

PUBLICLY PROVIDED HOUSING IN LIBYA
WITH SPECIAL REFERENCE TO TRIPOLI

"An Analysis of Residential Satisfaction
as a Basis for Public Housing Policy"

by

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ABSTRACT

The purpose of this study is to point out the problems of publicly provided housing, to identify the relationships between the physical elements and conceptual perspectives of housing functions, and space allocated for housing and to broaden the assessment of housing systems to include measures not only of quantity, but also of qualitative performance in relation to the needs and preferences of families and society. The overall aim of this research was to highlight the major factors governing the formulation of a housing policy for the achievement of a high level of public satisfaction, socio-economic fulfilment and environmental quality.

To help to fulfil the objectives of this research and to widen the range of information needed to establish a firm basis for the analysis of the current housing situation, it was necessary to collect data about existing publicly provided housing, both in terms of the machinery of provision and the dwellings constructed. General information was collected about housing institutions, finance and management systems, laws and regulations affecting housing development; information about housing projects, design and construction was also needed. Information about particular housing estates of varying characteristics, standards and locations was collected to form the starting point for a household survey, designed to elicit more detailed knowledge about dwelling units, their use and their suitability for their occupants.

The analysis and discussions based on the field survey and investigations enabled an examination of a wide range of information which was closely related to the residential and social functions of housing development. The relationships between variables such as household characteristics, socio-economic conditions and pattern of living and housing needs were examined in the context of the housing concept of Libyan people and factors which contribute to the degree of satisfaction of their needs.

The investigation and analysis made it clear that current housing policy must be rationalised if public housing is to fulfil its social and economic end objectives. The elaboration and discussion of the results were able to illuminate the conceptual elements that should form an important dimension of housing policies and strategies. A rational housing policy can be found through a number of changes to the major factors which widely influence the establishment of housing strategies. In order to obtain a guidance of these variables and required changes, the analysis output of all the information was formulated in a decision-making technique (DOT) by the application of which sets of housing strategies were generated.

The analysis of the generated strategies has indicated aspects of a housing policy framework that could be modified, adapted or extended. It also has indicated priorities and interdependence between the major elements of housing policy and how they could be articulated in order to achieve a higher degree of satisfaction and to meet the objectives and aspirations of society.

This study is mainly concerned with aspects of housing policy which might contribute to better housing satisfaction and which are responsive to changes in people's desires and preferences. It concludes with guidance and recommendations drawn from the various strands of the research and which might be used as basis for a rational, equitable housing policy both in the short and long term.

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To the family that cared for me
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INTRODUCTION

The Background of the Study

The role of the individual's house in his life is as significant as the neighbourhood or the residential district in which the house is located. The residential environment which is made up of the dwelling units, the ancillary buildings and facilities contributes greatly to human well-being and interactions with others.

Erecting housing estates and dwelling units that are functional and meet government specifications and provide shelter for man but ignore the personal, social and administrative consequences of requiring people to live in physical settings that do not reflect their values, lifestyle and social conceptions, leads towards the creation of a poor residential environment. This unconsciously created physical environment affects people's feelings of self-esteem, their social standing in the community and their relationships with their family, friends and neighbours. No part of man's environment affects his health, morals and well-being more effectively than his home where he seeks protection, comfort, security and dignity. The home environment deeply influences his way of life, behaviour and emotional reactions. It reflects his own self-esteem and identity. It creates the pattern of everyday life and of his associations with other people. Home expresses man's beliefs and attitudes. It affects his sense of belonging and responsibility towards the community and his relationship with the surroundings as well as the historical and cultural ties with the society.

In Libya, the Revolutionary Government is aware of the importance

of there being available healthy dwellings for the largest number of families in the society. Houses are needed to satisfy the family desires and aspirations and accord essential living requirements for all people. Thus the Government has been making strenuous efforts to meet the shortages in the housing sector. A great priority has been given to meeting the needs of the low-income groups who are most desperate for suitable accommodation. For the Government to achieve her aims the following housing policy was stated in its Transformation Plan (1976-1980):

"The State has endeavoured to provide an adequate house for each family in terms of quality, size and standard, taking into consideration the potential and planned changes of the economic and social conditions as well as the customs and traditions and hence their expected impact on the design and shape of the dwellings and the construction of its component parts."

(Transformation Plan, 1976-1980)

To achieve the objectives defined by this housing policy, a set of laws and regulations, accompanied by administrative and financial procedures was adopted to carry out this policy. The Government has been very enthusiastic in allocating great funds in the developmental plans and budgets to build the largest number of dwelling units as quickly as possible, through public direct and indirect construction and through granting interest-free loans to private individuals to build their own houses, or with very low rates of interest to encourage private investment in the housing sector. Government has also been encouraging the establishment of co-operative housing societies by granting them a number of subsidies to enable them to carry out their projects using loans and/or land allocations.

In spite of all these great efforts which have been made by the authorities and despite the huge investment programmes for the promotion of development and the allocation of massive housing budgets, the housing problem has not yet been solved. No doubt these efforts have minimised the acuteness of some aspects of the problem but they have not solved it. The urgency and the scale of the need for housing made it impossible for the authorities strictly to adhere to their policies to overcome the situation, for they have been operating in rapidly changing circumstances. The implementation of the housing programmes and plans has been seriously hampered by the lack of some basic requirements, but the big gaps in the fulfilment of annual programmes have never been due to lack of funds, but have been caused by other inadequacies in the housing sector.

The Revolutionary Government has been trying to overcome these inadequacies, to fulfil programmes and to achieve some of, if not all, the objectives behind these programmes. A quick glance at the stage of development reached in the housing sector in Libya shows the great effort that has been made by the Government. The high rate of housing construction achieved compares favourably with other developed countries' rates (see 3.3). In one year, it reached 13 dwelling units per 1,000 inhabitants of the population, which was 2.65 m in 1974.

From the foregoing discussion, it may be concluded that the solution of Libya's housing problem does not lie simply in the promotion of an increase in the number of dwelling units but will also involve giving higher priority to other aspects of housing provision and consideration of the qualitative scale that is appropriate for the country at the present time.

It is becoming even more evident that housing families in typical standardised public projects, as they are known in Libya, is disastrous to the traditional structure of family life because of the socio-economic problems that are associated with such new living environments. Most, if not all, projects fail to a greater or lesser extent to respond to the needs of the user, particularly where large families are involved. The essential requirements of adequate space are rarely considered. The traditions, culture and social background of the residents are not taken into account. Climate and local building materials are disregarded. In spite of their existence, legislation, sound housing policy and standards are ignored. Complementary community facilities and public services are hardly provided. Houses are haphazardly managed while essential maintenance and repairs are neglected. In most cases, the economics and costs of housing projects are inadequately considered and financing systems and procedures are not entirely successful.

Libya is in a transitional era as it is passing through rapid social and economic changes including that of demographic change. Unless housing design and construction is rationalised in the light of quantitative and qualitative requirements, the ultimate housing provision will be unsuited to the socio-economic characteristics of the people and the Government's efforts and use of the country's resources for the better achievement of housing objectives and goals would be continuously wasted. The symptoms of the problem are similar all over the country because of the centralised housing system. Housing institutions, policy, regulations and output are uniform throughout Libya despite the diversity of the characteristics and nature of housing requirements.

Tripoli is taken as an illustrative case study because it includes all sorts of housing problems and a wide variety of people and households as a result of:

- a) very rapid physical expansion
- b) very high natural population growth
- c) very high rate of urbanisation
- d) high influx of expatriates
- e) high concentration of foreign communities
- f) shortage of building sites and local materials and manpower.

The Aims of the Study

(The analysis of past and contemporary housing trends in the context of the transitional nature of socio-economic development of Libyan urban society is intended to provide an adequate understanding of the factors contributing to the great disparities in housing provision and to the level of dissatisfaction with public housing. It is also intended to show how these phenomena could be minimised or compromised. Examination of the existing stock of publicly provided housing in relation to a set of variables such as household characteristics, socio-economic conditions and patterns of living indicates ways in which the assessment of the public housing provision system and its qualitative performance may be considered more widely in relation to family and community housing needs. The discussion of present housing policies and institutions provided an assessment of the extent to which they succeed in terms of the official declared objectives, not only in quantitative terms but also in qualitative

measures. Such discussions throw some light on drawbacks and deficiencies which prevent the system responding adequately to human and environmental needs and how such failures might be avoided or at least minimised.

What housing is built in the next two or three decades will have to accommodate substantial social changes providing a solution to the housing problems that will not only cater for the traditional characteristics of the household and its style of life, but also for the changing social and economic structure, cultural values and customs of the transitional sectors of society as well as those following a modern life style.

The overall aim is to highlight the housing problems and the factors contributing to these problems, which may help in the formulation of better housing policies in the future. Guidelines are needed for flexible, compromise policies capable of responding adequately to human requirements and social changes and at providing a higher degree of satisfaction among the households which benefit from public housing and society as a whole.

Methodology

To achieve the purpose of the study and to extend the wide range of information needed to establish a firm basis for the analytical argument of the problems, information had to be collected about the existing publicly provided housing stock in different stages:

- a) General information was needed about housing institutions finance, and management systems and laws and regulations affecting housing development; information about housing programmes, design and construction was also collected.

- b) Information about specific housing estates of different features, standards and locations was collected to form the starting point for a household survey designed to elicit more detailed knowledge about the dwelling units, their use and their suitability to their inhabitants.
- c) Information from both the pilot and the main survey was collected in two different stages. Information revealed from the analysis of the survey in the form of tables, figures and percentages about the sample was used.
- d) The results of the analysis were formulated into an input to the Decision Optimising Technique (DOT) by which a set of housing policy alternatives was produced - on the basis of the conditions analysed from which guidance can be obtained for a housing policy that will satisfy as many as possible of the interest groups involved in the housing process.

The Structure of the Study

The research is presented in eight chapters. The first four chapters deal with an analytical description of the physical and social environment in relation to the development of housing concepts. They also provide a picture of the publicly provided housing, its policies and institutions. In Chapter 5 the picture is focused through the information on housing collected during the household survey in Tripoli in late 1977. The analysis in Chapter 5 of the survey findings in the light of the understanding of the concept and function of the existing social and economic institutions and of interaction with the human environment will expose the deficiencies and failure of the current housing machinery.

Chapter 6 deals broadly with the conceptual framework of housing needs, its influence on housing satisfaction and hence its role in a satisfactory public housing policy. Next, in Chapter 7, the survey findings are formulated and used as input to the decision-making

technique, DOT. The intention is to provide a policy framework, closely related to people's preferences within which the housing authorities' plans and programmes can be co-ordinated and developed as a continuous process and their priorities better assessed.

Chapter 8 summarises the results and conclusions and gives specific guidance and recommendations as a basis for more effective and successful housing policies.

CHAPTER ONE

LIBYA AND ITS CONTEXT

1.1 The Historical Development of Libya

Libya has undergone many changes as a result of historical, political, social and economic development. The presentation of historical and general background information about the country and its context is considered a prerequisite to an understanding of the present day state of the public housing sector in Tripoli and its relationship to the wide ranging economic, social and political changes which have taken place in Libya in recent years. This information is presented in chronological order and is intended to highlight the principal stages in the country's development.

To set Libya in its geographical context, the country is located in North Africa and has a Mediterranean coast of about 2,000 kilometres (see fig.1.1). The area of the country is 1,760,000 square kilometres which is more than seven times the total area of Britain and Northern Ireland and one third of the area of the U.S.A. To the west are the Tunisian and Algerian Republics, to the east lies the Arab Republic of Egypt, and to the south are the Republics of the Sudan, Chad and Niger. Throughout history, this strategic location has made Libya a distribution centre between Europe and Central Africa on the one hand, and between countries to the east and west of Libya on the other. In military terms it has also made Libya an attractive target for ambitious nations. From ancient times, Libya was over-run by successive waves of conquerors and invaders who swept in to occupy

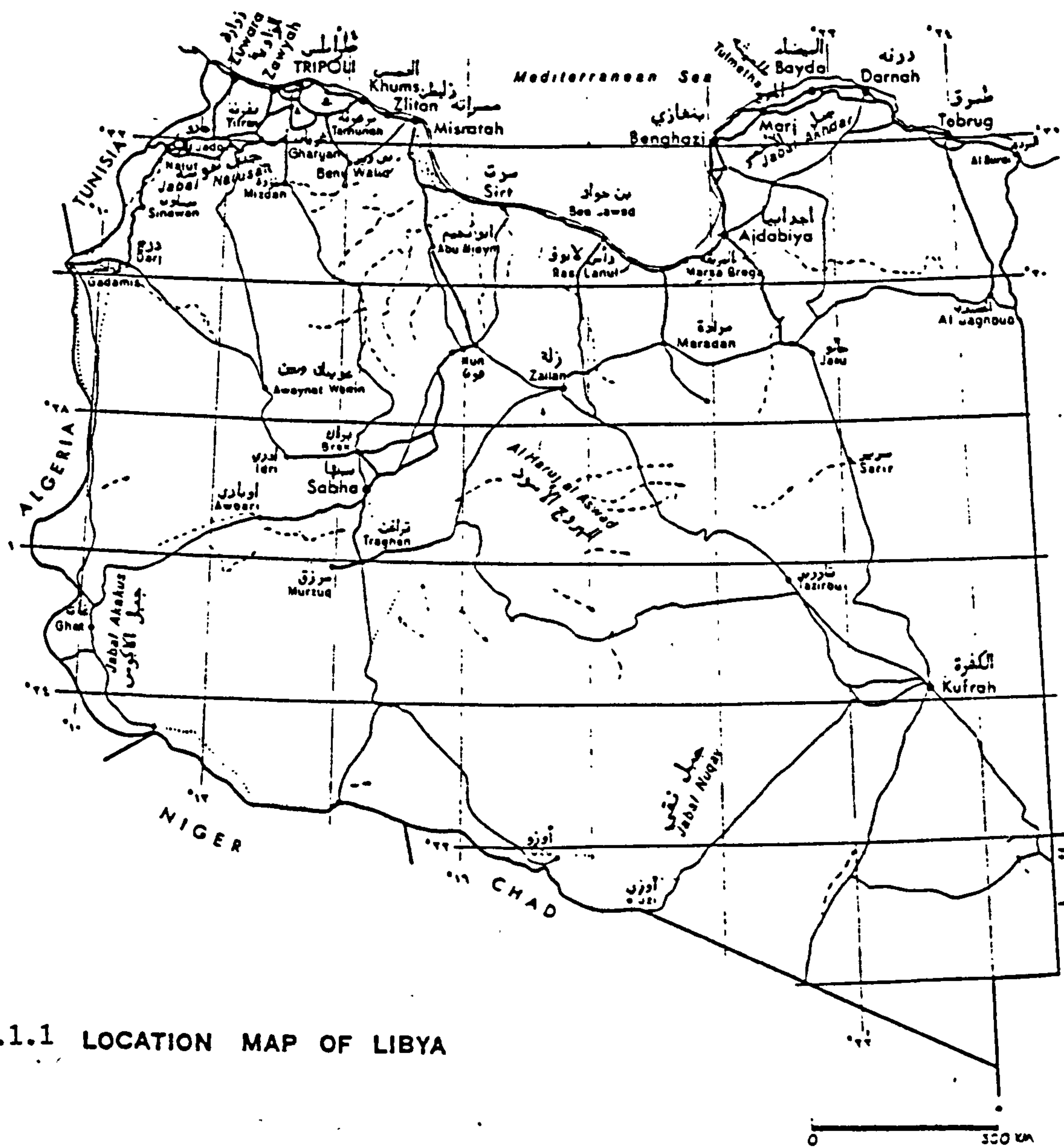
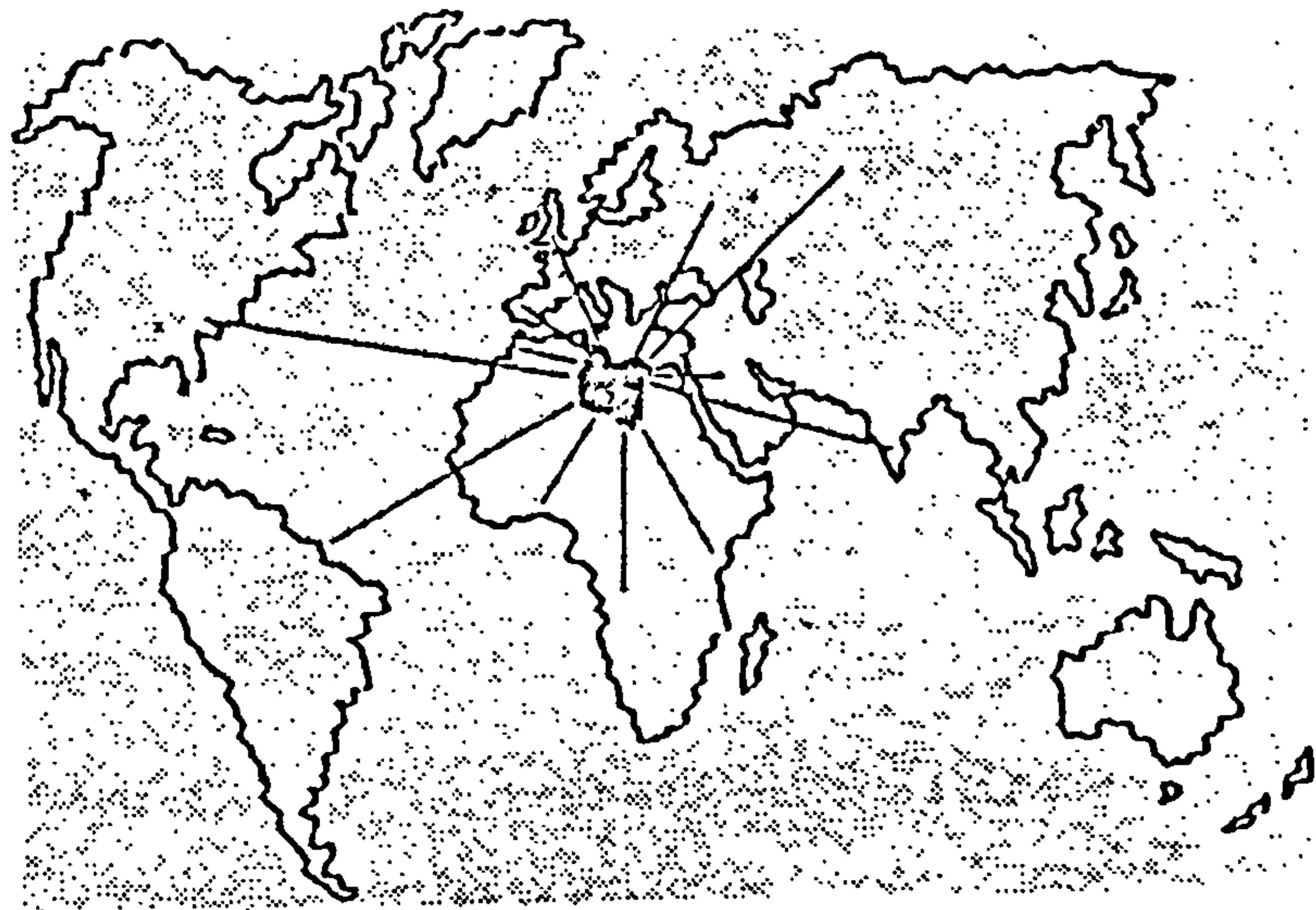


Fig.1.1 LOCATION MAP OF LIBYA

Source : National Physical Perspective Plan 1979

the country and shaped much of its recorded history (Khadduri, 1963).

It has been suggested that the earliest recorded foreign settlement was by the Phoenicians who in 800 BC established three commercial centres in Libya; one was Marca Uiata, later to become Tripoli, the other two were Sabratha and Leptus Magna (Elkabir, 1972).

The Greeks, Romans, Vandals and Byzantines, were all foreign occupants of Libya who imposed their rule upon the country. However, the most significant cultural and historical changes occurred when the Moslem Arabs, led by Amer Ibn al-As, conquered Libya in 642 A.D. They brought with them religion, culture, language and certain patterns of living which became deeply rooted and which have characterised the country ever since. From 1551 until the beginning of the 20th century Libya was a province of the rising Ottoman Empire which had emerged as the principal power in the Mediterranean.

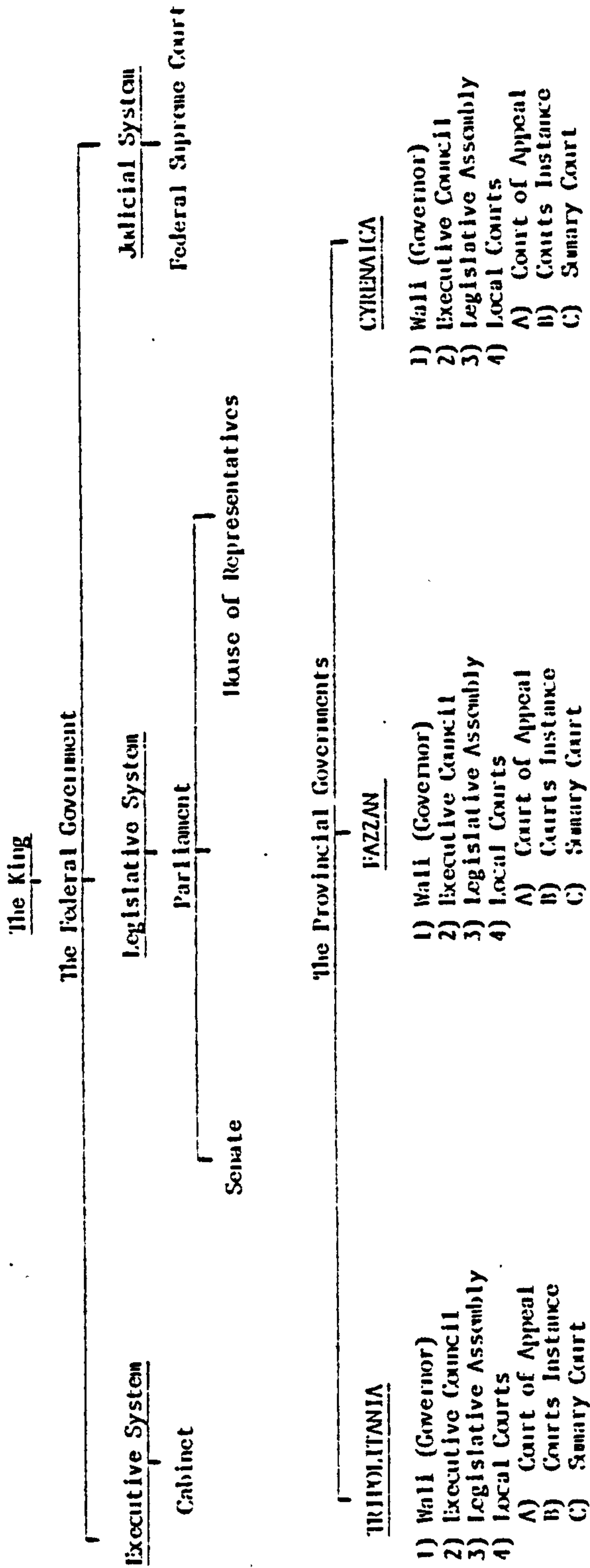
In more recent times, there have been further military incursions into the country. In October 1911 Italian troops invaded the Libyan Coast and from 1912 until 1943 Libya was under Italian rule. The period from 1943 to 1951 was considered as a transitional period under which the British and French powers administered the country as caretakers (Zarrugh, 1973). On 24th December 1951 Libya was declared an independent state "The United Kingdom of Libya" with a federal constitution (see fig.1.2).

During the early period of independence the country experienced a series of significant economic, social and political changes. However, the major economic changes occurred in the early 1960s when oil was first exploited. The sudden increase in wealth as a result

Fig. 1.2

The Governmental Structure From
Independence until April 25, 1963

The United Kingdom of Libya



of the oil boom has led to profound changes in the economic development of Libya. J. Wright (1969) stated that:

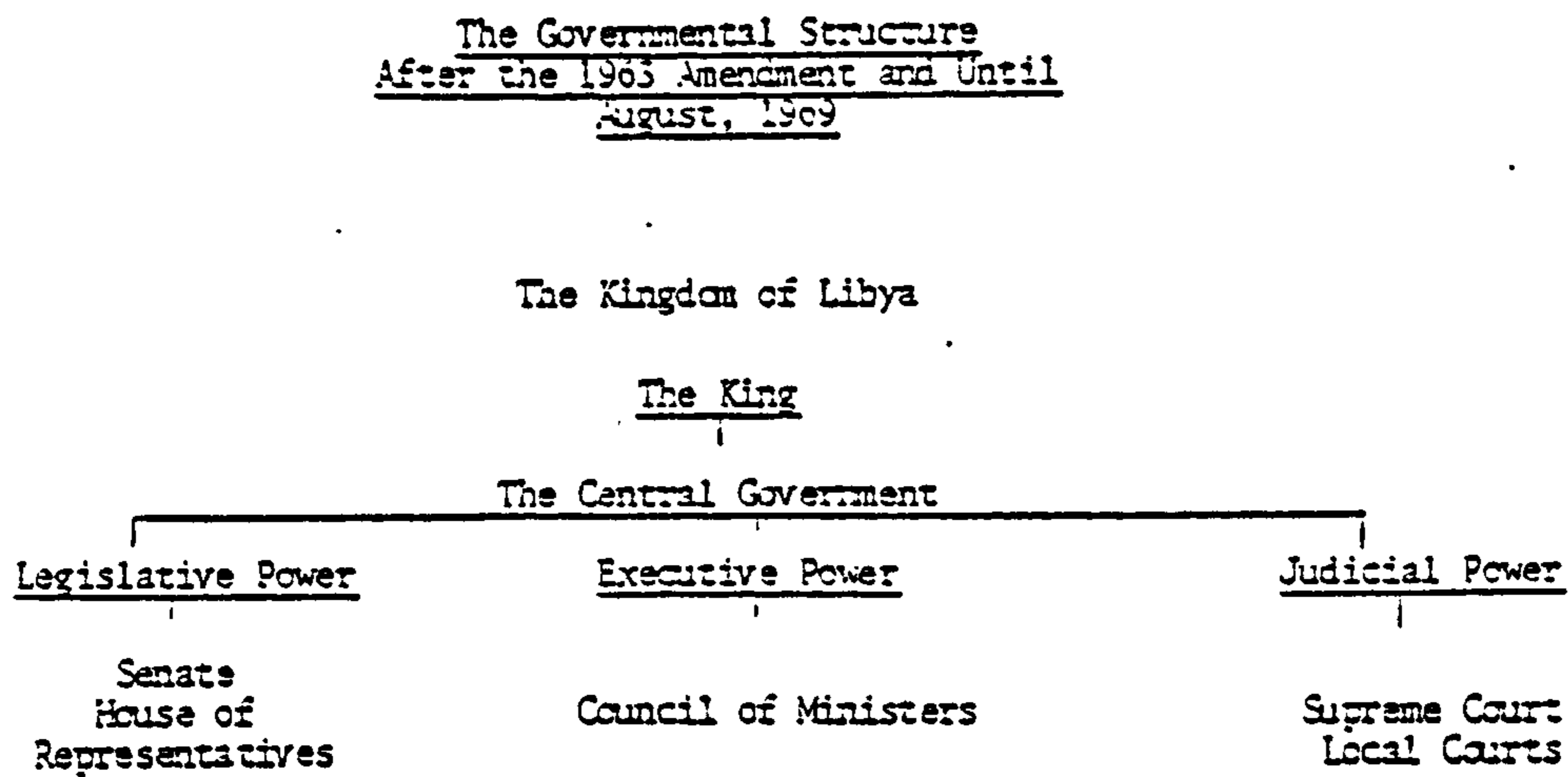
"In less than a decade a country that has been classified as 'the poorest in the world' had become a major supplier of fuel to those same countries that a generation before had fought each other over the oil-bearing desert of Libya for the possession of the oilfields of West Asia. No wonder that in 1966 a *Giornal di Sicilia* headline complained 'We never knew it: Millions of Barrels of Oil in Libya'."

These major economic changes were accompanied by a major administrative change. In 1963, the federal system was abolished and the provinces of Tripolitania, Cyrenaica and Fazzan were replaced by ten administrative districts (see fig.1.3) each of which was under the jurisdiction of an appointed administrator (Muhafed). The name of the country was changed from the United Kingdom of Libya to the Kingdom of Libya. Given the comparatively small population of the country (less than 2 million in 1963), the former federated system, with the three provincial governments between central and local government, was costly to administer and inefficient in the use of the limited number of trained civil servants and personnel.

In this respect under the federated system there was duplication of administrative structures at state and provincial levels with Nazarats or "ministerial departments" for each of the major services. For example, the Nazarat of Education in each state set their own standards which produced an uneven national educational pattern.

In the reorganised system the Muhafed represents the Central ministries in his region and is also administratively responsible for the ministerial personnel assigned to the Muhafadah.

Fig. 1.3



The Administrative Units
(From 1963 to July, 1970)

'Mohafazat'

Libya was divided into ten districts:

1. Tripoli
2. Zawai
3. Misurata
4. Khoms
5. Jabal
6. Banghazi
7. Jebel Akhdar
8. Derna
9. Sabha
10. Ubari

Each one of these units had:

1. Mohafiz (Prefect)
2. Mahafaza (Council)
3. Sub-ministries Departments

Source : Ali Shembesh 1975

However, within the reorganised system poor co-ordination and overlapping of areas of responsibilities were not entirely eliminated. For example, housing, at that time, was the responsibility of two different bodies, the Ministry of Public Works and Communications and the Ministry of Labour and Social Affairs. This overlap was not resolved until the creation of the Ministry of Housing in 1965.

A further problem of co-ordination was experienced when the government launched ambitious public works programmes and huge investment projects. Both of these activities suffered as a result of both a poor level of co-ordination and of a shortage of qualified local personnel. As a result of these and other inadequacies in the administrative system, many projects were only half completed or failed to meet their planned objectives. This is illustrated in the case of what was called "The Idris* Housing Scheme", described by J. Wright (1969) as follows:

"A scheme that was planned to end the national housing shortage One hundred thousand homes were to be built It started eighteen months later when works began on 9,200 homes at a total cost of £52 million at an average price £1,500 higher than the original estimate"

In the mid to late 1960s it was obvious that fortunes were being made by some who were encouraged by the "laissez-faire" economy to make speculative property investments. It was also clear that the oil revenues were increasing rather than lessening the gap between certain groups in the population. The problem of social reorganisa-

* Idris is the name of the deposed King.

tion and adjustment in the light of these changes will be discussed in this chapter.

At the end of the 1960s it has been suggested that corruption and exploitation were rife in the country (Shembesh, 1975). Parliament and administrative systems were ineffective mechanisms to cope with the economic and social upheavals which were going on in the country. These conditions were closely observed by certain military officials, who were able on 1st September 1969, to seize power, abolish the monarchy, suspend the constitution and dissolve the Parliament. With these events the country became the Libyan Arab Republic.

In 1976 the People's Democracy was declared and the country renamed "The Socialist Libyan Arab Jamahiria".*

* "Jamahiria" is an Arabic term which means republic of "Jamahir" or masses.

1.2 Physiographic Factors

Libya's national environmental conditions have influenced to great extent its physical structure, land use and the characteristics and distribution of its people. About 94% of the total area of Libya (1.76 million sq. km.) is desert, most of which is considered to be unproductive. About three-quarters of the population, all the major urban areas and most of the cultivated land are concentrated in less than 2% of the country's total area (N.Ph.P.P.* 1979).

The physiographic features vary throughout the country, and include plains, valleys, mountains and desert.

In terms of climate,** apart from the coastal strips which come under the prevailing influence of the Mediterranean climate with dry summers and relatively wet winters, about 90% of the country is semi-arid to arid with torrid temperatures and wide fluctuations between day and night. Accordingly the most favourable living conditions are in the rain fed coastal plains, mainly in the Tripoli and Benghazi regions in which soil and climate have favoured agriculture and human habitats. These two regions are the most densely populated, heavily cultivated and economically developed areas. They comprise 1.7% of the total country area and accommodate 75% of the total population, 84% of the total urban population and 94% of manufacturing employment (N.Ph.P.P. 1979). However in these two coastal regions, water resources for domestic, industrial and agricultural consumption are dependent on seasonal rain and ground-water. The shortage of ground-water is met

* N.Ph.P.P. : National Physical Perspective Plan.

** See Appendix 3.

by desalination, especially where land resources and climate conditions support agricultural activities. The largest water resources are in the southern parts of the country where land and climate are not suitable for such activities. The different characteristics of climate, land and water resources combined with the diversified socio-economic conditions have had a marked influence on the productive potential and the growth of each region.

1.3 Demography

Libya is a very small country in terms of population. The overall population density, according to the latest national census in 1973, was 1.3 persons/square kilometre, which is one of the lowest in the world. However, as previously noted, the population is not evenly distributed throughout the country. The diversity of topography, climate and economic activities have been major factors in population determining both the distribution of and the culture and lifestyle of people located in different parts of the country. The population of Libya was probably relatively small even during the Roman times when agriculture was very prosperous and climatic conditions are thought to have been more favourable than those of today (El Azzabi, 1975). The population was recorded officially for the first time in 1931 by the Italian Colonial Government when it was estimated that in the whole of the country there were 704,000 persons. Another official estimate five years later (in 1936) showed an increase of 144,477 persons. No further estimates or censuses were carried out until after the country's independence in 1951. With the help of the U.N. the Libyan Government undertook the first general population census in 1954. This showed a population of 1,088,873 persons. In 1964 a second general census took place and the population was recorded as 1,564,363 persons. The last census was carried out in 1973 and the size of population was 2,257,037 persons (National Census Records, 1974).

Table 1.1 shows the actual change and the annual rate of change from 1931 to 1973 (El Azzabi, 1975). The annual rate of increase in

world population during the decade 1960-1970, was 2%; 1% in the

Table 1.1

Population growth rates from the total Libyan population
from 1931 to 1973

Year	Type of data	Total Population	Number of Increase	Rate of Increase %
1931	Estimate	704,123		
1936	Estimate	848,600	144,477	3.8
1954	Gen. Census	1,088,873	240,273	1.4
1964	Gen. Census	1,564,363	476,490	3.7
1973	Gen. Census	2,257,037	692,668	4.2

industrial countries and 2.4% in the developing countries (U.N. Demographic Year Book 1972). By way of comparison, the rate of population growth in Libya between 1964 and 1973 was more than 4% per annum, one of the highest in the world. Allowing for this unusually high rate of increase, the present population is estimated to be close to 3.2 millions (Italconsult, 1976). There are many indications that the current natural increase (3.7%) (Italconsult, 1976) will remain high for at least the rest of the century. Even with a future decline in fertility rate as estimated 6.5 millions is to be expected by the end of this century (N.Ph.P.P., 1979).

The high rate of growth is due to numerous factors, the most significant of which appear to be: firstly, the economic boom and

prosperity that have been witnessed by the country following the realisation of the potential of the oil industry, resulting in better socio-economic conditions for Libyans and in a strong attraction for non-Libyan manpower; and, secondly, development of health services, resulting in an increase in the span of life of the citizens, a decrease in infant mortality and a higher birth rate; thirdly, the ever increasing influx of expatriates as a result of the independence of the country and of oil extraction. These factors coupled with a significant drift of people to the main cities have had a major influence on population distribution, reinforcing the trend towards urbanisation.

The striking high rate of natural increase since 1964 characterises all of Libya and the growth rates in the different regions have been very similar, although the heavy intra-regional movement with its urban orientation has affected the balance of the regional population. By 1973 nearly half the nation's population had settled in urbanised coastal regions and marked losses of population had occurred in the more rural areas. The last decade has witnessed a sharp decline in nomadic and semi-nomadic population. The rate at which nomadic and semi-nomadic peoples were settling accelerated between 1964 and 1973, when the percentage of the total population in these categories fell from 21% to 9%; in the period 1954 to 1964, the proportion of nomadic and semi-nomadic people in the total population fell far less quickly, from 26.4% to 21%. The rapid growth of the urban population is predominantly due to the movement of rural rather than of nomadic people to the urban centres. However, there is a very strong trend

of migration from villages to nearby urban centres or to the two major cities. For example, the population of Tripoli and Benghazi as a proportion of the total population of Libya has increased from 18.30% in 1954 to 20.4% in 1964 and to 30% in 1973 (National Census Records, 1974). In fact the urban population has been growing at an average annual rate of 20%, about five times the overall rate of population growth. With such high urban growth rates, Libya is urbanising much faster than most developing countries (Italconsult, 1976). Initial forecasts indicate a probable fourfold increase in urban population in this period 1973-2000 from 1,365,000 to 5,500,000 (N.Ph.P.P. 1979). The dramatic changes in Libya's economy have clearly accelerated the process of urbanisation but the regional and intra-regional movements have always been influenced by the attractions of Tripoli and Benghazi. In the rapidly developing socio-economic conditions the present trend of urban oriented migration is expected to intensify unless radical and effective changes in the social, economic and physical policies are devised to achieve a more balanced distribution of population and jobs in accordance with the country's resources.

The current stage of rapid population increase in Libya is reflected in its very youthful population structure, the national census of 1973 indicating that 51.9% of the total population of the country was under 14 years of age and only 44% was of working age. With female employment still at a negligible level, this population age structure has important consequences for economic and social policies. Libyan society is not only young in terms of its age structure but also a predominantly male society, features which might

be viewed as advantages for a developing country. According to census statistics, the population was 51.99% male and 48.01% female in 1964 and 53.17% male and 46.83% female in 1973.

The population growth between 1964 and 1973, has been represented in terms of an increase in household number and size. In this period the number of households increased by 16%, from 331,990 households to 387,043 households. The increase in the average household size was 24% (from 4.71 persons per household to 5.85 persons per household). There is no indication that household size in one part of the country differs significantly from that in other parts. Nevertheless urban household size is slightly larger (5.9 persons per household) than the rural household size (5.7 persons per household). This is probably related to the fact that urbanisation has not yet seriously affected the traditional role of Libyan women as housewives and mothers. But it is more evident that household size varies from one income group to another. There is a tendency for lower income groups to have larger families. A sample survey of Tripoli Town in 1961 (Buchanan, 1975) found the average household size to be 7.62 persons for lower income, 5.74 persons for medium income and 4.55 for high income households. Analysis of the national census of 1973 confirms the phenomenon that as incomes rise the proportion of large families decreases. It is obvious that higher income households enjoy better living conditions, education, health and social awareness.

1.4 Socio-economic Conditions

1.4.1 General

The dominance of traditional Arabic-Islamic culture on the nation for centuries has left a deeply ingrained social and religious homogeneity which has been advantageous to Libya. The insignificant variations in customs, attitudes and social infrastructure deriving from origin, climate and geographical factors have been dying out in the face of urbanisation, education, communications and economic growth. These changes were so sudden, strong and fast, often flying in the face of traditional customs, that the well established values, social structure and patterns of living which made up much of the cultural and ecological fabric of the country have been seriously confused by current events.

For many generations, Libyan people were severely oppressed by foreign domination and suffered extreme poverty. The rate of illiteracy was very high and political awareness was very low. So serious were conditions that the social, political and economic viability of Libya were in doubt when Independence was granted in 1951 (Zarrugh, 1973). Only a few years afterwards, in 1959, the economic revolution was sparked off by the discovery of oil in commercial quantities for the first time (Doxiadis, 1963). The significance of these two major events in the modern history of the nation demanded social and economic readjustments. The population's eager desire to be educated in order to overcome the obstacles which had held them back, and their longing for better living conditions, were indicative of the level of motivation wrought by these political and economic changes. Libyan society

has experienced change in almost every aspect of life and the struggle between deeply rooted traditions and a strong desire for modernisation has been present ever since.

1.4.2 Migration: pace and characteristics

One common feature of developing countries is the increasing migration of people from rural to urban areas. The dramatic changes in Libya's economy have clearly induced heavy migration movements over both short and long distances. Almost all migration has been urban-oriented, intra-regional movement and about two-thirds of all migration from Muhafadats (counties) is destined for Libya's two major cities, Tripoli and Benghazi. Nevertheless, the pace and distribution of migration in the Tripoli Region is different from the pattern characterising that in the Benghazi Region. Apart from the fact that half of Libya's population is concentrated in Tripoli Region, the rural-urban movements are less dispersed in this region than in Benghazi Region. For example, between 1964 and 1973 23,000 persons migrated to the nineteen urban centres in the Western Region while 228,000 migrants moved to metropolitan Tripoli. Within the same period about 24,000 migrants were absorbed by the eight other urban centres and 76,000 migrants went to Benghazi city (Italconsult, 1976). Because of the sharply defined environmental differences between rural and urban areas in Libya direct move to the two main cities involves high social adjustment costs affecting the migrant, his family, the community and the country as a whole. Second moves can be expected from people who have settled in the urban centres within the regions and who are now midway to urban life; their ability to withstand and

adjust to further change is much higher. Tripoli has always attracted people since the rule of Septimius Severus during the Roman era. It has also been the natural migration outlet for the Western Region (Elkabir, 1972). During the major historical periods and before Italian Colonisation, Tripoli experienced in-and-out migration as a result of consecutive periods of peace and prosperity and of wars, famines and plagues. During the Italian rule, the rural-urban migration was controlled by the Authorities for political and economic reasons: the number of urban migrants per year was restricted. At the end of World War II and as a result of the departure of Colonial Italians and the end of migration controls, migrants came to Tripoli in great numbers. This cannot be attributed solely to the disappearance of restrictions on people's movement, but has many other reasons. Among these are the stability and security of city life and the job opportunities, especially after the establishment of the British and American military installations. The attraction of Tripoli has been less in terms of urban social life than on economic grounds (Harrison, 1970). Major educational, health, leisure and shopping facilities were, and in some instances still are, limited to the two major cities of Tripoli and Benghazi, as the first shares her functions with the rival magnet of the latter. Nevertheless, Tripoli as a capital with a multibased economic centrality provides some services and facilities which are available nowhere else in Libya. Such "pull" factors have attracted migrants from different parts of the country, but the majority have always come from the Western Region (Harrison, 1970). The "pull" factors are no less effective in migration than the "push" factors. Their effectiveness varies from one part of the country to

the other and, of course, the different factors influence individuals in different degrees. Lack of sufficient water for irrigation, the decreasing area of cultivated land and the lack of essential community services are major forces creating economic pressures which persuade rural people to forsake their traditional environment for the confusion of the big city (N.Ph.P.P. 1979). Since the discovery of oil, the economic and social disparities between urban and rural life have been increasing dramatically and ambitious rural development programmes have failed to counter this trend.

Most people, especially merchants and traders, communicate with Tripoli quite often for one reason or another and many of them become familiar with city life or even attached to it and hence migrate. Those people usually maintain contact with their places of origin, their houses, farms and community, for social or economic reasons: when the migrants settle in Tripoli, they still return in agricultural seasons, for school holidays, social occasions and religious events. Their legal and municipal registration may be retained in their place of origin. Even when they move permanently from a particular area to Tripoli, they try to live amongst their fellows from that area. This long-established trend was recognised as early as 1917 by De Agostini, who mentioned that migrants were concentrated in Tripoli on the basis of their place of origin (De Agostini, 1917). Different quarters within the old city, the major area for the reception of cityward migration, and in the outer zones, used to be dominated by migrants from certain parts of the country. Established in-migrants were a spur to the flow of further migrants from the same places of origin,

whether as part from their extended family, kinship or tribe, or as a result of professional fellowship (merchants, craftsmen, for example). Newcomers related in these ways feel more secure and not completely divorced from their original environment or style of life. Early migrants experienced a slow adjustment to city life and a natural development of their adaption to the urban way of life. The expansion of the urban boundaries of Tripoli under Italian rule changed the city's physical pattern, social structure and lifestyle. Residential areas have developed in different socio-physical styles. The most Westernised quarters started as an extension of the new modern city centre which was built and occupied by the Italian and other foreign communities. Before Independence, these quarters were mainly occupied by non-Libyans, and the very few Libyans living there adopted a Western way of life. Traditional styles of quarters were developed by local people, based on the same socio-cultural and economic principles followed throughout the history of Tripoli. The most important of these was the neighbourhood concept, which enabled inhabitants to feel that they were part of their residential area or quarter, where the individual had an intimate, strong relationship with his kinship and neighbours (Elkabir, 1972) and where class differentiation was indistinctive in society with close friendly ties between different sections (M.T.H.Y. 1970).^{*} As a consequence of Tripoli's urban expansion, not only geographical but also social mobility resulted which affected not only the in-migrants but also the city dwellers. This mobility was accelerated after Independence

* M.T.H.Y. 1970: Municipality of Tripoli in 100 Years, 1970.

by the political, economic and social changes experienced nation wide. The rapid growth in per capita income and the high rate of urbanisation drew Libyan people to new sections of Tripoli built by the Europeans, many of whom had left the country by then, or newly established by the oil "bourgeoisie" in the fashionable zones (for example, Hai Elandalus, Ben Ashure). Nuclei of new urban areas were also established by better off migrants from the same place of origin, either as an extension of old neighbourhoods or as new ones, such as Sidi Kalifa, Gurgi. Poor late migrants settled in the deteriorating old city Medina and took the place of the well-off city dwellers, almost all of whom left the Medina when the post-oil boom began in the 1960s. The Medina, as well as squattments on the periphery of Tripoli, have been acting as productive nurseries in the urbanisation of Tripoli. These slums have been settled by groups of people of the same origins, by members of the same extended family or tribe or the same occupation (Harrison, 1970), and are characterised by the highest rates of fertility, illiteracy and of density in terms of persons per square metre or per room in the whole Tripoli (Elkabir, 1972). The geographical mobility of the late migrants to the city and within the city is heavily affected by the ever changing socio-economic conditions which have significantly contributed to the loosening of social links and the sense of community among them. A small proportion of those poor migrants succeed in moving individually to better residential areas and in being absorbed into the rapidly expanding fabric of the city. The rest receive the lion's share of publicly provided housing. The other section of the community which is a client of such schemes comprises poor expatriates, who returned recently from

the neighbouring countries (mainly Tunisia) and only manage to join the squatters in the hope that the Housing Authorities will one day provide them with dwelling units.

1.4.3 Urbanisation and Social Structure

The pace and depth of urbanisation which has been experienced by Libya is attributable to the discovery of oil. This has not only changed the possibilities and prospects of the economy tremendously, but also played an important role in transforming a great mass of the rural population into urbanites virtually over night and has diffused urbanisation into the rural areas (Shembesh, 1975). Hence urbanisation is no longer concentrated within cities' boundaries and has spread to other towns and villages. Because of the speed with which Libya has acquired its vast wealth, economic prosperity and cash availability, the high rate of change in living standards and urbanisation have been accompanied at a disproportionate rate, by changes in social values and patterns of living. In other words the material changes have not brought automatic or even comparable changes from traditional attitudes to the society and family ways of life. The community and family patterns of living are fundamentally affected by such changes which the whole nation experienced in the midst of the problem of people's assimilation in urban areas. The readjustment required by the new urbanised way of life has been challenging customs, values and attitudes. Nevertheless there has been inequality in the degree of assimilation in different institutions because of cultural, social and economic factors. Assimilation can be a function of the degree of urban exposure and the penetration of western influence, but

traditional upbringing and education have a great bearing on the speed of such assimilation.

The Libyan population is considered to have a fairly homogeneous composition, although of different ethnic origins and different income groups (Zarrugh, 1973). The general structure of the social organisations bear out the stratification of the country's population. For the purpose of this research the Libyan population is divided into three types of social organisation each of which has its own systems of stratification.

a) Non-Urban Population. It includes the diverse populations of nomadic and semi-nomadic people and settled villagers. The people live in oases, villages and around small towns throughout the country; in semi desert, on the mountains and plains and in the coastal areas. The nomadic and semi-nomadic people are known as "Badu" or "Bedouins" (people of tents) as they live in their typical low-pitched tents. Their way of life is adapted to their environment, and they adhere very closely to their own traditions and customs (Zarrugh, 1973). The drive for education is encouraging nomadic people to settle for the academic year in established centres for the sake of their children's education. Nevertheless the societal changes experienced by the country as a whole have been reflected in the decline of the Bedouin population. Most non-urban Libyans belong by birth to a tribe or a section of a particular tribe, but tribal sentiment is naturally stronger in remote areas of semi-desert and oasis. Blunsum, 1968, writes:

"One striking difference in Libya between the life of the inhabitants of the eastern region, Cyrenaica,

and the western, Tripolitania, is that of the settled cultivating existence of farming community in Tripolitania and the nomadic or semi-nomadic conduct of life in Cyrenaica. In the former the population has become largely de-tribalised and sedentary; in the latter the pattern is one of tribalism which has its roots in the customs of Arab forbears."

Kinship groups are the fundamental social units and the family is the focus of social loyalties. Family relationship and structure is based on the extended family which is the core of social interaction. Non-urban women enjoy by tradition much freedom: they do not appear heavily veiled and are not excluded in the home. Besides her traditional role as a wife and a mother, a woman usually helps her husband in the field and contributes to economic activities and family income. Despite the importance of women's functions, men's position in non-urban communities, as elsewhere, is superior to that of women. A high proportion of the non-urban population is poor and illiterate, but all are very generous and hospitable. These characteristics not only affect everyday life, but have a direct influence on people's concepts of housing and its use. Housing type is also affected by the geographical features of localities.

b) Urbanising population. Except for the highest income group, this category, with its dynamic nature, represents the majority of the population who are going through a transitional phase of urbanisation which is not necessarily a result of geographical mobility. The urbanising category includes city migrants who have not yet fully adjusted to urban life. It also includes rural people who live in recently formed urban communities which have an adaptive economic base but lack the adjustive social institutions of traditional life and people who

reside in their original localities, which have a mixture of rural-urban characteristics. However this urbanising category is the dominant sector of population in both urban and rural settings. It represents people who adopt certain, although not all, characteristics of an urban way of life in their non-urban place of living and people who persist in a rural way of life in the urban context for an unspecified length of time. The economic conditions, locality and residential facilities are reflected in the patterns of living which are practised by the urbanising sector in both urban and rural areas. It is also reflected in the social and family concept they adopt. The retention of "rural" ways of doing things and adaptation to urban life deeply influence housing needs, planning, design and space concepts.

c) Urban population with all its diversity of economic and social characteristics measures and values. This sector of population resides in major urban centres as well as the two big cities, and has completely adapted to living in an urban environment over a long period of time. The assimilation of early in-migrants to Tripoli was also accelerated by social mobility and economy interactions (Elkabir, 1972). Before Independence a substantial number of Libyans emigrated mainly to other Arab countries and Turkey, in search of peace and a living (Shembesh, 1975). However in the early 1950s and especially after the exploitation of oil and consequent developments, this trend was reversed and there was an influx of expatriates returning home to settle mainly in Tripoli and Benghazi for many reasons. After being away from their places of origin for many years and acquiring a new way of life, usually urban if not westernised, the expatriates would

hardly fit or be accepted into their old communities. Besides, the two cities have better social and economic opportunities.

At the same time the number of foreigners and minority groups has increased in Libya and most of them are concentrated in the two cities because there they can be better provided with job opportunities and all kinds of services they require.

1.5 Trends of Social Change

1.5.1 General Characteristics

The whole country is undergoing social and economic changes, urban centres are not the primary focus of such changes; rural areas are witnessing changes not so much because of the trend of urbanisation, but because of general changes in society. Some of these changes compromise local traditions and can reach their most extreme forms in the urban context. Nonetheless, urbanisation in Libya has been and will continue to be for quite a while, confined by the locally established culture and traditions of large cities, especially when the local values and customs of urban inhabitants are often derived directly from the rural areas, and when society as a whole enjoys cultural and religious homogeneity (Doxiadis, 1969). The local socio-cultural traditions of Tripoli in many ways provide a basis for the conduct of contemporary urban life and they account for some of the qualities of social urbanisation and physical changes typical of cities throughout the Middle East (Abu Lughod, 1975).

The retention of rural traditions and habits in the urban areas, particularly by low income groups, and the presence of urban privileges, such as cars, TV sets and refrigerators in the homes of well off non-urban villagers show that urbanisation in Libya does not follow the Western model of modernisation, where urbanisation is closely identified with modernisation (Qadeen, 1975). This is because the geographical and social mobility of Libyan society is a product of substantial economic growth, which does not bring about the social and economic characteristics which have been defined as modern in terms

of Western criteria. Stephenson (1969) defines modernisation as

"the movement of persons or groups along a cultural dimension from what is defined by the cultural norms as traditional, towards what is defined by the same culture as modern."

For the purpose of this research the modern sector of the society is to be contrasted with its traditional sector in the sense defined by Stephenson. The sector which is moving from the traditional to the modern is the transitional sector. This sector is undergoing social urbanisation in both urban and rural contexts, where certain aspects of life style belong to the modern definition and other aspects are traditional.

The social differences in terms of life style, had barely begun to be reflected in the cultural and social homogeneity of the Libyan society by the last decades of Italian colonial rule (Elkabir, 1972). The few Libyans who came in close contact with the Italians and adopted their way of life, were called "modernised" or "Italianised". In those days it had a very bad meaning and was regarded as insult to a person or a family if they were so labelled. The economic disparities, the result of the post-oil boom, have been strengthening the differentiation in the social as well as urban fabric of the country. For many reasons, rural society is characterised by a higher degree of integration and fewer sharp differences. The traditional rural way of life co-exists with the new "modernising" way of life adopted by the small urbanising sector in the rural context. Urban society is still substantially more segregated as measured by type of housing and characteristics of residents, although the degree of differentiation with each setting varies significantly.

1.5.2 Tripoli Population

In the case of Tripoli, the urban traditions that shaped its urban panorama throughout history have influenced the development of the physical and social organisations of the city. The adjacent types of quarters, within which there are fairly distinct modes of housing and urban development, show a range of variation in terms of style of life. The location, economic and social status of the quarter and its physical characteristics are influential factors in the type of life adopted by the residents. Nevertheless by any criterion it is virtually impossible to draw a clear line between the type of family and social life embraced by different categories of the majority of Tripoli inhabitants. To get a clear picture of the living patterns and social structure of Tripoli one can divide its population into two main groups according to social and family structure and way of life (see fig.1.4): urban and what may be referred to as the urbanising sector. Each of these two sectors can be divided into sub-sectors. Within the urban sector are those who live a completely modern life style, and those who live a life entirely based on local urban traditions developed through the ages in Tripoli. This sector also includes those in the process of adopting a complete modern life style. It should be noted that the measures of behavioural modernity with respect to patterns of living and life style do not necessarily correspond to the attitudinal measures adopted by the same people. Within the urbanising sector of Tripoli inhabitants there are two sub-sectors: those who are moving into the traditional way of life of urban Tripoli and those who are moving into the trappings of modern style (see fig. 1.4). The last three of the five sub-sectors mentioned are of a dynamic

nature in the sense that the people are undergoing social and economic changes often from rural to urban way of life. Stone and Simmons (1976) verify this phenomenon when they write:

"urbanisation brings an increasing number of people from peasant or rural backgrounds to work in the modern economy. This transition to wage labour is more than a difference in working patterns. It involves a major change in way of life in attitudes and standards of behaviour."

However these sub-sectors can be referred to as the transitional sector. The transitional people who constitute the majority of urbanites in Tripoli, have adopted a variety of aspects of modern way of life and retain certain traditional habits and customs, or may be both according to the circumstances - whether this concerns daily life or social interactions. These include for example, extended family and modern house style, traditional cooking and dining with modern furniture, and sometimes both traditional and modern versions of the same thing used on different occasions. It is evident that the transitional sector has a few parallels with what is said to be the modern way of life and a few more with what is known as the local, traditional style of life. The social duality and differences pertain primarily to the economic and settlement aspects of urban life. This sector enjoys urban jobs, western housing and community facilities, but the family structure, social concepts, attitudes and pattern of living do not necessarily bear any resemblance to the corresponding modern sector. In most cases the visible modern attributes of this sector which is often undergoing modernisation, including urbanisation, are merely superficial manifestations of change, especially financially, when people can afford them. One of the major concomitant factors of

urbanisation contributing to the dilemma of modernisation is the market (Stone and Simmons, 1976). From house design and building materials to the smallest thing required in the house, there are evidences of modern style and western exports. Low-income groups in this sector lack the means and the motivation to move fast and if they move as a result of the general changes in the society, they are confronted with alien living facilities, ill-adapted to their needs and values. Among the higher income groups the forces of modernisation work faster but even then in most cases change is retarded by the social ranking, despite the city's impersonality, complexity and rationality. However the economic and social heterogeneity of the transitional sector has been a function of the socio-cultural mobility achieved by individuals.

The socio-economic disparities developed throughout the modernisation process have considerable bearing on the family social structure, the pattern of daily life and the type of house and the way it is used. All this will be elaborated in section 1.6. Nevertheless, despite differences shown in the subdivisions of urbanised Libyan society, in the broadest sense the Libyan pattern conforms to the generalised social urbanisation pattern found throughout the Arab countries.

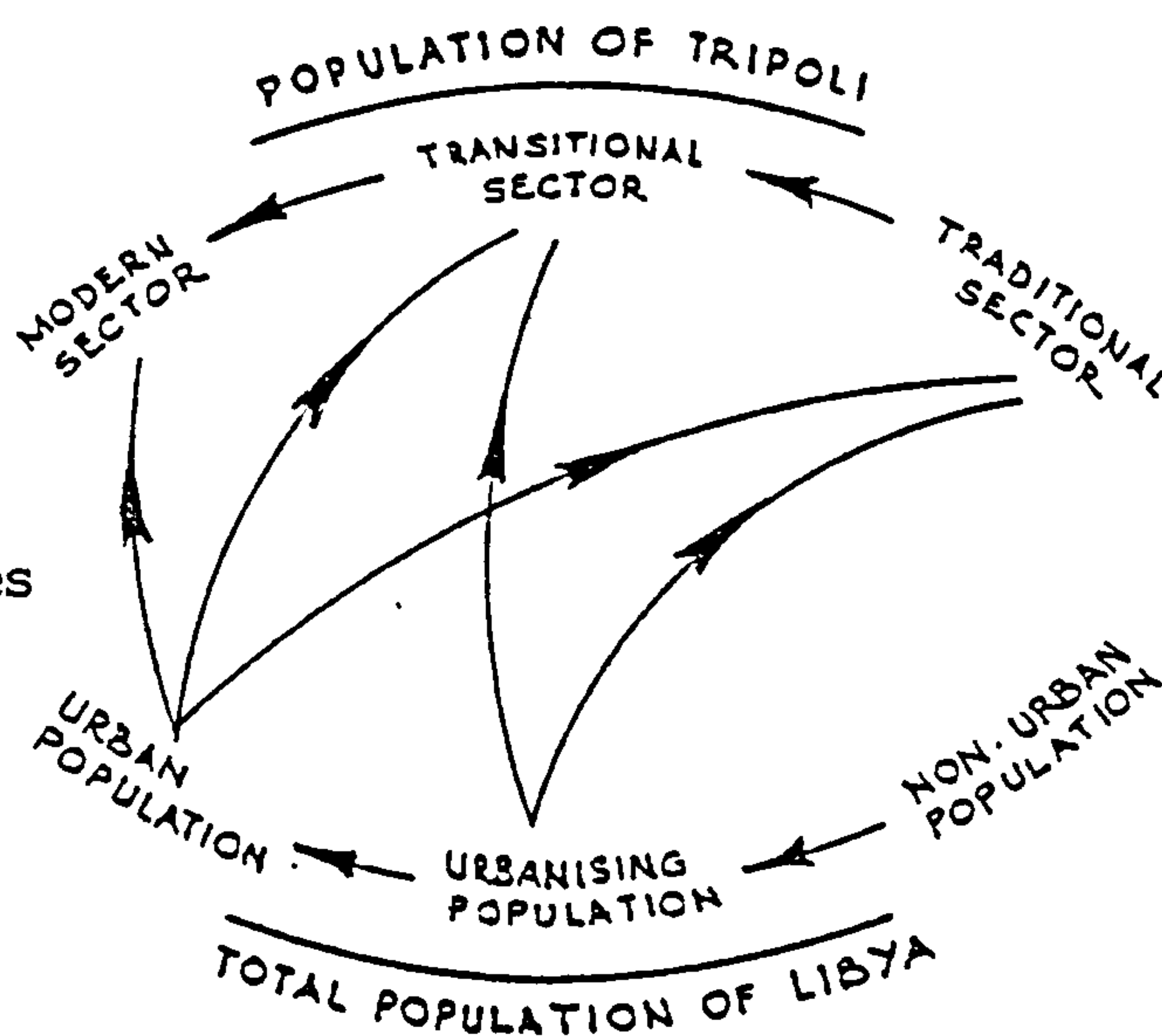


Fig. 1.4 Population Categories in Tripoli

1.6 Social and Family Life Characteristics

Social life in Libya has been based primarily on the traditional role of the family, whether it is of the nuclear, polygamous or extended type where there is a strong sense of belonging and willingness to support. It is still quite common for grandparents, parents and their children to live together in the same dwelling unit (Bear, 1964). In many cases such households include relatives who need to be looked after. The same role in most cases is maintained by the second generation. In such a pattern, blood loyalties are very strong and the kinship ties are continually reinforced by social institutions and economic considerations. The traditional security that exists where people live in natural groups has been the foremost socio-economic advantage of the social structure and way of life that is still fairly dominant throughout Libya.

The family remains an important social institution which determines style of life in terms of social activities, child rearing practices and production and consumption patterns. Beyond the family, the community organisation remains an important part of everyday life. The need of people to feel that they are part of the community or neighbourhood is another common characteristic of Libyans throughout the country. These socio-cultural traditions that shaped the urban panorama in the past have been decisive factors in strengthening the differences between the rural and urban ways of life.

Traditionally Libyan people, particularly urban dwellers, have a strong desire for the privacy which has played such an important part in shaping the character of traditional Libyan cities and towns and

which is carried over to the present day (Costello, 1977). In most cases it is a prerequisite feature of the house, due to the reluctance to compromise the privacy and intimacy of family life. Social and family activities are conducted in two separate spheres: male and female, public and private. In this respect traditional urban communities, mainly with rural backgrounds are more strict than modern ones. Such separation of the opposite sexes in life activities is reinforced by the education system, and employment, despite formal equality of rights. The persistence of these concepts has very little to do with the socio-economic conditions. Nevertheless, the higher status the groups the more modern, or westernised, they are. Socio-economic groups differ in many social attributes, all of which have considerable bearing on the type of house required and the way the house is used. Despite the changes in family structure as a result of urbanisation and modernisation, the woman's essential role as a housewife has not been affected. Even when she is economically active, the degree of motivation and fusion of roles are functions of education, job satisfaction and family attitudes. The dual roles: traditional, as a housewife and mother and the modern, as a career woman, are commonly maintained by women in the transitional sector of the population which constitutes the majority of Tripoli dwellers. The increasing confrontation with foreign norms and foreign ways of life and contacts with the foreigner community have not been the only channels of Western influence on Tripoli society. Mass media have been playing an important part in the change. The market is another factor in the changes taking place in the patterns of living towards a modern lifestyle. Such changes do not mean that traditional ways must go because they no longer satisfy

the new desires, but because either the modern alternatives are so exciting, or because new desires have not been catered for. The co-existence of the three sectors in Tripoli, the modern, traditional and transitional where the position of the man or the family living according in part to modern and in part to traditional styles, bears out this fact.

1.6.1 Characteristics of Social and Family Life in Tripoli

1.6.1.1 Urban Traditional Sector

As has been mentioned, one of the significant characteristics of the traditional urban family in Tripoli is its extended structure into several generations.

The degree of departure from this tradition has varied in strength among the different income groups. Generally the family in this sector is usually more resistant to change than in the others. However, the influence of modernisation, industrialisation and urban growth is so strong that socio-cultural mobility cannot be resisted even in extended families, especially at certain stages of life cycle. Whereas, polygamous, extended or combined types of household are common, with no differentiation between different income groups; the changing values and customs of society as a whole have contributed to the abandonment of such traditions among younger generations. The economic growth of many traditional families has, however, not brought about the expected decline of the extended family. Generally such families live in a single house, but this traditional practice is taking on a different appearance within the higher and middle socio-economic groups where large extended families do not have to live in one dwelling unit but

in multiple family accommodation (block of flats, sometimes with common facilities; a group of villas, in most cases sharing common entrances; or a compound type of dwelling). Many large extended families are maintained as long as the senior generation is alive, continuing to enjoy the traditional respect for the head of the household. In many other cases the traditional extended families develop into nuclear families in different parts of the city, but maintain close contacts and strong loyalties to the senior generation despite the fact that the nuclear families may follow different patterns, not only because of differences between age groups, but also because of the different attitudes and values they have adopted as a result of socio-cultural mobility. The "Family house" is usually the frequent meeting place for nuclear families, for instance at weekends, social and religious events and casual gatherings.

Family and social obligations are very important and the sense of belonging to the family, kin and neighbourhood is fairly strong. The social structure and the strong bonds of family relationships significantly influence the type of house and the way the house is used by people of this sector. The family concept of privacy, social status, religious and social customs and entertainments are also essential considerations in the form of dwelling and its relative location. The most strong tradition is privacy which is very strict among people of the traditional sector. Social and family activities are conducted in the customary two spheres, of public and private and of men and women. The most effective consequences of this tradition are the seclusion of women and the attitude toward guests (Buchanan, 1975). The traditional interpretation of Islamic norms concerning the behaviour of women is

still important in traditional families: they should neither have contacts with men nor go outside the house or show their faces unveiled to strange men - their role should be limited to that of wife and mother. The confinement of women to the home does not prevent them from working when financial hardship pushes them to do so. Craftswomen and artisans usually work at home on dressmaking and embroidery and women with rural backgrounds work in weaving and carpet making, mainly within the lower socio-economic group. Despite the seclusion of women and veiling, which are still retained, educational opportunities and economic needs played a part in encouraging traditional women to be trained as teachers where they can work in single-sex institutions and eventually to practice their prime role as mothers and housewives (Stone and Simmons, 1976). Among traditionals, privacy for the family as a whole is a basic requirement and the sheltering of women is reflected in the traditional house design and layout. Whereas social entertainment and visiting are major features of Libyan social life (Buchanan, 1975) the traditional sector practices them in two separate worlds of males and females. The importance of this tradition has divided the dwelling unit into two distinct areas; one is reserved for receiving, entertaining and accommodating guests, mainly male visitors, the Almarbuha and its associated cloakroom, while the other area is for the family and casual female visitors. The family area usually is for multi-use functions at different times of the day and at different seasons. The sheltered life of women is not confined to the interior of the dwelling unit but extended to its outdoor spaces and public facilities.

Religion still retains its social functions within the traditional sector. The same may be said about the large variety of customs practised in marriage and bereavement rites which are not always directly connected with religion and which also affect house design and layout. The most significant event is the ritual killing of animals at certain times of the year as a sacrifice made by every adult who can afford to do so. Although a great deal of this meat is given as donations for the poor, the traditional large family is still left with plenty to eat and to preserve for the winter months. The traditional way of slaughtering, preparing, preserving and storing some animals is adequately catered for in the traditional courtyard house.

The traditional community is a structured society wherein social respect, status and prestige are associated with the degree of retention of social and religious rites. The family and social obligations have a significant influence on daily life, not only on the individual, but on the household as a whole. This urban traditional sector constitutes people from all income groups, with a majority of low-income, though the whole sector is not very large. To conclude, despite societal changes, many institutions such as the family, women's status, religion and social functions have undergone very little, if any, changes within a certain category of urban society in Tripoli. Such institutions have been the focus of life activities and hence have influenced every aspect of it. The most significant influence has been on housing concept and design.

1.6.1.2 The Modern Sector

Before Independence, modernisation was confined to a very small

section of urban society in Tripoli. During the Ottoman rule the shift from the local traditional ways of life under the Turkish influence was very insignificant because of the nature and the pace of the change. The unity of the Islamic religion and the length of the Libyan-Turkish interaction made the shift very smooth and indistinctive. The experience of mobility through successive generations gradually evolved a style of daily life peculiar to urban Tripoli. More recently, during the Italian and British presence in Libya, the "Europeanisation" penetrated only the upper layer of the society, affecting education, values and style of life and hence alienated this group of people from bulk of the society. The creation of wide differences in socio-cultural characteristics was the outcome of rejection of the majority of the non-Muslim imposed influences, where the adoption of such influence was related to disloyalty to Islam and to the country, on the one hand and on the other of colonial politics. As a result of urbanisation, economic growth and education, direct western contacts (which took different forms from colonial times) and the great exposure of society to the western world have caused today's modernisation to be diffused in a wider layer of the population and to affect both public and private institutions (Elkabir, 1972). The deliberate movement away from the traditional style removed the obstacles to change and narrowed the gap between the modern "westernised" and the local urban tradition. This social transformation, greatly confused by the growth of wealth and urbanisation, resulted in the creation of a third sector, the "transitional", to bridge the gulf between the two extremes, the modern and traditional sectors.

The modern sector in general is more homogeneous and relatively well-off but not necessarily high in social rank terms. Most people categorised in this sector of the population are West-oriented by their education, marriage or occupation. The adoption of modern customs and values is inevitably reflected in the patterns of family life. Social and family relationship and structure are westernised. The small family unit has replaced the large composite household and the importance of the family as an agency of social security has been abandoned by people within this sector. Privacy has less bearing on social and family life and hence is less influential on house design and layout. Women of this sector are not veiled and enjoy more freedom, education and economic independence. Consequently they spend less time on domestic activities and traditional social obligations. Although privacy for the family as a whole is always claimed, visiting and social gathering are mixed and guests of either sex are entertained by the whole family in any convenient part of the house. The modern house as is usually owned by well-off people is large enough to have a specified use for each of its component parts. The pattern of living and the way the house is used is reflected in the type of furniture, style of house and neighbourhood: flats or modern villas are typical and reflect an adaptation to the western way of life these people have acquired. Ritual practices have no significance among people of this sector. Social and religious rites are considered as old fashioned and have no bearing whatsoever on the social status or respect of modern people as they do with their counterparts, the traditionals. The modern sector is not very large, but it is expected to increase in size and in percentage of the total population of Tripoli. It

constitutes mainly people from high and middle economic groups, but socially they have diverse status.

