opportunities for social contacts between neighbours. Neighbours may develop their contacts into friendly relationships if they share similar socio-economic characteristics and interests. This development would be more rapid if the homogeneous neighbours were housed close to one another.

Heterogeneity in physical proximity may encourage heterogeneous residents to be friendly, without necessarily being friends, but this can also lead to enmity. On the other hand, segregating two homogeneous groups by housing them in two separate clusters a distance from one another may lead to a mutual rejection. This research suggests relative homogeneity as a possible solution for encouraging friendship and avoiding enmity. Residents could be housed in such a way as to have a heterogeneous basic unit and homogeneous blocks of flats.

Relative homogeneity may increase levels of satisfaction with the social life in new urban housing projects, as it would promote friendships between neighbours. It is found that most residents with large groups of friends were satisfied. On the other hand, a significant number of people with few, or no, friends were dissatisfied with the new social life.

5.2 LEVEL OF INTERACTION AND SATISFACTION

The previous section discussed the factors affecting friendship formation and their effects on satisfaction with the social life. It is found that homogeneous residents form informal groups of friends and are generally satisfied with the social relationships. This section attempts to assess the extent to which these friends interact and examine the factors affecting the level of closeness, or interaction, between them. The section will also explore the relationships between levels of satisfaction and interaction between friends. By interaction, the patterns of "who" come together, for "what" activities, "when" and "where" is meant.

In a study of social activities on new housing estates, Carey and Mapes measured interaction by the frequency of visiting (1972). In the Ain-Allah survey the level of interaction was determined by the "intimate" activities of visiting/meeting at home and going out together, and the informal, "friendly" activities such as sitting and chatting in groups, playing bowls, and taking part in community work.

5.2.1 Visiting and Interaction

On account of the Islamic culture, men in Algeria do not visit each other unless they are relatives or very close friends. The family and home are strictly private and, apart from a close male relative, no man is allowed in the house unless the male householder is at home or the guest is accompanied by his wife. However, sometimes close friends cannot find suitable places

outdoors to meet and converse, as is the case in Ain-Allah. Consequently, some of them meet at home, dine together and create the opportunity for their families to meet.

When residents were asked how often they visited their friends, 37.1% replied "never". 30% visited their friends just once a month, while 21.4% visited once a week, generally at the weekends. The number of residents who met frequently (more than twice a week) was low (11.4%). These findings tend to suggest that only very close friends were involved in frequent visiting.

Correlation analysis reveals that the more residents interact with one another, the more satisfied they are with the new social environment. It is revealed that among residents who were involved in visiting, 86.9% were very satisfied with the new social relationships. Among the residents who had friends in the area but had never been involved in visiting, the percentage of those who were very satisfied was lower (67.3%).

Data suggests that visiting was more frequent between friends in cluster two (from the colonial areas) than in cluster one (from the Casbah), as shown in Table 6; it is revealed that 53% of people originating from the Casbah never visited their friends, whilst some did once a week or once a month. This was mainly due to their traditional background with characteristics similar to rural folk. In rural areas men do not visit each other. They always meet in the village public space (the "Djemaa" where weekly meetings also take place), the village mosque and in the local market. Only if somebody is ill, do the whole group of friends visit him. People in the Casbah used to meet in one of the many local cafes, outside on the nearest pedestrian street, and in the

local daily market and were not used to visiting at home.

The relatively high frequency of visiting in cluster two may also be because many of the residents living there share the same place of work and so may share the same interests and expectations. Findings in Table 6 suggest that people who work together are found to visit their friends more often than those who work for different companies. Also related to work is the position held in the company which appears to influence visiting. Highly ranked employees were found to visit more often than lowly ranked employees.

Table 6 also shows that level of interaction is related to marital status. Single people have other single people as friends, while married couples, especially those with children, interact mainly between themselves. With regard to the frequency of visiting, many single people do visit their friends, although not very often. The explanation of the low frequency among this group of people is, as explained earlier, that they do not spend much of their time in Ain-Allah. The married couples, on the other hand, are more committed to and involved in the new area and have more friends in the new project than the single residents. 11.6% of the married residents visited their friends more than twice a week, while 48.3% did so less frequently (once a week or once a month). Most of the married couples involved in visiting were from cluster two (from the colonial areas), for the reasons explained above.

To sum up, in a Muslim community, only very close male friends are involved in visiting. This is on account of the Islamic culture based on privacy which does not encourage visiting. Frequency of visiting seems to be higher among friends sharing similar interests, those holding highly ranked positions, and married residents.

5.2.2 Going Out and Interaction

Places to go and activities to do in Algeria and in the Muslim society as a whole are different from those in Western society. In Algeria, people usually go out together to a cafe, mosque or market. This is the reason why going out together mostly concerns the men. It is found that friends who go places together are generally satisfied with the new social life (75.2%).

The number of friends going out together is found to be higher in cluster one (from the Casbah: 42.9%) than in cluster two (from the colonial areas: 18.8%). This can be explained by the difference in backgrounds. People in the Casbah spent most of their free time with friends outdoors or in the local facilities. They used to go together to the mosque, cafe and market. It appears that they maintained the same pattern of outdoor gatherings after their move to the new project.

A further explanation for the above findings may lie in the difference in age. Cluster two (from the colonial areas) is composed mainly of young to middle aged people (all of a working age), whilst cluster one is a mixture of all ages. It was found that the older residents (60+) tend to go out together more than

the younger people. This may be explained by the fact, as discussed earlier, that places where people can go such as the mosque and the market are more likely to be frequented by older people and family householders.

Going to places with friends in Ain-Allah is quite limited as facilities such as a cafe, mosque and market are not provided at the project level. Residents have to commute to one of the nearest centres, Dely-Brahim or Ben-Aknoun. The provision of these facilities in new urban housing projects, in particular those with a high percentage of residents of a low income, traditional background, or those who are elderly, may help bring friends together. This may, in turn, increase their level of satisfaction with the new social life.

5.2.3 Outdoor Activities and Interaction

"Outdoor activities" here means all the observed activities which take place outside and in which residents take part. Two main categories of outdoor activities were noticed. Firstly, there are "formal" activities, which include community meetings for discussing the problems encountered by residents. These activities, as already discussed, do not necessitate any friendship ties between participants, but serve as a good opportunity for social contacts which occasionally lead to friendship. Secondly, there are "informal" activities which include gathering, chatting, playing draughts or bowls, etc..

It is found that a few friends meet outside as well as at home (5.8%) and a few also meet outside as well as at work (5.9%). Meeting outdoors among these people occurs in most cases by chance, usually when shopping at the local shops. It was also noticed that groups of approximately four or five friends got together in the local common space near their buildings in the evenings to chat and so maintain the friendship among their small informal groups. Informal interviews revealed that they were close friends and some of them visited each other, but they generally met outside as they were too numerous to meet in one flat. Meeting outside also offers the advantage of being in the fresh air. A cool breeze would be especially welcome during the long hot summer.

Observation carried out in clusters one and two suggests that the occurence of these outdoor activities, the size of the group, and the sex of the participants differed between the two clusters. The graphs in Figure b7 which resulted from the observation suggest that the size of the female groups was far smaller than that of the male groups, and that more people originating from the Casbah participated than those originating from the colonial areas. The size of the male groups peaked in both places between 6.30 pm and 8.30 pm when working hours were over, and in the mornings between 6.30 am and 8.00 am when people working together left to go to work together. Car owners sometimes met in the car park, while the non-car owners met at the nearest bus stop. At lunch time some of the car owning residents returned home between midday and 2.00 pm for lunch. Taking advantage of the privacy provided in the area by the absence of the men, most of the older Casbah women would go out in small groups, usually to do their

daily shopping or to accompany their young children or grandchildren to and from school. However, quite a number of women in cluster two (people from the colonial areas) work and therefore, like the male group, they have to leave home early and return late. The difference in cultural background between the residents of clusters one and two was found to affect the females' outdoors participation. People from the colonial areas do not object to their wives meeting near the entrances of the buildings late in the day to enjoy the good weather, while residents from the Casbah do not permit this.

In general, friends gathering outdoors were found sitting, discussing current problems, for example, high prices and lack of facilities, or just chatting together. These activities generally take place in the local common space, and during the evenings to overcome the problem of visual contact with the nearby flats which affects the level of privacy, as will be discussed next. Some residents play bowls quite a distance from the buildings to avoid both noise disturbance to and visual contact with the nearby flats.

The majority of respondents who participate in outdoor activities (72.8%) said they are satisfied with the new social environment. People meeting outdoors said that they were in need of suitable facilities in the area, such as playing spaces located at a distance from the buildings and meeting places, such as a cafe and outdoor sheltered spaces.

5.2.4 Privacy and Satisfaction With Social Relationships

It appears from the findings that the type of outdoor activities carried out in a housing project and their frequency depend on the level of privacy that the outdoor spaces provide with regard to the nearby flats. For example, the hierarchy of spaces in the traditional built form creates streets and outdoor meeting places for men which have no visual contact with the spaces used by the women (West-Dar and flats). In the new project under study, however, flats are in direct visual contact with the outdoor common spaces and streets. These spaces are, therefore, not suitable for men to gather, as this would affect the privacy of the nearby flats.

It is found that friends meet outdoors during the evening when darkness is ideal for overcoming the problems of visual privacy. However, when the activity requires light and cannot therefore be carried out in the common spaces, such as playing bowls, physical distance becomes the answer to this problem. Such activities take place in an isolated area, at a distance from the buildings.

Observation carried out in Ain-Allah revealed that people usually meet near the local shops. The entrances to the shops are sheltered and therefore visual contact with the flats is avoided. It appears from informal interviews that providing facilities for meeting in the form of a cafe or common room, and arcades along the spaces reserved for shops may encourage outdoor activities. In certain colonial neighbourhoods, people sit under trees in the local square, for example, as the trees help overcome the problem of visual privacy. Furthermore, they provide shady places during

the hot periods of the year.

During informal interviews, the majority of the respondents, in particular those from the Casbah, stated that they could not carry out some of their traditional activities in the common spaces of the new project. For example, they are not able to play dominos or cards as they used to in the Casbah. These activities cannot be carried out in the common spaces as they would disturb the nearby flats visually and aurally. Most of the interviewees stated that they preferred their previous areas with regard to outdoor activities and were dissatisfied with the level of privacy in the outdoor spaces of the new project.

The outdoor common spaces in Ain-Allah do not ensure a high level of visual privacy with the nearby flats. This has consequently hindered residents' familiar activities, in particular those which bring people together, such as relaxation and leisure activities. This discourages interaction between neighbours, thereby slowing down the rate of friendship formation.

The outdoor spaces in the Casbah, for example, ensure a high level of privacy through their well-defined hierarchy. The public spaces (street and local facilities) are meeting places for men, as they have no visual contact with the semi-private spaces (West-Dar) used as meeting places for the women. New projects should be constructed in such a way as to provide outdoor common spaces which would ensure a high level of visual privacy with regard to the nearby flats. This can be achieved by providing sheltered facilities, such as a cafe and a common room, or arcades along the local shops, or by planting trees in the common spaces. Another solution may be to arrange buildings in new housing

projects in such a way as to create a hierarchy in the open spaces; For example every group of flats (6 to 10 as in the Casbah) could be arranged around a semi-private space onto which the windows and the flat entrances could be orientated. These spaces could be used by women for socialising and carrying out their household duties, as in the West-Dar in the Casbah. Every four or five blocks of flats could be arranged around a larger common space, which should have no visual contact with the flats and the semi-private space used by women. It would, therefore, be used by men to carry out their outdoor activities and by children for play.

5.3 SUMMARY

To sum up, in the new housing project under study people moved from a familiar social environment, where neighbours knew and interacted with one another, to a new, probably unfamiliar, environment where many of the neighbours were strangers. Two questions arise. How will residents react to their new community? What are the aspects that could possibly bring the new residents together, thereby increasing the level of satisfaction with the new social environment? The answers to these questions seem to lie in the level of friendship that the new residents develop. Findings reveal that satisfaction with the new social life is closely related to the rate of friendship formation between new neighbours and their level of interaction.

Findings suggest that the arrangement of flats around shared landings and staircases, and the provision of common play spaces for children increase the opportunities for social contacts between the new neighbours. Homogeneity between the new residents, such as sharing similar backgrounds, social classes, marital status and interests, encourages the development of these social contacts into friendships. People who moved from the same areas or who worked together, however, were not so much in need of social contacts as they already knew one another. The rate of friendship formation among these residents is much more rapid than among those who moved as strangers.

It is also revealed that physical separation between two homogeneous groups can lead to mutual rejection. Heterogeneity at the block level, on the other hand, leads to friendliness but not necessarily to friendships. Relative homogeneity in new urban housing projects is therefore recommended. It is suggested that when allocating the flats, buildings (10 to 20 families) should be occupied by homogeneous groups and basic housing units (40 to 60 families) by heterogeneous groups. This way, relative homogeneity aims to promote friendliness between heterogeneous groups and friendship between homogeneous groups.

The arrangement of outdoor common spaces with direct visual contact with the nearby flats discourages socialisation outdoors and hinders residents' familiar activities. Secluded places such as a cafe, common room, or a mosque can bring people together by the visual and aural privacy they provide. These kind of places are particularly necessary if a large number of people in the project are from a traditional background or of a low income.

These people interact with neighbours outdoors more often than those of a high income.

Another way of ensuring outdoor visual privacy in outdoor spaces is by ensuring a hierarchy of spaces when designing new projects. For example, the traditional built form offers outdoor spaces for socialisation for both women and men and ensures a high level of privacy. This is achieved by a well defined hierarchy of spaces varying from private and semi-private (dwelling and West-Dar for women) to semi-public and public (Driba and Znika -entrance to the building and street- for men).

6. EFFECTS OF THE NEW BUILT FORM ON SATISFACTION

The previous chapter discussed the relationship between satisfaction with the new social environment and satisfaction with the new housing project. It was revealed that socio-cultural variables and the spatial organisation of the housing affect residents' attitudes towards one another which, in turn, affect the pattern of the new social relationships and level of interaction. This chapter aims to explore the effects of the residents' attitudes towards the new physical environment on their satisfaction with the new housing project.

The main objective of this chapter is to explore the factors affecting residents' satisfaction with the arrangement of the new physical environment, in particular, the effects of residents' attitudes towards the form of the new flat, and the spatial organisation of the outdoor spaces.

The first section examines the factors affecting level of satisfaction with the new flats, in particular, the effects of residents' attitudes towards the features, such as size, orientation, and quietness of the new flats.

The second section explores the factors which influence residents' satisfaction with the outdoor spatial organisation of the new project. Emphasis will be put on residents' attitudes towards features such as the appearance of the new project, situation and size of the green spaces and playgrounds, arrangement of buildings, and type of streets and their safety on satisfaction with the new outdoor layout.

This chapter attempts to discover the physical features of the new environment, both indoors and outdoors (form of the flat and the outdoor layout), which significantly affect residents' satisfaction. This analysis aims, therefore, to provide indicators which may help new urban housing projects to be designed and planned in such a way as to meet the residents' expectations and increase their level of satisfaction.

6.1 FACTORS AFFECTING SATISFACTION WITH THE NEW FLATS

The level of satisfaction with the new flats is affected by two sets of variables. Firstly, residents' attitudes towards the form of the flats (size, internal layout, orientation and views), and secondly, attitudes towards the form of tenure (renting and buying).

6.1.1 Attitudes Towards the Form of the New Flats

Findings in Tables 8 and 9 show that, in general, residents' level of satisfaction with the new flats is influenced by, in order, their attitudes towards the size (spaciousness), views, level of quietness, orientation and the storey.

a. Flat Size

Respondents were asked to indicate their opinion of the size of their flat on a five Likert scale varying from "1" representing "very spacious" to "5" representing "very small". Generally, respondents described their flats as fairly spacious (54.2%) or

spacious (29.7%). Before interpreting any of this data, it is necessary to define "spaciousness" as understood in Algeria and most third world countries. Half of the flats in Ain-Allah are two-bedroomed flats with a total surface area each of 77.8 m^2, while the remaining half are three-bedroomed flats with a total surface of 90.1 m^2 each. All the flats are composed of a bathroom (3.2 m^2), a toilet (1.2 m^2), a small loggia for drying the washing (3.6 m^2), a kitchen (11.9 m^2), a living-room (20.0 m^2), two bedrooms of 13.5 m^2 and 11.5 m^2, and, for the three bedroomed flats, a third bedroom of 12.1 m^2.

In comparison with international norms for the rate of occupancy per flat, Ain-Allah flats are not actually as spacious as the residents consider them. The average number of children in a family is slightly higher than four. This means an average family size of 6 persons per flat, excluding the householder's parents and/or possibly a relative(s) living with them. This means an average occupancy rate slightly higher than two persons per room in the three bedroomed flats. In comparison to most developed countries where each child is usually entitled to his own room, Ain-Allah flats are not spacious taking into account the size of the families. This rate of occupancy in Ain-Allah, however, is considered comfortable in comparison with the average rate of 3.63 persons per room in the urban areas of Algeria (SSEP, 1976).

Spaciousness is found to be a very reliable tool for measuring satisfaction with the new flats. Most of the respondents who stated that their flats were spacious were satisfied (44.3%) or very satisfied (55.7%) with their flats as a whole. On the other hand, the residents who described their flats as small or very small were, in general, dissatisfied with their flats, as is shown in Table 9.

Findings in Table 8 reveal that satisfaction with the features of the new flats are related to background. Residents from the traditional area were primarily concerned with the spaciousness of the new flats, whereas the residents from the colonial areas were not as affected by this. The explanation for this difference may lie in the difference in the two groups' respective requirements. Flats in the Casbah were very small (often with only one bedroom) and people lived as extended families. People from the Casbah, therefore, were in urgent need of spacious flats. Flats in the colonial areas (two to three bedrooms on average) are more spacious than those in the Casbah and people lived, in general, as nuclear families. For this group of people, the new flats are nearly as spacious as their previous flats and, therefore, they were not so concerned by the new flats' spaciousness. This may explain that more people from the Casbah than from the colonial areas said that their new flats were spacious.

It appears from the data that residents' opinions about the size of the new flats are related to density. More people with a low density rate described their flats as spacious than those with a high density rate. It is found that 2.5 pers/room is the

average density rate considered by residents as spacious. 51.2% of people with a density of 2.5 pers/room said that their flats are spacious. On the other hand, the majority (82.7%) of people who had a density of less than 2.5 pers/room said that their flats were spacious. The percentage of people who described their flats as spacious decreases the higher the density. For example, 68.3% of people with a density higher than 2.5 pers/room described their flats as small.

The findings seem to suggest that a density of 2.5 pers/room is considered satisfactory by residents. With the average family size in Algeria of 6 to 8 persons (SSEP, 1976), the two and three bedroomed flats provided in the new housing projects, if allocated according to family size may be satisfactory. For example, large flats (3 bedrooms) should be allocated to families with 6 persons or more. Families with less than 6 persons could have two bedroomed flats. This will contribute to achieving the target density of 2.5 persons/room.

b. Views From the Flats

Most flats in the new housing project under study enjoy views over the green spaces surrounding the area, rather than views of buildings situated close to the windows, as is the case in most Colonial and Casbah areas. However, the Casbah dwellings did provide the most attractive, panoramic views of the beach and the rest of the capital from the common terraces. The use of these terraces, however, is restricted to the dry time of year and they are almost exclusively reserved for the women's daily activities.

This may explain the findings that 68.5% of the male householders, who moved from the Casbah, were satisfied with the views from their new flats. Informal interviews, however, suggested that the majority of the women who moved from the Casbah preferred the views in the Casbah where they had enjoyed beautiful views from the terraces.

In Ain-Allah, 47.4% of the residents described their views as fairly pleasant, while 22.0% stated that the views were pleasant and 7.6% considered them very pleasant. Findings in Table 9 suggest that attitudes towards the views are related to satisfaction with the new flats. Of the respondents who considered their views pleasant, the vast majority (98.1%) were satisfied with the new flats.

The high density of the colonial areas occasionally resulted in buildings standing in the way of one another, obscuring the views. This may help explain the findings that 63.6% of the residents with a colonial background preferred the views of the new flats to those in their previous dwellings. One of the characteristics of the views in Ain-Allah is that the distance between the buildings (20m to 30m) is wide enough to allow all the flats to enjoy the views. This relatively wide distance between buildings also helps to reduce the effects of visual contact between opposite flats on their level of privacy.

It is important to ensure that flats in new housing projects enjoy pleasant views, as this increases residents' levels of satisfaction. Firstly, a site with attractive scenery, such as overlooking the sea or green spaces should be selected if possible. At the design stage, it is desirable to have a

relatively wide distance between buildings (around 20m to 30m) and to orientate opposite buildings in different directions.

c. Level of Quietness in the Flats

Flats in the new project under study do not provide a high level of quietness. 68.6% of the Ain-Allah residents were disturbed by noise. It is found that noise disturbance affects residents' satisfaction with their flats. 13.0% of the respondents who stated that they were disturbed by noise were dissatisfied with their flats. Conversely, of the respondents who stated that they were not disturbed by noise, none were found to be dissatisfied with their flat, as shown in Table 9.

One of the sources of noise disturbance is the heavy traffic on the RN 36 and CW 45. The location of buildings alongside such busy roads should have been carefully considered, especially in projects such as Ain-Allah where light materials compose the majority of the buildings' hardware (such as wooden or plastered pre-fabricated sections with weak sound insulation). Many residents pointed out this problem of weak sound insulation.

It appears from the informal interviews that the buildings in the colonial areas, for example, were more soundproof than those in Ain-Allah. Both the party and external walls of the colonial buildings are made of brick. In fact, the use of bricks is cheaper as they are produced in Algeria. Some of the prefabricated walls of the new urban housing projects are imported, as is the case in Ain-Allah. The cost price is made more expensive by the fact that such materials require specialised

workers and tools for assembly.

Findings also suggest that residents in cluster one (from the Casbah) were less disturbed by noise than those in cluster two (from the colonial areas). Informal interviews conducted with the two groups suggest that these findings may be explained by the fact that cluster one is situated in the south part of the project at a distance from the main road (RN 36), while cluster two, in the North part, is exposed to heavy traffic. The nearest building to the main road (RN 36) in the South part is located at more than 30m. On the other hand, most buildings in the North part are located approximately 10m to 20m from a relatively fast traffic road (CW 45).

Children playing outside is a further source of noise. Children do not confine their games to the cemented common spaces; very young children are often found playing on the staircases. People living in buildings occupied by families with young children are affected by this type of noise more than people living in buildings occupied by young couples or couples with grown up children.

Informal interviews carried out with residents living in the flats close to the playgrounds or roads with heavy traffic revealed that those who have the "active" spaces of their flats orientated towards these sources of noise were less disturbed than those who have the "rest" spaces of their flats orientated that way. By active spaces, the rooms where daily activities take place, are meant, namely the kitchen and living room. Rest spaces are those rooms reserved for relaxation, namely the bedrooms.

To sum up, the level of satisfaction with the new flats can be affected by noise disturbance. Flats close to high traffic roads (10m to 20m) and those orientated towards playgrounds are exposed to noise disturbance. Implementing buildings a distance (around 30m for example) from heavy traffic roads may help reduce noise disturbance. Car access to buildings can be ensured by internal streets. The use of local material, such as bricks for both party and external walls will help reduce not only noise disturbance but also cost price. With regard to design, noise disturbance may be lessened by orientating the active spaces of the flats towards the source of noise rather than the rest spaces.

d. Orientation of Flats

Orientation in this study is concerned only with the amount of sun received and not with the daylight as no respondents complained of a lack of natural light during the pilot and final surveys. The numerous wide windows in the new flats provide sufficient light for the flats.

The organisation of Ain-Allah's buildings around rectangular or square common spaces led to the orientation of the buildings' main facades in four different directions. The situation of all the buildings so that all their main facades do not directly face North or South avoids having rooms facing North which would receive no sun, and South where rooms would be over-exposed. Providing a satisfactory orientation with such a specific layout and having to repeat the same type of building throughout the project is a difficult task. The Ain-Allah designers, however, succeeded in ensuring that every room in all the dwellings

receives some sunlight, although the amount differs from one room to another, and from one dwelling to another.

Residents were asked to indicate if they received enough sunlight daily. The responses varied from having a very long to a very short exposure. Generally, respondents were satisfied with the orientation of their flats. In fact, 24.6% of the respondents stated that they received a large amount of sunlight daily. Of this group, 71.3% were satisfied with their new flats. 65.7% of the respondents stated that they received sufficient sunlight daily, of whom 59.8% were satisfied with the new flats.

It was observed that the buildings in clusters one and three enjoyed a slightly better orientation than those in cluster two. The common spaces, or courtyards, in clusters one and three are rectangular and more spacious than in cluster two, allowing many buildings to be arranged around the same common space, enabling the designers to orientate most of them in a desirable direction.

The above argument may also explain the findings that 34.1% of the respondents from cluster two (from the colonial areas) stated that they enjoyed a better orientation in their previous place of residence, compared to 12.7% of the respondents from cluster one (from the Casbah). Informal interviews suggested a further explanation for these findings. The large windows of most of the dwellings in the colonial areas (in general 1m70 x 1m20) allow more sunlight and a longer period of exposure than the small windows of the Casbah flats.

To increase residents' level of satisfaction with the orientation of the new flats, the bedrooms and living-room where most time is spent should receive the warm sun of the morning or afternoon and avoid the hot sun of midday. This supports the recommendations for East and West orientations in the new housing projects in Algeria. The arrangements of buildings around large rectangular common spaces, as is the case in clusters one and three, may facilitate the designer's task of achieving satisfactory orientation for the majority of the flats. Large windows (1m70 x 1m20), as in most colonial areas, increase amounts of sun and daylight received.

e. The Storey

Results of the analysis suggest that many people living on the first and second floors were satisfied with their storeys (72.3% and 63.5% respectively), compared to less than half of those living on the ground floor or third and fourth floors. A possible explanation for the preference of the first and second floors may lie in the difference in the socio-economic characteristics of the respondents, as shown in Figure b11. Most respondents with children were satisfied with the first floor (38.9%), and the second floor (33.7%). This category of residents represents a high percentage of the total population (Figure b3) and this explains why the above findings indicate a high level of satisfaction with the first and second floors among the total sample.

Informal interviews suggest that householders with children would like to be as close as possible to the ground floor in order to be able to watch their children closely while they are playing in the common spaces. The ground floor is ideal for that purpose, but, unfortunately, does not provide enough privacy, quietness or sunlight. The fact that there is no transitory space between the buildings and the common spaces, which are also used as car parks and walkways, is a threat to privacy for the flats situated on the ground floors. Some residents stated that green spaces and small trees (2m to 3m wide) separating buildings from the streets or car parks, as in some colonial neighbourhoods, may increase the privacy of the ground floor flats.

The respondents who did not have children were satisfied with the third and fourth floors. Of the young couples living on the fourth floor, 66.7% were satisfied with their storeys. This category of residents, being without children, is not concerned by the advantages of the lower floors. The higher floors provide wider views, more sunlight, and are further from the children's noise.

Findings also suggest the existance of a relationship between age group and the preferred storey. 50% of the respondents aged between 35 and 50, who were found to be satisfied with their flats, lived on the third floor. This is mainly because they are at an age where their children are old enough to look after themselves and have outgrown the stage of playing near their homes. This category, therefore, prefer to take advantage of the upper floors and avoid the disadvantages of the lower floors. However, many of the elderly people (60+) who were satisfied with

their storey, lived on the first or second floors. Informal interviews with this category of people revealed that they would like to enjoy the advantages of the upper floors if a lift were provided. The first and second floors avoid the disadvantages of the ground floor and are not too far to walk.

People of different socio-economic characteristics have different requirements with regard to their storeys. Residents with children prefer the lower floors while single residents and young couples are more attracted to the higher floors. The ground floor would have been ideal for elderly residents and those with young children if some privacy and quietness were provided. Planting trees between buildings and streets or playgrounds, for example, may help solve the problem of privacy for the ground floor flats. Satisfaction with the storey could also be increased if residents were able to choose the storey on which they would like to live. This way, the different socio-economic groups could be housed according to their needs.

f. Other Features Related to Satisfaction with New Flats

During informal interviews, some residents from both the traditional and colonial areas expressed a wish for open balconies instead of the partly enclosed loggias of the new flats. The open balconies of the colonial buildings are more spacious and receive more sun than the Ain-Allah loggias. The courtyards and terraces in the Casbah are large and enjoy the sun throughout the day as they are completely open to the sky. They are not only used for drying the washing, but also for carrying out housework duties, meeting and chatting, and sometimes for eating outdoors during the

hot summer.

It was also revealed during the informal discussions that the height of the ceilings in the new flats was unsatisfactory. The distance between the floor and the ceiling is 2m80. Residents stated that this is too low, some pointing out that they were unable to hang their lights. The majority of people interviewed in the three clusters preferred the height of the rooms in their previous flats. The colonial and Casbah dwellings have an average room height of between 3m10 and 3m30 and it appeared that the residents were satisfied with this height.

An architectural feature of the new flats with which the majority (81.5%) of residents were satisfied is the internal separation and the situation of each room, as represented in Figures a8, a9 and a10. The situation of the living room, also used as the dining room and guest room, close to the entrance, with the bedrooms situated at the other end of the flat, ensures privacy if the guest is not a very close friend or a member of the family. This layout also provides a segregation between the noisy (or active) part of the flat, where most of the daily activities take place and the resting part for relaxation. The situation of the kitchen, close to the living room but having no visual contact with it, is functionally satisfactory as it is close for serving meals, but also allows the woman to carry out her work in the kitchen, even when a guest is in the house, with no visual interference.

Certain architectural details, however, are not very well executed and some of the residents were unhappy about them. For example, residents stated that the type of tiled floor used in the Ain-Allah flats comes off the floor easily during the summer.

Findings reveal the existence of a relationship between satisfaction with the new flats and attitudes towards their architectural features. Large open spaces, such as the balconies in the colonial areas, which could be used for drying clothes, and sitting, eating and playing in, are preferred by residents to the small and partly enclosed loggias of the new flats. It is also found that the height of the ceilings in the colonial and traditional flats (3m10 to 3m30) are preferred to those of the new flats (2m80), which are considered too low. Findings show that an internal flat layout which provides privacy and separation between the work and rest areas, such as in the Ain-Allah flats, is desirable.

6.1.2 Form of Tenure and Satisfaction With New Flats

A comparison of levels of satisfaction with the new flats between flat owners and tenants suggested that the rate of dissatisfaction is similar among the two groups. From literature, it was expected that flat owners would have more pride in their dwellings than tenants. In the case study, however, both groups were equally dissatisfied with their form of tenure. These results were found to be related to the affordability of the rents and mortgages which are considered high.

a. Renting

Analysis of tenants' responses suggests that more people in cluster one (from the Casbah: 64.3%) than in cluter two (from the colonial areas: 18.5%) stated that the rent was high. This is mainly due to the difference in income. As discussed earlier, people from the Casbah are, in general, from a low income group, whereas people from the colonial areas are mostly highly ranked workers earning high salaries. This may also help to explain why the results show that a higher percentage of people in cluster two (65.3%) were satisfied with the new flats than in cluster one (47.6%).

The rent in Ain-Allah is fixed at 550 DA a month (around £60). People who answered that the rent was just affordable were in general low to medium ranked employees who earned an average of 2,500 DA (£275). The rent for these people represents slightly less than a quarter of their salaries. The lower the salaries, the more people in that category said that the rent was difficult to afford. For example, the average salary of people from cluster two is found to be approximately 1,500 DA (around £165). For these people, the rent is more than a third of their salaries. 89.3% of these people stated that the rent is difficult to afford. It could, therefore, be suggested that rents should not exceed a quarter of a resident's salary.

Analysing data collected in cluster one only (from the Casbah), reveals that rent affordability is also related to family size. 73.4% of the residents with four children or more stated that the rent was high, compared to 46.2% of those with less than four children. The problem of affording the rent for low income

and large families may be solved by the state according subsidies to these people. The resident could pay an amount representing a quarter of his salary and the state could pay the remainder. Another possibility may be to re-introduce the old system of designating special buildings for low income groups (Habitat a Loyer Moderes) which has existed in Algeria since the colonial period.

b. Home Ownership

The very high prices of the new flats are not affordable by many social classes, even those from the high income groups find them difficult, as the monthly instalments are very high. The two bedroomed flats are priced at 320,000 DA (around £44,800), and the three-bedroomed flats are 380,000 DA (around £53,200). Findings suggest that the monthly instalments for these prices (1,990 DA for a three bedroomed flat) are considered very high. 73.9% of the flat buyers in Ain-Allah stated that they experienced financial difficulty in paying their monthly instalments. Some flat buyers threatened to stop paying their monthly instalments if a subsidy of some sort was not introduced by the bank. The majority of the flat buyers who could afford their instalments were found to have working wives who often also held a highly ranked position at work. The high monthly instalments affected the level of satisfaction with new flats. 82.5% of the flat buyers who stated that they could afford their instalments were satisfied with the new flats. On the other hand, this percentage was lower among those who found it difficult to afford their monthly repayments.

During informal discussions, some flat-buyers suggested that reducing flat prices or the interest rate and the length of period of the loan may make the monthly repayments easier to afford. Increasing the period of repayment seems to be the only acceptable solution to the CNEP as flat prices represent almost the cost price and the interest rate is already very low. The average salary of highly ranked employees is 4,500 DA (around £495) and the monthly repayment is 1,990 DA (around £220). This repayment is more than a third of the salaries. Taking the same rate of monthly payments as that established for rents, the instalment should not exceed 1,120 DA (around £123). This requires an extension of the period of repayment from 25 years to approximately 35 years.

6.1.3 Summary

Findings in this section revealed that residents' level of satisfaction with the new flats is related to, in order of importance, spaciousness, pleasant views, quietness, suitable orientation, choice of storey and form of tenure. Attitudes towards some of the architectural features of the flats, such as height of ceilings, size of balconies and internal layout are also related to satisfaction with the flats, although not as closely.

The housing shortage in Algeria resulted in an overcrowding of dwellings which, consequently, affected residents' attitudes towards the size of the new flats. The new flats (two and three bedroomed) are considered fairly spacious by residents, although the rate of occupancy per flat is high compared, for example, with the average rate of occupancy in developed countries. In this

research, a density of 2.5 pers/room is found to be satisfactory. When distributing flats, the authority in charge should ensure that flats are allocated according to family size in order not to exceed the density rate suggested above.

Overlooking attractive scenery significantly increases the level of satisfaction with the new flats. A relatively wide distance between buildings (20m to 30m) avoids opposite buildings standing in the way of one another and ensures wider views. The location of the buildings with regard to the main roads may also affect satisfaction with the flats. Buildings situated less than 30m from the main road were, in general, disturbed by noise from traffic. The use of a material such as bricks would reduce both noise disturbance and the cost of the buildings.

In hot climates, such as Algeria, East and West flat orientations are recommended. These orientations allow the rooms to receive the warm sun of the morning and afternoons, but avoid the hot midday sun.

In Ain-Allah, people moved from different types of dwellings and have different socio-economic characteristics. They have, therefore, different requirements. For example, married couples with young children or elderly residents prefer to live on the lower floors. Single residents or couples without children, on the other hand, prefer the higher floors. Giving residents the opportunity to choose the storey on which they would like to live may contribute to their level of satisfaction with the new flats.

The form of tenure is found to be another factor influencing satisfaction with the new flats. The rents and prices of flats need to be revised. Monthly payment of both rent and mortgages, are considered high by the residents. It is found in this research that in order to be affordable, monthly payments of rents and mortgages should not exceed a quarter of the resident's salary. To achieve this, the period of repayment of the mortgage could be increased to 35 years. For tenants, financial assistance from the state for the amounts which exceed the one quarter of their salaries is necessary. Another solution may be to re-introduce housing for low income people (HLM) where rents are relatively low.

6.2 Satisfaction With the Outdoor Layout

Layout, as defined in this study, is concerned with the spatial organisation of the physical environment outside the flats, that is, the public space. It deals with the organisation of the physical built form, and its relationship with the open spaces, and with the relationships between the different components of the built form itself.

This section explores the factors affecting the level of satisfaction with the layout of the new project. Emphasis will be placed on the effects of the residents' attitudes towards the appearance of the new project, the location and size of the playgrounds and green spaces, the arrangement of the buildings, and the type of streets, on their overall satisfaction with the outdoor layout.

The results of the regression analysis, as shown in Table 11, show that satisfaction with the outdoor layout is affected by residents' attitudes towards a set of features, ranked by the strength of their influence. Attitudes towards the appearance of the new project, the location and size of the playgrounds and green spaces, the arrangement of the buildings and the type of streets, are, in order of influence, the factors affecting satisfaction with the new layout (tables 11 and 12).

Due to the difference in backgrounds and requirements between the two groups of residents (those from the Casbah and those from the colonial areas), their attitudes towards certain features of the new layout differed, as shown in Table 11. For example, the Casbah residents attach great importance to the type of streets and their safety. This group used to live in car-free neighbourhoods and moved to a new environment where all streets are vehicular. By "type", whether the streets are vehicular or pedestrian is meant. On the other hand, people from the colonial areas are used to vehicular circulation and are therefore not so affected by the safety of new streets.

6.2.1 Appearance of the New Project

Appearance is defined as the image the residents have of the new housing project with regard to the variety of the buildings, the spaciousness of the surroundings, and the way in which the project is maintained (Reynolds and Michelson, 1972). A similar definition is used in this research, with the exception that no variety of buildings exists in Ain-Allah. The effect on residents of the opinions of their friends and relatives who do not live in

the area when they visit are also taken into account. Many residents said that they feel proud of their new area because their visitors are impressed by its appearance.