1.6.1.3 The Transitional Sector

This sector of the population constitutes the middle layer of Tripoli's society which lies between the other two extreme layers, Modern and Traditional. It is a very heterogeneous sector in all aspects, especially in terms of income level and social status. But the differences are in the degree of modernisation rather than in any basic differences in life style. Such diversity is a result not only of migrants coming from different parts of the country, rural and urban, of different socio-economic background, but is also attributable to rapid cultural shifts resulting from increasing confrontation with foreign norms and foreign ways of life. For reasons associated with socio-cultural mobility families follow different patterns, even if they share a common background or origin. This is not because of the different values and modes of life adopted by different people but also because of people's ability to change. Changing values, customs and habits are persistently reflected in the patterns of family life style; changes have affected the family but not, so far, in the same way as in other developing countries (N.Ph.P.P. 1979), especially in the decline of the extended family and the establishment of more nuclear type of families. It is true that young couples are now setting up their own homes, but nonetheless they have not dropped family and kinship ties, even if such ties are not as strong or as formal as those in the traditional sector. The decline of the extended family has not, however, affected either the importance of the family as an agency of

social security or family size: birth rates have been increasing for many reasons, including the fact that urbanisation has not yet drastically affected the traditional role of Libyan women as housewives and mothers (Italconsult, 1975). Economic activity by women in the transitional sector of the population has been confined to types of work which accord with their traditional role (N.Ph.P.P. 1979). Beyond the family, community organisations are of no less importance in everyday life. Social ties and family bonds are vital determinants of patterns of behaviour and ways of living, but social disparities have emerged as a consequence of the characteristic mobility of the transitional sector. The variations in patterns of living do not always accord with the expectations of the modern sector, nor do they always parallel what is the expected way of life of people in the traditional sector: the traditional sector conforms in some ways, but not in others. Quite often a "dual style" of life is maintained. This has great significance for house design and layout, where houses have to cater to more than one of the patterns of living.

Religious observances are social occasions which have undergone some change, not because people's beliefs have altered, but often because traditional facilities for such occasions have disappeared from society and cannot be easily accommodated in modern houses. Despite a continuing reluctance to invade the privacy and intimacy of the family, transitional lifestyle is more open to public social life than the traditional lifestyle. This does not mean that women in the transitional sector are unveiled or have emerged from their seclusion, but in the houses of this sector while still distinctly

divided into exclusively family area and guests area, both male and female visitors can be received. Houses are also of a multi-use nature, especially among people in the low income group. The majority of the inhabitants of Tripoli of all socio-economic groups fall into the transitional sector as defined here. For people in this sector, the trend away from traditions is one way of moving up the social ladder, on the one hand and, on the other, modern ways may simply appear to be more exciting than the traditional; in some cases, traditional things may not be available and people will have no choice in settling for modern goods. This trend away from traditions is encouraged far more by contemporary house design than by changes in patterns of living.

Concluding Remarks

It has been shown in this chapter that the form and character of urban housing are very much affected by the total process of changes in society. Historical development and demographic growth have been extremely important factors, but the extensive economic and social changes have been far more influential. These changes include the rate and level of urbanisation, the scale and nature of social transition as well as the pattern and trends of adaptation to these changes.

CHAPTER TWO

THE CHARACTERISTICS OF THE URBAN FABRIC IN LIBYA

2.1 Pre-colonial Heritage

The history of the urban fabric in Libya is the story of man's struggle and the reflection of its consequences of success and failure on his way throughout life. The outcome of his interaction with the environment as he attempts to satisfy his spiritual and physical needs is the culture that dominates the urban characteristics of the country (Fathy, 1970). Libya as part of the Middle East, which according to Costello, can claim to have the world's longest history of continuous urban development, has an urban tradition dating as far back as the end of the second millennium B.C. (Costello, 1977). But, Costello also remarks "those historical factors which continue to influence urban life in the region date back no further than the Islamic period following the Arab Conquest" of Libya in A.D. 642. Nevertheless many Hellenistic, Roman, Byzantine and Islamic physical features and structures bear witness to various periods of historical development and to the life style adopted by local people; the most dominant feature of all throughout Libya is the traditional courtyard house (Shaiboub, 1979).

2.1.1 Classic Period

The Phoenicians were the first known people to settle in Libya as the native Libyans, according to Herodutus (Wright, 1969) were pastoral nomads living off the meat and milk of their cattle. They

lived in tents, huts or dugout homes, the types of which are still used in some parts of the country. There were no urban centres till the Phoenicians and the Greeks established trading posts and cities throughout the coastal region in the first millennium B.C. Although Phoenician contacts with Tripolitania, the Western region, started before that, permanent settlements were only established some centuries later when the settlers and the native people seemed to co-exist mutually. According to Wright "the upper class local people adopted Phoenician manner and culture" (Wright, 1969). Tripoli (Phoenician Marca Uiat, Roman Oea and then Tripolis and Arabic Tarabulus), was established by the Phoenicians as one of three commercial centres; Sabratha and Liptis Magna being the others (Haynes, 1959). Shipping facilities were the main feature of Marca Uiat which was a trading post between the Mediterranean and the rest of Africa, attracting migration from the rural hinterland (M.T.H.Y. 1970). It also developed a residential area and some shops and stores (Elkabir, 1972).

In Cyrenaica, the Greeks were the first settlers in the eastern region of Libya. Here also contacts with native people were made long before the foundation of the first city. The establishment of Cyrene (modern Shahate) in 631 B.C. was followed by waves of migrants from southern Greece and the Aegean islands (Wright, 1969). A half-dozen of such cities were founded afterwards and by the end of the 6th century the Cyrenaican cities had become important trade centres, with Cyrene being one of the greater Greek capitals of that time.

According to Shaiboub the private houses of the Greeks are far

less known than their public buildings in Cyrenaica, because houses were very modest in a society in which public life was more developed than private life (Shaiboub, 1979). During the Hellenistic period (330-97 B.C.) the Eastern region prospered and five of the Hellenistic cities in Cyrenaica federated as the Pentapolis (Wright, 1969). This federation reduced the trouble between them and contributes with many other factors, to the changes in political, economic, artistic and social life, as well as to new styles of urban fabric and patterns which began to develop. The Greeks started during this period to reorientate themselves away from public life to private life. This trend was reflected in their houses which became more luxurious. The ruins of Cyrene are examples of Hellenistic architecture at its best. In terms of houses the private urban house with a central courtyard was common during the Greek period of Cyrenaica. The excavations in Sidi Krebish (Benghazi) and Tocra have produced evidence of the ancient courtyard houses, similar to Greek houses found in Olynthus and other ancient cities, and of their use as early as the third and second centuries B.C. (Shaiboub, 1979). The courtyard house as it can be traced through Hellenistic remains in Libya up to the 3rd century B.C. consisted of a number of rooms surrounding a courtyard or atrium, usually built on top of an underground cistern to which rainwater was piped and stored for domestic purposes. Some of these houses were of a peristyle type with columns, arches and corridors along one or more sides of the courtyard. The remains of the stairs and the thickness of the walls in many cases show that some of these houses were more than one storey, with "porticos" running along one side or around the whole courtyard. Such porticos

not only sheltered the circulation area of the dwelling, but also controlled the penetration of sun, wind and rain. This made it possible to use the courtyard at different times of the day and at different seasons of the year for different functions. There is no evidence of Greek influence in Tripolitanian cities, although the Hellenistic influence on the Romans, who dominated the whole country for a long while, was considerable.

The Romans took over Tripolitania from the Carthaginians in 146 B.C. and Pentapolis from the Hellenistic kings in 74 B.C. They paid great attention to the three old Phoenician posts on the Tripolitanian coast, replanning them according to the Roman urban planning system. Both Leptis Magna and Sabratha flourished and increased in size and population, but Oea grew very little. Even when Aspharus took a special interest in Oea and built protective walls, the urban activities were limited and only a few public buildings and private houses were constructed within the walls (M.T.H.Y. 1970). However, when Septimius Severus came to power in 193 A.D., the status of the town changed greatly. He realised its geographical and strategic importance and shifted the capital of Roman Africa from Leptis Magna to Oea and renamed it "Tripolis" ('the three cities') (M.T.H.Y. 1970). Tripolis then developed rapidly from a small Phoenician trading post to a main Roman town enjoying the rights of many other Roman colonies. The town prospered, increased its built-up area and witnessed a degree of civilisation (Elkabir, 1972). The inhabitants of Tripolis, a mixture of Italians and Romanised Afro-Phoenicians, grew up in an urban society (Wright, 1969). When the Vandals took over Tripoli in

429 A.D. they destroyed most of the public buildings and private homes. Very few Roman remains still exist in the old city of Tripoli and the most important structure is the Arch of Marcus Aurelias. The other remains are the core of the Castle, which has changed a great deal throughout history, as have the city walls.

Before the beginning of the first century A.D. Cyrenaica started slow recovery and Cyrene restored most of its public buildings when Hadrian took a personal interest in the reconstruction of the city after the Jewish Revolt (Wright, 1969). Civic building activities were most encouraged by the Romans throughout Libya; this was a reflection of a period in which the economy flourished and the prosperity of both Tripolitania and Cyrenaica increased. The antiquities of Leptis Magna and Cyrene are witnesses of that era. The excavations of luxurious peristyle houses and villas in the suburbs of Leptis Magna, Sabratha, Oea and Ptolemais are examples of the summer residences used by the upper class members of the society and were produced by a characteristic style of life. According to Shaiboub, 1979, the common features of the Roman villas are the one or more peristyle courtyards with porticos on all four sides and the rooms on one or more sides, with the main facade facing the sea-breezes. As a result of economic difficulties the upper classes moved from the cities and the Roman urban civilisation declined. During the fourth century the whole Libyan nation suffered from a series of natural disasters, including floods and earthquakes, and also from barbarian invasions which caused moral and physical collapse and ended civilised life in the cities, but the most destructive of all

events were the Vandal invasions, in particular of Tripolitania. In Tripolis as in other cities, great numbers of the public buildings and private houses were destroyed by the Vandals who left no trace of their own art or building (Wright, 1969). A few major works, mainly defensive, were carried out by the Byzantines, who assumed power in Libya in the fifth century. In spite of Justinian's personal interest in Tripolis, migration to the rural areas continued because of the plague, wars and economic stagnation. Townspeople moved to the country from Cyrenaica, following the trend in many parts of the empire at that time, when rural populations and villages were growing as the cities decayed.

2.1.2 Islamic Period

The most significant event in Libya's cultural and social history was the Islamic conquest in the 7th century. The whole country underwent deep and everlasting changes following the Arab-Muslim arrival and the new language, religion and patterns of living have characterised Libya ever since. Wright has pointed out:

"The Arabs had brought with them little more than their religion, the language and their own racial characteristics offered a faith and with it a social system and a culture that they could completely absorb." (Wright, 1969)

Cyrenaica and Fessan's prosperity from trading activities was limited compared with that of Tripolitania. Tripoli was among a few ancient cities which regained its importance and prosperity during Arab rule. When they first took over Tripoli in 642 A.D., the Arabs built a mosque which they named after their leader Amer Ibn al-As (Elzzawi, 1958),

followed by other mosques, houses, shops and markets. Then the built-up area expanded to cover all the open land within the city walls, accommodating a greatly increased population. In his description of Africa, the tenth century Arab geographer Ibn Haukal called Tripoli: "A most wealthy and powerful city with vast markets". Visitors to Tripoli were always impressed by the city and the prosperity created by its trading activities. In addition to Ibn Haukal many travellers including Elbakary, Al-Tigiani, El Ayyashi, Ibn Naser, admired the cleanness of the city, the whiteness of its houses, the beauty of its mosques and other buildings and not least the characteristics of its people (M.T.H.Y. 1970) (see fig.2.1).

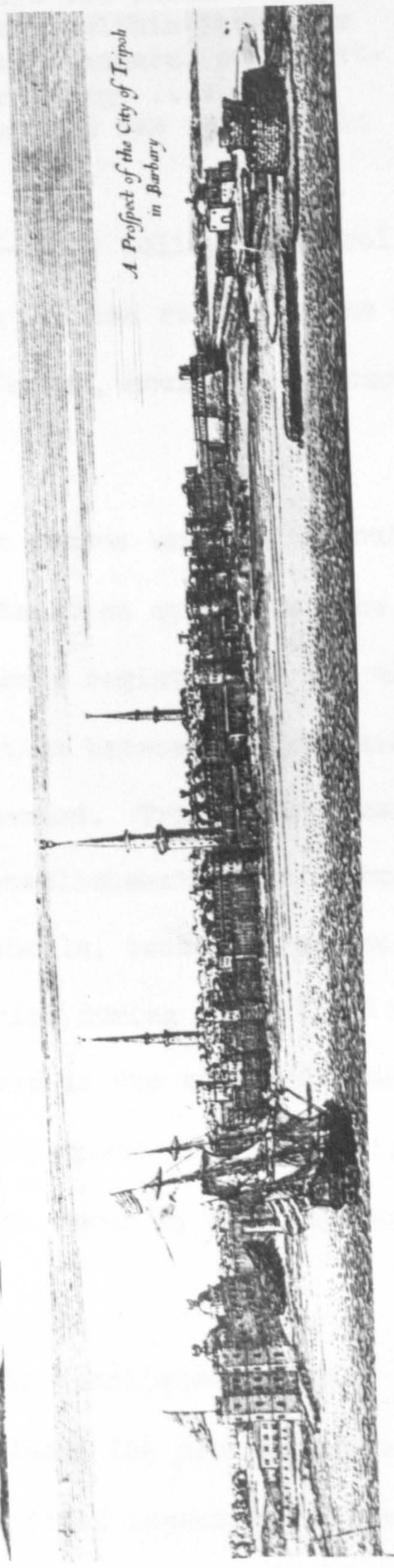
Between 1510 and 1551 Islamic rule was interrupted many times by European invasions, resulting in out-migration and damage to many of Tripoli's physical features. Moreover, during the period of Turkish rule (1551-1911) the country witnessed a sequence of rises and falls, being struck by famine, plagues and wars quite often caused by the nature of the ruling system. In Tripoli many building activities took place in the first Turkish period (1551-1711). Housing construction was encouraged by the government and mosques, schools, baths and other public facilities were also built. Shipbuilding for both commercial and military purposes was also important. Further economic and industrial expansion, resulting in an increase in urban activities, took place during the Karamanli dynasty which came to power in 1777 to last for the following 124 years.

Describing Tripoli in 1783 Miss Tully said:

"The whole town appears in a semicircle, some time before reaching the harbour's mouth. The extreme



Figure 2.1
Old Tripoli



Source: National Atlas (1978).

whiteness of square flat buildings covered with lime which in this climate encounters the sun's fiercest rays is very striking The castle or royal palace, where the Bashaw resides is at the east end of the town within the walls There are two covered bazaars, or market-places, one of which is very large The other bazaar is much smaller and has no shops in it." (Dearden, S., 1957).

The second Ottoman period (1835-1911) followed the collapse of the Karamanli dynasty in Libya. The Turkish rule then was able to bring stability and to re-establish urban, social and economic activities in the country.

During this period a population census was carried out for the first time to help in establishing taxation system for the country and for the same purpose land ownership registration was also introduced. The press and telecommunication between Tripoli and Benghazi were also established during this period. Tripoli as a capital had regained its importance and many establishments (for example: markets, courts, hospitals, dispensaries, schools, technical and military colleges) were provided in this period during which the leather and silk industries were also established in the city. The most important development, however, was the establishment of the Municipality of Tripoli and the provision of potable water in the city for the first time.

The walls of the city had to be demolished in order to accommodate the urban expansion and to release the overcrowded walled city (old city). The results of the official inventory of the establishments existing within its administrative boundaries which include the old city and its new extension (Menshia) by the end of this period, provide an impression of its size and urban structure at that time

(see Table 2.1). To appreciate the picture one must refer to what was written about it by the Tunisian traveller Alhashaeshi when he visited Tripoli in 1895. "The old part of the city is built in the traditional Arab style known to us in Tunisia except the non-arab places which are in European style. The new part of the city, Menshia, is in a good form" (El Musrati, 1965). The Medina, the old part of Tripoli, is a typical example of the historical and physical core of the pre-industrial Islamic cities in the Middle East which did "share common features in their ideology, the structure of society and government and their physical form" (Costello, 1977). Although many features of the country's urban life (notably the walls, gates, markets, inns and baths) had been established in the pre-Islamic periods, Tripoli old city's physical form reflected the social structure, culture and ideology of Islamic civilisation, and it was Islam that gave it its distinctive stamp. This part of Tripoli has always maintained a unity of character despite wide differences in people's technical and financial resources. A sense of unity, basic to the Islamic religion is clearly expressed there despite the fact that the city has always been a compound of a number of distinct quarters, buildings never being identical. Its consistency could hardly have been achieved without a tradition or without a logical and natural response to environmental demands (Fathy, 1970). The tightly grouped buildings and irregular narrow ways opening to small yards and squares, all of which relate to man's size, echo the human relationships and social and family cohesion and intimacy. This is still true when family and private life are socially and physically kept well isolated from public life (Costello, 1977).

TABLE 2.1

THE COMPONENTS OF THE URBAN FABRIC OF TRIPOLI IN 1885

Type of Business Establishment, Institution, etc.	Number
Big Mosques	9
Small Mosques	18
Churches	5
Synagogues	7
Secondary Schools	1
Primary Schools for Boys	15
Primary Schools for Girls	1
Free Islamic Centers	3
Bakeries	20
Mills	22
Workshops for Leather	1
Shops	1,019
General Wholesale Stores	40
Cafes	22
Turkish Baths	14
Hotels	13
Pharmacies	3
Hospitals	1
Traditional Houses	2,453
British Firms	9
Maltese Firms	11
European Consulates	<u>7</u>
Total	3,694

Source: Elkabir, 1972.

The principal feature of old Tripoli is its mosques, which have functioned not only as a place for prayer and other religious activities but also as intellectual, educational and social centres (Ismail, 1972). The bath house is another feature of the physical fabric which was, and to a much lesser extent still is, a place for informal social contact as well, as provision for facilities were not available in private houses. Although there was no classification of land use within the city walls (Elkabir, 1972), major commercial activities and crafts were conducted in specialised bazaars or Souqs. Some streets are also devoted to various trades. The "Nozel" or inns and coffee houses were also distinctive commercial and social activity centres.

The basic residential unit in Tripoli was a house built on one or more storeys around a central courtyard, often with a tree or a pond. The response of the urban fabric of the city to environmental demands is expressed in the form of the house which also reflect patterns of family life and of Islamic ideology (Costello, 1977). The houses are assembled in a jigsaw of narrow winding lanes, facing inward (see fig.2.2). Each house has a single facade connecting the enclosed private world of the house with the outside world of the city. The other three exterior walls are shared with other houses in irregular patterns despite the regularity of the house courts. This building mesh is often reinforced by the overlapping of the top floors of the houses or by the buttresses between the facing walls (see fig.2.2). (El Dars & Said, 1972). The narrow, zig-zag, shaded lanes with their closed vistas, have the same functions as the traditional

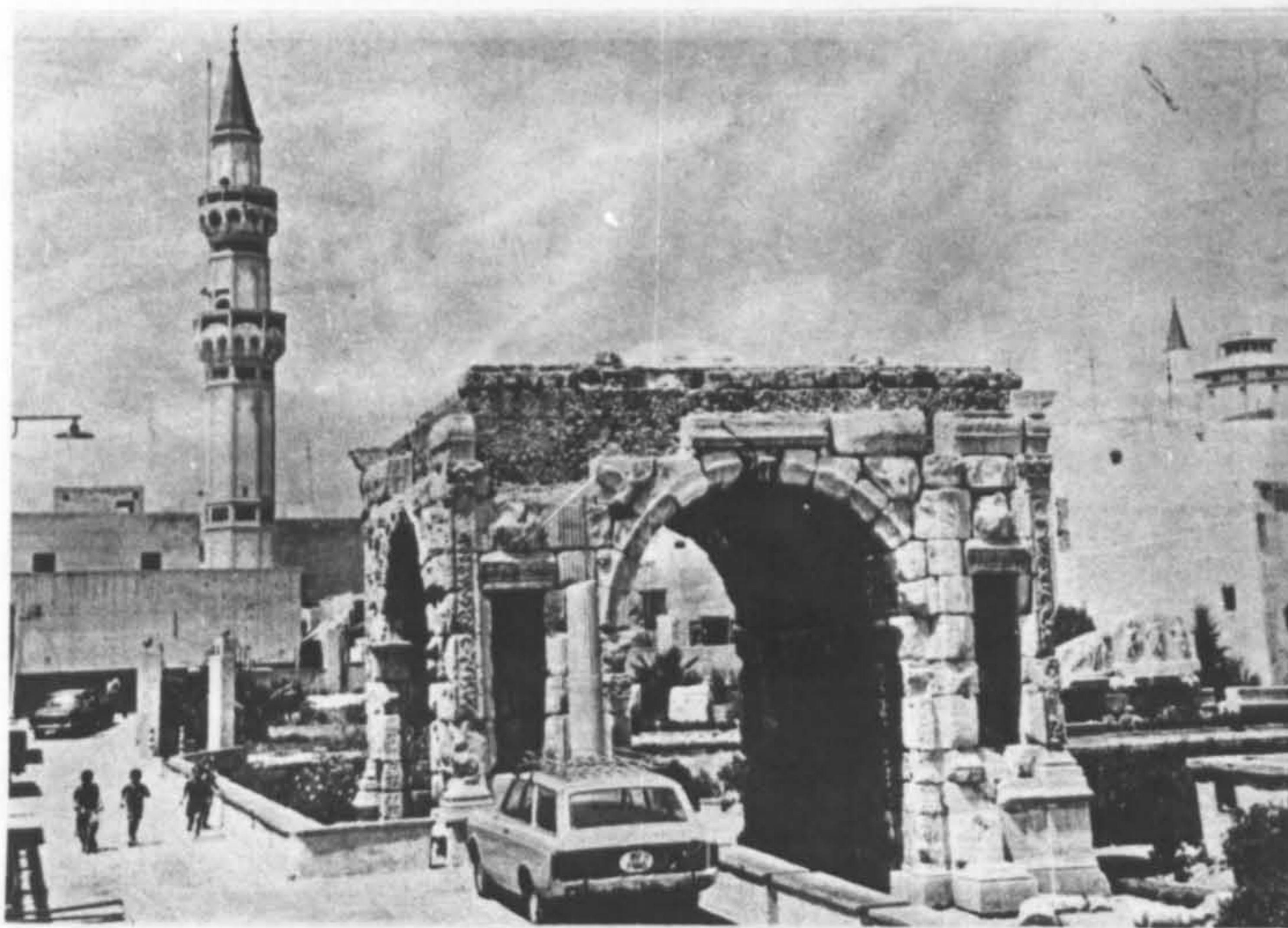


Figure 2.2

Urban Fabric of Old Tripoli

Source: El-Dars and Said (1972)





The Old City "Medina"

Source : Municipality of Tripoli (1970)
National Atlas (1978)



The Old City "Medina"

Source : Municipality of Tripoli (1970)
National Atlas (1978)

courtyard house not only catering for the intimate social and family relationships, but also regulating climatic factors (Fathy, 1970).

2.1.3 The Old Urban Dwellings

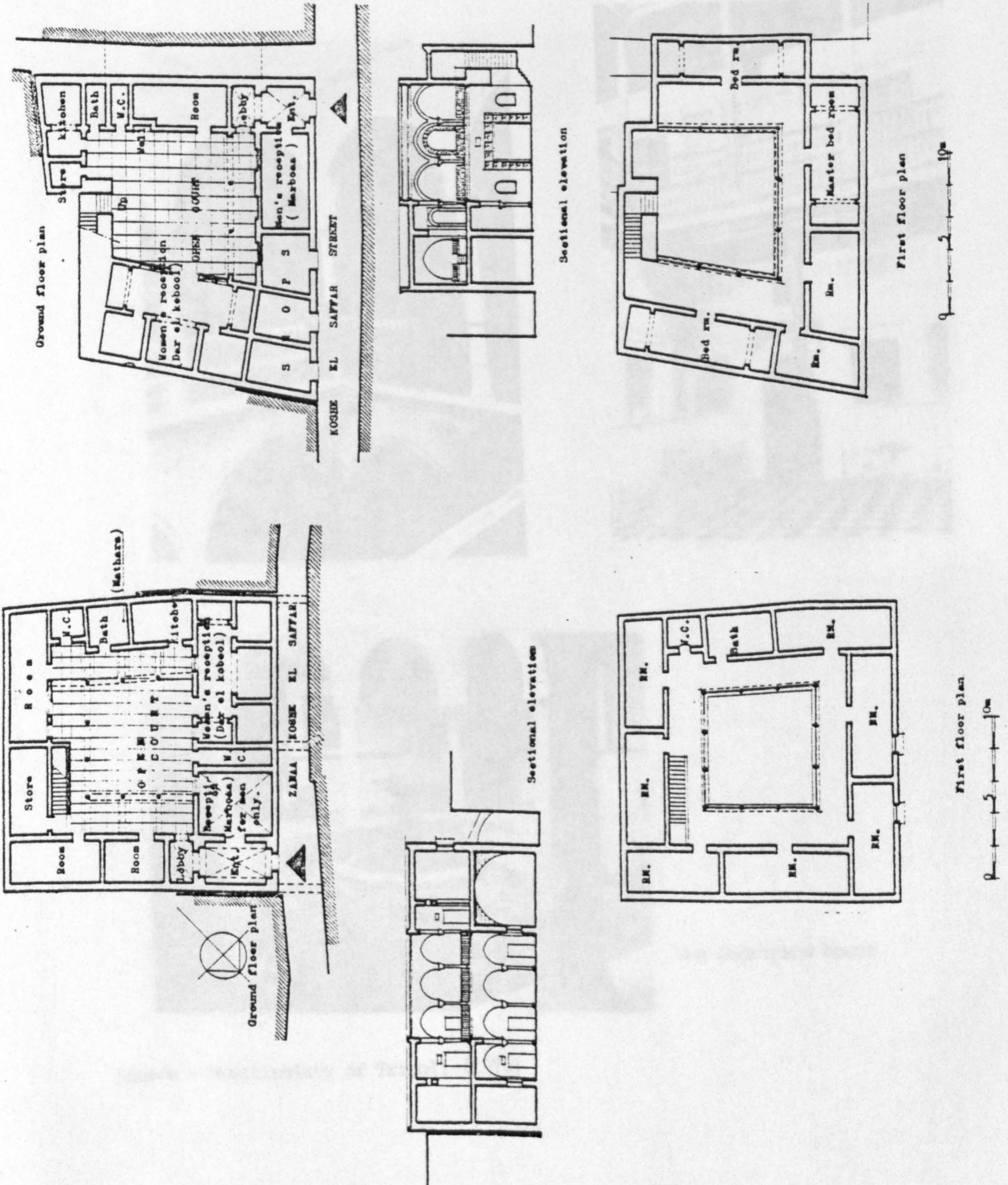
The diversity of socio-economic conditions of Libyan households before the colonial era which was not great enough to produce a variety of types of dwelling unit: the uniformity of such conditions and the unity of religion led to the creation of a traditional Libyan house style which displayed the same basic principles and consisted of the same basic elements throughout the country. Nevertheless, regional differences arising from topography and climate as well as from foreign influences have always been present, reflecting variations in building materials, methods of construction and use of the dwellings. The Tripoli heritage of historical residential buildings provides a good example of the design and use of the urban dwelling units in the past.

The use and characteristics of traditional courtyard houses which dominated the type of housing in Libya during the Arab and Turkish times goes further back to the ancient days of Phoenicians, Greek and Romans who introduced their typical court houses (El Dars & Said, 1972) not only because they were similar to the native Libyan shelters, but also because of the similarity in the climate conditions of all mediterranean regions. The protection and privacy that it afforded made the courthouse popular during the Arab conquest as well, providing a family privacy which is highly esteemed among the Arab Muslim peoples. The development of the court house in particular and

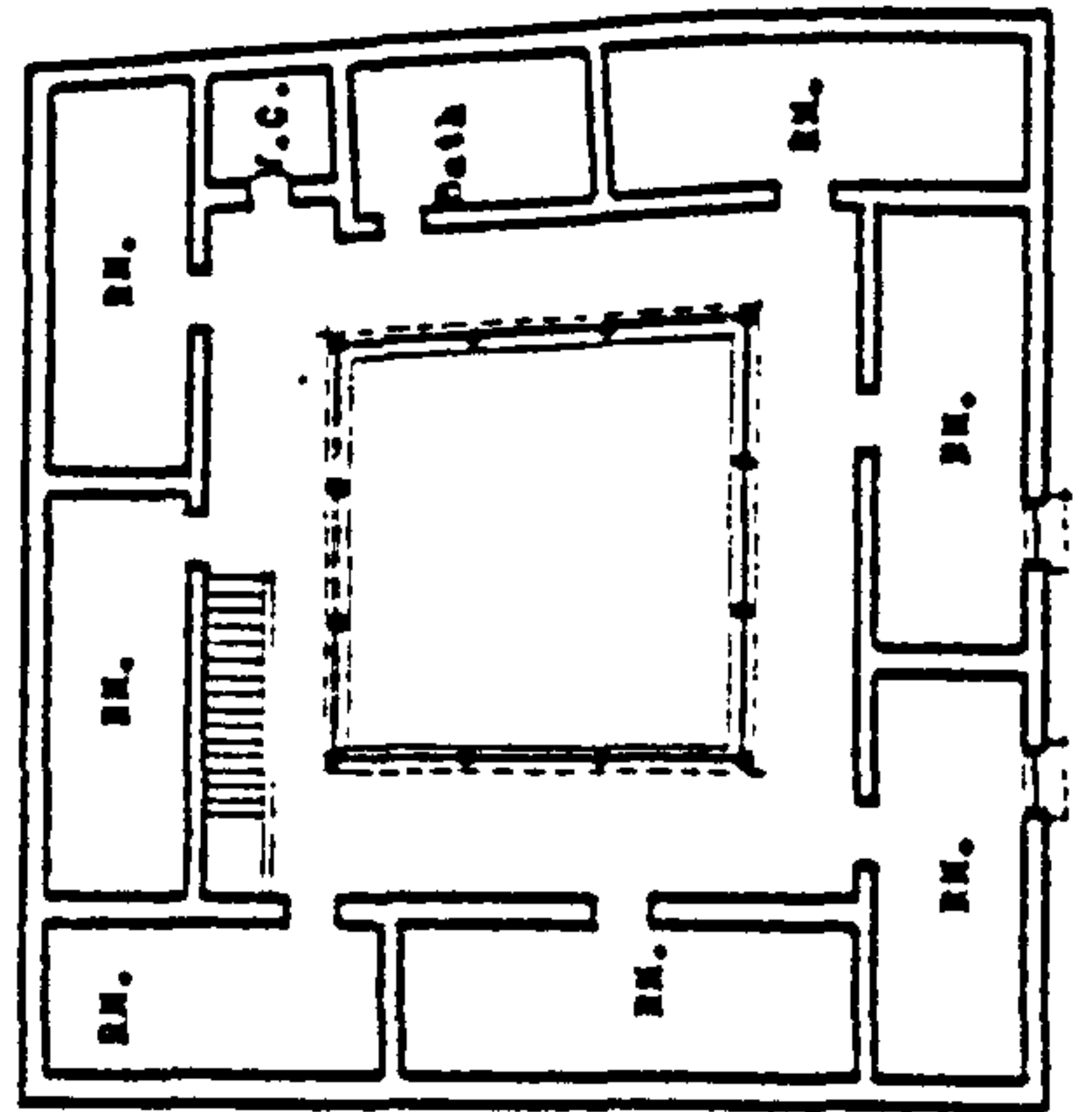
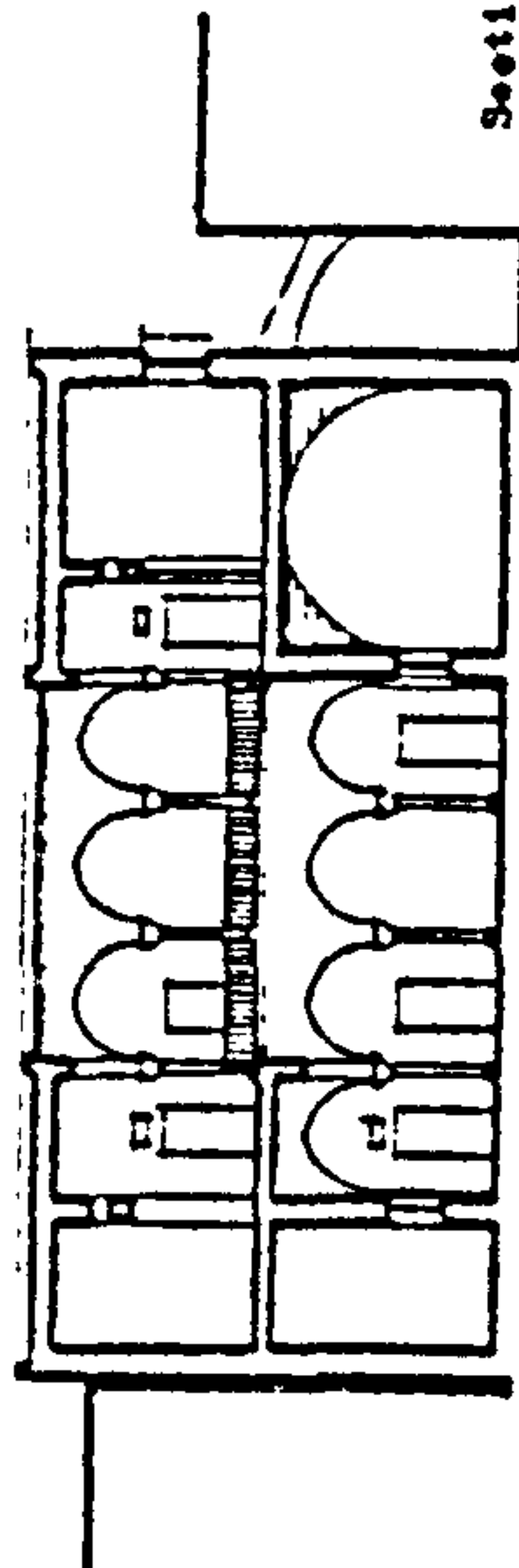
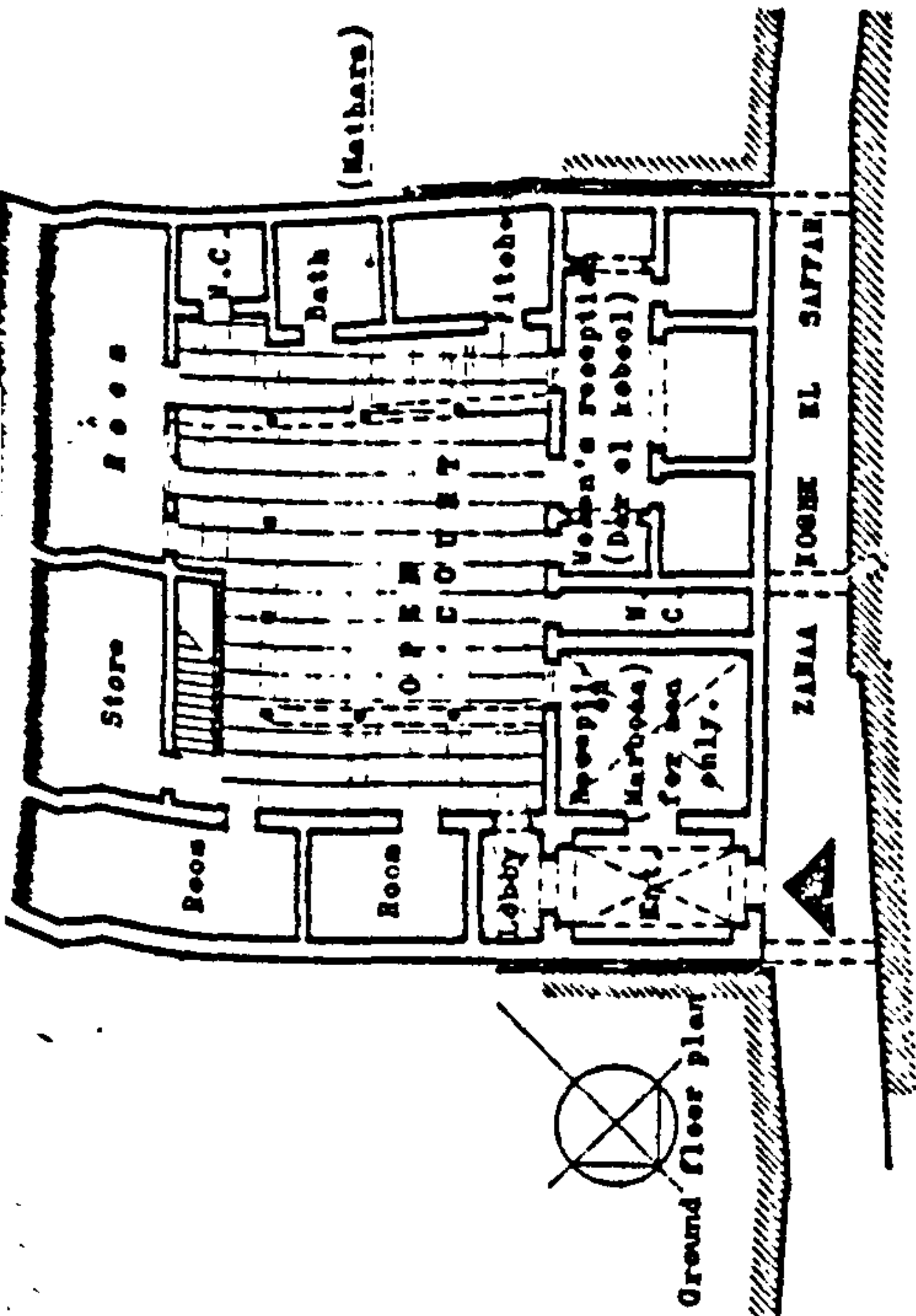
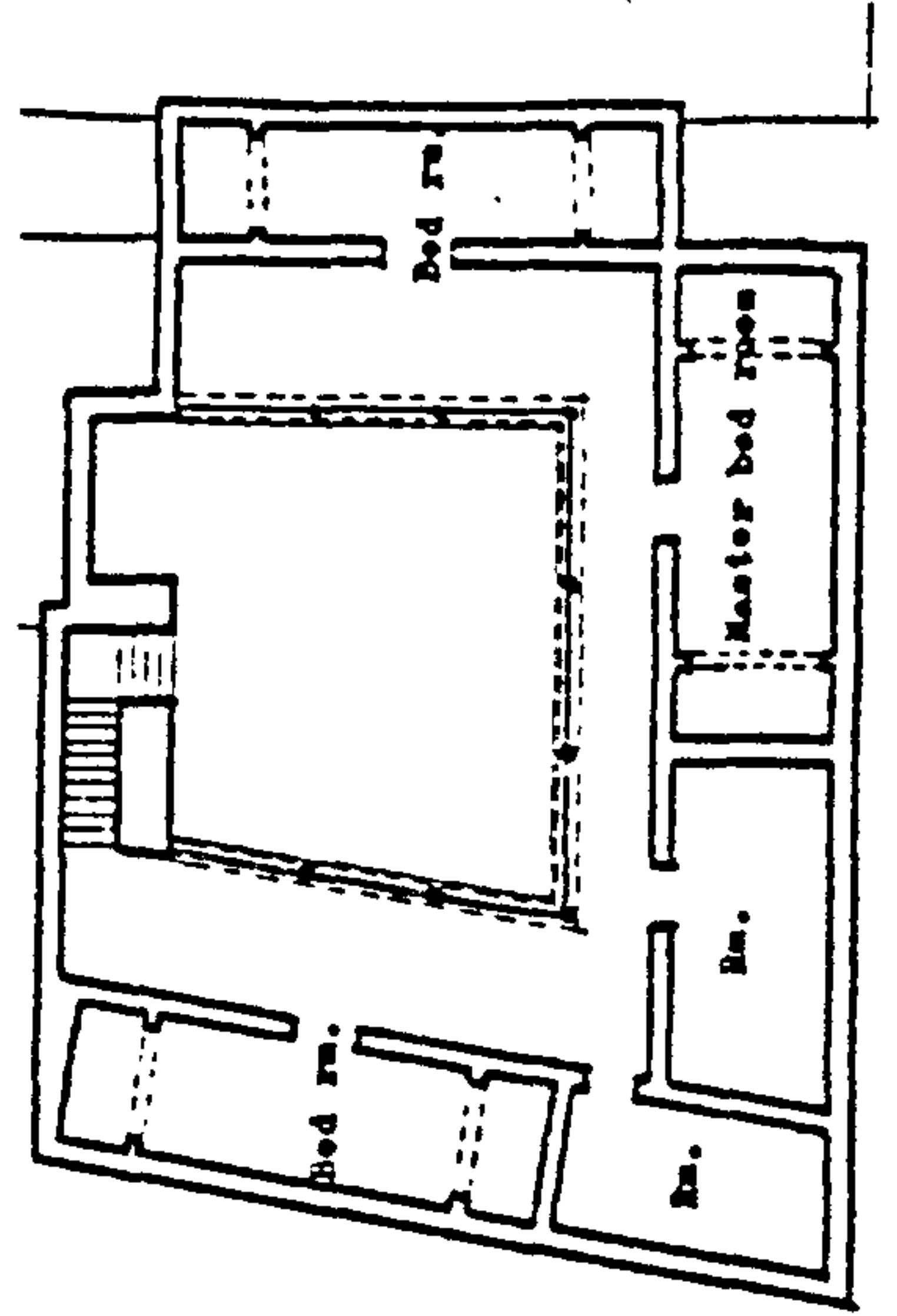
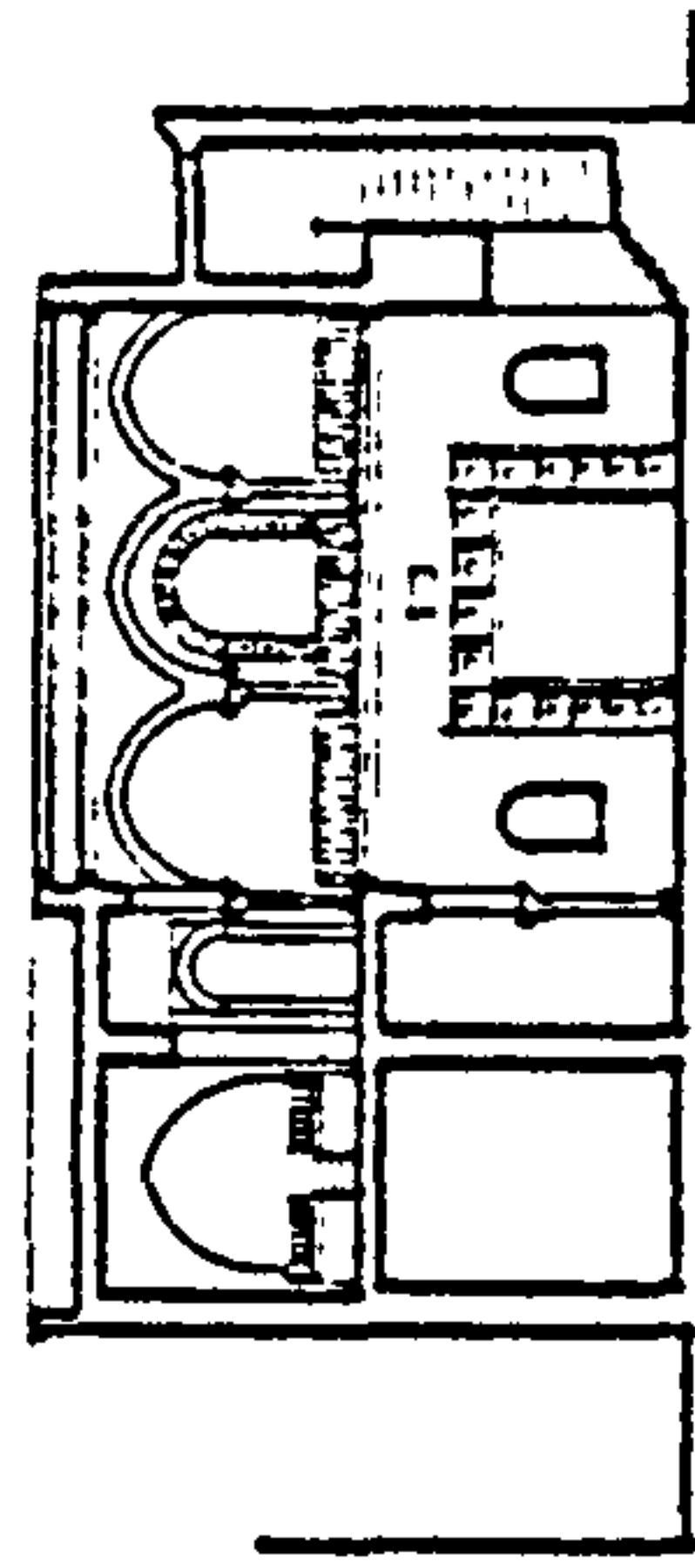
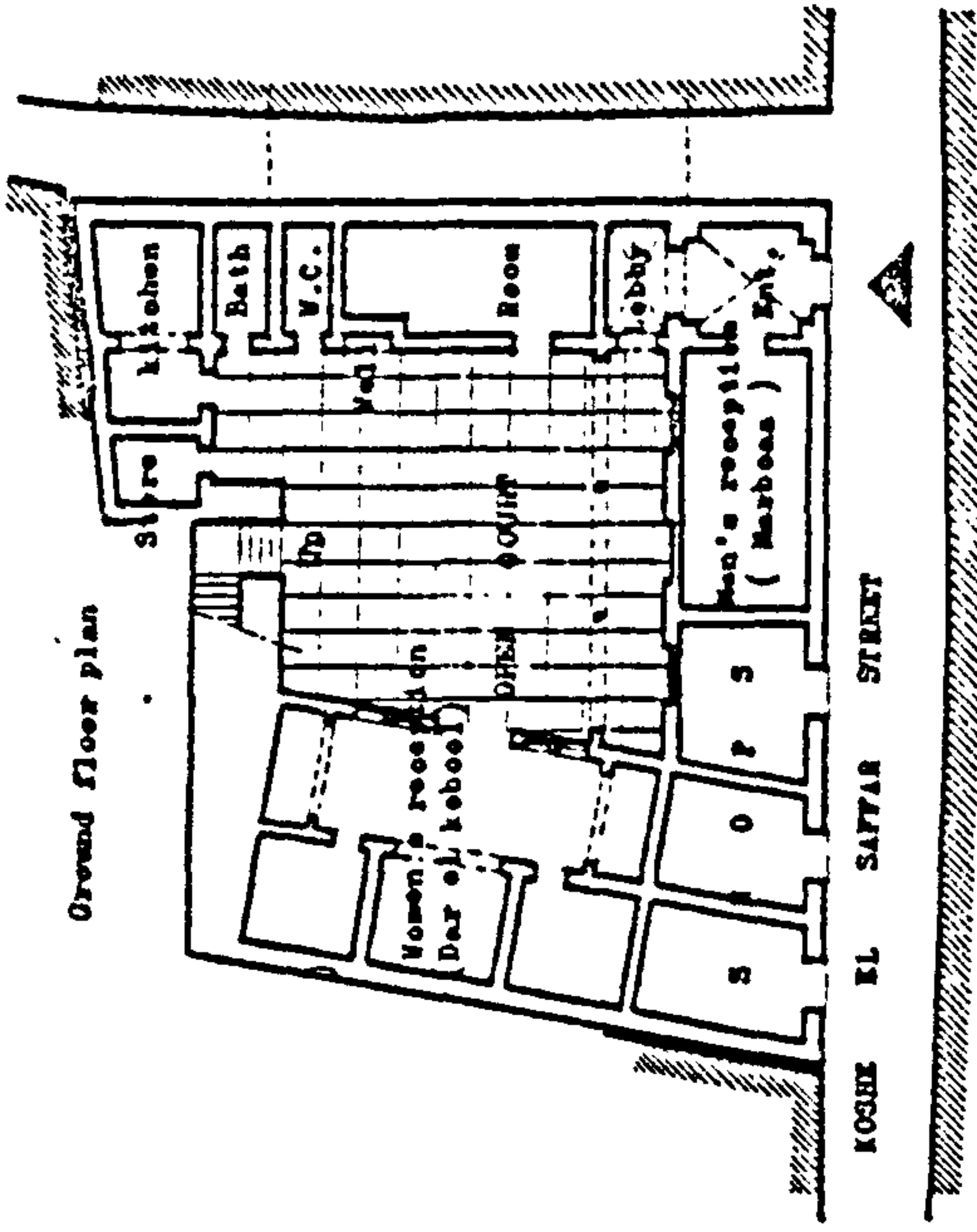
Islamic architecture in general was affected by both the Byzantine influenced architecture developed by the Turks and by the Andalusian influence of Spanish immigrants and the artisans who built many houses and other establishments during the Turkish period (El Dars & Said, 1972).

The major traditional type of courtyard house that exists in Tripoli, mainly in the old city, consists of two storeys usually built around a regular courtyard. The dimensions of the courtyard vary, but are usually in proportion to the height of the building so as to provide enough shade for most of the summer day. The environment within the courtyard is also regulated for different functions at different times of the day and of the year, by a portico running round the court, as part of it projected on the ground floor. The roofs of these porticos form the circulation area of the rooms which face onto the courtyard on the top floor. Such areas may have a similar portico or a roofed verandah all around the court which may also be used as living area, mainly in the cool summer evenings. The courtyard not only provides pleasant living conditions but also forms a setting for a private secluded family life. All this is achieved by the arrangement of the functions and elements of the layout. So as to screen views of the courtyard the entrance is never straight but access is gained through an "L-Shape" passage-way leading to the nearest corner in the court (see fig.2.3).

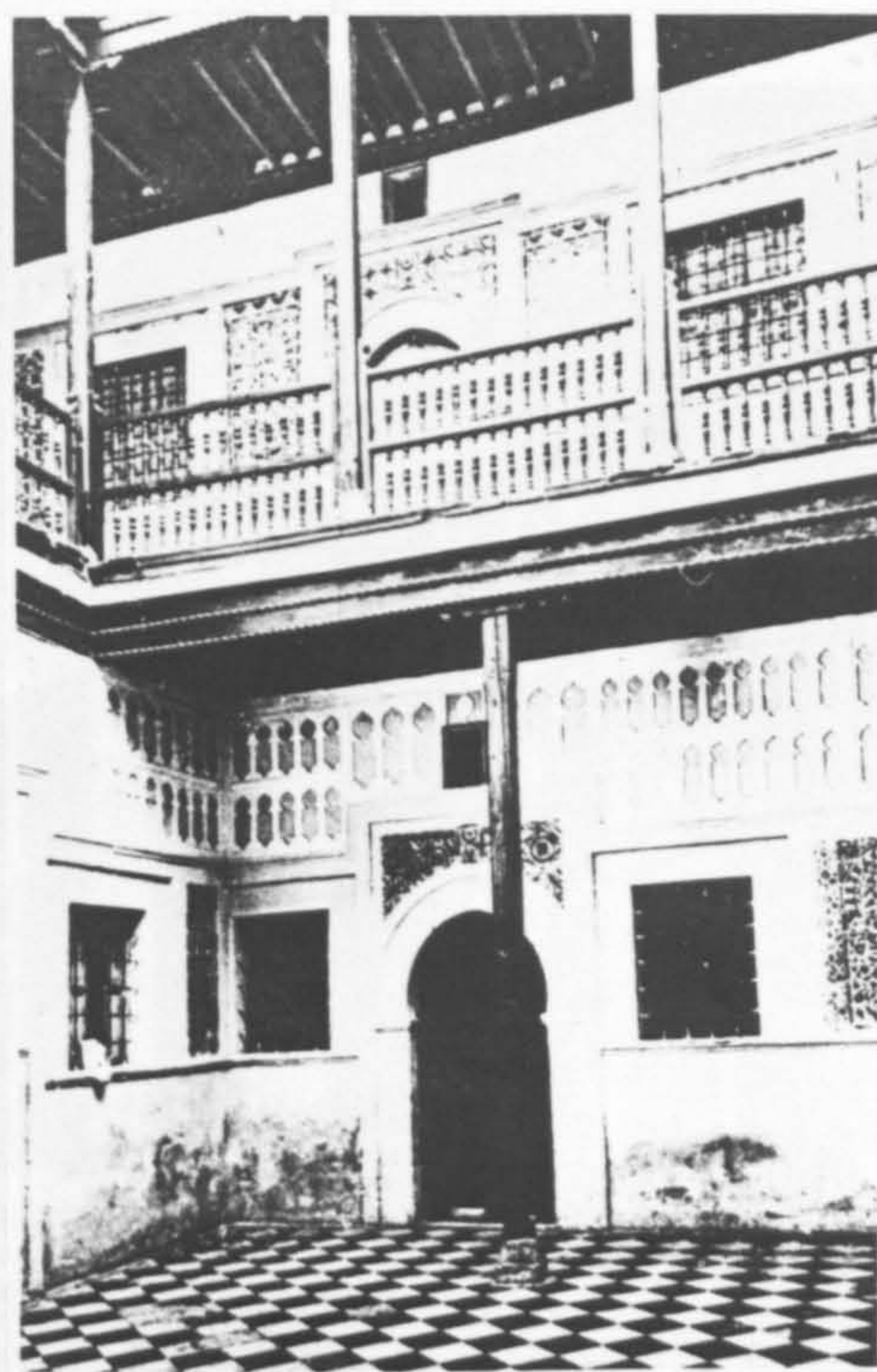
On the only facade of the house usually there are a few windows on the upper floor but not on the ground floor. However, if there are any windows on the ground floor, they are very small and high



Source : EL DARS & SAID (1972)



Source : EL DARS & SAID (1972)



The Courtyard house

Source : Municipality of Tripoli (1970)



A traditional bedroom in an old
Libyan house in Tripoli, furnished
for sleeping and receiving guests.

Source: Municipality of Tripoli (1970).

above the street level. Windows on the street are usually "veiled" with latticed screens projected on to the street and sometimes reinforced by iron grids for safety. The lattice traditionally is known as Ein Ezzarzure meaning "bird's eye" and is equivalent of the contemporary Masharabia. Made of different materials and patterns it is used nowadays as a screen for privacy, to soften the glare and as an element of decoration (see fig.2.4).

Adjacent to the main entrance is the guestroom Marboaa which usually opens only on to the entrance vestibule and is associated with a guest cloakroom, both of which are screened from the rest of the house. Guests (mostly male) are received in the Marboaa without disturbing the normal family routine and privacy. It should be mentioned that such separation of the dwelling unit into two distinct areas is still maintained in contemporary housing but with certain adaptations to modern styles

Another guest room known as Dar El Kobool, for more intimate and female visitors, is the most important room entered from the courtyard facing or on the same side as the entrance. It is a rectangular shape with a large arched recess opposite the doorway (see fig.2.3). On both sides of this recess there are two small inner rooms facing the two windows of the main room on the courtyard. These rooms are fitted with benches for use as guest beds, with storage underneath (M.T.H.Y. 1970). The whole room can be used for receiving, entertaining and accommodating guests at different times. The other rooms and terraces are arranged around the courtyard on both floors: they are probably used for different purposes at different times and seasons according



Figure 2.4 Window Veiling

to their orientation (El Dars & Said, 1972). Bedrooms, usually located on the upper floor are each provided with a wooden bench or a built-in-bed fixed in a recess prepared for this purpose. Such recesses do not only provide sleeping space away from the circulation area of the room, but also provide storage space underneath the bench. Most of the rooms open on to the courtyard with a doorway and at least one window. Some of these rooms are interconnected. The kitchen is usually not very large in relation to the size of the house and is not always well lit, but because some catering and other activities are possible in the courtyard, a small size kitchen is sufficient for the size of household. Both the kitchen and toilet have high, small windows giving outlook on to the street which, with the doorways, provide enough cross-ventilation and wall space, especially in the kitchen. The kitchen is always provided with a storage area. Traditionally, bathtubs were not provided where there were bathhouses to serve the purpose. A small room next to the toilet or a partition from the service area provided with drainage and a tap or portable water containers - some of which are for warming the water in winter season - and a bench is known as Mathara. In some contemporary traditional style houses it has been developed into a shower room. Even when a bathroom is provided, a shower is more common than a bath.

Before the houses were connected with the municipal water network, a well usually dug in the kitchen provided water for domestic uses. In addition, the flat roofs of the houses were prepared to receive rain water which drained through special pipes to a cistern in the basement of the same size as the courtyard. There were two

openings in each cistern, one on a wall not far from the kitchen through which water was drawn for certain uses such as drinking, cooking throughout the year and the other opening, covered and in one corner of the courtyard floor, through which the cistern Majen can be cleaned every year before the rainy season. The floors were laid with stone marble slabs or coloured mosaics or, more commonly, with coloured tiles. Smaller and brighter types of tiles were usually used to panel the walls, forming delightful patterns in the courtyard and other parts of the house.

The adaptation of such houses to the climatic conditions and to the traditional life style seems excellent from both functional and aesthetic aspects. The form of the traditional house in old Tripoli gives not only shade coolness and reduced glare but also security, spacious privacy in a densely populated urban setting and a restful inward-looking world contrasting with the noisy, restless busy life outside. As Durham (1969) writes: "Life in a courtyard house can best be imagined as life at the bottom of a rather comfortable and sometimes very elegant well, when the coolness and stillness are delightful contrast to the dust, wind and heat of the outside".

The extension of the old city which took place before the beginning of this century developed on the same principles but the warmth of the tightly knit urban fabric was never repeated. The narrow winding lanes became a regular grid of straight streets and hence the house became square in plan. The shade, coolness and protection of the high walls decreased in the low, dense expansion of the old city. The decorative features and size changed, but the basic style of the two

storey courthouse lent itself to a rather uniform row-house arrangement. Some houses were built in a single storey form, especially in the cases of average and low income groups. Most of the superb traditional court houses of the old city have been vacated by their original owners who left them in favour of the spacious suburbs. A few are in the hands of the Antiquities Department as examples of the historic legacy of residential buildings. A great many are still in residential use but most of these are in multi-household occupation by low income migrants whose way of life, income and over-crowded living condition abuses the houses and cause their deterioration. Many of the houses have also been converted into stores and workshops or for other inappropriate uses. A consequence of these changes has been that this part of Tripoli has become a dense mass of congested buildings and the major slum of the central area of the city.

The first version of the traditional court house co-existed in Tripoli with the two-storey old house; basically similar to it is the single storey court house which has been very common in the rural areas and was very popular among the newcomers to the urban centres, mainly before the oil boom. The layout has most of the features of the two-storey house. It has the same angled entrance lobby with the guest compartment separated from the family area. Its court is a modest one with no portico and usually smaller than the two-storey court. Thus it provides sufficient shade even with a lower height. The court in this case is used more often, not only as a circulation area between the rooms, but also as an open-air living room, play area and extra space for daily domestic activities such as laundering and cooking.

The service compartment is usually similar to that in two-storey houses. The rooms are all grouped around the court with no specific shape, use or function. Apart from the main bedroom, any rooms are available for multi-use purposes at the same or different times. Any room can readily be used for sleeping, living, casual visiting, playing and working (usually handicrafts such as sewing, weaving, carpet making). In most cases the house roofs are accessible as a private outdoor space, through internal staircases or a ladder. Although there is usually a screen fencing the roof area, both roof and courts are being used less and less, especially in the inner cities because new surrounding high buildings eliminate the privacy once enjoyed in those houses.

The second dwelling type, which is confined mostly to Tripoli, is a typical single-storey court house, but in this case the central court is covered with a ceiling higher than the roofs of the rest of the house. This leaves enough vertical space for skylight windows to provide sun, daylight and ventilation to the inside of the building (El Dars & Said, 1972). Although the rooms are provided with windows on the central court, as in the other types of the court house, in this case more windows are needed on the outer walls. Since the house is on the street level any opening will disturb family privacy and so a front verandah or a fenced enclosure around the house has been created in order to provide for a completely secluded outdoor area within the confines of a private home at the same time overcoming the disadvantage of outward windows. The covered central court is smaller than the open courtyard because of the limitation of construction

techniques at the time of building. This type of court house is typical not only in the inside arrangement and functions of its elements; it also had the typical high ceilings, the flat fenced accessible roofs and the enclosed private world of the typical traditional Libyan homes.

Further adaptations of the courtyard house took place as a result of the socio-economic changes as well as the presence of non-Libyan and non-Muslim communities, even before the colonial times. The ample space provided for a household by the two-storey court house made possible its conversion into more than one family house. The top floor or part of it was converted into one or more flat-type dwellings either for a separate use by part or parts of the household or to be rented out for extra income. The courtyard house was usually kept by the owner, enjoying a complete privacy.

The top flat or flats were completely secluded from the ground floor and provided with a small open service court which was insufficient for proper use and caused the dwellings to become outward-looking in style. They were provided with windows and balconies projected onto the streets creating a very interesting character and being a very much appreciated urban form ideally suited to the climate and traditional style of life of its people. If a Libyan Muslim family occupied such a flat they resorted to veiling the windows and balconies with latticed screens in a way to circulate the air, break the glare, to provide enough light and to prevent the occupants being seen from outside. The internal arrangement of the dwelling was usually controlled by the general layout of the whole block. If the ground floor was still more than the household needed, some parts could be converted into shops or workshops in accordance with what the layout permitted.

2.2 The Colonial Influence

The influence of European communities of Greeks, Maltese, Spaniards and others, had been evident in Libya sometime before the invasion of the Italians in 1911. But the most significant European influence came from the Italian settlers who were preparing for the Italian colonisation. When the country fell into their hands, they seemed intent on changing it into a new Italy. Although they succeeded in spreading their influence throughout Libya, Tripoli, as the capital for their colony, witnessed the most dramatic changes in its physical features. The extension of the old city which had begun before their arrival, followed the Italian style of planning and construction following Italian colonisation (see fig.2.5). The buildings were either for government purposes or European residence. Most of the old city wall was demolished and a new one was constructed for military purposes to enclose an area of 18.1 km^2 (Elkabir, 1972). Within the new wall, the old Tripoli became a small neighbourhood of a big European style city. Despite the provision of the existing built-up area with piped water, sewerage and paved streets, very little of the traditional physical and social environment changed in the old city. Even in the new extension built by the local people, efforts were made to retain the traditional style of houses, despite the use of modern building materials and techniques. This can be seen in the new sections of Tripoli, such as Edahra and Belker, which were mainly built up during the Italian colonisation, although luxurious and decorative features disappeared not as a result of modernity as much as lack of economical and professional means.



Figure 2.5 Italian Style Urban Development



Source: Municipality of Tripoli.

The rest of the newly walled area was developed by the Italians to create a 'European' city for themselves. New wide streets, roads and piazzas were laid out (see fig.2.5). Municipal gardens and parks were established on the vacant land and marshes, multi-storeyed buildings for a variety of uses were built mainly in the city centre. Modern shops and markets as well as public facilities (such as schools, hospitals, churches) were erected throughout the city. The residential areas were also planned and built to suit the European people and their way of life.

The new urban development undertaken by the Italians represented the first modern departure from the traditional urban fabric of the Arab world. Tripoli was provided with a Plan in 1931 by which the city experienced for the first time a major classification and rationalisation of land uses and co-ordinated road network. The city then was developed into:

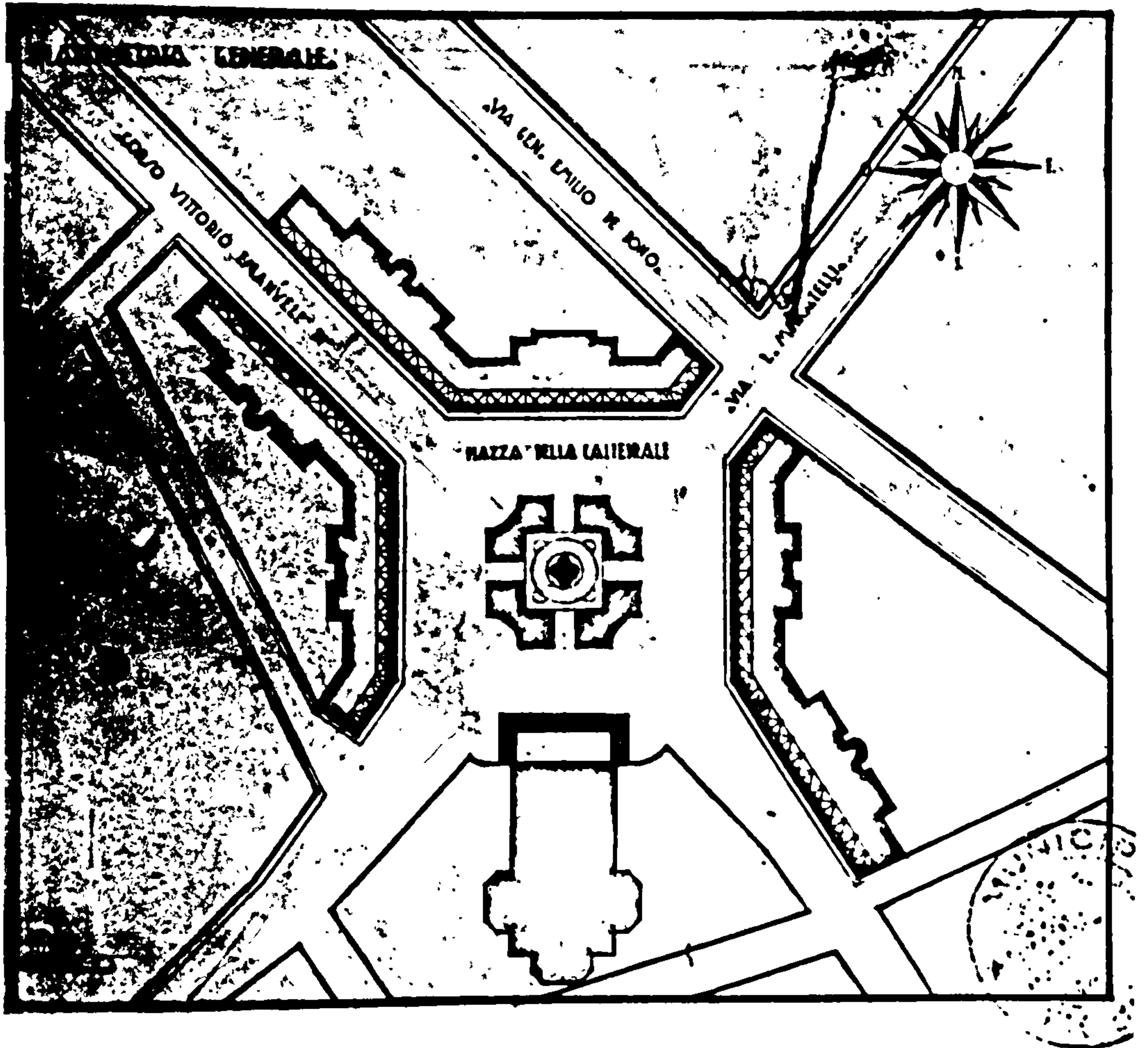
1. A major central business district to the east of the old city and a continuation of its markets, both of which are still functioning as the main commercial and business area for Greater Tripoli.
2. Residential areas of mixed styles, traditional for the local people and European for the non-Libyan. These latter areas consisted of more than one dwelling type, but flats constituted the majority. Rows of walk-up blocks were built in the central area to conduct business and professional affairs, and many of these were occupied as flats by the non-Libyans. In the areas adjacent to the city centre the blocks consisted of fewer floors

and many of the ground floor flats had front gardens and rear courts or gardens. On the periphery of the central area, a sort of garden city was established consisting of European villa-style development of detached houses surrounded with gardens. This type was not confined to the garden city of Tripoli nor only built by the well-off Europeans, but was also built in other parts by the colonial government for its senior employees. The same style of development, with some adaptations, became very popular among modern Libyans.

3. Recreational areas, comprising parts of the waterfront and the green lots of municipal gardens scattered within the residential areas.
4. Land allocated for the few primitive small industries. Three major areas were developed into industrial estates, for industries such as tobacco processing, building industries and mechanical engineering and workshops.
5. New piazzas and squares with a road network, designed in accordance with the Italian building style. An example is Maydan El Giazaer (see fig.2.6).

According to Elkabir (1972), the built-up area of Tripoli during the Turkish rule was about 70 hectares which was extended to 475 hectares by the Italians. Gas and electricity, including street lighting provision were connected to the central area and then extended to the other parts of the city. Planting also took place in most parts of the city.

Figure 2.6



Miydan Elgiazaer



Source: Municipality of Tripoli 1970.

The major features of the traditional dwelling units differed from the European ones as widely as the variations in social structure, way of living and values. The inward-looking plan contrasted with outward plan looking upon the street. The traditional internal courtyards became equivalent to outdoor gardens and the traditional latticed windows to the unveiled windows and balconies. The private family area did not exist in the European style house and the entrance usually led directly to a single corridor with the rooms arranged on both sides. The rooms could be used for any purpose, kitchens usually accessible to the rear court garden or balcony. The European types were usually provided with bathroom appliances and the roofs accessible for laundering purposes. However, the local building activities were very limited for several reasons, such as economic restrictions and political instability, and colonial-private and government-activities also ceased with beginning of the second World War. In the period (1943-1951) and under the British Administration, the geographic and urban features of the country did not change. Tripoli also underwent a state of stagnation in urban activities as a result of desperate economic conditions.

2.3 Development of Dwellings after Independence

Many Italians left Libya after the second World War but when Libya became an independent state in 1951, the Europeans left in greater numbers. The departure of the Europeans caused a profound transformation not only of the urban features, but also of the urban social structure. The non-rural middle class Libyans were the first group to experience the change and to benefit from it. They were able to take their place in employment, economic activities as well as in residential areas. A few better-off rural people did the same, but their degree of assimilation was less than that with the city dwellers. When Libyans occupied the modern residential areas many features of western style dwellings were modified to suit Libyans' needs. Very little adaptation of the traditional way of life was made. Both the modification of European units and retention of traditional habits and practices were combined to shape and influence the features and functions of dwellings, and the social and family relationships. Apart from the dwelling units already occupied by the modern minority of Libyans who completely adopted the European way of life, the rest were adapted to cater for the Libyan way of life. The strong desire for privacy led to less use of the private outdoor space as a living area, despite the replacement of the European garden fence by high walls and high blind iron gates and that windows and balconies were provided with latticed screens. Many domestic activities took place in kitchens, on roofs, or balconies or in other inconvenient places which were not originally intended for such traditional practices. Those dwelling units were also abused, by overcrowding, for traditional

Libyan families were much larger than those for whom the units were designed. This was the first break away from the traditional courtyard house and the preconceived neighbourhood concept, which reflected a weakness of friendly, close family and social relationships and of the strong feeling of community. As Costello (1977) puts it:

"Furthermore the quarters themselves began to lose their significance as social units. Solidarity among the inhabitants of the city quarters was weakened as they became more heterogeneous."

It is believed that the introduction of Western culture and modernisation was initiated by the Italians who created a desire among some Libyans to change some aspects of their lives (Elkabir, 1972). The changes were however, limited to a very small group which was exposed to a modern way of life. After Independence and because of the economic growth which resulted from oil production, the desire for change spread in varying degrees through most strata of society. The variable influence of modernity is reflected in the extent to which traditional ways of life are retained.

Prior to the oil boom and subsequent large-scale rural-urban migration, urban growth was very limited. But the need for urban development was desperate in Tripoli which was then the western capital and a seat of the federal government and foreign missions. Economic and technical limitations resulted in a failure to meet the demand even for housing, administrative and commercial building, let alone that for public services and utilities. Many buildings were converted for different uses (for example, houses to schools) and intensive use was made of existing facilities. New extensions of the

built-up area took place, mainly privately and for residential use. For the lower income groups and immigrants most of the houses built were humbler versions of single-storey traditional court houses. A palm or a vine tree provided the shade enjoyed under the portico and the decorative element had no tracery. House sizes varied, but style repeated itself in a row-house arrangement in a grid pattern of streets, in many instances below the appropriate standards with no municipal building licence. The very few higher and middle income groups who could afford to build at that time fell under Western influence either deliberately or because of the absence of local professional builders and designers. Only Europeans were available in such professions (M.T.H.Y. 1970). Western contact, however, intensified throughout the country, but especially in urban centres after oil exploration in 1956 and its production in 1961. Urban growth was a relatively universal phenomenon as a result of the flourishing economy of the country generated by the oil industry and government revenue from oil. Prosperity stimulated the government to allocate generous budgets to meet the demands of growth in every sector. Expenditure by the Government authorities on development, mainly on housing, services, roads and transportation, building materials and employment, encouraged private enterprise to invest in industries, housing and many other profitable businesses. Despite the effort of the authorities to provide at least the essential services in rural areas and smaller settlements, the rural-urban migration was on a vast scale and the subsequent rapid urban growth took place before people were ready for it, and without comprehensive planning. The result in most urban centres, particularly cities, was

characterised by urban discontinuities and the juxtaposition of different modes and types of urban development and life styles. In most urban centres the traditional centre with its market and mosque is next to the Modern centre built by the Italians, with additional newer development alongside very much of western style. In the case of Tripoli, and to a great extent in Benghazi, the historical medieval Islamic city core, with its Western and traditional style extension and the peripheral semi-rural quarters are physical expressions of the urban growth of the city, which developed in a semi-circular fashion with a radial road network.

During the 1950s Tripoli began to grow, but as yet on a moderate scale. At first the vacant land within the city wall, built by the Italians, began to be filled in. Soon the urban expansion outgrew these boundaries, although it was contained by the frequent flooding of Wadi Elmageneen. In the mid 1960s a major dam was constructed further up the Wadi and thus it was possible for Tripoli to expand beyond the area contained by the city wall which had already made way for a major ring road, Tariqu Eljala. With the sudden wealth of the country, thus began a period of accelerated growth, which has completely changed the face of Tripoli. The municipal boundaries have had to be changed, incorporating semi-rural settlements within the city. The absence of planning allowed piecemeal urban development to swallow agricultural land, a feature which was encouraged by the formation of monopolies and speculative activity. The lack of control, technical and human resources led to scattered development and premature subdivision of land which was not ripe for development, creating long

lasting urban problems. In most cases the provision of urban facilities such as water and sewerage networks, electricity and roads lagged behind development projects or were deficient for many reasons. Urban growth was then principally represented by residential development and included building types ranging from shacks on the peripheries of the city to luxurious western style villas. The latter, to the west of the city (Gangareh), accommodated people in the high income group who wanted to move away from the crowded central area to a very low density fashionable residential area (Elkabir, 1972). Soon the Italian style garden city was expanded in Ben Ashure area by the high and middle income groups although it has the same features as high income development but of higher density and with some adaptation to the Libyan way of life. Further south, Elhadba followed the same trend. Other areas were developed by lower middle and low income groups adjacent to these areas, but with still higher densities and further adaptation. Parts of Gurgi, Elhadba, Sidi Elmassy and others are examples of such development. The very poor established their shanty towns on the outskirts of the city, though within the municipality boundaries (see fig.2.7).

The analysis of the survey of the residential areas of Tripoli conducted by Whiting in 1966 as part of Tripoli Master Plan revealed that:

"the residential areas are basically made up of a series of types of dwelling units each of which is composed almost entirely of one particular type. Within these series common characteristics of height, density, floor space, structural quality etc. exist. They also exhibit to great extent similar economic condition and to less extent social background of the occupants." (Whiting Associates, 1969)

Figure 2.7 Contemporary City of Tripoli



1. Gurgi 2. Elhadba

The field surveys also had classified the housing types into four major types existing at that time:

1. House Haush: A traditional dwelling type usually with an interior court and windows on the street elevation, above the eye level. Apart from the two-storey courtyard house in the old part of Tripoli, most houses are of one storey covering the whole lot.
2. Flat: A dwelling unit contained with one or more units in a block of one or more stories. In most cases balconies are the only private outdoor space.
3. Villa: A modern type of residence, usually a free standing block surrounded by gardens to which windows and verandahs are opened. The majority are single storey and even where more, the whole block is used by one household.
4. Marginal housing: temporary accommodation used by low income in-migrants as transitional residence, in the form of shacks, bins, shelters or tents.

According to the 1966 survey, flats predominated in the central area, a single block being used for commercial, office and residential uses. Villas can also be used other than for residential purposes. Houses are mostly used by local people as residences. Shacks are grouped into three major areas and are provided with the minimum standards of services.

2.4 Contemporary Urban House Styles

The rapid social and economic changes which accompanied the oil boom and the subsequent European contact and migration have been expressed in the diversity of urban growth, new houses and way of living. These changes have created an ever growing desire for something superior to a simple shelter of four walls and a roof. The aspiration is towards a home which not only satisfies the needs of a growing family and includes modern facilities, but also satisfies social needs and self esteem. The current types and quality of urban houses vary depending on location, socio-economic status of the owner and the building regulations and materials available. But in general, throughout the country, the basic elements which are prerequisites in a home for a Libyan family are:

- a) Private area exclusively for family use both as enclosed indoor spaces which make up the rooms and as outdoor spaces, parts of which are shaded in the form of courtyard or garden.
- b) Visitors' area associated with the entrance and screened from the family living area.
- c) Functional flexibility of the unit components where not all the living space is assigned a specific function and can be adapted according to the changing circumstances.

Many factors influence the house design but the most significant is the socio-economic status of the urban household. The diversity of such factor produces a great variety of styles and designs in urban areas. This is especially so in Tripoli which represents a greater

diversity of socio-economic groups than any other urban area in the country.

2.4.1 Houses Privately Built by the Lower-Middle and Low Income Groups

For the lower socio-economic groups, among whom family privacy is as highly esteemed as it is among the majority of the Libyan population, most of the houses still feature an adaptation of the traditional courtyard. The form of the courtyard has been modified over the years: its domination as an open-air living area has disappeared and the location of the court is no longer central to the rest of the layout, neither is it a circulation area. It is mainly a service court at the far end of the house with a direct access from the kitchen. In many cases it is small, especially when a front porch or a verandah is included in the plan. Nevertheless the court is vital for the household domestic activities. Another adaptation which has taken place is the development of the sala, a room derived from the combination of the central covered courtyard and the Italian salon. It serves two functions, as a family living room and a hall giving access to the other rooms (Buchanan, 1975), and is entered through the entrance lobby which gives access to the guest-room. Roofs are usually accessible and vine trees provide the shade required at the entrance, on the roof and in the rear court. Children's play is usually outdoors in the narrow streets among the parked cars. Such a layout has become popular not because of its convenience to the Libyan household's way of life, but because the system of land subdivision, land cost and speculation made it so. The lack of local

professionals also led to the emergence of such layouts, which were copied again and again throughout the residential areas of the lower income groups in the urban areas.

2.4.2 Dwelling Units Built by the Middle Income Groups

A new type of dwelling developed as a result of the socio-economic conditions of the urban population, in order to accommodate the traditional extended family and enable the owner to live in one part of the building and rent out the rest, giving the developer a more flexible means of investment. Usually such development consists of flats in two-storey blocks surrounded by gardens. In the early 1970s, through the Urban Evolution Scheme (see 4.2.3) a trend emerged towards building higher blocks of flats, in most cases without gardens. In many cases the owner occupies the top floor and the rest is let as residences for non-Libyans or in other cases as offices for the public or private sector. Following the cancellation of the Urban Development Scheme in 1978, many of these flats have been occupied by Libyan families, involving a great deal of adaptation.

There are many variations of the layout of the flats, but the basic plan contains a reception room, through which the flat is entered usually with a guest's toilet adjoining and a dining room. In many cases the reception and dining rooms are combined into a large room for the same function. The rest of the flat is for family use when the bedrooms are adjoining the living area and kitchen and bathroom. There is ample open air space on the balconies and verandahs, but it is neither convenient nor sufficient for many activities of the

Libyan family and it is not a satisfactory substitute for the open-air living area of the courtyard house. The quality of construction and finishes, the number and size of rooms and many other aspects of these flats vary considerably. When the owner intends to occupy part of the building, this part is usually adapted to suit his household size and structure and his way of living. The rest of the building is then commercially designed and built. This type of residential development has a high population density and is built mainly for property investment, which is very popular among Libyans and compensates for the inconvenience of such type of housing for some people. For the rest, lack of means is the reason for living in such flats, which are occupied as a transitional period of housing.

2.4.3 Houses Built for Middle and Upper Income Groups

The typical urban house of the middle and upper income groups which is proliferating is an ostentatious building, developed in the name of modernisation. It is known as "Doublex". The new residential areas of such houses have a low population density in a suburban style of development in most urban centres. In Tripoli this type of development is fashionable everywhere, apart from the central area, but is found mainly in the newly developed residential areas. The houses are villa style, mostly free-standing, one to three storey blocks. The gardens round the block are surrounded by high walls and high iron gates. Sometimes there is an annexe to the main house, part of which used as lock-up garage and the rest as an extra kitchen, servant quarter, washing room or storage room. In other instances all these facilities are located in the basement or at street level if the

building is constructed on pillars. This basement area is used for major domestic activities specially where there is a religious or social event in the household and it is usually accessible from the family living area which is on the next floor, with, but completely secluded from, a visitors' area. The latter contains a reception hall and/or room and a dining room as well as a toilet, all of which are set aside for guests only. Sometimes even the entrance is devoted to use by visitors and the family is provided with a side entrance. This visiting area is usually a place of prestige and pride of the household. The living area on the first floor usually consists of a kitchen, family bathroom, a sitting room and/or a hall and verandahs. The top floor is mainly for sleeping and includes bedrooms, bathroom, a service and sometimes a living area as well. Windows and balconies are provided everywhere. Roofs are accessible and are usually parapeted.

Apart from the variations in the layout details and finishes, there are many differences in the size and number of rooms and bathrooms, functional allocation, duplication of uses and waste of space, none of which have anything to do with the size or structure of the household. The trends of housing among the upper income groups are motivated by fads and fashions, neither suitable for traditional society nor a useful guide to the Libyan families future needs.

The houses described in the preceding sections are the major types of residential unit in most urban centres. They also constitute the majority of the residential stock of Tripoli apart from the traditional courtyard houses. The variations of styles and diversity

of exteriors reflect only the differences in the socio-economic conditions of the occupants. The development of the urban house in Tripoli has been affected by the sudden social and economic changes to which the whole country has been subject.

The analysis of the household sample survey conducted in 1977 by A. Shembesh has revealed that:

"When dwelling type is related to income it becomes clear that, with increasing household income, the proportion of households living in villas increases substantially from about 2 per cent for households in the lowest income group to over 31 per cent for people in the highest income group. In contrast the proportion of households living in houses decreases as income increases, whereas the proportion of people living in flats is relatively stable over all income ranges. However, it is also interesting to relate dwelling type to dwelling tenure over 77 per cent of owner occupied properties are in form of houses and only 6 per cent are flats while 15 per cent are villas

It is interesting, however, to discuss the relationships between dwelling type, household income and dwelling tenure. Figure 5.13 indicates the general relationship between household income, dwelling type and dwelling tenure, in plotting the mean household monthly income value for the five different tenure groups by dwelling type. By looking at the values for the dwelling type villa it is clear that this type of dwelling is owned or rented privately by people in the highest income group as revealed still more clearly by Figure 5.11 and Figure 5.12. However, when this type of dwelling is provided by the Government, then it is occupied by people in the low income groups." (Shembesh, 1981) (see fig.2.8)

There have been major changes in the last two decades not only in the physical appearance and layout of the dwelling units themselves but also in the composition and structure of residential areas. The most significant are:

- i. The change in the intensity of residential land use, in

Fig. 5.8 DWELLING TYPE BY HOUSEHOLD INCOME GROUP

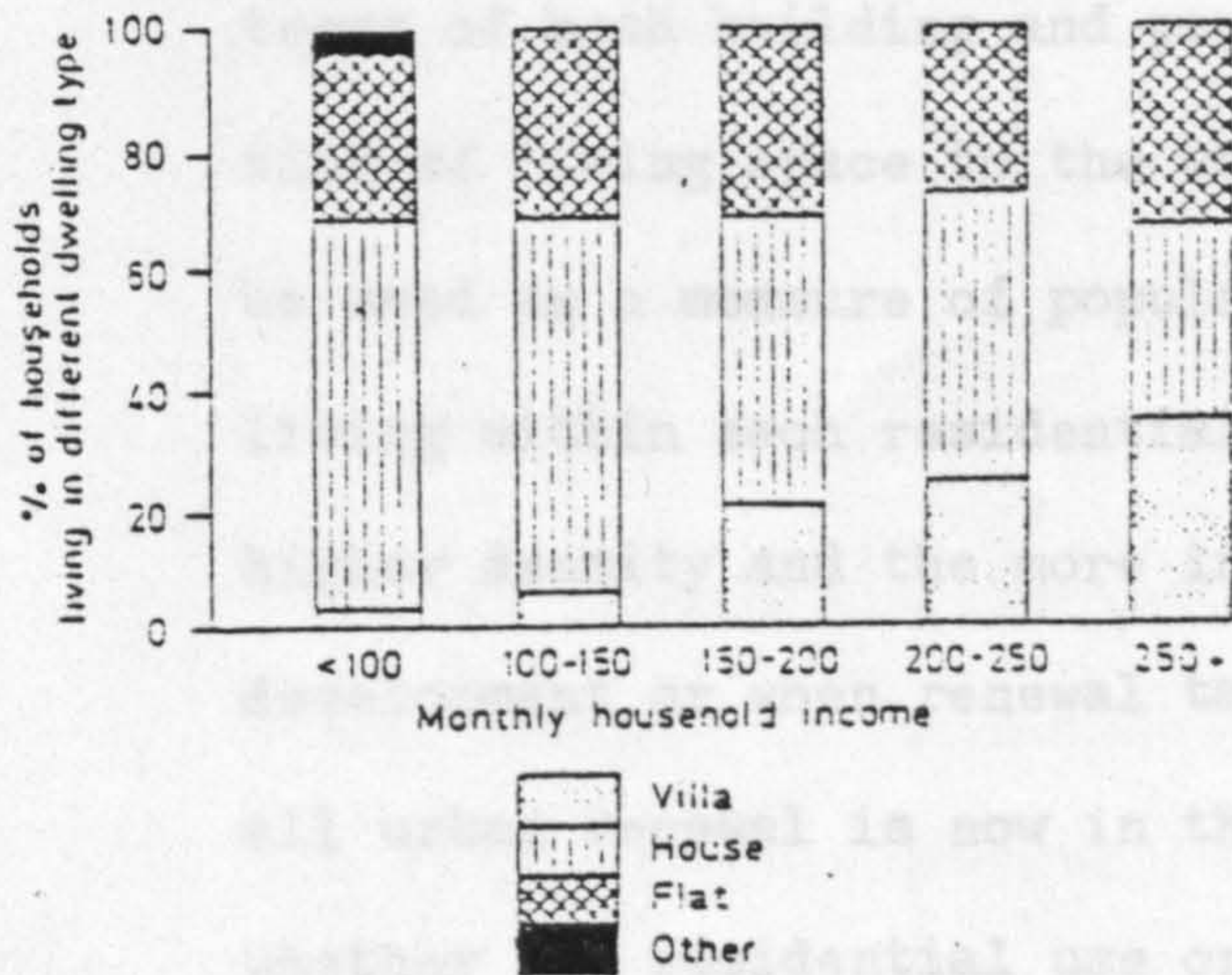


Fig 5.9 DWELLING TYPE BY DWELLING TENURE

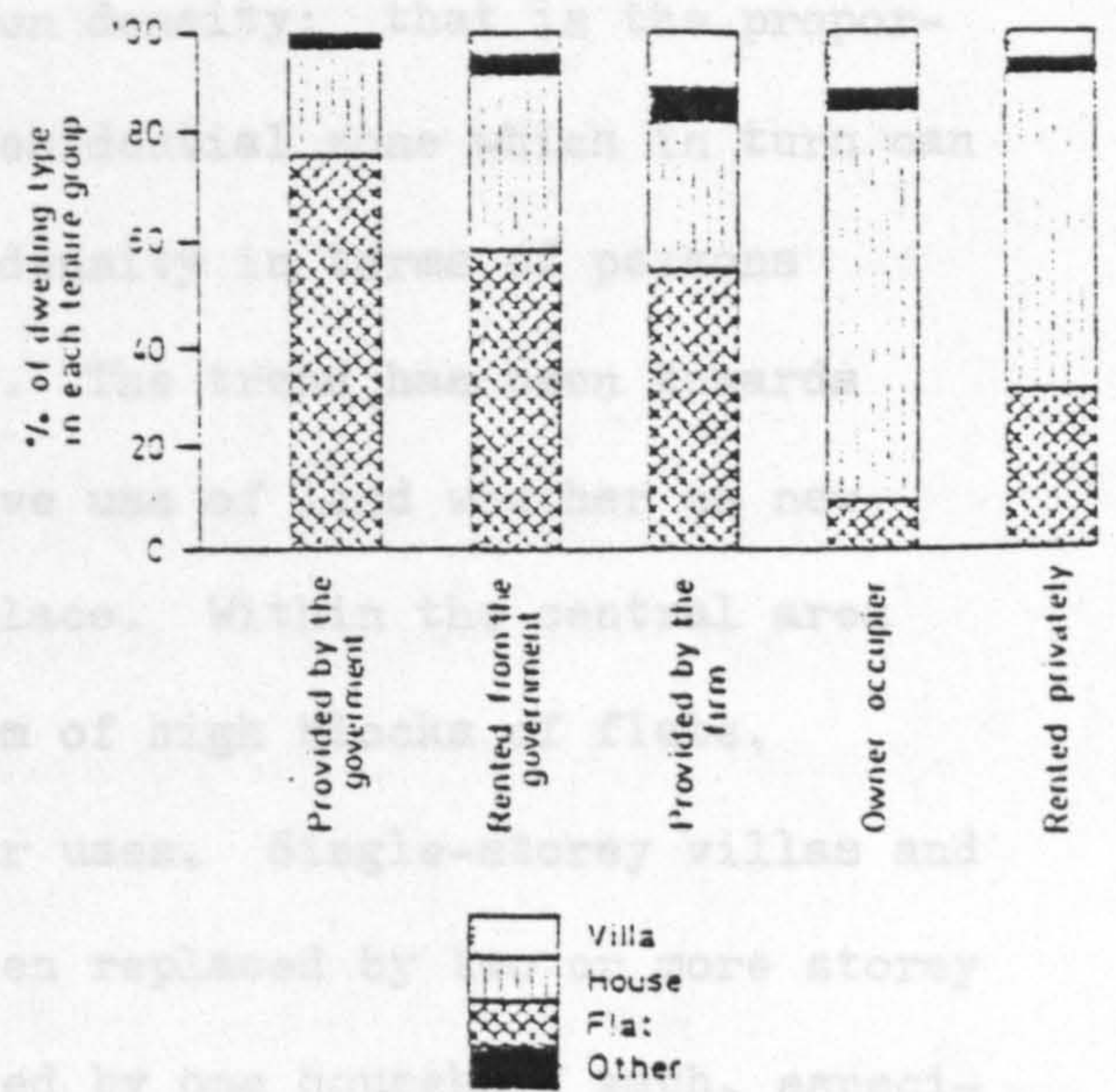


Fig 5.13 AVERAGE HOUSEHOLD INCOME BY DWELLING TYPE AND DWELLING TENURE

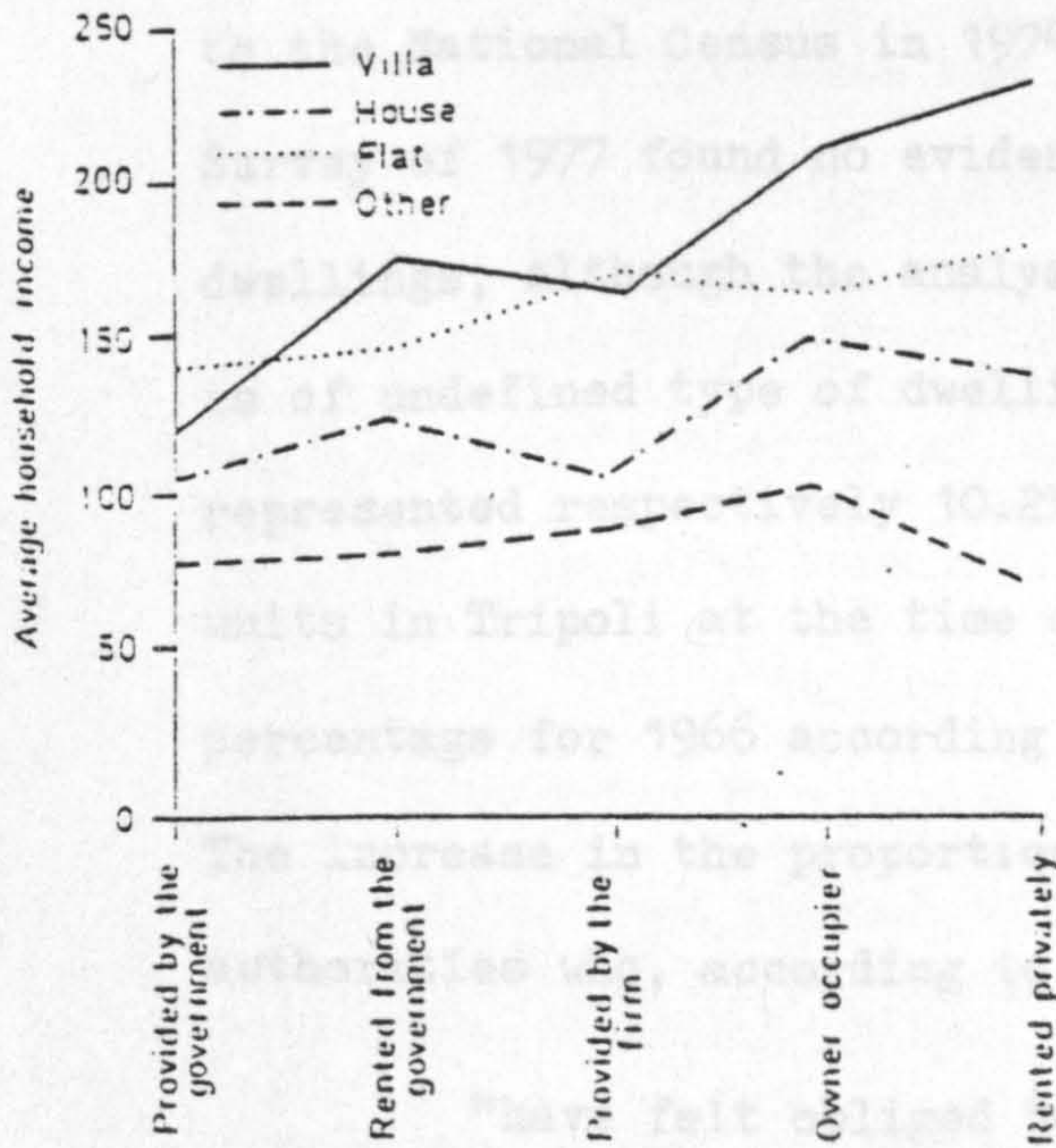
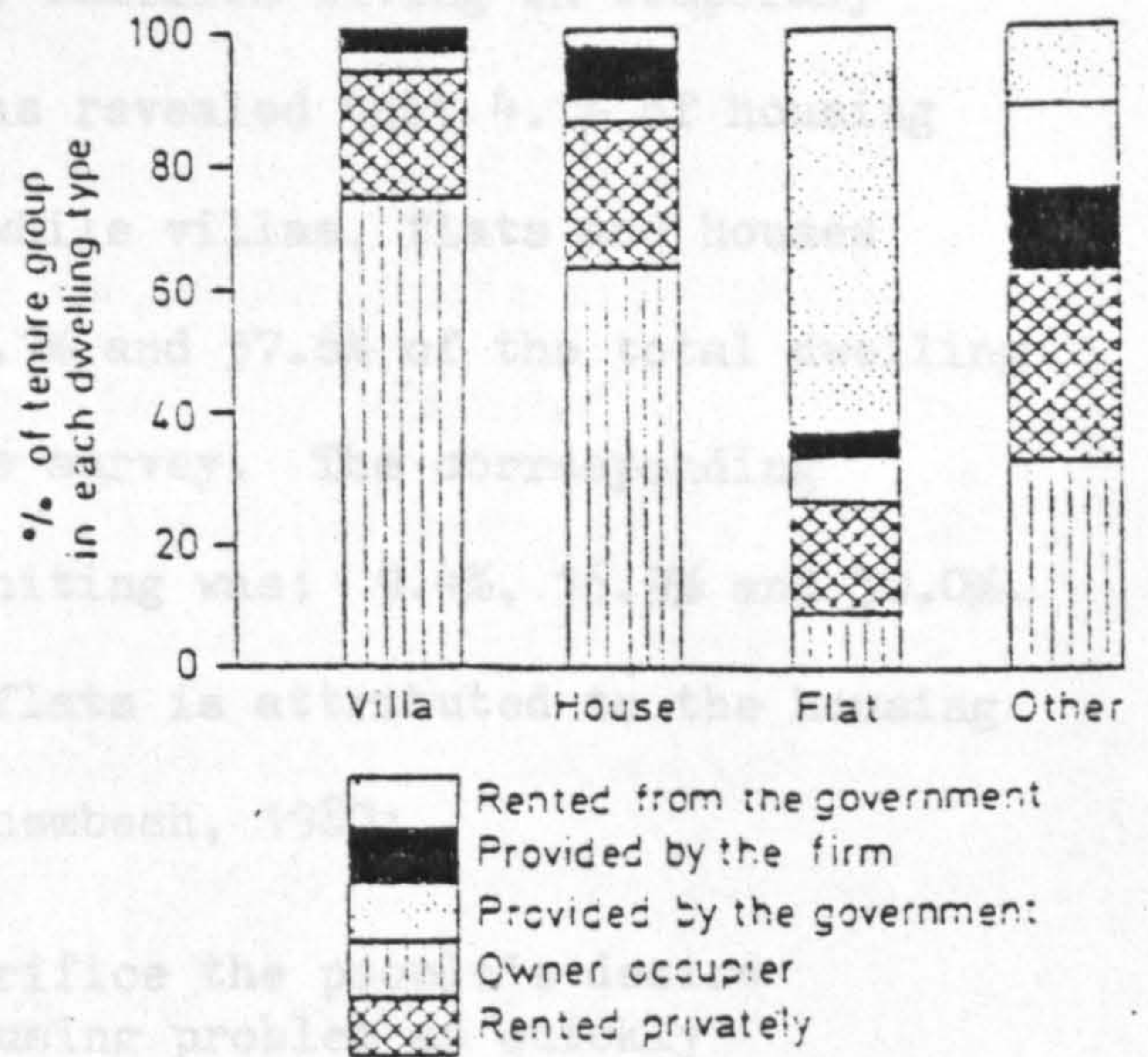


Fig 5.12 DWELLING TENURE BY DWELLING TYPE



Source : Shembesh (1984)

terms of both building and population density; that is the proportion of living space to the whole residential zone which in turn can be used as a measure of population density in terms of persons living within each residential zone. The trend has been towards higher density and the more intensive use of land whether as new development or when renewal takes place. Within the central area all urban renewal is now in the form of high blocks of flats, whether for residential use or other uses. Single-storey villas and houses near the city centre have been replaced by two or more storey blocks and in most cases are occupied by one household each, especially with the current increase in the Libyan household size.

ii. The change in the type of residence where the percentage of marginal type (see 2.3.4) has decreased from 22.4% of the total number of dwelling units in 1966 (Whiting, 1969) to 3.8% according to the National Census in 1974. Moreover the Tripoli Home Interview Survey of 1977 found no evidence of families living in temporary dwellings, although the analysis has revealed that 4.1% of housing is of undefined type of dwelling, while villas, flats and houses represented respectively 10.2%, 28.1% and 57.6% of the total dwelling units in Tripoli at the time of the survey. The corresponding percentage for 1966 according to Whiting was: 9.4%, 16.9% and 50.0%. The increase in the proportion of flats is attributed to the housing authorities who, according to A. Shembesh, 1980:

"have felt obliged to sacrifice the people's desire in order to solve the housing problem as quickly as possible by providing the high density development in the form of flats."

Another factor to which the increase in the number of flats can be attributed is property investment activity, although units of flat-type built for this purpose are usually occupied by non-Libyans or are for uses other than residential.

iii. There are changes in the dwelling design and layout, either imposed or deliberately adopted as consequences of the overall socio-economic changes of the post oil boom. The most significant are:

- a) The change from inward looking design to outward.
- b) The disappearance of the traditional courtyard which is replaced by gardens, verandahs and balconies.
- c) The increase of covered space.
- d) Rigid determination of functional allocation in the design.
- e) Duplication of facilities.
- f) Less intensive use of houses.
- g) Less privacy consciousness.

Changes such as these have a direct bearing on the living patterns and life style of the various income groups involved. Moreover, they will have a profound effect on the housing stock for the future. There is a need to adopt a radical approach to housing planning and design so as to set a trend that supports rather than inhibits the good aspects of the local way of life, values and attitudes. Such an approach should not be motivated by fashions and fads, unsupported by economic or practical considerations.

2.5 The Pattern of Use of a Dwelling Unit in Tripoli

While it is true that house type is related to socio-economic category, this is much more strongly related to the way it is used and lived in. The requirements of the household vary with its social position which in turn differs according to income, education and many other factors which determine the social attitude and values and style of life adopted.

i. For the Traditional Sector

As the majority of this sector is of lower income groups, the dwelling unit is not usually elaborate but its significant feature is the separation of the dwelling into two distinct parts: a guest area consisting of a sitting room and a cloakroom and a second part for family use, consisting of a number of rooms, most - if not all - of which are of multi-purpose function. For instance one or more rooms are used by the children for sleeping at night and by the family as living room or to receive a casual visitor. The living room or hall is used for sitting, eating, preparing tea, the afternoon siesta and many other convenient activities. The shape, size and furniture of the rooms enable the household to choose, change and assign several functions to them. There are usually few pieces of furniture and soft furnishing is very common. Long soft cushions are usually arranged on mats or carpets around the room wall for sitting on, with small ones for lying back on. The same cushions can be arranged for sleeping and around a low dining table for eating. The nature of the traditional house layout and furniture provide enough functional flexibility, a feature which should be retained in order to

provide for the full utilisation of the dwelling space by the Libyan family. The outdoor space in the form of courtyard service court, verandah or backgarden is also used as living space at certain times and for conducting some domestic activities which need open air at other times. This is true only when the outdoor space is enclosed in a way that provides complete privacy.

ii. For the Modern Sector.

The general pattern is westernised and similar in many aspects to the European style. The house space is furnished and used as it fits their own way of living especially when the house design is appropriate to this. Bedrooms are only used for sleeping and their number and size usually relate to family size. A large dining kitchen is conveniently used for preparing and eating meals. The living room is used as television room and it is quite often used by all members of the family for other activities. The higher income people of this sector have seasonal living rooms. The guest area is not usually rigidly separated from the rest of the house. The reception and dining rooms are more often used by this sector not only to entertain friends and guests in mixed company - but also by members of the family. The private open-air space is used more by this sector as a garden, verandah or balcony for different activities. Shared facilities such as staircases, elevators, gardens, etc., are employed more successfully than among other sectors. The house is usually provided with most western domestic facilities which are conveniently and efficiently used.

iii. For the Transitional Sector

Most houses for this sector have a separate guest area where the best furniture of the household is put and not very often used. It consists of a reception or reception/dining room of western style and another one of traditional Libyan style (the oriental room). In this part of the house, which is usually reserved for visitors, there is a dining room if dining facilities are not included in the reception room. There is also a cloakroom or guest bathroom. The well-off people of this sector go to great lengths to present a higher social class through a showy guest area of the house, not only in furnishing it but also in terms of the construction finishes. The focal area of the family part of the house is the living room or hall where the family usually sits, eats and receives visitors. It may be furnished with either traditional or western furniture, but in most cases with both types. The living room is also used as a television room, a play area, for the afternoon siesta and sometimes for night sleeping if there is a shortage of bed space in the house, mainly for children and grandparents. There may be more than one living room in a house, especially if there is no space for a dining/kitchen area. The kitchen is usually fully equipped with modern facilities and quite often large unless there is a spare one in the annex of the house: the reason is that this sector still retains some traditional habits of housekeeping along with the modern ones and the kitchen therefore has to accommodate utensils necessary for both. The kitchen has a primary role in a Libyan house where food is very important and Libyan cooking and food preparation consume much time: Libyan women spend a significant amount of time on daily domestic

activities. Bedrooms are usually assigned for sleeping and furnished with western bedroom suites. Apart from the main bedroom, the others are usually crowded, but segregated according to sex: a single bedroom for each member is not practicable in many cases. If there is no washing room in the house, a washing machine is usually installed in the bathroom alongside the showers. The washing is usually hung for drying in the open air space where bed sheets and blankets are also aired quite often. It is very inconvenient if the open air space is not prepared for such practice. The traditional social and family gatherings occur as often as among the traditional sector along with the new trend of western style parties and celebrations.

2.5.1 The Routine of Daily Activities of an Average Family

The working day begins fairly early even during the winter months and most people rise between 6.0 a.m. and 7.0 a.m. Breakfast is the least important meal and usually consists only of a hot drink of tea, coffee and/or milk with a piece of bread or traditional cake taken fairly quickly. If only the men of the family are wage-earners, after they have left the house, the women spend a considerable time on housework; domestic help nowadays is not easy to obtain. Apart from the major weekly and seasonal cleaning, a great deal of tidying and cleaning the house or the flat is done daily: hanging out bedding to air, sweeping and washing down the entire floor area, outdoor terraces and yards and doing the washing, most of which - if not all - is done manually. Some shopping may be done at local shops usually by the children but the main daily shopping is brought home by the adults on their way back from work. Most Libyan families like to buy

their groceries in bulk especially if they can afford the space to store it.

The men of the family usually return home from about 2.0 p.m. onwards and the main hot meal will be ready, the previous two or three hours having been spent in preparing it. The afternoon siesta is quite common among Libyan people after the heavy main meal and because of the climate. Most members of the household rest for a few hours, depending on the family programme for the rest of the day. If the men do not have to go back to work they conduct business or social obligations or sit in a coffee house which is a very popular entertaining facility. Visiting to neighbours, friends and relatives is usually done from about 4.0 p.m. returning home before the evening meal. However, visitors may stay for the evening meal or spend the night away from home, or even arrive in the morning and spend the whole day visiting.

An evening meal, which takes a while to prepare is usually served from between 8.0 p.m. and 10 0. p.m. The family does not have to be together during this meal which is usually lighter and less formal than the main one. The rest of the evening is most likely spent on watching television. Not a great deal of family outgoing and formal entertaining is done, but social events like wedding ceremonies, childbirth, departing or arrival from pilgrimage, bereavement rites, etc., parts of which are conducted in the evening and night, are social obligations a family has to attend quite often. Children usually do not have a bedtime routine and they stay up as late as their parents which may be from 11.0 p.m. onwards (Buchanan, 1975).

Concluding Remarks

The wide variety of the domestic urban features in Libya is due to various related factors. It is mainly the outcome of continuous interaction between urban development and the underlying social, political and economic changes within the context of the country's heritage and physical conditions. The characteristics of the urban fabric in Libya have been very much affected by long periods of foreign domination in the country. Such influence has been no less effective on the physical features of urban housing. But housing is not only the product of design trends, building technology and economic resources; it is also a function of the social and cultural values placed on housing and its incorporated features.

This chapter has examined how the pattern of the urban fabric has changed in response to historical influences on Libyan culture and how these influences and socio-economic forces have affected people's perceptions of housing, its design and form.

Tripoli's housing stock is characterised by a variety of styles. The variation of styles reflects in part the fads and fashions that have become prevalent as a result of revised, if transient, social values which could be attributed to rapid socio-economic changes. Very few of these variations are relevant to the basic differences in life style of the different socio-economic groups: despite external influences and the fact that the country has been in a transitional phase, many aspects of the traditional pattern of living, social values and habits are still valid and are maintained as strongly as ever.

In Chapter 3 the housing situation in the public sector will be

elaborated in the light of the political, economic and social changes which have accelerated in the 1960s, particularly after the 1969 Revolution. A review of public housing and its development since it was started during the Italian colonisation, together with a discussion of the present housing stock and the factors affecting demand in the public housing sector, will also be included.

CHAPTER THREE

THE HOUSING SITUATION IN THE PUBLIC SECTOR

Having discussed in the last chapter the characteristics of the urban fabric and the trends of housing development in general, this chapter comprises an examination of the developments of public housing programmes to provide accommodation for various sections of society.

3.1 Public Housing Prior to the Oil Boom

3.1.1 Before Independence

During the Italian colonisation groups of houses of various types and quality were built in different parts of the country by colonial agencies. A great many of these houses were built in villages and on farms for Italian immigrants to encourage them to work and settle in the agricultural areas. The layout was different from the local style and very similar to the low density types they built in urban centres and cities. Tripoli, as a capital for the colony, was the location of many housing projects during the period, ranging from luxurious villas in the garden city for senior civil servants to a very primitive type of dwelling in a camp form for the local people

According to "Il rinnovamento della Citta di Tripoli: negli anni XII and XIII E.F.(1934-1935)", both the colonial government and the Municipality found that it was necessary to co-operate to solve the housing problem. They undertook many projects, sometimes jointly, in different parts of the city for their Italian citizens. A group

of villas was built as an extension of the garden city, then a modern suburban residential area of the high class Italians. So, too, was another group in the Ben Ashure area, which is now a part of the fashionable extension of the garden city. A third group of villas was built for Italian labourers in the Elsarcem area, which was then on the outskirts of the city.

Other institutions participated in providing housing for the Italians, mostly in the form of flat type dwellings in groups of blocks. The Housing Corporation of the Italian Civil Servants (I.N.C.I.S.) built a number of blocks of flats adjacent to the garden city. Another corporation for popular housing was established which did build ninety eight dwelling units for workers next to the central railway station. The Italian civilians were also provided for when a profit-making organisation built eleven blocks of flats for them on the water front as an investment scheme (see fig.3.1). The design of these dwelling units and their layout was Italian in style and they were constructed to suit the way of life of Italians and their concept of housing. These dwellings are now occupied by Libyans, who bought them from the Libyan Government and have made many adaptations and alterations to suit their different life style. Most of the villa type units were demolished and larger blocks of buildings were erected in accordance with present building regulations.

Another project of 43 traditional houses was undertaken by the Italians for the local people in Zawiate Addahmani and a camp of 500 huts was erected as a housing estate outside the city wall next to Bab Tajura for the local poor (see fig.3.2); this was the first

تقسيم قضاة طرابلس على
المحلات والشوارع الاتي بيانها

Divisione del Circondario di TRIPOLI
nei seguenti quartieri (scikra o mchalla)

1. Chiesa di S. Maria	11. Piazza del Comune
2. Chiesa di S. Antonio	12. Piazza del Mercato
3. Chiesa di S. Francesco	13. Piazza del Palazzo
4. Chiesa di S. Giovanni	14. Piazza del Palazzo
5. Chiesa di S. Pietro	15. Piazza del Palazzo
6. Chiesa di S. Paolo	16. Piazza del Palazzo
7. Chiesa di S. Luca	17. Piazza del Palazzo
8. Chiesa di S. Matteo	18. Piazza del Palazzo
9. Chiesa di S. Giacomo	19. Piazza del Palazzo
10. Chiesa di S. Filippo	20. Piazza del Palazzo
11. Chiesa di S. Andrea	21. Piazza del Palazzo
12. Chiesa di S. Carlo	22. Piazza del Palazzo
13. Chiesa di S. Elisabetta	23. Piazza del Palazzo
14. Chiesa di S. Margherita	24. Piazza del Palazzo
15. Chiesa di S. Caterina	25. Piazza del Palazzo
16. Chiesa di S. Agnese	26. Piazza del Palazzo
17. Chiesa di S. Lucia	27. Piazza del Palazzo
18. Chiesa di S. Rosa	28. Piazza del Palazzo
19. Chiesa di S. Vincenza	29. Piazza del Palazzo
20. Chiesa di S. Anna	30. Piazza del Palazzo
21. Chiesa di S. Barbara	31. Piazza del Palazzo
22. Chiesa di S. Brigida	32. Piazza del Palazzo
23. Chiesa di S. Giustina	33. Piazza del Palazzo
24. Chiesa di S. Margherita	34. Piazza del Palazzo
25. Chiesa di S. Lucia	35. Piazza del Palazzo
26. Chiesa di S. Rosa	36. Piazza del Palazzo
27. Chiesa di S. Vincenza	37. Piazza del Palazzo
28. Chiesa di S. Anna	38. Piazza del Palazzo
29. Chiesa di S. Barbara	39. Piazza del Palazzo
30. Chiesa di S. Brigida	40. Piazza del Palazzo
31. Chiesa di S. Giustina	41. Piazza del Palazzo
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70. Chiesa di S. Brigida	80. Piazza del Palazzo
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73. Chiesa di S. Lucia	83. Piazza del Palazzo
74. Chiesa di S. Rosa	84. Piazza del Palazzo
75. Chiesa di S. Vincenza	85. Piazza del Palazzo
76. Chiesa di S. Anna	86. Piazza del Palazzo
77. Chiesa di S. Barbara	87. Piazza del Palazzo
78. Chiesa di S. Brigida	88. Piazza del Palazzo
79. Chiesa di S. Giustina	89. Piazza del Palazzo
80. Chiesa di S. Margherita	90. Piazza del Palazzo
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82. Chiesa di S. Rosa	92. Piazza del Palazzo
83. Chiesa di S. Vincenza	93. Piazza del Palazzo
84. Chiesa di S. Anna	94. Piazza del Palazzo
85. Chiesa di S. Barbara	95. Piazza del Palazzo
86. Chiesa di S. Brigida	96. Piazza del Palazzo
87. Chiesa di S. Giustina	97. Piazza del Palazzo
88. Chiesa di S. Margherita	98. Piazza del Palazzo
89. Chiesa di S. Lucia	99. Piazza del Palazzo
90. Chiesa di S. Rosa	100. Piazza del Palazzo



- 1 Villas for senior civ servants
- 2 Flats by I.N.C.I.S.
- 3 Dwellings for Italian workers
- 4 Villas for Italian labourers
- 5 Flats for Investment
- 6 Traditional houses
7. Housing camp

Figure 3.1: Location of Housing Development During the Italian Colonisation

Source: Municipality of Tripoli.

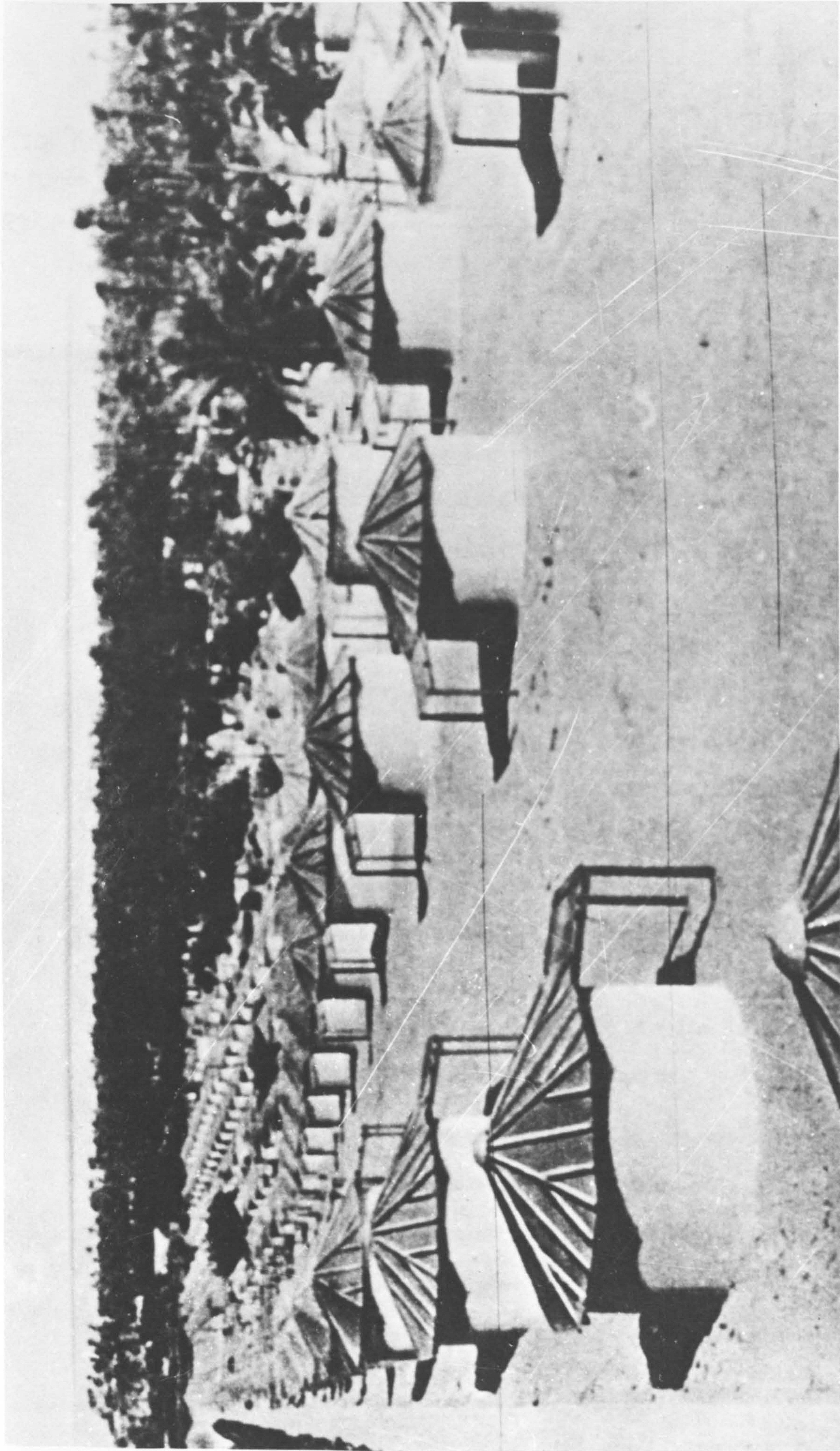


Figure 3.2 A Housing Estate Built by the Italians for the Local Poor

Source: Municipality of Tripoli (1970).

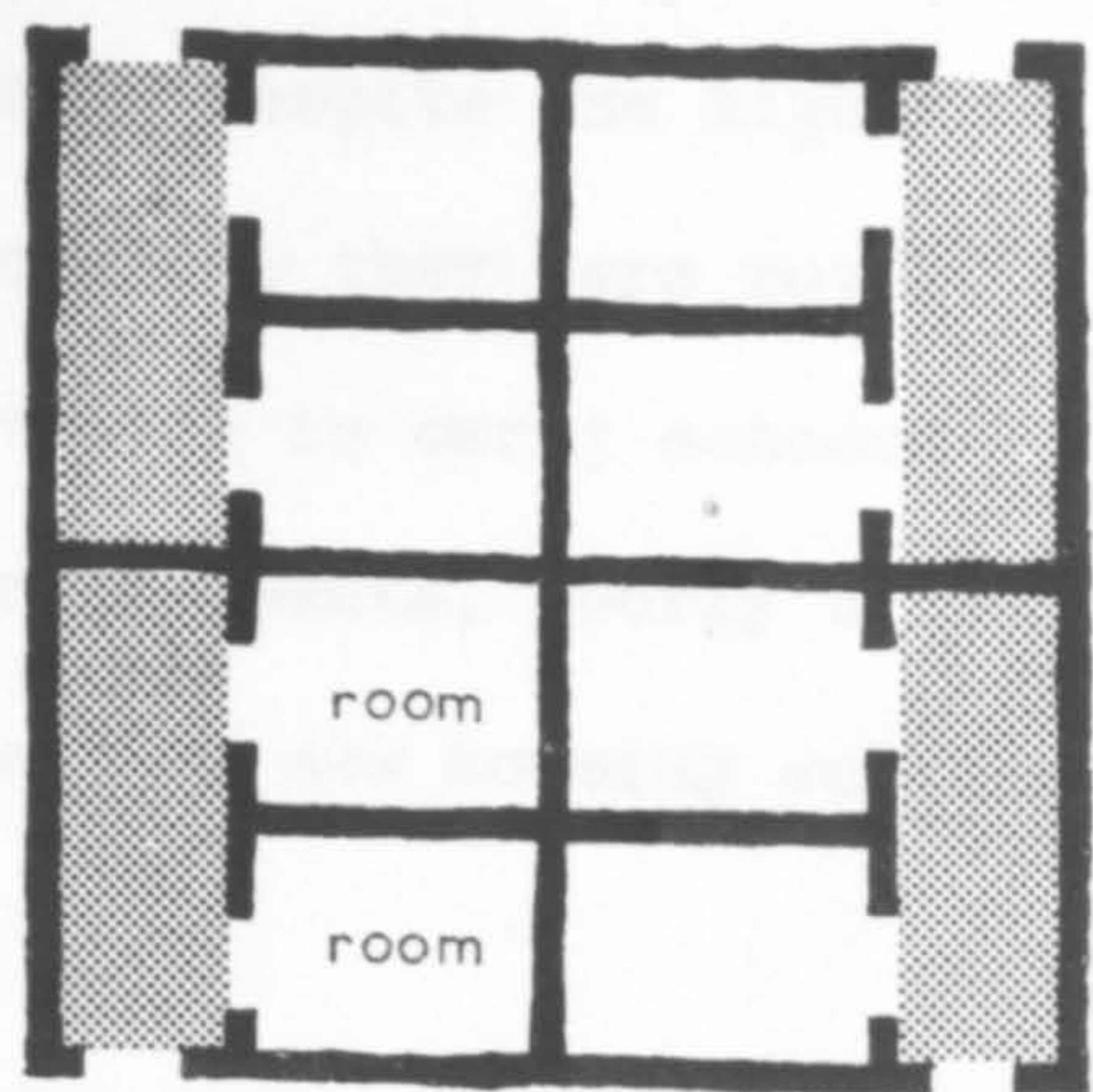
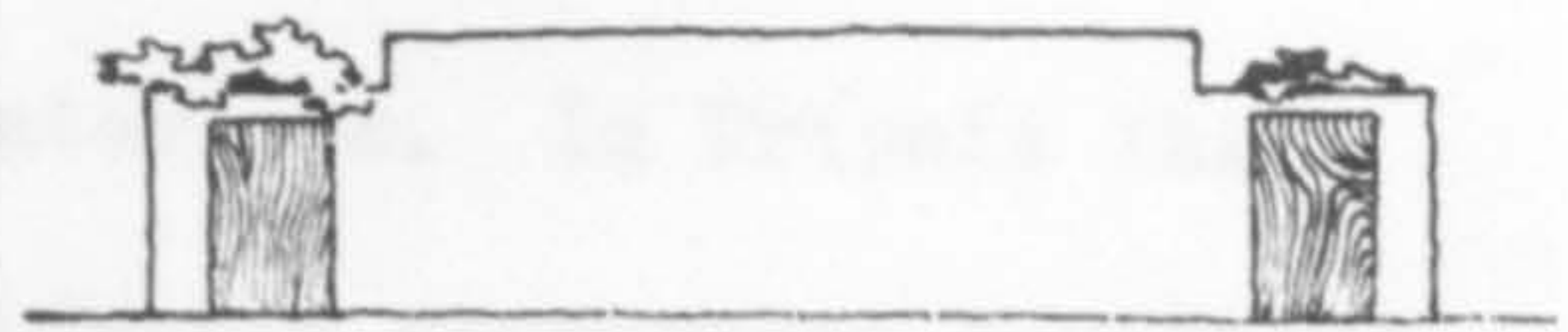
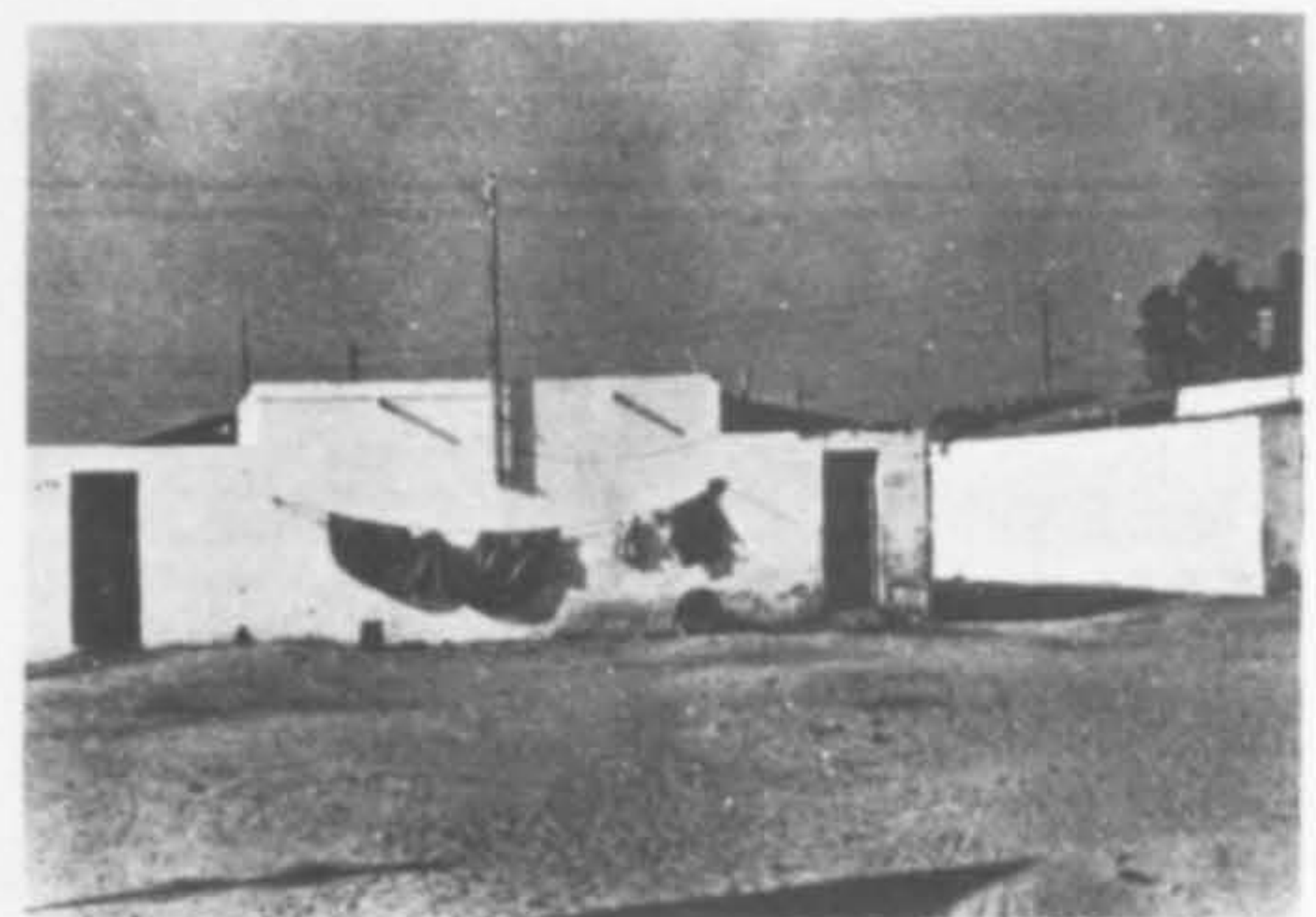
Tripoli slum clearance programme (M.T.H.Y. 1970).

After the departure of the colonial authorities and during the British administration of the regions there was little construction activity and the housing shortage became more serious.

3.1.2 Public Housing After Independence

Following Independence, there has been an influx of migrants from other parts of Libya to urban centres, which have also attracted Libyans returning from neighbouring countries. This has contributed to the considerable shortfall of available accommodation and consequently to a high level of rents. This, coupled with the lack of low income dwellings, led to the erection of squatter areas on the periphery of almost every urban centre in the country, especially the two major cities of Tripoli and Benghazi. The earnings of the lower paid workers were such that they were unable to pay an economic rent for permanent houses and their need for low cost housing could not be met by private enterprise in building activities, especially as the gross per capita income resulted in a deficiency of private capital. In these circumstances, the main financial burden of housing fell on the public sector and some rehousing schemes for low income groups were undertaken in different parts of the country.

In Tripoli, shanties to the west of the city were cleared and the people were rehoused by the state authorities on a more suitable site. The new dwelling units were in blocks of four, each unit consisting of a courtyard giving access to two rooms and a small roofed area for cooking (see fig.3.3). Communal water supply and latrines



0 2 4 6 8 10m

Figure 3.3
Low-Income Rehousing Scheme

Source: Doxiadis (1964).

were provided at central points. At the same time the Libyan Public Development and Stabilisation Agency was in charge of new housing in the Eastern Regions (Fitzmaurice, 1957).

Houses were also built at this time in Benghazi, consisting of the same components plus water and a closet in each house, but in this case the houses had windows opening to the street. The result was that in the vast majority of cases, the windows on the street side were permanently blocked up by the occupants. That was not the only adaptation to their needs that the inhabitants made. The new houses both in Tripoli and Benghazi were too small to provide decent housing for the larger families: new extensions and roofing were therefore added with temporary building materials. In Tripoli the harsh, unpleasant layout of the scheme evidently encouraged squatters to settle in its vicinity and very quickly the scheme became a big "shanty town" which in 1977 was cleared and the people rehoused for a second time. Indications are that it will probably only be a short time until they need to be rehoused once again, despite the high quality of the multi-storey flat blocks into which they were moved. Lack of forethought has resulted in the provision in early schemes of housing unsuitable for the needs of their occupants, poorly sited and ill-provided with communal facilities, and in new housing schemes which have still more serious deficiencies.

A further major residential project for low income workers was initiated in the early 1960s near the main industrial zone of Tripoli. The first phase consisted of 2,000 dwelling units in groups each comprising 4 adjoining L-shaped houses of two rooms, each having its own

open kitchen and w.c. Soon after the inception of the scheme, it was recognised that a two-roomed house was inadequate to meet the requirements of the relatively large Libyan family. The 576 houses already built remained as originally designed but in 160 two-roomed houses, the walls separating the kitchens were knocked down to make 80 four-roomed houses. Then another 432 four-roomed houses were built with a passage separating the courtyard (M.S.H.S.P. 1966)*. The remainder of the 2,000 two-roomed houses were replaced by 266 three-roomed, one storey row houses with a hall, w.c./bath and kitchen, a small entrance space and enclosed courtyard. The land development work and construction of basic facilities, as well as complementary buildings, was delayed by these changes. This first phase, which amounted to a total of 1,354 units, was followed in 1966 by the construction of 660 units of various types in the same area Bue Slum (see fig.3.3). This is now the major slum area in Tripoli with the worst social, physical and other problems ever known in the city.

The problem of housing for people with low incomes was most acute in Tripoli, but the housing position generally was aggravated by a number of certain special circumstances. These included the demand for middle class houses initiated by families of armed forces attached to the U.S.A. and U.K. bases which were then in the region, and a similar demand created by the foreign employees of various agencies, those serving the Libyan Government, Diplomatic and International Missions, the oil industry and private commercial and industrial activities.

As per capita income dramatically increased, private enterprise

catered for a great deal of this demand, with the result that the building industry had little capacity available to meet the demand for housing and there was increased pressure on the existing housing stock. The local medium income groups suffered most and this suffering was especially acute for the government employees. In the early 1960s, the Government realised the gravity of the situation and launched housing programmes for the civil servants throughout the country, not less than twenty five grouped houses being planned for each locality in 1965 (M.S.H.S.P. 1966).*

* M.S.H.S.P. : Monograph for a Seminar on Housing Statistics and Programmes, Economic Commission for Africa 1966.

3.2 Government Housing Programmes between 1963-1969

Before the export of oil began in 1961 the government's financial resources were very limited and severely constrained by the retarded state of the economy. Apart from this disability, there were also urgent problems in such fields as education, health, unemployment and primitive infrastructure that had to be solved prior to dealing with housing. It was for these reasons that the government efforts, described above, were limited to the desperate sector of society, the low income groups. As financial constraints became less severe, the government felt that it could and should become more involved in housing activities. Being a national problem, housing has increasingly gained higher priority and a greater share in the investment budget. As national resources have become more plentiful various housing programmes have been initiated, housing, financial and construction constitutions have been established, and both public and private housing activities have been encouraged strongly ever since national economic circumstances began to improve through oil income. After the formation of the unitary government in 1963, housing became the major concern of the central government and housing problems were tackled seriously.

3.2.1 First Five-Year Housing Programme: 1963-1968

Libya's First Five-Year Development Plan was initiated in 1963 and 10% of the planned investment budget was allocated to the housing construction programme. In the first year 4,000 d.u.* were built, 2,500 in Tripoli and 1,250 in Benghazi. One quarter of these dwellings were intended for civil servants; 2,000 d.u. of those built in

* dwelling units

Tripoli and 1,000 of those built in Benghazi were reserved for the low income groups (U.N.M.H.L. 1969). * (see Tables 3.1 and 3.2).

In June 1963 the government also commissioned Doxiadis & Associates to undertake a survey and a comprehensive study of housing conditions and problems and to set up the appropriate housing policy and programmes which would need to be adopted to overcome the acute housing problems in the country. The outcome of the study was a two-volume report discussing the existing problems, an outline of a National Housing policy and a Programme Framework within which a set of different programmes for action, finance and implementation were set.

According to Nerfin (1965), the study was frequently referred to but did not seem to have been fully considered. Nevertheless, although a great many of the proposals and recommendations were followed by the government for quite a long period, the housing situation did not improve very much. Perhaps the study did not give attention to certain aspects of housing in Libya or if it did, not enough stress was given to those aspects. Another reason why the study did not have the desired results was the lack of professionals and specialists to make its proposals effective. However one can only agree with what was said about this study in the M.S.H.S.P. 1966:

"In spite of its recognised shortcomings this report is considered as a useful broad reference document, its real and positive value lying in the identification and frank stress on the acuteness of housing problems in Libya."

* U.N.M.H.L. 1969 : United Nations Mission for Housing in Libya. Tripoli 1969.

Table (3.1) . 1964 Housing Programme

Type location	No. of Dwellings					
	P2 Popular	P3 Popular	V4 Villa	F4 Flat	F5 Flat	Total
Tripoli	2,000	224	100	96	72	2,492
Benghazi	1,000	124	48	-	60	1,232
Misurata	-	24	-	-	-	24
Homs	-	24	-	-	-	24
Garian	-	24	-	-	-	24
Zavia	-	24	-	-	-	24
Beida	-	24	-	-	-	24
Derna	-	24	-	-	-	24
Sebha	-	60	-	-	-	60
Ubari	-	48	12	-	-	60
Total	3,000	598	160	96	132	

Table (3.2) Dwellings built in Tripoli under the 1964 Programme

Location of Project	Type of Dwelling	Cost per Unit LD*	No. of Dwelling	Total Cost LD*
<u>Tripoli City :</u>				
El Hani	P3	1,060	200	212,000
Gargaresh	V4	1,645	100	184,000
G. Omar el Makhtar	F5	3,385	40	135,000
Sciara Shat	F5	3,380	32	108,000
Sciara Puccini	F4	(2,260)	48	107,000
		(2,340)	48	113,000
El Hāba el Khadra	P2	600	2,000	1,190,000
<u>Tripoli Province :</u>				
Azizia	P3	1,360	4	5,500
Sueni ben Adem	P3	1,360	4	5,500
Ben Gashir	P3	1,300	8	10,400
Tagiura	P3	1,175	4	4,700
Garabuli	P4	1,370	4	5,500
Total			2,492	2,080,000

* Libyan Dinars

Source : Housing in Libya - Nerfin 1965.

3.2.2 IDRIS Housing Programme

Apart from the first Five Year Plan (1963-68), a huge programme was launched in August 1965 to further the construction of housing throughout the country, this was the IDRIS Housing Project (IHP). According to this programme 100,000 dwelling units, costing about L.D. 400,000,000 were to be built over a period of five years. The IHP was formulated predominantly for families of limited income, civil servants, war veterans and invalids. Sixty per cent of the project's funds were allocated to rural areas in order to stabilise the high rate of urban rural migration (Wedley, 1968).

Because of the extreme inadequacy of professional and other personnel in the newly established Ministry of Housing and State Property (October 1966), the first phase of IHP was formulated on an ad hoc basis. LD 40 million were allocated to build 10,000 houses, 8,066 of which were distributed in groups of 10 to 100 units in 182 localities. Tripoli, Benghazi and Beida were the locations of a large number (M.S.H.S.P. 1966), distribution being hardly related at all to any study or survey of demand or to the shortage of housing in different areas. Standardisation was also applied in the design of houses, community facilities and layout plans with hardly any modifications to allow for local or regional differences. Standardisation was also applied to contract conditions, specifications and construction methods and details.

The housing construction programme consisted of two types of project. The popular or the economic housing projects were designed for low income people, mainly shanty dwellers. The other type was of

middle or average housing projects, built mainly for civil servants. Between 1965 and 1969 the number built of the first type was 11,553 d.u.; 3,332 d.u. were built of the second type. Achievement in the housing sector was very low indeed despite the efforts to overcome the difficulties and constraints (Sharnanna, 1976) (see Table 3.3).

3.2.3 Second Five Year Plan 1969-1973

The implementation of the First Housing Programme (1963-68) stimulated the demand for public housing, and the need for housing projects has become once more pressing ever since. Perhaps the rapidly changing economic and social circumstances have accentuated the urgent nature of the housing situation. After the period of the first plan elapsed, a Second Five Year Programme was established (1969-1974). It was intended to invest about LD 164 million in housing alone and part of the sum was allocated to complete the first five year project. The plan also considered the implementation of IHP. The budget of this Plan included not only direct housing construction by the Government, but also funds for loan schemes, as the following table indicates.

Table 3.3Programme of Government Construction of Housing1969 - 1974

I	IH Project stage 1	50	-
II	IH Project stage 2		
	a) Housing clusters (Industrial Housing)	20	5,000
	b) Industrial and Real Estate Bank and Ministerial allocation	49	12,000
	c) Joint Investment Programme	5	2,500
III	Administration Buildings (in order to release about 1,000 d.u. used as offices)	15	1,000
IV	Reform of Agriculture and Housing	10	4,000
		149 m*	24,500 d.u.

Source: UN Mission for Housing in Libya 1969

3.2.4 Evaluation of Housing Construction

The absence of statistics makes it extremely difficult to give a clear picture of housing construction activities. The scarce information available can, however, be used to evaluate the number of dwelling units constructed since the Libyan Government has been involved in housing activities. Between 1954 and 1963 the rate can be estimated of an average of 300 low cost units a year throughout the country. This rate rose considerably in 1964 when about 3,980 d.u. were built under the housing programme and again in 1965 when

* millions of LD

over 7,011 d.u. were constructed. According to UN Mission Report (1969) the average annual construction rate in the public and private sector during the first plan period, (1963-68), was 5,000 and 2,000 units respectively, that is a total of 7,000 units yearly against an estimated target demand of 18,000 units per year. For the Second Plan it was assumed that the rate would be 5,000 units per year in both the private and public sectors, a total of 10,000 units, leaving a shortfall of 8,000 units every year. The Revolutionary Housing Authorities survey of dwelling construction revealed that about 14,880 d.u. were actually built by the public sector between 1964 and 1969, an average of 3,000 units per year. There have always been big gaps in the fulfilment of annual targets and this has not been because of lack of funds. Among many other inadequacies, the capacity of the building industry, lack of a National Housing Policy, rapidly rising construction costs and general inflationary problems have been responsible for hampering the implementation of the housing programmes.

Despite the availability of financial resources, the magnitude and nature of the housing problems, and the other difficulties and constraints, were not easy to overcome. The Government, having in mind its responsibility for housing, tried to rationalise both the quantitative and qualitative aspects of the implementation of the housing construction programmes.