Residents' attitudes towards the appearance of the new project were found to be closely related to their satisfaction with the new outdoor layout. An explanation for this could be that the appearance of an area is related to feelings of pride with living there. It has been argued in many studies that a feeling of pride with a housing area affect to a large extent whether a person is satisfied with it (Reynolds and Michelson, 1972).

In general, the appearance of the new project can be considered to be satisfactory. 66.2% of the residents described the new project as "attractive", of whom only 7.0% were dissatisfied and 2.8% very dissatisfied with the new layout (Table 12). Residents said that the new buildings and surroundings were pleasant. The only unsatisfactory feature regarding the appearance was the relatively poor maintenance of the area, especially the rubbish rooms and green spaces. This did not, however, seriously affect residents' opinions of the appearance of the project. This can be explained by the lack of any kind of maintenance that respondents had experienced in their previous places of residence.

It appears from the findings that the majority of residents (85.3%) were satisfied with the appearance of the buildings and surroundings. Informal interviews revealed that people liked the form and size of the buildings and the spaciousness of the surroundings. Buildings in Ain-Allah are just four storeys high.

The common spaces are large (around 20m to 30m). These measurements are almost double the height of the buildings, making them proportionate to the open spaces, unlike the tall highrise buildings in the city centre where there is very little open space, for example.

Findings also show that visitors' opinions about the area affect residents' attitudes towards the appearance of the project. Many of the people who were satisfied with the appearance of the project (73.6%) said that their visitors were impressed with the appearance of the buildings and surroundings of Ain-Allah.

The level of maintenance, on the other hand, is not very satisfactory. In fact, 53.2% of residents were unhappy with the maintenance of the new project. Spaces reserved for greenery and trees were just bare soil in many basic housing units, and the rubbish rooms were not cleaned regularly. This is on account of the inefficiency of the local authority in charge of maintenance (OPGI). It would, however, be possible to keep the area tidy if the residents were given some of the responsibility. For example, some spaces in cluster one occupied by people from the Casbah, where informal groups were formed as discussed in the previous chapter, were planted with a variety of flowers and small trees. This was achieved through community work organised by the residents. This may explain the findings that 71.5% of people in cluster one stated that the new project was attractive compared to 59.1% from cluster two.

Summing up, the appearance of a housing project is strongly related to satisfaction with the outdoor layout. The form and size of the buildings, spaciousness of surroundings, and the maintenance affect people's attitudes towards the appearance of a housing project. Buildings with a few storeys (four for example) arranged around relatively large open spaces are thought to be attractive by residents.

The appearance of a housing project is also related to its maintenance. If the local authority (OPGI) is unable to maintain the project properly, putting the residents in charge may solve the problem. The OPGI could supply the residents with tools and financial assistance to enable them to maintain their area in the form of community work. This could be a very efficient solution, especially, among neighbours with a high level of interaction.

6.2.2 Location and Size of Green Spaces

In the new project under study, green spaces are intended to separate each basic housing unit from the next. The green spaces in Ain-Allah are relatively small and not well maintained, which resulted in a high degree of dissatisfaction (78.8%) among the whole sample (see Table 12).

It seems that residents were unhappy with both the size and the location of the green spaces. With regard to their size, the CNERU recommends 1,000m^2 of open space for greenery and play purposes for every basic housing unit (40 to 60 flats). The non-concreted open spaces in Ain-Allah (300m^2 to 400m^2) are small in comparison with these norms. Residents are unhappy

about having such small areas reserved for greenery when the common spaces (around 1,000m^2 for every 40 to 60 flats) are all concreted.

It also appears from informal interviews that residents would have liked the green spaces located in the common spaces. This would not only improve the views from the flats but would also end the use of the common spaces as car parks and they could be used as safe playgrounds. This may explain the findings that the number of children is found to be related, albeit not very closely, to the residents' opinions of the green spaces. Residents with younger children are the most in need of large nearby green spaces to use as playgrounds, as shown by Table 13.

Data shows that the percentage of residents (78.9%) in cluster two (from the colonial areas) affected by the location, size and maintenance of the green spaces was higher than that of the residents of cluster one (57.7%). As discussed earlier, residents in cluster one maintained their green spaces themselves in the form of community work, as there are well developed sense of community and friendship patterns between them.

During informal interviews many respondents in cluster two said that the local authority in charge of the project's maintenance (OPGI) should have responsibility not only for the technical maintenance of the buildings and the removal of the rubbish, but also for the maintenance of the open spaces. Taking into account the reduced financial capacity of the OPGI and the number of housing areas of which it is in charge, it would be extremely difficult for it to assume all these duties. The OPGI, however, may be able to provide tools and financial support to

residents if they were prepared to help to maintain the area.

To sum up, a high percentage of residents are dissatisfied with the small size, inconvenient situation and lack of maintenance of the green spaces in Ain-Allah. It is necessary to provide sufficient space for greenery. The CNERU's recommendations of 1,000m^2 must be respected in all new housing projects. It is preferable to locate these spaces in the common spaces of each basic housing unit (40 to 60 flats). This will not only improve the views from the flats but will also create safe playgrounds and reduce car intrusion. It is also found that the OPGI is not able to maintain the green spaces adequately. Residents who belong to informal groups looked after their green spaces themselves. It may, therefore, be possible to involve residents in the maintenance of their area by providing them with tools and financial assistance.

6.2.3 Location and Size of Playgrounds

The need for large and easily supervised playgrounds in Algerian society is due to the large families (6 to 8 persons/family according to Benatia, 1981), and the lack of space inside the flat which can be used for playing, such as the balconies in the colonial areas or the courtyards in the Casbah. With a substantial proportion of the population being under fifteen years of age, the community should be pedestrian orientated, and open spaces at all levels should be provided (Shankland Cox, 1973). In Algeria, 60% of the population is under 16 (CNERU, 1985), and therefore, many safe and spacious playgrounds are required.

Findings show that 62.8% of the residents were dissatisfied with the size and location of the new playgrounds. With regard to the size, the common spaces which were designated for play were large enough (between 900m^2 and 1,200m^2), compared to the CNERU's recommendations of 1,000m^2 for every basic housing unit. The use of these common spaces as car parks, however, considerably reduced their size. Originally, the Ain-Allah plan was based on a total segregation between the pedestrian and vehicular streets, as shown by Figure a6. This original plan proposed that the common spaces and the streets linking them with the buildings would all be concreted and reserved for pedestrians. The car park spaces were provided along the roads boardering the project, but the proposal was rejected by the fire safety commission, as discussed earlier. If the original plan had been implemented, it would have provided sufficient large, safe playgrounds, but with the intrusion of cars to the common spaces, both the size and the safety of the playgrounds have suffered. This, in turn, increased the level of dissatisfaction with the size of the new playgrounds.

The situating of the green spaces in the common spaces would considerably increase the size and safety of the playgrounds. These spaces could be provided with play equipment for children. If these spaces are not in direct contact with the buildings, footpaths to link them are necessary. It is also desirable to keep the cars away from these spaces, as suggested in Ain-Allah's original plan.

This suggested location of the playgrounds would increase residents' confidence that their children are safe while playing. Findings show that it is mainly the young couples without children (62.5%) and the couples with young children (64.5%) who considered the new playgrounds badly located and not conveniently designed, as shown by Table 14. Relatively few single residents were concerned by this problem (35.7%). It is understandable that parents and those planning to become parents in the near future are concerned about the safety of their children at play. These worries lessen as the children grow older and pass the stage of having to be looked after.

Summing up, the invasion by cars into the common spaces designated for play creates not only a shortage of these spaces but also poses dangers to the safety of the children. The majority of residents in Ain-Allah are, therefore, unhappy with the playgrounds. The size of the original playgrounds ($900m^2$ to $1,200m^2$) for each basic housing unit (40 to 60 flats) is sufficient according to the CNERU's norms. The transformation of these spaces into car parks, however, considerably reduced their size and level of safety. It is suggested that the common spaces are not concreted but are designated for greenery and play purposes, and are segregated from cars, as in the original plan of Ain-Allah.

6.2.4 Arrangement of the Buildings

The arrangement of the buildings is defined as the way in which the buildings are implemented with regard to the streets, playgrounds, green spaces and facilities, and whether the spaces

defined by a group of buildings are private, semi-private or public.

The use of the ground floor spaces of buildings for facilities in Ain-Allah is similar to the use of these spaces in the colonial areas, where businesses are arranged along a main street. The implementation of Ain-Allah's buildings along a dangerous road with heavy traffic, not frequented by many pedestrians, however, makes it necessary to have the facilities inverted on an internal street. The way in which the buildings are implemented creates common spaces designed for the residents living around them, but does not create a major street linking all the parts of the new project which could therefore support the facilities. Consequently, certain common spaces, in cluster two particularly, are designated for this purpose. The noise and the lack of privacy in the common spaces which support some of the facilities transformed these spaces from quiet semi-public spaces into public spaces where all the residents of the new project come to use the facilities. This may explain the high percentage of residents dissatisfied (71.5%) with the arrangement of the buildings in Ain-Allah.

Furthermore, the internal streets and the common spaces were initially designed to be pedestrian and consequently would have been used as playing areas for children and meeting spaces for adults. This design proposal, however, was opposed, as discussed earlier. To avoid the problem of redesigning the layout of the

project and requesting the postponement of the date of completion, designers opted to allow vehicular access to all the internal streets and common spaces. Consequently, the streets cannot be used for multi-activities, such as gathering and playing as in the Casbah for example, but only for vehicular and pedestrian movement.

Ain-Allah's design concept is similar to most of the colonial buildings which are repetitive and provide facilities at the ground floor level. On account of these similarities, it was anticipated that the residents from the colonial areas would be familiar with the new building arrangement and, therefore, be satisfied with it. People from the Casbah, however, are used to the traditional spatial organisation which ensures great variety in the appearance of the buildings and their organisation, and it was therefore anticipated that the building arrangement of their new environment would be unfamiliar to them. Their level of satisfaction was, therefore, expected to be lower than that of the people from the colonial areas. Findings, however, suggest the opposite. More than half (65.9%) of the people from the colonial areas were unhappy with the organisation of the new built form, compared to only 40.7% of those from the Casbah.

The reasons for these findings seem to be related to the difference in the nature and function of the basic housing units in the two clusters. Many of the residents from cluster two were unhappy about the scale of some of the facilities situated in the common spaces of their basic housing units. Some of these amenities are at a higher than project level, and some are at a district level. The offices of the OPGI is the best example, as

they attract residents from the whole district which results in noise disturbance and lack of privacy for the nearby flats.

For people from the Casbah, however, the common spaces in cluster one are still considered to be semi-public as most of them have no functional facilities at the ground floor level of their buildings. The common spaces are, therefore, used only by local residents. It appears from informal interviews with these residents that they are happier with their common spaces than the residents from cluster one. It is revealed, however, that the residents from the Casbah prefer the hierarchy and level of privacy of the traditional environment they moved from to the Ain-allah outdoor arrangement. It is also found that they enjoy some features of the new project, such as the large size of the open spaces, the nearby car parks, and the attractive buildings.

To conclude, the linear layout, such as that in the colonial neighbourhoods, can be adopted in the new projects as long as the scale of the facilities does not disturb the residents and does not create a problem of privacy by transforming the common spaces from semi-public to public. Residents would like to have a neighbourhood with a combination of what they judge to be "satisfactory" features, such as the semi-public outdoor spaces in the traditional buildings and their high level of privacy, combined with nearby facilites as in the colonial and Casbah neighbourhoods, and the many and very nearby parking spaces of the new project. This can be put into operation by arranging the buildings in such a way that the facilities of the ground floor have access onto a main street rather than onto the common spaces which should be reserved for play purposes. Car parks could be

located on the other side of the main street thereby stopping traffic from entering the courtyards and providing nearby car parking for all the basic housing units at the same time.

6.2.5 Type of Streets in the New Projects

In most new developments worldwide, designers acknowledge the importance of ensuring maximum safety for the residents from cars, mainly by providing a network of pedestrian streets and footpaths linking the dwellings with the local amenities (Milton Keynes D.C., 1980; Cergy Pontoise, 1979; Blowers, 1973).

The new project, as already discussed, was designed to be pedestrian. Its implementation alongside vehicular roads helped to create sufficient car parks between the buildings and the roads. For reasons already explained, cars invaded all the internal spaces of the project. The common spaces are used as car parks, and the original car parks have been abandoned. It was expected, therefore, that the residents would be very dissatisfied with the level of safety on the streets. In fact 70.6% of residents said that the streets in Ain-Allah were unsafe. Of this group, 53.2% were dissatisfied with the outdoor layout. As discussed earlier, residents were particularly worried about the RN 36 which separates the North and South parts of the project. With its heavy and fast moving traffic, the RN 36 represents a real danger, especially to the children in the South part going to school or the local shops, which are located in the North part. Residents stated that it was unwise to implement a residential area with a dangerous road running through the centre. An example of a way to take advantage of such a road while avoiding its

disadvantages can be seen in the CW 45 which borders the project East and North. The CW 45 does not represent a danger as it performs the role of a physical boundary of the project and provides quick and easy access to each basic housing unit's car park from the main road (Figure a6).

Data in Table 15 shows that the majority of married couples with children (73.5%) consider the streets in Ain-Allah to be unsafe. They said that they were unhappy with the fact that all the streets in the new project were vehicular. This percentage is higher among people from cluster one (86.9%). Residents with children in this cluster said that they were very worried for the safety of their children. This could be due to two reasons. Firstly, children from cluster one have to cross the fast and heavy traffic road (RN 36) when going to school or the local shops situated in cluster two. Secondly, people from the Casbah are used to living in car free neighbourhoods where the streets are used as safe playgrounds for the children. This may have affected their attitudes towards the new streets.

Summing up, findings suggest that pedestrian safety should be seriously taken into account when planning a new project. Vehicular roads, especially those with rapid traffic, running through a housing area affect the level of safety which, in turn, reduces the residents' level of satisfaction with the spatial organisation of the outdoor spaces. Vehicular roads running alongside the project to facilitate access to car parks, as is the case of the CW 45 do so without affecting safety. A pedestrian circulation network, such as footpaths linking basic housing units with one another and with the facilities may also increase the

level of safety from cars in a housing project. In Ain-Allah, for example, building a pedestrian bridge on the RN 36 would increase residents' feelings of safety for their children which may then increase their level of satisfaction with the layout of the new project.

6.2.6 Summary

To conclude, data in this section reveals that satisfaction with the layout of the outdoor spaces of the new project is affected by attitudes towards, in order of importance, the appearance of the new project, the location and size of the playgrounds and green spaces, the arrangement of the buildings, and the type of streets.

It appears from the findings that buildings of a low to medium height (around 4 storeys) arranged around relatively large open spaces improve the appearance of the project. These open spaces should be kept tidy. In the case study, a relatively high level of maintenance was observed in a few of the basic housing units where informal groups existed. These residents looked after their outdoor spaces themselves in the form of community work. It is expected that with the help of the OPGI in providing tools and financial support, more residents would become involved.

Findings also reveal that satisfaction with the new outdoor layout is related to the size and location of the green spaces and playgrounds. The CNERU recommends 1,000m^2 of green spaces and playgrounds for each basic housing unit. In Ain-Allah the green spaces are small (300m^2 to 400m^2). The cemented common

spaces are large (900m^2 to 1,200m^2) but are used as car parks which reduces their size and make them unsafe for play. The transformation of these cemented spaces into green spaces would considerably increase both the size of the playgrounds and their safety. This would also improve the appearance of the project.

With regard to the organisation of the spaces, in Ain-Allah facilities are located on the ground floor level of the buildings with access onto the common spaces. This results in noise disturbance and lack of privacy for the nearby flats, which caused a high level of dissatisfaction among people living around these spaces. Informal interviews suggest that if facilities were located on the ground floor of the buildings but had access onto the main street running along the project, as in the colonial neighbourhoods, this may create a satisfactory hierarchy of spaces. The common spaces would be semi-public spaces used only by local residents for gathering or play. The street would be the public space used for shopping, meeting and chatting.

It is also found that a fast traffic road running through a housing project may represent a serious threat to pedestrian safety and, consequently, increase the level of dissatisfaction with the layout of the project. The RN 36 in Ain-Allah is a danger for children going to the school or to the shops from the South to the North part. A network of pedestrian footpaths linking basic housing units with facilities, and vehicular roads serving as boundaries for the housing project instead of running through it would probably increase the level of safety in the new project.

7. SATISFACTION WITH THE LOCATION AND QUALITY OF THE NEW FACILITIES

Findings in the two previous chapters suggest that attitudes towards the new social life and physical environment (form of flats and outdoor layout) are closely related to the level of satisfaction with the new housing project under study. This chapter aims to assess the additional effects of attitudes towards the location and quality of the new facilities on satisfaction with the new project.

This chapter examines the factors affecting satisfaction with the new facilities. Emphasis will be placed on the effects of residents' attitudes towards the location and the quality of the facilities, such as the primary school and local shops on their level of satisfaction with the facilities in the new project.

This chapter aims to define the maximum walking distance between the various facilities and dwellings. It also attempts to identify the facilities which are urgently needed by the different socio-economic groups in the new project and the quality of services expected from them. The object of this analysis is to provide guidelines which may help in the design of new projects where facilities are easily and safely reached and may also help in defining the type of facilities needed by residents with different socio-economic characteristics. This may help designing new housing projects which may satisfy the majority of the residents.

The regression analysis reveals that the level of satisfaction with the new facilities is closely related, in order of importance, to attitudes towards the location and quality of the local shops, location of the primary school, location and quality of the services provided by the nearby cultural, recreational and educational facilities (library, mosque, cafe, etc.), and the location of the new project with regard to the city and neighbouring centres (Table 16).

7.1 LOCATION AND QUALITY OF LOCAL SHOPS

It appears from the findings that a convenient location of the local shops is related to satisfaction with the new facilities. A "convenient" situation, in this research, means a location near the dwellings, providing safe and easy access. Many researchers consider the situation of the local shops and school as the determinant factors of the size of the neighbourhood. Generally, researchers agree that these facilities should be located at a distance of 0.5 km or 5 to 7 minutes' walking distance from the furthest dwelling (Collison, 1954; Irvine D.C., 1972; etc.).

"Quality" of facilities means facilities which are varied, within easy reach of all dwellings and which offer all services needed (Bourne, 1971). Quality in the project under study was assessed using simple questions. The residents were asked to indicate whether there are enough shops, whether they find all their daily requirements in the local shops, whether the prices are reasonable, and whether they have a choice in the items they want to purchase.

The reason for locating the shops in certain selected common spaces in Ain-Allah was to ensure the minimal distance from the furthest dwellings. Common spaces which should support the local shops were therefore selected in both the North and South parts of the project by reserving certain ground floor buildings in both parts for this purpose. Not designating the nature of the facilities to be implemented in each reserved space, however, led to a situation where all the shops presently open which are needed daily are located in the North part. Most of the reserved spaces in the South part are closed, or are used for secondary required facilities such as hairdressers.

The designation of 120 spaces for facilities and offices in the project under study is exaggerated for the size of the project. The use of all these spaces would turn Ain-Allah into a small district centre on which neighbouring housing areas could rely, but this is not feasible for two reasons. Firstly, residents of the neighbouring housing areas would prefer to shop in the nearest well established centres of Dely-Brahim or Ben-Aknoun than in Ain-Allah. Secondly, creating such a centre would transform the nature of the new project from residential to commercial. This would help explain why only 18 of the 52 reserved spaces designated for commercial facilities are in use (figures from Field Investigation, 1986). The shops found to be operating in Ain-Allah during the survey were two greengrocers, a newsagent, a chemist, a butcher, a tool shop, and a stall for fruit and vegetables.

The correlation analysis suggests the existance of a relationship between satisfaction with the new facilities and the location and quality of the local shops. The majority of respondents (87.0%) who stated that the shops were located less than 5 minutes' walking distance from their flats were satisfied with the location of the facilities. On the other hand, the further away the shops were situated, the lower was the percentage of satisfied residents (Table 17). Data also reveals that of the respondents who stated that there were not enough shops in Ain-Allah, representing 72.6% of the total sample, almost three quarters of them (69.5%) were dissatisfied with the facilities as a whole.

In order to define the distance considered by residents as "satisfactory", they were asked to indicate on a five Likert scale the time it took them to reach the local shops. Only 20% of the respondents stated that the shops were located less than five minutes' walking distance from their dwellings, and 10.4% indicated the distance to be between 5 and 7 minutes. This means that the remaining 69.6% of the dwellings did not fulfill the maximum 5 to 7 minutes' walking distance suggested by the literature or the CNERU recommendations of a maximum of 600 meters' walking distance.

Findings reveal that the majority of residents who stated that they lived less than 10 minutes away from the shops were satisfied with the location of the shops (73.5%). More than half of those who lived between 10 and 15 minutes away were dissatisfied (57.3%), whilst almost three quarters of those who lived more than 15 minutes away were dissatisfied (71.2%).

Analysis shows that the dwellings of people living at 10 minutes' walking distance from the shops are located between 650m and 700m from the shops.

With regard to the quality of the local shops, residents in the new project were dissatisfied with the lack of specialised shops. The local shops which sell the necessary daily groceries were very few and did not offer a sufficiently wide choice.

Data reveals that the majority of residents (72.3%) stated that there were not enough shops in Ain-Allah. The CNERU recommends 10 local shops for a new housing project (Figure b13). There are a few shops selling consumable goods needed on a daily basis in Ain-Allah (five only). During informal interviews, residents stated that they needed varied shops, including a grocer, a baker, a newsagent, etc.. Residents also felt that a sufficient number of shops would result in an improved choice of goods.

The fact that most of the residents are married with children may help explain this desire for more shops. A relationship exists between marital status and attitudes towards the number of shops (Table 19). 75.7% of the married couples with children stated that there were too few shops in the new project, compared to 59.1% of the young couples, and 42.9% of the single residents. This is due to the fact that householders with children, as discussed earlier, were more settled in the new area, and rely on the local facilities more than the other categories of residents.

It appears from the informal interviews, and is also supported by the quantitative data, that more residents from the Casbah who are, in general, from a low income group are affected by the prices of the local shops than those from a colonial background, who are mostly from the high income group. Data show that only 43.8% of the high income group were dissatisfied with the prices of the shops, compared to 71.4% of the low income group. Increasing the prices of even the subsidised basic goods makes them difficult to afford for the low income group and especially for those with large families. The practice of charging high prices in Ain-Allah's shops can be explained by a lack of competition between shops, and a lack of effective control of prices by the local authorities. The nearest existing centres, where prices are reasonable, are located a long walking distance from Ain-Allah and they are, therefore, inconvenient to use for daily shopping. Residents are, consequently, forced to pay the prices of the local shops.

Summing up, it is found that residents' attitudes towards the location of the local shops, their number and the quality of their services are closely related to satisfaction with the new facilities.

The literature suggests that local shops should not be located more than 7 minutes' walking distance (or 600m) from the furthest dwelling. Findings in this research, however, reveal that the majority of residents with dwellings situated between 7 and 10 minutes' walking distance from the shops were satisfied. It can, therefore, be recommended that shops in the new urban housing projects are located not more than 10 minutes' walking

distance (650m to 700m) from the furthest dwellings.

It is also found that on account of the high prices in these shops, many low income residents were dissatisfied with the quality of the shops, whilst the higher income residents were dissatisfied because of the lack of choice of goods. These problems may be eased if new housing projects provided a sufficient number of shops (around ten for a housing project of 1,200 to 1,600 flats) and possibly an open market. These facilities should be functionnal on the arrival of the first settlers. The local council in charge of the management of the new project must ensure that the functionning shops are not concentrated in one part of the project, but are evenly distributed.

It is expected that a sufficient number of shops would also mean a wider choice of goods and reduced prices. Shops in the Casbah, for example, are numerous and provide a wide selection of items at reasonable prices, the result of there being a large number of shops and a daily open market, creating competition between shopkeepers.

7.2 LOCATION OF THE PRIMARY SCHOOL

The primary school in the new project under study is located equidistant from both ends of the project. The absence of even a concrete footpath and the dangers of crossing the RN 36 for the children living in the South part, however, caused a certain amount of dissatisfaction with its location. Using the same scale as for the local shops, findings suggest that most residents who

live less than 10 minutes away from the school were satisfied with its location, whilst many of those living more than 10 minutes (650m to 700m) away were dissatisfied, as shown by Table 17.

93% of the residents in cluster one (from the Casbah) situated in the South part of the project feared for their children's safety outdoors, compared to 65.6% in cluster two (from the colonial areas) in the North part. This is due to the schoolchildren from cluster two having to cross a road with heavy and fast moving traffic (RN 36) with no pedestrian bridge. As mentioned earlier, many parents pointed out the need for a bridge or at least traffic lights. Until a solution is found, each family has to arrange for an adult to accompany the children to and from school.

Data also shows that a close relationship exists between the location of the school and marital status. 45.9% of the married residents with children were dissatisfied and 25.9% were very dissatisfied with the location of the primary school. Dangers from cars are aggravated by the absence of footpaths or pedestrian streets leading to the school, which explains the great concern of parents. Some young couples were also concerned with the problem. 37.5% of them were dissatisfied and 12.5% were very dissatisfied with the location of the school. Their stage in the family life cycle caused some of them to be as affected by certain problems involving young children as the couples who already had children.

To sum up, as in the case of the local shops, it is suggested that the school is located within a walking distance, preferably less than 10 minutes (650m to 700m) from the furthest dwelling. However, distance is not the only criterion for the location of the school. Safe pedestrian and concreted footpaths linking the school with all the dwellings are necessary. Having to cross vehicular roads when going to school may considerably lower the level of satisfaction with the new facilities, especially amongst the married residents with children.

7.3 LOCATION OF OTHER FACILITIES AND QUALITY OF SERVICES

Ain-Allah's programme foresaw no defined facilities being implemented in the reserved ground floor spaces and, therefore, no particular design was provided for facilities needing a special internal layout, such as a mosque, library, health centre, etc.. The provision of institutional buildings, preferably in the centre of the neighbourhood, composed of many facilities such as a school, library, club, and a religious building, is considered necessary by many authors in planning neighbourhood units, as already discussed.

The regression analysis in the Ain-Allah study reveals that the location of religious, recreational, educational or sports facilities at a distance from the new project affects levels of satisfaction with the new facilities. Residents stated that they were particularly in need of a library, mosque, cafe and a nearby cinema, and also a health centre, a creche, a community youth club, telephone boxes and public lighting.

Residents were dissatisfied with the absence of a library in the new project and in the nearest centre of Dely-Brahim. The CNERU norms foresee a library at the district level (12,000 homes), however, the nearest library to the new project under study is located quite a distance away in the city centre. During informal interviews, many householders with children at school age suggested that the local council should use one of the empty, reserved ground floor spaces as a studying room. There would be no expenditure for the local council if this suggestion were put into practice other than a wage for one person to supervise, as the residents are not requesting the provision of books or a loan system.

64.3% of the residents stated that a mosque or even a prayer room was needed at the project level. It is discovered, from the few cases encountered during the survey, that the absence of a mosque could significantly affect some residents' level of satisfaction with the new facilities. The nearest mosque is located at Dely-Brahim which represents a long walk for a daily activity. Those affected by the location of the mosque are the residents who regularly visit it. Data shows that 61.3% of the elderly (60+ years) were dissatisfied with the location of the nearest mosque, compared to 40% of the young residents (20-35) and 44.3% of the middle-aged residents (36-60). The elderly people were mostly retired and some of them went to the mosque for all five of the daily prayers.

On account of their traditional way of life, residents from the Casbah said that they needed a nearby meeting place such as a cafe. The CNERU norms state that a mosque, cafe, creche, and youth club are necessary at the housing project level (1,200 to 1,600 flats), as shown in Figure b13. In fact, 68.9% of the respondents from the Casbah were dissatisfied with the lack of a cafe in the new project. The older people were also affected by the absence of a cafe at the project level and by the fact that the nearest cafe is located quite a distance from the project. A cafe and a mosque represent two of the rare places where elderly people like to meet and spend time together.

The majority of residents (82.4%) were satisfied with the public utilities in Ain-Allah. They were the responsibility of the contractor and were implemented at the same time as the flats. All the flats had their gas, electricity, water and sewage systems installed before the residents moved in. Almost all the streets inside the project were concreted and green spaces were reserved. The utilities, which were the responsibility of the local council, however, were still lacking after two years. No telephone lines or telephone boxes were available, no plants or trees had been planted, and no public lighting existed.

Informal interviews suggested that the high level of satisfaction with the public utilities in the new project can be explained by the very poor public services that residents experienced in their previous places of residence. Telephone boxes and trees are certainly necessary in a housing area, but they become a luxury compared to what many residents lacked in their previous places of residence. For example, some buildings

in one of the colonial areas (Bab-El-Oued) were deprived of water for a period of eleven months (El-Moudjahid of 15/09/1986). No rubbish system exists in the Casbah and its sewage system dates from the Othoman period, built around two hundred years ago. The lack and inefficiency of the public utilities that most Ain-Allah residents had experienced in their previous places of residence explains their satisfaction with the public utilities provided in Ain-Allah.

Informal discussions pointed out, however, a few minor problems with the public utilities of Ain-Allah. For example, residents urgently need public lighting. It appears from the informal interviews that residents blame the high number of car thefts in the area on the lack of public lighting.

To sum up, data suggests that the location of certain institutional and recreational facilities, such as a library, mosque and cafe, affects satisfaction with the new facilities. These facilities, together with others such as a creche and studying room (if a small library is not provided), are required at the housing project level (1,200 to 1,600 flats). An alternative which would provide maximum facilities at minimum cost would be to co-ordinate more than one activity in the same institution. For example, Shankland Cox suggests that in housing projects the local school is used for extra curricular community activities such as adult education and technical training in the evenings after school (1973). It is also found that putting the contractor in charge of implementing the facilities and public services would ensure their provision and functionning at the same time as the allocation of the flats.

7.4 LOCATION OF THE NEW PROJECT AND LACK OF PUBLIC TRANSPORT

In Ain-Allah, the choice of the site was made solely on the basis of free land, although its location does offer certain advantages in comparison to the location of some other new projects (ZHUN's). Ain-Allah is not very far, if an adequate transport system existed, from four nearby centres, namely, Dely-Brahim, Ben-Aknoun, Cheraga and El-Biar (Figure a4). Facilities, such as the APC (Town Hall), mosque, post office, middle school, open market, cinema, and other daily required facilities are provided in these centres.

The advantages which could have been provided by the location of Ain-Allah are spoiled by the lack of an efficient public transport system between the new project and the nearby centres. The difficulty of getting to the local centres helps to explain the high percentage of residents unhappy with the location of the new project (66.4%). Many residents stated that the new project is too far away from the city centre (68.3%) and the local and regional centres (63.9%). The reason for this is that most residents have to commute to the city centre where they work, or take a bus to their place of work. A choice, albeit limited, of recreational, educational and shopping facilities is also provided in the city centre.

The problem of the lack of an efficient means of transport in Ain-Allah is related to the transport situation in Algiers as a whole, as the new project is linked to the existing communication system. Public transport in Algiers is inefficient, unreliable and slow. Residents who do not own a car were asked to indicate

whether the location and the number of bus stops linking the new project to the rest of Algiers were satisfactory or not.

Findings reveal that 84.6% of the residents were unhappy with the number and location of the nearest bus stops. This result was anticipated as the nearest bus stop is located more than 20 minutes' walk from the furthest dwelling. Furthermore, this bus stop does not link the new project with all the other parts of the city where people may work. Most residents have to get to the bus station in Ben-Aknoun to catch their bus to work. It appears from the findings that the distance between the furthest dwelling and the bus stop should not exceed 15 minutes' walking distance (about 900m to 1,000m).

To sum up, the location of the new project at quite a distance from the city and neighbouring centres without the provision of an adequate public transport system adversely affects the level of satisfaction with the location of facilities. It is difficult for residents to commute to their places of work and to the nearby centres to shop and to use other cultural, recreational and educational facilities. It is suggested that the site of a new project is chosen to provide easy access to main line public transport, and to be close to the recreational, educational and industrial locations, if possible.

The inefficiency and unreliability of the transport system is a problem which concerns all parts of the city. Recommendations of the CNERU or the transport authorities, as discussed previously, must be put into operation at the city level. At the new project level, it is found that bus stops linking the project to the main transport system and to the city and nearby centres

are required and should be located no further than 15 minutes' walking distance (around 900m to 1,000m) from the furthest dwelling.

7.5 RESIDENTS' EXPECTATIONS FROM A NEW PROJECT

"Residents' expectations" here relates to the aspects considered to be important for a satisfactory new urban housing project. Defining these expectations could be of great assistance to architects and planners during the design phase of new urban housing projects. Some may argue that this definition is similar to people's involvement in the planning process. This is true to an extent, but generally when authors discuss people's involvement, they include all the participation phases, from the problem and community identification phase to the implementation phase (Kwok, 1983). People's involvement in this research, however, will be limited to the phase where residents can suggest aspects to be taken into account when the new area is being planned.

It appears from the opinions of the respondents in Ain-Allah that many of the present problems could have been avoided had the residents been consulted in the early stages of the planning of the new housing project. During informal interviews, some residents complained of the lack of meeting places, pedestrian streets and necessary facilities, the inconvenient location of the primary school and local shops, and, in particular, of problems with the features of their flats (Figure b9). Some residents with children would have liked to have a flat on the lower floors and were not given the choice. Others would have liked to live in

cluster one where they would have been close to local shops and to the Dely-Brahim centre. Again, these residents were not given the choice. In fact, the Ain-Allah residents were excluded from any form of involvement and this was evident from the frustration apparent during the informal interviews. Residents are extremely perceptive of anything which reflects on their self-esteem and integrity: choice and control of one's own activities emerge as key factors of residential satisfaction (Donelly, 1980).

When exploring how residents perceived involvement, it was found that they would have liked to have had the chance to discuss with the designers and local authorities the arrangement of the different spaces of their new physical environment and the location of the facilities. This is one of the many ways of allowing residents to participate. Discussing the plans of the new project and the design of the dwellings with the residents would have helped to stimulate the creativity of the architects and planners. The designers may consider something important which may be of little significance to the people for whom they are designing and vice versa (Peterson, 1967; Lansing and Marans, 1969).

Respondents were given a list of physical features and were asked to indicate the degree of importance to be accorded to each feature when planning a new housing project. The results suggest, for example, that residents attach great importance to the location of the primary school and local shops within a walking distance (7 to 10mins) and to the provision of a pedestrian network (Figure b12). However, designers of the new project did not attach a great deal of importance to these features, as

discussed earlier. It is also found that the importance accorded to the various physical features differed according to the social characteristics of the residents, in particular their family cycle and background.

People with different socio-economic characteristics have different goals and values. This ought to be taken into account by planners. People should be given the opportunity, resources and freedom to choose what they would like (Gans, 1968).

Residents of different family size, age group, income and marital status have different needs. To design new housing projects to satisfy the different socio-economic groups, it is necessary to meet their requirements. This is only possible by taking into account their social characteristics and determining their needs by carrying out a survey prior to the design stage of the new housing project.

7.6 SUMMARY

According to literature and to the CNERU recommendations, the school should be located at not more than 7 minutes' walking distance, or 600 metres from the furthest dwelling. In this research, however, it is found that people living less than 10 minutes' walking distance (650m to 700m) from the school were generally satisfied with the location. However, the lack of pedestrian routes to link the school with the buildings is found to be a source of dissatisfaction. Many residents feared for the safety of their children when going to school.

With regard to the local shops, the few shops in Ain-Allah, which are located mainly in the North part of the project, are not sufficient to provide competition and meet the residents' requirements. Prices are high and quality low. The provision of a sufficient number of shops (around 10 for a project of 1,200 to 1,600 flats) may help to ensure choice of goods and possibly reasonable prices. As is the case with the primary school, it is found that the majority of people living less than 10 minutes' walking distance from the local shops were satisfied with their location.

The absence of cultural, recreational, health and religious facilities, such as a library or studying room, mosque, cafe, emergency health centre and so on, in Ain-Allah and their location in other centres far from the area, are further sources of dissatisfaction. This is mainly a result of the location of the new project a distance from the city and secondary centres, and the inefficiency of the public transport system. A main bus stop located at a maximum of 900m to 1,000m from the furthest dwelling is necessary. The recommendations of the transport authorities in Algiers, already discussed, to link the new projects with the main centres of the city by a special and rapid bus service should be put into operation as soon as possible.

Findings reveal that involving residents in the planning of new housing projects is of great importance. People with different socio-economic characteristics and backgrounds have different needs and goals. Designers should plan "with" people, not "for" them, and discover their requirements and expectations. This can be achieved through a survey of the future residents'

opinions concerning the housing project, such as their preferences regarding the arrangements of the flats and buildings, the type of streets, and the location of the school, shops and other facilities. A project built taking people's opinions into account may fulfill the requirements of many residents, which in turn, will considerably increase their level of acceptance and satisfaction with the new housing project.

8. CONCLUSIONS AND RECOMMENDATIONS

This chapter sets out to suggest recommendations for planning and designing new urban housing projects in Algeria. The first section summarises the findings of the research. In the second section, the recommendations emanating from the research are discussed.

8.1 RESEARCH FINDINGS

The theme of this study is satisfaction with the new urban housing projects. The research explores the factors influencing satisfaction with the new social and physical environments. Emphasis was put on the effects of the new built form and group homogeneity on the process of friendship formation, and the relationship between friendship formation and satisfaction with the new project. The effects of residents' attitudes towards the arrangement of the flats and the layout of the buildings and facilities on the level of satisfaction with the new physical environment, were also emphasised.