The inability of the building industry to implement housing programmes led to the decision to buy five prefabrication plants, two of these plants to be installed in each of the coastal regions and the fifth in the southern region, each of which has a capacity

of 6 d.u. per day. The main object was to save manpower, especially skilled manpower, and to meet needs in the shortest time. The costs were expected to be lower than with conventional methods. Each plant was intended to use 60% of local building material and to satisfy their demand, cement plants were also installed in different parts of the country (Nerfin, 1965). The implementation of the housing prefabrication decision did not, however, actually take place until 1973.

The summary of the situation and the problems of housing in Libya made by a U.N. Regional Housing Adviser in July 1965 proposed the transfer of the Housing Department from the Ministry of Public Works to a new specialised Ministry so as to concentrate the available skills, as well as concentrating the responsibilities for elaborating the housing policy and implementation, in a National Housing Authority. The report also drew attention to the scope for U.N. technical assistance in the field of housing and the possibility of recruiting a comprehensive housing team to assist in establishing the proposed Housing Authority as well as to re-examine Housing Policy and programmes, and to search for every possible way to increase productivity and efficiency of building activities, in both the public and the private sectors (Nerfin, 1965). In October 1965, the Ministry of Housing and State Property was established (M.S.H.S.P. 1966), but the advisory team was not recruited until 1969. The U.N. Mission in Libya submitted a draft of a project lasting for five years.

The report of the U.N. Mission included, apart from the proposed Special Fund project and its scope, four reports from different experts. These reports will be considered in the relevant sections of this thesis.

3.3 Housing Activities in the 1970s

The revolutionary government recognised the importance of the availability of decent housing for the greatest possible number of people and intensified efforts were made to improve the performance of the housing sector in all directions, giving priority to low income groups. The Government was very eager to ensure the construction of the largest number of dwelling units in the shortest time by any possible means. The old housing policy was revised, some new housing institutions were established and others were re-established or reinforced, as will be seen in the next chapter. New housing schemes and programmes were introduced and others were either enlarged or eliminated. Those revolutionary changes led to a great accomplishment in number of units built, with a peak at 31,113 d.u. in 1974 in both public and private sectors. The two major plans established during this period were:

- a) The Three-Year Development Plan 1973-75
- b) The Five-Year Transformation Plan 1976-80

The first Plan was much more successful in the sense that it achieved an annual rate of dwelling construction of 25,598 d.u. while the annual rate of the Second Plan was 16,000 d.u. The high rate of housing construction was attributed to the large scale involvement of the private sector. For 1973-75 Plan this sector achieved 188% of the expected number (26,000 d.u.) while the public sector managed only 43.6% of its target (64,000 d.u.). There were three main reasons for the private sector achievements:

- a) A great number of loans was generated during 1974 alone

- (LD 48.0 m for 6,268 d.u.) for people to build their individual houses, the execution period of which was usually short. Another LD 32.87 m were also granted in that year for private developers to build 4,032 d.u.
- b) The Urban Evolution Act of 1972, which fixed land prices and also enables loans to be granted to private developers for housing investment.
 - c) The 1974 Act, which regulated the selling of public land to the private sector for housing construction on quite easy terms.

Even 1975 figures for housing construction indicated a higher rate in the private than in the public sector, despite the drop in the number completed in that year by both sectors (only 28,277 d.u., 63% by the private and 37% by the public sector). The labour force involved in construction activities at that time represented 23% of the total labour force involved in the national economy, 75% of which was foreign manpower (H. Directory 1969-75). The percentage of foreign labour employed in construction has always been high: in 1970 it was 71% and it was expected to be 79% by 1980, but the expansion of the non-Libyan work force came to a halt in mid 1977 and construction activities have been hampered by the problem of insecurity of an adequate foreign labour force since then (E.R.I.T.P. 1978).*

* E.R.I.T.P. 1976-1980: Evaluation Report on the Implementation of the Transformation Plan (1976-80) during 1976-78 and Prospects for 1979-80 Secretariat of Planning 1978.

The improvement in housing conditions arrived at in 1975 was due to the 110,200 d.u. added to the housing stock during 1969-75, of which 41,432 d.u. were built by the public sector and 68,780 d.u. by the private sector. The corresponding figures for the 1976-80 Plan period were 80,329 d.u. total of which the public sector constructed 32,185 d.u. and the private sector 48,144 d.u. However, the average number of houses completed during the years 1971 and 1975 was about eleven d.u. per 1,000 people. By way of comparison, in both market and planned economies, the rate of accomplishment at the beginning of the 1970s tended to be within the range of 6 to 10 d.u. per 1,000 people. Britain, Italy and East Germany were among nations with a rather lower level. Sweden provided nearly 13 units and Japan nearly 17 d.u., but they were exceptionally high figures (Ward, 1976). Nevertheless, despite the high rate of population growth, Libyans have maintained more or less the same average of 11 units per 1,000 people throughout the 1970s.

The following table (3.4) shows the various shares in the construction of dwelling units during the years 1969-75 and 1976-80. The estimated future housing situation is shown in Table 3.5.

Table (3.4) : Activity in Housing Construction by the Public and Private Sectors (1969-1980)

Sector and Authority	No. of Completed Dwelling Units 1969-73† + 1963-75*	No. of Completed Dwelling Units 1976-80
a - Public Sector		
Ministry of Housing	3,000	
General Housing Corporation	36,863	28,381
National Investment Company	284	985
Real Estate Investment Company	-	128
Ministry of Social Security	-	384
Ministry of Land Reclamation	1,017	2,307
Ministry of Agriculture	236	-
Awkaf	32	-
Total a	41,432	32,175
b - Private Sector		
b.1 Assisted by loans from :	58,257	16,164
i - Industrial and Real Estate Bank	33,441	-
ii - Commercial Banks	24,816	-
iii - Cooperatives	-	11,534
b.2 Private Savings	10,523	2,500
Total b	68,780	48,144
Grand Total	110,212	80,329
Fulfillment of target	85%	53.3% of the plans
Allocations	770.0m	1194.3m
Cost	623.5m	-

* Housing Development Project

** 1981-1985 Transformation Plan.

Table (3.5) Housing Situation : Past, Present and Future 1963-2000

	1963***	1969**	1975***	1980*	1985*	1990*	1995*	2000*
No. of Families	258,000	365,000	428,000	511,000 (531,035)	625,000 (663,748)	759,000	906,000	107,000
No. Living Places	189,000	300,000	380,000	452,000 (410,319)	559,000 (548,638)	701,000	880,000	107,000
The Deficit in D.U.	69,000	65,000	48,000	59,000 (120,716)	66,000 (115,110)	58,000	26,000	-
Substandard Places	45,000	120,000	117,000	35,000 (16,500)	20,000 (20,515)	-	-	-
Rate of Occupancy								
a - in total living places	1.37	1.22	1.13	1.13 (1.29)	1.12 (1.21)	1.08	1.02	1.00
b - in standard D.U.	1.79	2.02	1.63	1.23 (1.35)	1.16 (1.26)	1.08	1.02	1.00

Sources :

*** Doxiadis 1964

** Housing Development Project UN 1977

* Housing Programmes Y. Abdullah 1977

() Figures piled from the Transformation Plan 1981/85

During the 1973-75 Plan the target was 90,000 d.u., the public sector achieving a performance rate of 85.3% against 272% in the private sector. Under the Five Year Transformation Plan 1976-80 about 150,000 d.u. were planned to be built, 80,000 d.u. by the public sector, which only achieved 40% (32,185) of the target, and 70,000 d.u. by the private sector, which only managed to fulfil 68% (48,144 d.u.) of that target. There has been a shortfall in the rate of housing construction from an average target of 30,000 d.u./year throughout the period to an achievement of 16,000 d.u./year. According to the Evaluation Report of the Plan (1978), this can be attributed to the sudden drop in the number of dwelling units built by the private sector, whose share in the total number of completed units fell from 65.7% in 1975 to 43.4% and 22.7% in 1976 and 1978 respectively. A further decrease was expected, but the adoption of the new housing policy proposed in the 1981-85 Transformation Plan probably will halt the trend (see fig.3.5).

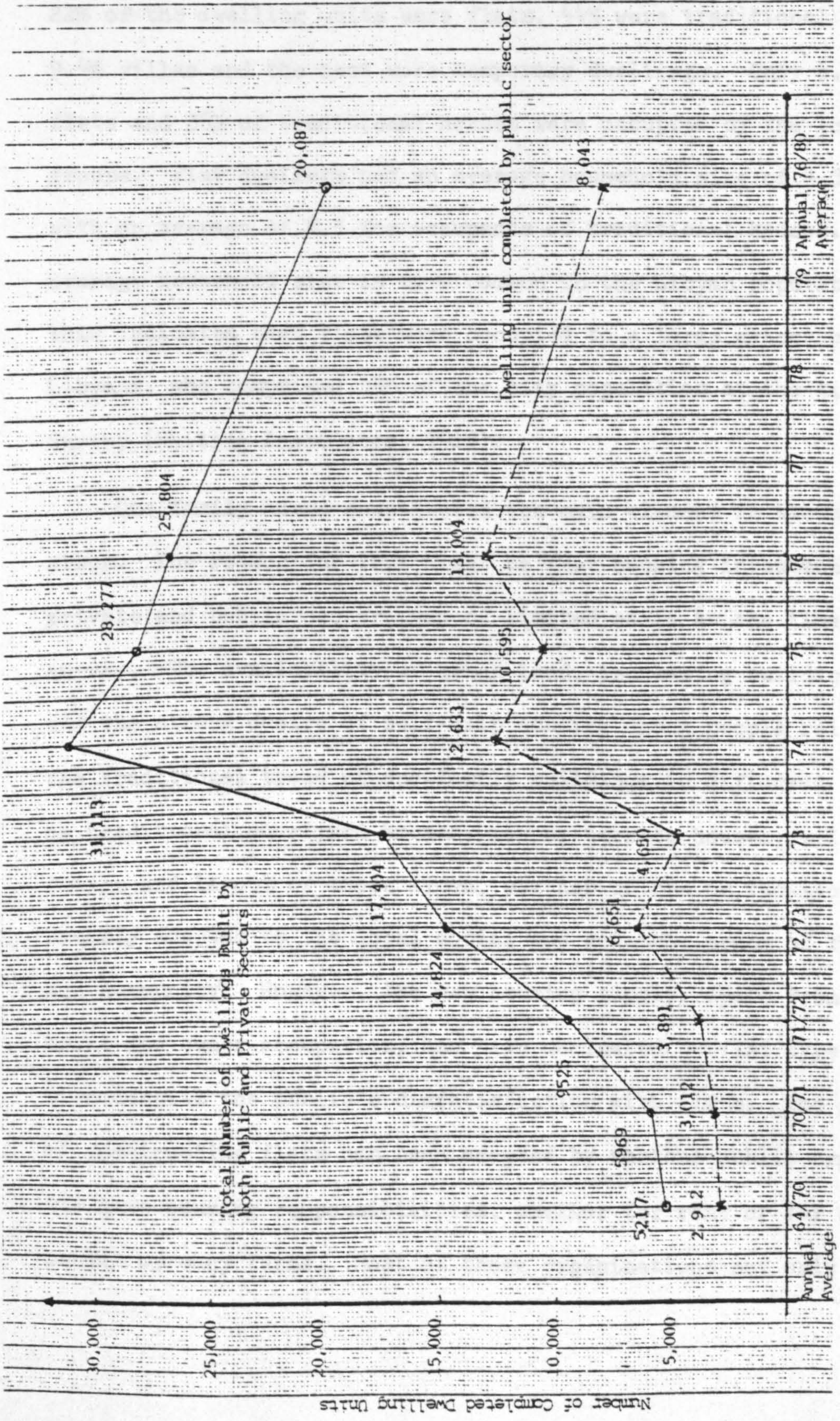


Fig. 3.4 Annual Rates of Housing Construction

3.4 Trends in Public Housing Design and Layout

The 1966 survey in Tripoli by Whiting Associates revealed that 22% of the dwelling units were flats, 44% were traditional houses, 9.4% villas and the rest were temporary dwellings. Only 6.8% of the flats and 36% of traditional houses were occupied by the low income groups. Flat dwellers had an average household size of 4.5 compared with an average of 6.5 for occupants of traditional houses. A high average household size is more common in the Libyan population and this indicates that flats were occupied to a large extent by non-Libyans, who comprised 14% of the city population at the time of the Survey (Whiting Associates, 1969).

One family house constituted the main element in the dwelling stock. The reason for this might be that housing investment of both private and public sectors was of limited scale at the time of the survey. The availability of urban land, increasing building costs and the strong desire of self-help housing among people reinforced the traditional trend of one-family buildings in different forms such as traditional courtyard houses, row or terrace houses, villas. The design and layout of these types, whether of one or two-storey, were usually adapted to the local social and economic needs of the residents and community. However, the new housing supply, apart from houses built for owner-occupation, has been dominated by flat type accommodation, despite the public's dissatisfaction with flats. The practice of constructing flats has been adopted by various public organisations who have housing responsibilities, whether for rent or for sale on normal or easy terms. Most of these organisations not only follow

the same general patterns of design, composition and construction system, they also often repeat their prototype designs in different regions of the country. There has been no attempt or proposal to build housing meeting traditional specifications. This attitude is not confined only to the public sector: private developers adopt the same trend. Almost all dwellings built over the last ten years are in the form of multi-family accommodation, ranging from 2 to 13-storey blocks of flats which are quite unsuitable for Libyan families.

The design of most flats and the layout of most estates has ignored the traditional needs of the Libyan family or community. These needs still exist, and will do so for a long while, and must be taken into consideration in housing projects. The vast area of the country includes regions of climatic, topographic and social variations, which have to be taken into account if satisfactory housing environments are to be achieved.

The 1969 U.N. Housing Design Advisory Report included a review of the designs of the projects under execution and a set of recommendations about changes in the designs, preparation of standards, building code and data sheets as well as advice on research to be carried out, required designs and the formulation of programmes.

The advisor listed what he then thought were the common criticisms of the design of the housing projects:

- '1. Lack of privacy.
2. Ill ventilation in some cases
3. Lack of architectural composition of various components
i.e. living bedrooms, kitchen and toilet.

4. Substandard specifications and workmanship.
5. Within the same covered area, a compact plan well laid out is possible.
6. Improper location with regard to local housing demand.
7. Uniform type design for all regions in Libya.'

(U.N. Housing Design Advisory Report 1969/6)

The type of designs the expert dealt with were based on 3,4,5, or 6 rooms with different covered areas ranging from 116 m² to 244 m² in single floor, villa type, four storeyed and multi-storeyed blocks of flats. Examples of these types are shown in fig. 3.5.

The expert realised the importance of privacy and segregation of the activities of men, women and guests. He knew also that people are accustomed to larger areas than those provided and that large rooms are preferred. In spite of all that he pointed to the spaciousness of the dwelling units and recommended a decrease in floor areas to between 90 and 150 m² for the low, middle and high income groups into which he divided Libyan society. He recommended the following type of units for each of these groups:

- 'a) For the lower income group:
Living-cum-guest room with 2 or 3 bedrooms of minimum size with two toilets, kitchen and parking space.
- b) For the middle income group:
In addition to "a" above, there should be a guest room, a store, larger rooms and a covered or uncovered parking space.
- c) For the higher income group:
Another bedroom, in addition to "b" above could be given.'

(U.N. Housing Design Advisory Report 1969/6)

Fortunately these recommendations were never adopted, mainly

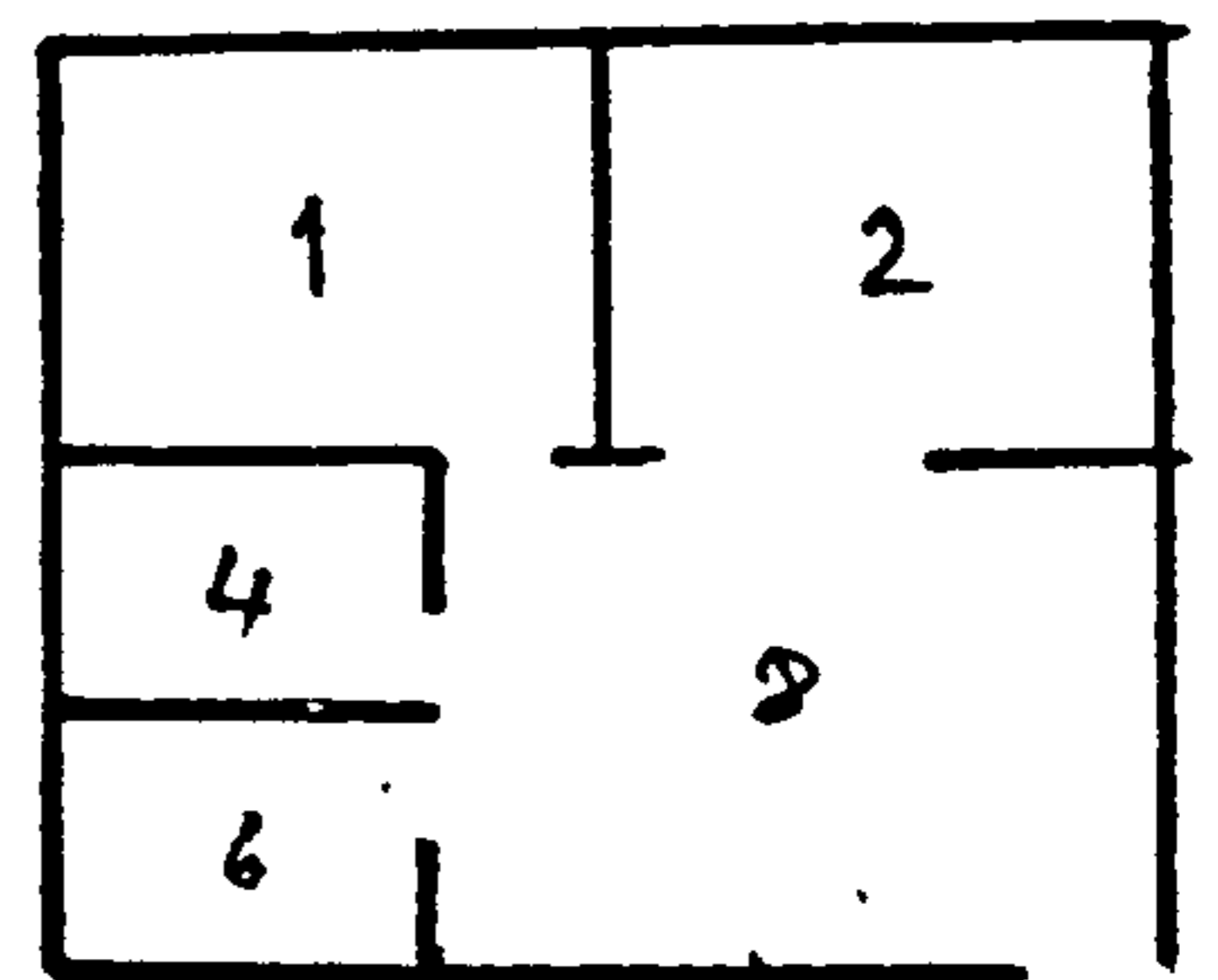
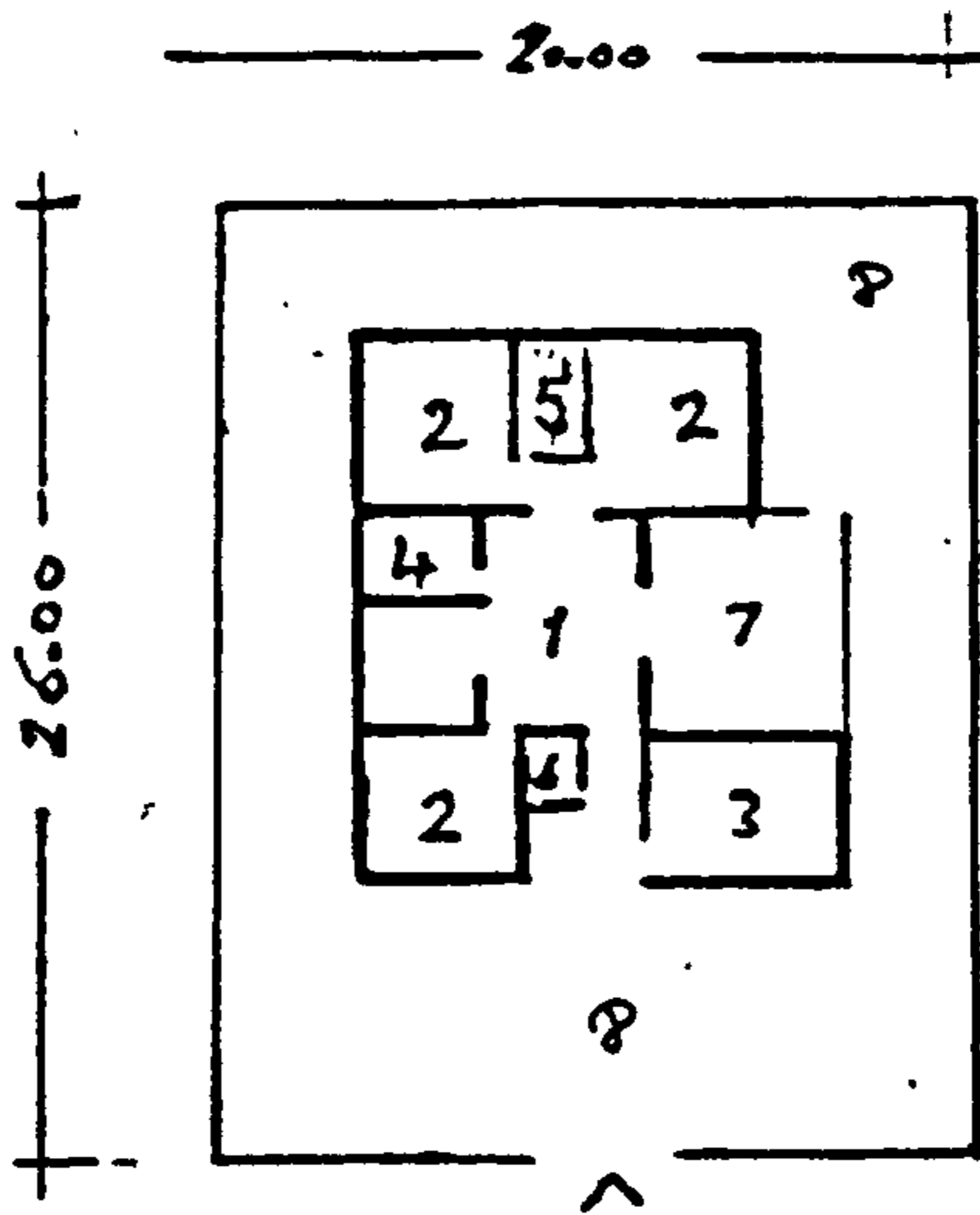
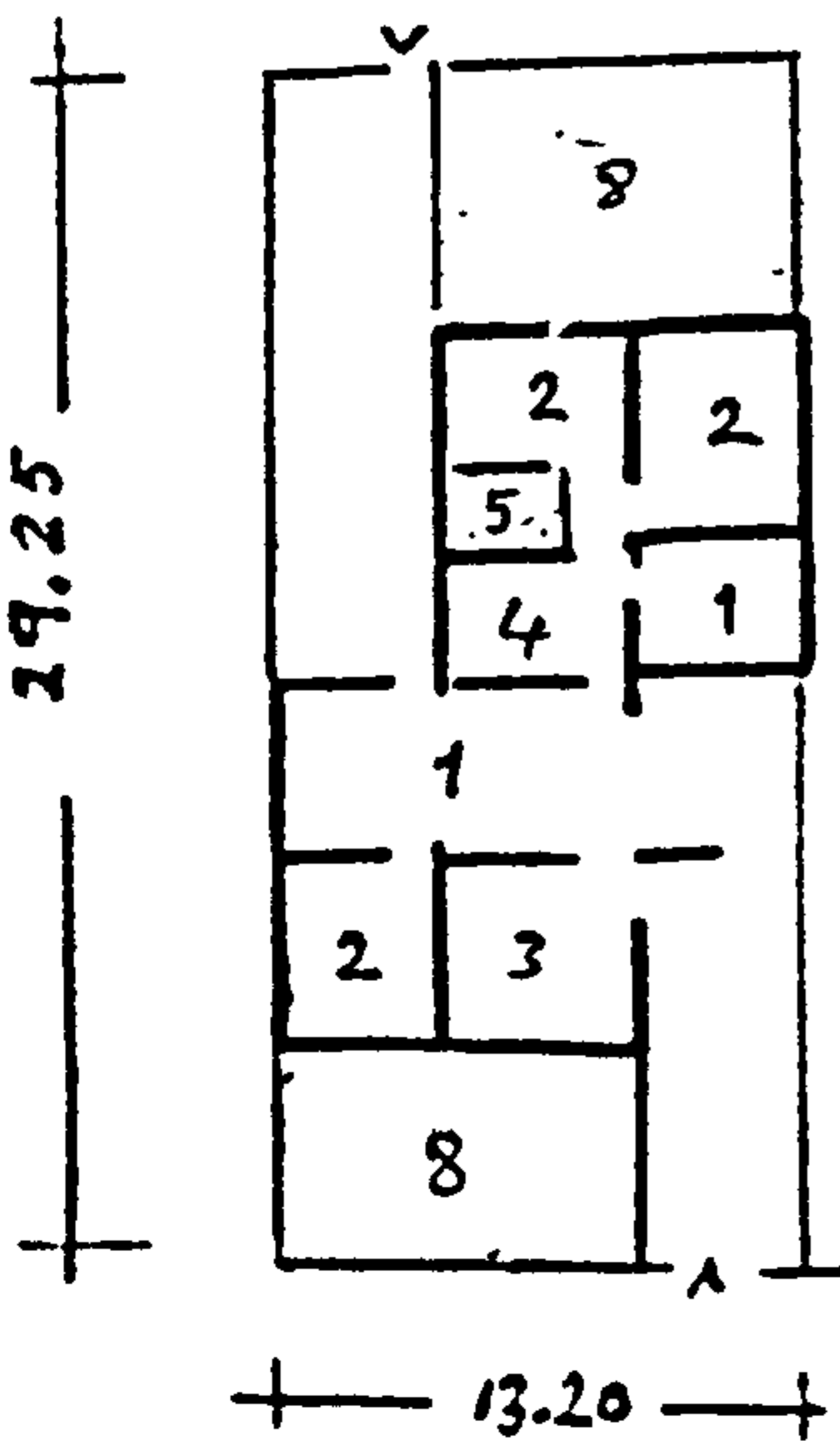
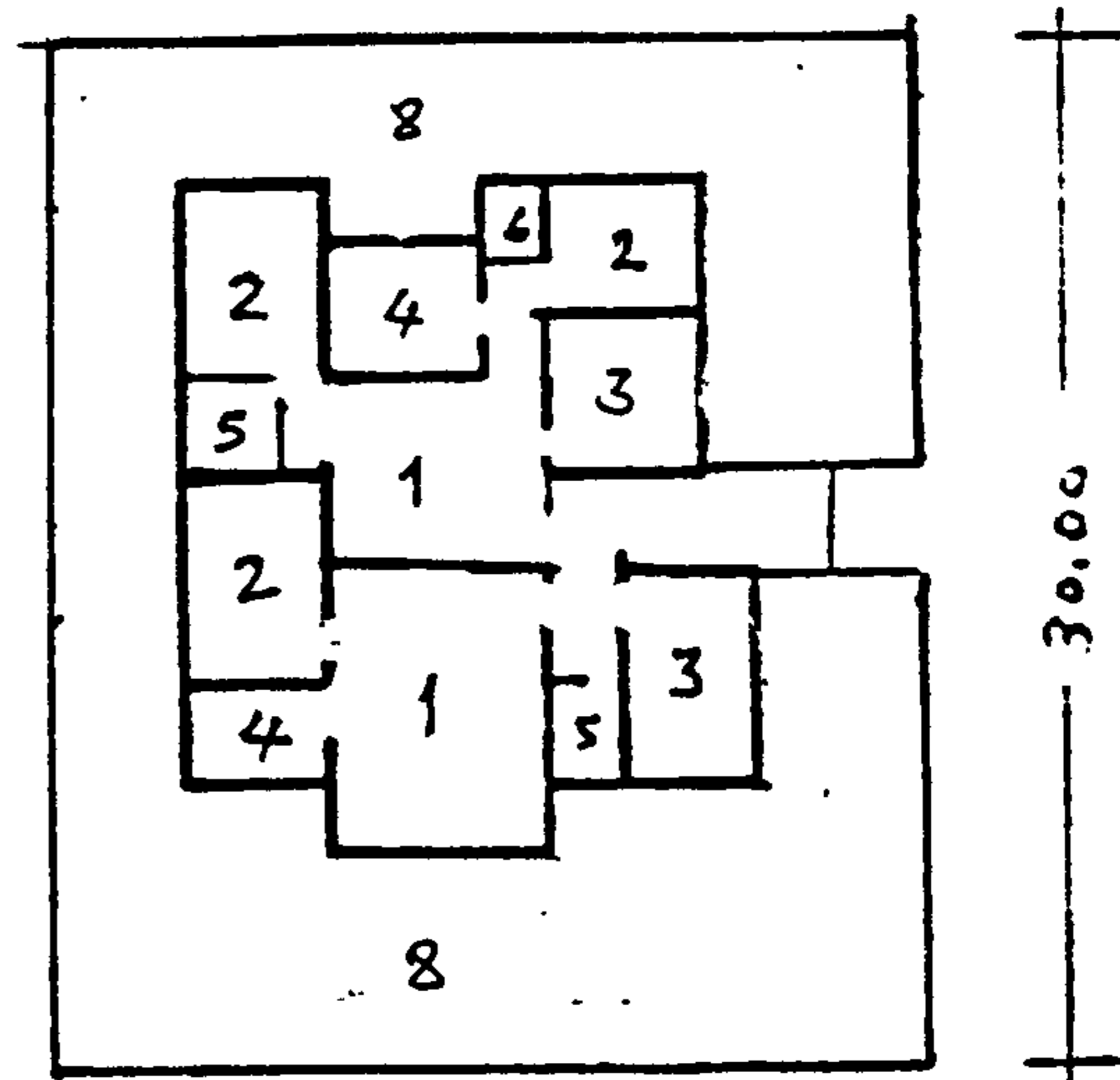
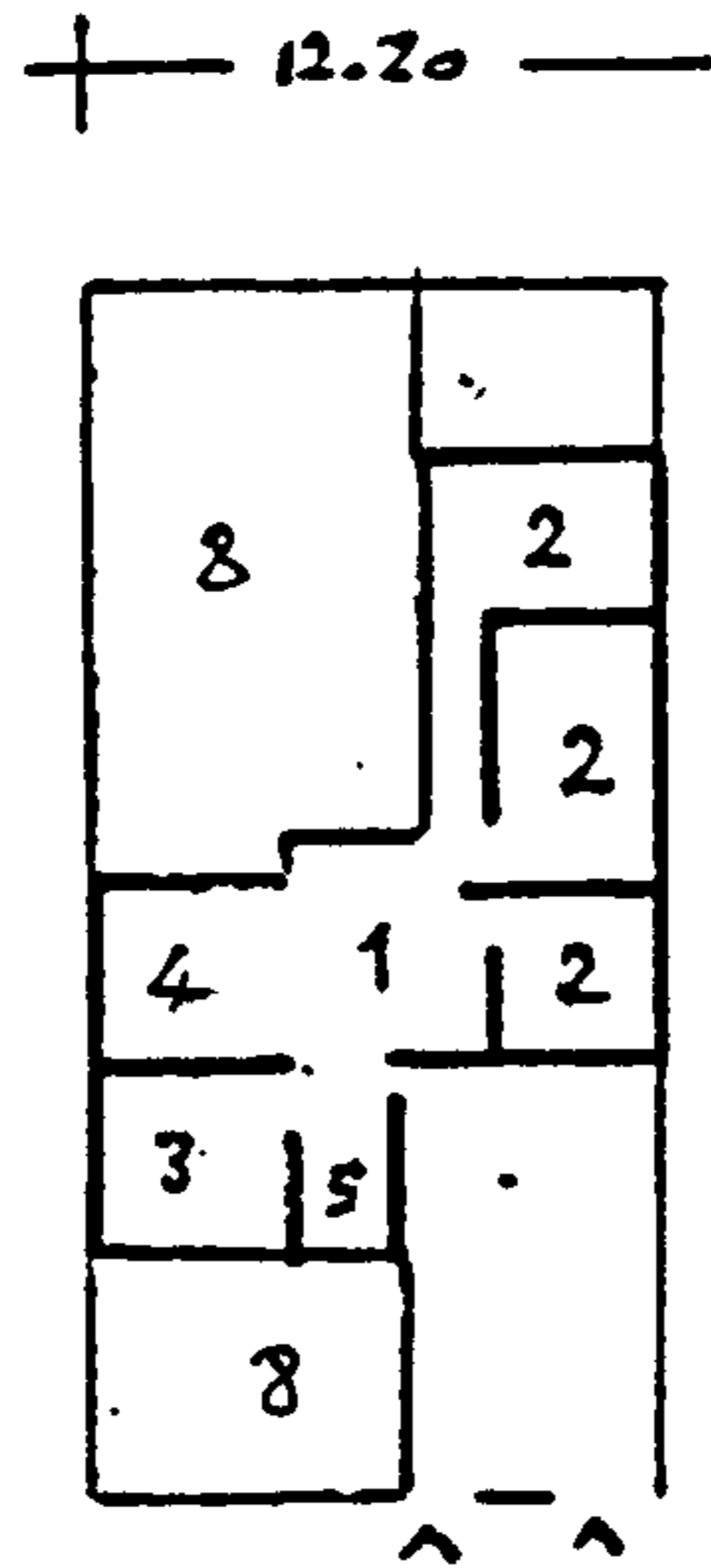
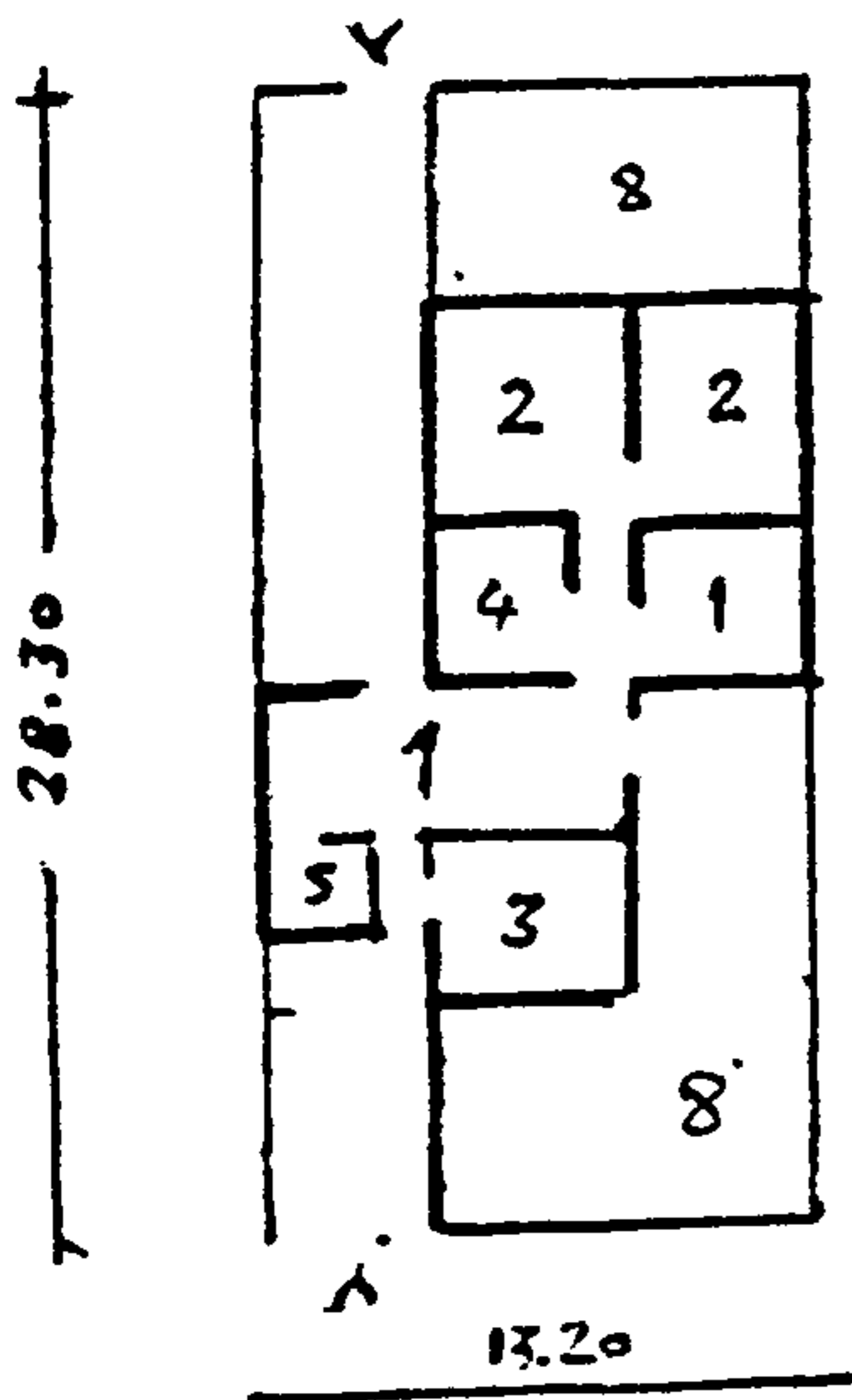
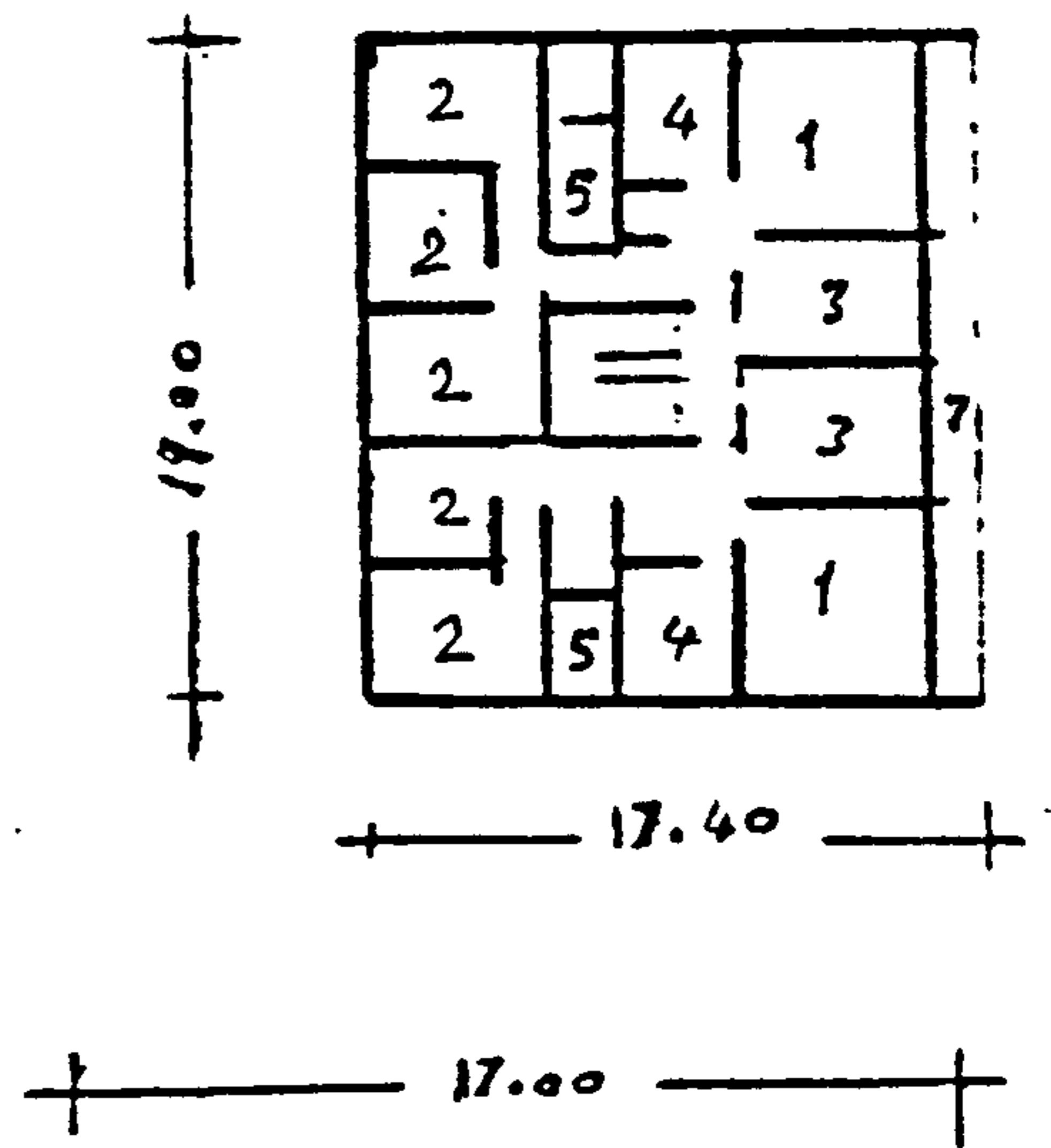
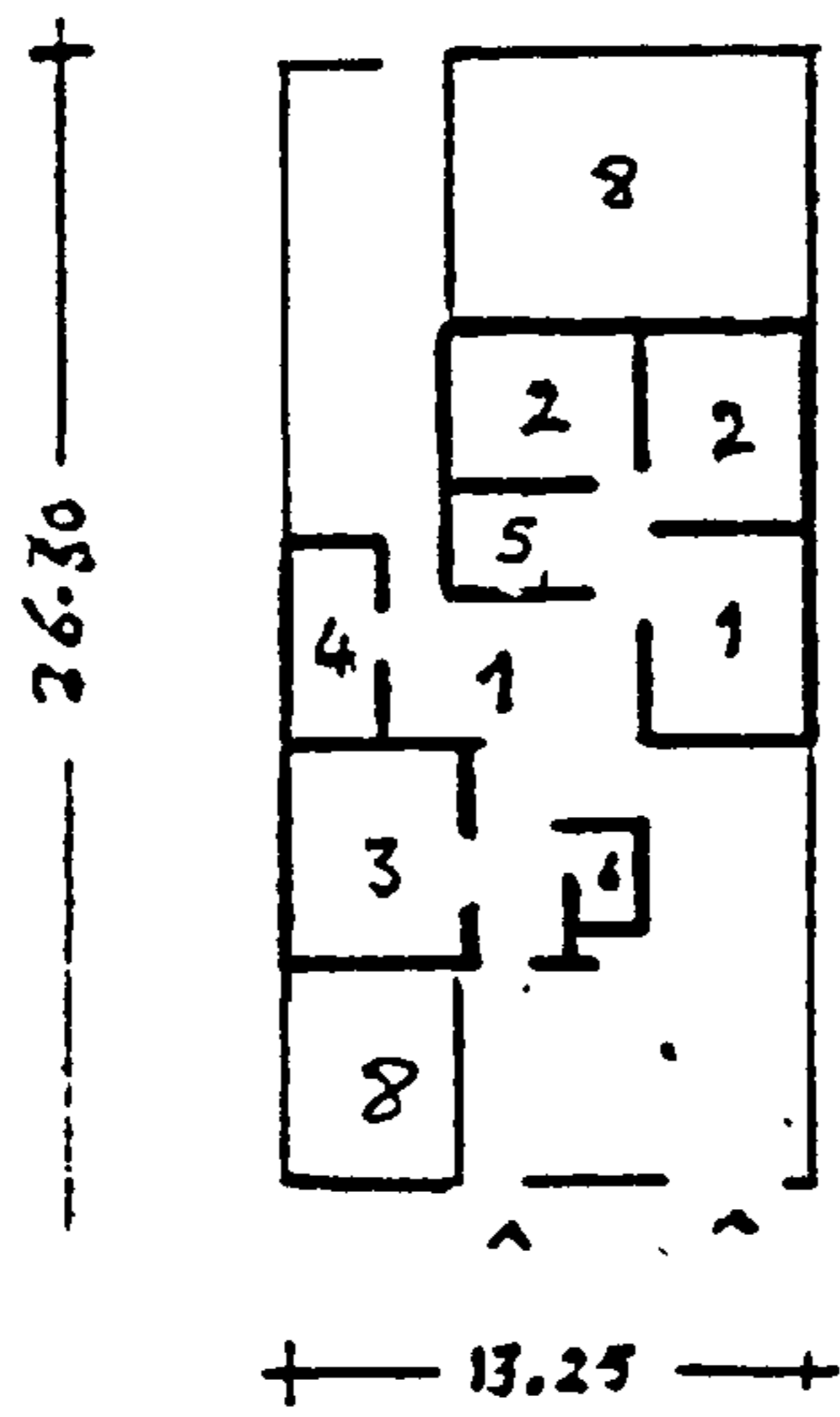
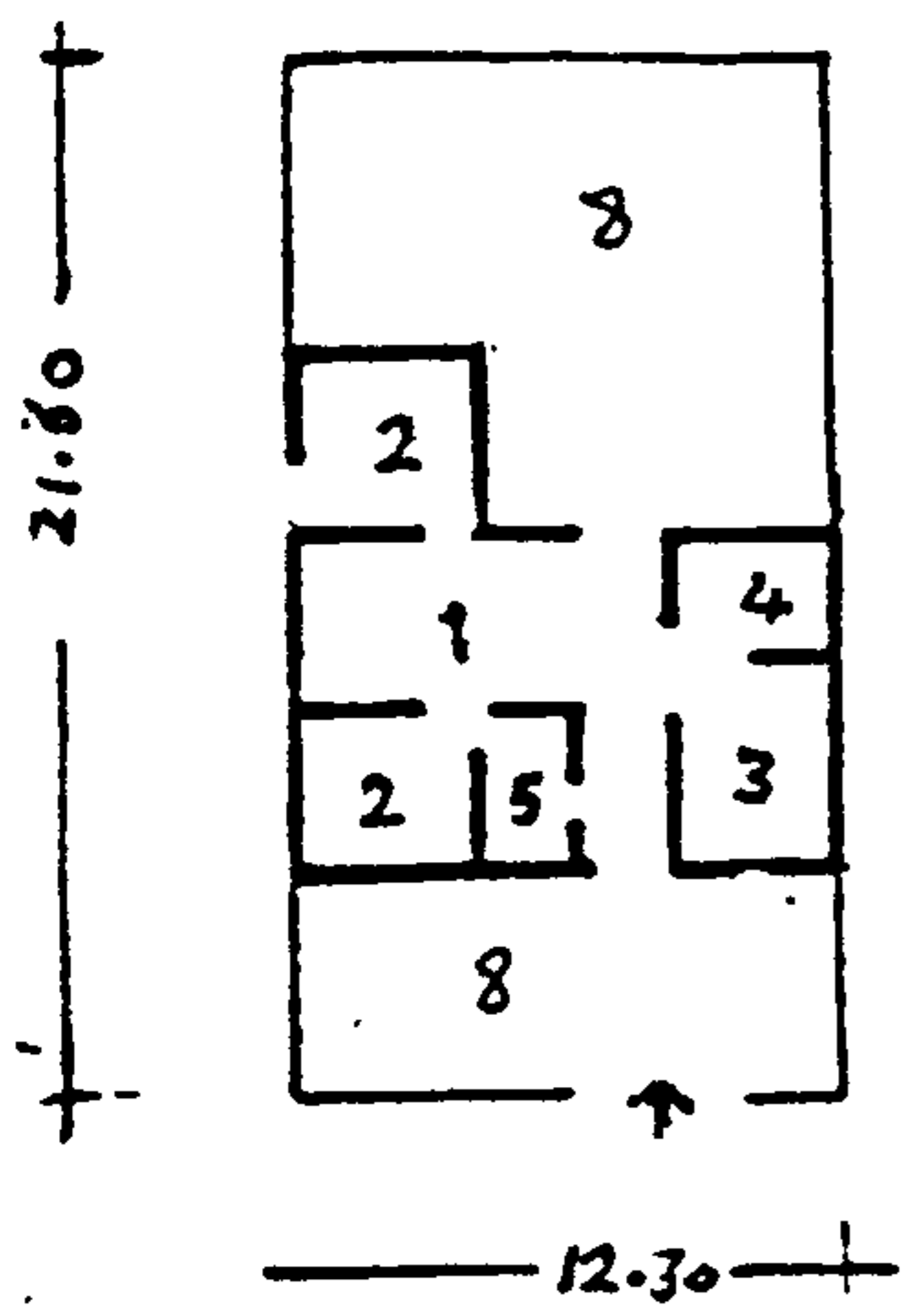


Fig. 3.5 Examples of Housing Design in 1960s

1. Living room
2. Bedroom
3. Guest
4. Kitchen
5. Bathroom
6. W.C
7. Loggia
8. Garden

because after the revolution on 1st September 1969 the housing institutional framework, policy and concept changed and were adjusted to suit the overall transformation of socio-economic and political conceptions in the country.

The nature and magnitude of the housing problem, together with the serious lack of necessary manpower required to solve them, have been so acute and the need for a much larger housing output has been so great that very little thought has been given to the social and environmental quality within or outside the dwelling units. However, as the housing output was at its peak in 1974, GHC felt the need for a comprehensive guide for housing design, based on customs, living style and standards and the needs of the family as well as the community.

A Consulting Firm, Buchanan & Partners submitted the Housing Design Manual, a 4-volume comprehensive study commissioned by the GHC.* The manual is intended to form a source of reference to designers, administrators, contractors and consultants. The four related volumes deal with planning roads and public utilities, dwelling design and specifications. Each ranges from broad policies to detailed standards as well as a set of recommendations related to each topic. The study considered carefully almost all the essential aspects of housing in Libya and the important requirements of the individual, family and community. The point is made that policies, standard, and recommendations should be considered, adopted and implemented in

* G.H.C. : General Housing Corporation (see 4.4.1). Some references refer to it as N.H.C.i.e.the National Housing Corporation.

conjunction with each other. Desirable though this may be it is impractical in the sense that different aspects of public housing involve different authorities or organisations. Were GHC to adopt the dwelling design standards, it would not oblige other authorities dealing with roads, public utilities, to adopt what is recommended for their aspects of housing. Sometimes the Housing Control Department within the Ministry of Housing has not considered recommendations concerning dwelling allocations, many families with young children being accommodated in flats in tower blocks about which the consultants have strong reservations.

The study is the most comprehensive one available and has many practical and positive points, but it is questionable if it is going to be much more successful than Doxiadis Study despite the differences in the context and conditions.

The flat-type housing projects are generally encouraged by both sectors so that any block, or blocks, of flats can be easily devoted to other purposes; offices, hospitals, or schools. Quite a number of high blocks of flats built by the public sector have been occupied by Ministries and other public administrative organisations. Blocks built by private developers were rented for purposes other than family residences by both sectors. All this contributed to an insufficiency in the supply of housing to meet requirements both quantitatively and qualitatively.

The misuse of accommodation within the housing sector has led to a great deal of waste in terms of floor area, appliances and cost, quite apart from that caused when flats are used for non-residential

purposes. Waste occurred when a high percentage of flats built for middle income groups were allocated to shack dwellers in spite of the unsuitability of these dwellings to their needs in terms of size, structural form and architectural composition, let alone in social and environmental aspects. The shack dwellers have been given flats without any of the essential preliminary studies of social, technical, locational, economic and other considerations. The preferences, wishes and desires of the future dwellers of flats have never been considered. The middle-income groups suffered most when housing demand increased and hence led to a drastic rise in rents. The Rental Act 1976 did not ease the problem: in fact it made it more acute (H.D.P. 1977).^{*} Rental complications mainly affected the middle-income groups who are not poor enough to be eligible for government houses nor rich enough to build their own. In 1976 some relief was offered to these groups, for when private developers could not carry on housing investment activities as a result of the suspension of the Urban Evaluation Act, private individuals became eligible for interest-free loans to build private houses for their own occupation. However, the 1978 law reduced the investment of private capital in housing and led to a re-evaluation of rents paid to the government.

* (H.D.P. 1977): A Project of Housing Development prepared for the Government of Libya by the United Nations, O.T.C. for the U.N. Development Programme. 1977.

3.5 Public Housing and Physical Planning

3.5.1 Physical Planning

For historical reasons and because of the nature of recent socio-economic changes, Libya has been confronted with tremendous tasks in all areas of development, including the growth of urban settlements. Physical planning and development control was completely absent until 1969, when final formal approval was given to a 1966 scheme for an extensive mapping and inventory preparation programme and for the making of Master and layout Plans for all major settlements (31 MP and 152 LP), backed by a Planning Law and legislation for the first time. Studies and Plans were prepared by four consultants commissioned for that purpose in 1966, as a first step towards the establishment of a framework of revising, controlling and guiding urban growth. Four major settlements, Tripoli, Benghazi, Beida and Barce as well as two other minor ones, Suani Ben Aden and Al Jmeel had had development plans prepared at various times in the past by different agencies, but of these six, only Tripoli and Suani Ben Aden were included in the 1966 scheme.

3.5.1.1 Tripoli : Physical Planning History

During the period of Italian rule (1911-1943), planned development occurred only for military and colonial purposes. Tripoli was the first and perhaps the only settlement in the country to have a plan before the war. In 1936 the "Regolamento edilizio per la Citta di Tripoli" was drafted for a population of 70,000 inhabitants (Nerfin, 1965). Another master plan was prepared for the city by Professor C. Valle in 1958 (Doxiadis, 1964). Although this plan was never formally

approved, it was considered to a great extent in the development of the city. The Municipality of Tripoli changed this plan into a zoning plan with the appropriate specifications and this was approved by the Municipality council in 1963. A great deal of it was implemented between 1963-1969. Earlier in 1962, W. Podwapinski, United Nations Adviser for housing and planning, prepared a general master plan for the Tripoli Metropolitan Region, which basically covered the area of the present Municipality of Tripoli. The master plan, which included Professor Valle's plan proposals, was extensively followed until the approval of the current Master Plan, prepared by Whiting International Associates, in 1970 (M.S.H.S.P. 1966).

The 1966 Planning Scheme aimed to provide an effective process of positive policy-making and decision-making, a continuous revision and adjustment of plans, together with the codification and maintenance of inventories and updating of surveys. This extensive set of tasks has been beyond the capacity of the available professional and technical personnel. As far as housing is concerned for obvious technical and other reasons, including rate of growth, timing, changing policy, lack of know-how, it has not been possible to correlate housing programmes with the findings and recommendations of the Plan, most of which are already outdated.

3.5.2 Housing Programmes in Plans

The four consultants commissioned in 1966 to prepare comprehensive master plans and layouts included various proposals for housing programmes and locations for residential zones in their land use maps.

Whiting Associates proposed housing programmes as a part of the Master Plan of Tripoli Urban Area which was approved in 1970 and has been in force ever since. The Master Plan anticipated a total need for new dwelling units from 1966 survey* year to 1988, the planning target year, as 144,540 dwelling units. The programme referred to several ways of improving housing supply:

- a) Local Authorities sponsored construction activities
- b) Self help schemes
- c) Co-operative Building Societies
- d) Housing Loan Programmes
- e) Industrialised Housing Techniques
- f) Introduction of New Building Materials
- g) Sponsoring of a local Building Materials Industry
- h) Construction Training Programmes

The consultant, using the output of his survey and the insights gained by his housing analysis, developed density patterns and assigned percentages of population for the year 1988 to each density group. Accordingly, gross residential land requirement was calculated for the estimated population of 930,000 in the target year (1988) (see Table 3.6).

A great deal of the Master Plan has been adopted and adhered to mainly by the Municipality of Tripoli through the private sector and semi-public housing organisations. Unfortunately, the public housing

* The survey was undertaken by the firm as part of the contract.

Table (3.6) : Future Residential Density Patterns

	Average M ² per d.u. (Land)	d.u. Site & the Supporting Increments of Land m ²	1966	1988	Average Persons per d.u.	Total d.u.s	d.u. per Hect.	Population per Hect.
Verh High	30	123.4	1.0	5.5	4	10,000	81	324
High	70	754.7	15.0	21.0	4.5	40,000	53	238
Medium	150	4,237	75.0	62.0	6	113,500	27	162
Low	600	1,727.2	8.5	10.0	5	19,000	11	55
Very Low	1,000	142.9	1.0	1.0	4	1,000	7	28
Total		6,451.9	100%	100%		183,500		

Source : Tripoli Master Plan 1969 by Whiting Associates International and Partners.

organisations, especially the General Housing Corporation which was between 1970 and 1978 responsible for the construction of the largest number of public dwelling units, have hardly considered the Master Plan, land use allocations or building regulations adopted by the municipalities concerned. The public housing organisations have always been interested solely in the numbers of dwelling units they build and not with other considerations. Moreover, the lack of co-ordination among the various housing institutions and the planning authorities is usually the reason for the unavailability of urban land suitable for public housing projects at the right time, in the proper location and subject to appropriate priorities. The municipalities usually define the sites on which projects are to be undertaken. Whether the concerned municipality or one of the housing authorities choose the site (or sites) they often look for government-owned free land without any real consideration of the use originally allocated to it in the formal Plan or to the possibility of suitably balanced and integrated physical development. In Tripoli a major housing estate of 875 flats in 173 (4 - 13 - storey) blocks was established in 1974 on the periphery of the city Master Plan for 1988. Another housing estate was established in the early 1970s on a site which was allocated in the Plan as a future major industrial zone. No doubt that created and will continue to create many inconveniences and problems, especially with regard to roads, traffic, utilities, facilities and population densities.

3.5.3 Regional Planning

Planning at the regional level is being carried out through the

various socio-economic plans of the government. The nature of the 1966 physical planning scheme made it difficult to introduce many regional considerations into the Plans. The scope of physical planning as such at the regional and national level is still very limited, but there are two relevant projects

a) Italconsult Study 1973-2000: As planning became fashionable, Italconsult was commissioned in 1973 to undertake a comprehensive study of population re-distribution. The outcome of the study, in 1976, was a Settlement Pattern Study at national, regional and local levels. The study is related to the current development characteristics and trends and aims at a long-term settlement policy stemming from three basic considerations:

- 1) National goal of improved living conditions for all Libyans
- 2) Better utilisation, investment and distribution of national resources
- 3) Strategic distribution of population according to potential areas for physical development.

The study highlights the problems and sets up sectoral recommendations at different levels and hierarchies.

b) National Physical Perspective Plan 1981-2000: The draft of this Plan, issued in 1979, was prepared by a joint team from the UN and the Libyan Government. The aim of the project is referred to in the Plan as:

- 1) 'Prepare National Physical Perspective Plan that will integrate economic, social and land use policies and programmes, by means of appropriate maps, technical reports, charts, etc.

- 2) Establish a framework including definition of planning boundaries guiding developing principles with respect to each region, physical planning standards and design norm etc. for the detailed planning of defined regions and selective settlements within the respective regions work which will be sub-contracted to private firms.
(N.Ph.P.P. 1979)

This draft has been submitted for formal approval.

Physical planning at the regional and national level in these studies has been linked with the regional and national economic and social aspects of planning such as: migration, manpower, urbanisation. Housing problems in the context of urban, regional and national development which enable or substantiate the framework of priorities in the provision of housing have been elaborated in spatial terms. The studies have not, however, dealt with housing in any detail.

3.6 Problems and Deficiencies of Public Housing Development

The housing sector has particular human and commodity requirements in all stages of housing provision. The activities involved start with the definition of problems and conditions and progress through the calculation of demands for housing, setting up plans and programmes to meet the defined needs, and establishing agencies and institutions to supervise and execute housing projects. With the completion of construction, the functions of housing allocation, management and maintenance are added. Without an integrated framework for a sound housing system, taking into account current factors and trends, the provision of adequate houses within a suitable urban context and a satisfactory residential environment at reasonable cost, ensuring equal opportunities and justice among diverse groups and settlements, is a very difficult task. Within the framework of past housing policies and systems, the development of the housing sector during the periods discussed in this chapter was affected by many difficulties and constraints as well as by deficiencies in the systems that were established. The most apparent problems are the related ones of shortage of skilled manpower and lack of knowledge and experience. These barriers to the achievement of the specified targets have affected the performance of housing agencies for many years and can be expected to continue to hinder progress and achievement.

3.6.1 Social and Environmental Aspects

In considering the development and implementation of housing policies and programmes in Libya, a number of observations can be

made about deficiencies in the programmes in terms of inadequate attention being given to social and environmental factors:

a) Economic prosperity, the rate of change in standard of living, the availability of cash and urbanisation have been accompanied, at a disproportionate rate, by changes in social values and concepts.

The disregard of certain traditional attitudes which are still valid, and the adoption of imported western patterns, causes housing to become functionally obsolete before it has physically deteriorated.

b) Housing projects have not always been conceived and executed within a physical integrated frame, including the necessary services and utilities. The range of services which are necessary to turn a group of dwelling units into an active community are very rarely built in time to play their role and, in some cases lag behind indefinitely. Hence, the schemes become extra burdens on existing facilities or are inappropriately located in relation to them.

c) Many housing projects are planned and designed before the site is decided on and most of them are built in areas and at scales that are inconsistent with the official Plans. In many cases the recommendations set out in the plans and the legislation which backs them are ignored, regardless of the consequent effects on land use disposition, pattern of population densities and the provision of infrastructure and services.

d) In evolving housing projects there has been no system of feedback about the type and size of dwelling units that suit families, from a social point of view and the patterns of daily activities or way of living. Repetition and standardisation in design, as well as

in other aspects of housing activity, are part of the trend to simplify, speed up and increase output. It is doubtful if the way to ensure the physical and social integration, which is a prerequisite of an environment of quality, lies in following this trend.

e) In the early projects, monotonous standardised housing - block architecture dominated the townships of "public housing estates".

In the 1970s, some quantitative and qualitative tendencies to improvement took place, they still did not include full consideration of social, cultural and environmental factors. Compromises in the design approach have yet to reflect such factors.

f) The design approach and mode of construction have quite often been inconsistent with locational circumstances, site implications and local requirements of social and environmental aspects of housing.

3.6.2 Manpower

As has been stated, housing machinery in the country has seriously lacked the necessary manpower and this has severely affected all efforts to improve housing conditions. Although shortages of local qualified professional and specialised personnel shortages have affected all areas of development effort, they have been especially apparent in the housing sector. The shortage extends to associated professional and skilled workers and can to some extent be accounted for in a bias in Libyan society against manual work in favour of white collar office jobs. This has the following implications:

a) The local professionals and specialised manpower are insufficient in number to meet development demands. Qualified Libyans are usually

assigned to high grades and key positions within a short period of their graduation. As a result, most of them usually lose the interest as well as the incentive to acquire skill and technical experience or to be involved in technical operations. Even people with an intermediate level of skills and qualifications, including foremen, technicians, draughtsmen and surveyors, are easily promoted and become much less involved in practical operations and fieldwork. All agencies and organisations, especially government departments dealing with planning and housing, suffer from the shortage of such people, especially of those who are willing to make a serious contribution to overcoming problems (H.D.P. 1977)

The lack of local specialised and technical personnel in all the organisations concerned with planning, design construction and management of housing has led to almost total dependence on the skills, judgement and advice of imported experts, who in many respects are not always familiar with the country's culture or its social and administrative system. A common pattern is for such experts to leave the country on the termination of their (usually short term) contracts or for other reasons just as they have adapted themselves, if they ever will, to local conditions and have started to make a really worthwhile and positive contribution.

b) Most house designs and layouts in Libya follow western patterns as they are highly dependent on foreign skill and labour as well as on imported materials: such houses are inappropriate for local requirements of Islamic philosophy, family and social life and unsuited for the climate. Local building materials, which have not yet been fully

developed, are not widely utilised. Thus, most design and site layout fails to provide the best possible physical environment.

c) The trend of house building in the private sector, mainly among the lower income groups, is towards an adaptation of the traditional house style to the contemporary way of living. Such attempts to adopt traditional specifications and composition have never been considered in major schemes because of the absence of local professional involvement in public house design and construction.

3.6.3 Management and Maintenance

Huge public and private investments have been made in the housing sector in Libya without any effective system of administration, management or maintenance. This has seriously affected the efforts made to develop better housing conditions in the country and has accelerated deterioration of housing stock. Three shortcomings in management policy may be identified:

a) Dwelling units are built to accommodate specific income groups.

Housing is sometimes devoted to other purposes or allocated to different groups without taking into account either the background of the new dweller or his desires and preferences. Inhabitants are seldom prepared for their new environment.

b) Housing projects are usually built with little or no consideration to variations in household requirements. And when allocations are made, such factors as family size, stage in the family life cycle, travelling patterns or socio-economic conditions, are hardly given any weight in occupant selection. Allocation procedures have been

very inefficient.

c) The rate of obsolescence of housing stock is quite high, especially of public housing where the management and maintenance systems have been ineffective. Communal facilities in the housing schemes, such as outdoor space, main entrances, stairs, lifts, deteriorate much faster than the dwelling units themselves which the individual occupants usually maintain properly. The misallocation of dwelling units contributes to the speedy deterioration of many housing estates.

3.6.4 Construction Problems

The capacity of the building industry is limited relative to the tremendous demands of Libyan development programmes and is badly affected by persistent constraints and problems.

Building methods and materials have become stereotyped throughout the country, and follow the pattern which was established during the Italian colonisation (Fitzmaurice, 1957). The conventional character of the building techniques is that they are labour intensive and use excessive quantities of building materials. Such building methods have not been developed or rationalised so as to economise, speed and improve housing activities (UNM.H.L. 1969). Local construction companies have a very low level of industrialisation and foreign companies, apart from different patterns of implementation, do not seem to contribute considerably to the modern conception of building in Libya.

The scarcity of qualified technical manpower, lack of experience and knowledge and absence of managerial skills are assumed to be

fundamental reasons for insufficient construction capacity. As a side effect, quality of output is sometimes poor and productivity is low. Because of the scarcity of manpower and low productivity, excessive man-hours have been involved in the building industry, causing construction costs to increase rapidly. The average cost per square metre built was LD 30, 40, and 100 in 1968, 1973 and 1977 respectively (UNM.H.L. 1969 and H.D.P. 1977). Building cost inflation is further aggravated by loose contract procedures and a lack of qualified field supervision.

The building industry depends mainly on imported building materials, the introduction of rationalisation and industrialisation of local materials having not yet been fully successful (see Appendix 4). The construction industry is severely affected by international inflation as well as by fluctuations in the demand and supply to different building materials in the world market. There is frequently a shortage of one or more of the building materials required as a result of the absence of a suitable system by which construction sector requirements can be calculated, balanced and made available: this is a major obstacle to construction achievement, whilst undue dependence on imported building materials, foreign manpower and foreign construction firms has caused the building industry to be seriously affected by political and other conditions and relationships. The lack of skilled and experienced building personnel led to the adoption of high safety factors in the designs of housing and public structures which seem to be - according to UN experts : 1969 - from a statistical point of view, to be excessive and over calculated.

Concluding Remarks

The public concept of housing, as well as the rational methods adopted to produce as many dwelling units as possible to overcome the sheer shortage of accommodation have meant that the units built have served no greater purpose than as shelters; housing programmes have been mainly a series of sites and schemes in different urban centres, varying according to the size of the project and the number of units rather than in quality. Housing has been considered in terms of quantity rather than in terms of neighbourhoods or residential communities which are an integral part of the plan of any urban settlement. In most cases the projects are exclusively of dwelling units added to the community as an extra load on existing facilities. If a project includes any ancillary buildings to serve the estate, they are usually sponsored by different governmental bodies for design, construction and finance. The provision of adequate services and other essential requirements has not been given its relevant importance in project planning. A tighter co-ordination among the different Ministries and agencies related with housing is a major factor that could make housing policies and programmes more successful.

In Chapter 4 the housing policy and its development will be discussed in the context of economic and social planning policies. Housing institutions and financial resources and systems will also be elaborated, in relation to the participation of public and private sectors and the local authorities in housing activities. A review of all authorities, agencies and bodies concerned with publicly-provided housing will be given. In addition, public housing allocation,

priority ordering and administration of sale and purchase, as well as the tenure system of publicly provided housing, will be considered.

CHAPTER FOUR

HOUSING POLICIES AND INSTITUTIONS

Having considered in Chapter 3 the existing situation of the publicly provided housing mainly in its physical context, it is important to discuss the contributing factors to such situation.

From Independence in 1951 until the early 1960s the rate of economic development in Libya was extremely slow with the country strongly dependent upon economic aid from various sources. Thus Libya at that time was characterised as one of the poorest countries in the world, with a severely retarded economy and lack of resources for economic development. However, due to the production of oil, which commenced in 1961, the economy of the country experienced a dramatic upheaval and soon switched to a path of rapid growth and comparative wealth. This resulted in the initiation of radical changes with respect to all aspects of the way of life in the Libyan population.

As early as 1958 the impact of oil had become quite perceptible. In money terms, the economy's growth between 1958 and 1962 was at an average rate of 30.5% (UN.M.H.L. 1969). In the First Five-Year Plan 1963-1968 the government devoted 70% of the National Income to economic and social development. Within this global allocation a substantial share of the funds was allocated for housing, with ambitious construction targets. Abundant finance has been the basis for generous housing budgets and ambitious development plans aiming to compensate for the great underdevelopment which existed before the discovery of oil. The

budgets allocated for housing activities in the Plans provided not only for direct construction by the government but also for loans to individuals. Government efforts have been tremendous and the goals already reached are encouraging, especially taking into account all the difficulties and constraints involved. However, the housing situation could have been much improved if an integrated framework for housing policy had been adopted, enforced and implemented.

4.1 Earlier Policies

Housing activities at one time were conducted in the absence of precise policies defining aims and stating the diverse regulations in force. After 1963, however, the government rapidly established plans and programmes and quickly created the institutions needed for their implementation. These housing programmes had general definitions, but did not result from an integrated policy defining problems, their solutions and the means of achievement, but were based more on construction decisions rather than on a system of housing provision with legal backing, necessary institutions and other facilities.