As a result of the housing crisis in Algerian cities, the Government has launched, since 1975, important housing programmes (ZHUN's) where emphasis was put on the number of dwellings implemented. Consequently, little importance was accorded to the human factor and to the physical quality of these new projects. The design of the project under study is based mainly on the personal images of the designers. It is probably true to say that the designers knew little about the life styles of the future

residents and their requirements. The findings of this research suggest that the new physical environment hindered some of the residents' familiar outdoor activities. Residents were also unhappy about certain physical features of the new flats and the layout of the project, and with the lack of some facilities required on a daily basis or for social activities, such as a cafe, library and mosque. For example, outdoor spaces (streets and squares) and facilities (cafes and shops) in the traditional area (Casbah) are used by men for gathering and socialising. In the new project under study, however, the absence of a cafe and the lack of visual privacy between the outdoor spaces and the flats discouraged socialisation between residents and slowed down the rate of friendship formation between them.

The question raised in this research is to what extent does the design of the new projects meet the social and physical needs of the people who move to them, and how satisfactory do the residents find it. The objective of this study is, therefore, to propose guidelines, or a development programme, for new housing projects based on the findings of this research. This may help designers to provide new housing projects which encourage friendship formation and provide satisfactory flats and outdoor spaces, together with a range of facilities required on a daily basis or for social activities. It is expected that this would increase residents' level of satisfaction with the new projects.

In the new project, people had moved from different areas and had different socio-economic characteristics, giving rise to different needs and expectations, and this affects their evaluation of the new project. For example, people originating

from the Casbah (traditional area) are primarily concerned by the level of friendship and interaction between the new residents, whilst those from the colonial areas attach more importance to the physical features of the new projects. When planning a new project, importance should therefore not only be accorded to the arrangement of the physical built form, but also to the selection of its residents and the homogeneity of the group that is housed.

Many researchers have argued that common outdoor spaces promote friendly relationships between residents. In this research, however, findings show that the arrangement of the new buildings around large outdoor public spaces with direct visual contact between them affected the level of privacy of the flats. This problem hindered the outdoor social activities and slowed down the rate of friendship formation. Outdoor spaces in Islamic countries are mainly used by men. Having visual contact with the windows and balconies of the flats used by women for drying their washing and other household tasks discouraged the men from gatherings outdoors. Most outdoor activities observed were carried out in the evenings when darkness solves the problem of visual contact.

Analysis also reveals that the rate of friendship formation is more rapid among people who moved from the same place of residence and those who shared the same place of work than among those who moved separately to the area and who did not share the same place of work. Consequently, satisfaction with the new social life is found to be higher among the former. The second type of residents moved to a new environment where everyone was a stranger. For this group of residents, the rate of friendship

formation depended upon the number of opportunities for contact between new neighbours provided by the new physical built form. It is found that sharing the same landing, staircases and building access increases the opportunities for social contacts, which often leads to friendliness. The development of relationships between people who know one another into friendships depends to a large extent on their sharing similar backgrounds, social class, marital status and interests. Group homogeneity at the micro-scale is therefore important for encouraging friendship development which, in turn, increases the residents' level of satisfaction with the social relationships in the project.

Comparisons between clusters one and two (occupied by homogeneous groups) and cluster three (occupied by a heterogeneous group) suggest that physical proximity between heterogeneous residents may lead to friendliness but not necessarily to friendship, whilst proximity among homogeneous people promotes friendship formation. On the other hand, when assessing the effects of segregating large blocks of homogeneous groups, findings reveal that no friendship pattern existed between people from cluster one (originating from a traditional setting) and those from cluster two (originating from a colonial setting). These Two groups of residents were housed in two clusters located a long distance from one another and separated by a road with heavy traffic. In order to promote friendliness between heterogeneous groups and friendship between homogeneous groups, this study suggests "relative" homogeneity. It is proposed that flats are allocated in such a way that buildings are occupied by homogeneous residents and basic housing units by heterogeneous residents.

With regard to the physical environment, it is found that satisfaction with the new flats is strongly related to their size. The new flats (two and three bedroomed) are considered by residents to be fairly spacious although the average rate of occupancy per room (2.5 pers/room) is high compared to developed countries, for example. The housing shortage in Algeria has led to an overcrowding in dwellings, and the average rate of occupancy found in the case study is low compared to most dwellings in popular areas (Casbah and many colonial areas). This resulted in a high percentage of residents satisfied with the new flats.

Other features which can increase levels of satisfaction with the new flats are: Firstly, pleasant views: flats orientated towards pleasant scenery, with no buildings obstructing the view. Secondly, satisfactory orientation: preferably East and/or West. Thirdly, a high level of quietness: rest spaces (bedrooms) not facing playgrounds or roads. Finally, a high level of privacy: no visual contact between opposite flats and visual separation within the flats themselves between the guest room and the family spaces. Taking into account these findings when designing new projects will result in no extra cost, and may help provide new flats which will satisfy many of the new residents.

Findings reveal that satisfaction with the outdoor spatial organisation of the new project is related to the nature and function of the outdoor spaces. Comparing a basic housing unit with facilities at the ground floor level of its buildings with a basic housing unit composed only of residential buildings, it is found that there was a higher level of dissatisfied people in the former. The explanation may lie in the transformation of the

common space in the first basic housing unit from a semi-public space for local residents to a public shopping space used by most residents of the project, which resulted in a loss of privacy and a high level of noise disturbance.

The nature and function of outdoor spaces may also encourage social activities between residents. For example, the pedestrian streets of the Casbah, along which facilities are situated, are safe spaces where many activities take place: shopping, meeting, playing and chatting. The new vehicular streets, however, which support no facilities do not play the same role and are not as vital as the traditional streets, consequently, they are generally deserted and fulfill only one function: passage.

Satisfaction with the outdoor spatial organisation is also affected by the appearance of the new buildings and their arrangement with regard to the open spaces. Buildings with a pleasant appearance and well maintained open spaces are related to feelings of pride about living in the project, and consequently, increase levels of satisfaction. The use of the outdoor spaces designated for play purposes as car parks in the case study, however, is a source of dissatisfaction with the outdoor layout, as it detracts from the appearance of the project and results in a lack of safety for children.

With regard to the location of facilities, researchers have argued that the size and catchment area of a housing project is determined by the location of the primary school and local shops within a maximum of 5 to 7 minutes' walking distance from the furthest dwelling (500m). This research, however, suggests that the majority of residents living at less than 10 minutes' walking

distance (650m to 700m) from the local shops and primary school are satisfied with their location. The new projects can, therefore, have a larger catchment area than that suggested by the literature and by the CNERU. It is also found that the school and shops should be linked to all buildings by pedestrian paths or streets.

Analysis also reveals that locating a new project as close as possible to existing commercial centres would make the use of certain facilities required on a daily basis far easier, such as a mosque, cafe, health centre and phone boxes, which are not provided in the new project. It would also reduce the cost of connecting public utilities such as water, gas and sewage to the existing systems.

People with different life styles, backgrounds, incomes and life cycles have different needs and expectations with regard to the physical features of the new project, as shown in Figures b11 and b12. For example, people from the Casbah used to spend much of their time socialising in the local cafes and shops. This group of people were in need of such facilities in the new project. On the other hand, people from the colonial areas, who in general earned high salaries and owned cars, were able to go to places such as the cinema, theatre and parks. This group of people attached more importance to the provision of other facilities such as a library and a creche than to the provision of a cafe in the project. Learning about residents' socio-economic and cultural characteristics prior to the design phase of the project may help designers to provide the facilities which the different social groups greatly need.

The following section is concerned with the recommendations for designing and planning new urban housing projects based on the research findings, which may help to provide new environments that satisfy the requirements of the residents.

8.2 RECOMMENDATIONS FOR DESIGN

8.2.1 New Built Form and Friendship Formation

The findings of this research suggest that satisfaction with the new project is closely related to the formation of friendships and the interaction between new residents. It is, therefore, necessary to provide a new physical built form which may encourage opportunities for contact and ensure that residents are selected and housed in such a way as to accelerate the process of friendship formation.

a. Provide Physical Proximity

The analysis in this research reveals that friendship formation among people who moved separately is generated mainly by the number of formal and informal contacts between them. Informal contacts are provided primarily by physical proximity and by the use of the local facilities. Formal meetings held by the residents, such as discussions regarding the local problems, are other sources of contacts. It is also found that proximity between people who know one another facilitates interaction and gathering between them. Findings revealed that sharing the same landing, staircases, and outdoor spaces such as playgrounds,

increases opportunities for contacts which, in turn, encourages friendship formation.

It is, therefore, necessary that the designers provide physical proximity in their design for both people who moved together and separately. Physical proximity can be achieved by:

- Providing a common, semi-private space for the flats situated on the same floor in the form of a landing, and a common staircase for the buildings. These shared spaces, however, should not disturb the aural or visual privacy of the residents.

- Providing common outdoor spaces in the form of courtyards at the basic housing unit level which should be composed of about four or five buildings with a maximum of four storeys each serving 40 to 60 families, such as those in Ain-Allah. These courtyards, however, should have some meeting places for men which are protected from visual contact with the flats. This can be achieved by providing sheltered spaces in the form of facilities, such as a games room for the men to use. Trees can also prevent visual contact with the flats. In many colonial areas, men are found sitting under a tree which not only shades them from the sun, but also provides a suitable place for meeting and chatting, ensuring visual privacy from the nearby flats. The advantage of this suggestion is that it is not costly and can be implemented in existing housing projects which have the problem of visual contact, as is the case in Ain-Allah.

b. Outdoor Spatial Organisation and Social Activities

Residents, in particular those from a traditional background, may participate more often in outdoor activities if facilities such as sheltered open spaces were provided where they can gather with no visual contact with the nearby flats. Open spaces located some distance from the buildings and designated for games such as bowls, and a nearby enclosed space, where residents can chat and play games such as draughts, chess and cards, in the form of a cafe or a local club, would also be suitable places for gathering.

Informal contacts can be encouraged by the appropriate location of the facilities. In the traditional area (Casbah), for example, the location of the facilities required for daily social activities, such as local shops, mosque, and cafes on a main pedestrian street provides opportunities for people to meet when using the facilities.

Formal meetings and community work organised by residents are found to be an important source of social contacts. Apart from meetings which concern the discussion of the problems of the buildings, the O.P.G.I. could put the residents in charge of maintaining the new project and could provide them with tools, material and even money when required. This would be beneficial for both the residents, who would have control over their project, and the O.P.G.I., which would have fewer responsibilities and this would, in turn, help it to operate more efficiently.

It is apparent from the findings that emphasis should be placed on the role of privacy when designing for a Muslim community. Any open outdoor spaces designated for activities needing daylight should be located at a distance from the buildings, or it should be ensured that these spaces do not face the neighbouring buildings. Under no circumstances should any outdoor spaces used by adult male householders be close enough for the conversation to be overheard by the neighbouring flats, as this may disturb the residents of these flats.

c. Selection and Homogeneity of Residents

It is found that the development and maintenance of contacts established by proximity depend upon the level of homogeneity of the residents. Findings suggest that proximity leads to friendship with the presence of homogeneity and that physical segregation between two heterogeneous groups, in particular by income, may lead to a mutual rejection. The research suggests relative homogeneity as a way of encouraging friendship formation between homogeneous groups and friendliness between heterogeneous groups.

Residents with different marital status and age group can be located in the same building, but in harmony and by respecting their needs, such as their floor preferences for example, as illustrated in Figure b11. Elderly or married residents with children generally prefer the lower floors, while young couples and single residents prefer the higher. At the meetings held at the building level, for example, a resident of any marital status can find a resident from the same group with whom he can get on.

Housing heterogeneous groups in the same basic housing unit would encourage friendliness between residents from these groups and would avoid rejection between them, as discussed earlier.

A further feature which may assist group formation is for residents from the same company and those moving from the same area to be located in the same building, together with residents from other companies or those moving from a different area at the level of a basic housing unit. This will accelerate the process of group formation on one hand and on the other will avoid the segregation of residents by previous area of residence and/or place of work, observed in Ain-Allah and most new housing projects.

Relative homogeneity may even reduce the number of burglaries and car robberies observed mainly in the basic housing units occupied mainly by single and high income residents with working wives. If residents are housed in such a way as to achieve the suggested relative homogeneity, however, each basic housing unit would be occupied by a mixture of different types of families. Therefore, there would not be basic housing units which are easy targets for robberies. Relative homogeneity could, therefore, increase the residents' feelings of safety and of trust and confidence between residents, which may encourage the formation of friendship between them.

8.2.2 Flat Design

It is found in this study that people attach great importance to the level of comfort and privacy that the new flats provide. By "comfort", spaciousness, pleasant views, quietness and satisfactory orientation, are meant.

a. Spaciousness

The flats should be spacious enough for the size of the families moving into them. This research suggests that in Algeria a density of 2.5 pers/room can be considered as the aim. The allocation of these different sized flats should be made on the basis of the size of the applicants' families. With the average size of an Algerian family varying between six and eight, families with less than six persons should be allocated the two bedroomed flats, whilst families with six persons or more should be allocated the three bedroomed flats.

b. Pleasant Views

The windows of the bedrooms and the living room should provide views as pleasant as possible. Orientation towards scenic views or wide green spaces is desirable. Buildings should be built in such a way that they do not block the views from other flats. The site can be located on a slope as in the Casbah which provides panoramic views overlooking the sea and ensures that all the homes enjoy the views. This orientation, however, should not be provided at the expense of privacy. The windows and balconies should not overlook the main street, and window to

window visual contact should be avoided by providing sufficient distance between opposite buildings (20m to 30m as is the case in Ain-Allah) or by orientating the buildings in different directions.

c. Quietness

Noise disturbance should be kept to a minimum. This can be done by reducing the effect of each of the sources of noise, discovered in this study. This can be made possible by:

- Providing a fairly large space (2m to 3m as in many colonial areas) separating the playgrounds and the flats, which should be reserved for greenery and small trees. This separation will also be very useful in ensuring sufficient visual privacy for the ground floor flats, a problem which most residents experienced. This can also be done in existing housing projects suffering from this problem as in Ain-Allah.

- Avoiding an orientation of the rooms requiring quietness (bedrooms for example) onto the playgrounds and roads.

- Avoiding having a road with heavy traffic near the project, and ensuring a hierarchy in the roads and streets near and in the project area. The basic housing units should be pedestrian or, if necessary, have a very low level of car intrusion. This, however, should not be done at the expense of providing car parks. The first layout suggested for Ain-Allah, as illustrated in Figure a6, represents a good reference.

- Using brick walls for both external and party walls instead of the prefabricated wooden or plastered walls used in Ain-Allah. Brick walls would not only reduce noise disturbances, but would also be cheaper. The cost of prefabricated walls is high taking into account that in most cases they are imported and their assembly requires special tools and qualified workers.

d. Satisfactory Orientation

The windows of the flats should be large and orientated in such a way as to receive the warm sun of the morning and afternoon and avoid the hot sun of midday. Designers should attempt to orientate the bedrooms and living room East and/or West to enjoy the sun in the morning and/or afternoon. It is preferable to orientate the kitchens North-East or North-West to receive the sun during the early morning or late afternoon. This orientation ensures that the amount of sun received and its strength will not damage the food. If these suggested orientations could not be achieved, sun breakers could be used. The distance between opposite buildings should be proportionate to their heights in order to avoid having the lower floors shadowed. For this purpose, the distance between buildings in Ain-Allah (20m to 30m) is adequate.

Open balconies are preferred to the partly closed loggias of the new project. It may also be useful to use the terraces of the buildings as large meeting spaces for women and play areas for children. Such spaces would have the same role as the West-Dar

(courtyard) and terraces of the Casbah. This would provide maximum aural and visual privacy for women, and would be suitable places for them to gather and socialise.

e. Appropriate Internal Layout

The internal layout of the flat should ensure privacy from the guests, and a separation between the rest and activity spaces. The internal layout of the Ain-Allah flats was judged satisfactory by residents. The living room, also used as a guest and dining room, should be situated at the entrance and should not communicate visually with any other room. The kitchen should be close to the living room. These two rooms are the spaces where most daily activities take place, and so they are relatively noisy. The rest space (bedrooms) should be situated at the other end of the flat to provide maximum quietness and privacy.

Certain extra features inside the flat should also be considered. The height of the ceilings in the new project (2m80) is considered by residents to be too low. A height of 3m10 to 3m30, as in most colonial flats, is desirable, but represents additional cost. However, if the building materials used are cheaper (local bricks instead of imported prefabricated walls, as recommended earlier), the amount of money saved could cover the extra cost of providing higher ceilings.

8.2.3 Location of Facilities and Layout

The layout of a new project should ensure that the facilities required by the different socio-economic groups are located within a short walking distance from the flats (Figure b12). The new project should also be designed in such a way as to provide pleasant surroundings. The number and size of the facilities to be provided are related to the size of the community and the degree of importance that residents attach to each facility. The layout of a new housing project should provide:

a. A Pleasant Appearance

The new project should be kept tidy, and have attractive buildings and well organised spaces. Residents can be involved in maintaining the green spaces, planting trees and flowers, erecting fences etc.. This is possible by encouraging group formation, as recommended earlier, and by providing the necessary material through the OPGI.

The buildings should be well spaced, as in Ain-Allah, and organised in such a way as to form secluded open spaces for green and playground spaces. Prototype buildings can be used as long as they have a pleasant appearance. However, a variety in the appearance, height, shape and form of the buildings, as in the Casbah, is desirable, but is also time consuming and costly.

b. Sufficient Well Located Open Spaces

Sufficient spaces for greenery and play purposes should be provided. The spaces for greenery and play in the new housing project under study are large (more than 1000m^2 for each basic housing unit) but lack safety. The playgrounds in future new housing projects can be concreted or green spaces, the latter being much safer for young children. The playgrounds should be safe from cars and large (around 600m^2 for each basic housing unit serving 40 to 60 families, as recommended by the CNERU). It is suggested that a similar organisation to the original layout of Ain-Allah can be used as a reference, where the buildings are organised in the form of small basic units around pedestrian courtyards used as playgrounds (Figure b6). Families with young children should have a choice with regard to living in flats near the playgrounds. It is also suggested that in Ain-Allah the local authority should put into operation the original layout of the project by stopping cars from entering the common spaces at the level of the basic housing units. This is possible to achieve by simply erecting barriers, which can be removed in case of an emergency such as fire, in the streets leading to the common spaces. Cars will have to use the car parks originally designated.

c. Layout and Function of the Spaces

A new project can be linear, as most of the new projects tend to be, inspired by the colonial linear streets. To create vitality in the linear street, which is intended to be the back bone of the project, it is preferable that the linear street is pedestrian and that all the facilities are located along it, creating a commercial street, where people can meet and chat when doing their shopping, as in the colonial areas. The linear street should not run through the common spaces of the basic housing units, but should act as a boundary for them. Facilities are not desirable inside the basic housing units as they tend to alter the nature of the common spaces from semi-public to public spaces. Having shops with entrances on a street would not only avoid the problem of transforming the courtyards into public spaces, but would also create a commercial street which may encourage social gatherings.

On the other hand, a new project can be organised in a concentric model, although this has recently been the subject of criticism by many urban designers for being a rigid model. One advantage of a concentric layout with the facilities located in the centre is the short walking distances it creates for the surrounding dwellings, together with the possibility of providing a large shopping centre with all the various facilities so that residents need not make multiple shopping journeys to different places. The provision in this centre of meeting places and facilities such as cafes would bring more people together and facilitate the process of group formation.

The original plan of the high part in Ain-Allah could be used as a reference for the layout of the streets and roads, if facilities are situated along the main pedestrian street rather than inside the common spaces. The vehicular road should be used as a physical boundary to the project. Car parks (two spaces for every three families, as recommended by the CNERU and put into operation in many ZHUN's) should be located along this road, and be used as a separating space between the pedestrian and vehicular areas. Some green spaces between the different car parks and between the car parks and the buildings would improve the appearance of the project.

d. Location of the School and Shops

The school, together with the local shops, should be located less than 10 minutes' walking distance from the furthest dwelling (650m to 700m). The school and shops should be located far from vehicular roads and linked to the basic housing units by concreted footpaths. It is, however, necessary to provide a car park and car access to the school, separated from the pedestrian access. If a vehicular road has to be crossed by children when going to school, as in Ain-Allah, a bridge should be provided.

e. Other Necessary Facilities

Certain facilities which are often needed by the residents should be provided in a new housing project or at least at the closest neighbouring centre. Therefore, the facilities required by future residents who may be of different age group, income,

marital status, etc. should be defined in terms of their size and location, and foreseen at the very early stages of the project (Figures b11 and b12). This information could be gathered through a survey.

The successful applicants for new flats should be selected by the local municipalities before the new housing project is designed. It is then necessary to carry out a survey among the future residents. This survey should be concerned with residents' opinions regarding the future new housing project; For example, their preferences as to the new housing spatial organisation, types of streets, location of primary school, shops, mosque and other facilities, management of the new project, and also the ways in which flats are allocated. Residents should be given the chance to choose their own flats on the basis of the storey they would like, the preferred orientation, its location with regard to playgrounds, school, car park, and so on.

Providing a sufficient number of shops, as shown in Figure b13 and ensuring that they are functional on the arrival of the residents would encourage competition. This may result in the local shops supplying the necessary goods, offering a choice of these goods, and charging reasonable prices. Locating the project close to an existing centre or providing a large shop run by the local authority would also force the local shops to drop their prices and offer a better service, which would be very beneficial, especially to residents with low incomes and those with large families.

With regard to other facilities and public services, a new project should be accompanied by the necessary range of cultural, recreational and religious facilities (Figure b13). The facilities should be purposely built. The appropriate location of each facility, its shape and its internal layout should be determined at the design stage. The policy of reserving spaces on the ground floors of some buildings is costly and not practical. If purposely built facilities were provided in Ain-Allah, the 120 reserved spaces could have been allocated as flats for housing many families. It is suggested that all the present unused spaces in Ain-Allah are attributed as flats. Also, if the required facilities were foreseen according to the size of the project (Figure b13), their number would have been much lower than the 120 reserved spaces. This would have represented a significant cut in the cost of the project.

Residents moving to a new project expect to find the necessary facilities available, especially those they need for their social activities:

- A studying room or small library if the library of the nearest centre is not within walking distance. If it is not possible to provide a studying room, the school's library or studying room could be used after school. In fact, the school could be used for many activities in the evenings by the adults. Meetings, debates, courses, etc. could be organised. The use of a facility for multiple purposes would help reduce the need for building several cultural facilities.

- A prayer room or a mosque if the mosque of the nearest centre is not within walking distance, especially if there are many elderly people.

- A cafe situated with the shopping facilities, or in the shoping centre if one exists, especially if some of the residents moving to the project have a traditional background.

- A bus stop linking the project with most parts of the city or with a major bus station, from which residents who are not car owners would benefit. The bus stop should be located just on the outskirts of the project. The transport problem concerns the city as a whole and therefore the suggestions of the C.N.E.R.U. detailed in the previous chapter should be heeded.

- A small health centre in the area is necessary for a housing project varying between 1200 and 1600 flats (Figure b13).

- A creche in the area, especially when there are many young couples and high income residents with working wives.

- A youth club to be equipped with educational and recreational games. Sports facilities may also be included in the club. This would be a suitable place for people socialising, in particular for those with a traditional background.

- Telephone boxes, public lighting, concreted footpaths and rubbish rooms equipped with closing doors.

8.3 RECOMMENDATIONS FOR PLANNING

The present policy of renting and selling at high prices should be reviewed as many residents consider the monthly rents or repayments instalments high. The present policy of distributing the flats should also be changed as soon as possible to put an end to multiple problems, such as the imbalance in densities per flat and per area, created by this policy. Encouraging forms of development other than the ZHUN's, such as private housing and self-building (as detailed in Appendix 4), would also help reduce the housing shortage. These suggestions could be put into practice by:

8.3.1 Reviewing the Rents and Mortgages

The rents set should be related to the income of the residents and should not exceed a quarter of their salaries. If the rent is to be standard for all residents, financial help should be given by the state for those earning low salaries (if the rent is higher than a quarter of their salaries).

The mortgage system provided by the C.N.E.P. should be revised. It is difficult, even for some high income residents, to afford to pay the monthly instalments. The present prices of the flats could not be reduced as they represent almost the cost price, and the interest charged is already very low. The length

of the period of repayment of the loan determined according to the total household income may result in the instalments becoming more affordable by many buyers. It is suggested in this research that to make monthly instalments affordable for all highly ranked government employees, the period of repayment should be extended from 25 years to 35 years.

The policy of encouraging people to own their homes should be reinforced, especially for those building their own houses. Self-builders should be helped by being provided with the necessary building materials in the shortest time possible. The bureaucracy in administration procedures in this context should be eased. However, it is very important to ensure that the plots of land acquired by self-builders are not located on agricultural land and do not contravene any of the P.U.D.'s suggestions for land use.

8.3.2 Altering the Policy of Allocating the Flats

The policy of allocating the flats should ensure that a balance in the rate of occupancy by flat and by area exists. It is not acceptable to allocate a three bedroomed flat to a single applicant when other succesful applicants with large families are housed in two bedroomed flats. Distributing the flats mostly to the highly ranked workers keeps the pressure on popular areas where people are generally lowly ranked workers, and contributes to the overcrowding of these areas. Some suggestions for change in the allocation policy are:

- The D.U.C.H. should be the only body in charge of the distribution of the flats. All municipalities and companies should inform the D.U.C.H. of the identity of the succesful applicants benefitting from a flat. This measure would discourage the illegal practices of some highly ranked workers who have been allocated more than one flat.

- The number of flats allocated by companies should be sharply reduced. The allocation of flats through the municipalities which study the applications and select on the basis of the most needy should be encouraged and widely used.

8.3.3 Encouraging Other Types of Development

Development in the form of ZHUN's is the most widespread in Algeria but other types of development, such as co-operative housing and private housing projects, exist and may be of great help in reducing the housing shortage if they were encouraged, as detailed in Appendix 4. The design recommendations discussed earlier for the ZHUN's can also be applied for these types of development, as they are fairly similar to the ZHUN's.

Firstly, housing co-operatives are not popular, but as long as some people can afford to build their own houses through this practice, they should be encouraged. As the housing co-operatives are financed by the residents, this contribution may help to lessen the housing shortage. However, the residents should be more involved in the projects, and the monthly instalments made

more affordable (not more than a quarter of the resident's salary, as recommended in this research) to attract a greater number of people from different social classes.

Secondly, private housing projects could be very helpful to the Government in reducing the housing shortage. However, strict rules and laws concerning the number and size of the projects allowed for each promoter should be laid down. Rules concerning the rent policy, especially the amount charged, to be applied in these projects when finished should also be laid down. The objective will be to avoid project owners monopolising the accommodation market in the future and imposing their own rules on tenants.

For every type of development, however, whether public or private, it should be ensured that in every project, a minimum density rate of 70 dwellings per hectare (approximately 400 to 500 persons per hectare), suggested in the PUD, is respected. It is unwise to waste land by allowing very low density projects to take place when most sites in the northern cities are close to saturation. It may therefore be useful if the Government were to encourage the expansion of the small cities of the high plateaux or encourage the creation of new towns which would absorb some of the residents of the overcrowded northern cities and this would help put an end to their alarming growth.

8.3.4 Providing a Convenient Location for the New Projects

The location of a new housing project should be chosen in such a way that:

- The site provides attractive scenery and views if possible.

- The housing project can be served by an existing road system and public transport.

- The housing project is within walking distance of existing recreational and educational places, together with jobs, if possible.

- The housing project is within walking distance of existing estates or commercial centres to reduce the cost of connecting the project to the city's sewage, gas, water, telephone and electricity systems.

If the new project is not close to a major regional centre, it is very important to provide an efficient and frequent transport link with the city centre. The provision of special 12 seater buses, for example, as suggested by the transport authority to link the ZHUN's with the major parts of the city would alleviate the problem of transport.

To sum up, it is found in the present research that a number of social and physical features of the new housing project under study did not fulfill residents' needs and expectations. This has, in turn, affected their level of satisfaction with their new environment. It is found that housing two heterogeneous groups of

residents in separate housing clusters led to a lack of friendliness between them. However, housing heterogeneous groups in the same basic housing units encouraged the development of friendly relationships between them. The lack of facilities where residents can gather, such as a cafe, and the lack of privacy in the outdoor spaces, resulting from their direct visual contact with the flats, limited the occurence of outdoor social activities and slowed down the process of friendship formation.

With regard to the new physical environment, the allocation of flats to residents without taking into account their family sizes resulted in some small families being allocated three bedroomed flats, whilst large families were allocated two bedroomed flats. A further problem with the flats was their orientation. Some flats did not receive enough sunlight or were not orientated towards pleasant views. Certain features of the outdoor layout also affected residents' level of satisfaction with the new physical environment. The lack of pedestrian safety on the streets leading to the school and shops, together with the inadequate size of the green spaces and the playgrounds represented a source of concern to residents, especially those with young children. Finally the new project did not provide the facilities required on a daily basis or those used for social and cultural activities, such as a mosque, library, youth club, creche, etc.. This did not only result in dissatisfaction with the new facilities but it also reduced the opportunities for social gatherings between residents.

It is suggested that in new housing projects, flats are allocated in such a way that heterogenous groups are housed in the same basic housing units but buildings are occupied by homogeneous groups. It is also necessary that the new built form is arranged in such a way as to provide facilities and outdoor spaces sheltered from visual contact with the flats to encourage outdoor gathering and social activities. This, in turn, is expected to encourage friendship formation between the new residents and increase their level of satisfaction with the new social environment.

The new flats should be allocated according to the family size, and designers should attempt to provide a satisfactory orientation, a high level of quietness and an internal layout which ensures privacy between the guest room and family rooms. Satisfaction with the new physical environment can also be increased if a pedestrian network of footpaths or streets linkings buildings with the shops, school and playgrounds exists. It is also recommended that facilities required on a daily basis or used for social activities are purposely built and located preferably along a main street or arranged as a compact centre. It should be borne in mind that these facilities should not be located more than 10 minutes' walking distance (650m to 700m) from the furthest dwellings. This may help to establish a hierarchy of spaces in the area. The street supporting the facilities, or the commercial centre, will be the public space, used by all residents; whilst the common spaces will be semi-public spaces used by the local residents only.

The above suggestions may assist in designing new physical environments which fulfill the residents' needs for satisfactory flats, suitable outdoor spaces for socialising and the required facilities. This may, in turn, increase residents' level of satisfaction with the new housing projects.

BIBLIOGRAPHY

BIBLIOGRAPHY:

Abdel Hai, S. (1981) "The Third World View: Planning Consultancy in the Developing World", THIRD WORLD PLANNING REVIEW, Vol.3, No.2, May, pp.133-140.

Allan, G.A. (1979) SOCIOLOGY OF FRIENDSHIP AND KINSHIP, London, Allen and Unwin.

Back, K. (1962) SLUMS, PROJECTS AND PEOPLE, Durham, NC: Duke University Press.

Bardo, J.W. and Hartman, J.J. (1982) URBAN SOCIOLOGY, USA, F.E. Peacock Publishers.

Bauer, Catherine (1951) "Social Questions in Housing and Community Planning", JOURNAL OF SOCIAL ISSUES, Special Housing Issue, pp.1-34.

Benamrane, Djilali (1980) CRISE DE L' HABITAT: PERSPECTIVES DE DEVELOPEMENT SOCIALISTE EN ALGERIE, Algiers, S.n.e.d.

Becker, F.D. (1977) HOUSING MESSAGES, Stroudsberg, Dowden Hutchinson and Ross Inc.

Bell, W. and Boat, M.D. (1957) "Urban Neighbourhood and Informal Social Relations", AMERICAN JOURNAL OF SOCIOLOGY, Vol.62, January, pp.391-398.

Benatia, Farouk (1978) L' APPROCHE DE L' ESPACE A ALGER APRES 1962, Algiers, S.n.e.d.

Benatia, Farouk (1981) ALGER : AGREGAT OU CITE, Algiers, S.n.e.d.

Blau, Z. (1961) "Structural Constraints on Friendship in Old Age", AMERICAN SOCIOLOGICAL REVIEW, Vol.26, pp.429-439.

Blowers, A.T. (1970) "Council Housing. The Social Implications of Layout and Design in an Urban Fringe Estate", TOWN PLANNING REVIEW, Vol.41-1, January, pp.80-92.

Blowers, A.T. (1973) "Planning Residential Areas", in Open University (ed.) PLANNING AND THE CITY, Sussex, Coes Printers Ltd., pp.91-139.

Blowers, A.T. (1973) "The Neighbourhood: Exploration of a Concept", in Open University (ed.) THE CITY AS A SOCIAL SYSTEM, Sussex, Coes Printers Ltd., pp.49-90.

Bourne, L.S. (1971) INTERNAL STRUCTURE OF THE CITY, London, Oxford University Press.

Brebner, B. (1981) "Algeria : The Transformation of a Settlement System", THIRD WORLD PLANNING REVIEW, Vol.3, No.1, pp.43-56.

Brink, S. and Johnston, K.A. (1979) "Housing Satisfaction: The Concept and Evidence From Home Purchase Behaviour", HOME ECONOMIC RESEARCH JOURNAL, Vol.7, pp.338-345.

Brown, Hedy (1973) "Man and His Environment : a Psychological Introduction", in Open University (ed.) THE CITY AS A SOCIAL SYSTEM, Sussex, Coes The Printers Ltd., pp.13-41.

Buchanan, C. (1966) SOUTH HAMPSHIRE STUDY, Supplementary Vol.1, London, H.m.s.o.

Bulmer, M. and Warwick, D.P. (1983) SOCIAL RESEARCH IN DEVELOPING COUNTRIES: SURVEYS AND CENSUSES IN THE THIRD WORLD, Bath Avon, The Pitman Press Ltd.

Burisch, M. (1979) "Can Housing Quality Be Measured Objectively", Paper to the Third International Conference on Environmental Psychology, University of Guildford.

Burns, Wilfred (1967) "Presidential Address", JOURNAL OF THE TOWN PLANNING INSTITUTE, Vol.53, No.8, pp.329-333.

Buttimer, Anne (1972) "Community", in Murray Stewart (ed.) THE CITY: PROBLEMS OF PLANNING: SELECTED READINGS, Suffolk, Richard Clay Ltd., pp.195-216.

Cameron, G. (1980) "Housing Densities for Developing Countries : a Discussion Paper", THIRD WORLD PLANNING REVIEW, Vol.1, No.2, pp.45-53.

Campbell, A.; Converse, P.E. and Rodgers, W.L. (1976) THE QUALITY OF AMERICAN LIFE: PERCEPTIONS, EVALUATIONS, AND SATISFACTIONS, New York, Russll Sage Foundation.

Caplow, T. and Foreman, R. (1950) "Neighbourhood Interaction in a Homogeneous Community", AMERICAN SOCIOLOGICAL REVIEW, Vol.15, No.3, pp.357-366.

Carey, L. and Mapes, R. (1972) THE SOCIOLOGY OF PLANNING : A STUDY OF SOCIAL ACTIVITY ON NEW HOUSING ESTATES, London, Batsford.

Case, F.D. (1981) "Dormitory Architecture Influences: Patterns of Students Social Relations Over Time", ENVIRONMENT AND BEHAVIOUR, Vol.13, No.1, January, pp.23-41.

Chatterjee, L. and Nijkamp, P. (1983) URBAN AND REGIONAL POLICY ANALYSIS IN DEVELOPING COUNTRIES, Aldrshot (Hants), Gower Publishing Company Ltd.

Chaulet, C. (1973) "Famille et Habitation", Paper for the First National Seminar on The Rural Housing, Algiers, 20th-24th of March 1973.

Cherry, G.E. (1970) TOWN PLANNING IN ITS SOCIAL CONTEXT, London, Leonard Hill.

Clarke, B.D. (1980) "Urban Planning : Perspectives and Prospects", in G.H. Blake and R.I. Lawless (eds.) THE CHANGING MIDDLE EASTERN CITY, London, Croom Helm.

C.N.E.R.U. (1980) Z.H.U.N. AIN-ALLAH : DOSSIER DE CREATION, Algiers, C.n.e.r.u.

C.N.E.R.U. (1981) EL-DJAZAIR 81 : LE POINT DE L' URBANISME, Algiers, C.n.e.r.u.

C.N.E.R.U. (1981) ALGER. PUD, OPTIONS ET SCHEMAS : RAPPORT DE SYNTHESE, Algiers, C.n.e.r.u.

C.N.E.R.U. (1981) ALGER. PUD, OPTIONS ET SCHEMAS : RAPPORT GENERAL, Algiers, C.n.e.r.u.

C.N.E.R.U. (1983) Z.H.U.N.'s : REFERENCES DE PLANIFICATION ET INFRASTRUCTURES EXTERNES, Algiers, C.n.e.r.u.

C.N.E.R.U. (1986) P.U.P. DELY-BRAHIM, Algiers, C.n.e.r.u.

Cohen, J.C. and Uphoff, N.T. (1977) "Rural Development Participation : Concept and Measures for Project Design, Implementation and Evaluations", MONOGRAPHE SERIES, No.2, p.7, Rural Development Committe, Center for International Studies, Cornell University, Ithaca: N.Y.

Coleman, Alice (1985) UTOPIA ON TRIAL: VISION AND REALITY IN PLANNED HOUSING, London, King's College London.

Collison, P. (1954) "Town Planning and the Neighbourhood Unit Concept", PUBLIC ADMINISTRATION, Vol.32.

Cote, M. (1983) "La population d' Algerie", MEDITERRANEE: REVUE GEOGRAPHIQUE DES PAYS MEDITERRANEENS, No.4, Nice, pp.95-100.

Darke, J. and Darke, R. (1969) "Physical and Social Factors in Neighbourhood Relations", Centre for Environmental Studies: Working Paper 41, August 1969.

Darke, J. and Darke, R. (1969) MOSBOROUGH MASTER PLAN, Sheffield, Sheffield Corporation.

Deluz, J.J. (1984) APERCU CRITIQUE SUR L' ARCHITECTURE ET L' URBANISME A ALGER, Algiers, Ecole Polytechnique d'Architecture et d'Urbanisme.