The first attempt to create a National Housing Policy was in 1963 when the Ministry of Planning and Development commissioned Doxiadis Associates, to undertake an extensive study of the housing conditions and problems in Libya and on the basis of that study to devise the appropriate housing policies and programmes to be followed in the development of the housing sector. Doxiadis submitted a detailed report in 1964 entitled "Housing in Libya" (Doxiadis, 1964).

In this report the first ever National Housing Policy for the

country was recommended. It was suggested that this policy should aim at achieving the following 3 major goals (Doxiadis, 1964):

- a) The achievement of a reduction in the average occupancy density from 1.37 families per dwelling to 1.1 families per dwelling,
- b) The elimination of slum dwellings within 10 years, and
- c) The provision of adequate community facilities.

The following basic principles for the National Housing Policy were strongly recommended:

- a) Integration with overall development policies of the country,
- b) Adoption of correctly planned approaches for overall housing improvement,
- c) Maximisation of private participation through the investment of capital and efforts in housing activities, and
- d) Differentiation of housing policies and programmes to meet the varying needs in different parts of the country.

The consultants drew up a general framework for housing which constitutes the National Housing Programme. The Programme was formulated to direct and co-ordinate all actions in the field of housing within the recommended policy principles.

The first phase of the NHP, covering the first five years, was studied separately and defined as The Basic Foundation Programme (BFP). Furthermore, in order to satisfy the most urgent needs a Special Programme of Action (SPA) was proposed to start immediately and last for a year. For the BFP, the study gave an annual breakdown

of public and private investment by location in different parts of the country. It was classified in three broad groups and consisted of three basic comprehensive programmes:

- a) Urban Housing Programme: This group comprised individual projects aiming at covering the most urgent of the contemporary housing needs of the urban centres in the form of new dwellings, slum clearance or amelioration of conditions.
- b) Rural Housing Programme: The object of this programme was to raise the living standard and to improve housing conditions in an attempt to slow down the accelerating migration from the rural areas. This programme was equally varied and comprised housing similar to the individual projects of urban areas.
- c) Special Housing Programme: This programme was conceived as individual programmes each of which was intended to provide dwellings urgently needed both in urban and rural areas to house the most desperate groups; earthquake victims, repatriates, slum dwellers, industrial workers and civil servants.

The most crucial problem in initiating plans, designing and implementing national housing programmes corresponding to the real need of the country, was the serious shortage of skilled technicians, scientists and professionals in the various disciplines involved, let alone qualified personnel and labour force. To secure the maximum number of dwelling units in the shortest time, standardisation in designs, tender documents and implementation process was imperative.

The Study envisaged the use of standardisation on a large scale. Furthermore, a Ministry of Housing was established in late 1965 to formulate, develop and implement housing policies and programmes aiming to bring the responsibility for housing under central control.

In view of the magnitude and the complexity of the housing problems of Libya, Doxiadis Associates' study of housing had many positive points and represents perhaps the most comprehensive, integrated and serious attempt to deal with housing issues, apart from the Housing Design Manual prepared by Buchanan and Partners in 1975. A great many of the recommendations and proposals were adopted either at different times and/or on the basis of different principles. Had programmes, policies and recommendations been fully considered and largely implemented, perhaps the acuteness of housing conditions would have been reduced.

The rapidly changing economic and social circumstances have made possible great housing developments by the public sector in accordance with the following general policies:

- a) To build a large number of houses through rationalised and industrialised building methods with priority for low-income groups.
- b) To encourage private capital to join the public sector investment through joint investment programmes.
- c) To conduct research and experimentation to reduce cost, simplify designs and mechanise the building industry.
- d) More use of local building materials and services.

These general purposes were defined within the different programmes

established, such as the IHP and the first and second Five-Year Plans. Such general definitions did not, however, make up for the absence of comprehensive National Housing Policy within which diverse regulations could frame the programmes. Such regulations are needed to relate to the type, size and quality of house; different income levels; allowances, incentives, subsidies all of which should be based on the findings of social and economic research.

As a Housing Policy Adviser put it (1969 : I):

"Based on the information received, there is no such definition for a General Rule for the country in connection with a National Housing Plan. As the revenues of the Government increased suddenly, and in a great amount from one year to the next since 1962, the Government has rapidly established plans and programmes for quick action creating the necessary institutions for this purpose."

Several institutions, (for example, Industrial and Real Estate Bank (1965)) and government agencies (for example, committees, councils ...) were created to meet needs as they arose. Apart from the different sections in the various Ministries, the Ministry of Housing with its several departments has been involved in housing activities. Their activities have lacked integration, co-ordination and the effective administrative and legal backing which could make the housing system work.

The early type of housing programme which: "itemises projects and expenditures but does not give locations of projects" (Narfin, 1963) was implemented in the absence of an adequate social and economic framework as well as the physical planning requirements of any effective housing policy. Moreover, both the pursuit of policies

and the implementation of the housing programmes were seriously hampered by the lack of various basic but very important elements, such as systematic methodology, established management practices and experience, statistical data and manpower as well as by the limited availability of building materials. It was proved that it is not possible to fulfil the objectives of the programme with the availability of ample funds alone.

4.2 Housing Policy in the 1970s

Since the revolution in September 1969 housing problems have gained increasingly more attention. Much larger and stronger programmes have been initiated, aiming to overcome the housing problem as soon as possible. Housing, financial and construction institutions have been created, reinforced and/or strongly encouraged. New housing policies and goals, apart from the revised existing policy, have been adopted, adjusted and/or modified as frequently as required. The financial and institutional frameworks of the housing system have been changed accordingly. The earlier revolutionary housing policy was designed to provide housing help to the largest sector of society through several means. Public housing was no longer reserved exclusively for government employees and the poor have had better chances of housing satisfaction. Nonetheless, the government's principal role has been always to help those people who can not secure housing for themselves unaided. Apart from re-establishing the Ministry of Housing four months after the revolution, a new public housing institution (GHC) was set up in 1970 mainly to design, build, finance and follow up public housing construction. More than 88% of the dwellings built by the government up to 1975 were by the GHC. During the 1973-75 Plan period, about 95% of dwelling units built by the government, consuming 96% of housing funds, were allocated to low income groups.

Government efforts were not however, concentrated only on direct construction: a very large number of loans were granted to the private sector as follows:

- a) Individual interest-free loans for low income groups.
- b) Individual low-interest loans for other groups.
- c) Urban Evolution scheme for private housing developers.

The Urban Evolution scheme was repealed in 1976 and in the same year the charging of interest on loans was abolished, no interest having since been payable by people in any income group. Within the framework of the stated Housing Policy, private investment, private/individual and co-operative housing were promoted parallel with public activity. The aim of this policy was to use the population's own resources on a larger scale in accelerating housing development. This policy increased housing construction mainly in larger cities and perhaps at a lower rate in other urban centres. The situation demanded policies in other areas relevant to housing activity to facilitate an increased rate of construction such as those described below.

4.2.1 Land Policy

4.2.1.1 Urban Land

i. Private Land

In 1972 an act was issued organising urban development. The purpose was to prevent speculation in land to define land prices within the urban areas, prices being fixed on 1964 values plus 5% increase per year thereafter. The act facilitates the provision of loans to land owners to prepare and sub-divide their land for development. The act also imposes a yearly tax on open land of 2.5% of its value and only 1600 m² per owner are exempt from that tax (H. Directory 1969-75). In 1978 a new law put all private land into State holding

and individuals are only allowed one building plot to build a house for owner occupation.

ii. Public Land

In 1974 the Council of Ministries issued a set of regulations organising the sale of publicly owned land within the urban areas. The prices are determined within the limits of the market price and in conformity with urban development in each locality (the prices prevailing being those in the nearest urban centre). A set of priorities for deciding between potential buyers are included in the regulations as well as the system of payment. The buyer has to pay the total cost of land if it does not exceed LD 500 and if it does, a down payment has to be made followed by monthly instalments of not less than LD 10 for not more than three years (H. Directory 1969-75).

4.2.1.2 Agricultural Land

Any land with agricultural features within or outside the master and layout plan areas of all cities, towns and settlements is prevented from urban development by law and construction in such areas is severely restricted. The land is reserved for recreation and green space for adjacent urban areas or, if suitable, for their future expansion and development.

4.2.2 Public Assistance in Private Housing Construction

The low-income groups have been the major concern of the government. Many facilities and much help have been devoted to these groups. However, a great number of loans have been granted directly or through

co-operatives to individuals to build their own houses. The loans are on a long term basis and free of interest. The Co-operative Housing system was revived in 1973 and has had a leading position ever since. This is attributed to the large interest-free loans and subventions from the state. According to 1981-85 Plan, loans will be granted to all income groups provided that a down payment is made. The very poor will be provided with free houses.

4.2.3 Building and Construction Sector

The national construction industry in Libya has been very weak and unable to meet the demands of development. The lack of manpower in general and skilled manpower in particular, shortage of building materials as well as the low degree of industrialisation in the building field, are the main reasons for the inadequate construction capacities that have caused long delays in implementation of housing programmes. The government, having in mind the importance of this sector in the economic and social development of the country, has been concerned and involved in activities intended to overcome the construction problems. These activities have included:

- a) The establishment of more than eight building and construction firms from 1970 onwards, to undertake and compete with international firms in construction activities.
- b) The establishment of several factories of different capacities to provide for a range of building materials which can be made locally so as to overcome the shortage and high cost of the equivalent imported ones (see Appendix 4).

- c) The establishment of training centres throughout the country to train and prepare local manpower for all kinds of work in the construction industry. The labour force involved in building activities has hitherto been about $\frac{1}{4}$ of the total labour force and most have been non-Libyan.
- d) Realising the importance of research, some building research centres for various purposes have been created. They are attached to different organisations which have building interests, for example, the Building Research Centre in the Ministry of Housing.
- e) The adoption of the prefabrication systems in the housing sector in order to produce the largest number of dwelling units in the least amount of time and labour and with reasonable cost. The first factory was established in Benghazi in 1973 and the second in Tripoli in 1974, aiming at a production of 3,000 dwelling units yearly. These two factories are introductory projects for the system and others are expected to follow.

However problems and the shortcomings of previous policies, coupled with the political pressure to achieve something on the ground prompted the government to seek a sounder overall basis for national housing policies. This took the form of the housing component of the 1976-80 Transformation Plan.

4.3 Comprehensive Housing Policies in the Context of Socialist Development

Within the national five year Transformation Plan for the period 1976-1980, the socialist Libyan government set up a policy for the development of the housing sector. The broad statement of this policy was expressed as follows:

"The 1976-80 Plan is concerned that each household should get a house of a suitable size and type, taking into account the evolution planned and expected to occur in economic and social conditions, as well as in habits and customs, and the effects thereof on the form, components and conveniences of houses. The realisation of these aims must be based on a comprehensive housing policy to ensure that difficulties and problems encountered in the execution of housing works in the past years, which prevented full and efficient utilisation of housing services, will be overcome."

In order to be able to implement the above policy the following broad guidelines and principles were stated (Transformation Plan 1976-1980):*

- a) Suitable sites will be provided for the construction of new houses and quarters by making available to individuals and co-operative societies of land fit for construction at reasonable prices. Such land will first be prepared complete with adequate utilities and services such as sewerage, water, roads and electricity.
- b) Realisation of physical integration between housing schemes and their requirements for public utilities and services building such as schools, dispensaries, gardens, etc.

* These are quoted from the published English version of the plan. Secretariat of Planning and Scientific Research, Tripoli, Libya, 1976.

- c) Meeting the requirements of the various economic sectors such as industry, agriculture, petroleum, etc., for adequate housing for their workers in their work positions.
- d) The design of houses should be in harmony with the size and living system of the household as well as the localities in which they are built and should be so suited to environmental conditions as to enable utilisation of building materials available locally. This is in addition to adhering to the rules of architectural and constructional design so as to economise on costs without changing the main requirements.
- e) Expansion of loans through the Land and Industrial Bank and other banks to assist in the achievement of all the objectives of the medium range housing plan and; through it, those of the long-range one as well.
- f) Taking inspiration from the importance which the State attaches to the role of the housing co-operative societies, the Plan aims to remove the obstacles to the activities of these societies providing them with land fit for construction, enabling them to obtain loans on easy terms, at the same time introducing the self-service method in building wherever possible.
- g) Laying down of suitable bases and policies for constructional activity so as to improve its standards and overcome its obstacles, as well as conducting studies on reducing its costs through determination of the requirements of the

construction plan for building materials and specialised manpower. These requirements are to be met through increase of training centres and support of contracting apparatuses.

The Five Year Plan envisaged the construction of 150,000 dwelling units during the period 1976-1980 as part of the estimated total housing need, to the year 1990, which was 562,000 dwelling units specified as follows:

48,000	Dwelling Units (d.u.) to cover the deficit in houses in the year 1975.
6,000	d.u. to cover the replacement of the balance of the dwellings existing in 1975. (Marginal places are not included)
50,000	d.u. to replace shacks and caves.
92,000	d.u. to cover revolving replacement needs during the years 1976-1990.
362,000	d.u. for the increase in the number of families.
4,000	d.u. for meeting the needs of nucleated families.
562,000	d.u. Total.

The 150,000 d.u. envisaged to be built during the years 1976-80 would cover the following:

6,000	d.u. to cover the balance replacement needs in the year 1975.
36,000	d.u. to cover the revolving replacement.
104,000	d.u. to cover the increase in the number of families.
4,000	d.u. to replace a part of the shacks and caves.
150,000	d.u. Total.

In examining the principles underlying the housing policies set

out above, it can be argued that the authorities were seeking to achieve worthwhile objectives. In this respect, it seems that the decision-makers or whoever advised them seemed to have taken most of the important elements into consideration in attempting to provide the most satisfactory housing conditions for the population of the country. However, once again the extent to which these objectives have been achieved in practice leaves a great deal to be desired.

It will be clear from the next chapter that both the quantity, and more especially the quality, of most of the public housing is far from satisfactory. Furthermore, it is clear that it is a fairly easy task to set up objectives and guiding principles, but it appears what has been more difficult to define is the means by which these objectives are to be fulfilled. As one of the UN Housing Experts comments on the situation (H.D.P. 1977) :

"Housing sector in Libya took and still takes a great care in terms of building houses but not in terms of the necessity of the availability of an integrated, efficient and detailed housing policy which makes the housing achievements of sound meaning, eminent goal and aesthetic feature."

It is argued that the failure to meet the established objectives was due to many inter-related factors the most apparent of which are:

- a) The principles or guidelines were not spelled out in sufficient detail as to how or by what means and by whom a particular policy measure was to be achieved.*
- b) No effort was made to establish an executive body or

* The guidelines were supported by only tables and figures indicating the institution, the number of dwellings to be achieved and the allocation of funds (see Table 3.1).

"committee" with representatives from all the authorities concerned with the implementation of the programme, including the various Ministries and other agencies. Such a body should have been established to monitor and respond to changing circumstances and help in overcoming obstacles in planning, design, construction and management.

- c) The lack of legislative measures or failure to enforce them if they are available.
- d) The lack of a system for planning and managing or in general simply meeting the manpower and building material requirements of the programme.
- e) Finally and most apparent of all, it is suggested, is the lack of knowledge of housing needs in terms of quality i.e. the kind of shelter that the people require and would like to live in which suits their social and cultural background and environmental surroundings.

4.4 Housing Machinery and Institutional Framework

The public organisations responsible and involved in house building activities apart from the Ministry of Housing are:

- a) General Housing Corporation (GHC)
- b) Agricultural Development Council (ADC). This council became a Ministry.*
- c) Ministry of Agriculture*
- d) National Investment Company (NIC)
- e) Real Estate Investment Company (REIC)
- f) The Religious Board (RB). This Board was abolished in 1979.
- g) General Institution of Social Security (GISS). This institution became a Ministry.*
- h) The Industrial and Real Estate Bank (IREB).

4.4.1 The General Housing Corporation (GHC)

In order to achieve its housing programmes the revolutionary government established in 1970 the General Housing Corporation (GHC) as a semi autonomous body under the supervision of the Minister of Housing. The GHC's prime responsibility was new housing construction and from 1972 onwards it was given an annual target of building 10,000 new dwellings (UN.H.D.P. 1977). Apart from the heavy burden laid upon the GHC in building dwelling units, it was involved in other construction activities as part of its programmes or on behalf of different public organisations (such as ADC, IREB). It executed many housing projects of different kinds throughout the country, including pre-

* All Ministries were changed first to Secretariats and then to Popular Committees.

For convenience the old titles are used in the text.

fabricated units and integrated villages. The GHC used to be in charge of all aspects of contracting implementation and supervision for housing construction. When dwelling units were ready they were handed to the Housing Control Department, the institution charged with the allocation, management and maintenance of the public housing stock.

Under the 1981-85 Transformation Plan, the GHC lost its importance and most of its functions which led to its transformation into a department in the Ministry of Housing to which the Plan gave responsibility for public housing. The Plan limits the provision of free housing to families that have not the financial capability to acquire their own dwellings. The Ministry of Housing will also construct dwellings related to industrial, agricultural and the other socio-economic activities (Transformation Plan, 1981-85).

4.4.2 Agricultural Development Council and Ministry of Agriculture (b-c)

These two organisations build houses within agricultural and pastoral projects. The dwelling units are usually integrated features of the projects in the form of farm houses and complementary buildings to serve the agricultural community.

4.4.3 Other Organisations (d-h)

The organisations share common features, the foremost of which is that all their housing activities are for investment. They also finance, execute and manage their housing projects. In some cases the design is carried out by private consultants and the execution of

these projects is supervised by the GHC. The Industrial and Real Estate Bank, apart from its own housing and the servicing of investment projects, undertakes an important function in providing loans to the individuals to build their own houses. The investment in housing made by these organisations is through the renting of their property to both public and private sector whether local or foreign people, and by selling to the Libyan medium income households on an instalment basis over several years (15-20 years). The organisations (some of which have taken a different name and/or functions and some of which have been abolished) with other investment organisations (for example, insurance companies, commercial banks, pension fund organisations and others) formed the new National Investment and Real Estate Council in July 1979. According to 1981-85 Plan, investment in housing will be only in the form of providing rental accommodation for non-Libyans and the NIREC is solely responsible for such activities.

4.4.4 Ministry of Housing: The directorates, departments and sections having housing responsibilities and engaged in closely related activities within the Ministry of Housing as follows:

- a) The Directorate General of Planning and Follow up:
 - Mainly to study and prepare for the housing plans and policies and to follow up, evaluate and calculate budgets and achievements.
- b) Directorate General of Designs:
 - Mainly to design Government buildings.
- c) Directorate General of Construction:
 - Mainly to supervise the construction aspects of public buildings.

d) Directorate General of Public Properties:

Deals with the management and maintenance of publicly owned buildings, and with all aspects of land and property acquisition for the public interest. All legal and documentary procedures concerning housing allocation, renting and ownership are dealt with in this Directorate, and the authorised 27 Housing Control Departments throughout the country.

e) Directorate of Co-operative Housing:

Helps, supervises and follows up the activities of housing co-operatives.

f) Housing Control Departments:

These are implementation bodies for housing, consisting of 27 branches of different levels and scope of responsibility in different parts of the country. In general they handle the distribution of the publicly built dwellings according to the eligibility of applicants, based on waiting list priorities compiled from people's housing applications. Apart from the management and maintenance of these dwelling units, they function in their localities in the same way as the Directorate General of Public Properties.

The public housing activities of the Ministry of Housing, after the establishment of GHC, were eliminated, as the GHC used to design, supervise and execute housing programmes defined by the Cabinet and supervised directly by the Minister. When they belong to Ministry of Housing*, Housing Control Departments are under the direct supervision

* The Housing Control Institution has been at different times under the control of both the Ministry of Housing and Ministry of Social Affairs.

of the Under Secretary and not of the Ministry of Housing. According to UN Housing Development Project (1977), the tie between the Ministry of Housing and other Ministries or organisations which have housing responsibilities was very weak. It was very difficult for the Ministry to maintain its main function in defining the housing situation and conditions, preparing national housing plans and programmes following up housing fulfilment and managing and maintaining its stock. The main reasons are:

- a) Inadequacy of the quantity and quality of its technical personnel.
- b) The very large number of institutions and organisations with various housing involvement (such as finance, execution, management).
- c) Lack of co-ordination and co-operation between these institutions.
- d) Lack of consistency and uniformity in housing activities and programmes.
- e) Absence of integration with related activities, for example building materials, labour force.

Despite the obvious improvements which took place following the 1969 revolution, the state of public housing in the 1970s was still characterised by failure to achieve previously determined objectives in terms of both the quantity and quality of housing provision. It is necessary at this point to note that these failures in the fulfilment of targets were again not due to lack of funds, but rather due to the persistence of fundamental and often inter-related factors which had handicapped earlier programmes. Nonetheless, there have been, and probably for a while will continue to be unpredictable contributory factors not easy to overcome.

The 1981-85 Plan has changed the institutional framework of housing, hoping to eliminate such factors. Public housing construction activity is now limited to the Ministry of Housing and is only carried out for the low-income groups. The major burden in housing construction for local people will be undertaken by the private sector through individual families and housing co-operatives.

4.5 Housing Finance Institutions

The institutions and sources of finance of publicly provided housing and their relations with the development budget can be explained as follows:

4.5.1 Public Sector

I Organisations having a direct relation with the development budget:

- a) The General Housing Corporation
- b) Ministries having Housing responsibilities

II Organisations that have their own finance resources apart from government subventions:

- a) National Investment Company (NIC)
- b) Real Estate Investment Company (REIC)
- c) The Religious Board (RB)
- d) The General Institution of Social Security (GISS)
- e) Industrial and Real Estate Bank (IREB)
- f) Commercial Banks (which are public banks)
- g) Co-operatives.

4.5.2 Private Sector

Private sector activity in housing construction depends mainly on loans granted from the public institutions which undertake housing finance through Co-operative Housing Activity which is semi-private and Lending Activity for Housing Construction, which can be divided between a) Industrial and Real Estate Bank and b) Commercial Banks.

I Co-operative Housing Activity: (Semi-Private)

Co-operative activity was known as early as 1956 when a law and regulations under which co-operatives could be chartered were enacted. This was followed by the establishment of two housing co-operatives, one in Benghazi (1960) and one in Tripoli (1961), but co-operative activity was not of any significance until 1973 when the Government decided to re-establish the co-operative system of housing both by issuing a new law and regulations as well as by amending the old ones. A new department was created in the Ministry of Housing to advise, supervise and follow up the housing co-operative societies.

The increasing number of housing co-operatives throughout the country (150 hc approved up till 1979) received help and a number of subsidies in the form of payments to meet administrative expenses and technical assistance, low interest loans for the purchase of land, subsidised building materials and provision of public utilities (or their cost). These co-operatives are exempted from all taxes and fees (HDP, 1977). Their functions are as follows:

- a) To build houses for rent or sale to their members.
- b) To help their members to obtain loans and any assistance relevant to housing.
- c) To collect the members savings and to invest them on behalf of the members in housing activity.
- d) To help in the provision of land, building materials and technical assistance, if necessary, to their members.
- e) Other activities which are legally allowed (H. Directory 1969-75).

The co-operative housing system which covers all sectors of society is heavily encouraged and continuous efforts have been made to

accelerate its construction programmes. The 1981-85 Transformation Plan envisages that integrated housing projects and multi-dwelling complexes will be constructed by the housing co-operatives for their members in different parts of the country, taking into account natural and social variations (TP 1981-85).

II Lending Activity for Housing Construction

a) Industrial and Real Estate Bank:

This Bank was established in 1965 (Board of Directors Report 1970) for the purpose of granting loans to buy land for housing and/or to build a dwelling unit or to enlarge, renew or improve the individual's accommodation. The repayment of loans was over a period of 7 to 20 years with low interest charges. Since 1972 shack dwellings have been given interest free loans and from 1974 low income farmers were included in this scheme. In 1976 people with a monthly income of less than LD 100 were asked not to repay loans which they had contracted (IREB 1965-1978) and loans granted for individual households for housing construction were exempted from interest (H. Directory 1969-75).

b) Commercial Banks:

Apart from the IREB, five other public banks have been dealing with lending activity for the housing sector. Such lending has been mainly for medium to high quality of housing construction either for investment or owner occupation. The rate of interest varied from 5.5% for multi-dwelling units to nil for low income group housing. The evolution of the rate of interest, the amount of loan, the period of repayment and other relevant terms were narrated. The decision in 1976 of loan interest cancellation, following the abolition of the

Urban Evolution Law eliminated interest on housing loans for all income groups.

As the 1981-85 Plan depends principally on private sector participation in housing through saving and lending activities, the Property Investment And Savings Bank was established in late 1980 for this purpose. Its functions are to plan, subdivide and sell the land and to grant loans for prospective home-owners. The loans will be granted when a certain percentage of the price is paid by the borrower as a down payment although his savings and the loan will be repaid in monthly instalments based on his financial capacity (Transformation Plan 1981-85).

4.6 Housing Finance and Payment

4.6.1 Housing Expenditure

The implementation of housing projects and programmes and all other related activities are financed by:

- a) Public funds which are allocated in the development budgets for housing activity executed directly by public organisations.
- b) Semi-Public funds which are provided for housing activities by the state through banks and housing co-operatives and by the channelling of funds from social security, insurance companies and other investment organisations. These funds are used in housing activities either through direct loans or through the execution of housing projects for investment.
- c) Private Savings, which include private initiatives through Housing Co-operatives. These funds are invested in housing for owner occupation or through investment organisations, such as the Housing Co-operatives.

The payment for housing whether for purchase or rental, can be classified on the same principles:

- a) Public; when the dwelling unit is given free for ownership or otherwise.
- b) Semi-Public; when the dwelling unit purchase or rent is subsidised by the government in some form of subsidy; or when payments are made through housing allowances given to employees.

- c) Private: when the dwelling unit is paid for in full, for rent or purchase by the occupant himself, unaided.

4.6.2 Rent System of Public Housing

The 1970 Rental Act and the amendments following it were issued to organise the rental system of public properties, aiming to provide a suitable healthy accommodation for the largest possible sector of society especially for desperate families. For martyrs, war veterans and disabled families, national rental values are determined by the Ministry of Housing according to ability to pay. Families with a monthly income of less than LD 30 are exempted from paying rent. For a shack dweller, rent for a government house should not exceed 5% to 15% of his monthly income depending on its size.

Government employees may rent public dwellings against their housing allowance to which they are entitled. In some cases, employees are allowed to pay only part of their housing allowance for rent (20 to 40%).

Other sectors of society are entitled to government houses according to the following rental values:

5% of the monthly income if it does not exceed LD 90

10% of the monthly income if it is between LD 90 and 120

15% of the monthly income if it is between LD 120 and 200.

These values are revised after two years when the occupant either purchases the dwelling if he wishes, or pays a full market rent.

The Public dwellings are not rented unless the applicant fulfils the following conditions:

- a) He must be married or supporting dependants.
- b) He has not bought a public dwelling before.
- c) He is not renting another public dwelling.
- d) He has not been granted a housing loan before.
- e) He does not own a suitable dwelling for his accommodation.

On the whole, families in areas subject to slum clearance or redevelopment action or families made homeless by emergencies receive priority over applicants on the waiting list. Priorities are usually assessed with little consideration being given to the types of stock available.

4.6.3 The Allocation and Possession of Government Houses

Apart from the above mentioned rental act which organises the allocation of government houses, a new act was made in 1973 to facilitate the sale and purchase of these dwellings. The cost of the dwelling unit is supposed to be equal to the lowest value of a similar unit built anywhere in the country within the same year with a discount of 2% yearly since the construction of the unit, to which must be added the land cost at that time. Further discounts for the low income groups are as follows:

Annual Income	% of discount
not exceeding LD 600	90%
between LD 600 and LD 750	80%
between LD 750 and LD 900	70%
between LD 900 and LD 1050	60%
between LD 1050 and LD 1200	50%
over LD 1200	no discount

Groups whose annual income is more than LD 1200 are not entitled to any discount unless they are government employees when those earning between LD 1200 and LD 1800 are entitled to 40% discount and those earning more than LD 1800 are entitled to 30% discount.

The cost of the dwelling is to be paid on an instalment basis within 20 years or in cash if the buyer wishes. The instalments should not exceed $\frac{1}{3}$ of the monthly income of the buyer.

4.6.4 Housing Allowance

This scheme was initiated in 1964 mainly for government employees (Shernanna, 1976), but was later amended to include larger numbers from other sectors of the workforce. According to this scheme, the government employee, regardless of his job, is entitled to a housing allowance proportioned inversely to his monthly salary. It ranges from 45% to 80% with a maximum of LD 100 and a minimum of LD 35 for a married man and half the allowance for an unmarried man with a maximum of LD 20 and a minimum of LD 50. For non-Libyans the range is between 30 and 40 per cent with a minimum of LD 50 (H. Directory 1969-75). The scheme did not solve the problem of high rental payments; but instead contributed to high increases in rent, which rocketed when the government adopted the renting system favoured by the private sector, with the result that employees' housing allowances depreciated in value. Fortunately the system was abolished after the revolution, but the housing allowance still has a minor effect on rent paid.

4.7 Current Housing Policy

During the Transformation Plan 1976-80 period, with a total of 80,319 units completed by both private and public sectors the overall average annual completion rate was 16,000 d.u. and the overall rate of implementation of the programmes was 53.5%. The housing situation deteriorated, the shortage in 1980 being 42% greater than that in 1975, although it cannot be denied that the quality of the housing stock in the country has improved considerably, low-income type accommodation having been abandoned and middle income type dwellings having been allocated to shack dwellers and low income groups. In consequence of the shortcomings of the previous Plan (1976-80) a new phase of development has started requiring the reorientation and further adjustment of housing policy. These adjustments were expressed in the comprehensive programme of socio-economic development as well as in a Prospective Plan for the housing sector for 1981-85. The principal object of this Plan is to shift the major burden in housing construction from the public to the private sector. The Plan has proposed a considerable increase in house construction. The target is 206,152 d.u. to be completed by 1985, that is to say 165% of the previous plan fulfilment target. The following table shows the contribution anticipated by different organisations having housing responsibilities:

Institutions	To Complete 1976-80	New d.u. 1981-85	Total d.u. 1981-85
1. Direct Execution through Public Institutions (Ministry of Housing)	44,683	43,700	88,383
2. Commercial Banks, Property Investment and Saving Banks, Housing Co-operatives	11,237	65,000	76,237
3. National Investment and Real Estate Council (NIRE)	4,032	37,500	41,532
Total	59,952	146,200	206,152

Apart from the completion of 1976-80 obligations this Plan anticipates that only 29.8% of new dwellings will be constructed directly by public organisations, - Ministry of Housing and Ministry of Reclamation and Reconstruction. The National Investment and Real Estate Council is the chief investor, and perhaps the only investor, in housing: it is expected to construct 25.8% of the new dwellings for investment through renting to non-Libyans. The remainder of the total construction target (44.4%) is expected to be built by co-operatives and individuals with access to loans and grants together with direct contributions of part of the cost by the prospective owners.

4.7.1. The Development Strategy of the 1981-85 Transformation Plan

The primary long-term goal in housing is still to provide every Libyan family with a dwelling unit of its own with adequate facilities that would promote health, safety, privacy and general welfare.

However, despite great efforts, the problem that remains if this housing goal is to be achieved is one of tremendous magnitude.

Whereas for the previous housing policies the public sector was the principal supplier of housing, new policies have emphasised the role of co-operative and private individual housing aiming at a further contribution of the private sector through the population's own resources in building their own houses. This programme has included the following basic principles which underlie housing development:

- a) Public authorities will provide houses free to families who are financially incapable of housing themselves, their resources often being limited to social security or other grants.
- b) Apart from people in that category, the individual will pay back the cost of the dwelling unit or the loans - with easy terms for low income groups - on an instalment basis. The monthly repayment should not exceed 25% of a householder's monthly income.
- c) Loans for housing construction will be made available through lending institutions for the individual, who will be granted a loan when a determined percentage of the amount is provided by the individual as a contribution for building his house.
- d) The Ministry of Housing will also build dwelling units in areas of industrial investment and all health and educational facilities for that sector. The Ministry of Reclamation and Reconstruction will build dwelling units for agriculture projects.
- e) All Social savings (Insurance and Social Security) will be subordinated to housing investment through renting activity for the non-Libyan manpower required for the implementation of the Transformation Plan 1981-85.
- f) Regulations, acts and measures relevant to housing appropriation and ownership, lending and loan granting for building houses should also be revised and unified, in line with the stated housing policy.
- g) The importance of housing maintenance has been recognised and specialised institutions will be available everywhere to enable housing maintenance to be executed according to a defined system and at fixed prices.

- h) Local authorities will help in land provision and the state will pay for the public utilities and facilities for housing complexes to be built by housing co-operatives for their members rather than for individual construction.

The implementation of the 1981-85 Plan projects and programmes will be the responsibility of the following institutions:

- a) Ministry of Housing involved only in direct execution of dwelling units for certain groups and also public facilities.
- b) Housing Co-operatives execute housing complexes for their members.
- c) Property Investment and Saving Banks; grant loans for housing construction.
- d) National Investment and Real Estate Council, execute housing projects for housing investment.

The origin, functions and financial resources of these institutions were discussed in the previous section in which the housing institutional framework before and after the 1981-85 Transformation Plan was elaborated.

4.7.2 Assessment of the New Plan in the light of 1976-80 Plans

The present adverse housing situation cannot be attributed to the high rate of population growth especially as the 1976-80 Plan considered that rate.* Other deficiencies in the previous plan constituted difficulties and constraints in fulfilling the ambitious targets and objectives defined in the Plan. Basically the failure was caused by the drastic drop in the number of dwellings built by private sector whose participation was diminished from 1976. Further, the following

* The Plan expected 104,000 new families during 1976-80 and the estimate of the actual number of new families in 1980 is 103,035 families (1976-80 and 1981-85 Transformation Plans).

factors have seriously affected housing activities:

- a) Reorganisation of the structure of contractor firms and private enterprise companies which led a large number of them, mainly dealing with construction, to suspend their work.
- b) The suspension in 1976 of the 1972 Urban Evolution Law which was the main support for private sector investment in housing.
- c) The sudden change in the concept of home ownership as a result of the 1978 law of property acquisition which regards the dwelling occupant as the owner if he wishes to be so, when the original owner has no right to object or to receive rent. The occupant pays the Government instead. Accordingly private investment in this respect has been eliminated.
- d) Dependent mainly on imported manpower and with the difficulty in securing a permanent supply of it, the construction industry has been badly hit by the shortage of foreign labour.
- e) Shortage in one or more of the essential building materials, mainly the imported ones, because of the lack of balance between sources and uses.
- f) Difficulties in allocating lands for housing development for many reasons, but mainly because of the absence of up to date plans of most - if not all - settlements.

It is obvious that the 1981-85 Plan has recognised these facts, but the main objective remains to increase the production of standard dwelling units by 156% more than the 80,319 d.u. completed in 1976-80. Although many difficulties in that plan have not yet been solved, there are several positive points in the new policy which will no doubt improve housing development, if other drawbacks are dealt with in the right way and at the right time:

- a) The concentration of public housing construction in one housing authority, the Ministry of Housing, is a major step towards the lack of co-operation and ensuring integration of housing organisations and housing programmes in previous plans.

- b) The shift of the major share of the house construction from housing organisations to the individual families will go a long way towards overcoming the difficult social, cultural and economic problems that have appeared and which led to a delay in society's cultural and technical development.
- c) Housing construction mainly through private initiative with the Government assistance through housing co-operatives or direct loans will make the population's own resources bear the main financial burden in building their own homes.
- d) In 1981-85 Plan the co-operative housing system has acquired a leading position and probably will take over many functions of public housing construction. With larger loans and subventions from the State, co-operative housing construction is dependent on wider economic considerations and the state preferences for housing development.
- e) The existing balance of housing stock and large provision of new dwelling units, constitute a basic element of national real estate resources, owned by the private or the public sector. The policy of adopting an appropriate maintenance system will help to provide continued maintenance at reasonable cost. At the same time it will help to avoid rapid deterioration of the national housing stock.
- f) With Housing Investment undertaken by semi-public organisations provided with a revolving fund, some quantitative and qualitative tendencies to improvement can be expected.
- g) The financial involvement of the prospective owner created by the new policy will help to overcome the major problems of mass housing, the user's participation, preferences and convenience. It would be extremely difficult under present circumstances to be able to create, manage and maintain mass housing which is economic, fast and provides decent living environment, without such participation by the users.

Concluding Remarks

There was a time when there was no definition of housing policy in conjunction with national housing plans in Libya: when plans and programmes were established, the necessary institutions were created for quick action. The plans and programmes represented construction decisions more than National Housing Plans. Planning for housing consisted of the declaration of principles and a list of proposed public investments. Once the Government adopted a scientific planning approach to achieve efficient social and economic development, policies, programmes and plans were produced consecutively in relation to the perceived housing situation, and pertinent housing policies stating diverse regulations to frame the programmes were set up. Housing strategies have since been developed within the framework of national economic and social policies and the necessary institutions and housing agencies concerned with publicly provided houses have been established. In addition to loans and mortgages being granted to individuals, building plots, materials and other building facilities have been made available. In view of all of these and many other steps it can be said that the housing problem has been relieved in certain aspects, but substantial progress in housing tasks within the present conceptual framework of public housing provision lies beyond the possibilities of massive housing programmes. A greater efficiency in the process and products of publicly provided housing is, however, possible if a sound comprehensive housing policy is maintained.

In Chapter 5, deficiencies and problems associated with public housing activities are highlighted by the analysis of the results of the sample household survey that was conducted in selected public housing projects.

CHAPTER FIVE

HOUSING SURVEY

5.1 The Survey

Housing in every respect, ultimately affects people's lives: its quality, type and environment determines the pattern of family and individual life. Yet decisions made as to housing type, location, quality and density are often inadequately considered. The occupants of publicly provided housing and especially low income groups, have very little control of their housing or opportunity to express their preferences: their choice is largely predetermined by housing organisations which generally give little consideration to social or cultural values if ever they realise them. A systematic investigation in this field is almost unknown in Libya and it is hoped that the current study will contribute to the better understanding of some of the issues involved.

It is essential to know about individual ways of life, perceptions of housing and personal needs. The design of houses and their layout should reflect the needs of the occupants and cater for their family and social activities, which are strongly influenced by local customs and traditions. Apart from the design of the dwelling units themselves, the physical layout of housing estates plays a vital role in the social pattern and environment of the community. Neighbourly relationships and friendliness, for example, are affected by the physical arrangement of houses and housing density which has a large impact on community life. Many environmental and social problems can be avoided if planners,

architects and others who have responsibilities for housing, understand more about people and their desires and preferences. In mass housing, especially in the developing countries, there is a lack of direct knowledge of the needs and ways of life of the potential occupants. The reasons for this are many, but the most forceful factor which can be mentioned is the serious shortage of local professional personnel and skilled manpower. Moreover, the small number available have neither the time nor the skills to effect a full assessment of user needs in housing estates which consequently fail to provide a high degree of satisfaction to inhabitants both in the design of the dwelling units and in planning the whole environment. In many cases the planners and architects may have had good reasons for their decisions, but these may nevertheless still be unsatisfactory for many of the people.

The traditional approaches to and production of public housing in Libya have never been tested or questioned for their validity, suitability and convenience. During the mid-1970s there was growing recognition that some action would have to be taken in order to be able to create housing design and services meeting contemporary needs and to provide a better residential environment. So far, very little has been done in this respect.

5.1.1 Objectives of the Survey

Considerable research is required into publicly provided housing if it is to achieve the necessary levels of economy, environment, efficiency and acceptability. This involves not only the physical aspects of housing conditions but also research into social character-

istics and requirements of their residents as well as housing management. The simultaneous investigation of housing in all its aspects is essential.

The conviction which lay behind this survey was that the experience, attitudes, patterns and values of those involved in publicly provided housing could be objectively ascertained and described satisfactorily and then taken into consideration in decision-making and housing policy. The purpose of the survey was to provide information regarding the pattern of inter-relationships between the household and the dwelling unit it occupies and to highlight the associated environmental problems. The object of this survey was to identify people's wants and provide an assessment of broad preferences of dwelling type and social requirements. The analysis of the survey throws some light on the advantages and the disadvantages of each type of design and layout and on the quality of environment - social and otherwise - as perceived by the occupants.

For these reasons a housing sample survey has been undertaken and is believed to be the first of its kind for Tripoli. It is concerned with socio-economic characteristics of the households that live in the full range of publicly provided dwelling unit types.

5.1.2 Scope of the Survey

The decision to carry out a survey being motivated by the need to obtain specific information about the effects of dwelling design and living space on the environmental qualities experienced by different people and communities, the selection of the sample was governed by the

necessity to draw a cross section across various kinds of publicly provided housing. If the survey was to have any relevance for the future, it was also important that one should choose estates that would resemble as closely as possible future developments. It was therefore necessary that the study should take into consideration the large numbers of the familiar type of walk-up block, which will presumably continue to be constructed to house large numbers of people. Because of the scarcity of land and the existence of many small gaps in the urban fabric of the inner cities, a new trend towards the construction of high rise flats can be discerned; but there is no information as to whether the housing authorities are likely to continue this type of construction or to return to the practice of building walk-up blocks. Low-rise dwelling units were also included in the survey in order to find out the degree of satisfaction of their residents, in comparison with those living in other types of dwelling units.

The choice of estates to be examined was directed to these three different types of construction, flats, houses and villas. A further element which affected the choice of estates to be examined was the governmental organisation and sponsorship of schemes and different terms of provision on which housing finance is based. It follows from these differences that the study deals with different housing attitudes and socio-economic backgrounds. The type of housing estate - for instance, whether it is a part of existing community or isolated estate - is one of the criteria which influenced the selection. Density, and location in relation to the city centre, as well as date

of construction were also taken into consideration in the choice of estates to be studied.

It was thought essential to examine an estate or estates that would give a comprehensive picture, representing as accurately as possible all aspects of the publicly provided housing sector. The intention was not simply to investigate problems and defects but also to examine the positive attributes of this sector: a critical examination of the sector might eventually be useful and constructive. Accordingly, the earlier and obviously less well planned and designed estates were excluded. New tower blocks which had recently been occupied by shack dwellers from nearby shanty communities were excluded simply because the occupants had not been there long enough to experience all aspects of flat life. At the time of the survey the occupants of the six estates included in the sample had been in residence for different periods, varying from 2 to 10 years. In spite of the initial reaction which everybody has to a changed environment, two years residence might not be a long enough period in which to appreciate the advantages and disadvantages of the new home, but is definitely not too long to forget about the old home and environment.

The estates chosen are at different localities and in different surroundings. The first four estates lie in areas of high density development close to the central area of Tripoli, surrounded by a mixture of other land uses. These flat developments were erected originally, not because flat dwelling provides suitable living accommodation for a Libyan family, but to fill the gaps in the urban area of the city with buildings constructed so that they could easily be

Table 5 . 1 Characteristics of Housing Sample

No. of Estate	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6
Characteristics						
1. Type of Dwelling Unit	Flats	Flats	Flats	Flats	Villas	Houses
2. Type of Development	High Rise Medium Rise	High Rise	High Rise	High Rise Medium Rise	Ground Floor	Low Rise
3. Overall Density	Very high	high	high	Very high	Low	Medium
4. Location	Inner city	Inner city	Inner city	Inner city	Inner Suburban	Outskirts
5. Surroundings	Mixed Land use	residential offices	Mixed Land	Mixed Land	Agriculture	Residential
6. Community Facilities within the Estate	-	Shops	-	Shops	School shops	School shops
7. Built by	Ministry of Housing	NIC	NHC	NIC	NHC	NHC
8. Tenure	Mixture	purchase	free occupation	purchase	Mixture	Mixture
9. Socio-economic conditions	Urban dwellers mixed-income	Urban dwellers middle-income	ex.Shack dwellers low-income	Urban dwellers middle-income	Migrants low-income	Migrants mixed-income
10. Age of construction	10 years	6 years	2 years	3 years	5 years	4 years

adopted for uses other than housing, for example as offices, should the eventuality be necessary. Two of the four schemes in this category were semi-government investment housing projects sold to middle income groups and the other two were provided by the Ministry of Housing, one for government middle income employees and the other for low-income people. Three of the schemes are high density, high-rise blocks of flats and the fourth is a mixture of high rise and walk-up development with a very high density. The fifth scheme is located in the inner suburban area of Tripoli surrounded by agricultural land. The sixth is on the outskirts of Tripoli in a newly developed residential area with a mixture of income groups. These last two estates were built for low-income groups and are low density, low-rise developments. The following description of the estates gives a clearer picture of the nature of the sample areas surveyed (See Table 5.1).

5.1.3 Description of the Housing Schemes

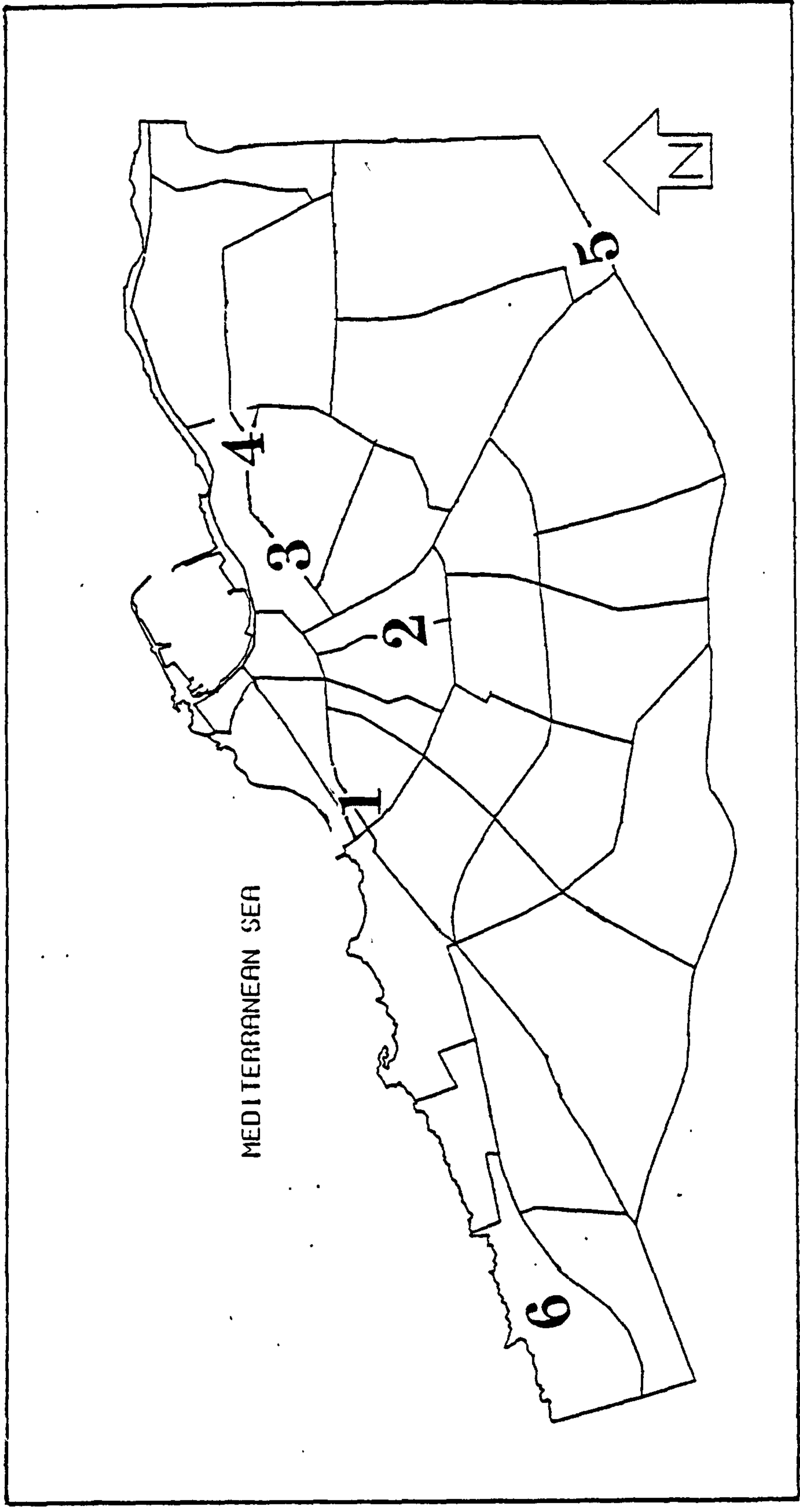
In the following sections is presented a brief description of each housing project under study. This includes information about location (fig.5.1), layout and some of the other more important features of each scheme. Reference is also made to the client or developer of each project as well as the date of construction.

The figures attached give further detailed information.

5.1.3.1 Omer Elmuktar, No.1.

This estate is located in the west end of the central business district of Tripoli on a triangular piece of land of 3.3 hectares,

Fig. 5.1 The Location of the Housing Estates



1 OMER ALMUCKTAR

2 SHARHA EL ZAWIA

3 EDDAMER

4 ZAWIAT EL-DAHMANI

5 EL FORNAGE

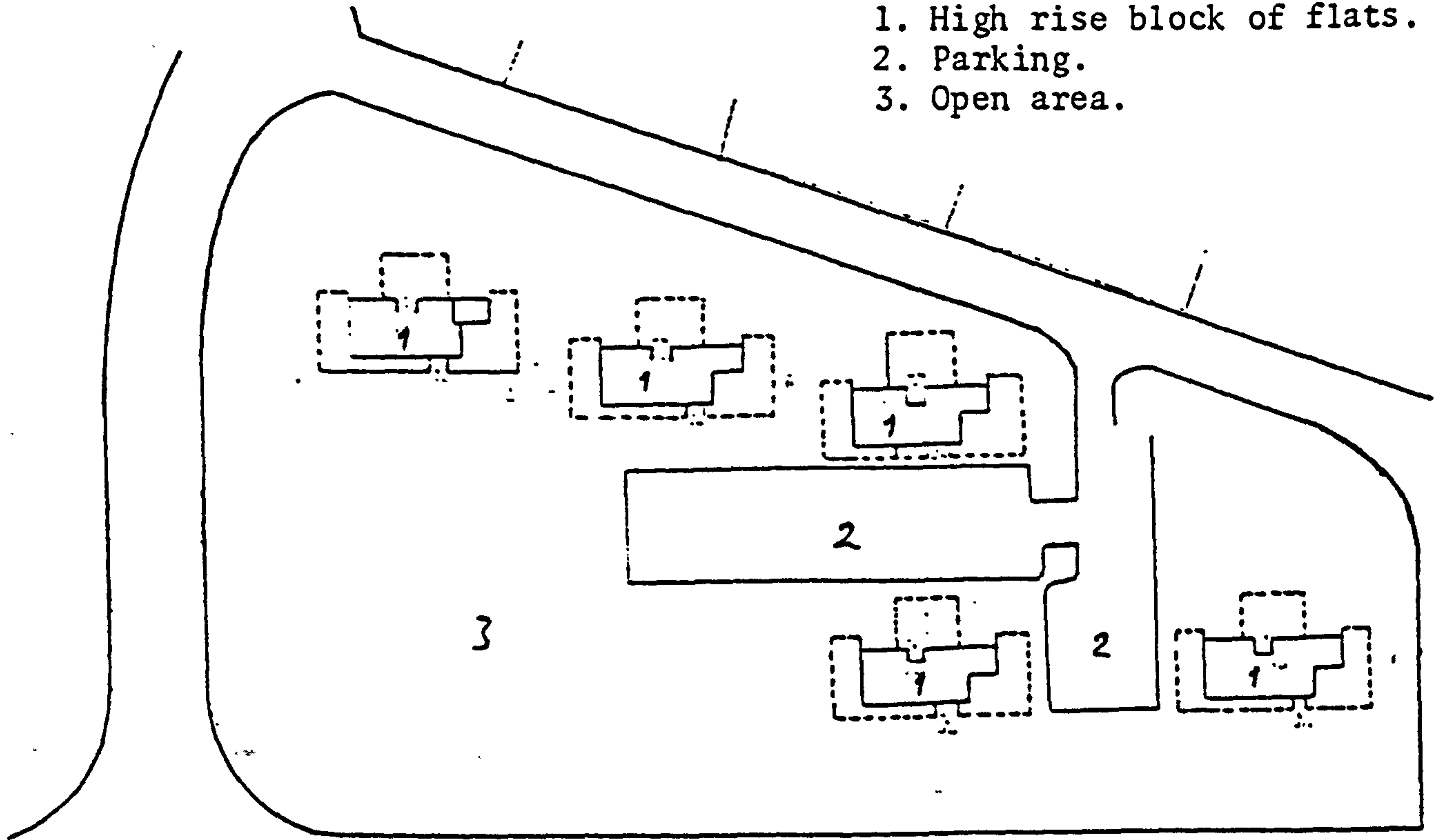
6 EL MADINA EL-SIHJA

- Road network

formed by the meeting point of Sh. Omer Elmuktar and Sh. Elnasser and bounded by the main women's hospital "Algiala". Directly opposite the estate, across heavily used roads, is a vast parkland, surrounded by traffic originating in the square "Mydan Eltahreer". To the north side across the busy Sh. Omer Elmuktar - Tripoli High Street - there are beaches and other recreation facilities: the sea is clearly visible from many upper floor flats. The scheme was built at a high density, consisting of a mixture of three multi-storey blocks (8 floors) and twelve walk-up blocks of 4 floors. All are built on stilts and occupy 25% of the area of the site. The ground level space under the blocks is used for car parking and a part of it is divided into small stores belonging to the flats above. With one exception, the walk-up blocks run in a broken line parallel to Sh. Omer Elmuktar facing north and are separated by strips of lawn planted with young trees. The high rise blocks are gathered at the top angle of the site. Such generous provision of open space (75% of the total area) is desirable in any high rise development, and in this case, with a very high density (the existing density is 351 person/hectare), the space is actually available for mixed uses including car parking, local circulation and children's play.

The scheme was built in the late 1960s by the Ministry of Housing for a medium income group - government employees only. A similar type of design and construction was used in 1975 by the National Housing Corporation and allocated to low income groups - former shack dwellers. This project, which was included in the sample (estate No.3) is a small one consisting of only 96 units grouped in three blocks of 8 floor flats in the inner central area. The scheme was not provided with any

- 1. High rise block of flats.
- 2. Parking.
- 3. Open area.

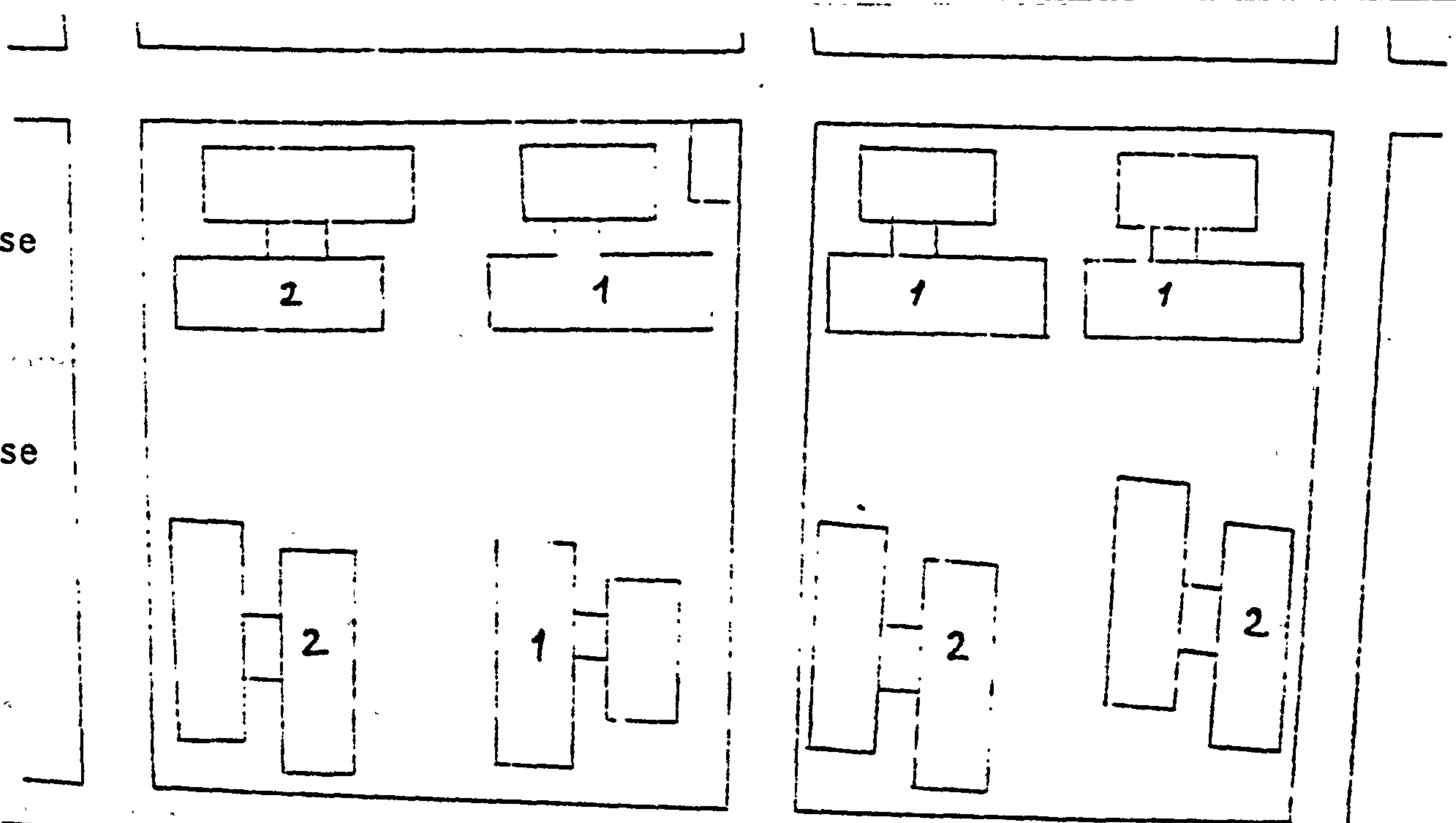


Shara Elnasr

Estate (3)

1. High rise block with 3 flats on each floor

2. High rise block with 4 flats on each floor



Estate (2)

facilities and the free land between the blocks is till neither paved nor planted.

5.1.3.2 Sh. Elzawia, No.2 and Zawiate Eddahmani, No.4.

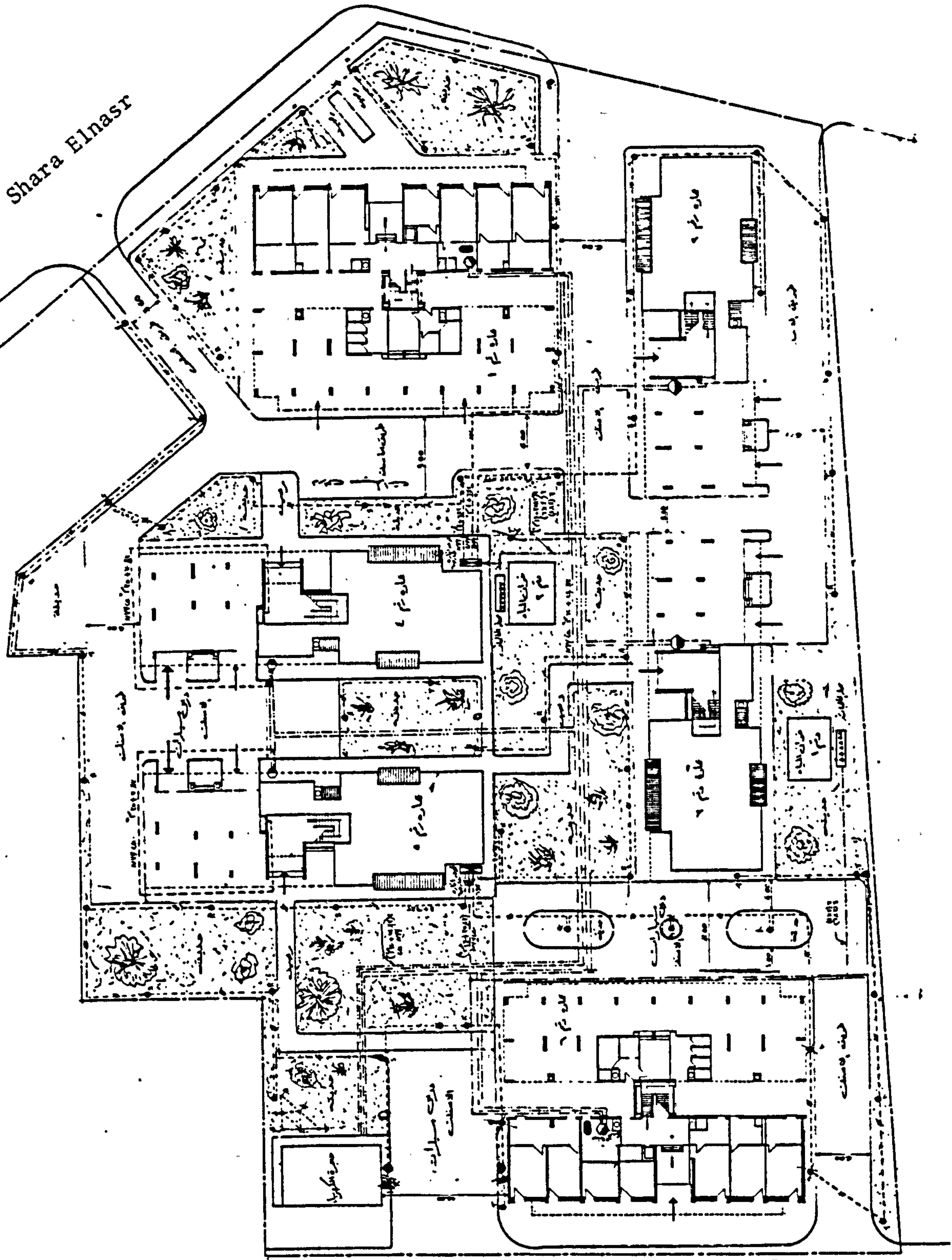
These two estates comprise the first housing investment projects completed by a semi-government organisation, the "National Investment Company (NIC)". Libyan architectural consultants were hired to plan and design the estates and they also supervised the construction. The two estates are situated in newly developed high density districts within the inner central area of Tripoli.

Estate No.2 lies behind St. Elzawia and the surrounding area contains a mixture of uses, mainly governmental administration. The scheme was started in 1971 and consists of eight 8-floor blocks of flats of two different types with a few corner shops. All blocks are on stilts with ground level space used for car parking. Three blocks have been taken over for governmental uses - two for offices and the third as residence. No greenery is provided within the estate and the free ground space is paved for traffic circulation.

Estate No.4 is located on a rectangular piece of land between two main roads, Elnnasser and Algiumhuria, with no cross traffic within the estate. The closed layout provides green open space within the estate, which includes six 9-floor blocks of flats of two different types, with a row of seven small shops on Sh. Algiumhuria. All blocks are partially on stilts.

No other facilities were included in either estate. The flats were put up for sale before the estates were ready for occupation;

Shara Elnast



Shara Fashlume

Layout of Estate (4)

20% of the total cost being paid in advance and the rest on a monthly basis over 20 years, the occupant paying an extra 10% of the monthly payment for general maintenance and caretaking. As estate No.4 was constructed later than No.2 the standard of the whole scheme is better than No.2. In general terms, the occupants of both estates are in the medium income group.

5.1.3.3 Elfornage Estate No.5

This scheme was built by the Ministry of Housing through the General Housing Corporation in 1972 for low income groups. The estate is situated in the inner suburban area of Tripoli, "Elfornage" facing one of the major army camps in the city and surrounded by agricultural land. The estate is a low-rise, semi-detached type of development at the low density of 125 persons/per hectare. It consists of 360 units, an elementary school and is also planned to include a shopping centre. 212 of the dwelling units are of three bedroom type and 148 have 2 bedrooms with the possibility of future extension to provide another bedroom. The units are back to back in rows within a net of closed end streets and car parking. The built up area is only 25% of the total area of the estate, but the public open space is quite limited and there is no accommodation for children's playgrounds or gardens. Private open yards and gardens are the main feature of the estate. The free ground space on the estate, which was paved a few years after construction, is mainly car parking and local streets.

The district in which the estate is located is an old established village centre whose shopping centre now caters for the usual range of

needs of the population because of the delay in constructing the new shopping centre included in the scheme. Children of the estate go to the village schools for preparatory and secondary education.

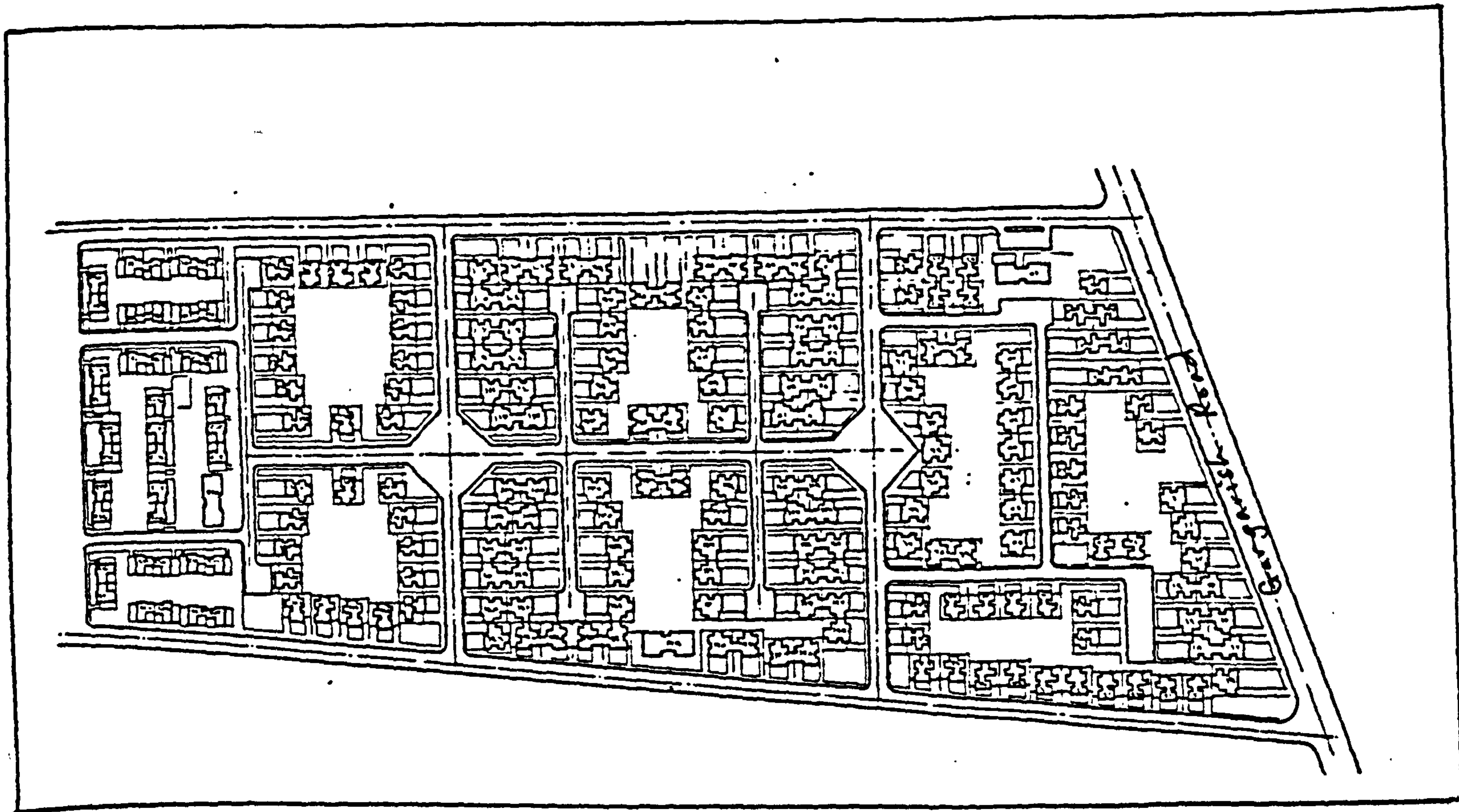
The estate itself is built on a site sloping gently from south to north which puts it on different levels from the main road parallel to the estate from the west. There is an elementary school at the far end of the estate from the road, water storage at the middle and the planned shopping centre at the entrance of the estate. There is little sense of enclosure within the estate in spite of the privacy enjoyed by the individual dwelling units. This privacy is provided by high fences and solid gates surrounding the units. The land which is left as open space has not been prepared for any use, either as children's playgrounds or as planted lawns.