Denzin, N.K. (1970) THE RESEARCH ACT IN SOCIOLOGY, Chicago (Illinois), Aldine Publishing Company.

Denzin, N.K. (1970) "Rules of Conduct and the Study of Deviant Behaviour : Some Notes on the Social Relationships", in G.J. McCall, M.M. McCall, N.K. Denzin, G.D. Sutlles and S.B. Kurth (eds.) SOCIAL RELATIONSHIPS, Chicago, Aldine Publishing Company, pp.62-94.

Dobriner, W.M. (1969) SOCIAL STRUCTURES AND SYSTEMS : A SOCIOLOGICAL OVERVIEW, California, Goodyear Publishing Company.

Donnelly, D. (1980) "Are We Satisfied With 'Housing Satisfaction'", THE BUILT ENVIRONMENT, Vol.6, No.1, pp.29-34.

Doornkamp, J.C. (1982) "The Physical Basis for Planning in the Third World", THIRD WORLD PLANNING REVIEW, August, Vol.4, No.3, pp.213-221.

Dorfman, P.W. (1979) "Measurement and Meaning of Recreation Satisfaction", ENVIRONMENT AND BEHAVIOUR, Vol.11, No.4, pp.483-510.

Durand, R. and Echart, D. (1973) "Social Rank, Residential Effects and Community Satisfaction", SOCIAL FORCES, Vol.52, pp.74-85.

Durham County Council (1976) COUNTY STRUCTURE PLAN : REPORT OF SURVEY, Durham, Durham County Council.

El-Moudjahid of 01/ 08/ 1978 "Un Immeuble s' Effondre a la Casbah...1 Mort et 2 Blesses", in Jaffar Lesbet (ed.) LA CASBAH D' ALGER, Algiers, Office des Publications Universitaires, p.227.

El-Moudjahid of 15/ 09/ 1986, ALGER AU CRIBLE, Algiers, P.9.

Essex County Council (1973) A DESIGN GUIDE FOR RESIDENTIAL AREAS, Essex, Essex County Council.

Fathy, H. (1973) ARCHITECTURE FOR THE POOR, Chicago, University of Chicago.

Festinger, L.; Schacter, S. and Back, K. (1950) SOCIAL PRESSURES IN INFORMAL GROUPS, New york, Harper.

Festinger, Leon (1951) "Architecture and Group Membership", JOURNAL OF SOCIAL ISSUES, Vol.27, No.1-2, pp.152-163.

Festinger, L. and Katz D. (1953) RESEARCH METHODS IN THE BEHAVIOURAL SCIENCES, New York and London, Holt- Rinehart Winston.

Fisher, F. (1976) THE URBAN EXPERIENCE, New York, Harcourt Brace Jovanovish.

Foley, D.L. (1960) "British Town Planning : One Ideology or Three?", BRITISH JOURNAL OF SOCIOLOGY, Vol.11, pp211-231.

Foote, N.; Abu-Lughod, J.; Foley, M. and Winnick, L. (1960) HOUSING CHOICES AND HOUSING CONSTRAINTS, New York, Mc Graw Hill.

Franck, K.A. (1980) "Friends and strangers: The Social Experience of Living in Urban and Non-Urban Settings", JOURNAL OF SOCIAL ISSUES, Vol.36, No.3, pp.52-71.

Fried, M.E. and Gleicher, P. (1961) "Some Sources of Residential Satisfaction in an Urban Slum", JOURNAL OF THE AMERICAN INSTITUTE OF PLANNERS, VOL.27, PP.305-315.

Friedmann, John (1973) RETRACKING AMERICA : A THEORY OF TRANSACTIVE PLANNING, New york, Anchor Press.

Front de Liberation Nationale (1976) CHARTE NATIONALE, Algiers, Editions Populaires de l' armee.

Galster, G.C. (1980) CONSUMERS' HOUSING SATISFACTION, IMPROVEMENT PRIORITIES, AND NEEDS. Columbus: Center for Real Estate Education and Research, Ohio State.

Galster, G.C. and Hesser, G.W. (1981) "Residential Satisfaction: Compositional and Contextual Correlates", ENVIRONMENT AND BEHAVIOUR, Vol.13, No.6, November, pp.735-758.

Gans, H.J. (1961) "The Balanced Community : Homogeneity or Heterogeneity in Residential Areas?", JOURNAL OF THE AMERICAN INSTITUTE OF PLANNERS, Vol.27, No.2, August, pp.176-184.

Gans, H.J. (1961) "Planning and Social Life : Neighbour Relations in Suburban Communities", JOURNAL OF THE AMERICAN INSTITUTE OF PLANNERS, Vol.27, No.2, pp.134-140.

Gans, H.J. (1962) THE URBAN VILLAGERS: GROUP AND CLASS IN THE LIFE OF ITALIAN- AMERICANS, New york and London, Free Press and Collier-MacMillan.

Gans, H.J. (1967) THE LEVITTOWNERS : WAYS OF LIFE AND POLITICS IN A NEW SUBURBAN COMMUNITY, London, Allen Lane the Penguins Press.

Gans, H.J. (1968) PEOPLE AND PLANS : ESSAYS ON URBAN PROBLEMS AND SOLUTIONS, New york and London, Basic Books.

Gans, H.J. (1972) "Planning for People, not Building", in Murray Stewart (ed.) THE CITY: PROBLEMS OF PLANNING, Suffolk, Richard Clay Ltd., pp.363-384.

Garret, Eckbo (1964) URBAN LANDSCAPE DESIGN, New york and London, Mc Graw-Hill.

Garret, Eckbo (1978) HOME LANDSCAPE : THE ART OF HOUSE LANDSCAPING, New York and London, Mc Graw-Hill.

Giner, Salvador (1972) SOCIOLOGY, Oxford, Martin Robertson.

Glaser, N. (1967) "Housing Problems and Housing Policies", in J. Hadden et al (eds.) METROPOLIS IN CRISIS, Itasca, IL: Peacock.

Goss, Anthony (1961-62) "Neighbourhood Units in British New Towns",TOWN PLANNING REVIEW, Vol.32-1, April, pp.66-82.

Goss, Anthony (1968) HOMES, TOWNS AND TRAFFIC, London, Faber.

Guterman, S.S. (1968) "Defence of Wirth's Urbanism as a Way of Life", AMERICAN JOURNAL OF SOCIOLOGY, Vol.74, pp.229-299.

Haber, G.M. (1977) "The Impact of Tall Buildings on Users and Neighbours", in Conway (ed.) HUMAN RESPONSES TO TALL BUILDINGS, Stroudsburg, PA: Dowden, Hutchinson and Ross, pp.45-57.

Halmos, P. (1952) SOLITUDE AND PRIVACY : A STUDY OF SOCIAL ISOLATION, ITS CAUSES AND THERAPY, London, Routledge and Kegan Paul.

Hamovitch, M.B. and Peterson, J.E. (1969) "Housing Needs and Satisfaction of the Elderly", THE GERONTOLOGIST, Vol.9, No.1, pp.30-32.

Homans, G.E. (1965) THE HUMAN GROUP, London, Routledge and Kegan Paul.

Howard, K. and Sharp, J.A. (1983) THE MANAGEMENT OF A STUDENT RESEARCH PROJECT, Aldershot (Hants), Gower Publishing Company Ltd.

Institut d' Amenagement et de l' Urbanisme de la Region d' Ile de France (1978) CERGY-PONTOISE : VILLE NOUVELLE, Paris, Edition Artistique.

I.N.E.R.B.A. (1978) ELEMENT POUR UN PLAN NATIONAL DE CONSTRUCTION, November, Algiers, INERBA.

Irvine, D.C. (1971) IRVINE NEW TOWN PLAN, Scotland, Irvine Ayshire.

Jacobs, J. (1962) DEATH AND LIFE OF GREAT AMERICAN CITIES, London, Jonathan Cape.

Jesperson, C. and Co. (1983) 1500 LOGEMENTS : ZHUN AIN-ALLAH, Denmark, Hillerod.

Journal Officiel de la Republique Algerienne Democratique et Populaire (1986) "Decret No.86-38 of the 4th of March 1986 Fixant Les Conditions et Modalites de Souscription a une Operation de Promotion Immobiliere et Definissant le

Cahier de Charge -Type- ainsi que le Modele -Type- d' Acte de Reservation", JOURNAL OFFICIEL, 5th of March 1986, pp.249-255.

Kaidi, Omar (1986) EVOLUTION ET STRUCTURE URBAINE D' UN QUARTIER D' ALGER (EL-AGUIBA), Algiers, Entreprise Nationale du Livre.

Kane, Eileen (1985) DOING YOUR OWN RESEARCH, London and New York, Marion Boyers Publishers Ltd.

Kasl, S. and Harburg, E. (1972) "Perception of the Neighbourhood and the Desire to Move Out", JOURNAL OF THE AMERICAN INSTITUTE OF PLANNERS, Vol.38, pp.318-324.

Katz, D. (1960) "The Functionnal Approach to the Study of Attitudes", PUBLIC OPINION QUARTERLY, Vol.24, pp.163-204.

Keller, S. (1968) THE URBAN NEIGHBOURHOOD : A SOCIOLOGICAL DESCRIPTIVE, New york, Random House.

Kemeny, J. (1981) THE MYTH OF HOME OWNERSHIP : PRIVATE VERSUS PUBLIC CHOICES IN HOUSING TENURE, London, Routledge and Kegan Paul.

Kuhn, M.H. and McPartland, T.S. (1954) "An Empirical Investigation of Self Attitudes", AMERICAN SOCIOLOGICAL REVIEW, Vol.19, pp.68-76.

Kuper, Leo (1953) LIVING IN TOWNS, London, Cresset Press.

Kurth, S.B. (1970) "Friendships and Friendly Relations", in G.J. McCall, M.M. McCall, N.K. Denzin, G.D. Sutlles and S.B. Kurth (eds.) SOCIAL RELATIONSHIPS, Chicago, Aldine Publishing Company, pp.136-170.

Kwok, R.Y.W. (1983) "A Synoptic Examination of Urban Studies and Urban Planning", HABITAT INTERNATIONAL, Vol.7, No.5-6, pp.79-95.

La Bruyere, J. (1982) "Effets des Conditions d' Accession au Logement de Type H.L.M. sur les Modes d' Habitation", Paper for the 'Journees d' Etudes sur le Theme: Normes et Besoins Dans 1' Habitat, of the 12th and 13th of May 1982,

Ecole Polytechnique d' Architecture et d' Urbanisme of Algiers.

La Bruyere, J. (1982) "Les Grands Types d' Habitat en Algerie", Paper for the 'Module de Demographie Urbaine', Ecole Polytechnique d' Architecture et d' Urbanisme oF Algiers.

La Bruyere, J. (1982) "Evolution et Croissance de la Population Urbaine", Paper for the 'Module de Demographie Urbaine', Ecole Polytechnique d' Architecture et d' Urbanisme of Algiers.

Lansing, J. and Hendricks, G. (1967) LIVING PATTERNS AND ATTITUDES IN THE DETROIT REGION, Detroit, Regional Transportation and Land Use Study.

Lansing, J. and Kish, L. (1954) "Family Life Cycle as an Independent Variable", AMERICAN SOCIOLOGICAL REVIEW, Vol.22, pp.512-519.

Lansing, J. and Zehner, R. (1970) PLANNED RESIDENTIAL ENVIRONMENTS, University of Michigan, Ann Arbour: Institute for Social Research.

Lansing, R.L. and Marans, R.W. (1969) "Evaluation of a Neighbourhood Quality", JOURNAL OF THE AMERICAN INSTITUTE OF PLANNERS, Vol.35, No.3, May, pp.195-199.

Le Monde of the 21/ 09/ 1987 ALGERIE : PRES DE 23 MILLIONS D' HABITANTS, Newspaper published in France, p.4.

Lee, T.R. (1963-64) "Psychology and Living Space", TRANSACTIONS OF THE BARTLETT SOCIETY, Vol.2.

Lee, T.R. (1968) "Urban Neighbourhood as a Socio Spatial Schema", HUMAN RELATIONS, Vol.21, pp.241-268.

Lee, T.R. (1971) "The Effects of the Built Environment on Human Behaviour", INTERNATIONAL JOURNAL OF ENVIRONMENTAL STUDIES, Vol.1, pp.307-314.

Lesbet, Djilali (1985) LA CASBAH D' ALGER : GESTION URBAINE ET VIDE SOCIAL, Algiers, Office des Publications Universitaires.

Lynch, Kevin (1960) THE IMAGE OF THE CITY, Cambridge, The M.I.T. Press and Harvard University Press.

Maghfour, A. (1986) "L' Habitat et la Famille", ALGERIE ACTUALITE, No.1060, of 06-12/ 02/ 1986, p.9.

Mandler, G. (1975) "Consciousness : Respectable, Useful, and Probably Necessary", in R. Solo (ed.) INFORMATION PROCESSING AND COGNITION: THE LOYAL SYMPOSIUM, Hillsdale. NJ: Lawrence Erlbaum.

Mann, P.H. (1954) "The Concept of Neighbourliness", AMERICAN JOURNAL OF SOCIOLOGY, Vol.60-2, September, pp.163-168.

Mann, P.H. (1958-59) "The Socially Balanced Neighbourhood Unit", TOWN PLANNING REVIEW, Vol.29-2, July, pp.91-98.

Marans, R.W. and Rodgers, W. (1975) "Toward an Understanding of Community Satisfaction", in A.H. Hawley and V.P. Rock (eds.) METROPOLITAN AMERICA IN CONTEMPORARY PERSPECTIVE, New York, Halstead.

Mayo, J.A. (1979) "Effects of Street Forms on Suburban Neighbouring Behaviour", ENVIRONMENT AND BEHAVIOUR, Vol.11, No.3, pp.375-397.

McAuslan, Patrick (1985) URBAN LAND AND SHELTER FOR THE POOR, London and Washington D.C., International Institute for Environment and Development.

McCall, G.J. (1970) "The Social Organisation of Relationships", in G.J. McCall, M.M. McCall, N.K. Denzin, G.D. Sutlles and S.B. Kurth (eds.) SOCIAL RELATIONSHIPS, Chicago, Aldine Publishing Company, pp.3-34.

Merlin, Pierre (1971) NEW TOWNS : REGIONAL PLANNING AND DEVELOPMENT, London, Methuen.

Merton, K. (1951) "The Social Psychology of Housing", in W. Dennis et al (ed.) CURRENTS TRENDS IN SOCIAL PSYCHOLOGY, Pittsbrugh University Press, pp.163-217.

Merton, K. (1967) ON THEORETICAL SOCIOLOGY, New York (1949) and Toronto (1967), Free Press and Free Press Paper Back Editions.

Michelson, W. (1966) "An Empirical Analysis of Urban Environmental Preferences", JOURNAL OF THE AMERICAN INSTITUTE OF PLANNERS, Vol.32. pp.355-360.

Michelson, W. (1968) "Social Insights to Guide the Design of Housing for Low Income Families", EKISTICS, Vol.25, PP.252-255.

Michelson, W. (1976) MAN AND HIS URBAN ENVIRONMENT: A SOCIOLOGICAL APPROACH, Reading, MA: Addison-Wesley.

Michelson, W. (1977) ENVIRONMENTAL CHOICE, HUMAN BEHAVIOUR, AND RESIDENTIAL SATISFACTION, New York, Oxford University Press.

Miller, F.D. et Al (1980) "Neighbourhood Satisfaction Among Urban Dwellers", JOURNAL OF SOCIAL ISSUES, Vol.36, No.3, pp.101-117.

Milton Keynes, D.C. (1970) THE PLAN FOR MILTON KEYNES, Vol.1, Bletchely, Milton keynes D.C.

Milton Keynes, D.C. (1980) TECHNICAL FACT SHEETS, Milton Keynes, Information Unit.

Ministere de la Planification et de l' Amenagement du Territoire (1970) PLAN QUADRIENNAL 1970-1973, Algiers, Editions Populaires de l' Armee.

Ministere de la Planification et de l' Amenagement du Territoire (1985) DEUXIEME PLAN QUINQUENNAL 1985-1989, Algiers, Entreprise Nationale des Arts Graphiques.

Ministere de l' Urbanisme et de l' Habitat (1978) "Problemes du Developpement Intensif de l' Habitat en Algerie", Report of a Polish Mission for the Algerian Ministry,

Algiers-Warsaw, November 1977-February 1978.

Ministere de l' Urbanisme et de l' Habitat -Atelier Casbah- (1981) PROJET DE REVALORISATION DE LA CASBAH D' ALGER, Algiers, Atelier Casbah.

Mitchell, G.D. and Lupton, T. (1954) "Neighbourhood and Community : The quality of Local Authority Housing Scheme", ARCHITECTS' JOURNAL, 27th of February 1974, pp.456-465.

Moreland, R.L. and Zajonc, R.B. (1977) "Is Stimulus Recognition a Necessary Condition for the Occurrence of Exposure Effects?", JOURNAL OF PERSONALITY AND SOCIAL PSYCHOLOGY, Vol.35, pp.191-199.

Morris, E. et al (1976) "Housing Norms, Housing Satisfaction and the Propensity to Move", JOURNAL OF MARRIAGE AND THE FAMILY, Vol.38, pp.309-320.

Morris, R.N. and Mogey, J. (1965) THE SOCIOLOGY OF HOUSING, London, Routledge and Kegan Paul Ltd.

Moss Louis and Goldstein Harvey (1979) THE RECALL METHOD IN SOCIAL SURVEYS, London, University of London Institute of Education.

Mueller, J.H. and Schuessler, K.F. (1961) STATISTICAL REASONING IN SOCIOLOGY, Boston, Houghton Mifflin.

Mumford, Lewis (1953-54) "The Neighbourhood and the Neighbourhood Unit", TOWN PLANNING REVIEW, Vol.24-4, January, pp.256-269.

Nachmias, C. and Nachmias, D. (1981) RESEARCH METHODS IN THE SOCIAL SCIENCES, New York, St. Martin's Press.

Nahemow, L. and Downes, G. (1979) "Collaboration in Architectural Design : A Case Study of the Oxford Home for the Aged", JOURNAL OF ARCHITECTURAL RESEARCH, August, Vol.7, No.2.

National Committee for Human Settlements (NCHS) -Government of Iran- (1976) "Habitat Bill of Rights", EKISTICS, Vol.42, Nos.248-253, July-December, pp.302-308.

Newcomb, T.M. (1961) THE ACQUIANTANCE PROCESS, New York, Holt, Rinehart and Winston.

Newman, Oscar (1973) DEFENSIBLE SPACE: PEOPLE AND DESIGN IN THE VIOLENT CITY, London, Architectural Press.

Onibokun, A.G. (1974) "Evaluating Consumers' Satisfaction With Housing: An Application of a System Approach", JOURNAL OF AMERICAN INSTITUTE OF PLANNERS, Vol.40, pp.189-200.

Onibokun, A.G. (1976) "Social System Correlates of Residential Satisfaction", ENVIRONMENT AND BEHAVIOUR, Vol.8, No.3, September, pp.323-344.

Open University (1973) PLANNING AND THE CITY, Sussex, Coes Printers Ltd.

Open University (1973) SPREAD OF CITIES, Sussex, Coes Printers Ltd.

Open university (1973) THE CITY AS A SOCIAL SYSTEM, Sussex, Coes Printers Ltd.

Organisme National de la Recherche Scientifique (1977) LA QUESTION DU LOGEMENT A ALGER, Algiers, Office des Publications Universitaires.

Osborn, F.J. and Whittick, A. (1969) NEW TOWNS : THE ANSWER TO MEGALOPOLIS, London, L. Hill Books.

Osborn, F.J. and Whittick A. (1977) NEW TOWNS : THEIR ORIGINS, ACHIEVEMENTS, AND PROGRESS, London, L. Hill Books.

Pahl, R.E. (1968) READINGS IN URBAN SOCIOLOGY, Oxford and London, Pergamon Press Ltd.

Perry, C.A. (1929) "The Neighbourhood Unit, a Scheme of Arrangement for the Family Life Community, THE REGIONAL SURVEY OF NEW YORK AND ITS ENVIRONMENT, Vol.7, New York, pp.22-140.

Peterson, G.L. (1967) "A Model of Preference", JOURNAL OF REGIONAL SCIENCE, Vol.7, pp.19-31.

Phillips, B.S. (1971) SOCIAL RESEARCH : STRATEGY AND TACTICS, New York, the MacMillan Company.

Phillips, D.R.H. (1967) "Comfort in Home", ROYAL SOCIETY OF HEALTH JOURNAL, Vol.87, pp.237-246.

Rapoport, Amos (1983) "Development, Culture Change and Supportive Design", HABITAT INTERNATIONAL, Vol.7, No.5/6, pp.249-268.

Reynolds, I. and Nicholson, C. (1972) THE ESTATE OUTSIDE THE DWELLING : REACTIONS OF RESIDENTS TO ASPECTS OF HOUSING LAYOUT, Design Bulletin No.25, London, Department of the Environment (HMSO).

Ritter, p. (1964) PLANNING FOR MAN AND MOTOR, Oxford, Pergamon.

Rosow, Irving (1961) "The Social Effects of the Physical Environment", JOURNAL OF THE AMERICAN INSTITUTE OF PLANNERS, Vol.27, May, pp.127-133.

Rosow, Irving (1970) "Old People : Their Friends and Neighbours", AMERICAN BEHAVIOURAL SCIENTIST, Vol.14, pp.59-69.

Rossi, P.H. (1955) WHY FAMILIES MOVE : A STUDY IN THE SOCIAL PSYCHOLOGY OF URBAN RESIDENTIAL MOBILITY, Glencoe, Free Press of Glencoe.

Rossi, P.H. (1972) "Community Social Indicators", in A. Campbell and P.E. Converse (eds.) THE HUMAN MEANING OF SOCIAL CHANGE, New York, Russel Sage Foundation.

Runcorn, D.C. (1966) RUNCORN NEW TOWN. MASTER PLAN, Runcorn, Runcorn D.C.

Shankland Cox and Part. (1971) LOW COST HOUSING IN JAMAICA, London, Publication Services.

Shankland Cox and Part. (1973) SITE AND SERVICE HOUSING IN JAMAICA, London, Publication services.

Smart, W. et al (1968) THE LARGE POOR FAMILY : A HOUSING GAP, Washington D.C., National Commission of Urban Problems, Report No.4.

Snyder, L. and Ostrander, E. (1974) RESEARCH BASIS FOR BEHAVIORAL PROGRAM: THE NEW YORK STATE VETERANS HOME, OXFORD, NEW YORK, Ithaca New York, Dept. of Design and Environmental Analysis, Cornell University.

Sokari, E.G. (1985) "Improving Town Planning in Nigeria Through Popular Participation", HABITAT INTERNATIONAL, Vol.9, No.3-4, pp.191-200.

Stoodley, K.D.C.; Lewis, T. and Stainton C.L.S. (1980) APPLIED STATISTICAL TECHNIQUES, Chichester (West Sussex), Ellis Horwood.

Suttles, G.D. (1972) THE SOCIAL CONSTRUCTION OF COMMUNITIES, Chicago, University of Chicago Press.

Suttles, G.D. et Al (1970) "Friendship as a Social Institution", in G.J. McCall, M.M. McCall, N.K. Denzin, G.D. Sutlles and S.B. Kurth (eds.) SOCIAL RELATIONSHIPS, Chicago, Aldine Publishing Company, pp.95-135.

Szelenyi, I. (1983) URBAN INEQUALITIES UNDER STATE SOCIALISM, Oxford, Oxford University Press.

Taguemout, Hanafi (1986) "Transport et Circulation a Alger: Rail, Pneu, Cable...", ALGERIE ACTUALITIES, No. 1091 of 11-17/ 09/ 1986, p.19.

Turner, V. (1974) THE RITUAL PROCESS, Harmondsworth, Penguin Books.

Tversky, A. and Kahneman, D. (1971) "Belief in the Law of Small Numbers", PSYCHOLOGICAL BULLETIN, Vol.76, pp.105-110.

Tversky, A. and Kahneman, D. (1973) "Availability : a Heuristic for Judging Frequency and Probability", COGNITIVE PSYCHOLOGY, Vol.5, pp.207-232.

Tversky, A. and Kahneman, D. (1974) "Judgement Under Uncertainty : Heuristics and Biases, SCIENCE, Vol.185, pp.1124-1131.

Ulman, E.L. (1980) GEOGRAPHY AS SPATIAL INTERACTION, U.S.A., University of Washington Press.

Unterman, R. and Small, R. (1977) SITE PLANNING FOR CLUSTER HOUSING, New York, Van Nostrand Reinhold company.

Warner, W.L. (1974) "The Modern Community as a Laboratory", in C. Bell and H. Newby (eds.) THE SOCIOLOGY OF COMMUNITY: A SELECTION OF READINGS, London, Cass and Co. Ltd.

Warwick, D.P. and Lininger, C.A. (1975) THE SAMPLE SURVEY: THEORY AND PRACTISE, USA, Mc Graw-Hill Inc.

Westin, A.F. (1967) PRIVACY AND FREEDOM, New York, Atheneum.

Westminster City Hall -Department of Planning- (1982) CITY OF WESTMINSTER DISTRICT PLAN : WRITTEN STATEMENT, Adopted April 1982, London, Westminster City Hall.

White, L.E. (1950) COMMUNITY OR CHAOS : NEW HOUSING ESTATES AND THEIR SOCIAL PROBLEMS, London, National Council of Social Services.

Whyte, W.H. (1957) THE ORGANISATION MAN, London, Jonathan Cape.

Williamson, R.C. (1981) "Adjustment to the Highrise: Variables in a German Sample", ENVIRONMENT AND BEHAVIOUR, Vol.13, No.3, May, pp.289-310

Willis, M. (1963) "Designing for Privacy", ARCHITECTS' JOURNAL, 29th. of May, Vol.137, pp.1137-1141.

Willmott, P. (1962) "Housing Density and Town Design in a New Town: A Pilot Study at Stevenage", TOWN PLANNING REVIEW, Vol.32, No.2, July, pp.115-127.

Willmott, P. (1963) THE EVOLUTION OF COMMUNITY, London, Routledge and Kegan Paul.

Willmott, P. (1967) "Social Research and New Communities", JOURNAL OF THE AMERICAN INSTITUTE OF PLANNERS, November, Vol.33, pp.387-397.

Willmott, P. and Young, M. (1957) FAMILY AND KINSHIP IN EAST LONDON, London, Routledge and Kegan Paul.

Willmott, P. and Young, M. (1960) FAMILY AND CLASS IN A LONDON SUBURB, London, Routledge and Kegan Paul.

Wilson, J. (1968) "The Urban Unease : Community vs. City", PUBLIC INTEREST, Vol.12, pp.25-39.

Wilson, R.L. (1962) "Livability of The City : Attitudes and Urban Development", in Chapins F.S. Jr and S.F. Weiss (eds.) URBAN GROWTH DYNAMICS IN A REGIONAL CLUSTER OF CITIES, New York, Wiley, pp.359-399.

Wilson, W.R. (1979) "Feeling More Than We Can Know: Exposure Effects Without Learning", JOURNAL OF PERSONALITY AND SOCIAL PSYCHOLOGY, Vol.37, pp.811-821.

Zajonc, R.B. (1980) "Feeling and Thinking : Preferences Need No Inferences", AMERICAN PSYCHOLOGIST, Vol.35, pp.151-175.

Zakour, Abderrahim (1986) "Les Urbanisations Nouvelles: Bilan et Constat", Report for the Ministry of Housing and Construction, Algiers.

Zehner, R.B. (1971) "Neighbourhood and Community Satisfaction in New Towns and Less Planned Suburbs", JOURNAL OF THE AMERICAN INSTITUTE OF PLANNERS, Vol.37, No.6, pp.379-385.

Zeisel, John (1981) INQUIRY BY DESIGN : TOOLS FOR ENVIRONMENT-BEHAVIOUR RESEARCH, California, Wadsworth Inc. Belmont.

Zuchelli, Alberto (1983) INTRODUCTION A L' URBANISME OPERATIONNEL ET A LA COMPOSITION URBAINE, Vol.1, Algiers, Office des Publications Universitaires.

Zuchelli, Alberto (1984) INTRODUCTION A L' URBANISME OPERATIONNEL ET A LA COMPOSITION URBAINE, Vol.4, Algiers, Office des Publications Universitaires.

APPENDIX 1

QUESTIONNAIRE

Questionnaire Schedule	Code	
1. Number of your building	...	1
2. Number of your storey	...	2
3. For how long have you been living in Ain-Allah?	...	3
4. Where did you live before? 1. Casbah 2. Other Specify	...	4
5. Are you? 1. Single 2 Married without children 3. Married with children	...	5
6. If married with children, how many children?	...	6
7. Sex 1. Male 2. Female	...	7
8. To which age category do you belong? 1. 20 - 30 2. 31 - 35 3. 36 - 50 4. 51 - 60 5. 60 +	...	8
9. Which company do you work for?	...	9
10. How long have you been working there?	...	10
11. What is your position within the company?	...	11
12. What level of education do you hold?	...	12

13. How many of your current neighbours did you know before you moved to Ain-Allah? 1. 0 2. 1 - 2 3. 3 - 5 4. 6 - 10 5. 10 +	...	13
14. How many neighbours do you know now (have a conversation with, for example)? 1. 0 2. 1 - 2 3. 3 - 5 4. 6 - 10 5. 10 +	...	14
15. How did you know these neighbours? Was it because: 1. You work with them 2. You moved from the same area as them 3. You live in the same building in Ain-Allah 4. You live in a nearby building in Ain-Allah 5. Through children playing together 6. Other specify ____	...	15
16. How many neighbours in Ain-Allah do you consider as your friends (From whom you borrow things and go for help)? 1. 0 2. 1 - 2 3. 3 - 5 4. 6 - 10 5. 10 +	...	16
17. If you have a preference among your friends who do you consider the closest to you (where does he live)? 1. Same storey as you 2. Storey above you 3. Storey below you 4. another storey in your building 5. another building Which Number	... ...	17 18

18. Where do you meet your friends? 1. At home 2. In a cafe 3. In a mosque 4. At work 5. Outdoors (streets or shops) 6. Somewhere else Specify ____	...	19
19. Do you have any relatives living in Ain-Allah? 1. 0 2. 1 - 2 3. 3 - 5 4. 6 - 10 5. 10 +	...	20
20. How often do you visit your friends in Ain-Allah? 1. Every day 2. 2 - 3 times a week 3. Once a week 4. Once a month 5. Never	...	21
21. Some people complained about problems with neighbours regarding cleaning the stairs, and noise from children or music. Do you have such problems with your neighbours? 1. Yes 2. No	...	22
If yes, What problems? 1. Cleaning the stairs 2. Noise 3. Other Specify ____	...	23
22. Do you know if residents meet to discuss local problems? 1. Yes 2. No	...	24
If Yes, how often do you take part? 1. Always 2. Often 3. Time to time 4. Rarely 5. Never	...	25

23. Are you? 1. Tenant 2. Home owner Is the rent or mortgage? 1. High (not affordable) 2. Medium 3. Low (easy to afford)	... ...	26 27
24. Do you think that your flat is: 1. Very spacious 2. Quite spacious 3. Medium size 4. quite Small 5. Very small	...	28
25. What do you think of the views from your flat? 1. Very pleasant 2. Quite pleasant 3. Average 4. Quite unpleasant 5. Very unpleasant	...	29
26. How much sunlight does your flat receive? 1. A lot 2. Enough 3. Medium 4. Little 5. Very little	...	30
27. Are you disturbed by noise? 1. Yes 2. No If yes, what sort? 1. Neighbours (Music or talking) 2. Children playing 3. Traffic	... ...	31 32
28. Are you satisfied with the separation of the rooms in your flat (visual privacy)? 1. Yes 2. No	...	33

Do you think that in Ain-Allah there is:

	Yes	No	D.K.		
29. Enough play spaces	1	2	3	...	34
30. Enough green spaces	1	2	3	...	35
31. Enough shops	1	2	3	...	36
32. Enough visual privacy from opposite buildings	1	2	3	...	37
33. Good Maintenance (area tidy	1	2	3	...	38
34. Attractive buildings	1	2	3	...	39

35. Do your visitors think that Ain-Allah is?

1. Attractive
2. Fairly attractive
3. Not attractive

... 40

Indicate the method of transport you use to get to: (Please answer by)

1. Car
2. Bus
3. Company Transport
4. Walking

36. Work	1	2	3	4	...	41
37. City centre	1	2	3	4	...	42
38. Nearby centres (Dely-Brahim, Ben-Aknoun)	1	2	3	4	...	43

How many minutes does it take to walk from your flat to the:

mns:	1-5	6-7	8-10	10-15	15+		
39. Primary school	1	2	3	4	5	...	44
40. Local shops	1	2	3	4	5	...	45
41. Bus stop	1	2	3	4	5	...	46

42. Do you find the goods you need on a daily basis in the local shops? 1. Yes 2. No 3. D.K.	...	47
How often do you go to the following nearest facilities? (please use the scale) 1. Often 2. Occasionally 3. Rarely		
43. Cafe 1 2 3	...	48
44. Mosque 1 2 3	...	49
45. Library 1 2 3	...	50
46. Cinema 1 2 3	...	51
47. Health centre 1 2 3	...	52
48. Open market 1 2 3	...	53
49. When you go to these facilities, do you go with? 1. Friends from Ain-Allah 2. With friends not from Ain-Allah 3. With relatives 4. By yourself	...	54
Are you worried about the following dangers in Ain-Allah? Yes No D.K.		
50. Flats break-in and robberies 1 2 3	...	55
51. Traffic dangers for children when going to school or playing 1 2 3	...	56

As the results and suggestions of the study are based on the opinions of the residents, I would be grateful to have your opinion about the importance or necessity of having the following in a new housing project. Indicate the importance you accord to each one by:

1. Very important
2. Important
3. Not important
4. D.K.

52. Spacious flat	1	2	3	4	...	57
53. Enough play spaces	1	2	3	4	...	58
54. A cafe	1	2	3	4	...	59
55. A mosque	1	2	3	4	...	60
56. A library	1	2	3	4	...	61
57. A creche	1	2	3	4	...	62
58. A health centre	1	2	3	4	...	63
59. Nearby school	1	2	3	4	...	64
60. Nearby shops	1	2	3	4	...	65
61. pedestrian streets	1	2	3	4	...	66
62. Variety in buildings	1	2	3	4	...	67
63. Neighbours from the same previous area or place of work.	1	2	3	4	...	68

To which extent are you satisfied with?
(Please use the scale)

1. Very satisfied
2. Satisfied
3. Dissatisfied
4. Very dissatisfied

64. Your flat	1	2	3	4	...	69
65. Facilities as a whole	1	2	3	4	...	70
66. Social Relationships between neighbours	1	2	3	4	...	71
67. The new project as a whole	1	2	3	4	...	72

68. Please indicate the type of residence in which you would like to live, if you were given the choice of the following: (Classify your choice from 1 to 5, with 1 being the first choice and 5 the last). - 3 bedroomed house without a garden - 2 bedroomed house with a garden - 4 bedroomed flat with a balcony - 4 bedroomed flat with a communal courtyard - Plot of land on which to build your own house with the help of the state.					...	73
Residents have different opinions when comparing various aspects of their previous and present places of residence. In your opinions where did you have: (Please use the scale) 1. Previous place of residence 2. Ain-Allah 3. No difference						
69. More friends	1	2	3		...	74
70. More outdoors places for meetings and relaxing	1	2	3		...	75
71. More privacy in outdoor spaces	1	2	3		...	76
72. More spacious flats	1	2	3		...	77
73. More sunlight in flats	1	2	3		...	78
74. More pleasant views from the flats	1	2	3		...	79
75. Better separation inside the flat (for privacy)	1	2	3		...	80
76. Safer streets	1	2	3		...	81
77. More playgrounds	1	2	3		...	82
78. More green spaces	1	2	3		...	83
79. Nearby facilities	1	2	3		...	84
80. Enough shops	1	2	3		...	85
81. Well stocked shops	1	2	3		...	86
82. Affordable prices	1	2	3		...	87

Where were you more satisfied with:
(Please use the scale)

1. Previous place of residence
2. Ain-Allah
3. No difference

83. Your flat	1	2	3	...	88
84. The facilities	1	2	3	...	89
85. The relationships with the neighbours	1	2	3	...	90
86. The area as a whole	1	2	3	...	91

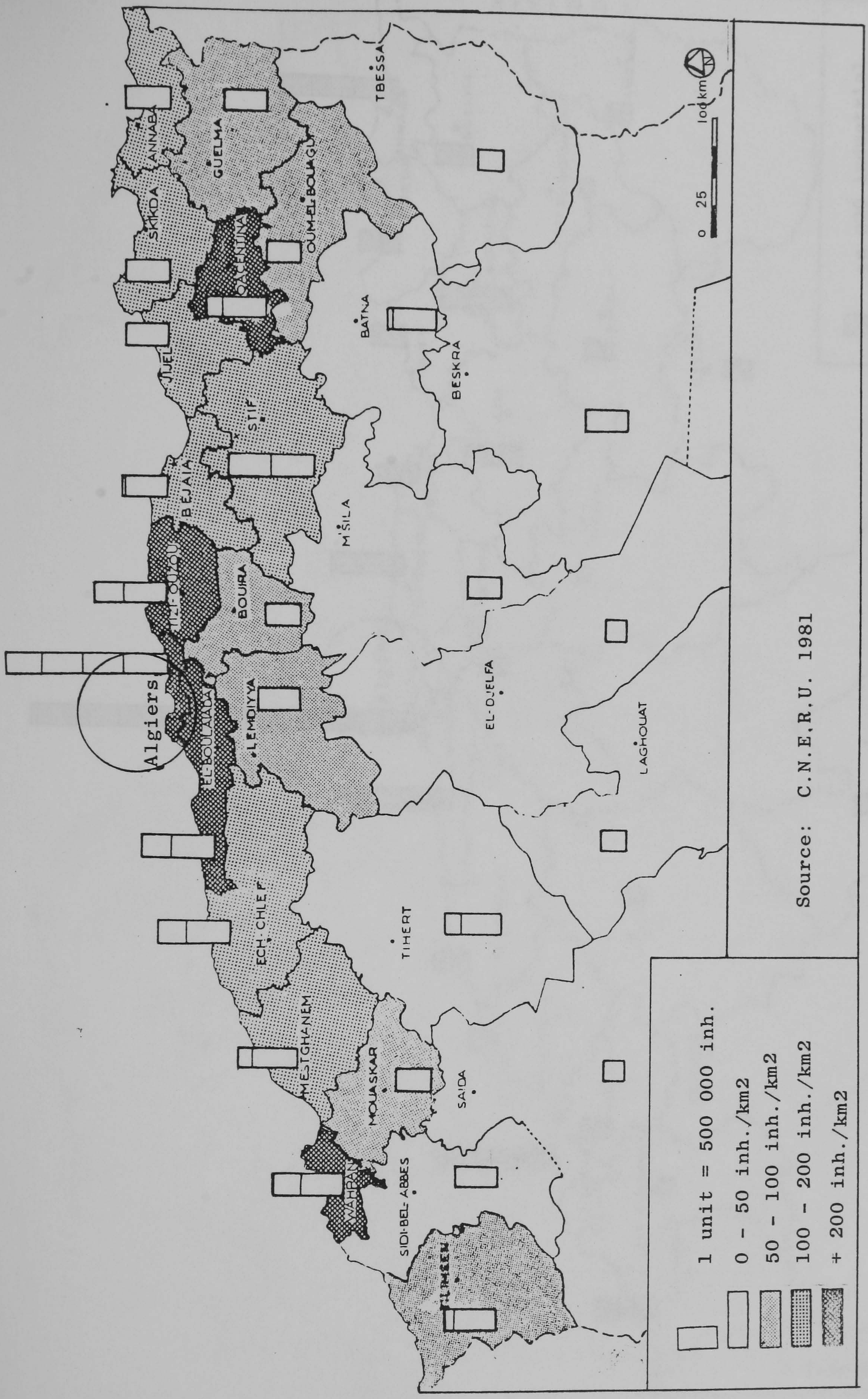
Are you satisfied with the services provided by following nearby facilities (of Dely-Brahim or Ben-Aknoun)?
(Please use the scale)

1. Very satisfied
2. Satisfied
3. Dissatisfied
4. Very dissatisfied

87. Cafe	1	2	3	4	...	92
88. Library	1	2	3	4	...	93
89. Market	1	2	3	4	...	94
90. Health centre	1	2	3	4	...	95
91. Post office	1	2	3	4	...	96
92. Cinema	1	2	3	4	...	97

APPENDIX 2

FIGURES



Source: C.N.E.R.U. 1981

Figure 1. Algeria: The Overcrowding of the Northern Cities

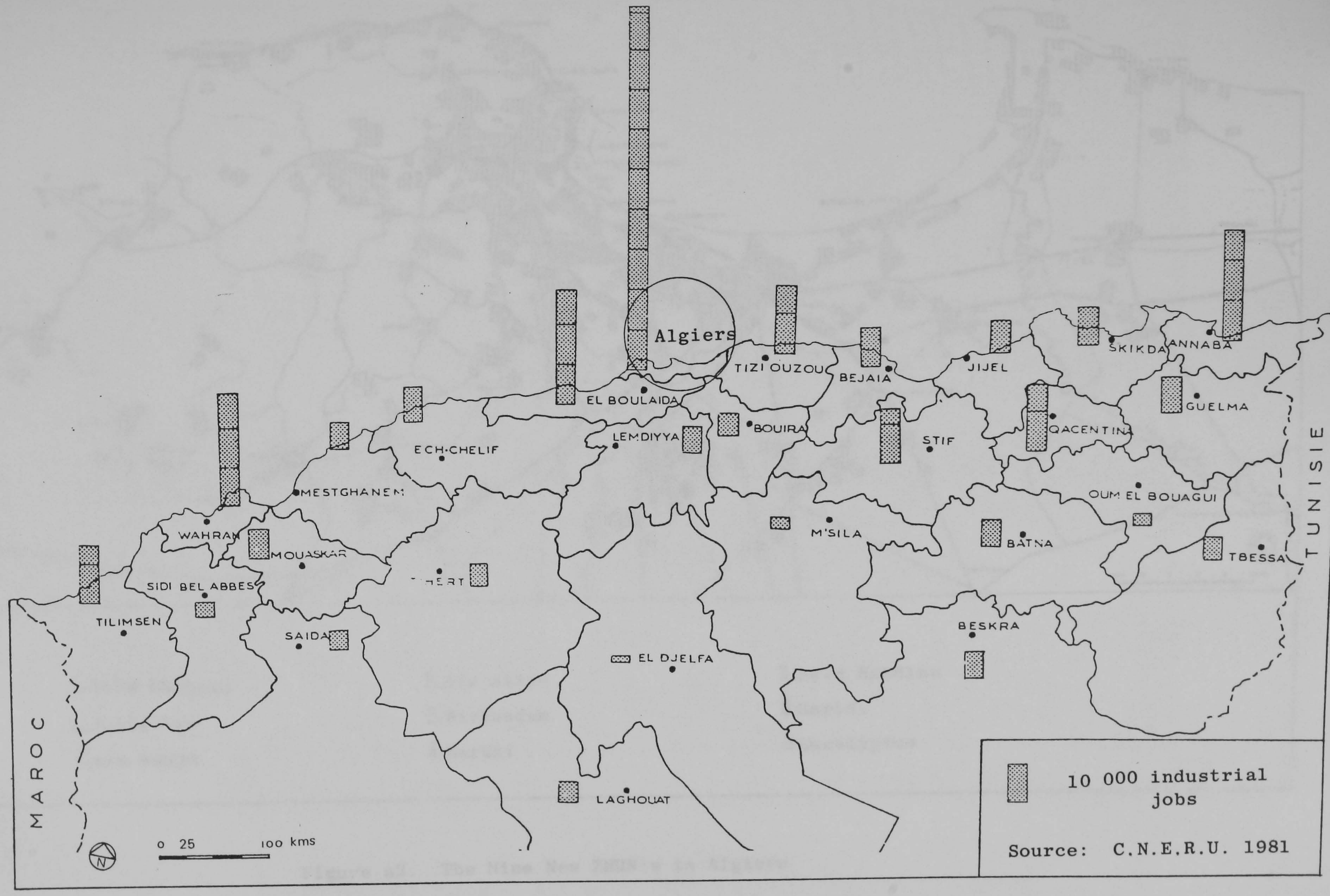
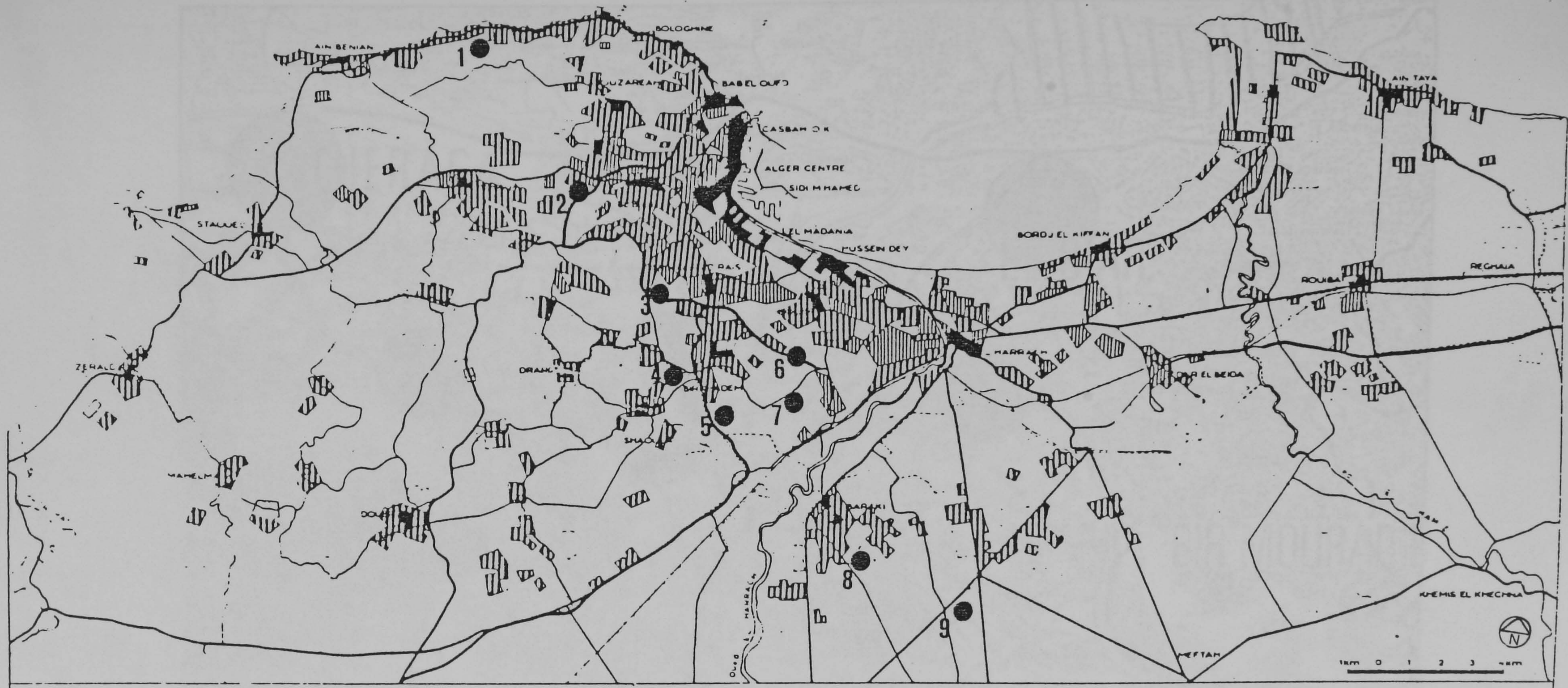


Figure a2. Concentration of the Jobs in the Northern Cities



1. Rais Hamidou
2. Ain Allah
3. Said Hamdine
4. Jolie Vue
5. Birkhadem
6. Garidi
7. Ain Nadja
8. Baraki
9. Eucalyptus

Figure a3. The Nine New ZHUN's in Algiers

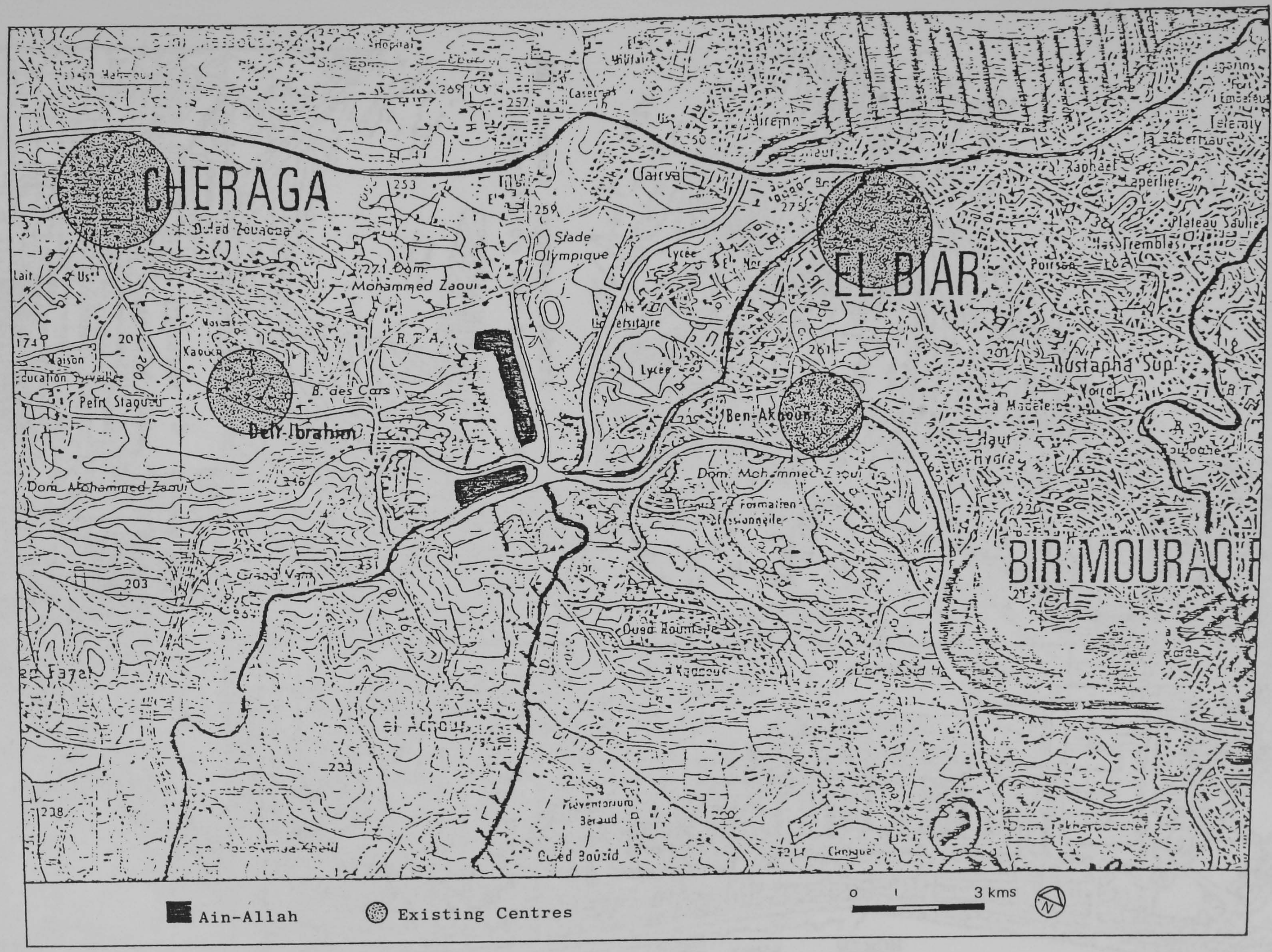


Figure a4. Location of Ain-Allah With Regard to the Nearby Centres

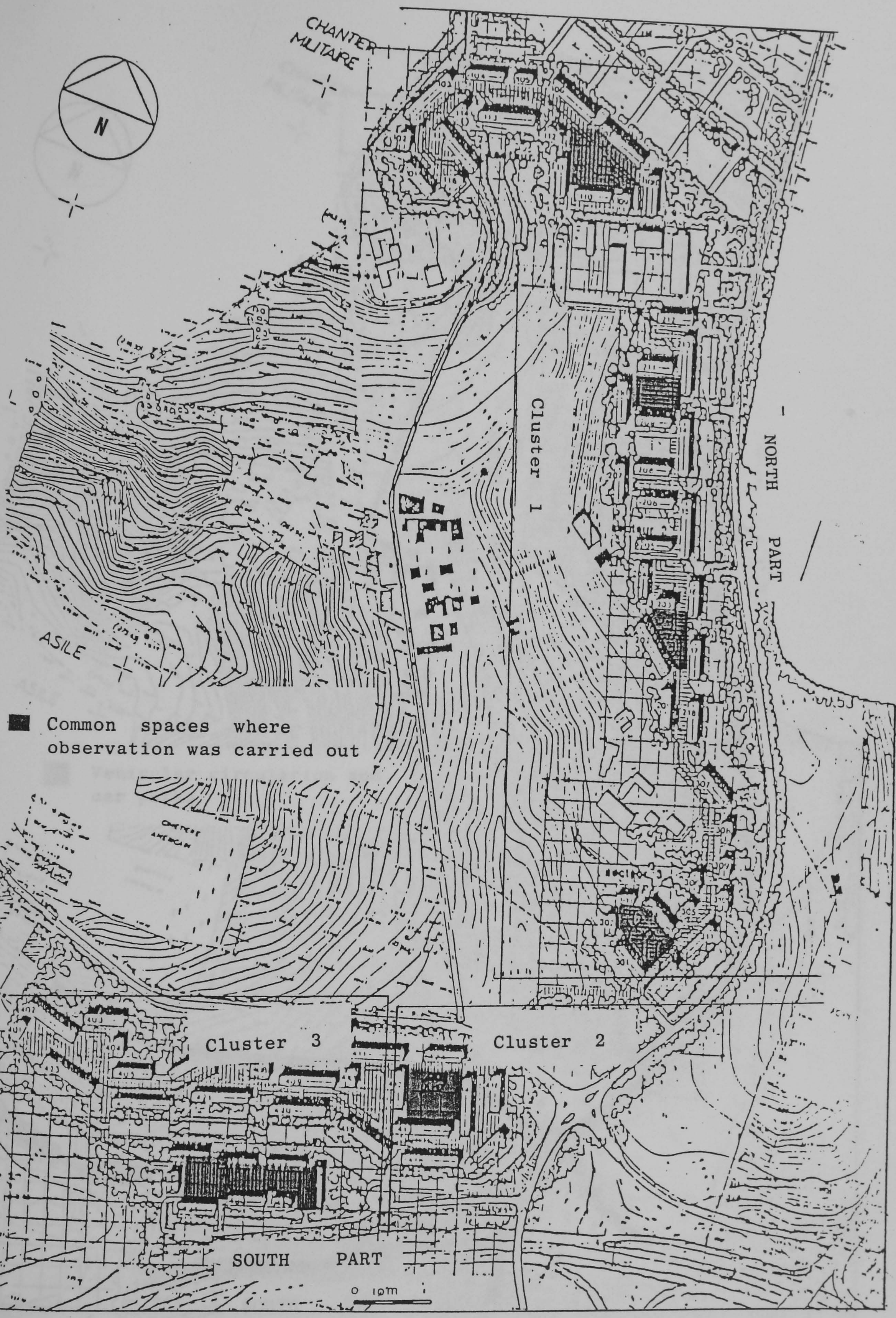


Figure a5. Layout of Ain-Allah

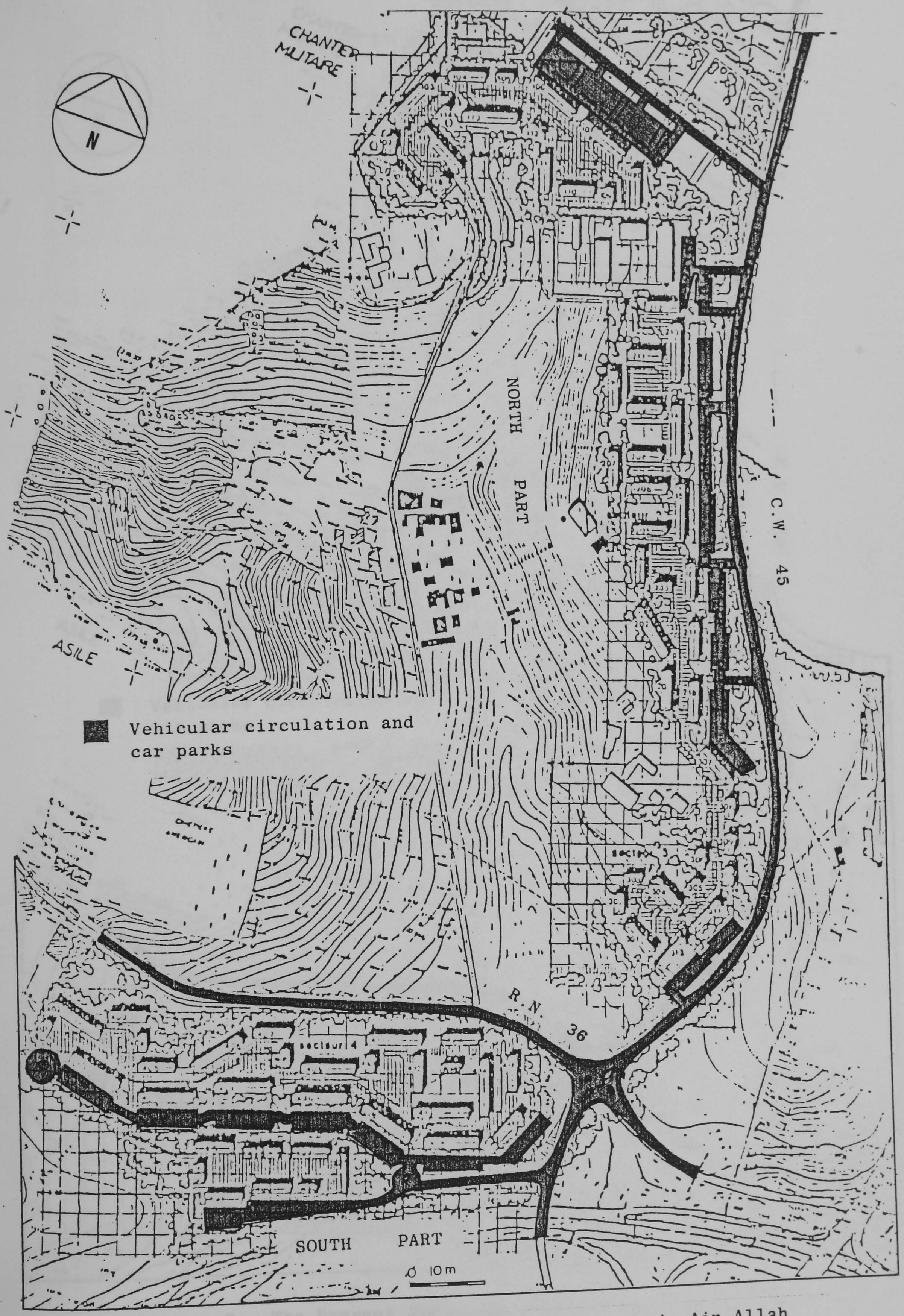


Figure a6. The Suggested Vehicular Circulation in Ain-Allah

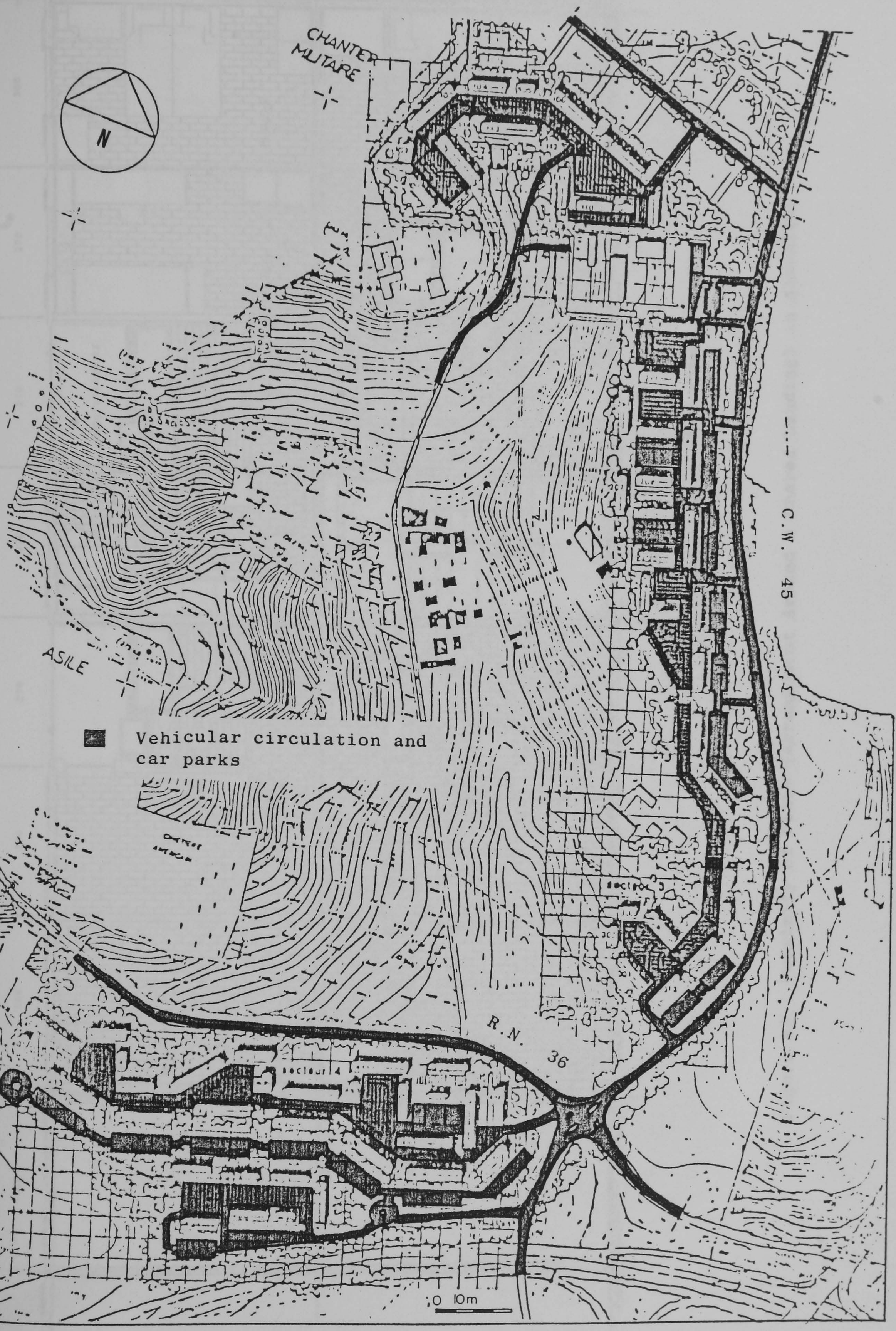


Figure a7. The Present Vehicular Circulation in Ain-Allah

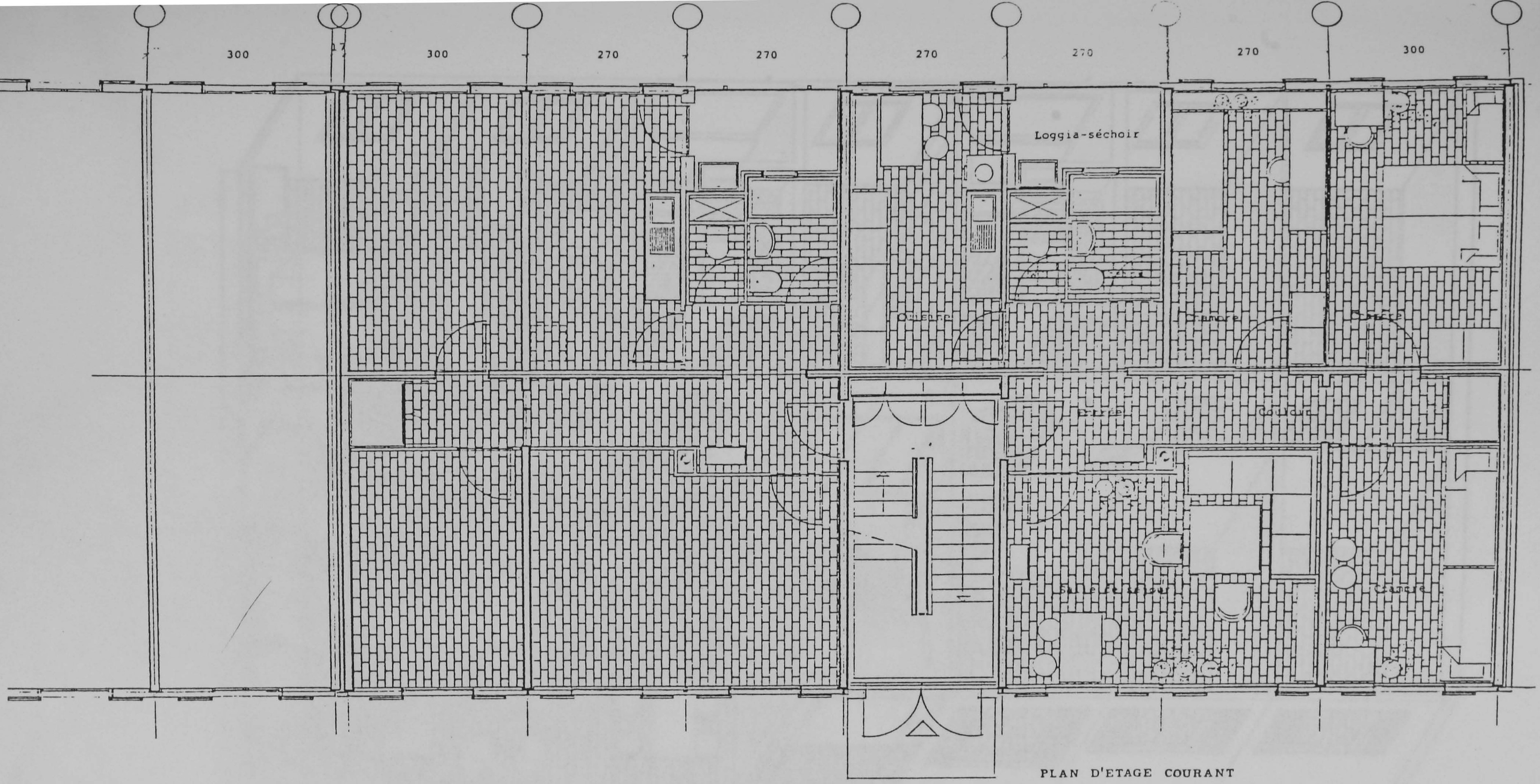


Figure a8, Proximity of Flats (Arrangement Around a Shared Landing) in Ain-Allah

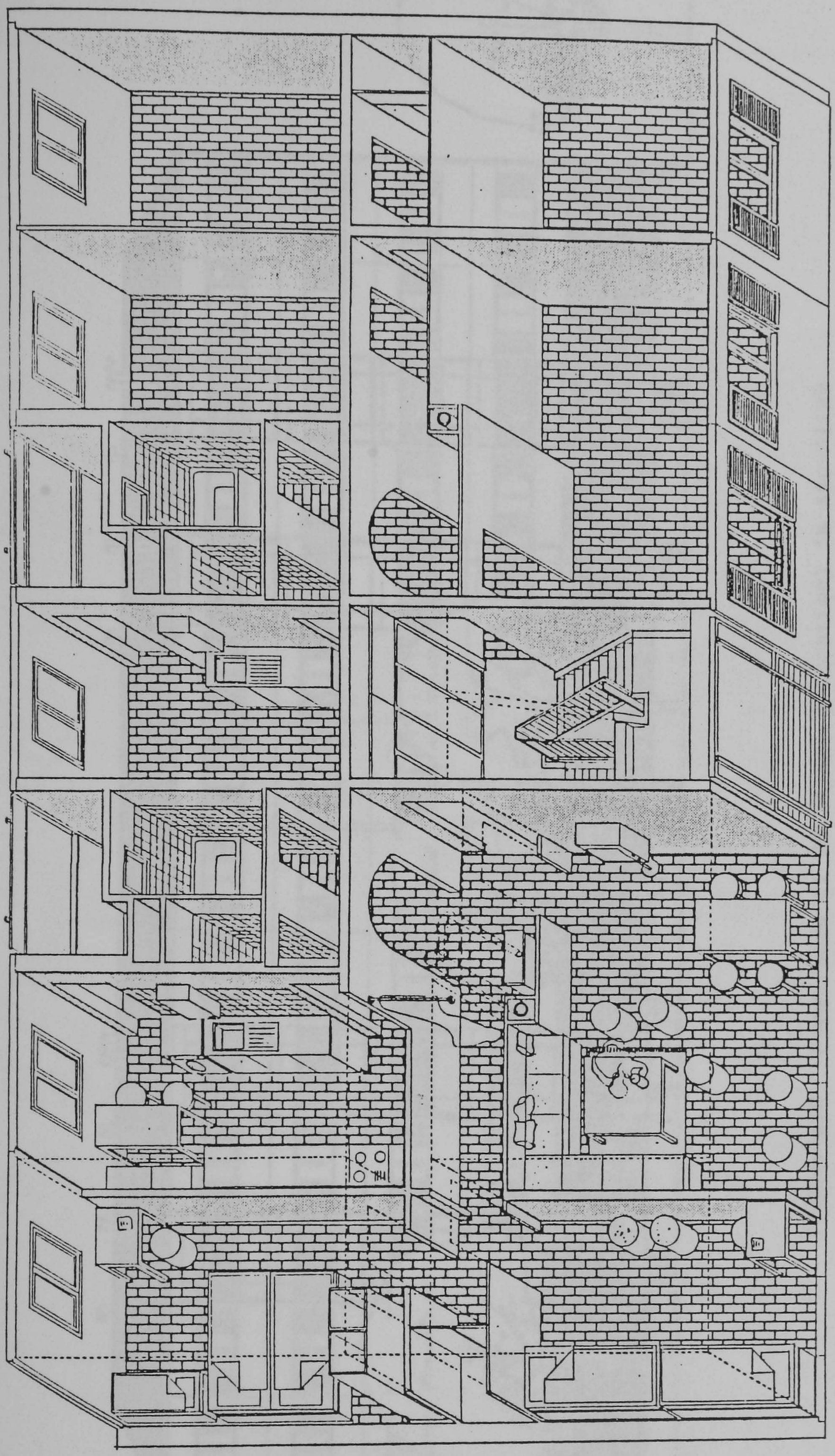


Figure a9. Forms of Flats (Axonometric View) in Ain-Allah

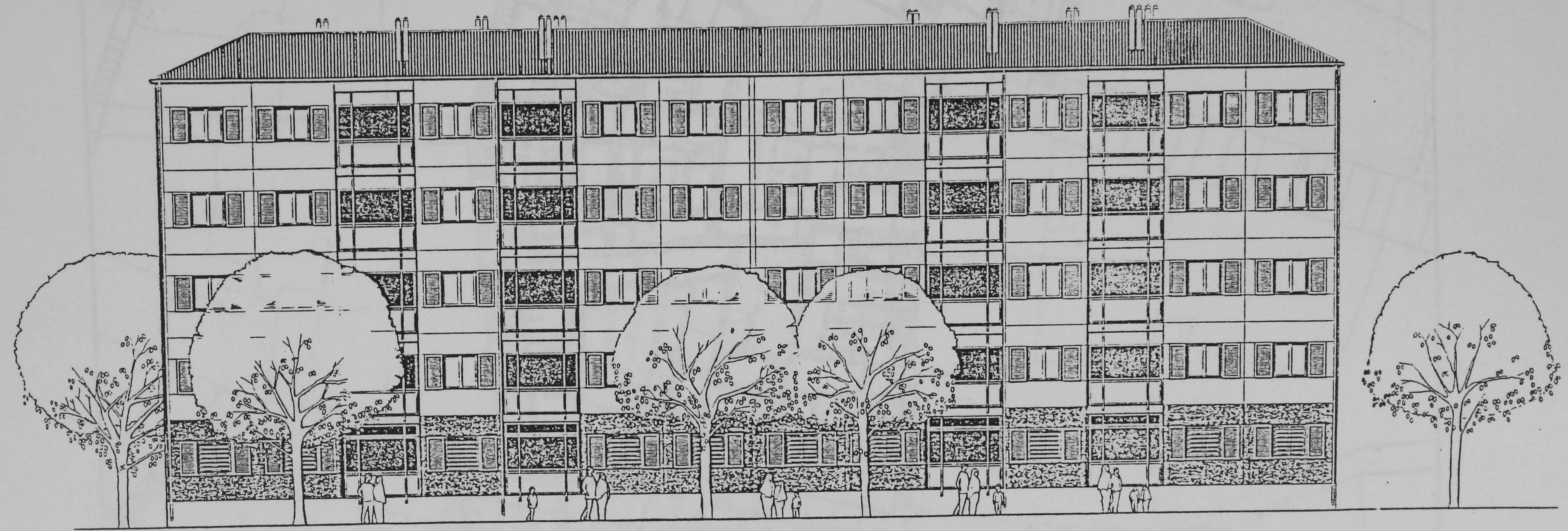


Figure a10. Appearance of Buildings (Elevation) in Ain-Allah

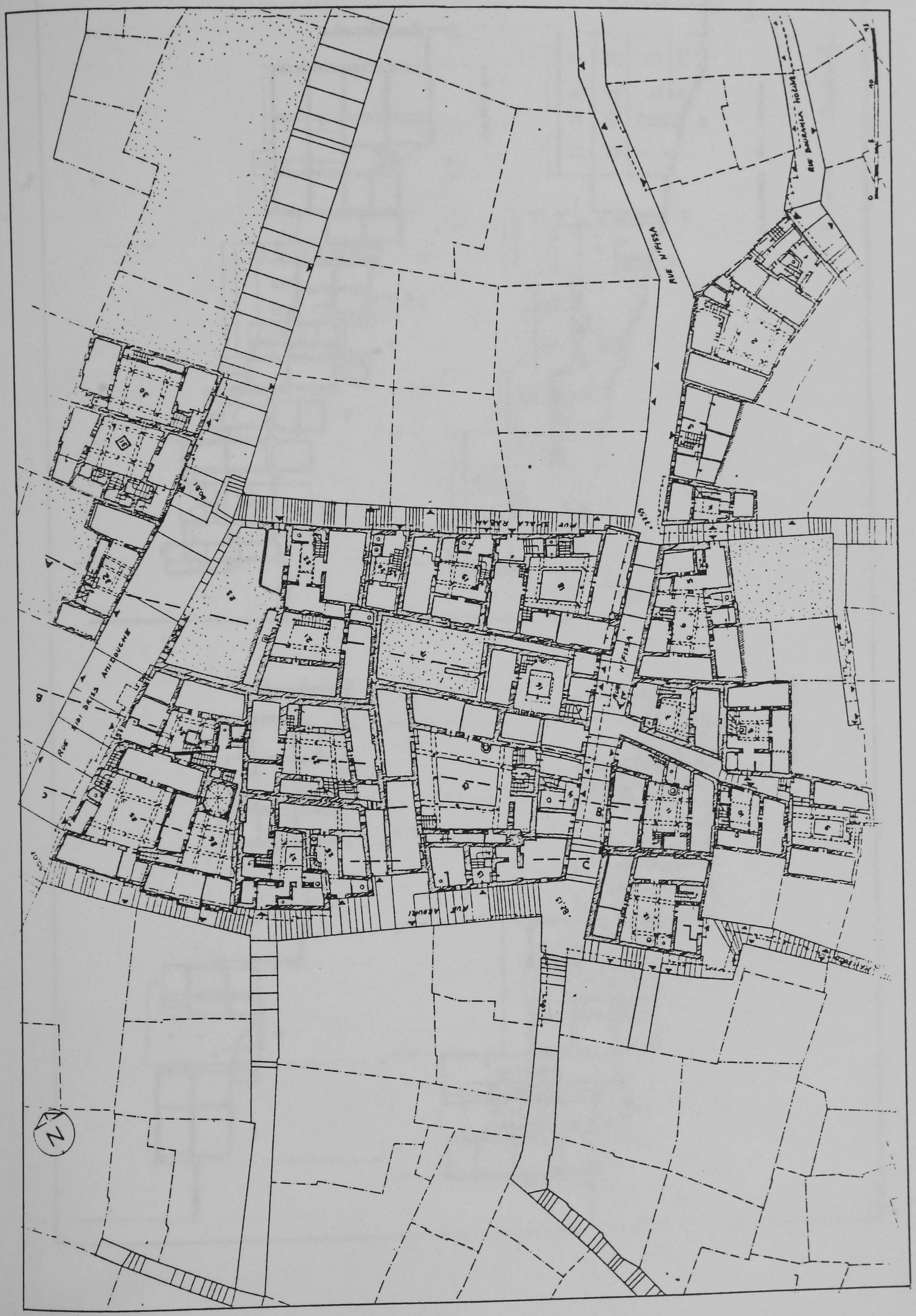


Figure all. Layout of a Traditional Cluster Housing (Casbah)