5.1.3.4 Elmadina Essiyahia No.6

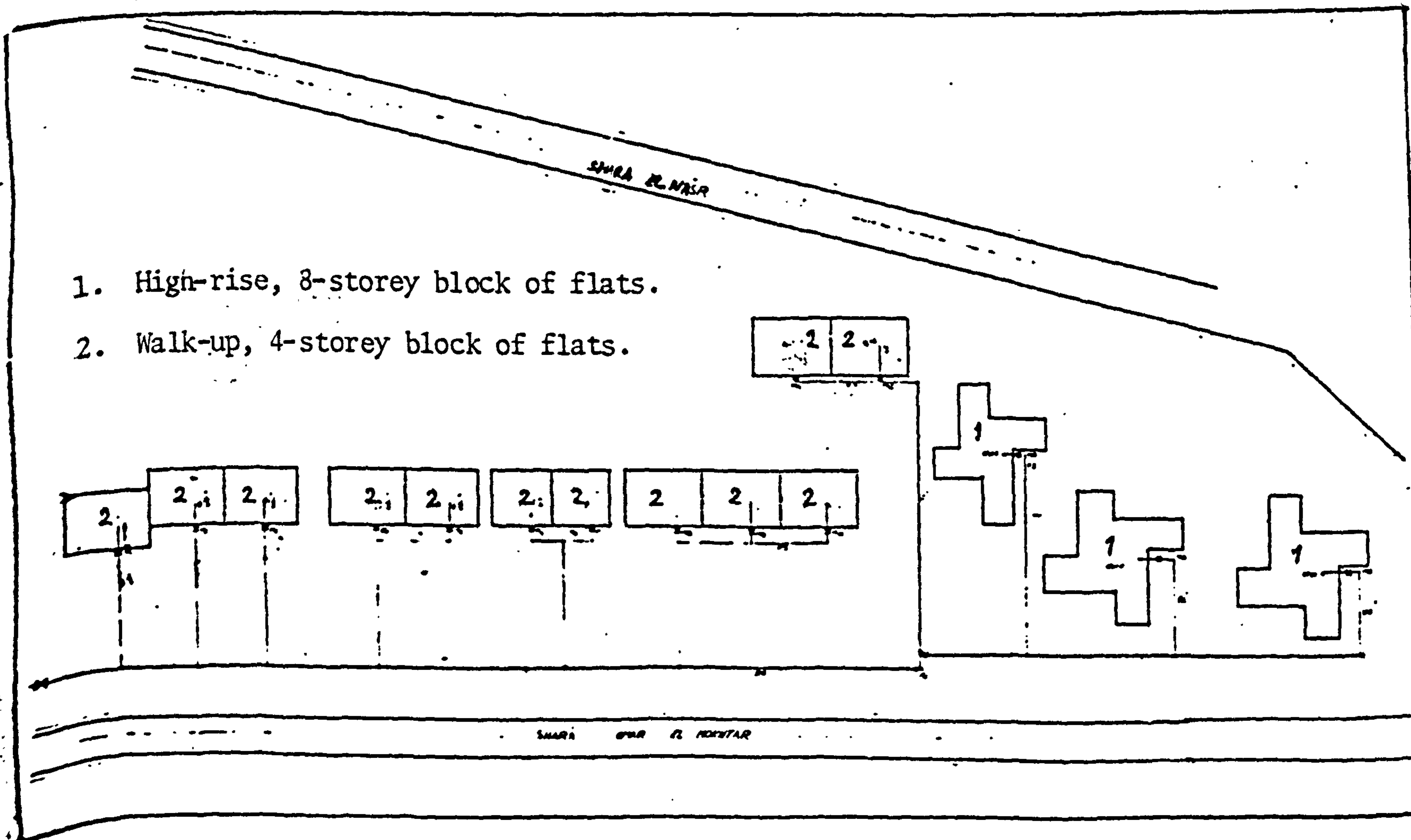
Project No.6 is known as Elmadina Essiyahia Housing Estate and is named after the adjacent recreational centre. The estate was built about 1973 by the Ministry of Housing through the G.H.C. The estate is situated on the far west periphery of Tripoli, about twelve km. from the city centre. The estate is bounded by the sea to the north and Gargaresh Road to the south. Private villa-type dwelling units are to the west and east of the estate: to the west there is a high-income low density development and to the east there is a medium income medium density privately developed housing estate. The same type of development is found also to the south, across Gargaresh Road.

The main land use of the district in which the estate is situated

Layouts of the Housing Estates



Estate (6)



Estate (1)

is residential with the buildings rising one floor above the ground level. The skyline is broken only by water towers and the minarets of the mosque serving the district. The few schools in the district which also rise in two or three storey buildings. A row of 6 shops, built as part of the estate, is a continuation of a series of shops along Gargaresh Road. There are 412 dwelling units of four different types in the estate: flats, detached houses and two-unit blocks with a range of 1 to 3 bedrooms.

A few dwelling units are used for other purposes, such as an elementary school for girls, a clinic and a police station. The estate is divided into six lots by a grid of streets and the houses are grouped around cul-de-sacs with free pieces of land separating these groups. Indoor car parking is provided for each unit, but because the free land is not planted it is very often used for car parking as well as a playground for children.

5.2 Methodology

The aim of the survey was to collect information about home life and housing attitudes of the people living in the publicly provided housing estates. The information was intended to indicate to what extent the occupants are affected by, and affect, the residential environment, living space and layout, within the context of their contemporary culture.

The facts sought were obtained by measuring the impact of defined environmental characteristics on people, relevant to the local circumstances ascertaining the causes of dissatisfaction and satisfaction and then deciding upon remedial solutions to discernible problems.

Foreknowledge of the public housing situation and its problems enabled certain assumptions to be made. In order to test whether or not these assumptions were valid, information had to be obtained in a form of a survey. The items chosen for a questionnaire had to be intelligible and relevant. To test the reliability of the questions, a provisional questionnaire had to be designed and a pilot survey undertaken. The final questionnaire included a range of factual and attitudinal questions about housing estates in particular and profile questions to help in grouping the surveyed population into socio-economic categories. The questions were intended to be brief, clear and simple so as to admit of one interpretation only and to draw the information sought in straightforward answers, in order to avoid ambiguity in the responses.

Nevertheless, the interviewer's contributions in asking the questions and interpreting the answers must be taken into consideration

when one seeks reliable information. In this case, the possibility of ambiguity in recording and interpretation of the survey responses is compounded, because the interviewing was conducted in a language different from that in which the research as a whole has been carried out and in a social and cultural setting which are alien to the developed countries. Every effort was made to overcome the linguistic difficulties and the many other complications.

5.2.1 Planning and Pilot Survey

During the planning stages, a provisional questionnaire form was designed and a small pilot study undertaken by the researcher with some help from two lady architects, three months before the main survey was conducted. The chief aim of the pilot study was to test the questionnaire as well as to obtain experience of certain aspects of the survey techniques in a locality where such surveys are not common. Thus the pilot survey was beneficial not only in examining the validity of the questionnaire form, but also in learning more about certain aspects of interviewing techniques in such circumstances.

The pilot survey sample was 15% of that of the actual sample interviewed later. The population involved in this preliminary study was not selected under any systematic sampling conditions, although it was intended to be as representative as possible of the population under consideration. The choice of the households was a difficult one. On the one hand, to be sure that the respondents are accessible, cooperative and willing to answer questions, there should ideally be previous acquaintanceship with the interviewer. On the other hand, it

is important to know to what extent the interviewer can operate successfully and obtain people's confidence sufficient for the proper answering of questions, without previous knowledge of the interviewee. Dealing with different types of people one can examine the questions and test the general approach likely to be encountered in the main survey.

The results of the preliminary study led to changes in the structure of some of the questions and in the language composition of others. A shortening of the questionnaire form to reduce the interview time without altering the amount of information obtained, was also considered after the pilot survey. Useful conclusions were also drawn about interviewing procedures and the organisation of the survey team and the right time to call, as well as the amount of time needed to conduct interviews. The pilot study tested also the general approach to the population and how the initial contact with households is affected by preliminary publicity.

It was found that some publicity could affect not only the proportion of the households willing to be interviewed but also the type of answers they give in response to the questionnaire used in the main survey. The means and context of such publicity must be carefully chosen so as to reach most, if not all, people concerned and it must be clear enough to give a comprehensive picture about the purpose and intention of the survey.

5.2.2 Sampling

The outcome of the pilot study made it easier to decide on the

best sample population for the main survey to give as true a picture as possible. To include all public housing estates was impractical in terms of time and resources. Therefore, the first question was to decide which estate (or estates) would be the most representative of the major variables considered in the selection of the survey population.

The choice of sample was guided by a desire to study a combination of the major characteristics of publicly provided housing and sampling had to be a matter of compromise between technical efficiency and resource availability.

A number of variables was considered in the selection of the six housing estates which were chosen to be the "Sample Population". Each housing estate chosen was as homogeneous as could be found with respect to its general socio-economic, dwelling type and physical characteristics. Also each of the chosen estates shares some variables and differs in others from one or more of the other five estates. But all six estates were specially chosen to represent all features and types of publicly provided housing. However, the choice was intended to cover a wide range of comparable social and economic conditions as well as geographical variables, all of which would provide a common ground for comparison among different types of dwelling units.

The lack of numbers, addresses or any sort of identification for most of the dwelling units led to listing of individual dwellings in estates 3, 5 and 6 based on the number of blocks in each. A list was prepared to cover each estate, completely and accurately.

The numbering system available in estates 1, 2 and 4 was used in

listing these estates. The total size of the population for all estates was 1,306 dwelling units or households and a sample of about 20% was drawn to be interviewed. The lists constituted the 'sampling' frame. In view of the complexity of variable characteristics within the sample population, the sample was stratified; firstly to be sure that each estate was represented in adequate numbers for the purpose of analysis; secondly to allow different estates to be treated differently if necessary, and thirdly so that the results for each estate would reflect the nature of the total sample. Accordingly sub-samples were drawn from the sample population by dividing it into a number of strata (states) a random sample being selected from each stratum (state). This procedure was necessary because variation in population type occurs not only between the estates but also within the estate in the case of Estate No.1 only, which was divided into two strata. Seeking precision was not the only or most important reason for the stratification adopted in this survey: administratively, stratification also helps to carry out the survey with very limited resources.

It is known that "a stratified random sampling with a uniform sampling fraction tends to have somewhat greater precision than simple random sampling and it is also convenient for practical reasons"(Moser, 1958

Accordingly, a proportionate stratified sample was drawn. This means that the size of a sub-sample from each stratum is proportional to the population size of the stratum itself. Thus the total sample size - 261 units, the number of households to be interviewed - was allocated between the strata by proportionate allocation, on the

basis that 20% of the known population of ≈ 1306 is representative of the whole.

Hence the size of the sample to be interviewed is 261 units

$$\therefore \frac{N}{n} = k = \frac{1306}{261} = 5$$

where $N = 1306$ units

$n = 261$ units

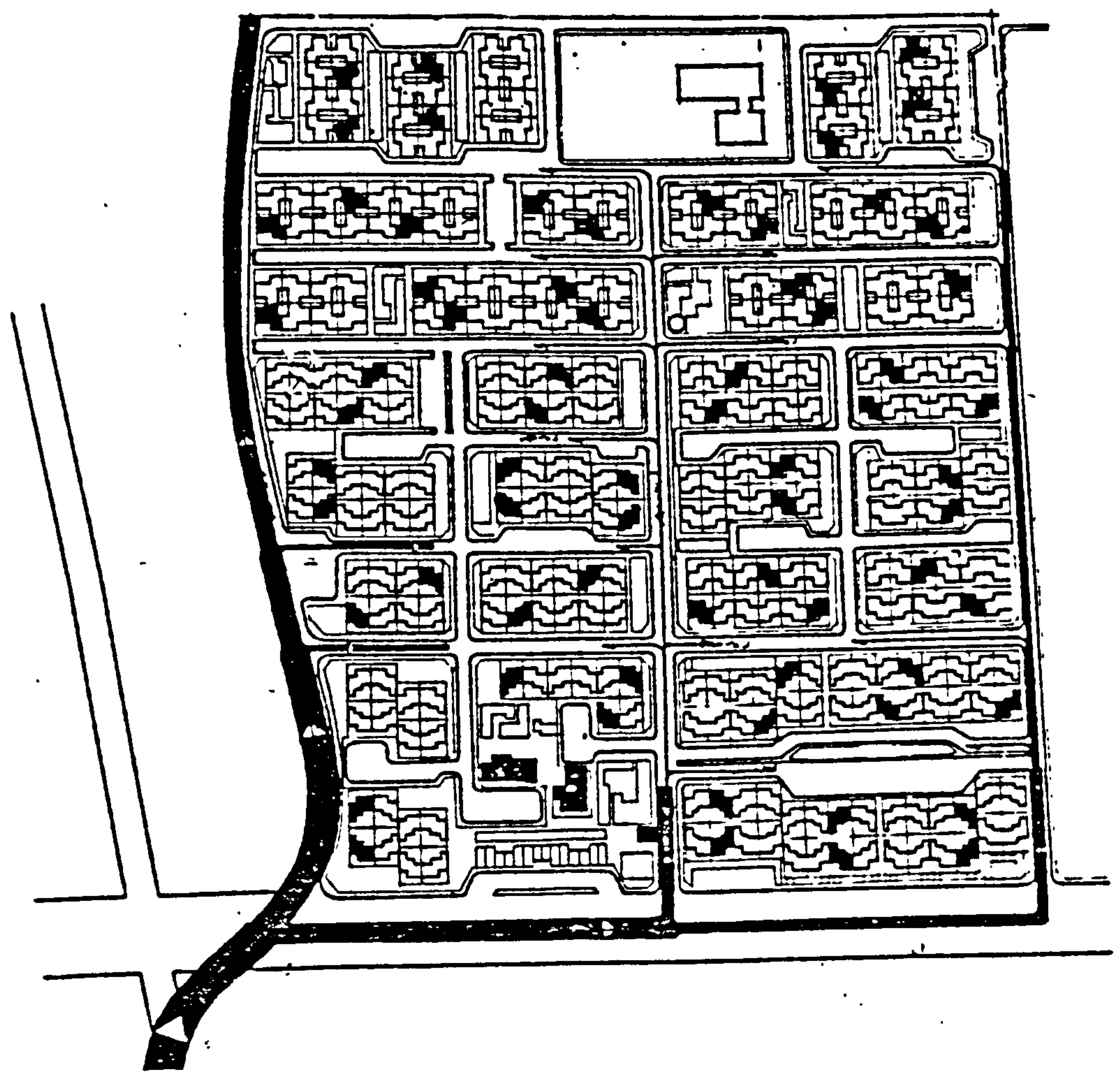
$\frac{1}{k} = \frac{n}{N}$ is known as the sampling fraction.

This sampling fraction is kept constant in allocating the proportionately stratified sub-sample. If the sampling frame of each stratum and the sampling fraction are known, sub-samples are then easily drawn. Furthermore, the availability of the sampling frame enabled the use of a random selection of the sub-samples. To decide on the starting point in the sampling frame one random number is chosen and then a fixed sampling interval is added to define the next unit and subsequent units to be selected. The size of interval is calculated by dividing the sample frame (the list) of each stratum by the sub-sample size decided for the stratum.

$$k = \frac{N}{n} = \frac{N_1}{n_1} = \frac{N_2}{n_2} \dots \dots \dots \frac{N_x}{n_x} = 5$$

If the number s is chosen as starting point, the units to be interviewed from any sampling frame is $s, s + 5, s + 10, s + 15 \dots \dots \dots$ (Fig.5.2). Efforts were made to disperse the selection throughout each block and to make sure that the selection represented different blocks and different sections of the block.

Fig. 5.2 Sampling interval used for allocating households for interview



Estate (5)

TABLE 5.2

SAMPLING DERIVATION

No. of Estate	No.1	No.2	No.3	No.4	No.5	No.6	Total
Total Number of Dwelling Units in the Estate	192	216	96	128	360	412	1404
Sample Population	140	150	96	96	360	412	1254
Sub-sample	28	30	20	20	74	86	258
No. of Interviews	28	27	20	16	70	86	247
Reasons for differences	-	non-Libyans	-	non-Libyans	Vacancy	-	-

5.2.3 Questionnaire Design

As has been stated previously, the overall objective of this study is to identify the extent to which home life affects and is affected by living space, layout and physical environment as a whole.

The family needs a home to live, develop and grow, with adequate space for its activities. Privacy for the family and its individual members is an essential requirement. The traditional way of life within and outside the walls of the dwelling unit requires appropriate and adequate space to be used in designing units and their surroundings. The close social interaction and feeling of community which provide the warmth, security and comfort of a desirable residential environment require a high degree of priority in housing provision. The survey questionnaire was designed in such a way as to obtain information about all these aspects.

However, the provisional questionnaire was designed specifically to suit the study's aims. As a result of the pilot survey some alterations were made and the questionnaire was tailored to the research requirements and the characteristics of the population to be interviewed. It consisted of a mixture of semi-structured and open questions. Sub-questions were used in most questions. The sub-questions and the questions were designed to provide a means of double-checking on each response.

The questionnaire dealt with four major items which were selected as being relevant to the overall perspective of the study and designed to elicit facts, attitudes and values that would indicate the degree of satisfaction of the households involved about these items. The items were: household characteristics, the dwelling units, the housing estate and socio-economic conditions.

Detailed questions were included concerning: size and structure of the household, marital status, school attendance, number type and location of employment, and housing history. Questions also related to dwelling tenure and the method and amount of payment. Other questions were intended to measure the occupant's reaction to the dwelling unit, its component elements, domestic facilities, layout and local setting. There were questions about the occupant's attitudes toward his type of residence, his preferences for different types of accommodation and different localities. Included in the questionnaire, were enquiries about the social and physical environment of the estate and the quality of its maintenance, with others about relationships between neighbours and about children's play-habits and community facilities and other social indicators.

Questions concerning information which could be obtained from sources other than interviewing were eliminated. Information which was difficult to obtain by the interview method was also avoided.

Each interview was intended to be conducted within a period of 20 minutes to half an hour, depending on the size of the household and the characteristics of the individual respondents.

The questionnaire was designed to be administered to both husband and wife of the household in their home in ideal cases. However in cases where households did not represent a family type structure, adult members, male or female, were interviewed at home where the dwelling unit represented the sample unit.

5.3 The Fieldwork of the Survey

The housing survey was carried out during the last half of October 1977. The fine weather was not the only reason for the timing of the survey. It was thought that the end of the holiday season and the beginning of school sessions would guarantee a high number of responses. Also, it was intended to rely on the help of some volunteer students from the Department of Architecture and Urban Planning at the Faculty of Engineering in Tripoli when they first started the new session. However due to the delay in commencement of the academic year and the provision of a grant for the survey expenses, the Plan and conduct of the housing survey took a different form.

5.3.1 Preparation Prior to Interviewing

5.3.1.1 The Team of Interviewers

The researcher who does not consider herself to be an ideal in depth interviewer, was fortunate to have the help of a team of four experienced female interviewers who are graduates in Social Science and were working for the Arab Development Institute in the Department of Research.

The team was not only ideal for the size of the sample but also, being female and familiar with social surveys, was able to elicit more detailed and more open responses to survey questions from husbands and/or wives in an Arabic Muslim Society than would otherwise have been the case. The incentive of payment coupled with the personal interest of the team members made most arrangements efficient and successful.

5.3.1.2 Briefing the Interviewers

The interviewers were thoroughly briefed on the research background, its objectives and the questionnaire form. A set of interviewing instructions was devised and revised in the course of the survey jointly by the researcher and the members of the team. The previous experience of the team in household surveys in a similar context contributed to the success in solving all problems arising from the practical application of interviewing.

5.3.1.3 Informing the Interviewees

The initial approach to the prospective interviewee and his perception are very influential in the outcome of a survey. Great importance should be attached to pre-survey publicity which can greatly influence the response-rate and the nature of answers to a questionnaire survey. Since the survey was only concerned with certain groups of the population on selected estates it seemed that wide publicity through the mass media would not be possible. Luckily, "The Tripoli Home Interview Survey 1977" had been preceded by daily radio announcements and half an hour of prime T.V. time was devoted to discussion of the survey. Leaflets and advertisements in newspapers were prepared to inform people of the importance of their assistance and co-operation with the survey personnel. The researcher was able to benefit from that publicity which had already dispelled misplaced fears and doubts and accordingly the interviews were arranged to take place during the Tripoli Survey.

As another means of assuring people of the aims of the project,

a copy of an official letter from the University of Tripoli, Faculty of Engineering, was attached to every questionnaire form. The letter, and the questionnaire form, were shown to the interviewee before starting the questions. The respondents were also assured that no names were to be included in the information collected and hence the anonymity of the household was guaranteed.

5.3.2 The Interview Procedures

Prior to the start of the interviewing operation, and apart from the several reconnaissance surveys made by the researcher, each housing estate included in the survey sample was visited and explored by the team. A preliminary application of the systematic random sample was then tried.

The researcher's knowledge and understanding of the culture and the overall living patterns of Libyan society helped in avoiding inconvenient timing of interviews and poor approaches on the part of the interviewers. The interviewing time chosen was to be between 2.30 and 4.00 p.m. when most working members of the family were back from work and yet had not left for their evening activities.

The calculated sample size was 261 units and the successful interviews were 258, which indicates the very high rate of response. However, only 247 households were used in the analysis, 11 households being eliminated because they were foreign families with different culture and different language and hence they did not represent local social and cultural values (see Table 5.2).

As indicated earlier, the questionnaire was administered to

either or both husband and wife of the household, in most cases. In other cases, the household head and/or an adult member were asked to answer the questions.

In planning the survey, the researcher had considered attempting to describe something of the social composition of the estates which were the subject of the study by using comprehensive observations. The questionnaire was designed with this intention in mind. Most observations which seemed pertinent to the purpose of the study were recorded by the researcher while the interviews took place. Some others were initiated by the interviewers, although they were not completely relevant.

5.3.3 Rate of Response

As a result of the above mentioned measures, people approached were prepared and often very helpful, which contributed to the very high rate of response despite the fact that the reliability of information could not be guaranteed. Such a high rate of response (98.9 per cent) can perhaps be also attributed to the probability that the degree of concern those people felt for the circumstances they found themselves in, was so high that they were so anxious to complain or comment, and thus to consent to an interview.

The experience of the interviewers indicated that once the interviewee understood that the survey was aimed at improving future housing conditions and facilities, he was most willing to help and talk about the advantages and disadvantages of his dwelling unit, but there were nevertheless some cases where people did not want to

antagonise housing authorities by any form of protest or criticism. Other cases were noted as well, which related to hostility or suspicion about the bona fide nature of the study, and some indications that a few people did not wish to give personal details, whether as a result of their attitudes towards privacy, pride or secrecy.

The three unsuccessful approaches were due to the households' absence and hence the refusal-rate was nil despite the fact that social researches, household surveys and interviews are not extensive in the locality.

Checking the completeness and consistency of the questionnaire forms was made daily after interviewing. The revision of the forms was made according to the system adopted in the survey and daily performance sheets were submitted by the interviewers recording the daily outcome of the completed questionnaire forms.

5.3.4 Complementary Information

During the fieldwork additional relevant information was also collected from different sources by means other than interviewing:

- a) Plans and maps of each housing estate and the various types of dwelling units so as to facilitate study and comparison.
- b) A photographic survey was undertaken of all housing estates portraying the full range features and characteristics.
- c) Remarks and observations pertinent to the purpose of the study were carefully recorded and referred to in the discussion.
- d) Other documentary information from official sources and housing organisations which are relevant to the subject was also collected for reference.

5.3.5 Coding and Data Processing

Due to preliminary expectations of the scope and limitations of the study, it was thought unlikely that use would be made of the computer in data processing and in performing statistical analyses and hence the questionnaire form was not designed for computer coding. It was intended that a sorting method would be employed. Spaces were provided on the form for ticks and for written answers. However, the size of the sample (261 units, 31 items and about 240 variables), the range of household characteristics collected together with the wide range of ideas, attitudes and reactions recorded and the complexity of the inter-relationships between variables made it difficult to process the data manually. It was therefore decided at a late stage that computer based analysis would be essential if the potential of the data was to be fully exploited. A numerical coding system was thus devised and the completed questionnaire categorised and coded and the entire set of responses submitted to the computer on punched cards. A final check was carried out simultaneously.

The sampling unit is the dwelling unit which may be housing more than one household. The revision and checking of the questionnaire form revealed that the household can also be considered as a sampling unit as the number of households corresponds to the number of dwelling units which had been approached in the survey. Accordingly the coding system was designed so that all the information gathered from each household could be transferred on one coding sheet which was then punched on cards. Each coding sheet was coded with an identifying number belonging to a specific household. This was done to enable

checking at any stage of the analysis process. All other processing of the data was done by means of the SPSS computer program (The Statistical Package for the Social Sciences).

5.4 The Analysis Approach and Outcome

The aim of the survey was to ascertain satisfactorily and describe as objectively as possible the ideas, attitudes and patterns of the various socio-economic groups residing in the different types of publicly built housing. The analysis is designed to make possible a proper study of the pattern of inter-relationships between each household and the dwelling unit it occupies in the light of its socio-economic characteristics; that is, to analyse the inter-relationship between the different variables considered in the survey. The procedure selected as being most appropriate for this purpose was the cross-table display which produces frequency distributions in absolute and percentage form, related to the number of observations falling in particular ranges of values of different variables. In many cases these tables were produced with respect to both the grand total of all observations and separately for each housing estate. In addition separate cross-tabulations were produced on the basis of employment, according to which frequency distributions of variables were tabulated in relation to the two types of jobs: white and blue collar. However, the majority of tables give the frequency distribution in the form of percentages out of the total number in each housing estate as well as the grand total of the sample. These tabulations are discussed in some detail and a number of the relationships so revealed are later employed in the application of DOT technique, as described in Chapter 7.

5.4.1 General Analysis

The aim of the following analyses is to provide three kinds of information about:

- 1) the socio-economic characteristics of the population in each housing estate;
- 2) the residents' attitudes to the dwelling unit in which they live;
- 3) the housing estate as a whole.

This was directed towards examining the relationships between residents' attitudes and socio-economic characteristics with the aim of discovering the problems of particular sub-groups in the population with similar characteristics or a particular type of dwelling unit or estate. It is hoped that the resulting picture might serve to assist in identifying the level of satisfaction or otherwise from which guidelines could be determined for establishing future housing policies for urban public housing in Libya.

The analyses of the field survey presented in this chapter have been carried out using the Statistical Package for Social Sciences, SPSS, version 5.0. There are minor rounding errors in some of the tables presented due to rounding for simplification of presentation.

5.4.1.1 The People

The socio-economic characteristics of the people living in the 248 dwelling units surveyed are very varied. This variation will have an important influence on people's attitudes towards their home (dwelling unit) and their housing estate as a whole. However, other factors are likely to be equally important in influencing their level of satisfaction or otherwise, such as length of residence in the same dwelling, or the place of origin of the residents' household.

In this section is presented a general picture of the population surveyed in the field study and a comparison between the characteristics of the residents of each estate and, where possible, with residents of the city of Tripoli as a whole.

Household size

As one would perhaps expect the most interesting feature of the household characteristics, in a Muslim/Arab city like Tripoli, is the large household size. As can be seen from Table 5.3, in both the city of Tripoli as a whole and in each housing estate surveyed, about 50% of the households contain 5 persons or more. However, households in the projects under study tend to be larger, with the exception of project No.2 which contains a higher proportion of young families, than in Tripoli as a whole. Overall, there is an average household size of 6.7 persons in all the projects together compared with 6.0 average household size in Tripoli. This is due generally to the higher proportion of 6 and 7+ persons/household in most of the projects and the non existence or low proportion of 2 or less persons/household. Although there is a fairly uniform distribution of household size (in all the projects together as well as in the city of Tripoli) over the range 3 to 6 persons, each unit of which accounts for about 12 per cent of households, there are some differences within the projects themselves. The largest household sizes were observed in projects 1 and 3; in the former case this might be a reflection of the fact that the estate has been in existence for 10 years and families have become fully established. In contrast in project 2 the average household size is 5.4 reflecting a smaller proportion of larger households.

Table 5.3 Household Size Distribution by Project

Number of persons	CMER ALMUCKTAR (1) %	SURRIA EL ZAWIA (2) %	EDDAMER (3) %	ZAWIAT EL-DAIFANI (4) %	EL KORRAGE (5) %	EL MADINA EL-SHUA (6) %	ALL Projects %	City of Tripoli 1977*
.2 or less	0.0	3.7	5.0	0.0	1.4	2.5	2.1	6.4
3	3.6	14.8	15.0	6.3	4.3	14.8	9.9	10.6
4	0.0	22.3	15.0	18.8	14.9	12.3	10.3	12.8
5	7.1	11.1	20.0	12.6	18.1	13.6	11.6	14.4
6	42.9	22.2	5.0	36.8	23.8	13.6	19.8	12.7
7+	46.3	25.9	40.0	25.4	37.1	41.1	46.3	43.1
ALL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Average household size	7.3	5.4	7.2	6.8	6.4	6.8	6.7	6.0
Type of Dwelling unit	Flats	Flats	Flats	Flats	Villa	Flat/Villa type		

Table 5:4 Number of Persons in Education in each Project by Education Category

Education Categories	1	2	3	4	5	6	All Projects Total Persons in Education	Overall % of Resident Population by Education Category
Elementary	56 23.5	32 18.8	17 11.0	28 25.7	137 23.5	107 18.5	377	26.5
Preparatory	31 13.0	10 5.8	10 6.5	3 2.7	42 7.2	36 6.2	132	9.3
Secondary	2 0.8	2 1.2	0 0.0	1 0.9	8 1.3	9 1.6	22	1.6
University	1 0.4	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	1	0.0
Other Education Establishment	3 1.2	1 0.6	5 3.2	0 0.0	0 0.0	9 1.6	18	1.2
All Persons in Education	93	45	32	32	187	161	550	
Total Population in each Project	239	171	155	109	584	577	1425	
Percentage Population in Education	38.9	26.4	20.7	29.3	32.0	27.9		38.6

This is a reflection of the fact that in this estate the dwelling units are provided free for low income ex-shack dwellers.

Household Income

One of the most commonly used indicators of the socio-economic characteristics of a population is household income. A direct question relating to household income was not asked mainly because it was known to the writer that the residents of the 6 projects under study are only of two distinct categories with respect to income. Projects 3, 5 and 6 were provided for low income households whereas projects 1, 2 and 4 were built for middle income categories in the population. Furthermore, and more importantly, during the pilot survey most of the households interviewed indicated that they were not willing to answer any question indicative of their income. However, other household information was collected which is very strongly related to household income, such as car ownership, number of persons in employment and occupation category of head of household. In this respect instead of categorising the respondents in relation to income, which would be in this case, middle and low, a categorisation will be adopted based on a combination of these other household variables.

Household car ownership

In a number of studies carried out in Tripoli (for example, Brown et al, 1978) it has been found that household/car ownership is very strongly related to household income. A similar high correlation between income and car ownership is revealed in Table 5.6. As can be seen from the table, differences between the six housing estates are very marked with respect to car ownership. The observed value for

Table 5.6 Car Ownership and Assumed Household Income by Project

Position of Car	Project Number						All projects	*Tripoli region in 1977
	1	2	3	4	5	6		
	Assumed household income							
	Middle	Middle	Low	Middle	Low	Low		
No Car Owned	25.0	3.7	85.0	0.00	37.1	33.3	32.2	47
One Car Owned	75.0	96.3	15.0	100.0	62.9	56.7	67.3	53
ALL	100	100	100	100	100	100	100	100

* Brown et al (1978)

Table 5.7 Number of Employed Members in Household by Project

Number of employed persons in household	Project Number						ALL projects	Tripoli region in 1977*
	1	2	3	4	5	6		
One	74.1	88.9	85.0	81.2	84.3	93.1	86.3	76
Two and over	25.9	11.1	15.0	18.8	15.7	6.9	13.7	24
Total	100	100	100	100	100	100	100	100
Average employed persons per household	1.3	1.1	1.2	1.2	1.2	1.1	1.2	1.3

project 3 is particularly low (15%) reflecting the income status of the residents. In contrast are the high values for projects 2 and 4 in which 96% and 100% of households respectively, own cars. However, with the exception of project 3, car ownership level in the housing estates is comparatively high in relation to that in the city as a whole.

Number of employed persons in the household

Examination of the number of employed persons in the households by project shows some pattern of variation for projects which have otherwise been found to have similar characteristics and in comparison with the city of Tripoli as a whole, as can be seen from Table 5.7. Overall the proportion of households who have one employed member is higher than the city average. This average is almost constant among the projects 2, 3, 4 and 5. However, projects 1 and 6 display some differences from this pattern, with project 1 close to the city average while project 6 has a very low proportion (about 7%) of households containing more than one employed person. This might be a reflection of the fact that project 1 is located in the inner city area where employment opportunities are very great. Indeed it has been found that over 65% of all employment are concentrated in the inner city (Devecon, 1978). In contrast project 6 is located in the outskirts of the city where it is difficult to find job opportunities, particularly for females.

Occupation of heads of household

As the majority of households have only one person in employment and in 98% of all households this person was found to be the father and

the head of household, discussion of occupations will be restricted to those of heads of households.

Heads of households were asked for information concerning their occupation which was categorised in accordance with the scheme adopted in the 1973 National Census (Ministry of Planning 1974). However, for the purpose of displaying variation between the population in each project it was decided to group the different occupational categories into the two familiar types, white collar and blue collar, as shown in Table 5.8.

As might be expected, the occupational category of heads of households tends to reflect some of the socio-economic characteristics of the population in each housing estate. Thus, for example, the fact that the residents of housing estate 4 are owner occupiers and have the highest car ownership level (100%) is reflected in the observation that almost all heads of household are in the white collar occupation categories. The residents of project 3 are known to be ex-shack dwellers with very low income and have been found to have a very low car ownership level (15%). This is reflected in the high proportion of heads of households in the blue collar category.

The aggregation of the occupation categories into white and blue collar revealed that there is a consistent relationship between these two occupational groups and the socio-economic characteristics of the resident population within each project.

Categorisation of projects

In examining the socio-economic characteristics of the respondents in each project, it became apparent that the residents of projects 1, 2

Table 5.8 Occupational Categories of Leads of Households by Project

Project Number	Occupation Categories										All. Categories	
	White Collar					Total White Collar	Blue Collar					Total Blue Collar
	Professionals	Administrative	General	Sales	Company Employees		Military Service	Transport Worker	Skilled	Unskilled Worker		
1	3.8	69.2	3.8	11.5	3.8	92.1	3.8	0.0	3.8	0.0	7.6	99.7
2	22.2	33.3	0.0	3.7	33.3	92.8	0.0	7.2	0.0	0.0	7.2	100
3	0.0	0.0	0.0	0.0	0.0	0.0	6.2	18.6	12.4	62.5	99.7	99.7
4	12.5	18.7	0.0	0.0	68.7	99.9	0.0	0.0	0.0	0.0	0.0	99.9
5	0.0	1.8	0.0	3.1	3.1	8.0	39.7	15.4	4.6	32.3	92.0	100
6	4.2	7.8	1.4	0.0	1.4	14.8	30.6	9.1	22.8	22.8	85.3	99.9

and 4 are distinct from residents of projects 3, 5 and 6 with respect to various factors. In relation to tenure, dwelling units in the latter projects were allocated to low income households and ex-shack dwellers either free of rent or at a nominal rent. In contrast, project 1 was built for senior civil servants and projects 2 and 4 were built by a profit making public organisation for middle income groups. Most of these units are owner occupied. Further, as shown in Table 5.9, residents in projects 1, 2 and 4 are urban dwellers while residents in projects 3, 5 and 6 are mainly immigrants.

These observations suggest that for the sake of ease of further comparison it is possible to group the projects into two categories, which for simplicity will be referred to as category A, containing projects 1, 2 and 4 and category B, comprising projects 3, 5 and 6. Table 5.9 shows that this categorisation matches very closely the distinction between the mix of population with respect to the values of such variables as car ownership and occupation. In the latter case the match is virtually 100 per cent.

Table 5.9

Categories Characteristics

Socio-economic characteristics	Projects (1), (2) and (4)	Projects (3), (5) and (6)	all projects
	Category A	Category B	
Assumed income	Middle	Low	-
Socio-economic condition	Urban dweller	Immigrants	-
Percentage of household own car	88.7	59.1	67.8
Percentage of household in white collar category	93	9	56
Percentage of household in blue collar category	7	91	44

5.4.1.2 The Dwelling Unit

As has been stated earlier the activity pattern and needs of the residents daily life within the dwelling unit can be generally expressed in specific functions: sleeping, preparing and eating of meals, domestic functions and social activities within the household and with outside persons. Each of these activities is influenced to some extent by the space allocated to it. The architect and his client face a major problem of choice as a wide range of different layouts, designs and arrangements of facilities can be devised to meet the requirements of households within varying needs, tastes and attitudes.

It is not intended to examine in detail the purely 'external' features of the dwelling unit but rather whether the dwelling units built and provided for certain categories of the population are really suited to the composition, size and the way of life of households within those categories.

This section describes the different types of dwelling units in the six projects under study before turning to the features of the dwelling unit that were liked or disliked. This information is valuable because it represents the opinions of residents with different socio-economic characteristics. The attitudinal questions when combined with the characteristics provides a basis for measuring the satisfaction or otherwise of residents. The results of which are discussed in following sections.

The types of dwelling units

Generally the housing estates examined in the study range from flats in medium and high-rise apartment blocks to villa-type dwellings.

In particular there were four types of dwelling units, the classification of which is defined below and will be adopted throughout the analysis:

- 1) High-rise flats: A dwelling unit in a building of five or more storeys within which more than one such unit is contained.

Lifts are required by regulation.

This type of dwelling unit is found in projects 2, 3, 4 and part of project 1.

- 2) Walk-up flats: A dwelling unit in a building of less than five storeys within which more than one such unit is contained.

Lifts are not mandatory.

This type of dwelling unit is found in part of project 1.

- 3) Villa: A single storey enclosed dwelling unit generally with a private garden.

This type of dwelling unit is found in project 5.

- 4) Villa-flat combination: Two dwelling units combined into one, with a two storey building with separate entrance and private gardens. The dwelling unit in the ground floor can be seen as a villa whereas the dwelling units above it can be considered as a flat.

This type of dwelling unit is found in project 6.

Table 5.10 provides some general information about the dwelling units in each project. Further information will be presented as particular aspects of the dwelling units are discussed.

The suitability of a dwelling unit as to its use as a 'home' might be looked at from various points of view, for example, with respect to type, design, space provision and the availability of utilities. However, an 'ideal' dwelling unit or home is that in which the 'total environment' meets the needs, desires and tastes of the occupants.

Table 5.10 : Information about the Dwelling Unit in each Estate

Category	Estate Number	Type of Development	Number of Floors				Average Area per d.u. excluding outdoor space	Available Area per d.u.	Average private outdoor space		Average number of rooms per d.u.	Bedrooms per d.u.		Living Area	Guest Room	Kitchen	Bathroom	Lifts	Average number of persons/d.u.	Average persons/room	Habitable Area per person
			1	2	3	4			5	Balcony		Garden	Number of Bedrooms								
Category A	1	Flat			x	x	126.2	106.2	13.1	-	4.8	2.8	17.3	21.5	18.1	12.2	5.7	1/4 d.u.	7.3	1.5	14.5
	2	Flat				x	131.7	124.8	13.9	-	3.3	2.6	19.4	41.1	23.0	10.3	7.0	1/3 d.u.	5.4	1.6	23.1
	4	Flat				x	153.7	127.8	25.0	-	4.5	3.0	20.8	34.7	18.7	11.8	9.0	1/4 d.u.	6.8	1.5	18.8
	3	Flat				x	94.0	71.7	19.5	-	3.2	2.0	15.8	15.9	15.6	9.6	5.6	1/3 d.u.	7.2	2.3	10.0
Category B	5	Villa x					117.2	93.0	-	1.20	3.6	2.6	17.0	20.4	18.3	9.3	4.9	-	6.4	1.8	14.5
	6	Flat Villa	x				92.7	76.2	42.2		3.5	2.3	16.3	18.9	-	9.9	6.6	-	6.8	1.9	11.2

1 - In Estate 6 only 10x of d.u. are provided with an extra w.c. and a guestroom beside the living area. The rest of the d.u.'s are provided with one room for both functions and no extra w.c.

In Estates 1 and 2 half of the d.u.'s are provided with an extra w.c., while all d.u.'s in Estates 3, 4 and 5 have this facility.

2 - The average number of rooms per d.u. does not include the space allocated for dining or living activities which is not within a specific room; such as in Estates 3, 4 and 5. The rooms specifically allocated for dining in the d.u.'s in Estates 1, 2 and 3 are included in the living area. In Estates 3, 5 and 6, no actual dining rooms are provided, and dining takes place in general living areas or in rooms designated for other activities.

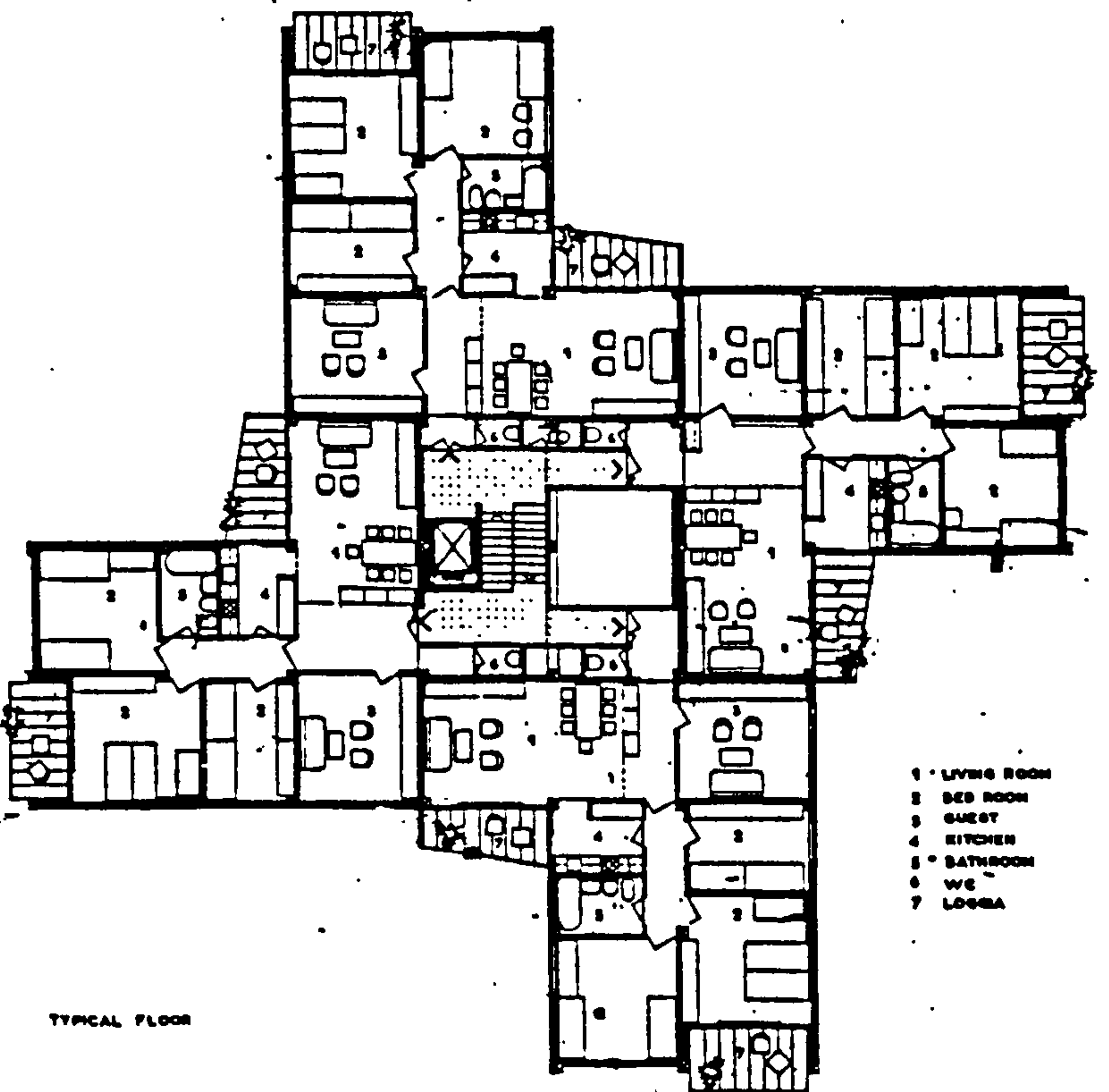
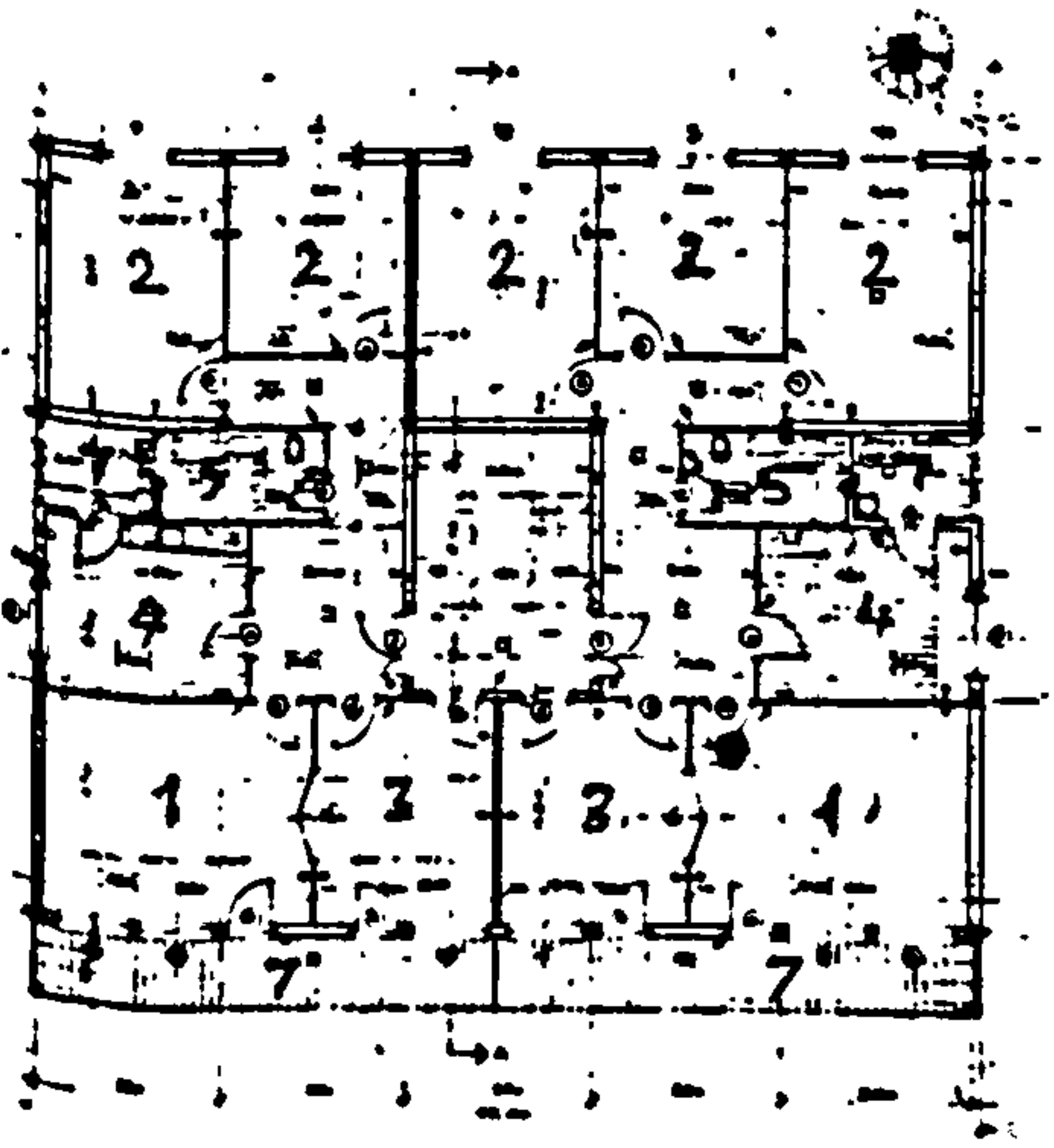
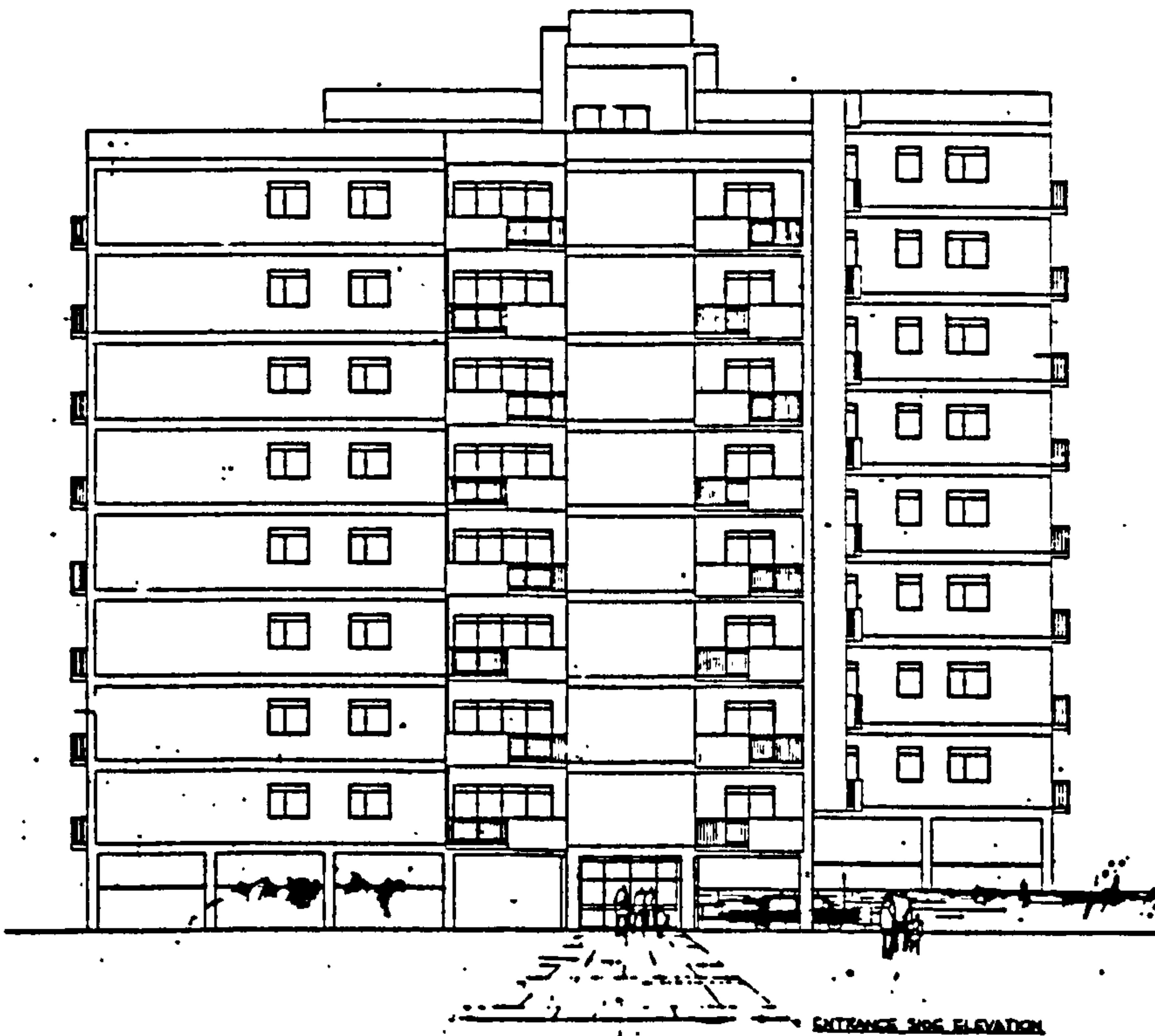
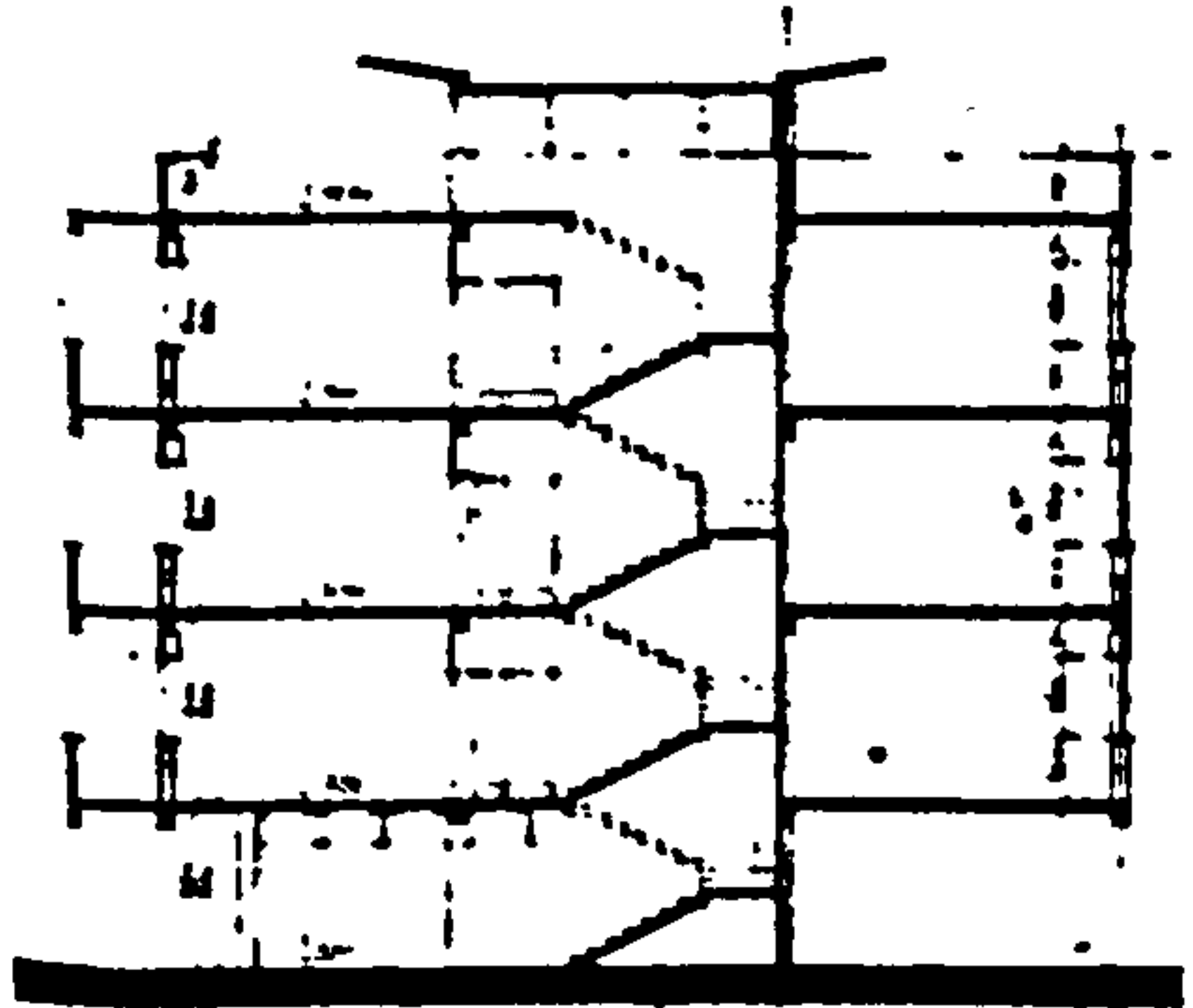
Although the specific features of the total environment which a home must possess in order to satisfy its occupants are many and various there are a number of physical specifications or standards which are essential: failure to meet them could lead not only to dissatisfaction but could also have some effect on the health and emotional well-being of the residents.

An attempt is made in this section to examine such physical features as site, occupancy rate, number . . . and size of rooms in the dwelling units in each of the six projects in order to draw attention to similarities and differences which might have a bearing on people's satisfaction or otherwise.

As can be seen from Table 5.10 the average dwelling unit size is different in each project, conforming not only with common practice in the provision of public housing but also the differences between category A and category B, in other words dwellings designed for middle and low income residents. It was anticipated that the wide range of differences in the size of dwelling units and number and size of rooms in each project might prove to be important factors when interpreting the results of the attitudinal questions. However, it seems that appreciable significance could only be attached to the differences between the two categories and not within them. In this respect the following three measures have been estimated which are intended to reveal the differences:

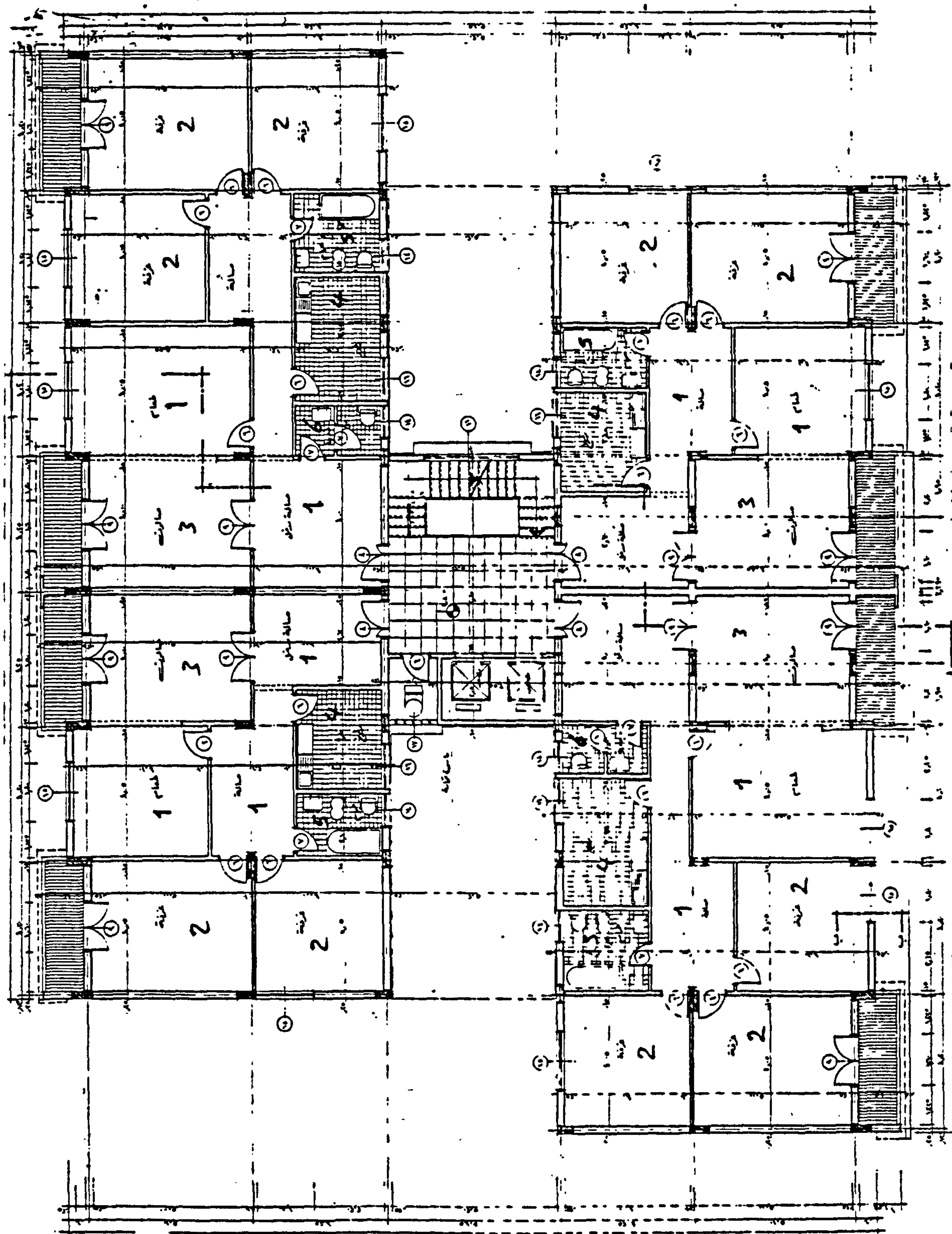
- a) Average number of persons per dwelling unit
- b) Average number of persons per room
- c) Average habitable area per person.

As clearly shown in Table 5.10 the first and second factors do not

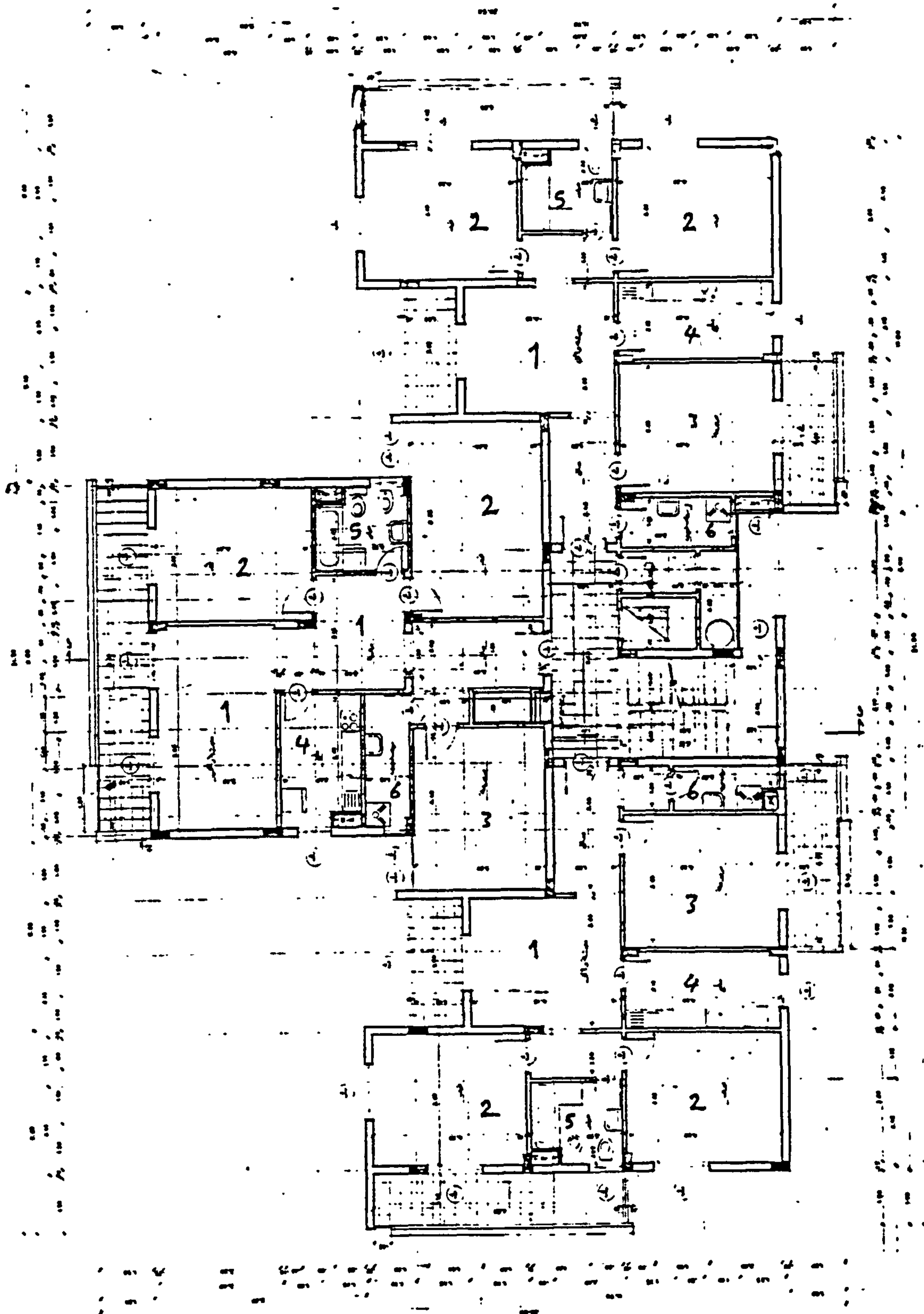


- 1 - LIVING ROOM
- 2 - BED ROOM
- 3 - GUEST
- 4 - KITCHEN
- 5 - BATHROOM
- 6 - WC
- 7 - LOBBY

An Example of Dwelling Units in Estate (2)

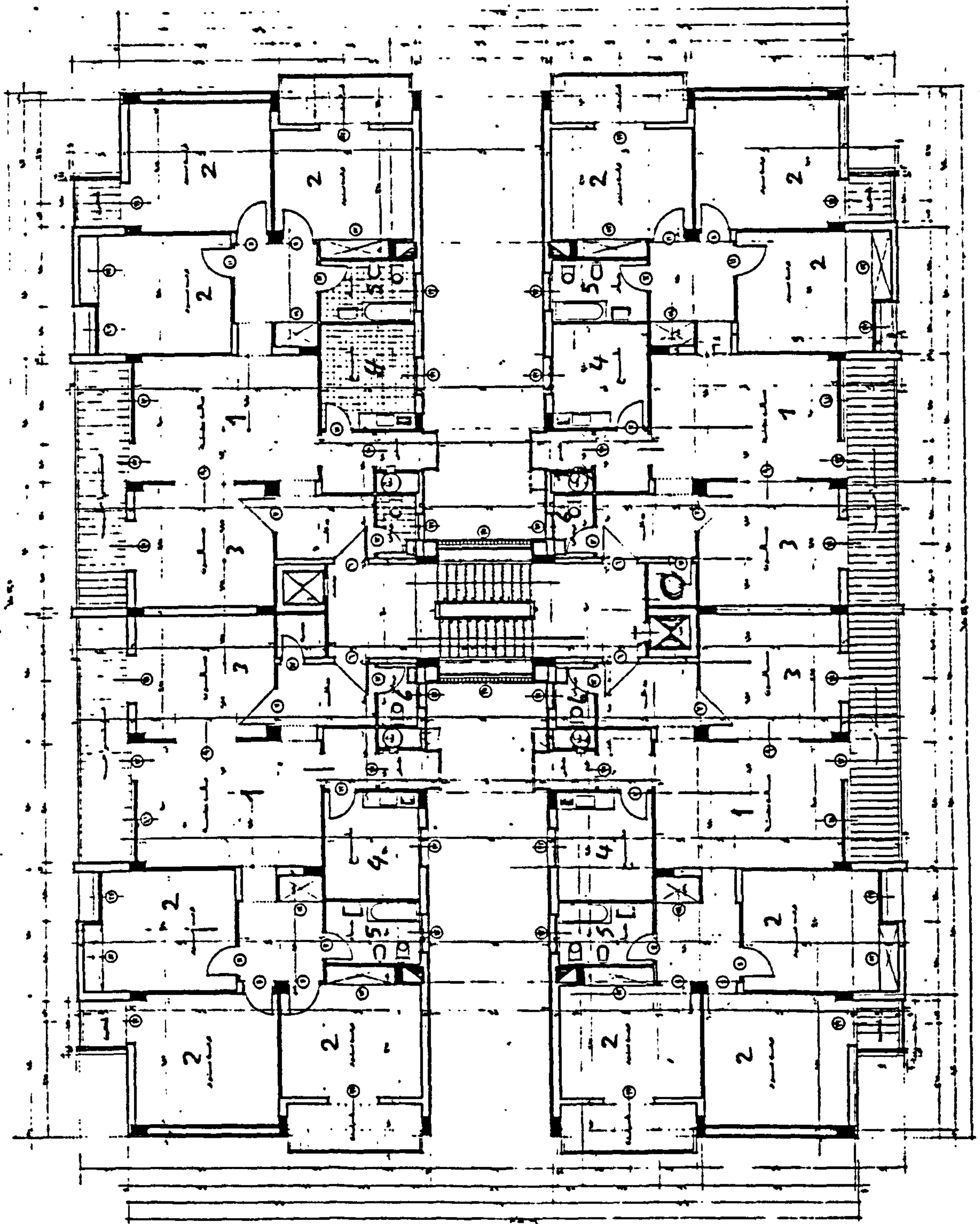


- | | |
|----------------|-------------|
| 1. Living room | 5. Bathroom |
| 2. Bedroom | 6. W.C |
| 3. Guest | 7. Loggia |
| 4. Kitchen | 8. Garden |



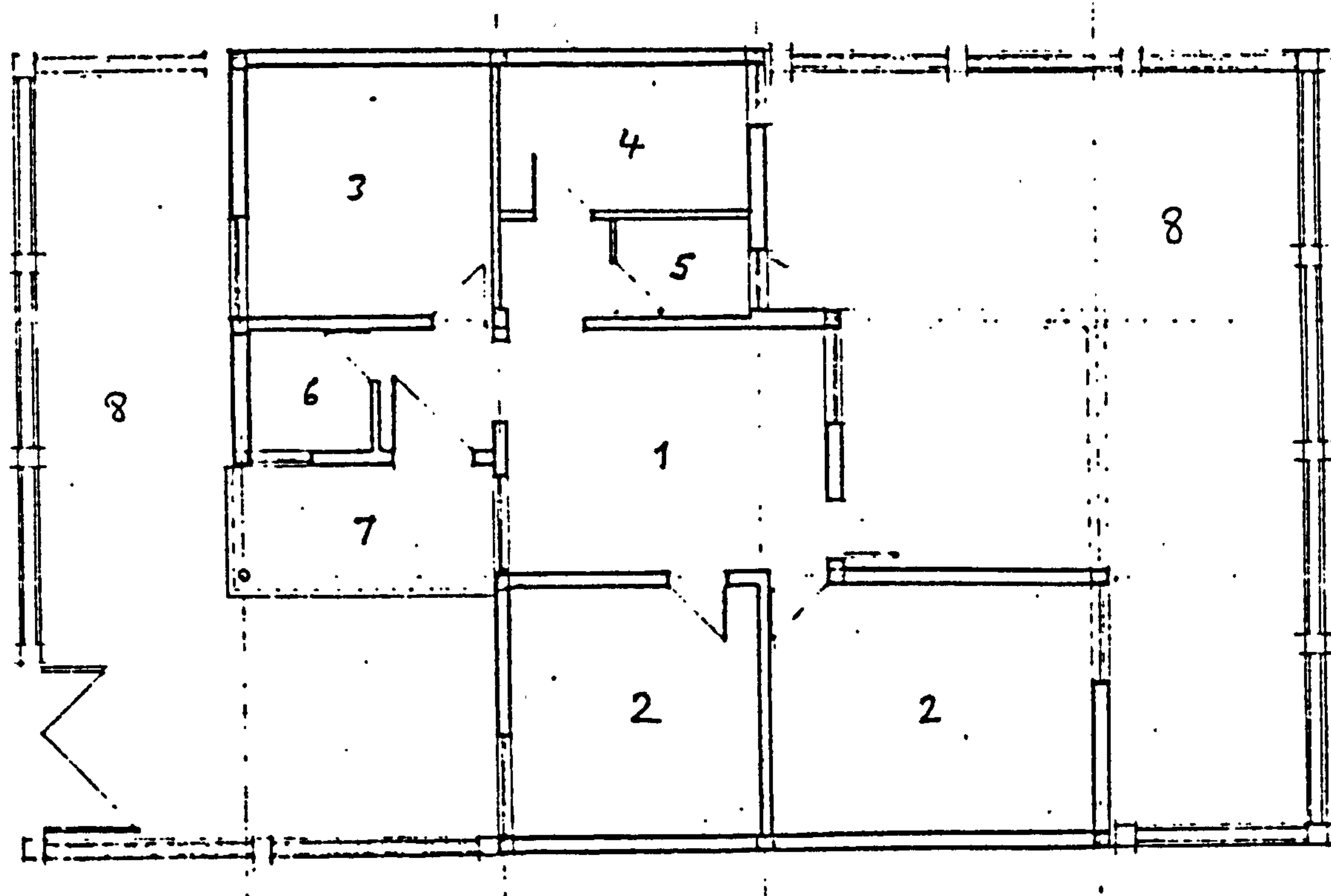
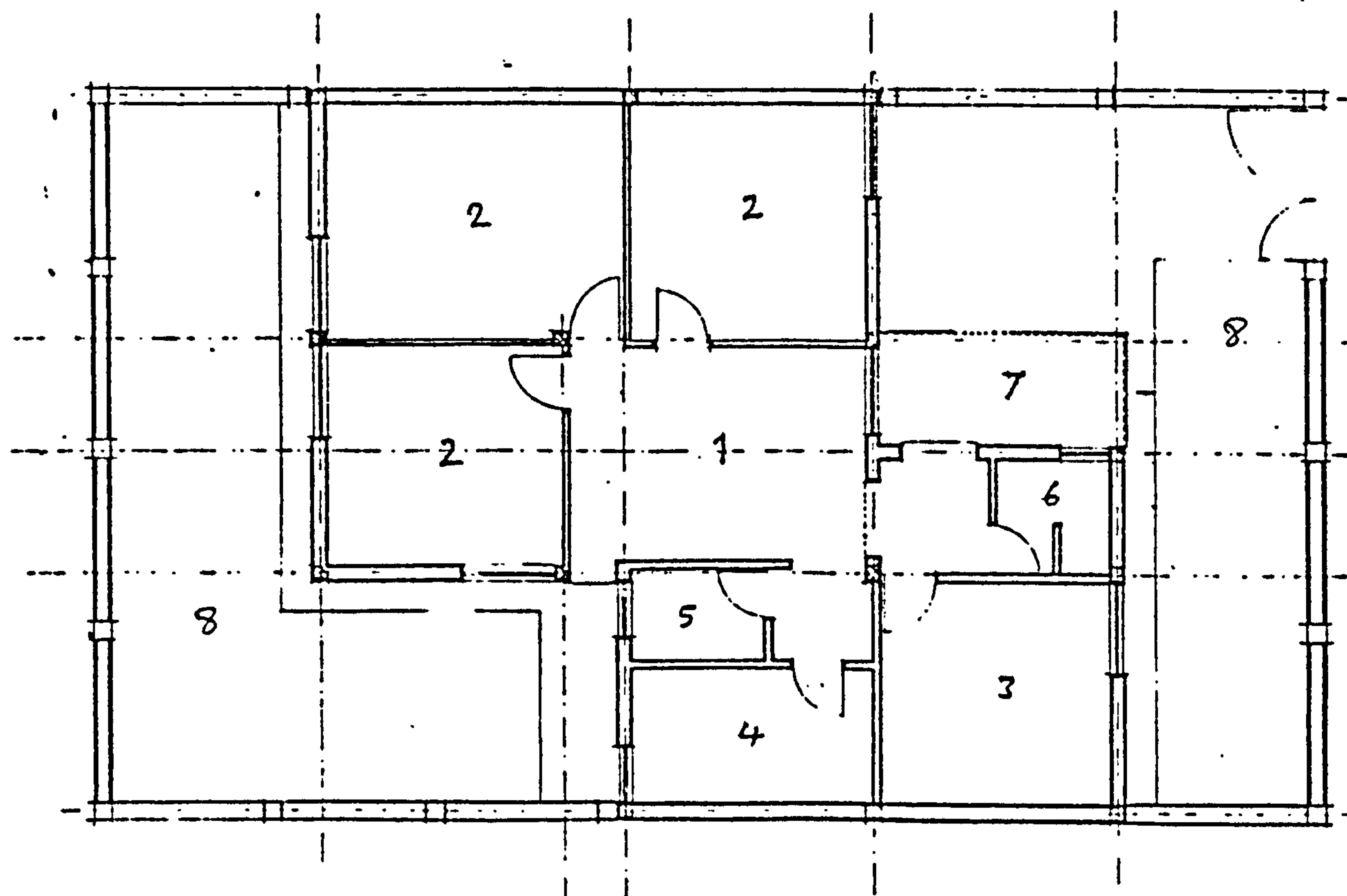
- | | |
|----------------|-------------|
| 1. Living room | 5. Bathroom |
| 2. Bedroom | 6. W.C. |
| 3. Guest | 7. Loggia |
| 4. Kitchen | 8. Garden |

An Example of Dwelling Units in Estate (4)



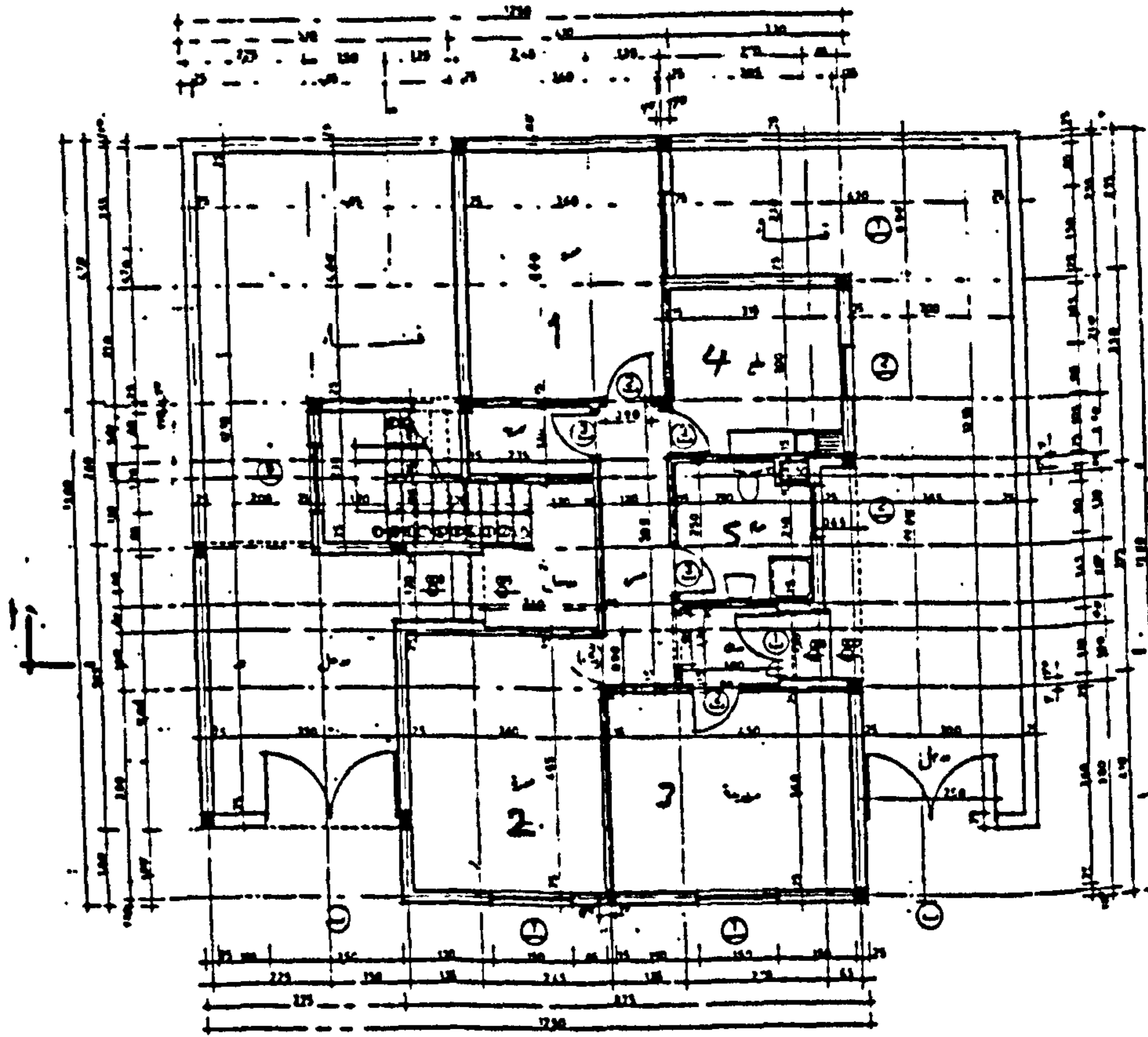
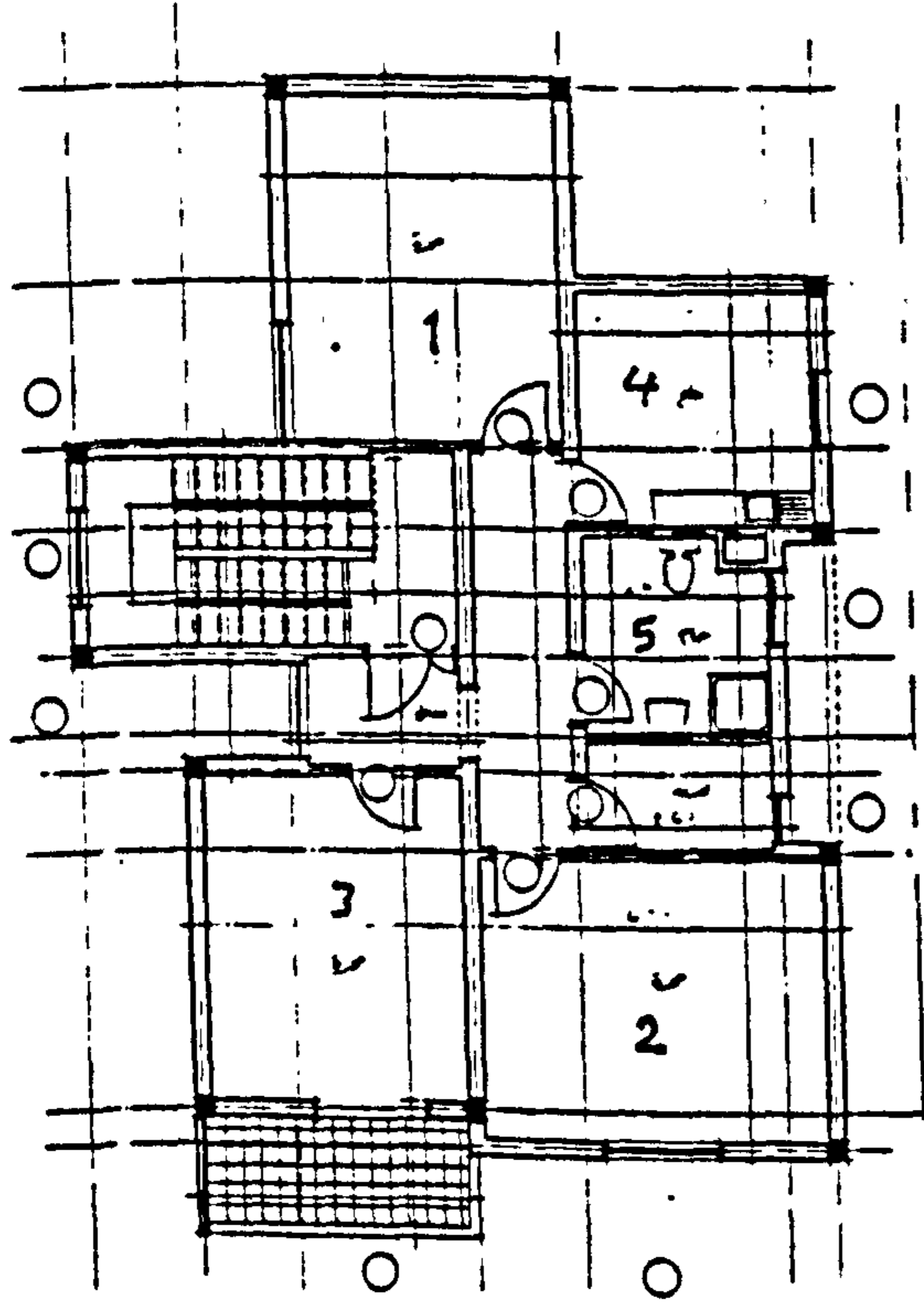
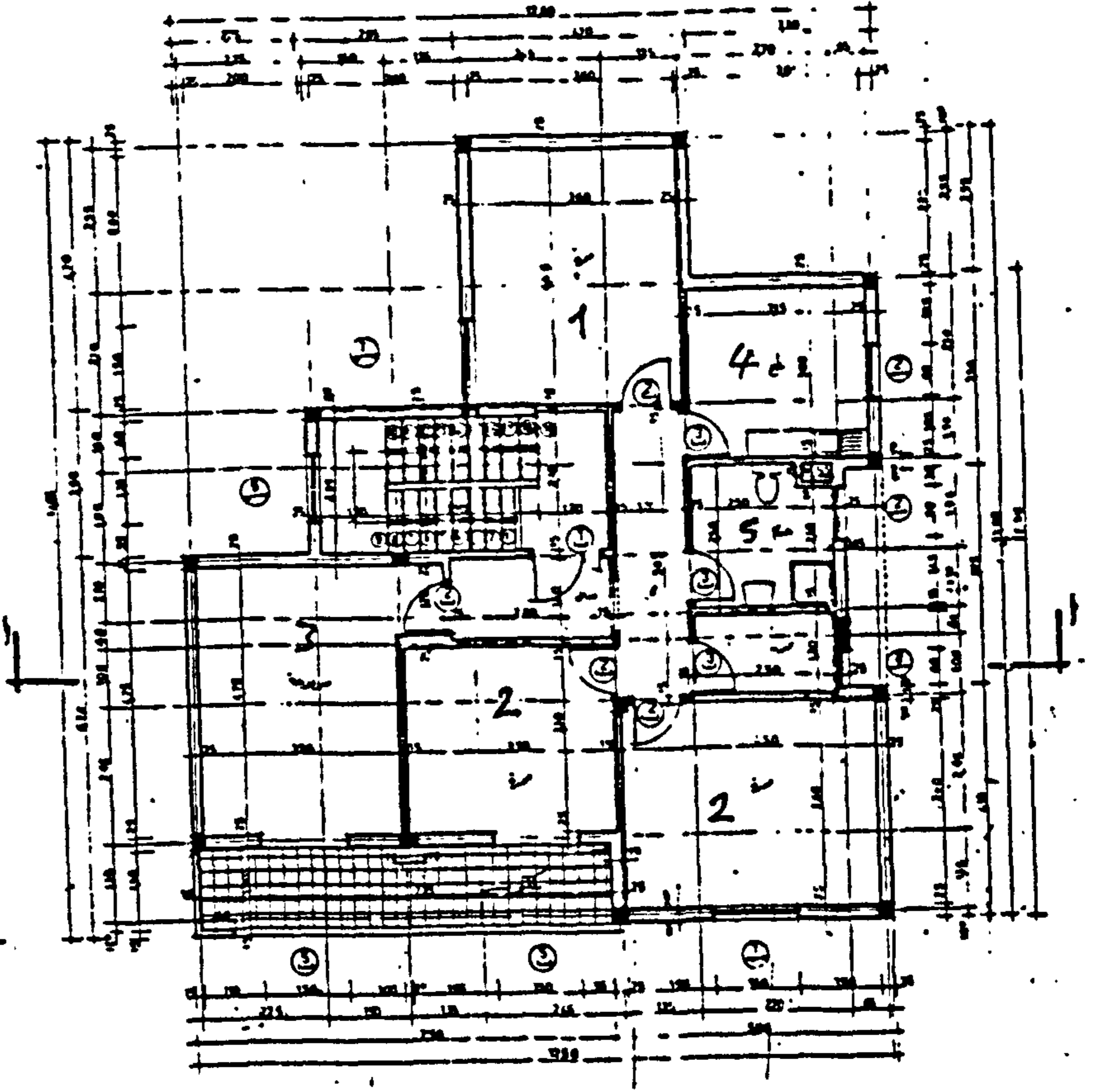
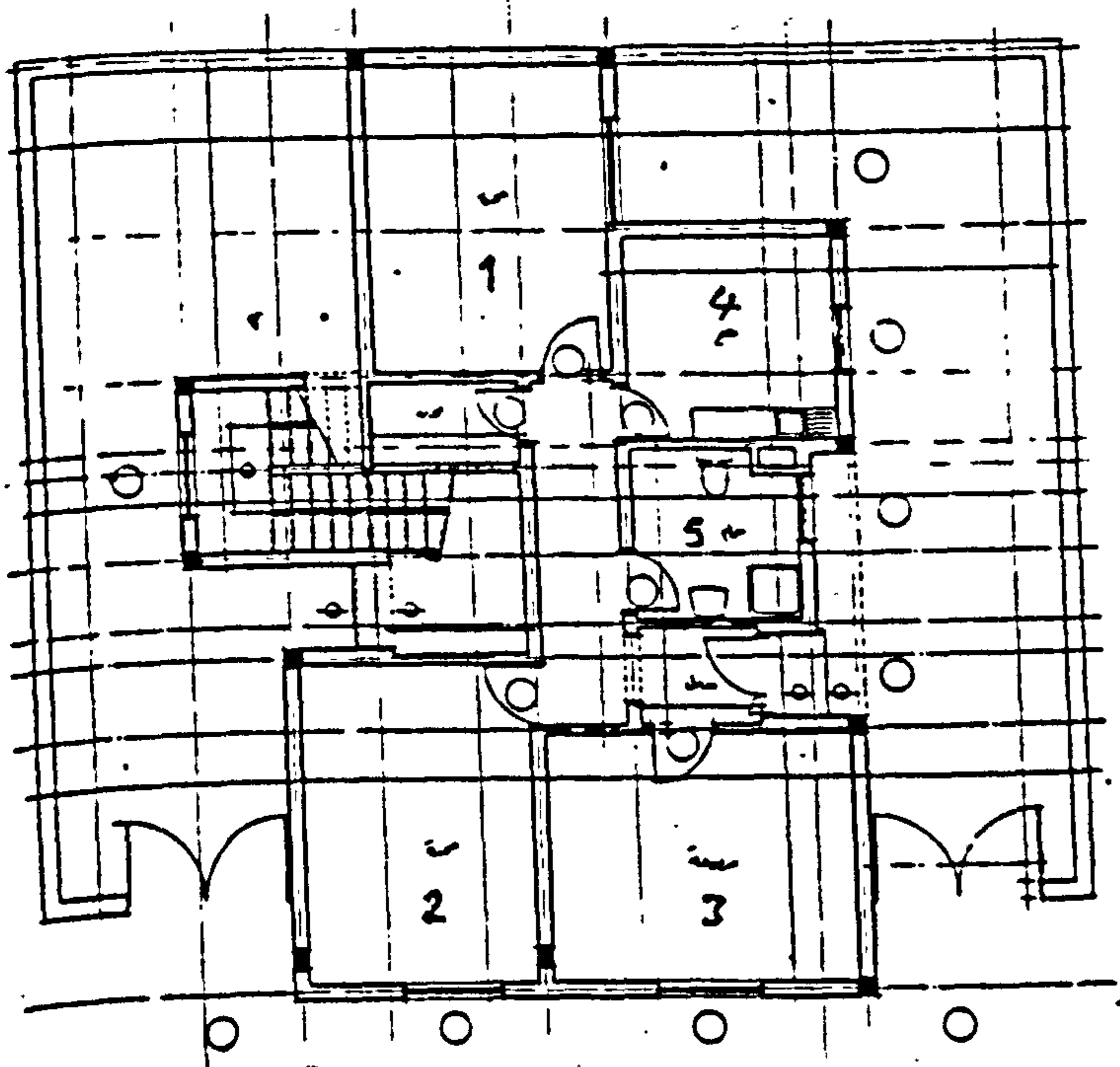
- | | |
|----------------|-------------|
| 1. Living room | 5. Bathroom |
| 2. Bedroom | 6. W.C |
| 3. Guest | 7. Loggia |
| 4. Kitchen | 8. Garden |

Examples of Dwelling Units in Estate (5)



- | | |
|----------------|-------------|
| 1. Living room | 5. Bathroom |
| 2. Bedroom | 6. W.C |
| 3. Guest | 7. Loggia |
| 4. Kitchen | 8. Garden |

Examples of Dwelling Units in Estate (6)



- | | |
|----------------|-------------|
| 1. Living room | 5. Bathroom |
| 2. Bedroom | 6. W.C |
| 3. Guest | 7. Loggia |
| 4. Kitchen | 8. Garden |

reveal a great deal of difference, simply because of the similarity of household sizes and numbers of rooms/dwelling in the projects. But the habitable area per person indicates more marked disparities between the two categories. For example people living in project 2 have almost twice the habitable area per person available compared with those in project 3 although the average number of rooms per dwelling unit in the two projects is almost identical.

A wide variety of responses was obtained when residents were asked about their satisfaction with the dwelling unit as a whole. As Table 5.11 shows, the overall level of satisfaction (71%) can be seen as high. However, greater differences in the level of satisfaction were observed between the residents in each of the projects, the highest level of satisfaction (94%) being observed by residents in project No.4, and in contrast the lowest level of satisfaction (58%) was found amongst residents in project No.6. These differences are a reflection of the fact that dwelling units in project No.4 have a habitable area of about 128 m² which is almost 70 per cent more than in project No.6 (78 m²) while households in both projects have a similar average household size of 6.8 persons/household.

A different picture emerges when residents' attitudes are examined in relation to specific reasons for dissatisfaction. For example, the very low level of dissatisfaction of about 6 per cent, obtained from residents in estate No.4 with respect to the dwelling units as a whole, increased to almost 36 per cent when households were asked if they felt that the dwelling unit was the right type for them. Differences in attitudes were also observed in relation to other features of the

Table 5.11 · The Dwelling Unit

Category	Number of Estate	Total Average Area M ² (with outdoor type)	Habitable Area	Percentage satisfied households	Average/ Category	Percentage non- satisfied households	Average/ Category	Reasons for Dissatisfaction						
								Not the right type	Not the right size	Not enough privacy	Hot in Summer Cold in Winter	poor arrange- ment of facil- ities	Noise from: streets, Neighbours, Lifts or Stairs, Playgrounds	Other reasons
	1	126.8	106.2	67.9		32.1		25.1	30.6	53.6	46.4	42.4	21.4	
A	2	131.7	124.8	74.1	76.1	25.9		26.0	28.2	11.1	14.8	7.4	3.7	
	4	153.7	127.8	93.8		6.2		13.1	31.3	6.2	6.2	12.5	6.2	
	3	94.1	71.7	75.0		25.0		38.9	18.3	30.0	10.0	20.0	0.0	
B	5	117.2	93.0	79.7	69.3	20.3		47.1	1.4	5.7	5.0	4.3	20.0	
	6	92.7	76.2	58.4		41.6		50.6	6.7	23.5	11.1	1.2	37.0	
Total				71.3		28.7		40.1	23.1	19.8	14.5	9.9	21.5	

dwelling unit. As might be expected in relation to almost all other reasons with the exception of the size of the dwelling units, the lowest level of dissatisfaction was obtained from residents in project No.5 where the dwelling units are of a villa type which offers among other benefits, a good deal of privacy.

A comparatively high proportion of households in estate No.1 were discontented about the climatic conditions in the dwellings which they regarded as being hot in summer and cold and draughty in winter. This might be the effect of location in relation to the coast as discussed earlier, see section 5.1.3. In contrast a much lower proportion of residents in projects 2 and 4 had complaints about the same features. This is likely to be because almost every dwelling unit on these estates is equipped with air conditioning systems as illustrated earlier, reflecting the greater affluence of the residents. (see Appendix 3).

With respect to privacy, a very interesting picture emerges. Table 5.11 shows that the flat dwellers are the least satisfied whereas the villa dwellers are the most satisfied. Project 6 which is a combination of both villas and flats is somewhere in between in terms of satisfaction.

Bedrooms

Generally residents in all the projects have been found to be satisfied with the size and general appearance of their bedrooms. However, as shown in Table 5.12, there is some variation in the proportion of dissatisfaction in relation to both the different estates and reasons for dissatisfaction.

Table 5.1.2 The Bedroom

Category	Number of Bedrooms	Average Number of Bedrooms	Average Price	Percentage satisfied households	Average / Category	Percentage of non-satisfied households	Average / Category	Reasons of Dissatisfaction						
								Lack of Privacy	Not adequate for family	Not enough space	Lack of sunshine	Restriction of furniture arrangement	Noise from the road	
A	1	2.8	17.3	85.7		14.3		10.7	25.0	14.3	19.7	10.7	28.6	
	2	2.6	19.4	88.9	84.5	11.1	15.5	3.7	25.9	18.5	18.5	7.4	3.7	
	4	3.0	20.8	75.0		25.0		12.5	12.5	18.7	12.9	6.2	18.7	
B	3	2.0	15.8	55.0		45.0		5.0	47.1	42.0	50.0	0.0	15.0	
	5	2.6	17.0	82.9	71.9	17.1	28.1	0.0	30.0	30.0	6.2	8.6	5.0	
	6	2.4	16.3	66.7		33.3		4.9	50.6	35.7	10.8	16.0	6.2	
Total Average				75.6		24.4		4.5	39.7	31.8	18.2	10.3	9.9	

Table 5.1.2 The Bedroom

Category	Number of units	Average Number of Bedrooms	Average Area (sq. ft.)	Percentage satisfied households	Average/ Category	Percentage of non- satisfied households	Average/ Category	Reasons of Dissatisfaction					
								Lack of Privacy	Not adequate for family	Not enough space	Lack of sunshine	Restriction of furniture arrangement	Noise from the Road
	1	2.8	17.3	85.7		14.3	Total	10.7	25.0	14.3	19.7	10.7	28.6
A	2	2.6	19.4	88.9	84.5	11.1	100	3.7	25.9	18.5	18.5	7.4	3.7
	4	3.0	20.8	75.0		25.0	100	12.5	12.5	18.7	12.9	6.2	18.7
	3	2.0	15.8	55.0		45.0	100	5.0	47.1	42.0	50.0	0.0	15.0
B	5	2.6	17.0	82.9	71.9	17.1	100	0.0	30.0	30.0	6.2	8.6	5.0
	6	2.4	16.3	66.7		33.3	100	4.9	50.6	35.7	10.8	16.0	6.2
Total Average				75.6		24.4	100	4.5	39.7	31.8	18.2	10.3	9.9

The differences in the level of dissatisfaction between the projects appears to be related to the number and size of bedrooms. The highest level of dissatisfaction (45%) was observed from residents in project No.3. The dwelling units in this estate have on average only two bedrooms, each measuring 16 m² despite the large household size of over 7 persons per household. This may be contrasted with the lowest level of dissatisfaction (11%) expressed by residents in project No.2 where dwelling units have on average about 2.6 bedrooms with an area of almost 20 m² and the households have an average size of 5.4 persons.

Residents' dissatisfaction with number and size of their bedrooms which is related to household size, was also expressed in the desire of most households for built-in wardrobes because it was felt that there was not enough space for storage, in particular of winter clothes and blankets. In this respect a fixed wardrobe would provide more space, especially for larger households, and would help in keeping the bedrooms tidy.

A further reason for dissatisfaction which was expressed by about 18% of respondents in all projects was the lack of sunshine in the bedrooms. This is perhaps a reflection of the density of development of the high-rise schemes.

Living Room

The general attitude to the living room has been found to be one of satisfaction. However, a significant proportion of residents in project 6 and a much smaller proportion in the other projects were not satisfied, mainly with the size and location of the living room (see

Table 5.13 The Living Room

Category	Average Area	Percentage satisfied households	Average/Category	Percentage of non-satisfied households	Average/Category	Reasons of Dissatisfaction					
						Not enough space	Not enough privacy	Not enough daylight or ventilation	Poor location	Lack of external views	Other reasons
1	21.5	96.4		3.6	Total	7.1	5.7	3.6	3.6	0.0	
A	2	41.1	77.8	22.2	14.5	18.5	7.4	18.5	11.1	7.4	
	4	34.9	78.6	21.4		6.2	6.2	12.5	0.0	7.1	
B	3	15.9	88.9	11.1		15.0	5.0	15.0	0.0	15.0	
	5	20.4	82.1	17.9	29.4	21.4	0.0	1.4	32.9	1.4	
Total	6	18.9	56.0	44.0		45.7	9.9	9.9	33.3	8.6	
			75.1	24.9		26.0	6.6	8.3	22.3	6.2	

Table 5.13). Dissatisfaction with location was mainly related to the lack of privacy.

As the table shows, there is a great variation in attitudes about the adequacy of the size of the living room which can be related to the number of persons in the household. It seems that for smaller households with less than 5 persons a living room of an average size of about 18 m² is adequate. Residents in project 6 were found to be the least satisfied with living room space provision.

Kitchen

Compared with other features of the dwelling unit a lower level of satisfaction with the kitchen was recorded by most of the households interviewed. This can be related to the fact that most Libyan women spend comparatively more time preparing meals than, for example, women in the western world and is also influenced by the comparatively large households for whom the women have to cater. Most interesting is the examination of kitchen size by category. Table 5.14 shows that about 70% of category A residents were not satisfied with their kitchens, although kitchens in this category occupy on average an area of about 11.5 m². This dissatisfaction could well reflect the fact that kitchens in category A estates are equipped with a lot of modern kitchen aids which occupy a great deal of space and reduce the amount of working space available. In contrast only about half the residents in category B were dissatisfied with their kitchens which on average occupy only 9.5 m². Most of the residents in category B are either immigrants or ex-shack dwellers. This observation gives further insight into the way in which previous accommodation and its facilities influence the level

Table 5.14 The Kitchen

Category	Number of Estate	Average Area sq. ft.	Percentage satisfied households	Average/Category	Percentage of non-satisfied households	Average/Category	Reasons for Dissatisfaction					
							Not large enough	Water supply and drainage	No storage space or not large enough	Windows are poorly located or too small	Poor location	Other reasons
A	1	12.2	21.4		78.6		67.9	78.6	82.1	3.6	52.1	14.3
	2	10.3	29.6	32.9	70.4		74.1	11.1	96.3	14.8	3.7	11.1
	4	11.8	60.0		40.0		25.0	12.5	40.0	6.2	18.7	12.5
B	3	9.6	55.0		45.0		25.0	65.0	95.0	5.0	10.0	0.0
	5	9.3	40.6	51.8	59.4		62.9	40.0	82.9	2.9	24.3	1.4
	6	9.9	60.5		39.5		40.7	30.9	43.2	13.6	19.8	3.7
Total			46.3		53.7		51.7	38.4	69.8	8.3	22.7	5.4

of satisfaction of residents. The two major reasons for dissatisfaction put forward by the majority of households were that the kitchens were not large enough and that there was no, or insufficient, storage space.

In the category B sample about half the residents claimed that they had problems with either the water supply, or the drainage or both; problems which are familiar in most parts of Tripoli. This gives some indication of the poor quality of appliances in the dwellings and the lack of maintenance of utilities in this project. In contrast in category A, with the exception of project No.1, where the residents are owner occupiers and maintenance is provided, only about 11% of the residents complained about the water supply or drainage. At the time of the survey project No.1 was about 10 years old and, as noted earlier, has experienced a poor level of maintenance.

The kitchen in a Libyan house is part of the private area which visitors or strangers do not see, partly because it is the workshop of the female. In this respect the location of the kitchen plays an important role in the design and layout of the dwelling unit as a whole. Analysis of the survey revealed that this factor seems to have been recognised in the design of some of the dwelling units as reflected in the general level of satisfaction with its location, the exception being project No.1.

Bathroom and W.C.

As has been the case with the other facilities in the dwelling unit, the residents' attitudes to their bathroom is strongly related to its size. As might be expected the highest level of discontent, 57%, was observed by residents in project No.5 where bathrooms measure on

Table 5.15 The Bathroom and W.C.

Category	Number of Estate	Extra %	Average Age	Percentage satisfied households	Average/Category	Percentage of non-satisfied households	Average/Category	Reasons of dissatisfaction				
								Too small	No proper appliances	Poor drainage	Water supply not adequate	Other reasons
	1	50%	5.4	46.4		53.6		50.0	14.3	60.7	21.4	7.1
A	2	50%	7.0	74.1	64.8	25.9	35.2	29.6	7.4	11.1	3.7	0.0
	4	100%	7.9	81.2		18.7		0.0	6.2	18.7	0.0	6.2
	3	100%	5.6	70.0		30.0		15.0	30.0	35.0	30.0	0.0
B	5	100%	4.9	43.3	53.9	56.7	46.1	51.4	45.7	28.6	31.4	4.3
	6	10%	6.6	58.7		41.2		34.6	50.6	13.6	23.5	4.9
Total				57.1		42.9		36.8	35.5	25.0	22.3	4.1
Total								100				

* % of the dwellings which are provided with extra W.C.

average about 5 m². In contrast the lowest level of dissatisfaction was obtained from residents in project No.4 where bathrooms were found to measure 9 m². Generally, however, the high level of satisfaction within category B can also be related to the fact that most of the residents, particularly in project No.3, ex-shack dwellers, have not had a proper or modern bathroom before.

The high level of dissatisfaction with the drainage system in project No.1 can be related to the age of construction and poor maintenance of the dwelling units in this project.

The second major reason put forward by the residents for their dissatisfaction within the bathroom was the lack of availability of proper appliances. The differences between projects in category A and category B is clearly revealed in this respect, and is related to the generally poor building quality of dwelling units within the projects in category B. As can be seen from Table 5.15 almost half the residents in category B considered the lack of proper appliances a major reason for their dissatisfaction, whereas less than 15% of residents in category A offered the same reason.

Private outdoor space

Information and responses collected about private open space related to satisfaction with size and use in each case. As shown in Table 5.10 all the dwelling units in each project are provided with private balconies or gardens, though the size and use of private open space varies considerably within the projects. On the one hand, the size ranges from about 13 m² to 120 m² and on the other, in the case of balconies, their use varies from conversion into an extra room or



Project No. 1.

THE MULTIPLE USE OF BALCONIES



Project No. 4.



Project No. 3.

as extra storage space. A further important use of private open space is the drying of clothes, both in gardens and on balconies. Although many flat residents suggested that it looked unsightly, at the same time they stated that they have no other alternative. Something which should be considered in planning for the provision of domestic activities in housing in the future is adequate provision of space specifically for clothes drying.

However, as might be expected, it has been found that the residents in projects 5 and 6 who have gardens are the most satisfied in this respect. Real problems have been found in particular in project No.3 where in most cases the balconies have been used as a storage space for large items and this no doubt limits the use of the balcony for its intended purpose.

Storage of large items

The problem of storing large items, particularly in flats, appears to be a very real one. In this respect, most flats residents had complaints about the limited space available for storage. However, in several cases people have simply converted their balcony for use as extra storage space or stated that they had got rid of items which they could not store.

5.4.1.3 The Housing Estates

In earlier sections the location, layout and other features of the six housing estates under study have been described. In the following sections the influence of some of these factors on people's satisfaction or otherwise with their housing estate will be examined in an attempt to evaluate such influences.

The new environment

Public housing has apparently failed to maintain the traditional spirit and the "community ties" of neighbourliness have been disappearing from many parts of Tripoli as a result of rapid urban growth and social and economic changes. It was suspected that the breakdown of the traditional neighbourly interaction patterns, characterised by the communities from which most of the residents originally came, has had an effect on the respondents' evaluation of their housing estates. In relation to these issues occupants were asked whether they miss the social and sentimental relationships with their previous neighbourhood or community. The majority of the respondents in both categories (59% in A and 52% in B) emphasised that they missed their previous community relationships while only a small percentage (9% and 7% of A and B respectively) stated that they had not experienced close community relationships prior to their move to the present community. This is a high level of dissatisfaction which reflects the disruptive effect of moving from an established community to a new estate. On the other hand, it has been found that only a small proportion, 10% in A and 16% in B, still enjoy the same relationships with previous neighbours who also moved to the same estate and in this way had managed to retain some of their former social connections and were consequently more satisfied. However, although most of the residents had lived in their present home for at least two years only a minority in each project stated that they enjoyed newly established neighbourly and community relationships as the following table shows:

Table 5.16

Category	A			B		
	1	2	4	3	5	6
Missing previous neighbourly relationships (%)	38	48	64	30	45	54
	59			52		
Have the same neighbours (%)	15	9	9	25	17	12
	10			16		
Enjoy new neighbourly relationships (%)	25	17	15	10	19	11
	18			14		

In order to investigate further the present relationships within the different communities in each project, respondents were asked how they get on with other people on their housing estate. Over three quarters of respondents in each project indicated that they have good relationships with all the people on the housing estate, while only a small minority, 16% in category A and 8% in category B, indicated that they did not have good relationships with others in the same estate.

Table 5.17

Category	A			B		
	(1)	(2)	(4)	(3)	(5)	(6)
Good relationships with all	71	70	75	80	82	85
	71			83		
Good relationships with some	15	4	10	10	13	12
	11			7		
Good relationships with none	14	25	15	10	5	13
	16			8		

These results indicate that the overall social climate was perceived to be generally good and is reflected in the ease with which people make friends among neighbours. Contrary to expectations, the type of housing development was not a significant factor in influencing the overall evaluation of the social environment in the publicly provided housing estates. It is interesting to note that there were no significant differences between the two categories and between the estates as a whole, implying that socio-economic status is not a major factor in influencing occupants perception of the positive and negative aspects of the social environment especially within relatively homogenous estates.

Positive attitudes towards public housing implied in the responses were directly measured by asking if the new housing offered a better environment compared to that of previous housing. It is evident that occupants associated their evaluation with the physical improvement over the former residence when 23% of category A and 28% of category B indicated that they have better dwelling units and 18% and 25% of category A and B respectively referred to their housing estate as better than the previous housing area. The convenience of new housing was another reason for their move to the new housing estates, but the least significant reason was indicated when only 1% of each category moved to the new dwelling because it was less expensive (see Table 5.18). Very few of the occupants indicated that the environment in general is better in their new residence compared with the previous one (indicated by 3% and 5% of category A and B respectively). Even among occupants of Estate 3, who are mostly ex-shack dwellers and would be expected

Table 5.18 Reason for Moving to Estate

Category	Category (A) %			Category (B) %		
	(1) %	(2) %	(4) %	(3) %	(5) %	(6) %
Reason for Moving to Estate						
Better Dwelling Unit	29	22	13	30	26	28
		23			28	
Better Residential Area	14	18	25	25	21	27
		18			25	
Less Expensive	4	0	0	3	0	0
		1			1	
To Join Relatives and Friends	7	18	12	0	3	0
		13			1	
Convenience of Location	7	44	50	45	14	20
		31			21	
Close to Place of Work	32	4	6	45	21	7
		15			17	
Better Environment	10	0	12	30	4	0
		3			5	
Other Reason	21	4	5	0	7	12
		12			9	

very much to favour the new environment because of the poor conditions in which they lived previously, only 30% thought it was better.

Changes in behaviour

It is often suggested that a change in environment, as a result of change in housing, affects people's way of life in one way or another. The survey revealed this to be generally the case with the respondents in the six projects under study. Interestingly, however, the environmental changes appear to have had a greater influence in relation to respondents in category B where as many as 80% of residents admitted changes in many aspects of their way of life. In contrast only just over half the respondents, 54%, in category A stated that their way of life changed as a result of moving to the present housing. The differences between the two categories in this respect could be due in part to the fact that most residents within category A are urban dwellers and their environment did not change much. In contrast most of the residents in category B are immigrants from rural areas and other countries, and the environmental changes for them were clearly more significant.

Changes in behaviour implied different responses to different activities, the responses recorded in the survey relating to various functions ranging from domestic and shopping to employment activities. When residents were asked whether the amount of housework has increased compared with the housework done in previous accommodation, only about 37% in category A and 39% in category B stated that they do more housework in their present house than before (see Table 5.19).

In relation to a change in behaviour with respect to social action

Table 5.19 Response to Behavioural Changes

Category :	Category (A) %			Category (B) %		
	(1) %	(2) %	(4) %	(3) %	(5) %	(6) %
Behavioural Changes						
Changes as a result of New Environment	44	62	60	74	85	78
		54			80	
Changes in Home Family Gathering	36	18	15	38	51	60
		20			62	
Changes in Social Relationships	32	41	37	42	85	47
		37			43	
Changes in Children Play Time and Place	14	21	31	10	15	15
		27			12	
Changes in Shopping Habits	14	22	43	40	57	40
		24			52	
More Housework	20	19	50	50	46	30
		37			30	
See Relatives and Friends less Frequent	35	48	37	30	36	56
		39			42	
Change Place of Work	8	0	0	6	0	0
		2			2	

and activities, such as interaction with others and family gatherings, 41% of the respondents in category A and 44% in category B stated that their social activities had decreased following their move into their present dwellings. When respondents were asked about reasons behind such decreases, only a small percentage, 17% in A and 16% in B, related these to the location of the housing estate. However, a much higher percentage, 30% of A and 52% of B, related it to availability of space within the dwelling unit, living and guest rooms, and the design of the dwelling.

Another change which was regarded as being a result of the new environment was in shopping habits as 24% of A and 52% of B residents pointed out. It seems likely that this change was related to the new environment, firstly as a result of the internal design and lack of storage space in the dwellings for bulk shopping. This was a major complaint among occupants of both categories. Secondly, it could be attributed to locational characteristics of the estates, as expressed by 64% of B residents who stated that they were now located far from shopping facilities. Nevertheless even among category A householders, 20% were not happy about the shopping facilities in their locality despite the fact that they are now living close to the city centre. Perhaps it was this more central location of category A estates which contributed to the higher level of satisfaction of category A residents with provision for other facilities compared with those in category B (see Table 5.20).

Location

In evaluating convenience of their housing, centrally located

Table 5.20 Reasons for Dissatisfaction with the Estate

Category	Category (A) %			Category (B) %		
	(1) %	(2) %	(4) %	(3) %	(5) %	(6) %
Reasons of Dissatisfaction with the Estate						
Do not have a good Neighbourhood to Live in	41	42	0	5	56	77
	12			50		
Lack of Necessary Facilities	12	22	43	5	9	24
	31			15		
Lack of Elementary Schools	7	7	0	1	3	3
	5			2		
Lack of Preparatory Schools	11	19	0	0	19	15
	11			15		
Lack of Health Facilities	14	22	13	0	51	90
	17			54		
Lack of Cultural Facilities	29	19	19	20	40	51
	30			43		
Lack of Religious Facilities	12	7	6	15	54	68
	17			56		
Lack of Recreational Facilities	23	30	11	20	30	59
	30			46		
Lack of Shopping Facilities	24	7	25	0	51	37
	20			54		
Environmental Quality	4	15	23	5	1	7
	27			4		
Social Problems	0	4	6	12	3	13
	3			9		
Do not Enjoy Outdoor Space	74	34	38	60	61	63
	70			62		
i - Not well managed and maintained	5	20	15	11	24	5
	27			13		
ii - Not Protected from Traffic	18	33	1	10	24	4
	24			17		
iii - Noisy	11	25	5	17	11	4
	16			8		
iv - Not Clean	20	11	6	10	10	5
	17			9		
v - Other reasons	12	15	3	3	5	9
	13			7		
Lack of Management and Maintenance	10	4	4	25	7	17
	-			14		
Psychological Dissatisfaction	14	0	4	1	7	3
	7			4		

category A occupants were somewhat more satisfied, 31%, compared with those in category B, 21%. This similarity in level of satisfaction disappears when the locations are evaluated in terms of their accessibility to public facilities and other parts of the city. Only 6% of A think their housing is not accessible, but 46% of B think the same. But when the households in both categories were asked if any of their members had changed his place of work since they moved to their new dwellings, only 2% of each category had done so and the change in all cases was not due to residential location (see Table 5.19).

Location evidently has played a major role in the occupants' evaluation of their housing in many respects. Among category A householders only 17% were dissatisfied with health facilities, while in category B there was high dissatisfaction, 64%. Within category B the differences are very clear between Estate 6 which is on the periphery of the city, 90%, and Estate 3 which is centrally located, 0%. The same range of differences is reflected in the level of dissatisfaction with the cultural and religious facilities (see Table 5.20).

The level of dissatisfaction with school facilities is very low, but before discussing the factors which influence the disparity within this level it is appropriate to point out that the Libyan Government has given full attention to providing for free school facilities, with compulsory education age up to fifteen years. Besides, elementary schools are usually the first to be built - after dwelling units - before other community facilities in any housing scheme. Only 61% of category A are dissatisfied with elementary school facilities and as little as 2% of category B. There is a high degree of satisfaction with preparatory

school facilities, only 11% of A and 15% of B not satisfied. Perhaps the high level of car ownership has contributed to this satisfaction. There is more disparity in the degree of satisfaction with respect to nursery facilities as 31% of A and 15% of B are not satisfied. This is likely to be due to the fact that category A is characterised by a higher percentage of more than one employed person per household, and in many cases the second employed person will be the housewife and mother. Category A residents also have higher incomes which are closely related to professional and educational status. All this affects the awareness of the need for nursery schooling and the evaluation of such facilities. The level of satisfaction with educational facilities seems clearly to be a function of the household characteristics as well as its socio-economic conditions.

Children's play facilities

Information collected on children's play areas in each estate, was aimed at exploring the use made of such areas if provided, and whether respondents generally considered the estate to be a good one for children to live in.

In the survey sample there were 377 children, about 26% of the total population, in the age range 6-12 years, the elementary school age. As one might expect, play for these children was confined either to the dwelling unit, including balcony, or within close proximity of the home, that is to say, within the estate. With the exception of estates 5 and 6 where each dwelling unit has its own garden, playgrounds for children on the other estates were regarded, by a substantial majority of respondents, 76%, as not satisfactory. Apart from Estate 1,



Project No. 6.

ILLUSTRATING INADEQUACY OF PROVISION
OF PLAY SPACE FOR CHILDREN



Project No. 2.



Project No. 3.

children's play facilities are limited and very poor. Outdoor space in all estates is of a multi-functional nature. Children's activities are usually a function which takes place on the estate or in common areas, such as the staircases and halls, within the blocks. As the outdoor space is not allocated for defined use, children usually play between parked and circulating cars within the estate, a situation which contributes to the feeling of dissatisfaction with play facilities among all occupants of these estates. For a variety of different reasons 56% of category A and 34% of category B inhabitants did not allow their children to play on the estates (see Table 5.21). 32% of A and 16% of B were dissatisfied with the outdoor space as playgrounds for their children, while 26% of A and 9% of B were dissatisfied with safety measures. 21% of A and 8% of B thought that their children did not get on with other children on the estate. Other people, 18% of A and 12% of B, prefer that their children play at home. The level of dissatisfaction with the playing safety and convenience is high enough for parents to discourage the popular habit of children playing in the vicinity of their homes even among the lower income groups who usually encourage this habit and who cannot afford otherwise, especially when home space and facilities are considered.

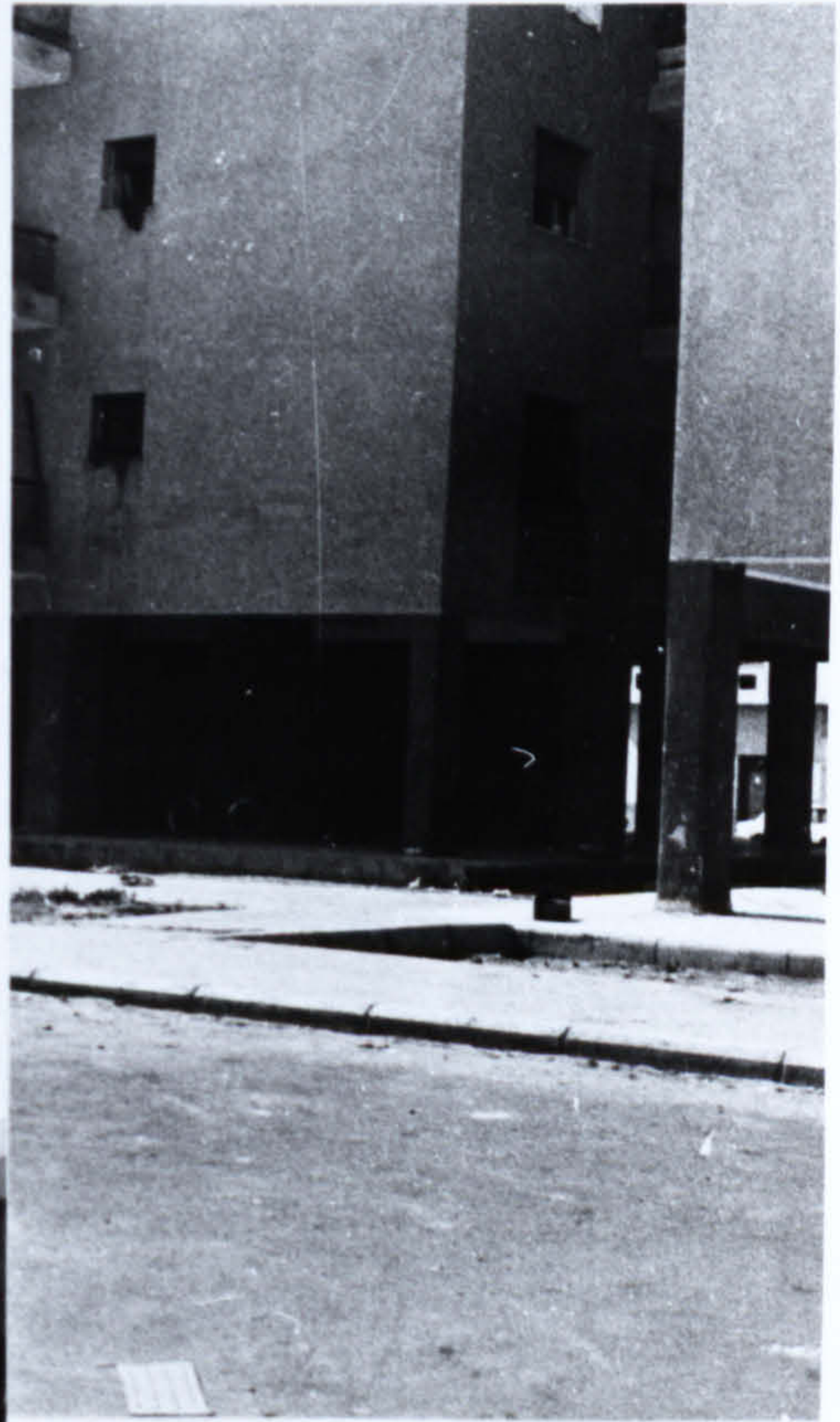
Table 5.21

Category	A _g			B _g		
	(1) _g	(2) _g	(4) _g	(3) _g	(5) _g	(6) _g
Reasons						
Estate No.						
Children do not play on the estate	54	71	38	38	34	42
	56			34		
Outdoor space is not appropriate for children play	43	30	16	20	16	16
	32			16		
Outdoor space is not safe for children play	29	26	6	10	11	6
	26			9		
Children do not get on with other children on the estate	39	11	6	5	4	11
	21			8		
Prefer children play at home	14	22	12	20	6	14
	18			12		



Project No. 3

DERELICT AND POORLY MAINTAINED
COMMUNITY OPEN SPACE



Project No. 1



Project No. 6.

5.5 Conclusion of the field survey and the analyses

For any given situation, climate, site and constraint of materials and technology will modify, but not determine the form of a 'home'. That form will be primarily the result of a choice from among possible alternatives, and will reflect an image of an ideal life style expressed through a mixture of socio-economic conditions, preferences, tradition and cultural forces in the broadest sense which can often be more important than 'physical' forces in the generation of forms.

In this chapter a concise description of the field study and summary analysis of the survey data have been presented. The analysis proceeded from a consideration of the socio-economic characteristics of households interviewed through a description of the different types of dwelling in which they live to a discussion of distinguishing features in the six housing estates and their environment. The analysis and discussion centred around the examination of the residents' satisfaction or otherwise with certain features of the dwelling units and estates as well as the 'total environment' in which they live.

Much of this investigation has been exploratory in nature, designed to achieve a better understanding of the problems of housing in the study area. The approach has been based on the systematic study of residents' attitudes. In this connection the significance of the data presented should not only rest upon their 'measurability' but also upon the importance that one is prepared to place on the range of opinions and subjective views of the people interviewed.

One is inevitably faced with the difficulty of finding solutions to mass problems without ignoring the particular needs and circumstances of groups in the population. The analysis of the data revealed something

of the extent of this dilemma. The views expressed by respondents about their satisfaction with their circumstances confirmed that even where conditions could only be judged to be relatively 'good' dissatisfaction could still be strong, reflecting the tendency for people progressively to raise their expectations and aspirations. The attainment of a state in which universal satisfaction is expressed is clearly impossible.

However, it is suggested that one of the fundamental impediments to any successful housing scheme is the conflict between group and individual household needs. These often arise out of the lack of direct contact or understanding between those who are planning and designing the scheme and those for whom the scheme is planned. A first step towards the achievement of greater user satisfaction would be to at least ask people what they want or would like as an ideal or to give them a choice between alternatives in terms of the type of dwelling or the type of tenure or different locations.

Not all respondents were articulate about their situation and they were not always fully aware of the origins of their dissatisfaction or otherwise with particular features within their home 'environment'. For example, the low income flat dwellers of project 3, were in many cases aware of the advantages of their present situation. However, in spite of their modest earnings and previous accommodation, it seems that their aspirations were set on a way of life which is enjoyed by those above them in the community and which they had adopted as a standard or goal towards which they were striving.

In the following chapter an attempt will be made to discuss the findings of the field study within the wider context of housing in Libya.

CHAPTER SIX

HOUSING CONTEXT

The preceding chapters have shown in detail the characteristics and nature of housing development on the one hand and the most influential factors contributing to the current housing situation, with special reference to the public sector. In spite of the country being in transition in every respect, there are still certain requirements in housing imposed culturally or socially, or both, which are not easy to ignore. Environmental qualities are greatly affected by the extent to which the human and social requirements are met. The nature of the relationship between these aspects is discussed in this chapter and the influences of the long adopted way of life, values and housing concepts which should be separated from passing fashions, are identified.

6.1 Conceptual Framework of Housing Needs

One major perspective for understanding the social implications of housing needs and problems is people's concept of a home, which is related to the prevailing cultural pattern and attitudes. A housing unit is basically a physical container which provides for man's need for protection from elements and enemies, but this is a relatively minor criterion of housing requirements in contemporary living conditions (Abrams, 1969). In an increasingly complex urban world, housing implies much more than merely 'shelter'. Every society has sets of values and notions about the appropriate form of dwelling to satisfy

social and other defined requirements of a person or of a group of people who have to share the same roof. 'Household' is the term used to describe such a person or group. Depending on cultural and social norms, the composition of the household can range from a single individual to several generations living together in the same dwelling. What are then the human needs in terms of housing? Broadly defined, housing needs within both private and communal spheres can be seen in two overlapping levels: the basic (sometimes also known as biological) and the socio-cultural (non-quantifiable) needs. The role of the man-made housing environment is to fulfil all of the needs which arise at these two levels. The attributes that a shelter must have to meet the social and human needs are discussed below.

Privacy is one of the basic principles of healthful housing. A proper knowledge of people's definitions of privacy is essential for an appropriate interpretation of housing needs and problems. However, it is not easy to define privacy as it is a social rather than physical concept. Understanding of privacy is a prerequisite to forming a concept of a house, which can be a needed refuge from the noise and tension of the outside world. The same principal applies within the home itself between members of the household. Needs for and attitudes to privacy* vary considerably among different cultures and, within a particular culture, according to socio-economic conditions, and also tends to change with time within a given society. Housing privacy is highly affected by the design, composition and physical appearance of dwelling, and more importantly, by the household characteristics, life style and living conditions. The inter-relationship between these

* Ekistic privacy for living activities, social interaction and education.

elements is bound up with the traditional definition of a dwelling unit and how it accommodates the living activities or functions which may be conducted within the privacy of the house.

Living activities and social interaction can be considered as an extension of privacy and a balance must be maintained when provision is made for these needs. Living activities relevant to housing vary in nature and differ with the home concept of the individual as well as of society. Sleeping is perhaps one of the major functions conducted by a household in a dwelling and it varies considerably in terms of space and privacy with cultural and social values. Domestic facilities and recreation are also elements of housing needs, the nature and scale of which are functions not only of cultural and social traditions but also of the economic conditions of individuals and households. An element which is very much a function of all these conditions is a working place in the family dwelling, whether for pleasure or for earning a living. Private open space is another essential element of housing need and housing privacy in very many societies. Its importance, form and use again vary, subject to many factors.

Social interaction by members of the household, the needs for which may vary in importance from one culture to another, is a function of individual characteristics as well as household structure. The physical arrangement of the internal space of the housing unit has to provide for individual and joint activities in order to achieve healthy, significant interaction.

Location is another major attribute of housing. There are two

important aspects of housing related to location; relative location in terms of accessibility and absolute location in terms of environmental quality.

The need and frequency of travelling (work, educational, social and other kinds of trips) are not standardised features of individuals or households, neither is the concept of travelling, or its time and cost. The nature of the mix varies greatly from one society to another. The quality of relative location depends on the ease of access to local facilities, within acceptable walking distance; the availability of transportation to other locations; the cultural acceptability of different means of travel; and on people's ability to use it where it is provided.

The second set of issues can be regarded as environmental amenities, but this does not imply specificity about the physical nature of environments. Rather, it refers to the general characteristics of the surroundings which affect the quality of residential environments, variations of which satisfy different requirements in different social contexts. Apart from the built residential environment, the social character of people and the reputation of the area are vital considerations in environmental quality of a particular housing locality. Factors such as density, visual appearance, land use, traffic, noise, safety and many others influence to different degrees people's perceptions of the environmental amenity of a residential area.

However, all these locational variables take extremely diverse forms both in different cultures and in different socio-economic classes within the same culture.

Ownership is another perspective of housing needs that can affect housing satisfaction. Home ownership provides the household with a feeling of security in both psychological and financial senses. It satisfies the need for stability and private freedom protected by a set of property rights which vary from nation to nation. Home owners enjoy social status as ownership symbolises wealth and prosperity in some societies, whilst in others it is a system of social security. It is a family achievement when property investment is a common practice. The rights and obligations of enjoying a dwelling by a household constitute complex and important attributes of housing.

However, these housing parameters and many other variables are not only subject to cultural and socio-economic factors, climatic and political factors give relative importance and definitions to these aspects of housing in a particular context. The relationships between these variables determine the meaning of housing standards and the degree of housing satisfaction that households enjoy in that context.

6.2 Housing Standards

Once housing needs in both private and public spheres are recognised, the pattern of living activities arising from those needs has to be determined. The pattern as such cannot be used directly in the designing process, it has to be translated into physical requirements for design purposes (U.N. 1971). The term standards is quite often used to refer to these physical requirements in different context. It may be used to refer to the norms currently applied for the determination of the level of satisfaction of housing needs and the quality of housing to be built, or to existing housing stock. Housing standards can be prescribed in terms of space, equipment and quality of construction. In a wider sense standards may refer to planning measures such as residential densities. It will be evident that the use of housing standards is a vital tool in the formulation of housing policies (U.N. 1961). Housing authorities are liable to make their own judgement about the desirability and suitability of the housing they provide, evaluating the dwellings in a manner similar to that adopted by the people to be housed. But this is usually done by authorities on the basis of objective standards related to the physical dimensions and characteristics of the dwellings provided within their resources (Smith, 1971). A household's current housing satisfaction involves far wider considerations than these. In a sense, it is more conceptual than material, related to individuals rather than to masses. Satisfying the motives and desires of occupants is surely a very important element in successful housing policy formulation and in housing provision. The problems that accompany the establishment of standards are many, especially when roles of housing other than the basic

provision of shelter have to be fulfilled. In this case social aspects of housing must be related to the activities and functions conducted in houses and these are quite often ignored when housing standards are determined, despite the fact that they are important needs to be fulfilled by the physical environment (U.N. 1971).

Specific standards cannot always be applied even when dealing with the basic minimum level of housing provision. When social and cultural requirements of housing are involved, the establishment, let alone the application of housing standards within a community is not easy. Standards adopted in any society have to emanate from that society's conceptions of housing and must be related to the broadest interpretation of the housing needs of the individual as well as those of society. However, housing standards can be judged in the light of definitions of housing satisfaction according to local measures.

6.2.1 Social Components in Housing Standards

Although housing provides for many other needs, besides physical shelter, its planning is very often based solely on physical design standards. The importance of relating the social aspects to the economic and physical aspects is great, but the conceptual framework of this study emphasises the importance of social components and their implications for housing design standards within the context of the socio-cultural background of the clients of public housing in Libya.

6.2.1.1 Implications of Social Factors for Dwelling Design in Libya

a) Household Characteristics: Normally, the size and structure of

the household affect the size of the dwelling, but in Libya the socio-economic conditions are more influential in this respect. The traditional composite or extended family is the main characteristic of household structure, especially in the lower income groups (see 1.5). The implication of this is that housing for special groups is not yet a matter of concern as the young, the elderly and handicapped are kept within the household. Another typical characteristic is the large size of the household, averaging 6.7 persons. This no doubt affects the size of the dwelling, the arrangement of rooms and the type and number of amenities needed.

b) Traditions and Social Values: The traditional attitudes towards age and sex affect the development of the dwelling form, most important being attitudes towards privacy in terms of separation of sexes. This has created the two distinct areas in the family home, one reserved for the private family living activities, and the other for receiving visitors (see 2.5). The degree of separation and the attitude towards the privacy of the family part of the house is a matter of individual judgement rather than socio-economic conditions. However, these conditions have strong implications for the role and use of the visiting area in the house. Sheltering of women is traditionally required inside the dwelling and in its outdoor space.

c) Household Chores and Activities: The perception of 'home' is reflected in such household activities and uses, which in turn are functions of custom and common practice in society. The contemporary major role of a woman in Libyan society is confined to the house within

which a great deal of her time is spent, especially when food has to be prepared (see 2.5.1). For this reason the kitchen is a particularly important element in the house. The traditional bulky cooking utensils and groceries which are still largely in use, make adequate kitchen storage space an essential need in housing. Because most social interactions such as family gatherings and meals and children's play are almost entirely confined to the house, the traditional centrally located living area has an important role to play in the housing needs of a family. This is especially so when several functions can be allocated to such an area (see 2.5). Sleeping space, apart from the parents room, usually has the same multi-purpose feature. The functional allocation may change with the seasons and/or with the household structure and composition. Another element of housing needs is outdoor space, whether for domestic activities such as washing and drying clothes or for some aspects of social interaction, such as family gatherings for summer evening tea ceremonies or children's play. Private open space is essential in a society where, for social and traditional reasons, public gardens and parks cannot easily be a substitute for an individual garden.

Traditionally, cleanliness and hygiene are very important among all socio-economic groups, but the number, type and quality of facilities in this respect are functions of groups preferences. Western styles of bathrooms became first a status symbol then a fashion and now their provision is a common practice, despite the fact that the bathtub is rarely used for tub bathing as traditionally people take showers instead. Western type bidets were introduced by the Europeans

and then adopted by the local people as a substitute for the traditional methods of toilet cleanliness: the bidet, or its equivalent therefore has to be provided. Domestic activities and daily habits thus bear heavily upon the physical requirements of a dwelling.

d) Social Habits and Customs: Libyan society is undergoing changes in several directions, among them changes in the social life and pattern of living. Many factors influence the speed of changes and cause other aspects of social life and the pattern of living to change only slightly. If housing is to be successful it has to reflect the current socio-cultural patterns as expressed in the use and activities undertaken by the occupants of the houses. Among the strong traditions still retained is visiting. Buchanan (1975) emphasises that 'visitors and visiting are an important feature of Libyan life'. Visiting can take a variety of forms, from the individual casual intimate visit from a friend or a relative to seasonal or social visits from quite a number of them. The size and frequency of such gatherings depends on the characteristics of the individual or the household. Feasts and religious occasions create a great many of activities which have to be catered for. Extra bedding and soft furnishings are required on such occasions, and this in turn requires the provision of storage space. Storage space is also required for family clothes as the sharp differences in the weather necessitate different clothes for different seasons.

e) Furniture and Appliances: Apart from the usual furniture, most Libyan houses include soft, easy to carry furniture (see 2.5) which

can be arranged and used for several functions according to the needs at any time. However, the nature of furniture has to be in accordance with the adaptability of the house itself. Socio-economic changes imply changes in domestic activities and as a consequence modern domestic appliances are gradually replacing the traditional ones. Nevertheless lower income groups are less capable of acquiring such facilities, and housing for these groups therefore has to provide for the traditional activities and the appliances. This is especially so when community services such as laundrettes are not familiar throughout the community.

f) Home Ownership: In Libya the desire for home ownership is very strong. Sometimes the owned home is referred to as "Life grave". Traditionally home ownership is a system of social security as well as capital investment. It is a symbol of social status and social stability. It influences social and family ties within the household and in the community. It strengthens the feeling of belonging and of protection. Another aspect of home ownership is the freedom to use, adapt and improve. The sense of ownership means a great deal to a Libyan family; apart from anything else, it influences the degree of enjoyment, appreciation and satisfaction of home.

6.2.1.2 Implications of Other Factors for Dwelling Design

Climate is a major influence in the design of dwellings. The four season climate implies that certain attention be given in dwelling design to the amount of space needed and its arrangement to building materials and construction technology. The extreme climatic conditions

and the nature of the daily cycle of the hot dry summer and cold rainy winter affect to an extent the living pattern of the household and its activities. As a consequence, the housing requirements of a household change with the changing of season. Houses must be sufficiently flexible in their functioning to accommodate these changes reasonably especially with respect to air volume, sunlight, thermal comfort, and dimensions of living space, including outdoor and storage spaces (see Appendix 3).

6.2.2 Design Considerations

In the case of new housing the standards which form the basis of the design should be concerned with the physical characteristics of the dwellings in relation to the households' habitual and conceptual characteristics.

The built form has to be considered first in terms of those physical and symbolic requirements, which are common to all (or the vast majority) of the future inhabitants and secondly, in terms of flexible forms which involve minimal effort in adaptation to suit individual housing needs and to permit the expression of individual aspirations. A congruent environment is the overall satisfactory requirement but in mass housing it seems improbable that this can be achieved because of the lack of contact between the designer and user in the design process. However, within the framework of this study a broad profile of a dwelling suiting the majority of public housing clients may be drawn:

- a) Housing Standards should provide for the requirements of large

households. The extended, composite household structure characteristic of the Libyan community should be encouraged and retained for as long as possible. This is especially important in the absence of social and institutional organisations which can take care of the housing requirements of the young, the elderly and the handicapped. In any case, socially, such facilities are not yet acceptable.

b) The separation of the dwelling into two differentiated areas has been and will continue to be one of the most significant features of a Libyan house. One part is exclusively for family use and the other is reserved mainly for visitors on special occasions or as living area for some members, mainly male, of the household.

c) A private outdoor space is another feature of housing requirements. It has to be conveniently located for the family's private use. Climatic factors influence this requirement. It is an especially useful element when it can be used as an extension of the family living area and when public open spaces are not as yet fully appreciated as a means of family recreation.

d) The nature of the social interaction necessitates the provision of a centrally located living area, conveniently related to all other dwelling components.

e) The major feature of the living components in the house is multi-purpose use, in which not all rooms are allocated or furnished for specific functions. Design standards and layouts have to accommodate the functional flexibility required in the Libyan dwelling, a feature that should be retained (Buchanan, 1975).

- f) The provision for flexibility in function and the nature of furnishing which suits the multi-purpose use of the dwelling imply the need for a considerable amount of storage space. This need is also imposed by seasonal differences.
- g) Traditional attitudes to the way in which domestic activities are performed influence housing needs. Design standards should provide for such activities in terms of space, services and appliances.
- h) The desire for setting up a home is relatively strong among the urban population, in the sense that individual households do not like to move about very much, especially when limited resources are involved. This means that a household, having once obtained a publicly provided house, is likely to live there for some years during which the family structure will change and its housing requirements will change accordingly. House design should as far as possible be adaptable to such changes.

6.3 Environmental Satisfaction and Social Needs

Empirical research indicates that the satisfaction of housing needs for human beings is socially and culturally influenced as people's attitudes towards matters such as privacy, crowding, density differ considerably (U.N. 1971). These differences are also attributed to the socio-economic class structure within a culture. To meet the social needs, therefore, full consideration has to be given to social, cultural and even historical factors that affect these needs. The link between the housing physical environment and the fulfilment of social needs in housing in its cultural setting can be demonstrated by basic indicators of satisfaction appropriate to that setting.

For the purpose of this study, and within its context, a set of broad measures was defined to indicate aspects of satisfaction of the housing needs among occupants of the publicly built dwellings represented in the sample survey made in the study. The objectivity of judgement is investigated mainly by determining the variables affecting the occupants' opinion. However, several factors play different roles in people's assessments of preference and satisfaction. Therefore the effect of the defined variables on the occupants' judgement about their housing has been investigated with respect to a constant framework of reference (the same housing estate) as each estate is relatively homogeneous.

In this study although the analysis showed considerable differences among the categories studied the responses given in this respect are by and large indicative rather than definitive. This is because a greater number of phenomena has to be investigated comprehensively in

order to form a foundation for the practical application of such indicators of satisfaction. However it is found that the variables discussed here are the major issues which reflect and influence people's evaluation of their residential environment.

6.3.1 The Emerging Variables of Satisfaction in the Case Study

The field survey of the different housing schemes showed that the built form has to be considered as the primary factor that must be satisfied with respect to the physical and symbolic requirements of housing. Nevertheless the influence of these aspects of housing is closely related to cultural and social structures which can be considered simply as manifestations of man's adaptation to his environment. Ease and convenience of adaptation have to be accommodated in a housing process if it is to be successful. It seems probable that the residents' evaluation of different aspects of housing is a means of measuring its success. Several indications of occupants satisfaction emerged from the analysis of the survey.