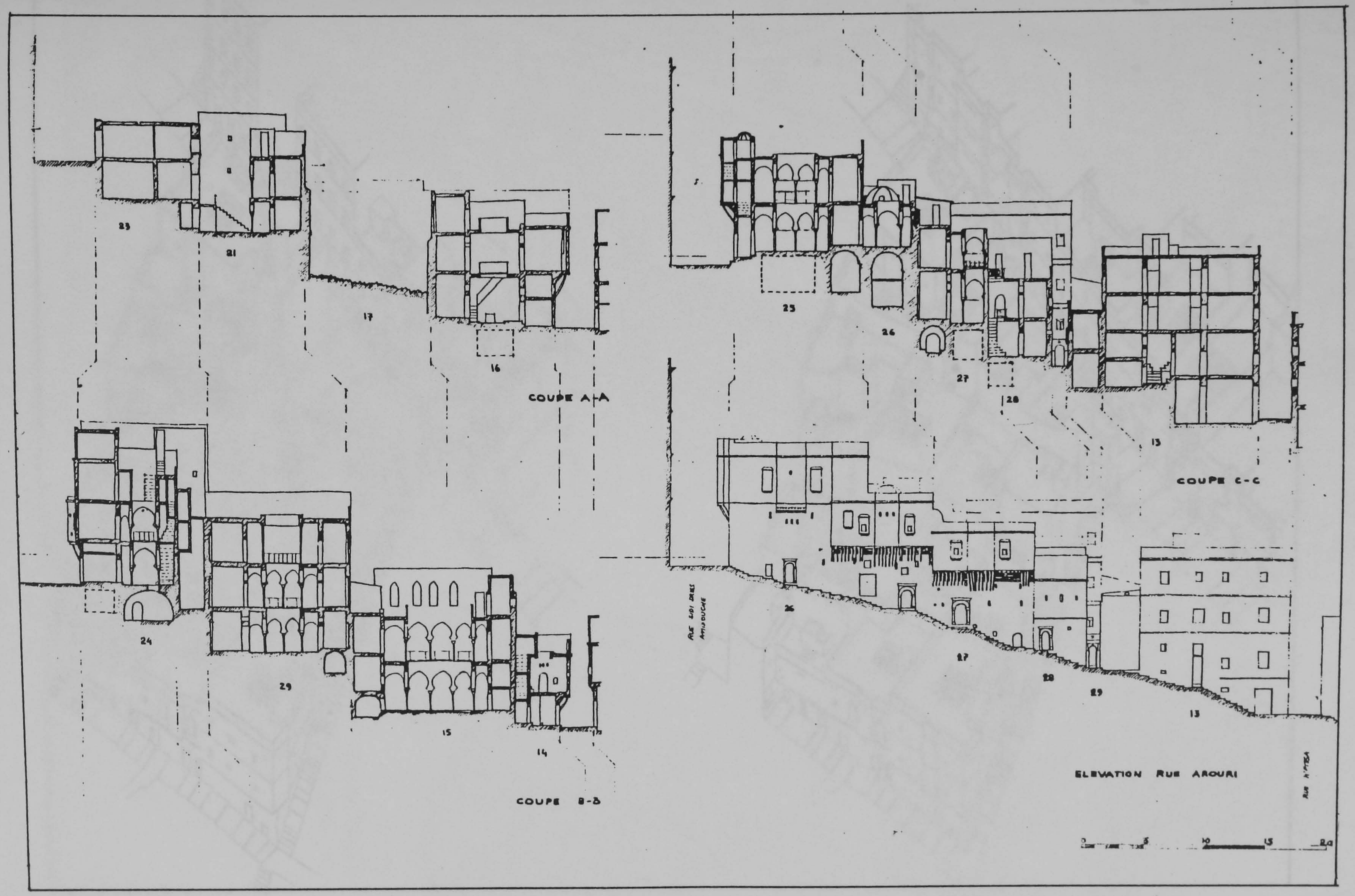


Figure a12. Sections and Elevation of a Cluster Housing in the Casbah

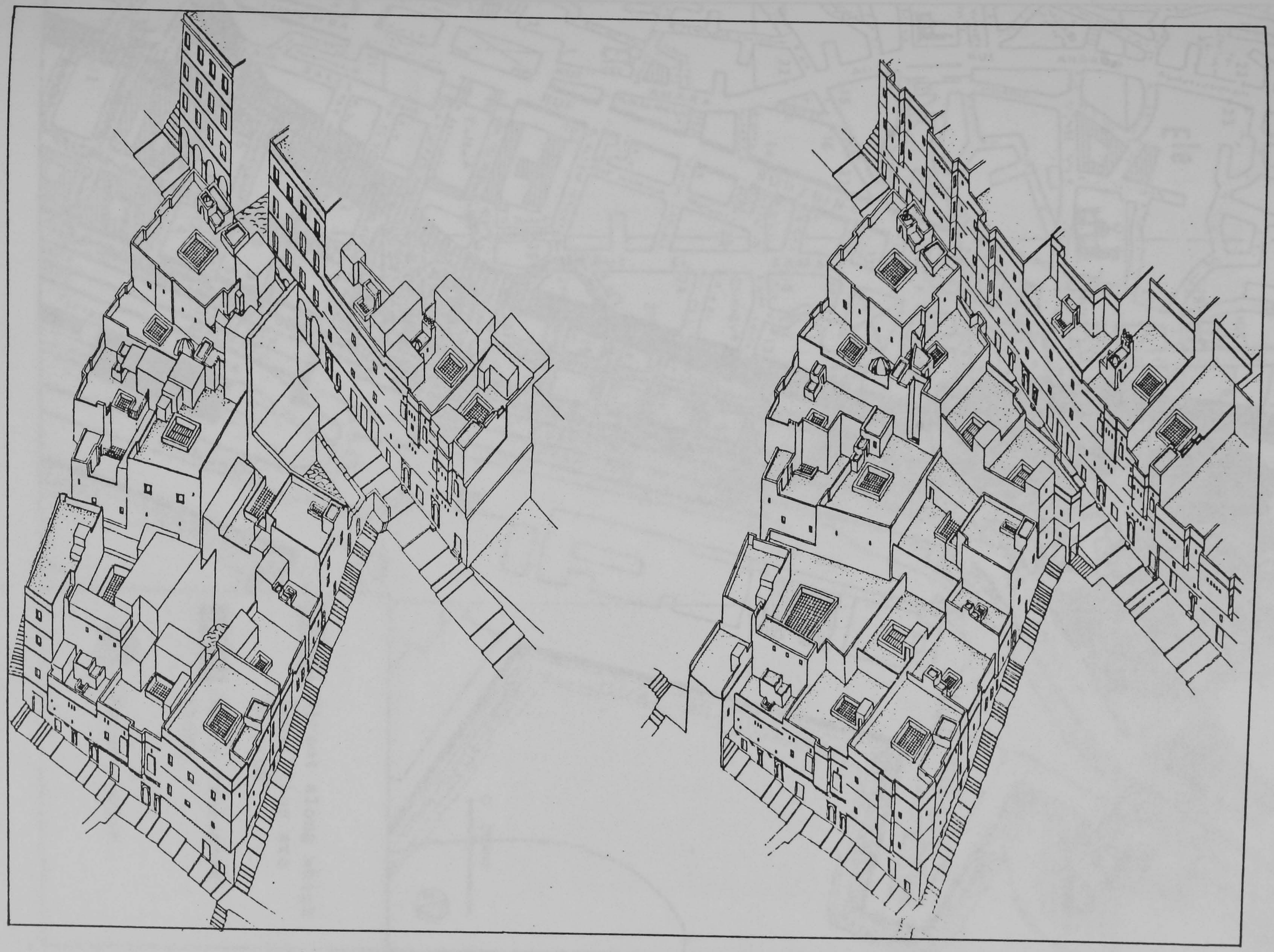


Figure a13. The Diversity of the Volumes in the Casbah and the Use of the Slope to Provide Panoramic Views

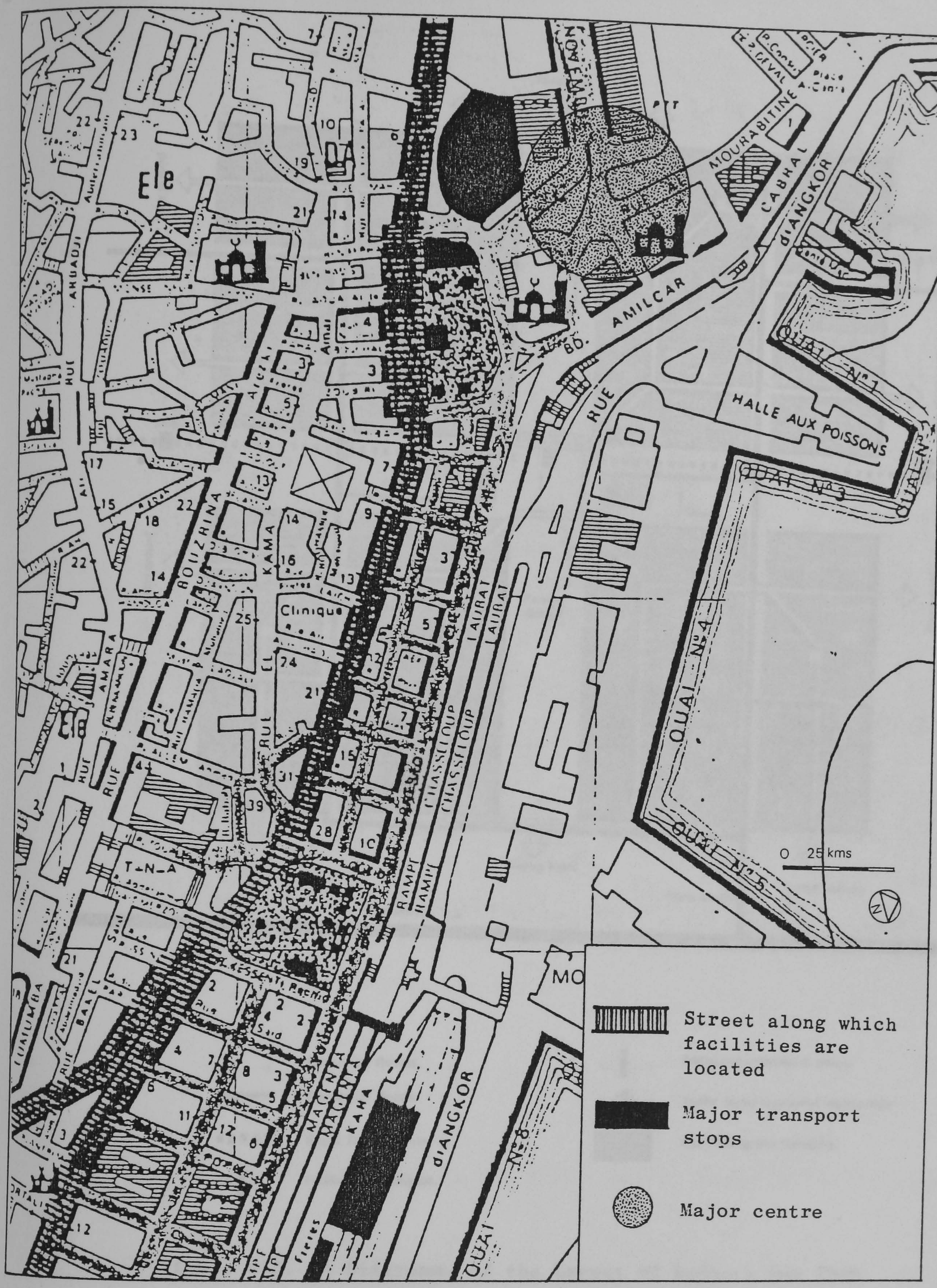
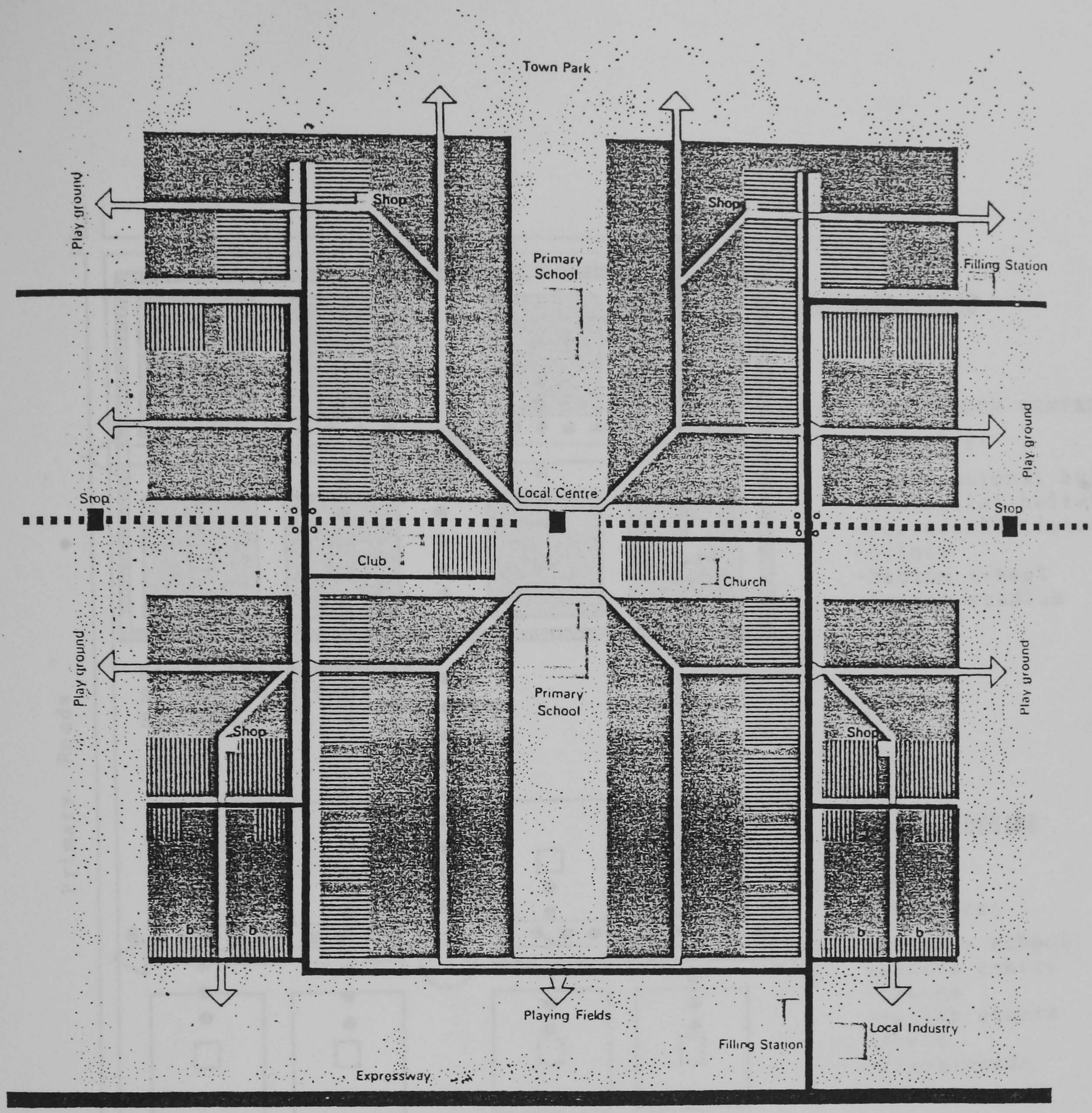


Figure a14. Layout of a Cluster Housing in a Colonial Area



Pedestrian Routes.

Distributor Roads.

Rapid Transit Route.

Pedestrian underpass.

Pedestrian crossing at grade.

Traffic signal controlled intersection.

Car Parking and Garaging.

Figure a15. A Diagramme of the Layout of Runcorn New Town

Source: Runcorn D.C. (1967) p.54

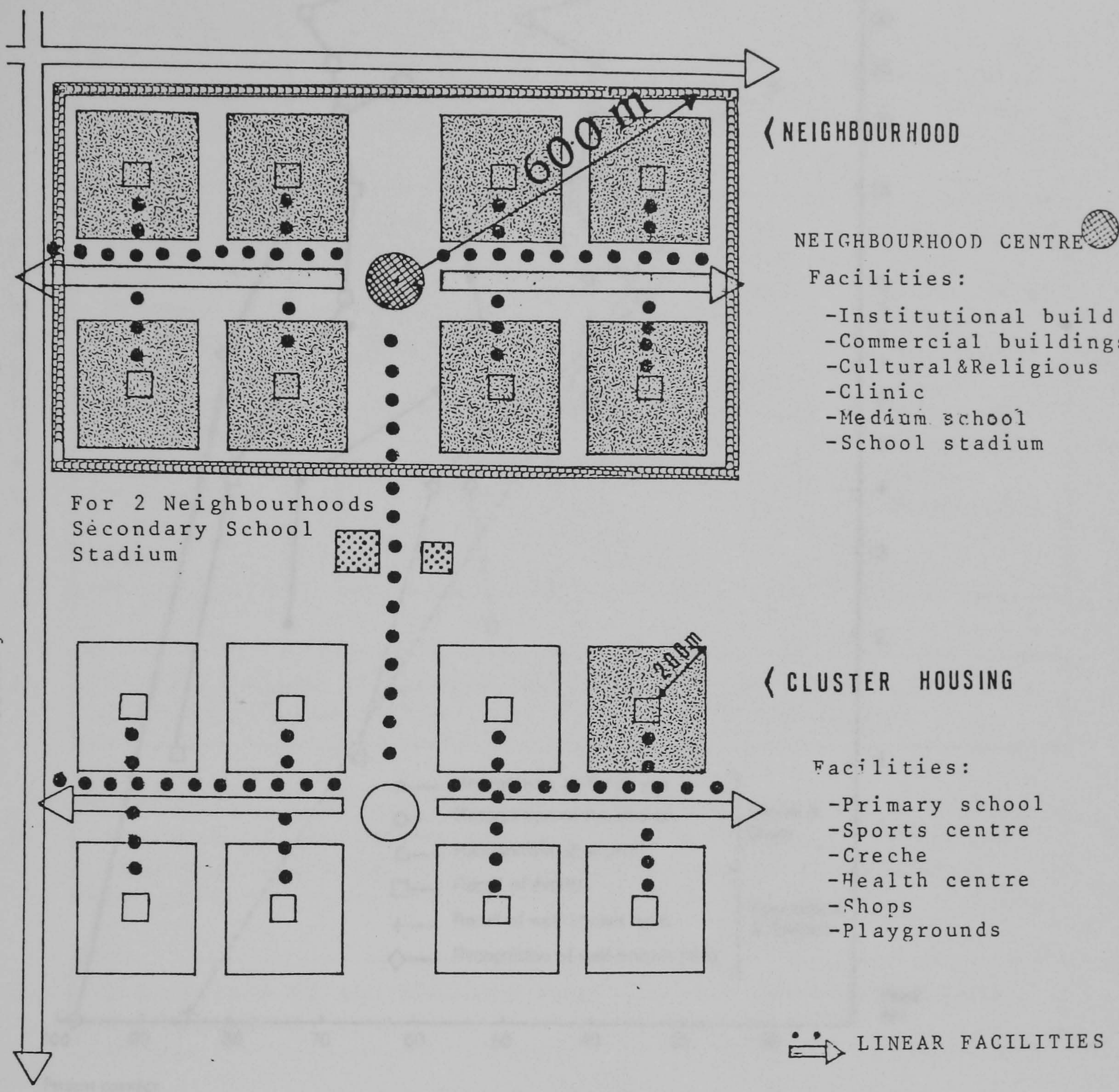


Figure a16. A Diagramme of the ZHUN's Layout Suggested by the CNERU

Source: CNERU (1983) p.50

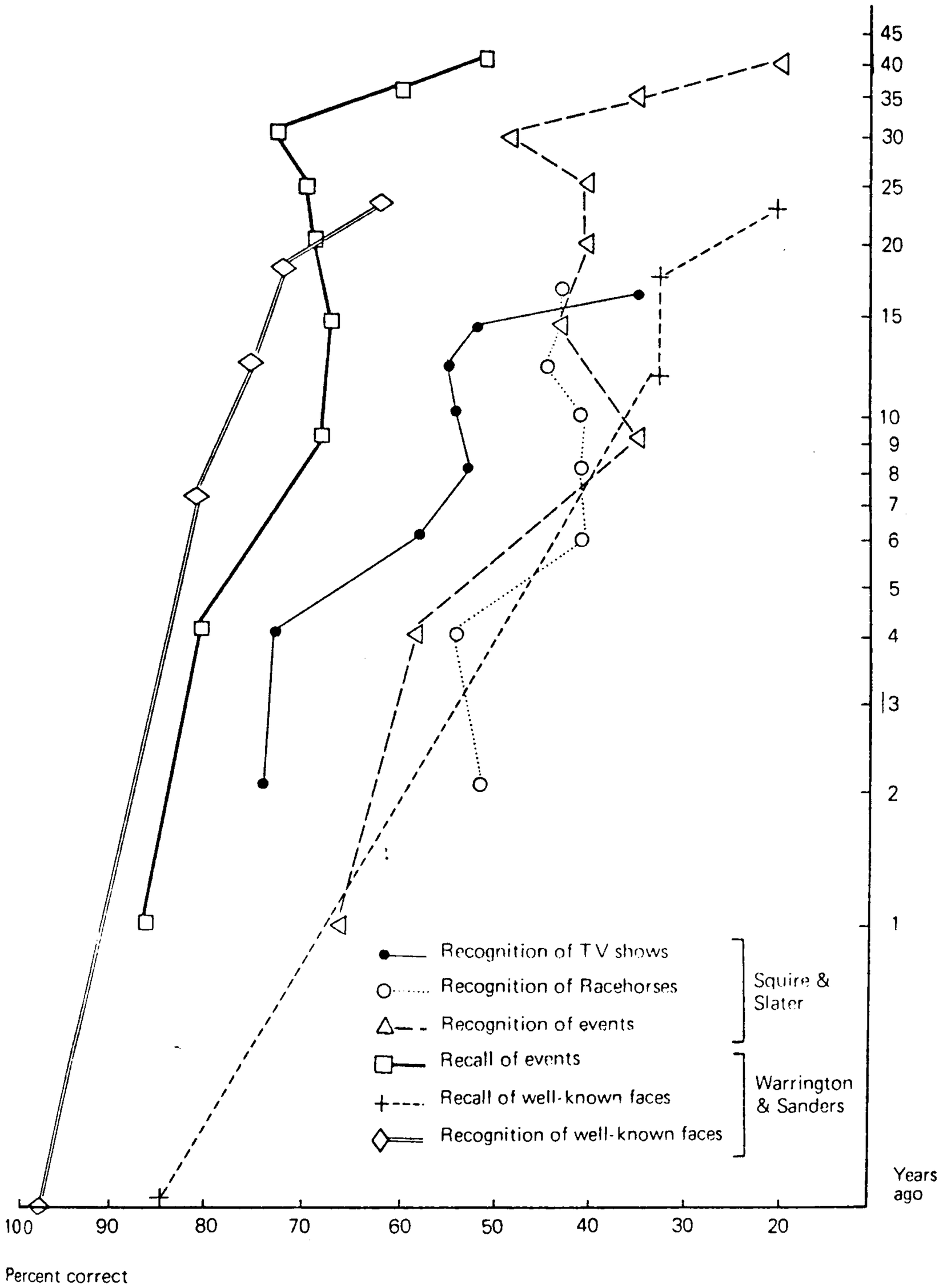


Figure b1. Relationship Between Retention of Information and Time

Source: Louis Moss and Harvey Goldstein (1979) p.15

Satisfaction With the the Following Aspects

	1	2	3	4
	Social Relationsh.	Form of the Flats	Layout of the Project	Location of Facilities
PARAMETERS	-Participat. in Com. Wo. -Number of Friends -Friendship -Interaction -Feelings of Safety -Privacy -Privacy -etc.	-Spaciousn. -Views -Noise -Orientat. -Storey -etc.	-Appearance -Location of green Spac. -Location of Playground. -Arrangement of buildin. -Type of Streets -etc.	-Location of Shops -Location of School -Quality of Shops -Means of Transport -Public Services -etc.

A. Classification of Aspects and Parameters by Their Degree of Influence On Residents' Satisfaction With the Project

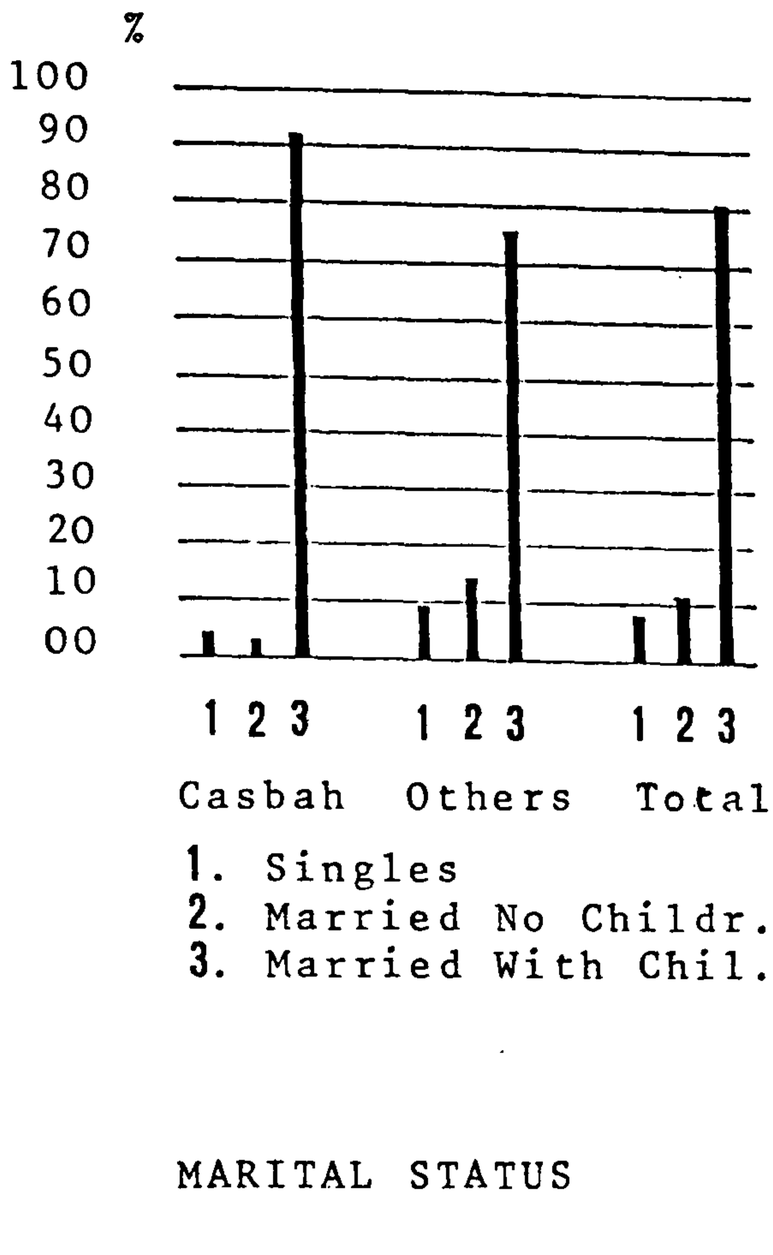
B. Analysis of the Parameters Affecting Satisfaction With Each aspect (1-4), Presentation and Discussion of the Findings

C. Translation of the Findings From "B" Into Planning Concepts and Recommendations

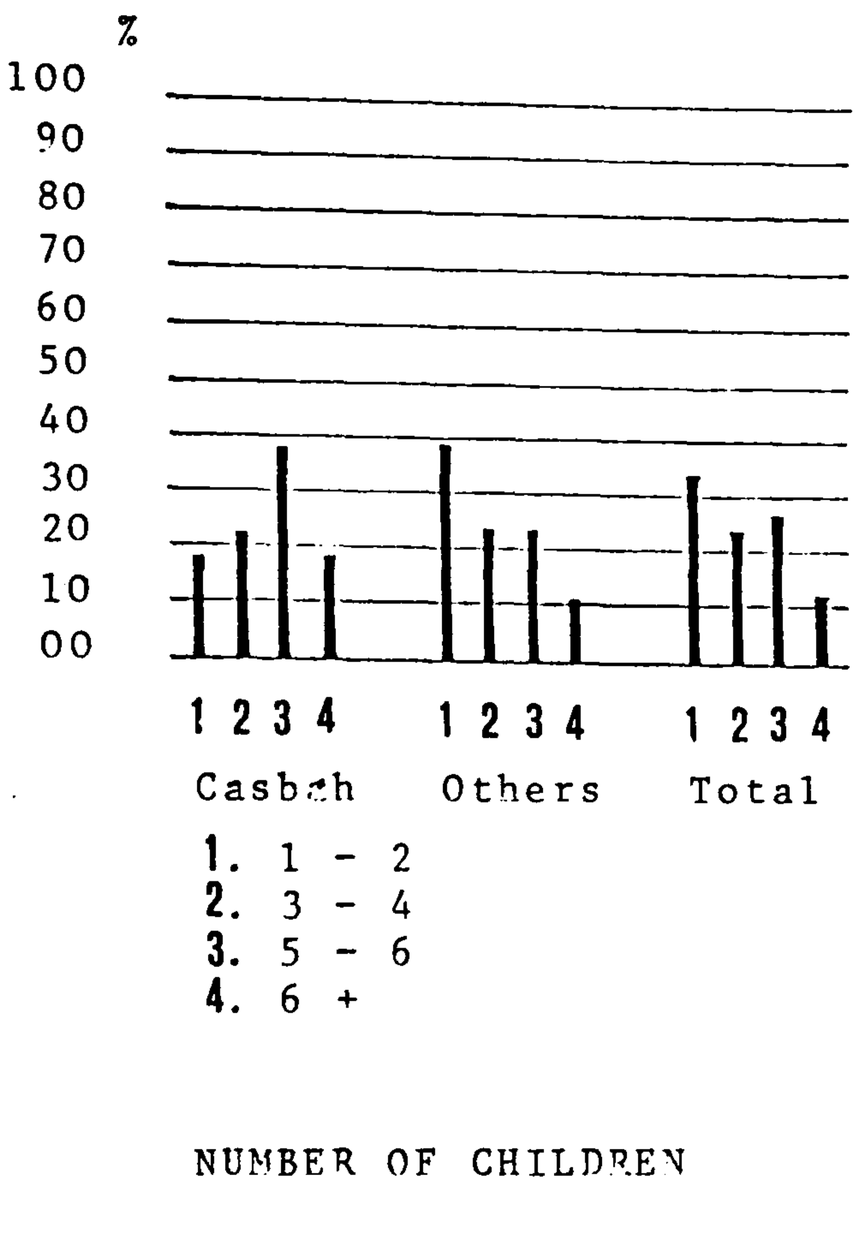
D. Stress on Concepts Needing Further Research

E. Proposals From "C" of a Development Programme (Guidelines) For Designing and Planning New Housing Projects

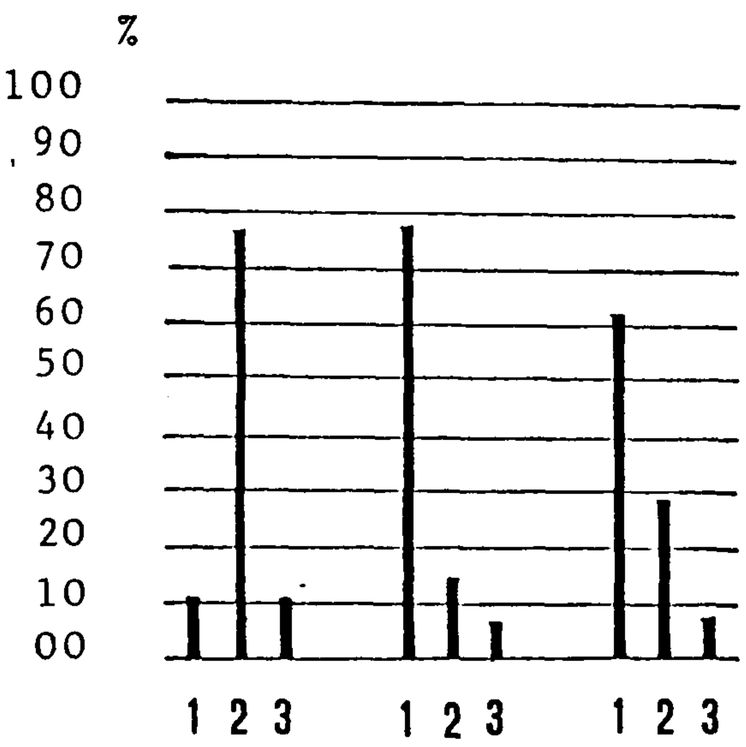
Figure b2. Variables, Parameters and Structure of the Thesis



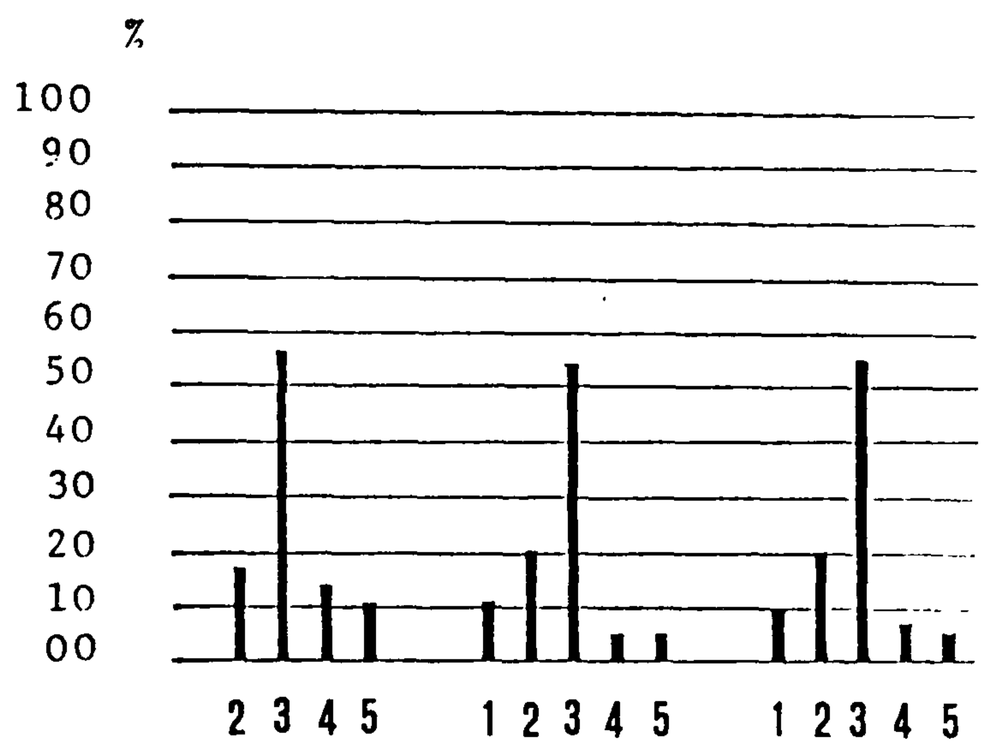
MARITAL STATUS



NUMBER OF CHILDREN

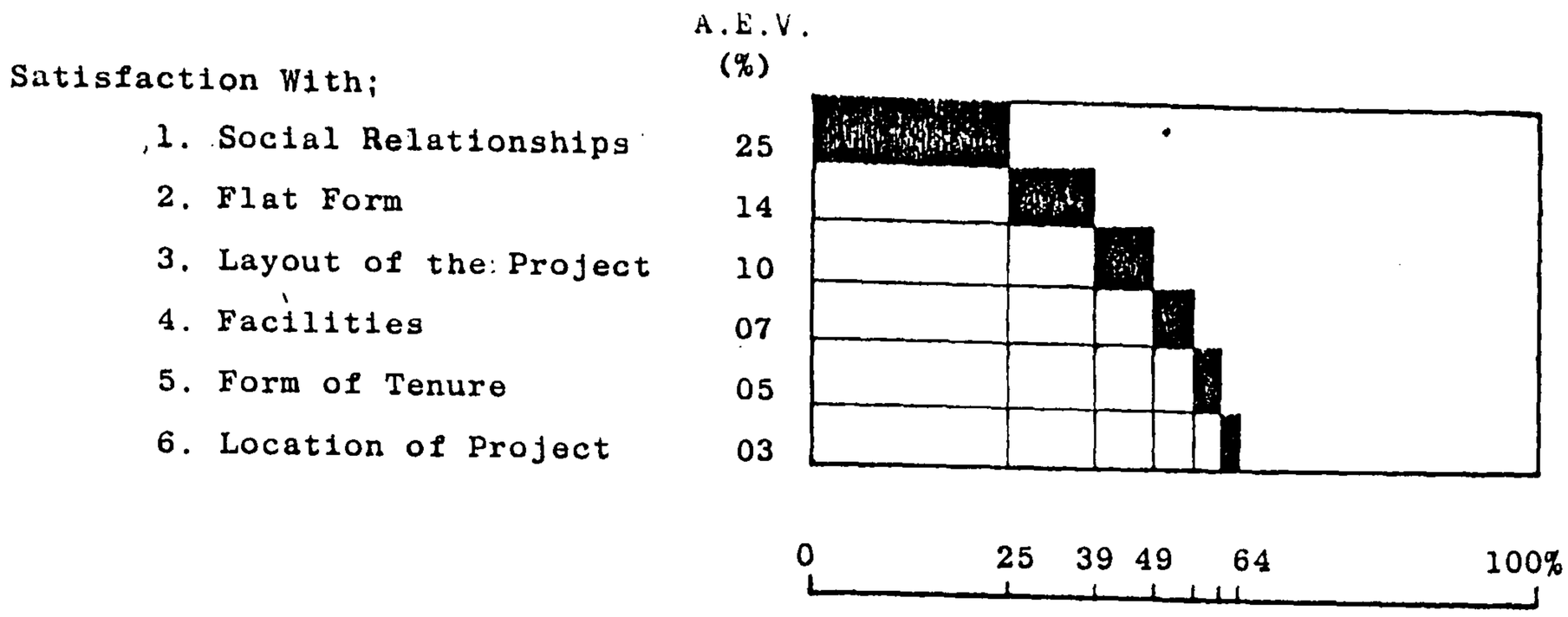


OCCUPATION



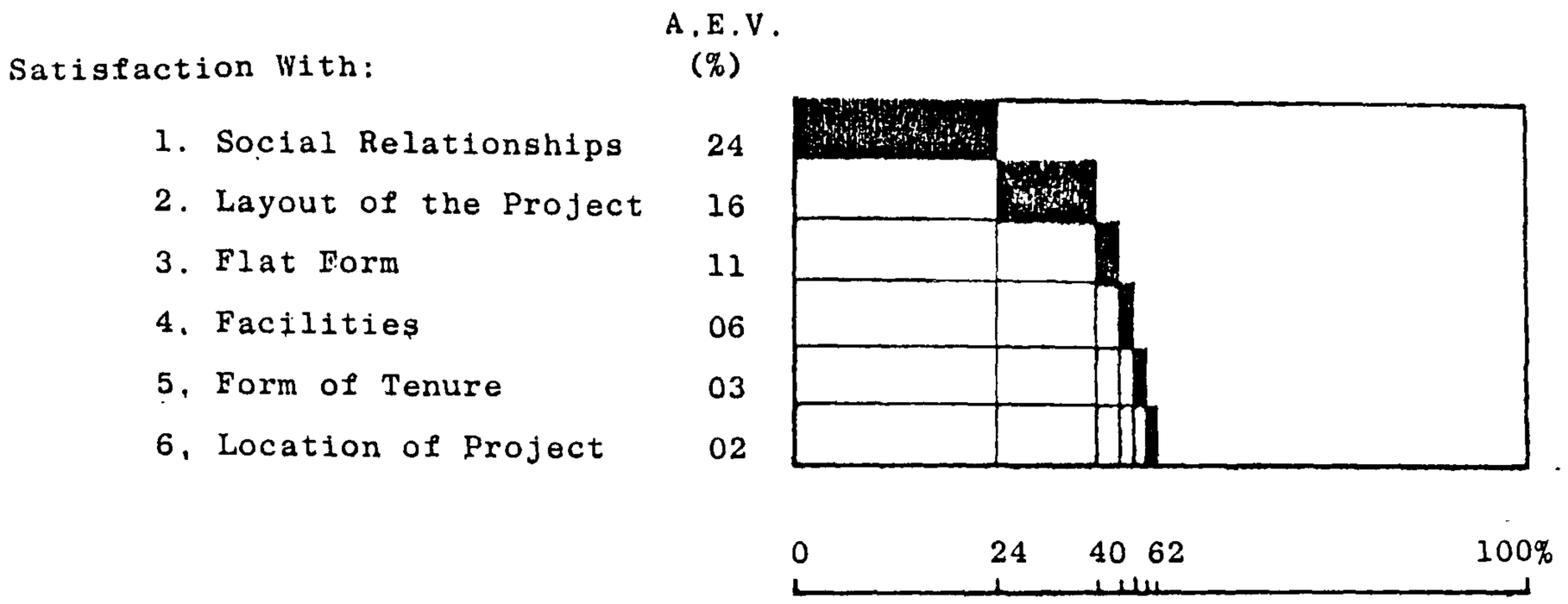
AGE GROUP

Figure b3. Socio-Economic Characteristics of the Residents



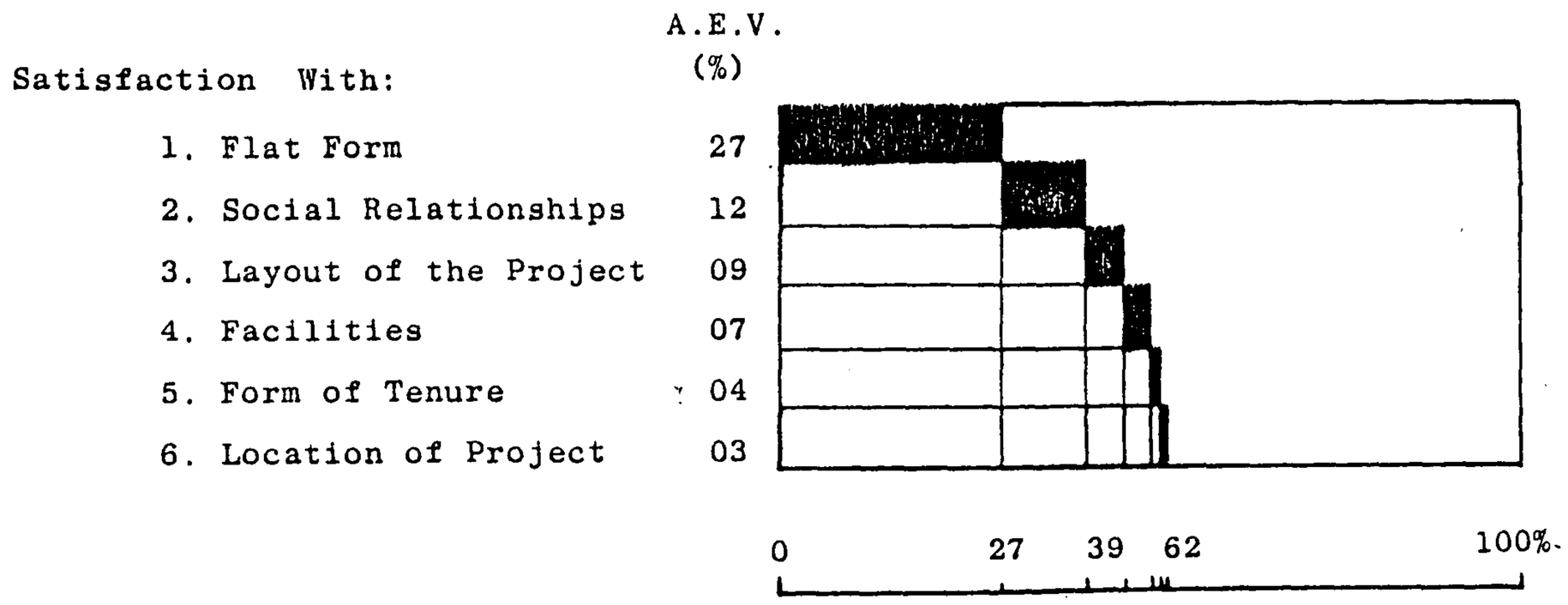
C.U.V. = 64%

Prediction of Satisfaction With the Project Amongst All Respondents



C.U.V. = 62%

Prediction of Satisfaction With the Project Amongst Resp. from Casbah



C.U.V. = 62%

Prediction of Satisfaction With the Project Amongst Resp. from Colon. Areas

A.E.V. = Additional Explained Variance

C.U.V. = Cumulative Explained Variance

Figure b4. Aspects Related to Satisfaction With the Project

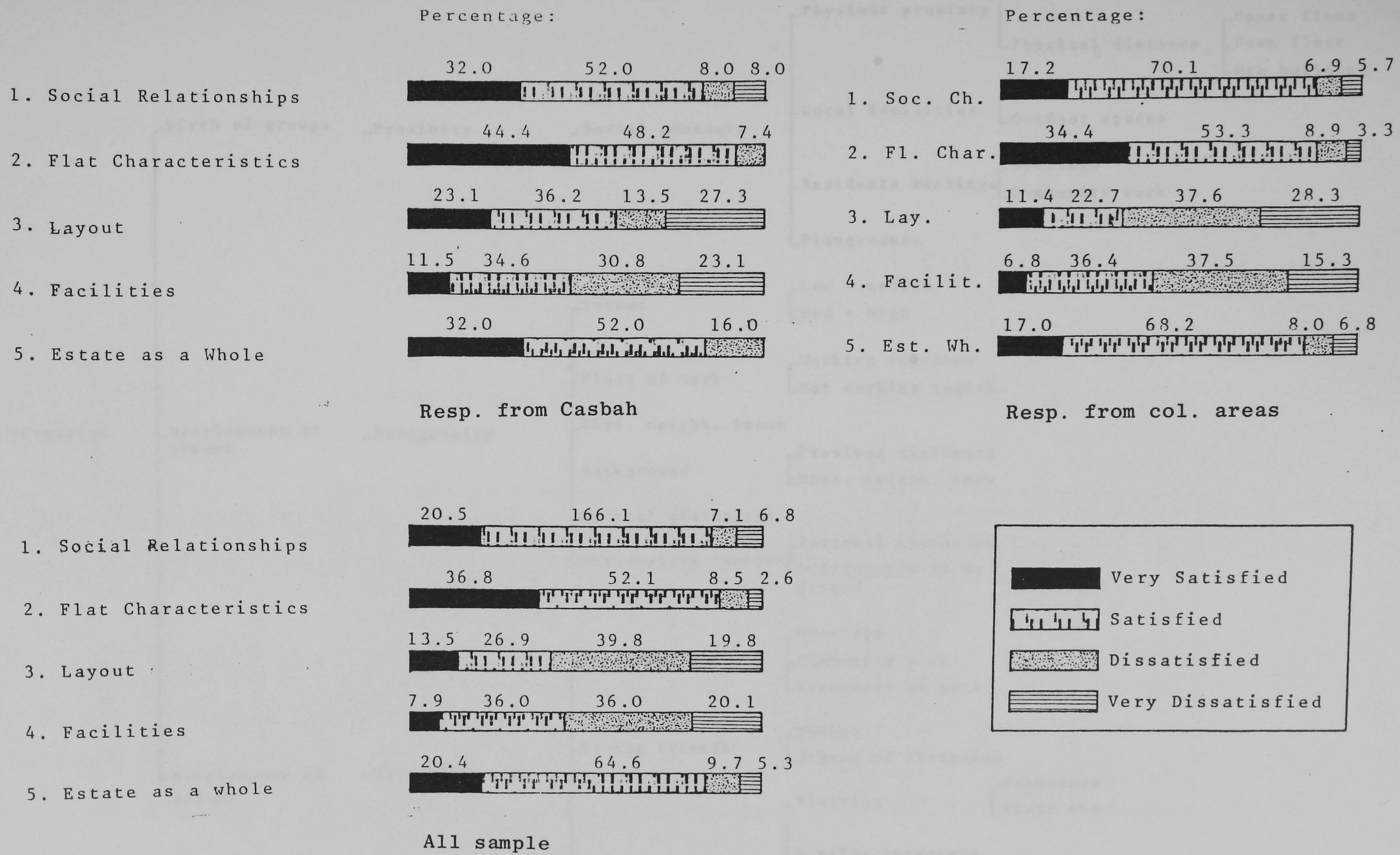


Figure b5. Residents'Degree of Satisfaction With the New Project and the Aspects Related to it

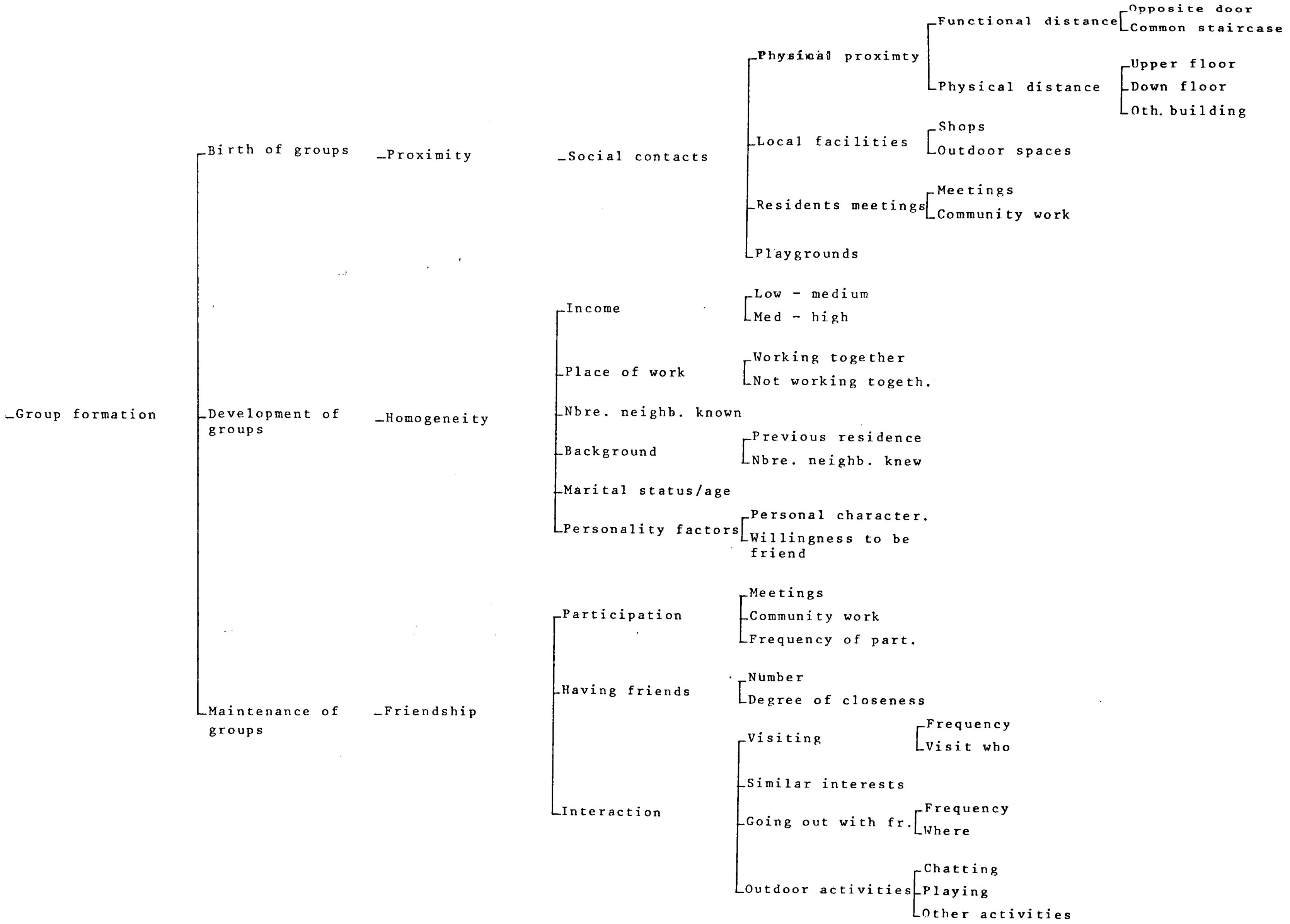
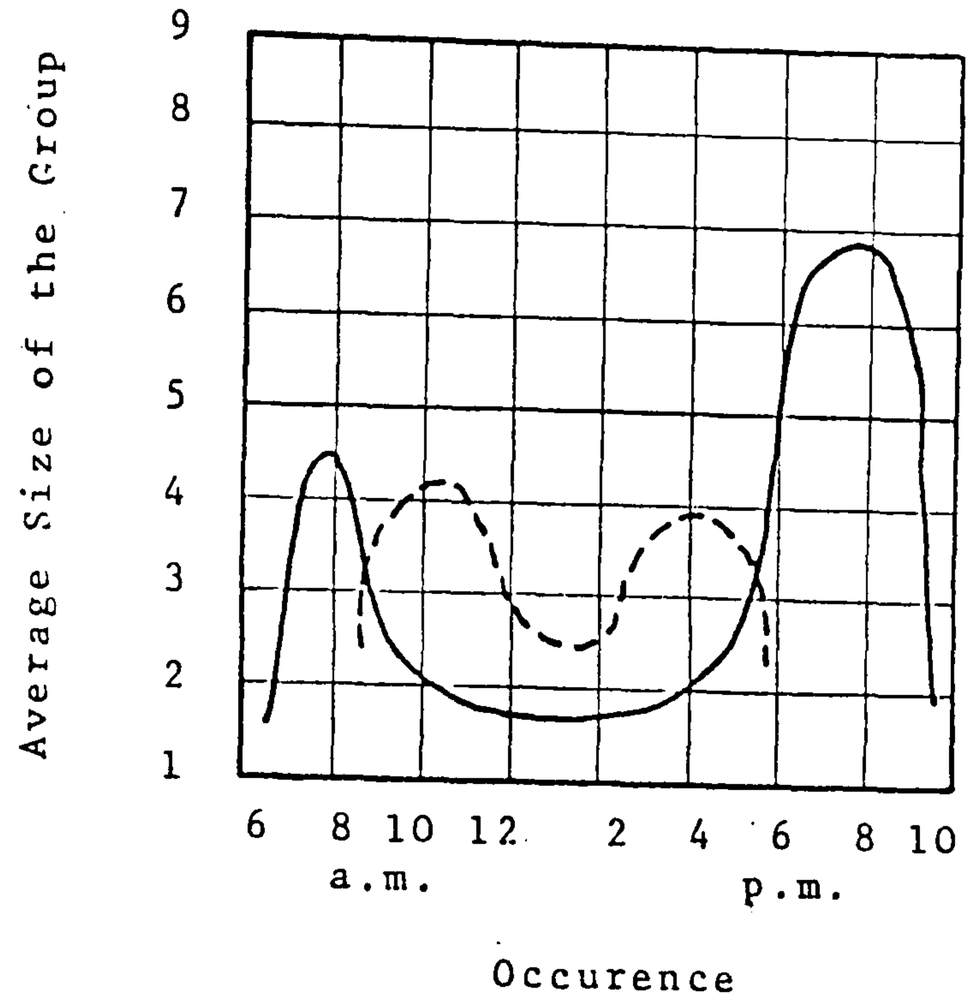
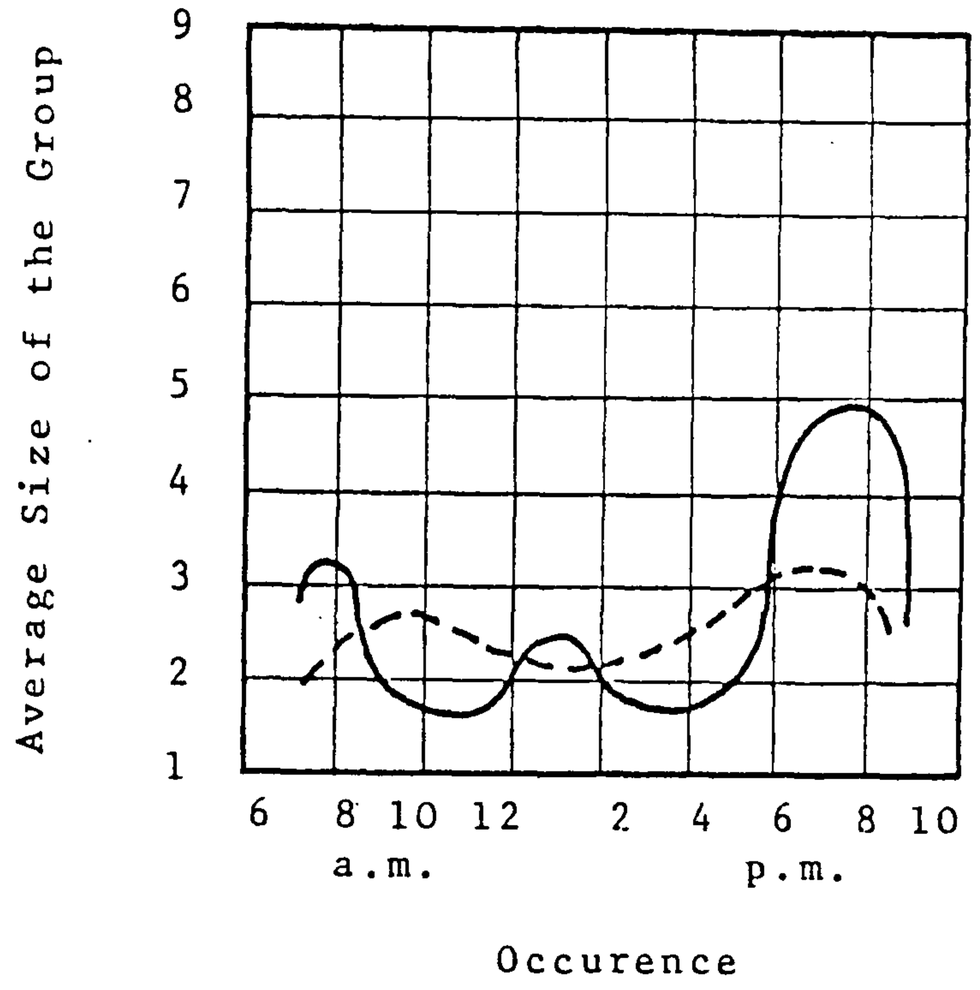


Figure bf. Dia[illegible]

1, Cluster One
(Casbah)



2. Cluster Two
(Clonial)



Results of a Week Observation
- Excluding the Week-end -

Males

Females

Figure b7. Relationship Between Occurence of Outdoor Activities and the Size of the Groups

Factors:

Lack of Green Spaces
Cinema Too Far
Library Too Far
Not Enough Shops
Fears From Car Dangers
Disturbed By Noise
Lack of Playgrounds
Bad organisation of Buildi.
Too Far From City
Health Centre Too far
Fears From Robberies
Cafe Too Far
Place of Work Too Far
Shops Not Well Stocked
Market Too Far
Mosque Too Far
Did Not Know Neighbours
Some Problems With Neighbo.
Not Very Pleasant Building.
School Too Far
Do Not Have Friends
Shops Too Far
Views Unpleasant
Do Not Like The Storey
Do Not Partic. Outd. Activ.
Do Not Partic. Comm. Meeti.
Dissatisf. With Social Rel.
Flat Too Small
Unhappy With Orientation
Do Not Know Any Neighbours

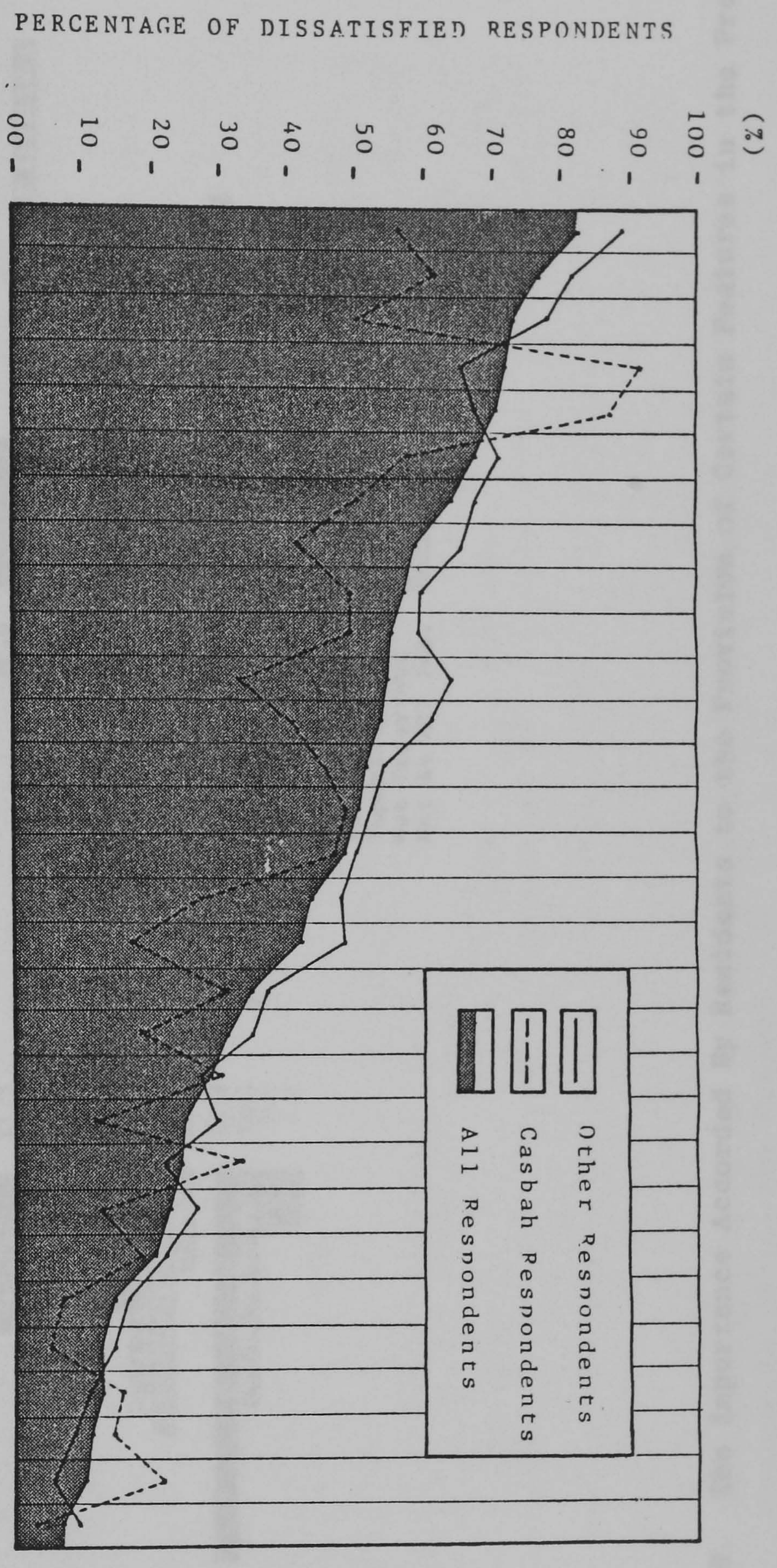


Figure b8. Percentage of Residents Dissatisfied With Certain Features of the New Project

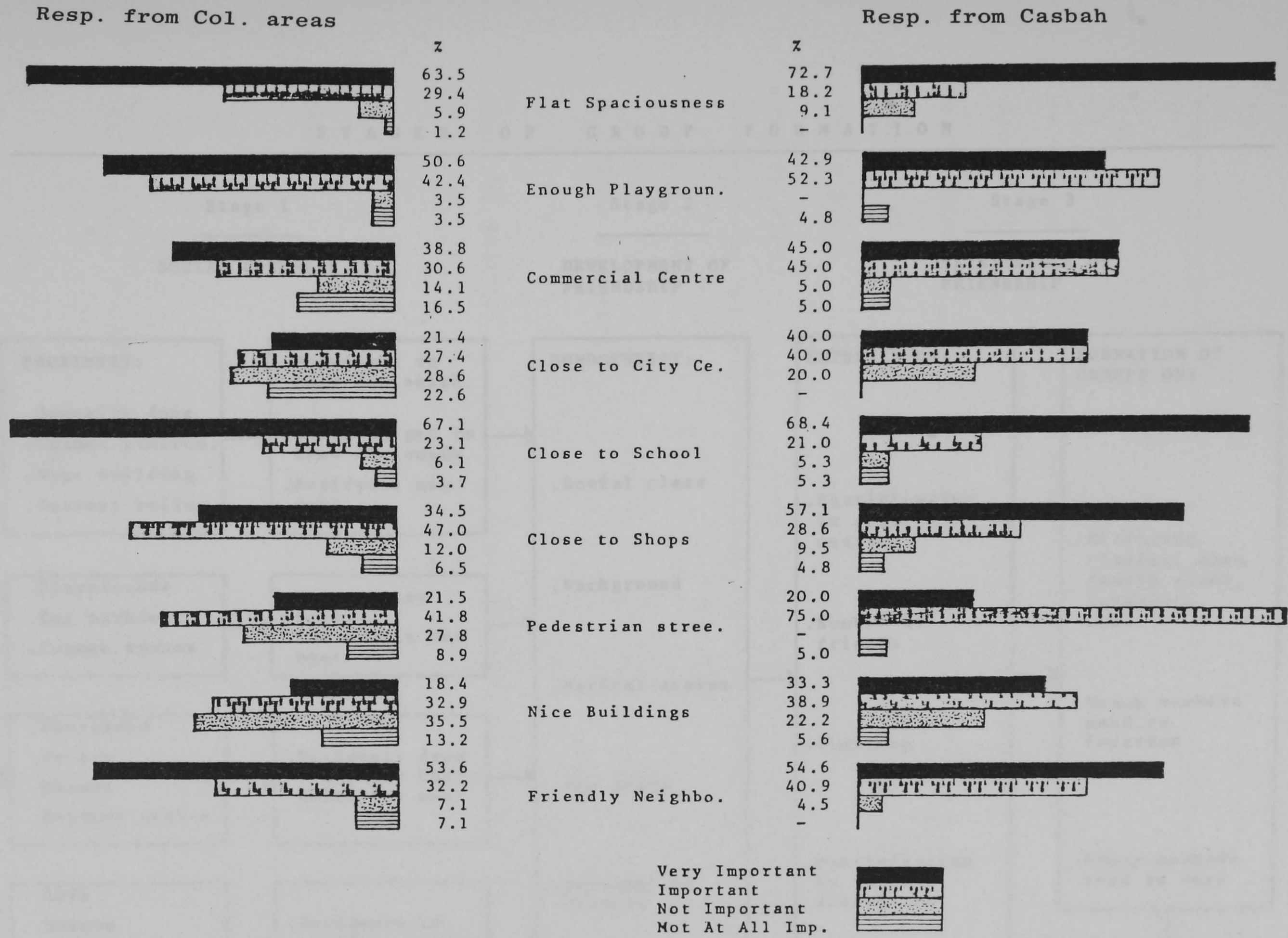


Figure b9. The Importance Accorded By Residents to the Provision of Certain Features in the Project

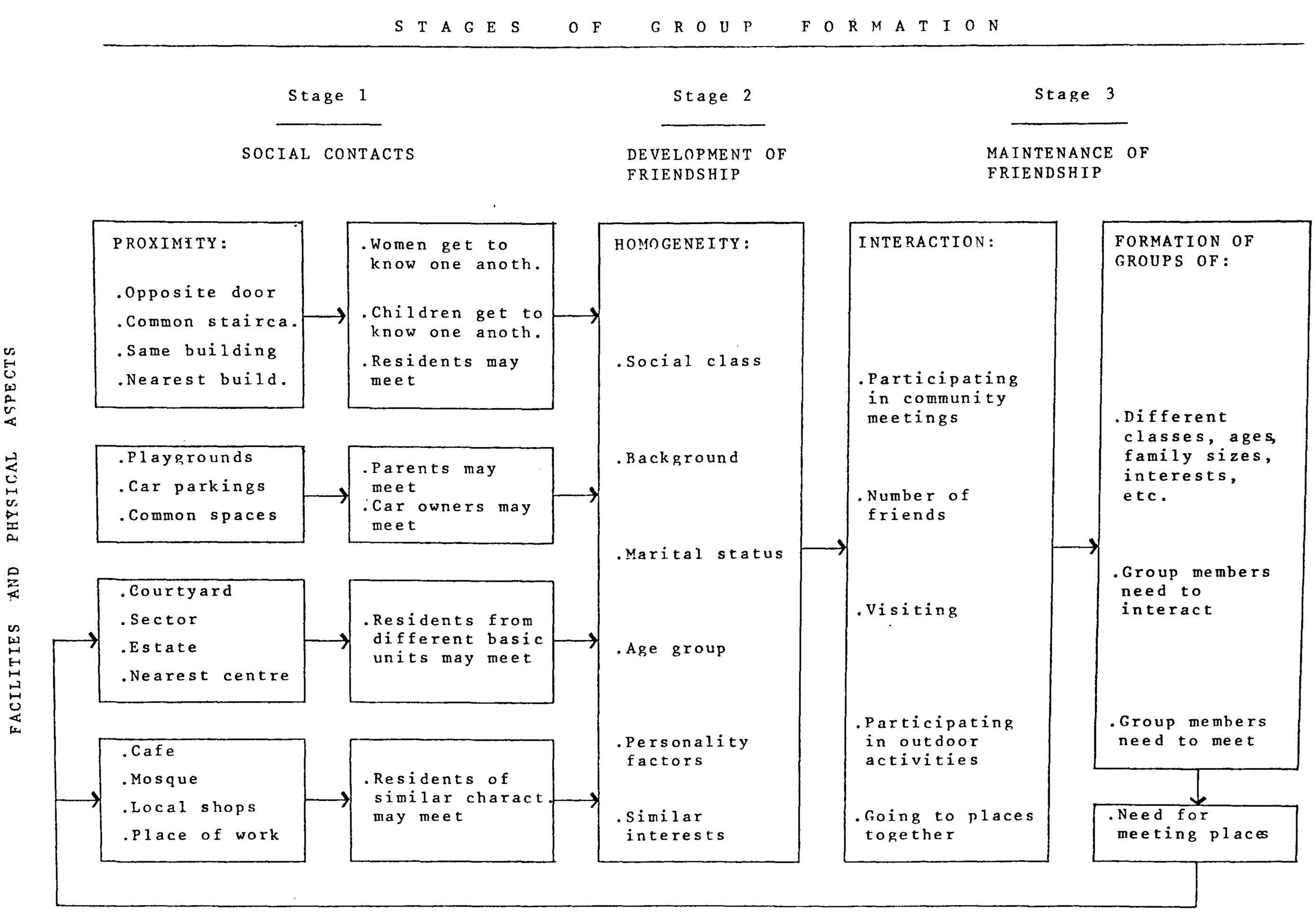


Figure b10. Relationship Between the Process of Group Formation, Facilities and Physical Components of the New Project

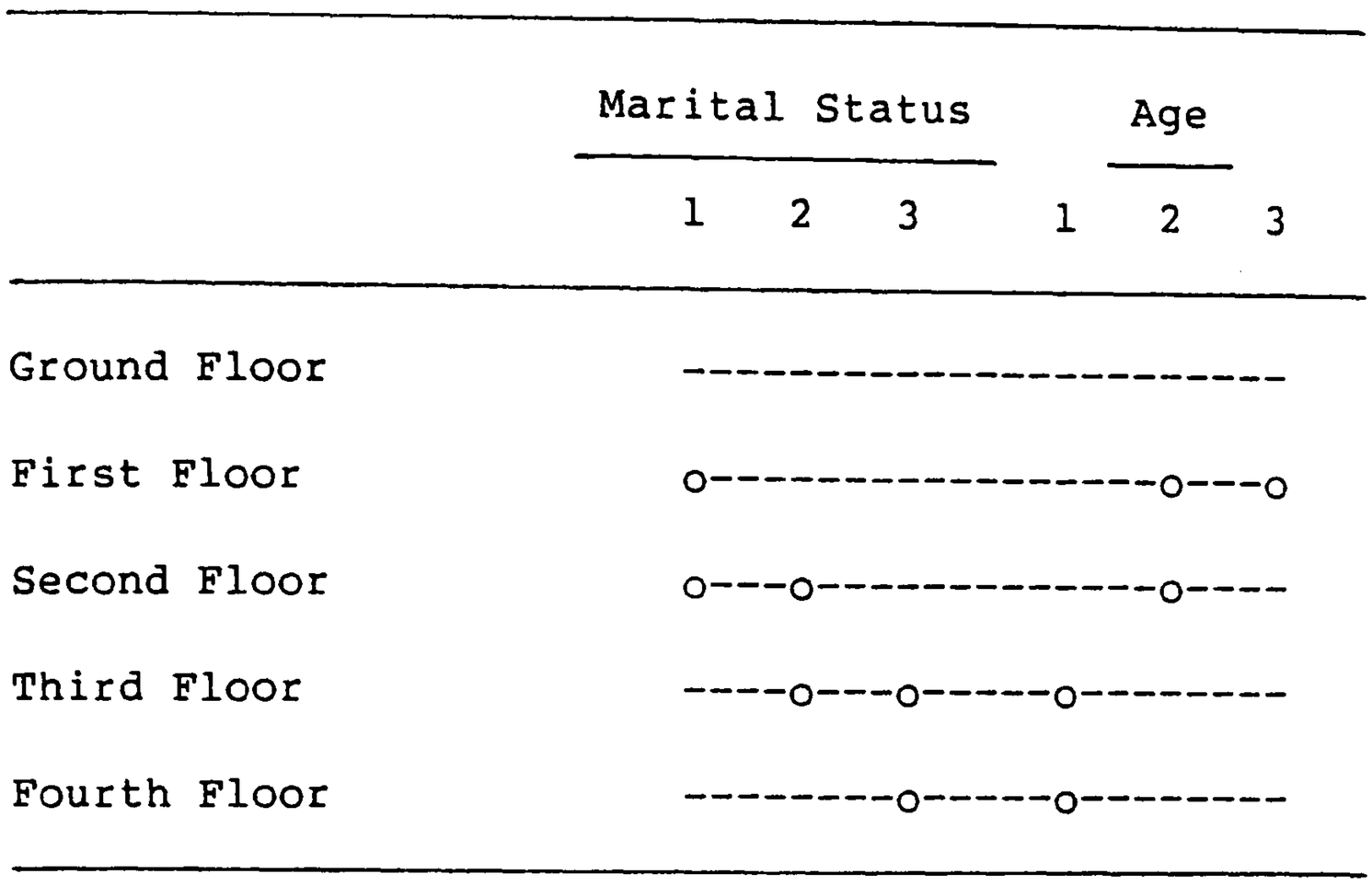


Figure b11. Floor Preferred by Residents

	Marital Status			Age			Income	
	1	2	3	1	2	3	1	2
- Having Many Friends on the Estate	x	o	o	o	x	x	x	x
- Knowing Many Neighbours	x	o	o	-	o	x	x	o
- Partic. in Many Outdoor Activities	x	o	-	-	o	x	x	o
- Providing Outdoor Meeting Places	x	o	o	o	x	x	x	o
- Having a Spacious Flat	x	x	x	x	x	x	x	x
- Having Attractive Views From Flat	o	x	x	x	o	-	o	x
- Living in an Attractive Estate	x	x	o	o	x	x	x	x
- Providing Sufficient Playgrounds	x	o	-	-	o	x	x	o
- Providing Many Green Spaces	x	x	x	o	x	x	o	x
- Living Near School (less than 10mns)	x	o	-	-	x	o	x	o
- Living Near Shops (less than 10mns)	x	o	-	-	o	x	x	o
- Varied + Good Quality Goods in Shops	x	o	o	o	x	x	x	x
- Reasonable Prices in the Shops	x	x	x	o	x	x	x	o
- Having a Nearby Library	o	o	x	x	o	o	o	o
- Having a Cafe Nearby	o	o	o	-	o	x	x	o
- Having a Mosque Nearby	x	o	o	o	o	x	x	o
- Reducing Rent	x	o	o	o	x	o	x	o
- Reducing Mortgages	o	o	o	o	o	o	-	x
- Living Close to City Centre	o	x	x	x	o	o	x	o
- Living Close to Local Centres	x	o	o	o	x	o	x	o

Marital Status: 1. Married with Children 2. Young Couples 3. Singles

Age: 1. 25 - 35 2. 36 - 50 3. 50+

Income: 1. Low to Medium 2. Medium to High

x Very Important
o Quite Important
- Important

Figure b12. Difference in Importance Attached by Residents to the Provision of Certain Features in New Housing Projects by Marital Status, Age and Income.

Facilities	Capacity	Surface (m^2)	Number
Primary School	1200 places	15000	1
Medium School	600-800 pla.	90000-12000	1
Local Shops		60	10
Playground (For every 30-50 flats)		1000	
Health Centre		600	1
Sport Centre		9600	1
Post office		1400	1
Mosque		2000	1
Youth Club		1200	1
Creche		800	1
Cinema	400 places	700	1
Market		2000	1
Cafe		80	1

Figure b13. Facilities recommended by the CNERU for a housing project varying between 1200 and 1600 flats.

Source: CNERU, 1983 pp.222 - 223

APPENDIX 3

TABLES

	Satisfaction With Project	A.E.V. (%)	C.E.V. (%)	Cor.Coef
			**	**
C	1. Satisfaction With the	27	27	0.72
O	Flats		**	**
L	2. Satisfaction With the	12	39	0.69
O	Social Relationships		*	*
N	3. Satisfaction With the	09	48	0.58
I	Layout of the Project		*	*
A	4. Satisfaction With the	07	55	0.60
L	Facilities			
	5. Satisfaction With the	04	59	0.52
R	Form of Tenure			
E	6. Satisfaction With the	03	62	0.51
S.	Location of the Project			
			**	**
	1. Satisfaction With the	24	24	0.69
C	Social Relationships		**	**
A	2. Satisfaction With the	16	40	0.63
S	Layout of the Project		*	*
B	3. Satisfaction With the	11	51	0.61
A	Flats		*	*
H	4. Satisfaction With the	06	57	0.58
	Facilities			
R	5. Satisfaction With the	03	60	0.54
E	Tenure Aspect			
S.	6. Satisfaction With the	02	62	0.51
	Location of the Project			
			**	**
	1. Satisfaction With the	25	25	0.70
A	Social Relationships		**	**
L	2. Satisfaction With the	14	39	0.66
L	Flats		*	**
	3. Satisfaction With the	10	49	0.61
S	Layout of the Project		*	*
A	4. Satisfaction With the	07	56	0.59
M	Facilities			
P	5. Satisfaction With the	05	61	0.54
L	Tenure Aspect			
E	6. Satisfaction With the	03	64	0.51
	Location of the Project			

A.E.V.: Additional Explained Variance
C.E.V.: Cumulative Explained Variance
Cor.Coef.: Correlation Coefficient
**: Results Significant at a 0.01 Level
*: Results Significant at a 0.05 Level

Table 1. Aspects Predicting Satisfaction With the New Housing Project Under Study.

Satisf. With Social Relat.	A.E.V. (%)	C.E.V. (%)	Corr.Coef.
1. Participation in Community Meetings	24	24 **	0.70 **
2. Number of Friends	13	37 *	0.68 *
3. Background	10	47 *	0.59 *
4. Visiting	07	54 *	0.50 *
5. Number of Neighbours Knew	04	58 *	0.55 *
6. Number of Neighbous Known	03	61	0.57
7. Feelings of Safety	02	63	0.45
8. Place of Work	02	65	0.46
9. Privacy	01	66	0.46
10. Willingness to Be a Friend	01	67	0.44
11. Marital Status	01	68	0.43
12. Going out With Friends from Estate	--	68	0.43
13. Desire to Move	--	68	0.42
14. Lack of Choice	--	68	0.41

A.E.V.: Additional Explained Variance
C.E.V.: Cumulative Explained Variance (r^2)
Cor. Coef.: Correlation Coefficient
**: Results Significant at a 0.01 Level
*: Results Significant at a 0.05 Level

Table 2. Factors Predicting Satisfaction With the Social Relationships in the New Housing Project Under Study.

participation		Frequency						Percentage					
		1	2	3	4	5	Total	1	2	3	4	5	Total
1. NUMBER OF NEIGHBOURS KNEW	0.	-	2	2	2	8	14	-	14.3	14.3	14.3	57.1	9.0
	1-2.	8	10	7	3	6	34	23.5	29.4	20.6	8.8	17.6	21.8
	3-5.	13	19	16	6	6	60	21.7	31.7	26.7	10.0	10.0	38.5
	6-10.	12	8	4	3	1	28	42.9	28.6	14.3	10.7	3.6	17.9
	10+.	11	3	4	-	2	20	55.0	15.0	20.0	-	10.0	12.8
	Total	44	42	33	14	23	156	28.2	26.9	21.6	9.0	14.8	100%
2. NUMBER OF FRIENDS	0.	2	6	4	4	8	24	8.3	25.0	16.7	16.7	33.3	16.2
	1-2.	6	8	19	8	11	52	11.5	15.4	36.5	15.4	21.2	35.1
	3-5.	24	17	10	2	-	53	45.3	32.1	18.9	3.8	-	35.8
	6-10.	10	4	-	-	1	15	66.7	26.7	-	-	6.7	10.1
	10+.	2	2	-	-	-	4	50.0	50.0	-	-	-	2.7
	Total	44	37	33	14	20	148	29.7	25.0	22.3	9.5	13.5	100%
3. MARITAL STATUS	Singles	-	2	8	3	2	15	-	13.3	53.3	20.0	13.3	10.0
	Young Couples	2	2	1	3	4	12	16.7	16.7	8.3	25.0	33.3	8.0
	Married + Children	38	33	30	8	14	123	30.9	26.8	24.4	6.5	11.4	82.0
	Total	40	37	39	14	20	150	26.7	24.7	26.0	9.3	13.3	100%

1. Always 2. Often 3. Time to Time 4. Rarely 5. Never

Table 3. Factors Related to Frequency of Participation in Community Meetings.

Satisf. With Soc. Rel.	Frequency					Percentage				
Participation	1	2	3	4	Total	1	2	3	4	Total
1. Always	14	23	3	-	40	35.0	57.5	7.5	-	28.6
2. Often	10	29	-	-	39	25.6	76.4	-	-	27.9
3. Time to Time	8	23	1	2	34	23.5	67.6	2.9	5.9	24.3
4. Rarely	2	2	3	2	9	22.2	22.2	33.4	22.2	6.4
5. Never	4	9	3	2	18	22.2	50.0	16.7	11.1	12.9
Total	38	86	10	6	140	27.1	61.4	7.1	4.3	100%

1. Very Satisfied 2. Satisfied 3. Dissatisfied 4. Very Dissatisfied

Table 4. Relationship Between Frequency of Participation in Community Meetings and Satisfaction With the New Social Relationships.

Number of Friends		Frequency						Percentage					
		0	1-2	3-5	6-10	10+	Total	0	1-2	3-5	5-10	10+	Total
1. PREVIO. AREA	Casbah Area	4	23	10	9	5	51	7.8	45.1	19.6	17.6	9.8	22.1
	Colonial Ar.	54	96	22	2	6	180	30.0	53.3	12.2	1.1	3.3	77.9
	Total	58	119	32	11	11	231	25.1	51.5	13.6	4.8	4.8	100%
2. NUMBER OF NEIGHB. KNEW	0	13	5	2	-	-	20	65.0	25.0	10.0	-	-	8.3
	1-2	12	46	6	4	-	68	17.6	67.6	8.8	5.9	-	28.3
	3-5	8	34	26	16	2	86	9.3	39.5	30.2	18.6	2.3	35.8
	6-10	2	6	16	8	4	36	5.6	16.7	44.4	22.2	11.1	15.0
	10+	2	4	6	12	6	30	6.7	13.4	20.0	40.0	20.0	12.5
	Total	37	95	56	40	12	240	15.4	39.6	23.3	16.7	5.0	100%
3. GOING OUT WITH	Friends From Ain-Allah	-	4	15	9	-	28	-	14.3	53.6	32.1	-	23.5
	Friends Not From Ain-All.	8	10	1	-	-	19	42.1	52.6	5.3	-	-	16.0
	Relatives	6	17	3	1	-	13	22.2	63.0	11.1	3.7	-	22.7
	Alone	8	20	2	-	2	32	25.0	62.5	6.2	-	6.2	26.9
	Any Combinat.	2	9	2	-	-	13	15.4	69.2	15.4	-	-	10.9
	Total	24	60	23	10	2	119	20.2	50.4	19.3	8.4	1.7	100%
4. PARTIC.	Always	2	6	24	10	2	44	4.5	13.6	54.5	22.7	4.5	29.7
	Often	5	8	18	5	2	38	13.2	21.1	47.4	13.2	5.3	25.7
	Sometimes	4	20	10	-	-	34	11.8	58.8	29.4	-	-	23.0
	Rarely	4	9	1	-	-	14	28.6	64.3	7.1	-	-	9.5
	Never	9	9	-	-	-	18	50.0	50.0	-	-	-	12.2
	Total	24	52	53	15	4	148	16.2	35.1	35.8	10.1	2.7	100%
5. MEET AT	Home	-	39	5	2	-	46	-	84.8	10.9	4.3	-	25.1
	Cafe	-	5	4	3	-	12	-	41.7	33.3	25.0	-	6.6
	Mosque	-	7	9	7	3	26	-	26.9	34.6	26.9	11.5	14.2
	Work	-	5	20	18	-	43	-	11.6	56.5	41.9	-	23.5
	Outside	-	6	11	29	-	46	-	13.0	23.0	63.0	-	25.1
	Any Combin.	-	3	4	3	-	10	-	30.0	40.0	30.0	-	5.5
	Total	-	65	53	62	3	183	-	35.5	29.0	33.9	1.6	100%

Table 5. Factors Related to the Number of Friends that Residents Have in the New Housing Project Under Study.

Frequency of Visiting		Frequency						Percentage					
		1	2	3	4	5	Total	1	2	3	4	5	Total
1. PREVIOUS AREA	Colonial	10	2	24	38	38	112	8.9	1.8	21.4	33.9	33.9	80.6
	Casbah	-	3	6	5	13	27	-	11.1	22.2	18.5	48.1	19.4
	Total	10	5	30	43	51	139	7.2	3.6	21.6	30.9	36.7	100%
2. MARITAL STATUS	Single	-	-	4	6	-	10	-	-	40.0	60.0	-	7.2
	Young Couple	-	2	4	1	3	10	-	20.0	40.0	10.0	30.0	7.2
	Married+ Children	10	4	22	36	48	120	8.3	3.3	18.3	30.0	40.0	85.6
	Total	10	6	30	43	51	140	7.1	4.3	21.4	30.7	36.3	100%
3. PLACE OF WORK	Working Together	3	6	12	19	21	61	4.9	9.8	19.7	31.1	34.4	50.8
	Not W. Tg.	2	2	11	17	27	59	3.4	3.4	18.6	28.8	45.8	49.2
	Total	5	8	23	36	48	120	4.2	6.7	19.2	30.0	40.0	100%
4. INCOME	Med-High	4	2	15	18	29	68	5.9	2.9	22.1	26.5	42.6	50.0
	Low-Med	6	5	24	11	22	68	8.8	7.4	35.3	16.2	32.4	50.0
	Total	10	7	39	29	51	136	7.4	5.1	28.7	21.3	37.5	100%

1. Once a Day 2. 2-3 Times a Week 3. Once a Week 4. Once a Month 5. Neve

Table 6. Factors Related to Visiting Among Residents.

Preference	Frequency				Percentage			
	1	2	3	Total	1	2	3	Total
Colonial Respond.	60	60	47	167	36.1	36.1	27.7	79.0
Casbah Respondents	18	14	12	44	40.9	31.8	27.3	21.0
Total Sample	78	74	59	211	37.1	35.2	27.6	100%

Table 7a. Residents' Preferences of Social Relationships in Their Previous or Present areas of residence.

Flat Preferred	Frequency				Percentage			
	1	2	3	Total	1	2	3	Total
Colonial Respond.	28	130	15	173	16.3	75.6	8.1	76.8
Casbah respondents	3	45	4	52	3.8	88.5	7.7	23.2
Total Sample	31	175	19	225	13.4	78.6	8.0	100%

Table 7b. Flats (Previous or Present) Preferred by Residents.

Layout preferred	Frequency				Percentage			
	1	2	3	Total	1	2	3	Total
Colonial Respond.	50	90	24	164	30.5	54.9	14.6	78.1
Casbah Respondents	12	24	11	47	26.1	52.2	21.7	21.9
Total Sample	62	114	35	211	29.5	54.3	16.2	100%

Table 7c. Layout (Previous or Present) Preferred by Residents.

Facilities Preferred	Frequency				Percentage			
	1	2	3	Total	1	2	3	Total
Colonial Respond.	109	26	33	168	64.3	15.5	20.2	78.5
Casbah Respondents	34	10	3	47	73.9	21.7	4.3	21.5
Total Sample	143	36	36	215	66.4	16.8	16.8	100%

Table 7d. Facilities (In Previous or Present Area) Preferred by residents.

	Satisfaction With Flats	A.E.V. (%)	C.E.V. (%)	Corr.Coef.
COLON. RES.	1. Views	26	26**	0.67**
	2. Spaciousness	15	41*	0.65**
	3. Noise	09	50	0.61*
	4. Orientation	06	56	0.50
	5. Storey	04	60	0.49
CASBA. RES.	1. Spaciousness	23	23**	0.71**
	2. Views	14	37**	0.65**
	3. Orientation	12	49*	0.59*
	4. Noise	09	58	0.54*
	5. Storey	05	63	0.49
ALL SAMPL.	1. Spaciousness	28	28**	0.65**
	2. Views	16	44*	0.60*
	3. Noise	11	55	0.58*
	4. Orientation	07	62	0.51*
	5. Storey	03	65	0.48

A.E.V.: Additional Explained Variance
C.E.V.: Cumulative Explained Variance (r^2)
Corr.Coef.: Correlation Coefficient
**: Results Significant at a 0.01 Level
*: Results Significant at a 0.05 Level

Table 8. Factors Predicting Satisfaction With the New Flats Among Residents, as Indicated by the Regression Analysis.

Satisfaction With Flats		Frequency					Percentage				
		1	2	3	4	Total	1	2	3	4	Total
1. SPACIOUSN.	Very Spac.	7	1	-	-	8	87.5	12.5	-	-	3.4
	Quite Spac.	39	31	-	-	70	55.7	44.3	-	-	29.7
	Medium Siz.	40	76	10	2	128	31.2	59.4	7.8	1.6	54.2
	Small	-	13	8	-	21	-	61.9	33.3	-	8.9
	Very Smal.	-	2	3	4	9	-	22.2	40.0	40.0	4.2
	Total	86	123	21	6	236	36.4	52.1	8.9	2.5	100%
2. VIEWS	Very Pleas.	12	6	-	-	18	66.6	33.4	-	-	7.6
	Quite Pleas.	26	25	1	-	52	50.0	48.1	1.9	-	22.0
	Average	36	66	9	1	112	32.1	58.9	8.0	0.9	47.4
	Quite Unple.	10	24	8	2	44	22.7	54.5	18.2	4.6	18.6
	Very Unplea.	2	2	3	3	10	20.0	20.0	30.0	30.0	4.4
	Total	86	123	21	6	236	36.4	52.1	8.9	2.6	100%
3. NOISE	Disturbed	53	82	21	6	162	32.7	50.6	13.0	3.7	68.6
	Not Distu.	33	41	-	-	74	44.6	55.4	-	-	51.7
	Total	86	123	21	6	236	36.4	52.1	8.9	2.6	100%
4. ORIENTATI.	Good	19	31	3	5	58	32.6	53.4	5.2	8.6	24.6
	Medium	60	84	11	-	155	38.7	54.2	7.1	-	65.7
	Bad	7	3	5	1	16	43.7	18.8	31.2	6.3	6.8
	D.K.	-	5	2	2	9	-	71.4	28.6	14.3	3.0
	Total	86	123	21	6	236	36.4	52.1	8.9	2.6	100%

1. Very Satisfied 2. Satisfied 3. Dissatisfied 4. Very Dissatisfied

Table 9. Factors Related to Satisfaction With The New Flats.

Flat Preferred		Frequency				Pecentage			
		1	2	3	Total	1	2	3	Total
1. MORE SPACIOUS	Previous Area	22	11	2	35	62.9	31.4	5.7	16.8
	Ain-Allah	5	142	-	147	3.4	96.5	-	70.7
	No Prefer.	-	12	14	26	-	46.2	53.8	12.5
	Total	27	165	16	208	13.0	79.3	7.7	100.0
2. BETTER VIEWS	Previous Area	21	56	11	88	23.9	63.6	12.5	42.3
	Ain-Allah	5	81	2	88	5.7	92.0	2.3	42.3
	No Prefer.	1	28	3	32	3.1	87.5	9.8	15.4
	Total	27	165	16	208	13.0	79.3	7.7	100.0
3. BETTER ORIENTAT.	Previous Area	17	26	6	49	34.6	53.1	12.2	23.6
	Ain-Alah	6	89	5	100	6.0	89.0	5.0	48.0
	No Prefer.	4	50	5	59	6.8	84.7	8.5	28.4
	Total	27	165	16	208	13.0	79.3	7.7	100.0

1. Previous area 2. Ain-Allah 3. No Preference 4. Total/Group

Table 10. Factors Related to Residents' Preferences of Their Present or Previous Flats.

Satisf. With Layout of Proj.		A.E.V. (%)	C.E.V. (%)	Corr.Coef.
			**	**
C	1. Appearance	23	23	0.65
O			**	**
L	2. Location and Size	16	39	0.63
O	of Green Spaces		**	**
N	3. Location and Size	11	50	0.61
I.	of Playgrounds		*	*
	4. Arrangement of	06	56	0.58
R	Buildings			*
E	5. Location of the	04	60	0.52
S	Project			
P.	6. Safety of Streets	03	63	0.50
			**	**
C	1. Appearance	25	25	0.75
A			**	**
S	2. Location of	13	38	0.70
B	Playgrounds		*	**
A	3. Arrangement of	09	47	0.65
H	Buildings		*	**
	4. Safety of Streets	07	54	0.61
R				*
E	5. Location of the	04	58	0.57
S	Project			
P.	6. Location and Size	03	61	0.54
	of Green Spaces			
			**	**
	1. Appearance	21	21	0.69
A			**	**
L	2. Location and size	15	36	0.61
L	of Green Spaces		*	*
	3. Location and size	12	48	0.53
S	of Playgrounds		*	*
A	4. Arrangement of	08	56	0.51
M	Buildings			
P	5. Location of the	06	62	0.50
L	Project			
E	6. Safety of Streets	03	65	0.49

A.E.V.: Additional Explained Variance
C.E.V.: Cumulative Explained variance (r^2)
Cor.Coef.: Correlation Coefficient
**: Results Significant at a 0.01 Level
*: Results Significant at a 0.05 Level

Table 11. Factors Predicting Satisfaction With The Layout of The New Project Under study.

Satisf. With Layout of Proj.		Frequency 1	2	3	4	Total	Percentage 1	2	3	4	Total
1. APPEARANCE	Attractive	41	88	10	2	143	28.7	61.6	7.0	2.8	66.2
	Unattract.	9	41	10	8	68	13.2	60.3	14.7	11.8	31.5
	No Idea	2	3	-	-	5	40.0	60.0	-	-	2.3
	Total	52	132	20	12	216	24.1	61.1	9.3	5.5	100%
2. LOCATION OF GREEN SPACES	Well Situat.	16	19	4	-	39	41.0	48.7	10.3	-	16.5
	Badly Situated	29	120	26	11	186	15.6	64.5	14.0	5.9	78.8
	No Idea	-	8	1	2	11	-	72.7	9.1	18.2	4.7
	Total	45	147	31	13	236	19.1	62.3	13.1	5.5	100%
3. LOCATION OF PLAYGR.	Well Situated	22	51	6	1	80	27.5	63.8	7.5	-	34.6
	Badly Situated	24	94	17	10	145	14.5	64.8	11.7	6.9	62.8
	No Idea	-	2	4	-	6	-	33.3	66.7	-	2.6
	Total	46	147	27	11	231	19.9	63.6	11.7	4.8	100%
4. SAFETY OF STREETS	Safe	32	108	12	6	158	20.3	68.4	7.6	3.8	70.2
	Not Safe	14	28	8	4	54	25.9	51.9	14.8	7.4	24.0
	No Idea	4	7	-	2	13	30.8	53.8	-	15.4	5.8
	Total	46	147	20	12	225	20.4	65.3	8.9	5.3	100%

1. Very Satisfied 2. Satisfied 3. Dissatisfied 4. Very Dissatisfied

Table 12. Factors Related to Satisfaction With the Layout of the Project.

Locat. Green Spaces	Frequency 1	2	3	Total	Percentage 1	2	3	Total
1 - 2 Children	4	65	3	72	5.6	90.3	4.1	36.0
3 - 4 Children	6	45	1	52	11.5	86.5	1.9	26.0
5 - 6 Children	13	38	2	53	24.5	71.7	3.4	26.5
7 + Children	4	19	-		17.4	82.6	-	11.5
Total	27	167	6	200	13.5	83.5	3.0	100%
Married With Child.	27	167	6	200	13.5	83.5	3.0	84.0
Married With No Children	4	19	1	24	16.7	79.2	4.1	10.1
Singles	4	7	3	14	28.6	50.0	21.4	5.9
Total	35	193	10	238	14.7	81.1	4.2	100%

1. Well Situated 2. Badly Situated 3. No Idea

Table 13. Relationship Between Marital Status and Number of Children, and Attitudes Towards the Location of Green Spaces.

Locat. Playgrounds	Frequency 1	2	3	Total	Percentage 1	2	3	Total
1 - 2 Children	18	53	1	72	25.0	73.6	1.4	36.0
3 - 4 Children	15	35	2	52	28.8	67.3	3.9	26.0
5 - 6 Children	22	29	2	53	41.5	54.7	3.8	26.5
7 + Children	9	12	2	23	49.1	52.2	8.7	11.5
Total	64	129	7	200	32.0	64.5	3.5	100%
Married With Child.	64	129	7	200	32.0	64.5	3.5	84.0
Married With No Children	6	15	3	24	25.0	62.5	12.5	10.1
Singles	7	5	2	14	50.0	35.7	14.3	5.9
Total	77	149	12	238	32.4	62.6	5.0	100%

1. Well Situated 2. Badly Situated 3. No Idea

Table 14. Relationship Between Marital status and Number of Children, and Attitudes Towards the Location of Playgrounds.

Safety of Streets	Frequency				Percentage			
	1	2	3	Total	1	2	3	Total
1 - 2 Children	13	59	-	72	18.1	81.9	-	36.0
3 - 4 Children	13	35	4	52	25.0	67.3	7.7	26.0
5 - 6 Children	17	34	2	53	32.1	64.1	3.8	26.5
7 + Children	3	19	1	23	13.0	82.6	4.4	11.5
Total	46	147	7	200	23.0	73.5	3.5	100%
Married With child.	46	147	7	200	23.0	73.5	3.5	84.0
Married with No Children	7	13	4	24	29.2	54.2	16.6	10.1
Singles	5	8	1	14	35.7	57.1	7.2	5.9
Total	58	168	12	238	24.4	70.6	5.0	100%

1. Safe 2. Not Safe 3. No Idea

Table 15. Relationship Between Number of Children and Marital Status, and Attitudes Towards the safety of the Streets.

	Satisfaction With Facilities	A.E.V. (%)	C.E.V. (%)	Cor.Coef.
COLON I.	1. Quality of Shops	25	25**	0.73**
	2. Location of school	14	39**	0.65**
	3. Number of Playgrounds	08	47*	0.55*
	4. Location of Shops	04	51*	0.50*
RES.	5. Lack of Means of Transport	03	54	0.50
	6. Location of Other Facilities	03	57	0.49
CASBAH RES.	1. Location of School	21	21**	0.72**
	2. Location of Shops	15	36**	0.67**
	3. Lack of Means of transport	11	47*	0.61*
	4. Number of Playgrounds	07	54	0.56*
	5. Quality of Shops	04	58	0.52
	6. Location of Other Facilities	02	60	0.46
ALL SAMPLE	1. Location of School	23	23**	0.69**
	2. Location of Shops	13	36**	0.65**
	3. Number of Playgrounds	09	45*	0.53*
	4. Quality of Shops	07	52*	0.65**
	5. Lack of Means of Transport	04	56	0.51
	6. Location of Other Facilities	02	58	0.48

A.E.V.: Additional Explained Variance
C.E.V.: Cumulative Explained Variance (r^2)
Cor. Coef.: Correlation Coefficient
**: Results Significant at a 0.01 Level
*: Results Significant at a 0.05 Level

Table 16. Factors Predicting Satisfaction with Facilities in the New Housing Project Under Study.

		Frequency					Percentage				
Satisfaction with Facilit.		1	2	3	4	Total	1	2	3	4	Total
1. LOCATION OF SHOPS	5 mns.	6	40	-	-	46	13.0	87.0	-	-	21.2
	5-7 mns.	5	16	-	2	23	21.7	69.6	-	8.7	10.6
	8-10 mns.	10	24	2	2	38	26.2	63.2	5.3	5.3	17.5
	11-15 mns.	9	23	5	3	40	22.5	57.5	12.5	7.5	18.4
	15+ mns.	13	39	13	5	70	18.6	55.7	18.6	7.1	32.3
	Total	43	142	20	12	217	19.8	65.4	9.2	5.5	100%
2. LOCATION OF SCHOOL	5 mns.	4	34	-	2	40	10.0	85.0	-	5.0	21.2
	5-7 mns.	6	16	2	-	24	25.0	66.6	8.4	-	12.7
	8-10 mns.	12	39	3	2	56	21.4	69.6	5.4	3.6	29.6
	11-15 mns.	5	14	6	4	29	17.2	48.3	20.7	13.8	15.3
	15+ mns.	6	26	4	4	40	15.0	65.0	10.0	10.0	21.5
	Total	33	129	15	12	189	17.5	68.3	7.9	6.3	100%

1. Very Satisfied 2. Satisfied 3. Dissatisfied 4. Very Dissatisfied

Table 17. Relationships Between Location of School and Shops, and Satisfaction With the New Facilities.

Sufficient Playgr.	Frequency			Percentage		
	Yes	No	Total	Yes	No	Total
Singles	10	4	14	71.4	28.6	6.0
Married With no Children	8	14	22	36.4	63.6	9.4
Married With Child.	68	130	198	34.3	65.7	84.6
Total	86	148	234	36.8	63.2	100%

Table 18. Relationship Between Marital Status and Attitudes Towards the Number of Playgrounds

Sufficient Shops	Frequency			Percentage		
	Yes	No	Total	Yes	No	Total
Singles	8	6	14	57.1	42.9	5.9
Married With No Children	9	13	22	40.9	59.1	9.2
Married With Child.	49	153	202	24.3	75.7	84.9
Total	66	172	238	27.7	72.3	100%

Table 19. Relationship Between Marital Status and Attitudes Towards the Number of Shops.

	Frequency				Percentage			
Quality of Shops	1	2	3	Total	1	2	3	Total
Singles	11	-	3	14	78.6	-	21.4	5.8
Married With No Children	12	10	-	22	54.5	45.5	-	9.1
Married With Child.	73	116	17	206	35.4	56.3	8.3	85.1
Total	96	126	20	242	39.7	52.1	8.3	100%

1. Well Stocked 2. Badly Stocked 3. No Idea

Table 20. Relationship Between Marital Status and Attitudes Towards The quality of Shops.

APPENDIX 4

OTHER TYPES OF URBAN DEVELOPMENTS IN ALGERIA

OTHER TYPES OF URBAN DEVELOPMENT IN ALGERIA

Although the ZHUN's are the main tool of urbanisation in Algeria, a number of other types of development exist and if encouraged may help in reducing the housing deficit.

1. SELF BUILDING

One of the objectives of the master plan of Algiers is to define in the city the land reserved for agriculture, housing, industry, etc.. The areas reserved for housing are usually destined for new urban housing projects (ZHUN's). Part of the housing land, however, is reserved for developments of individual houses which give the opportunity to people to build their own houses, and so reach the objectives of the Ordnance No.74.26 of the 20/02/1974 and the Decree of 1976 encouraging people to own their houses (in Zuchelli, 1983). The local municipality (APC) is in charge of distributing the plots of land reserved for individual development. In order to acquire a plot of land, people have to complete applications, and the most needy will be selected by the APC.

The plots provided are usually between 160 and 400 m^2, depending on the applicant's family size and his aspirations regarding future extension. The price of one m^2 is usually subsidised at 100 DA (around £14), which makes the total price of a plot of land vary between 16,000 and 40,000 DA (around £2,240 and £5,600). These land prices represent a very good bargain for the purchaser in comparison to the flat prices. The successful

applicants are also encouraged to build their houses by being able to buy the building materials directly from the national companies (such as the SNMC and SNS) at Government's fixed prices.

In reality, however, most of the successful applicants are forced to buy the building materials paying the expensive prices of the black market, as the national enterprises have priority when buying the already small quantity of building materials produced by the national companies. Some individual house builders waited for years without being served by a national company.

When the land is acquired, the householder and his family carry out the work themselves, assisting the one or two masons they hire during the weekends in order to save money. The roofing is generally of concrete to enable the householder to build an extension when needed. Finishing the house completely takes years, but the householder is very proud of what he has achieved. He solved the problem of housing for himself and for his children. The house owner is satisfied as he has made his own choices and decisions. It is of this form of home ownership that the owner is very proud, and this sense of pride is expressed in a high level of maintenance of the dwelling, its yard spaces, fencing, etc. (Shankland Cox, 1971). This is the reason, therefore, why people are more interested in building their own houses than buying the expensive flats, over which they have no control or choice when built. Most CNEP flats in Ain-Allah are still empty, as nobody is interested in buying them. Being a home owner, especially when the home is built by the resident himself, is the most rewarding form of house tenure. It satisfies a deep

and natural desire on the part of the householder to have independent control of the home that shelters him and his family (Kemeny, 1981).

It appears that the policy of self building is beneficial for the state. The purchaser of a plot of land will invest his own money, and so assist the Government in reducing the housing shortage in the large cities. A problem associated with this policy, however, is the creation of very low densities and the occupation of large surfaces of land by individual houses, when the capacity of urbanisation of Algiers is very limited. The PUD foresees that at the present rate of urbanisation, Algiers will be saturated by the year 2010. The PUD also foresees that if the rate of urbanisation does not increase, the housing shortage will worsen with the pressure of the high growth rate in the population. In order to reduce the deficit in housing and save some land for future development, high rise buildings are the only solution if the Government does not encourage the creation of new towns around the large cities, or does not provide job opportunities in other small towns to absorb some of the population from the cities. High rise buildings may be an effective solution for considerably reducing the consumption of land, but all the social problems, such as crimes, which may result from this type of development should be borne in mind.

2. HOUSING CO-OPERATIVES

A housing co-operative is a system whereby people can be home owners by investing their own money in a project with other people. The organisation and operation of the housing co-operatives are defined in the Ordnance No. 76.92 of 23/02/1974. Housing co-operatives can build individual as well as collective buildings. The people involved in building their dwellings form the co-operative and they elect a president and a treasurer. The elections are held annually. The local APC provides the site, the building materials and fixes the price of the land. Sometimes the co-operatives are in charge of more than 100 homes. The people have the responsibility of selecting the enterprise which will implement the project. However, the members also have the right to build their own houses. A monthly instalment has to be paid to the co-operative by each member, and failure to do so, after a period of three months, may lead to expulsion. The co-operative system provides the advantage of getting the building materials from the local APC. Its disadvantages are the lack, in many cases, of a free choice and control of the owner over his house when it is built. It also appears that such projects are reserved for stable workers who are certain of receiving a high monthly income which will enable them to live and also pay their monthly instalment when the houses are being built.

3. PRIVATE HOUSING PROJECTS

Since the sharp fall in oil prices in early 1986 and the resulting economic crisis in Algeria, the Government accelerated the process of involving the private sector in housing projects. A private entrepreneur can build collective or semi-collective buildings and rent them when finished. The entrepreneur can expect a loan from the Government for this effect. The Decree No. 86.39 of 04/03/1986 fixed the conditions that the entrepreneur should fulfill to benefit from a loan and the permission to build a housing project. The conditions included a limitation on the scale of the operation that the entrepreneur can undertake by limiting the loan to 50 million DA. The second condition is that the majority of the buildings in the project should be collective or semi-collective housing of "economic type" which will ensure that the rents will be affordable.

This type of project is very recent, and therefore it is difficult to assess its outcome. It is feared that when the projects are completed, the owner will fix his own rent prices which will again mean the exclusion of many low social classes from the process of renting a new flat. The idea of private projects may allow the private sector to play a decisive role in helping the Government to overcome the housing shortage. On the other hand, strict measures should be taken by the Government to ensure some entrepreneurs do not monopolise the housing market in the future.

4. People's Preferred Type(s) of Development:

The discussion of the types of urban development (ZHUN's, self-building, co-operatives, and private housing projects) existing in Algeria revealed that each one of them presents certain advantages as well as disadvantages. The collective buildings (ZHUN's and private housing projects) are "presumed" by the Government to be cheaper and quicker to build than the individual houses (self-building and some co-operative projects). However, studies in both developing and developed countries contradict this presumption and suggest that it is possible to build an equal number of individual houses or flats at approximately the same cost and time.

In this research, respondents were asked to rate their preferred type of housing; whether an individual house (with a garden or without), a flat (with a balcony or without), or a plot of land. Findings show that the majority of respondents (89.3%) rated the plot of land as their first choice. It can, therefore, be argued that people wish to exercise control and decide on the way their houses are built. Findings also show that generally people prefer to live in individual houses than in flats, even if the flats are more spacious than the houses. It is also found that more people (58.3%) prefer to live in flats with balconies rather than those with shared courtyards. These results suggest that people prefer to have their own private dwelling rather than living in a shared building.

In the case that the same number of individual houses can be implemented on the same site as a project with collective buildings, it is suggested that the first type of housing should be heeded. The individual houses could be built by a contractor and then allocated to successful applicants. The other possibility is that the CNERU designs the outdoor layout (situation of car parks, streets and footpaths, facilities and so on), whilst the surface reserved for houses is divided into plots on which the successful applicants will build their own houses. Some design guidelines and regulations, to be laid down by the CNERU, such as the height of the houses, distance with regard to the streets, orientation, and so on, should be respected to maintain a certain harmony in the project.