6.3.1.1 Socio-economic Conditions

The survey was carried out across a range of socio-economic groups. Professions, tenure type and car ownership are used as indicators of income which is in turn, closely related to social and educational background. When socio-economic background is taken into consideration, it is found that the groups living in estates 1, 2 and 4 are relatively more satisfied than the lower income groups in estates 3, 5 and 6. This satisfaction is a natural consequence of the relative freedom of choice enjoyed by higher socio-economic groups.

Nevertheless the choice of housing in this case depends on higher income more than on higher education. This is reflected in the fact that occupants of 1, 2 and 4 were granted their accommodation because they were then above certain minimum of income, whereas the other groups in estates 3, 5 and 6 were allocated their accommodation because their income was then equal or less than the official standard minimum wage of the time.

Another factor reflecting variation in housing satisfaction is home ownership. As estates 2 and 4 are entirely owner occupied the level of satisfaction is the highest. Estate 3, which was allocated for free occupation mainly by ex-shack dwellers, shows a fairly high level of satisfaction which may be attributed to the other variables. The heterogeneity of the other three estates (1, 5 and 6) in this respect has a less easily discerned effect of home ownership on the occupants' judgement. However, although most of the sample population mentioned that the main reason of their move to publicly provided housing was the desire for home ownership which many of them succeeded in fulfilling, in most cases a high level of dissatisfaction with the current accommodation and preference for own-built housing was nevertheless expressed. This overall dissatisfaction and desire for building one's own house can be differentiated on the basis of socio-economic conditions. For the lower income groups, the allocation of public housing does not yet take into account any personal preferences and sometimes even standard measures such as family characteristics. The higher income groups are expected to be able to satisfy more of their needs as their criteria and choices reflect for the most part

only current constraints. It is also possible that once the ability to achieve some aspirations in terms of housing was realised then more negative evaluation of present accommodation is felt, regardless of the ability of the residence to satisfy the housing expectations originally placed on it. A spontaneous response regardless of social background, was that flats provide inconvenient accommodation for a Libyan family.

6.3.1.2 Household Structure and Age

Requirements of households vary considerably according to their size, type and age. Even within one household these requirements change with the development of its characteristics, although these changes do not necessarily have negative influence on housing satisfaction. Large households with children and/or with elderly members housed off the ground tended to be less satisfied than others. Interior space demands, estate environment and accessibility contribute considerably to their level of satisfaction. Safety measures within and outside dwelling units were highly evaluated by these households. Lack of suitable children's play facilities was a major complaint in all types of household. Although accessibility to schools was a principal consideration of households with children, accessibility in every respect was a primary concern of households of different structural characteristics, who preferred low-rise and centrally located accommodation. In terms of household structure, layout, size and number of rooms are major elements of satisfaction. However, a clear majority of households of more than four members expressed their dissatisfaction with the size as well as number of bedrooms and to a great

extent with bathrooms, toilets and kitchens.

6.3.1.3 Type of Dwelling Unit

The average level of satisfaction with dwellings was strongly affected by its type. The most satisfactory one was the villa type in Estate 5. Privacy, safety, lifts, water supply and refuse disposal were common elements in evaluating flats as satisfactory residences. The internal layout and space arrangements were another set of factors influencing the degree of satisfaction, in most cases causing household chores and activities to be inconveniently conducted. The provision of storage space and access to private open air space were unsatisfactory in most cases, but especially so in flats where balconies cannot be the right substitute for the traditional outdoor space, the courtyard. Most flat dwellers would have preferred a garden.

Main complaints in different types were about size of kitchens and bathrooms and their location in relation to the living area. There was a great deal of dissatisfaction concerning the layout and size of the living area itself. There were distinct variations in satisfaction with bedrooms, especially in terms of size rather than number.

6.3.1.4 The Housing Estates in Terms of Environment, Amenities and Location

Many characteristics of the surrounding environment affect the desirability of the residence. Although physical and aesthetic aspects of estates included in the survey, did not feature highly in

the determination of overall satisfaction, the general appearance of the estates was still significantly unsatisfactory. The different layouts and types of blocks were not found to be as significant factors in variations in people's attitudes as height, density and dwelling privacy. These concerns mainly affected the high-rise flat blocks in estates 1, 2, 3 and 4. As might be expected on high density development within earshot of main roads, noise is a problem. A more mobile source of noise is that of children playing near and within the blocks. Safety is another measure of dissatisfaction, especially with regard to children. A contributory factor to these problems is the lack of suitable places for children's activities and the multiple use of the free areas on the sites. Apart from estates 2 and 4, poor upkeep and lack of maintenance was a major complaint; particular reference was made to lifts. Lack of management may be one of the contributory factors. The majority of flat dwellers found difficulty in using communal areas and shared services, such as roofs, stairs and lifts. Association with neighbours for the majority of flat dwellers was difficult to conduct. They related it to the social character of people as much as to the physical characteristics of the residential setting. Two-thirds of the sample considered their estates to be inconvenient places in which to live, in terms of accessibility to urban activities such as education, shopping, health services and employment. Ownership is in fact relatively high and very few (2%) of the sample population changed their place of work after moving to their new home. Recreation tended to be the least significant factor in people's assessment of satisfaction.

6.3.1.5 Housing History

A change of residential location may cause a reaction influencing the evaluation of the new environment which can be either positive or negative. The level of satisfaction throughout the sample was found to be related to the previous housing conditions and environment the occupants then experienced. People coming from similar types of residential settings showed a relatively higher degree of satisfaction, as most of them were either urban dwellers or people living abroad before moving to these estates. People coming from rural settings were less satisfied, although many of them who previously lived in shacks appreciated their new housing. Length of residence was a significant factor in the evaluation of the housing. Older households were generally more satisfied, firstly, perhaps because they had already adapted themselves to the physical and social environment and, secondly, perhaps because they were allocated their dwellings under much better conditions of housing supply and demand and different organisational housing policy. Newly housed occupants were less satisfied even than the ex-shack dwellers in estate 3. This may be due to the aspirations or demands these households are likely to have, but of greater concern in such aspirations are primary physical demands, such as the number of rooms. Expectations may also go well beyond the immediate physical setting to include social and environmental qualities, especially when the previous experiences have not yet been forgotten. The perception of the new setting may lead to a negative reaction and hence affect the evaluation of satisfaction.

However, it is expected that when people change their residential

environment or desire to do so, they make comparisons between the old and the new residence in different respects. Initially such comparisons would have influenced their evaluation by any differences in these respects, either good or bad.

6.3.1.6 Managerial Aspects

There is evidence that dissatisfaction is caused by matters such as managerial inefficiency and inadequacy of service, which are not related directly to the type of housing, but rather to management practice. Estates 2 and 4 have been managed according to a defined discipline which was established for this type of housing and started as early as the planning stage of the schemes, when occupant selection was made. Although Estates 1 and 3 are of the same type of high rise development as Estates 2 and 4, the poor level of upkeep and day-to-day maintenance on the former contrasts with the good management practice in the latter. This contrast is reflected in the level of satisfaction recorded by the occupants. However the environmental qualities of all types of housing schemes are seriously affected by the lack of management and maintenance: this has influenced the overall satisfaction with publicly provided houses.

6.3.2 Other Causes of Housing Dissatisfaction

There is no doubt that specific design aspects of housing have a bearing on the positive or negative evaluation of the degree of satisfaction with a residential setting. Additional factors are no less vital than physical characteristics. In terms of the present housing policy, up to 1981, and also as a result of persistent overall

shortages, complex administrative procedures and allocation systems have been devised to determine who gets which dwelling, where and when. Although these procedures have been changing in many respects, the lack of housing management is still as serious as ever. Housing authorities assumed that social welfare was served by the creation of certain forms of housing erected according to certain sets of standards in order to eliminate other forms of sub-standard housing. The allocation of these houses may or may not take place according to a set of definitions of different categories of demands, based upon an order of priorities. Apart from the financial arrangement in most cases, the relationship between housing authorities and occupant ends as soon as occupancy takes place. The inadequacy of the current efforts has contributed to the failure of housing activities to meet the Government's goals and aspiration in this respect (see 3.6).

It has become evident that the building of housing alone does not bring about a better residential environment or greatly improve the housing and living conditions of people of any socio-economic background. Housing activities are likely to fail to be a success unless effective management concepts and procedures are established to promote community development, social improvement, proper maintenance and upkeep of the estates and appropriate financial arrangements. It has become evident that it is as important to maintain housing as to produce it, and that maintenance is a primary tool for improving housing conditions, especially when existing housing stock is considered in meeting housing needs in a community. However a better living environment is attributed to a great extent to proper housing management, which in turn should form an inseparable part of good housing policy.

6.4 Housing Policy and Residential Satisfaction

The preceding discussions have shown the complexity of related factors that contribute to housing satisfaction. It is clear that there are a number of major and quite often related variables that significantly affect the nature of the housing process and its products. In this context, and particularly with respect to publicly provided housing, the user has no effective role in the nature of the system or its outcome, yet the success of the process and product depend greatly on the user's acceptance, satisfaction and willingness to create a home from that product. If housing is perceived as a function of the intimate and complex relationship between the user and his dwelling, and not simply in the material quality of its product, then the gap between the roles of decision makers and users has to be as small as possible.

The interpretation of the housing needs of the user, the ranking of his priorities and means and ways to meet them are made by the decision maker in the absence of the user. The vital differences between the two are bound to create deficiencies and problems in the housing process and its products. The user seeks desirable housing and the policy maker works for feasible housing. If the conceptual issues of housing are the same for both the decision maker and user, then a compromise between the decision maker's feasibility and the user's desirability can be reached. When both household satisfaction and economy in housing are to be maintained and if societal objectives in housing are to be achieved there must be a better match of demands with housing process. A great deal of compromise in this respect might

be achieved through a comprehensive, flexible and practical housing policy. Current housing policy in the public sector lacks some aspects of these important features and underemphasises some others.

6.4.1 Rationalisation of the Existing Housing Policy

The focus on housing satisfaction as the prime objective of housing policy has become clear from preceding discussions. A balance between the dwelling and the household needs can be expected to be easier to maintain in the private sector through a process of rapidly responsive adjustment to changes. But in the case of mass housing, conventional arrangements may soon be in variance with changes in needs. Therefore satisfactory housing is a problem that depends on the current definition of 'decent' housing: this in turn is highly related to the actual living conditions of people and to the prevailing socio-cultural perception of what an adequate dwelling should be. The question then is how to fulfil a high level of satisfaction in mass housing: rational housing policy can be the answer. The current housing policy of the 1981-85 Plan possesses many positive points compared with previous policies. Nevertheless major features have to be emphasised so as to achieve even better housing satisfaction. Such features are:

6.4.1.1 New Approach to Housing Standards

Within the context of this discussion the housing deficiency and problems resulting from, or accumulated by, conventional standards can be attributed to the failure of these standards to meet the social needs to the same extent as the physical and technical needs. Minimum housing standards, according to J. Turner, "are universally accepted

by the socially dominant sectors of society, and are remarkably uniform" (Turner, 1972). The quantitative aspects of housing standards are modified by socio-cultural values, economic abilities and sometimes by the individual's specific desires. Therefore what are considered minimum required standards for a particular socio-economic group could not possibly be accepted by higher groups. This is ultimately due to differences in life style and the convenience demanded from the functional needs of housing and their order of priority. These differences are not only functions of socio-economic variations, but are also subject to changes with time. In the context of this study and as far as materially measurable housing needs are concerned it is important in setting standards for new housing, (even if there are limitations) that the spatial arrangements take account of household structure and social and cultural patterns of living as well as the changing nature of these factors.

This can be achieved by adjusting the existing standards through:

- Definite knowledge of the patterns of living and social values of local groups and the differences in the ways of life of these groups.
- Functional flexibility in space arrangement and adaptability to changing requirements.
- Continuous revision of standards in accordance with societal changes.

However, effective standards in this respect must take account of local conditions ranging through climate, type of construction, the financial resources of people to be housed, and not least, their pattern of living and housing requirements. The smaller the gap between the desirable and feasible minimum standards, the higher will be the contribution of

housing to improving living conditions and to eliminating the social and economic problems, which tend to be associated with unsatisfactory housing.

6.4.1.2 Freedom of Choice in Housing

It is assumed that publicly provided housing has been created for people who cannot compete in the private housing market and who still require decent, convenient housing to meet their needs within their economic capacity. In Libya the construction standards of recently built public housing are high, but as in any mass housing the traditional relationship of designer and individual client, which enabled the former to assess his client's needs, is not practical. Furthermore the designer may and usually does draw on his own limited experience, if any, of local socio-cultural conditions. Lack of direct knowledge of the requirements and the way of life of the potential occupants contributes to the inconvenience and dissatisfaction of public housing occupants. There are of course great difficulties in assessing individual user needs, but it is evidently less difficult to provide for fairly contented households when common-sense assumptions have been made on the basis of positive information about prevailing patterns of living and social values. It may perhaps be possible to speculate on the needs of an average household on the basis of the prevailing standards such as physical dimensions of dwellings and household characteristics. Even then within a specific setting it is quite likely that two households with the same set of characteristics experience different degrees of satisfaction because of the individual priorities they put on these characteristics. It is not the character-

istics themselves which interact with the environment and create the satisfaction, but is the behaviour stemming from a particular characteristic or a blend of more than one which has to be accommodated satisfactorily (Michelson, 1977). It is rather difficult, if not impossible, in mass housing to acquire knowledge of detailed requirements of individual households and what is required to overcome this deficiency is to provide for freedom of choice. In order that public housing may afford a high rate of satisfaction, there has to be more individual choice rather than the mere acceptance of needed commodity. Environmental choices involve decisions by the occupants, who should have a range of options available to them. The selection of a certain type, size and location which satisfy defined requirements of a household are not the only aspects of housing fulfilment; this also includes the way and means by which the housing is sponsored, designed, built, managed and maintained. Another aspect of environmental choice is the freedom to adapt dwellings to meet changing household requirements. This may involve adaptation of existing accommodation or change of dwelling unit, housing area or housing tenure or terms of help in housing. This freedom of housing choice will no doubt help to meet the desired social equality and will create a great deal of housing satisfaction.

6.4.1.3 Involvement of Potential Occupants

In a developing country where a household's ties with its home are very strong and home ownership is an instinctive objective, this kind of relationship is affected by the extent of involvement in home establishment and this influences the sense of belonging and socio-

economic stability. The conventional system of public housing has been to plan, design and provide for people's housing requirements so that in the end people become more or less 'consumers' of housing commodity. This is not true when the traditional characteristics of the private housing system are considered. This system is open to higher income groups who can afford not only to satisfy their housing needs, but also to choose their own housing and to be involved throughout the whole process. They expect to choose the location and the design and to decide whether to build or to supervise construction. They use the house and manage it in their own ways. The consequences of such involvement are obviously of great potential benefit, both in material and human terms, even if the outcome does not fully meet an owner's housing expectations.

In Libya the scale of housing demand among the lower income groups makes it impractical, at least for the time being, to bring the openness of the private housing system into the public system. But it is vital to maintain such a concept at the policy level. When decisions for housing a particular socio-economic group are made by higher income policy-makers at the national level, and quite often of non-local backgrounds, the outcome of the process is bound to be far from the group's expectations and desires and fails to satisfy its housing needs. This does not imply that in mass housing, every household should decide for or build its own dwelling. But if housing can be conceived as an activity in which the users are the principal actors, then decision-making power can be maintained in the hands of the user and hence a more reasonable balance between the desires of occupants and feasibility

can be achieved. The involvement of the potential occupant can be achieved at many stages in the housing process through his own efforts or resources. It can be started even before the user has any connection with the process, for example when he has to save for housing. Housing of the lower income groups, who according to Turner (1972) 'possess the bulk of the nation's human and material resources for housing' becomes less of a burden on the Authorities especially if society invests and benefits from these resources according to individuals' capabilities. The direct or indirect involvement of the user in finance, design, construction and management makes the individual have an actual stake in his surroundings. It certainly creates a strong, deep relationship between him and his future home in every respect and throughout his residence in it. A relationship of this kind will help to make a dwelling into a home and will lead to better care, maintenance and adaptation so as to accommodate any changes in his housing needs. This no doubt will contribute a great deal to environmental satisfaction and societal stability.

6.4.1.4 Social and Physical Integration of Publicly Provided Housing

Publicly provided housing is currently built in defined projects for economically stratified groups of households. Within the present concept of public housing the housing itself can very often adversely affect the physical environment. It may obstruct the common patterns of urban living and the opportunities for traditional social interaction and communication. In this respect publicly provided housing may be disliked by its own occupants and in many instances is resented by its neighbours. Usually there is very little incentive for commu-

nity attachment or responsibility because of such things as ugliness, isolation and overcrowding or of its mismanagement and lack of maintenance. Some public housing projects have been stigmatised socially through misallocation and bad management. Publicly provided housing of this kind is unlikely to be popular or to meet people's needs.

There are many ways to avoid the physical and social destruction of public housing. Housing policy must envisage provision of a much wider range of housing assistance to the people in need. The range must be more diversified in order to provide solutions for the housing problems and to offer better possibilities for socially integrated developments and responsible community living, according a higher level of satisfaction among public housing clients. Skiadarssis, in his report about physical planning in Libya, emphasises that:

"International experience has shown, particularly from housing activity in the years after the second world war, that the most critical factor in housing effort is not so much the number of dwelling units that are created, but the degree up to which they succeed to become integral parts of existing communities or livable communities in themselves. If they fail in this respect, then the new dwellings, particularly those built by the public sector, may easily end up being "foreign bodies" in existing organisms or even a liability, creating new problems, more difficult to deal with than the ones they are supposed to have solved. Libya is no exception from this role". (U.N. 1969:II)

The physical integration of housing schemes in the community is a major factor in social integration and social equality. Public housing integration might be achieved through the co-ordination of physical, economic and social aspects of the housing policy with their equivalents in the national policy objectives in the country. The integration of housing has to be comprehensive not only in terms of public facilities such as

water supply, sewerage, road network, transportation, but also in relation to community services and economic activities. Unless such integration is emphasised within the housing policy framework, publicly provided housing will not help the growth of a sense of neighbourhood and community. A sense of belonging, which has been maintained in the traditional urban form, is an essential element in housing satisfaction.

6.4.1.5 Management and Maintenance

Management and maintenance of publicly provided housing has a special significance in relation to occupant satisfaction. However, the management aspects of housing have not received the attention they deserve nor has their importance been realised. Proper management of public housing, in addition to being conducive to the occupant's welfare and satisfaction, saves resources allocated for housing and preserves the housing stock; it reduces depreciation, obsolescence and dissatisfaction.

Management usually begins with the selection process. The proper selection of occupants and the fairness of the selection system are important factors in the ultimate success or failure of public housing activities. Housing policy should include the basis and systems for selection which has to be fair, equitable and appropriate in the sense that the right accommodation in both quantitative and qualitative terms should be allocated to the right household. When a household is accommodated in the wrong dwelling its pattern of living is disrupted by housing that is alien to the customary way of life. Such sudden change is undesirable in terms of social stability and housing satisfaction. The other defect of allocation of this kind is that the

dwelling may be misused, badly adapted or uncared for, all of which will accelerate its physical deterioration and spoil its environmental qualities. In such a way a great deal of new housing, which constitutes a basic element of national real estate resources, is abused and wasted. A successful housing policy must provide proper housing management so that housing activities accord with the various requirements and patterns of living of different categories in society, in terms of quality, size, composition, location and cost. The scope of housing management is vast. The role of management prior to occupancy is as important as after it. In some countries management can be effective as early as the planning stage of the housing scheme and continues when the dwellings are occupied where management experience can be used as a feedback. This concept is very useful in maintaining a balance between housing facilities desired by the occupants and the feasibility of housing provision. Management on the local level is essential especially in the multi-family housing schemes. This type of housing includes a great deal of common areas which are usually subject to neglect, vandalism and abuse, and at the same time are sources of disturbance, annoyance and disaffection because they are not regarded as anybody's responsibility.

An appropriate system of management should be broadly defined in the housing policy and adopted so as to avoid the deterioration of social and environmental qualities and to maintain a high level of satisfaction among public housing occupants. Education and involvement of new occupants contribute significantly to management fulfilment. Good management has to be efficient and flexible and provide sufficient

financial control and adequate balance between the needs of both the housing authority and the occupants.

Maintenance is another aspect of management and the financing of maintenance work is very important. Proper maintenance and the continuous care of the existing resource of public housing are essential to prevent speedy physical and environmental deterioration. This also helps to retain the property's economic, aesthetic and social values. Continuous maintenance prolongs the property's functional life as should be. All this will increase the level of satisfaction in public housing and hence its social objectives will be fulfilled.

Conclusions

This chapter has considered a conceptual framework of housing needs, in which the quality of community development and the social environment of housing have been seen as important components in the degree of satisfaction expressed by residents. The evaluation of housing satisfaction must be viewed from a multidimensional perspective, including not only measures of satisfaction related to specific elements and standards of the physical environment, but also those related to factors of a social and psychological nature.

From past experience, it can be seen that policy for publicly provided housing has incorporated social objectives in terms of economic and physical considerations. Regarding the housing problem entirely as a problem of income distribution, housing policy has attempted to orient solutions to the problem towards meeting quantitative demands and providing for social equality for as many people as possible. These aspects

of policy must be sustained but there should be a shift of emphasis within housing policy at the national level: the aims of providing decent, safe and sanitary housing must be complemented by a strong emphasis on total community development and prosperity. The policy makers need to review the conceptual principles of public housing, focusing predominantly on the local perception of contemporary socio-cultural norms, style of living and demands of housing in the light of socio-economic changes.

Within this wider conceptual framework, a rational housing policy guidelines are required, capable of fulfilling adaptable policies in response to problems, changes and people's preference.

In Chapter 7 the application of Decision Optimising Techniques (DOT) to the production of alternative housing policies and strategies is examined. The results gained from the application of this technique will throw some light on the aspects of current housing policy that should be modified, extended or replaced in order to devise a new sound and successful policy.

CHAPTER SEVEN

THE USE OF DECISION OPTIMISING TECHNIQUES

IN PLANNING FOR HOUSING

7.1 Introduction to the Techniques

In the housing sector in Libya a great deal of emphasis has been placed on the building of large numbers of dwelling units. However, much of this large scale building has been carried out without the benefit of an integrated or detailed overall housing policy. In the absence of such a framework very little attention has been paid to the identification, let alone the achievement, of goals relating to aesthetic features or environmental standards.

The magnitude and nature of the Libyan housing problems as well as the difficulties and constraints for their solution have always been beyond the capacity of the system with which they are being tackled. The old approach of piecemeal plans, which lacked the necessary range of measures for a comprehensive integrated housing policy, failed in every respect. This piecemeal approach failed to meet the grave immediate need or to contribute significantly to the solution of the country's chronic housing problems in the long-term. It was criticised as being unclear on policy and insensitive to public preferences.

The present system does not differ too much from the old one but it is split into two levels. At the higher level are overall strategic plans and at the lower level local government programmes, prepared by

Central Government within the context of the strategic plans, in which specific budgets, numbers and types of dwelling units rarely coincide with the requirements of the local people, local authorities and land use planning constraints. The system faces a whole range of problems, some of which it is ill equipped to confront while others lie beyond the capabilities of the housing sector as a whole.

According to the Socio-Economic Transformation National Plan (Transformation Plan 1976-1980), housing expenditure is allocated in the National Development Budget. When the public organisations who have housing responsibilities prepare their programmes, their only guide is the information supplied to them by the Minister of Planning in the form of tables of statistics with inadequate explanatory notes. The tables contain only the expenditure information for the continuing projects and the new ones included in the plan period. No statement justifying the figures is provided. The result of using this form of housing plan and programme is that the actual housing needs and requirements are not accurately defined. No effort is made to define what is considered to be an adequate number of dwellings of appropriate types required to meet particular needs, taking into consideration factors such as size of family, income, locational preferences; environmental issues and above all the existing housing conditions and situation in the context of the individual settlement. The existing static, inflexible, excessively land use oriented development plans have very often failed to recognise the urgency and importance of housing programmes. The result of pursuing this form of housing plan and programme is inadequacy in the available supply of dwelling units to meet requirements in terms of both quantity and quality, in spite of

the high rate of housing unit completions achieved in the housing sector.

In a rapidly changing society, it is essential that within the housing sector there should be established an integrated framework for the formulation of a sound, flexible, short-term problem oriented housing policy that is sensitive to a wide range of factors and current trends, and makes a long-term contribution to the achievement of better housing and environmental quality. The conceptual framework for such a policy should ideally lead to the provision of adequate houses within a proper and suitable urban context and at a reasonable cost, ensuring equal opportunities and justice among various groups and communities.

The country is in a transitional stage, radical changes are required and means are limited. The rate of change, the lack of information, the incomplete knowledge and control of planning systems, and the shortage of qualified and informed decision-makers are major factors contributing to the invalidity of the traditional approach to plan-making and responsible for making the entire concept of identifying a preferred plan misleading and irrelevant in a very short time. In this respect, what is required is a robust plan-design technique, which is capable of adapting policies in response to changes and problems. Such a technique should ideally make it possible to modify, extend or replace existing policies as circumstances change and should be capable of use in helping to resolve conflicts between the main interest groups contributing to housing policy and its implementation. It is suggested that multiple-objective technique might be useful in this context in providing a means of systematically taking into account the wide range of issues and interests which need to be considered in this process of policy and plan formulation.

7.2 The Theoretical Framework

In this latter respect the role of planning can be seen to have changed in recent years even in most established and advanced countries. It is no longer seen as the production of a blue print for the future through a linear process of survey, analysis and plan, but as the production of policies suitable to the present circumstances via a cyclical process which is sensitive to the objectives and aspirations of a wide range of interest groups. However, since the 1960s the traditional approach has been widely criticised by many people, not least by Openshaw and Whitehead (1977) from Newcastle University. They argue that this approach requires complete knowledge and control over the systems being planned and their future behaviour which is impossible when applied to a system as complex as the human system. As an alternative they have developed a practical plan-making technique which they claim is capable of functioning in situations of widespread uncertainty. The technique is believed to be particularly suitable where neither knowledge nor control over the systems being planned is complete. Data and data forecasts need not be accurate. The approach is capable of accommodating events outside planning control which may easily imbalance the preferred strategy. As the situation changes so does the resulting strategy according to the given new criteria.

Plan-making is defined by Openshaw and Whitehead as the process by which strategies and policies are produced leading to individual implementation decisions. A decision is defined in this respect as a process by which one course of action is selected from amongst alternative possibilities. A series of inter-connected decisions concerning

a particular subject area forms a policy. A strategy is a set of the chosen policies. In practice, to identify a preferred strategy, only a small number of feasible alternatives tend to be manageable for detailed evaluation. Also, in order to accommodate uncertainty and a continuously changing set of circumstances in plan-making conditions, a selected strategy should be continuously monitored and reviewed in the light of the relevant events.

Many specialised techniques have been developed under this so called Strategic Choice Approach which are collectively referred to as the "Technology of Strategic Choice". The strategic choice technique has been advocated whereby a plan retains enough flexibility and adaptability by keeping open a number of decision alternatives until it is necessary to commit a decision. However, in order to achieve this an explicit decision oriented framework is needed within which strategy generation, monitoring and review can be operated. Such a framework is provided by the Analysis of Interconnected Decision Areas (AIDA) method, which is a technique for the systematic analysis and management of uncertainty (Hickling, 1974). With an understanding of the practical problems of the AIDA technique and by accepting that uncertainty will not decrease, Openshaw and Whitehead have developed a methodology known as the Decision Optimising Technique (DOT), an integer linear programming generalisation of AIDA. The technique makes it possible to produce decision-oriented plans in towns using an explicit model of the decision-making process. Such a process permits a continuous re-evaluation of possible decision alternatives. Given a set of weights as constraints and evaluations at a given point of time,

the technique is capable of selecting a set or sets of decisions to form policies and strategies.

The methodology can be explained as follows: after the initial recognition of the context of the problem (or problems) to be solved, Decision Areas are identified in the light of their relevance to the defined problem. A Decision Area is an explicit self-contained area of choice, within which a series of alternative decision options are defined with a minimum of two options. These options are known as Policy Options. Only one option may be selected from each decision area for each problem. The selection aims to identify an optimal set (or sets) of decisions against each of the alternatives, articulating explicitly preferences so that a best compromise solution may be identified. Three mechanisms operate in choosing a particular option, the objective function, a set of constraints and the option bars:

The Objective Function is a set of weights derived according to the criteria chosen as a result of considering the overall plan performance. The evaluation weights are allotted to each policy option in a certain range or scale. Similarly, the Decision Areas can be evaluated in terms of importance. The two sets of weights produce comparative outputs expected from the alternative decisions for the objective function which does not have a strategy value limit.

A Constraint is a set of weightings attached to each Policy Option and another set is assigned to each Decision Area and hence a relative scoring is achieved. An overall maximum strategy score is not to be exceeded.

The evaluation weights are quantitative measurements of qualita-

tive information assigned subjectively by the appropriate source or more objectively by reference to available data. The technique seeks to identify an optimal decision strategy by selecting a set of decisions which maximises or minimises their scores on sets of criteria subject to a set of constraints. The relative effectiveness of the evaluation weights can be adjusted by changing their mean strategy values in accordance to the situation.

Option Bars are drawn between policy options which are considered totally incompatible with each other and are thus prevented from occurring in the same strategy. Mutually compatible options can be considered in the same strategy if required. No limit is set on the number of option bars but it is important to leave the choice of options as open as possible so that a feasible strategy is chosen.

The DOT program requires certain input to be prepared consisting of a full list of the policy options within each decision area, a series of option bars, a list of objective function values and another list of constraint weightings and their limits. Feasible solutions will then be examined by a process of implicit enumeration and one or more optimal decision strategies will be identified for any given set of evaluation weights and constraints.

The basic techniques applied in housing policy formulation were:

- i - DOT₁ : Decision Optimising Technique (version 1)
- ii - DOT₂ : Decision Optimising Technique (version 2)
- iii - Weighting schemes, one of which is Saaty's method (see Appendix 2)

The basic problem formulation for DOT₁ and DOT₂ runs is similar

i.e. involving the specification of decision areas, policy options, option bars, constraints and sets of weights as option coefficients. Both versions of DOT are optimisation techniques, which generate strategies and evaluate them. However, DOT₁, if used in its basic format, is a single objective technique while DOT₂ explicitly takes account of conflict by optimising solutions with reference to more than one objective function or several interest groups. The outcome is an optimal solution which represents a compromise between the objectives of competing interest groups (see Fig.7.1).

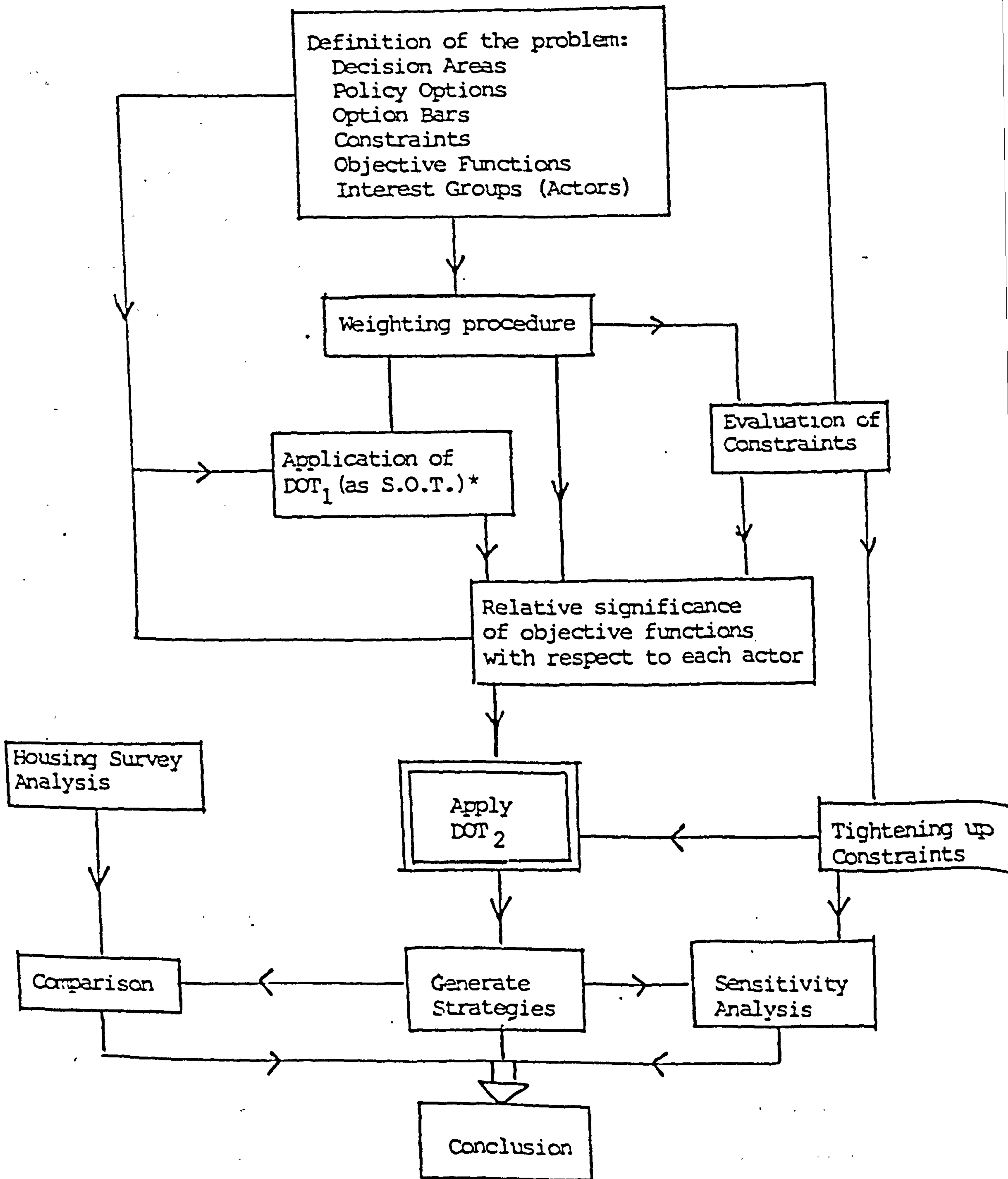


Fig. 7.1 The Methodology adopted to generate strategies using DOT_2

* Single Objective Technique

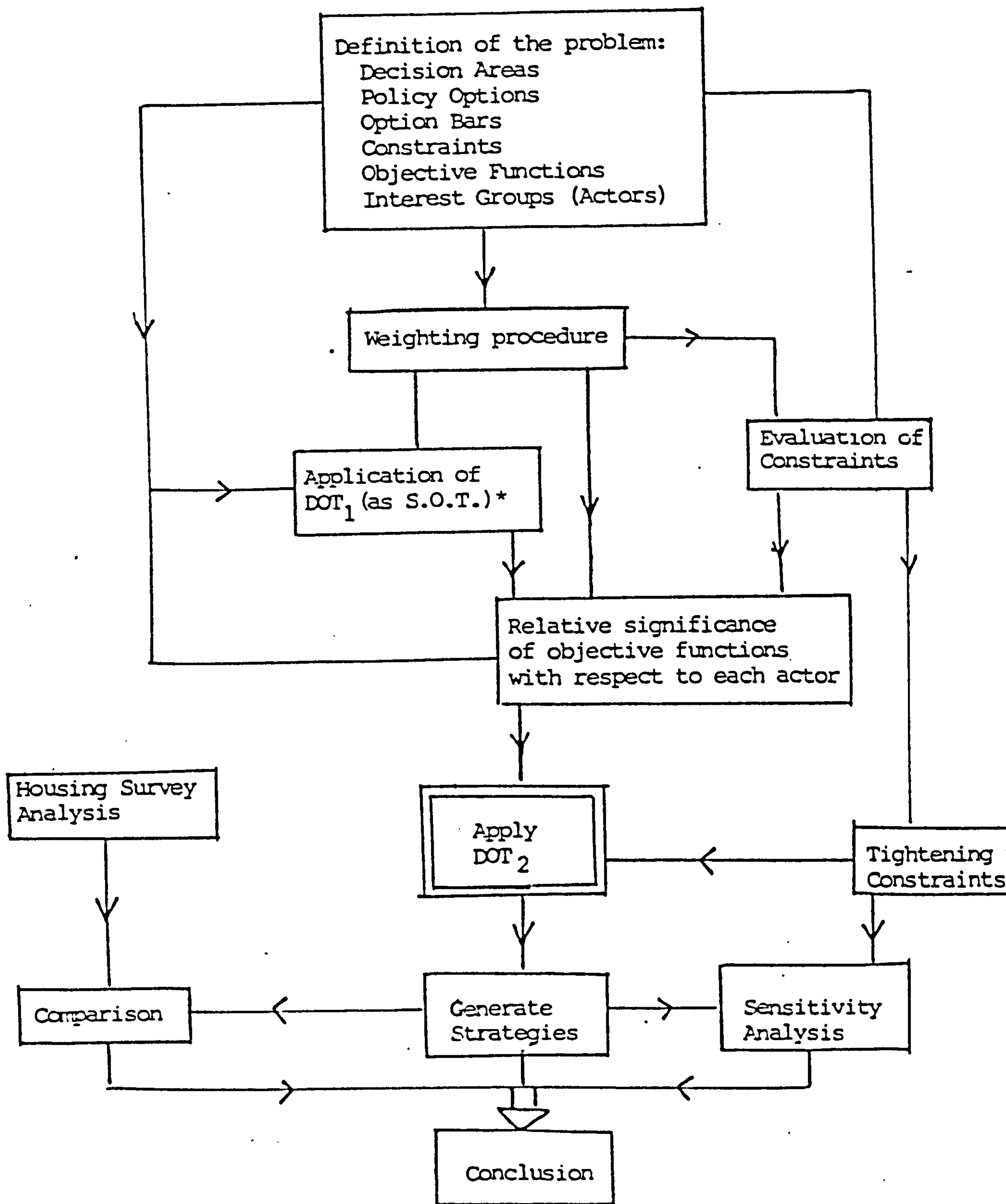


Fig. 7.1 The Methodology adopted to generate strategies using DOT_2

* Single Objective Technique

7.3 The Context of the Case Study

It is intended to provide a policy framework within which the housing authorities plans and programmes can be developed and co-ordinated as a continuous process, and their priority and inter-dependence better assessed and identified so as to achieve a higher degree of public satisfaction and better environmental qualities. The plan should be a means of identifying alternative courses of action towards longer term physical, economic and social objectives and capable of modification by constant monitoring and review, taking into account the intervening events, studies and decisions, and the performance of chosen actors as revealed through the continuous process.

The study is based upon the examination of a real set of problems aspects of which are revealed in the data available from the household survey. The survey information provides a reasonable description of the current situation in different publicly provided housing areas, which includes a range of measures of the character of the areas, and their residents problems which they are experiencing.

The findings of the survey serve as the descriptive basis for the application of DOT. The study also draws upon material contained in published official reports which describe a series of key issues relating to general housing policy issues and accomplishments. Although there are no specific objectives detailed in the reports and no explicit framework of decision-making is described, the information available is incorporated within the application of the DOT technique. The survey findings remain the basic source of information on public preferences used in this study.

Given the complexity of the housing situation in Libya, the high level of demand and the level of uncertainty regarding the stability, controllability and knowledge of systems being planned, it was necessary to adopt a methodology which was capable of taking into account a very wide range of considerations. From the earlier discussion of the main features of DOT it appeared to possess the required capability and to be an appropriate tool for use in achieving the following:

1. The production of refined sets of policies and strategy alternatives closer to people's preferences.
2. The improvement of public policy making by combining and co-ordinating elements of both goal orientated and problem solving approaches.
3. The making of maximum use of the survey findings and data available which were in an appropriate form to allow the formulation of DOT programme.
4. The enabling of decision makers and planners to respond to changing circumstances.

The starting point was seen as an attempt to establish a broad approach to the problem of housing policy formulation and to link the various different planning elements within and affecting the housing sector. This would involve the linking of decisions in different policy fields to achieve concerted action and better results. The intention is thus to provide a policy framework within which the housing authorities' plans and programmes can be co-ordinated and developed as a continuous process, and their priority better assessed and identified.

7.3.1 The Scope

The results of the housing survey revealed broad measures of satisfaction with and preference for a range of different housing arrangements. The major factors which caused the variations and influenced people's evaluation of their residences appeared to be:

1. Socio-economic background
2. Household size and composition
3. The dwelling type and design
4. The housing estate and public facilities
5. The household's housing history.

Therefore a series of key issues which play an important role in the quality of housing policy and environment, and which constitute multi-objective problems, were identified and classified for the application of the techniques. Several "actors" other than the people themselves contribute to the generation of housing policy such as politicians and planners. Each of these decision-makers has his own views and preferences as to which factors success or failure of housing may be attributed. These issues were also converted or expressed in forms appropriate for use in conjunction with the techniques. The main problem areas were identified as including: the dwelling unit, housing estate, public facility provision, housing management and finance, traffic and transportation and other social and environmental aspects of housing. These issues can be addressed at three levels:

The Dwelling Unit: The main issue at this level is the relationship between house-design (layout and components) and the occupants' activities and characteristics.

The Residential Area: This level deals with the relationship between the residents and their immediate surroundings with particular

reference to the community facilities, services and social and environmental qualities.

General Issues: This level is mainly a strategic one and is concerned with broad factors such as general government strategy, managerial and financial policies and physical and economic measures which may have a significant role in influencing the quality of dwelling units or/and the residential areas.

The main problems relating to each subject were identified together with a set of options for each problem. These problems were formed into 30 decision areas. Some of the subject areas are represented by more than one decision area. The total number of policy options is 137 with 3 or more options derived for each decision area. While the environmental quality of housing might be affected by far more issues only the main problem areas are covered due to lack of relevant and reliable information.

As a result of these limitations, the options used may be inadequate in certain areas. They were derived in two ways: firstly, the presentation of key issues in the questionnaire was in the form of questions providing either yes or no plus one or more of the listed reasons for the answer chosen by the household. The choices thus presented were interpreted as broad policy options in most cases. Secondly, responses to various problems were derived from the knowledge of the situation in Libya, Government publications and general planning background. This information was then used in identifying what were thought to be appropriate policy options.

A brief outline of the decision areas adopted and the policy

options within each decision area is given below (for more details see Appendix 2).

7.3.2 Limitations

The Housing Survey which has formed the basic information source, deals with a wide range of housing problems which contribute to the long lasting shortage, dissatisfaction with and deficiencies in the environment of housing. The identification of these problems was carried out at two scales, the general strategic level and the level of more detailed design and layout. Due to the broad nature of many issues relating to social and other underlying changes, at the strategic level, a number of key subjects relevant to housing vary only over the long term while many others can change quickly in the short term. It is more realistic in such circumstances to maintain an overall framework which is flexible enough to accommodate changes as and when they occur. Furthermore, if the intention is to provide guidance for policy oriented rather than land use oriented decisions, the formulation of the problems has to be at different levels of plan-making.

Another reason for confining the application of the technique to the strategic level is the lack of information about the design aspects of housing problems other than that provided in the survey. However, the two-tier presentation of issues in the survey made it relatively easy to deal with the strategic issues while the more detailed ones have been considered only as they fit into these. By careful reconsideration of the study the decision areas were reformed

to cover most relevant housing issues. The thirty decision areas were reduced to thirteen, relating broadly to type of housing development, public facilities, social and environmental aspects, management and finance. These issues and the relevant decision areas and policy options are now outlined.

7.4 The Formulation of the Problem

7.4.1 Decision Areas and Policy Options

1. Type of Residential Development

The acute shortage of housing leads to multi-family development which conflicts with people's preferences. Options need to be formulated in order to achieve the balance between housing needs and demands:

- 1.1 - High rise blocks
- 1.2 - Walk-up flats
- 1.3 - Villa type
- 1.4 - Traditional terraced housing
- 1.5 - Mixed development.

2. Layout of the Dwelling Unit

There is a very low level of satisfaction among occupants of publicly provided housing. The problems involve the design of the dwelling unit as a whole and/or one or more of its components and to what extent it caters for the local family way of life:

- 2.6 - Satisfy physical requirements
- 2.7 - Satisfy physical and social requirements
- 2.8 - Apply the present system.

3. Communal Areas

The problems resulting from sharing facilities and communal areas in publicly provided housing schemes have a very serious environmental impact, particularly in crowded high rise blocks of flats. Three alternative treatments of communal areas are suggested:

- 3.9 - Minimum provision of communal areas
- 3.10 - No provision of communal areas
- 3.11 - Use present standards.

4. Community Facilities

The problems involve poor provision of community facilities which makes most schemes an extra burden on the existing inadequate infrastructure. This area deals with the balance to be achieved between providing for new development and making better use of the existing facilities.

- 4.12 - Make greater use of existing community facilities and promote multi-use of some of them
- 4.13 - Provide additional facilities for existing and for new development
- 4.14 - Provide for new development and improve the existing facilities promoting their multi-use.

5. Environmental Aspects

There is a serious imbalance between housing accomplishment and demand. This has led to the deficient environments of housing which in turn has reduced the quality of life in publicly provided housing schemes as well as the quality of their physical conditions.

- 5.15 - Concentrate on improving housing conditions in the short term; housing environment in the long term
- 5.16 - Achieve a balance between environmental requirements and demand
- 5.17 - Low level of investment in environmental qualities.

6. Social Aspects of Housing

Traditionally, the Libyan people's custom regarding privacy and separation of the sexes is quite strong and the conduct of life has been separated into two spheres, private and public, males and females. The problems which this creates involves putting pressure on the amount of accommodation available. Essential issues in scheme design and layout can thus be seen in terms of providing or not for those activities.

- 6.18 - Provide physical environments that cater for social interaction
- 6.19 - No special attention to be paid to promoting social interaction

- 6.20 - Provide facilities for all social and cultural activities within housing schemes
- 6.21 - Pursue present system (laissez-faire).

7. Location of Housing Projects

Locational choice is affected to a great extent by other criteria such as availability of suitable sites, size and budget of schemes among many others. The main locational options are as follows:

- 7.22 - In the inner city
- 7.23 - City centre periphery
- 7.24 - Inner suburban areas
- 7.25 - Mixture of redevelopment and new sites in different locations
- 7.26 - New self-contained development outside city boundaries.

8. Size of Housing Projects

This decision area is interrelated with number seven as well as with the Government's General Policy.

- 8.27 - Large self-contained housing estates
- 8.28 - Small infill projects
- 8.29 - Make best use of urban land available.

9. Housing Provision Agency

This issue is also related to the Government's General Strategy and the range of options includes:

- 9.30 - Central Government
- 9.31 - Local authority
- 9.32 - Investment organisations
- 9.33 - Individual investment
- 9.34 - Co-operative
- 9.35 - A combination of these.

10. Responsibility for Housing Management and Maintenance

As this issue plays an important role in the housing conditions and environment it requires a policy statement based on one of these options:

- 10.36 - Public body with local branches
- 10.37 - Ministerial Management and Maintenance schemes
- 10.38 - Encouragement to occupant co-operatives estates management
- 10.39 - Broaden present policy and integrate links between authorities with housing responsibilities.

11. Housing Payment

This issue is interrelated with other housing issues and policies.

- 11.40 - Subsidised cash sale
- 11.41 - Regular monthly installment
- 11.42 - Regular monthly installment plus cash sum in advance
- 11.43 - Rent system
- 11.44 - Owner occupation (private ownership)
- 11.45 - Mixed tenure.

12. Allocation Procedure

This requires a policy statement related to the broad housing policy as well as the Government's General Strategy.

- 12.46 - Priority to large families from certain income groups
- 12.47 - Priority to all families from certain income groups
- 12.48 - No priority
- 12.49 - Priority to emergency and special cases and then families from certain income groups
- 12.50 - Maintain the present system.

13. Urban Containment Policy

There has been a conflict between the conservation of land with agricultural value, within and surrounding the urban centres, and the increasing demand on sites for housing development. Options include:

- 13.51 - Maintain the present laws of agricultural land conservation
- 13.52 - Conserve no land; allow acceptable development in terms of other relevant criteria
- 13.53 - Conserve the surrounding land as Green Belt, allowing inner city sites for recreational uses and/or low density housing development
- 13.54 - No restrictions on the urban development of land.

7.4.2 Option Bars

To avoid impractical or illogical combinations as well as to

limit the range of solutions within feasible strategies, bars between incompatible policy options had to be identified. Excessive barring of options between decision areas in the first formulation of the problem was another reason for reformulation. Explicitly, the new arrangement took a spatial element into account. It also reduced the computational problem of option bars overflow experienced in an initial formulation. However, option bars were drawn between policy options which were considered totally incompatible with each other as follows:

7.4.3 Constraints

The feasibility of strategies was further defined within five main constraints:

- 1 - Land availability
- 2 - Infrastructure provision
- 3 - Supply of building materials
- 4 - Manpower
- 5 - Cost.

Each policy option was given a value for each constraint. Any feasible strategy should include options whose total weights do not exceed the value allocated for the constraints. However, to derive optimal solutions from the range of strategies generated, a set of objective functions as well as the main actors involved had to be identified.

7.4.4 Objective Functions

A set of five objective functions was selected. Each reflected the view of different actors involved. The five objective functions are:

- 1 - To minimise cost
- 2 - To maximise social equality
- 3 - To maximise environmental quality
- 4 - To maximise rate of construction in relation to demand
- 5 - To maximise traditional local cultural attributes.

Again, each policy option was given a value with respect to each objective function and then target values were derived for each of them. Different sets of priorities were given to the five objective functions in the decision-making process depending upon the actors involvement.

7.4.5 Actors

Four interest groups or actors with varied options on the importance and relevance of the above objective functions were selected.

- 1 - The politicians
- 2 - Low-income groups (category B)
- 3 - Middle-income groups (category A)
- 4 - The planners (developers and professionals).

7.4.6 Weighting Procedure

To generate multi-objective strategies by using the DOT technique, it was necessary to evaluate each policy option in accordance with each constraint and objective function separately. The weighting scheme adopted for this purpose was as follows:

- i With respect to each objective function, each decision area was given a value from 1 to 9 (where 1 represented least effective and 9 most effective in terms of the housing strategy) (see Appendix 2).
- ii Accordingly, a value from 1 to 9 was also assigned to each policy

option within each decision area (where 1 represented the least favoured and 9 most favoured option).

- iii The final weight for policy options, with respect to a specific objective function was calculated by multiplying the value allocated for a specific decision area and the value assigned to each option within that decision area.
- iv The same policy option procedure was also applied to derive constraint weights on each option, in accordance to each constraint separately. As the policy options and decision areas were ultimately defined subjectively, the system adopted was meant to provide relative rather than absolute weights so as to justify them in the guise of scientific objectivity. Different rankings of objective functions and the progressive tightening up of constraints revealed some significant results.

The outcome of the weighting procedure was ten sets of policy option weights, five of which corresponding to the five objective functions and the other five corresponding to the five constraints (see Appendix 2).

7.5 Generation of Strategies

7.5.1 Generate optimal strategies using a single-objective DOT₁

DOT₁ was applied for each of the five objective functions selecting a strategy that maximises the total option score and hence optimising that objection function, subject to the options bars and constraints set beforehand. These optimal solutions were used as a target in the multi-objective techniques applications.

7.5.2 Generate optimal strategies using a multi-objective technique

The application of the technique was intended to produce a strategy (or alternative strategies) optimal with reference to more than one actor's preferences and to several objective functions all of which have relative significance to strategy formulation. The varied views of the different interest groups on the relative importance of the objective functions were elaborated in two different approaches:

7.5.2.1 Generating strategies using DOT₂

The approach was aimed at generating compromise solutions between the actors preferences while as far as possible satisfying all the objective functions. In this approach, the sets of weights were retained in the form described in the previous section but the priority order for optimisation of the objective functions was changed for each run carried out with respect to each actor. In the results discussed below one set of rankings of objective functions is presented for each actor in turn. In all three cases rate of maximising construction to meet demand is ranked as the first priority but the rankings of the other four objective functions are different.

Compromise strategies were selected from the different solutions generated accounting for the relative significance of objective functions and actors, subject to the five constraints previously specified (land, infrastructure, building materials, manpower and cost).

The Results

The different priority ranking of the objective functions by different actors led to only a limited variation in the selection of policy alternatives. Six decision areas were not affected by changing the relative significance of the objective functions where the same policy options were selected from each of these decision areas. Apart from decision area seven (location of housing), people's preferences (for both categories) in all strategies were the same and were similar to the politician's preferences in five of the decision areas. In decision area one, which is related to type of dwelling unit, two categories of dwelling unit were selected (villa, by category A, and terrace house by category B) which could be explained by category A being less attached to the traditional pattern of living which was given a higher ranking by those in category B. Nevertheless in both cases, the groups selected a single-family type of housing unit, in contrast to the politicians, who ranked life-style and traditions at the bottom of the list and cost much higher in their ranking and, as a result, selected the walk-up flat type of unit. People in the two categories differed in their selection of policy options from the politicians in the decision areas concerning layout of dwelling unit, communal areas, social aspects of housing, size of housing projects

and housing payment. Again the reason for this is clearly the difference in priority ranking of the objective functions of the interest groups. In these strategies the highest priority was given by all three groups to the increase in the rate of construction in relation to demand but the politicians' next priority was to minimise cost which was given less priority by the other two groups. Therefore, the variation in selection of policy options in the above-mentioned discussions could be attributed to the alternatives to the people's preferences selected by the politicians being always less costly for the housing authorities. For example in the decision area concerning layout to the dwelling unit, the people's choice was that it should satisfy physical and social requirements while the politicians' option was only to satisfy physical requirements. The same can be said about the decision area concerned with communal areas, where people preferred minimum provision of communal or shared areas, politicians selected a continuation of the present system of high level communal area provision (see fig.7.2).

In decision areas where all strategies involved the same policy options such selection could be attributed to the fact that in these areas cost is less influential in relation to other objective functions or equally effective on the different policy options within each of these decision areas. However, even when there were alternatives in the selected strategies, still there were no combinations which included any of the extreme policies in any decision area.

Further runs were carried out in which the importance attached to cost by the politicians was decreased and by the people increased.

Decision Areas	Policy Options	Politicians	Category A	Category B	Politicians	Category A	Category B
	Strategies	1	2	3	4	5	6
1	1						
	2	*					
	3		*	*			*
	4				*	*	
	5						
2	6	*	*	*	*	*	*
	7						
	8		*	*	*	*	*
3	9		*	*	*	*	*
	10						
	11	*					
4	12	*					
	13		*	*	*	*	*
	14		*	*	*	*	*
5	15	*	*	*	*	*	*
	16						
	17						
6	18	*			*		
	19		*	*		*	*
	20						
	21		*	*		*	*
7	22			*			
	23		*				
	24				*	*	*
	25	*				*	*
	26						
8	27	*			*	*	*
	28		*	*		*	*
	29						*
9	30						
	31					*	
	32						
	33						
	34	*	*	*	*	*	*
10	35	*	*	*	*	*	*
	36	*	*	*	*	*	*
	37						
	38						
11	39						
	40						
	41	*					
	42		*	*	*	*	*
12	43						
	44		*	*	*	*	*
	45						
	46	*	*	*	*	*	*
	47						
13	48						
	49						
	50						
13	51	*	*	*	*	*	*
	52						
	53						
	54						

- 1 - Strategy generated with the following ranking of objective function assigned for Politicians (4) (1) (2) (3) (5)
- 2 - " " " " " " " " " " " " Category A (4) (2) (1) (3) (5)
- 3 - " " " " " " " " " " " " Category B (4) (2) (5) (1) (3)
- 4 - " " " " " " " " " " " " Politicians (4) (2) (3) (1) (5)
- 5 - " " " " " " " " " " " " Category A (1) (2) (3) (4) (5)
- 6 - " " " " " " " " " " " " Category B (1) (4) (2) (5) (3)

where (1) - To minimize cost
 (2) - To maximise social equality
 (3) - To maximise environmental equality
 (4) - To maximise rate of construction in relation to demand
 (5) - To maximise traditional local cultural attributes.

The result of this was that the same policy options were selected by both groups in eight of the decision areas (see fig.7.2). In four of the remaining decision areas the policy options selected by the politicians were either similar to category A or to category B selections. In decision area nine, which is related to housing finance, category A selected individual investment and category B's strategy selected central government provision which is as would be expected since this category is entitled to government assistance. Meanwhile, the politicians' strategy included the selection of a policy option whereby mixed resources could be used for housing provision and which coincides with the current housing policy where public and private resources are involved in housing activities. This policy option was selected as part of the politicians' strategy in the previous ranking of objective functions when the strategies for the two categories A and B also included selection of that option. However, the politicians' selections were the same in more than five decision areas in the two different rankings of objective functions, while the two categories selections were the same in seven decision areas. In another three decision areas category B's selection was the same in both rankings. Nevertheless decision areas such as social aspects, management and allocation of housing seemed to be insensitive to change in the significance ranking of objective functions (see fig.7.2).

Thus it is suggested that a compromise housing strategy could be achieved if the interest groups involved in housing provision were willing to accept a degree of compromise with respect to certain objective functions and perhaps re-rank some of their priorities. It is thought that such flexibility on the part of residents, in accepting

something short of their stated goals with respect to certain issues, is much more likely to be displayed if they are able to realise at least those goals on which the people place highest priority. For this to happen the decision-makers need to be aware of what these priorities are and themselves be willing to concede that some of their own goals will not be fully met.

7.5.2.2 Strategies generated using DOT₁ in multi-objective form*

The ordinal scale ranks applied using the DOT₂ approach described above took account of the relative significance of objective functions according to the different priority attached to each of them by each actor individually. The problem with this approach is that the interest groups identified differ in their relative significance to strategy formulation as well as in their influence on decision-making. To pursue a multi-objective approach catering for such conditions a particular methodology was developed (see fig.7.3). In general terms, it is a combination of DOT₁ and the Saaty Weighting System (see Appendix 2). This approach takes account of the relative significance of objective functions and interest groups explicitly and consequently shifts from a single to a multi-objective analysis while DOT₁ continues to optimise for one objective function, but uses composite weights (or a composite objective function) drawn from the views of the different actors.

* A study of multiple objective planning and techniques was undertaken by a group of second year students as part of the Master of Civic Design course requirements. Two of the group joined the writer in applying the techniques to Tripoli household survey data as a case study as part of their project. The findings of the project are described in the group report entitled "Multiple Objective Planning", Department of Civic Design, University of Liverpool, December 1980.

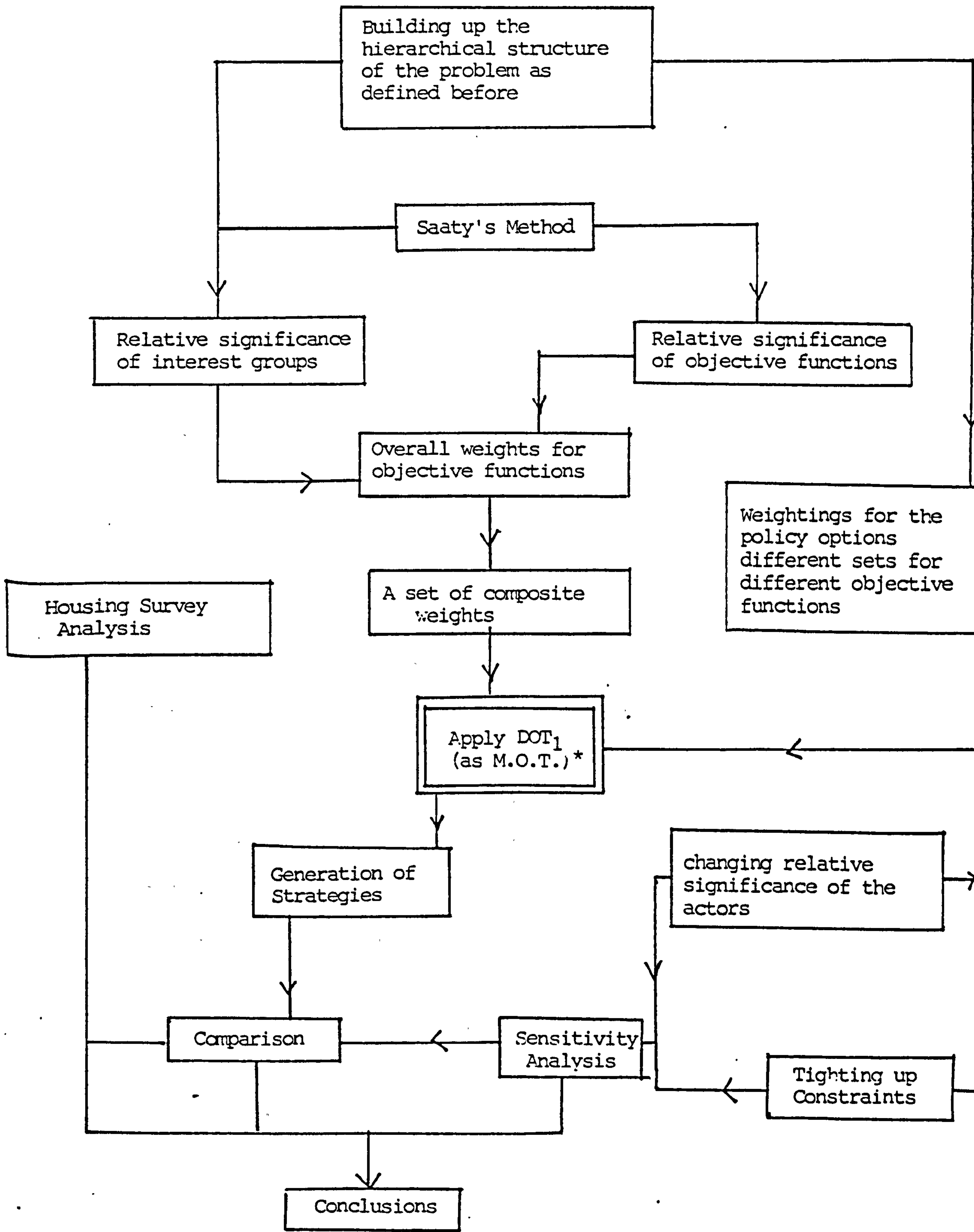


Fig. 7.3. : The Methodology adopted to generate strategies using DOT₁ as a Multi-objective Technique

* Multiple Objective Techniques.

However, the same sets of decision areas and objective functions were retained as well as the same set four actors. Four of the original set of constraints were retained but, in an effort to simplify the problem, the manpower constraint was omitted.

The original weighting scheme used in the earlier DOT₁ approach was further developed by application of the Saaty method which involves the use of the procedure described in Fig. 7.4 which shows how the problem was approached using a hierarchical structure and Saaty's method of weighting. Each of the model's four levels are discussed below.

At levels 3 and 4, the 5⁴ policy options are assessed in relation to the 5 objective functions separately and weighted accordingly. The relationship between level 3 and level 2 reflects the fact that different actors will assess the relative importance of the 5 objective functions differently. For example, cost minimisation may be of less importance to the low-income earner than to the politician. The relationship between levels 2 and 1 reflects the relative significance at each of the 4 interest groups in influencing the choice of strategy.

From such a structure, it is clear that the relative significance (and hence, the weighting) of policy options will depend on which objective function one is considering. Likewise, the relative significance of the objective function depends on whose view one is taking. Finally, assigned weights will also reflect the relative importance of each actor. This will depend on the actual context, but clearly fig.7.4 may be regarded as a simulation of policy construction.

Saaty's method of deriving weights (see Appendix 2) was then

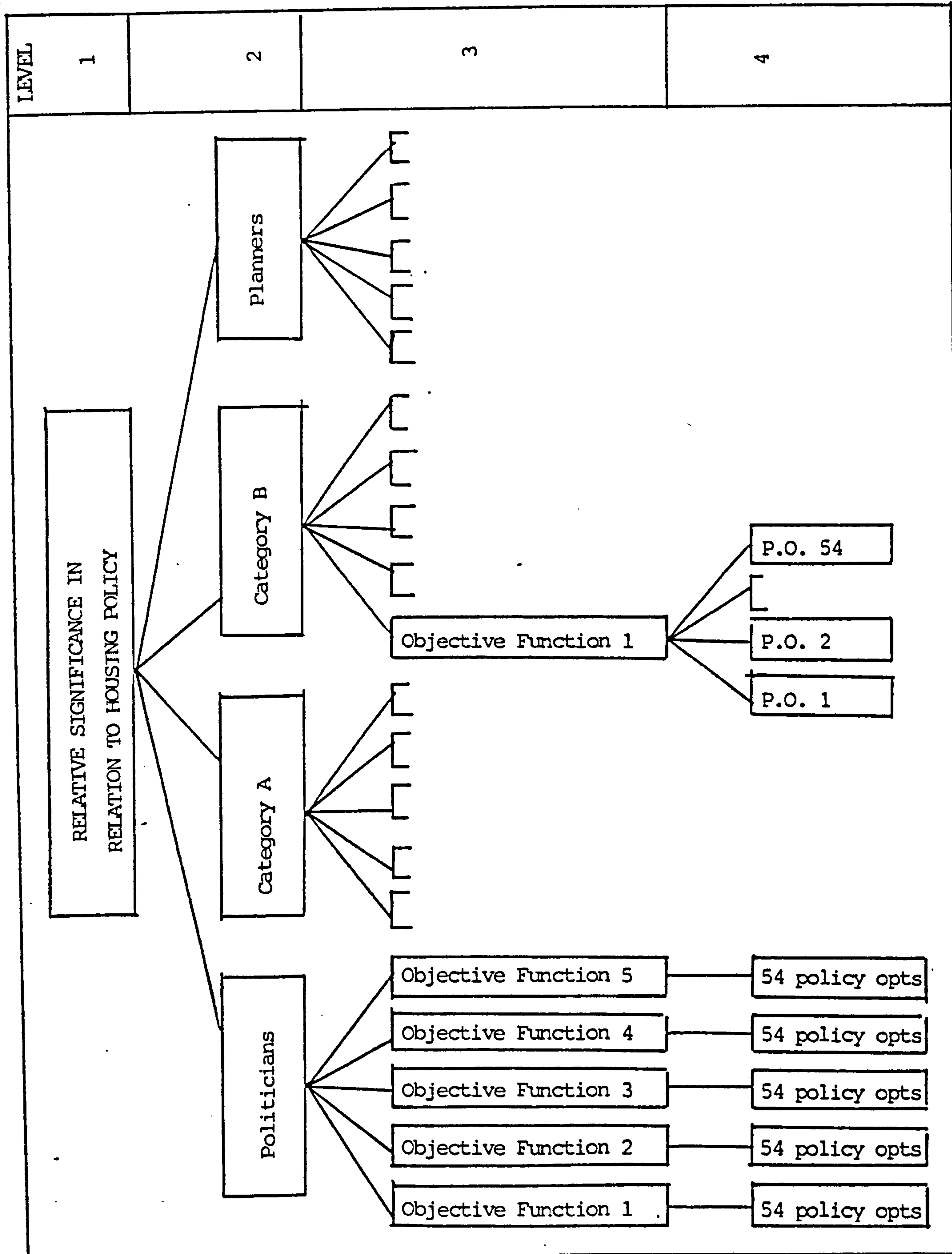


Fig. 7.4 The Hierarchical Structure of the Weighting Procedure adopted in the Tripoli Case Study

employed and applied to the hierarchy. To recap, this method involves the drawing of pairwise comparisons between alternatives or actors and the recording of this information in matrix form. The eigenvectors of the matrix can then be derived, the size of each of which reflects the relative importance of each alternative or actor.

A pairwise comparison matrix was constructed representing the relative significance of the 4 actors in the decision-making process in Tripoli. Figures were based on the analyst's interpretation of each actor's importance. From this a normalised eigenvector was derived containing the weightings for each actor; each entry representing the relative significance of all actors on an interval scale.

Thus:-

Pairwise Comparison Matrix

	A	B	C	D	<u>Weights</u>
A. Politicians	1	4	3	5	0.54
B. Category A	0.25	1	0.5	2	0.13
C. Category B	0.33	2	1	4	0.25
D. Planners	0.2	0.5	0.25	1	0.08

With regard to the relation between level 2 and level 3, a separate pairwise comparison matrix was constructed for each actor with respect to each objective function. Ideally, the entries in each matrix should have been supplied by the relevant actor. Unfortunately in the present study this had to be done in a proxy manner by referring to published sources of information and opinion, as well as to the household survey. The resulting 4 vectors of weights reflected the relative values that

each actor put on the 5 objective functions (fig.7.5).

The 5 sets of weights thus derived (1 for the actors' influences; 4 for objective functions corresponding to each actor) were then combined by means of a simple calculation, as follows:

Let the vector of weights representing the relative significance of the 4 actors be \underline{a} , and the vectors of weights representing the relative significance of the 5 objective functions to each actor be \underline{f}_i , (where $a_i = 1, 2, 3, 4$).

Then $\underline{f}^* = \underline{F} \cdot \underline{a}$, where \underline{f}^* is the vector of overall weights for the 5 objective functions, and \underline{F} is the matrix concatenating the 4 \underline{f}_i vectors (i.e. $f_1/f_2/f_3/f_4 = \underline{F}$).

In effect, the vector \underline{f}^* has incorporated the relative significance of the actors as well as individual preferences for certain objective functions so that,

	<u>Weight</u>	<u>Objective Function</u>
\underline{f}^* =	0.2141	Minimisation of cost
	0.1408	Maximisation of social equality
	0.0659	Maximisation of environmental quality
	0.3859	Maximisation of building rates
	0.1987	Maximisation of cultural attributes

This suggests that the objective of meeting basic demand for housing in the shortest period is of utmost importance; environmental quality would appear to be of least significance.

At this point, it is interesting to compare this overall weighting with those obtained earlier corresponding to individual actors (see

POLITICIAN	PAIRWISE COMPARISONS					WEIGHTS	
	1	2	3	4	5		
Objective Function	1	1	4	5	1	4	0.36
Objective Function	2	0.25	1	3	0.33	1	0.11
	3	0.2	0.33	1	0.14	0.33	0.05
	4	1	3	7	1	6	0.39
	5	0.25	1	3	0.16	1	0.10
Category A							
	1	1	0.33	0.14	0.2	0.33	0.05
	2	3	1	1	1	0.33	0.13
	3	7	1	1	0.33	0.14	0.13
	4	5	1	3	1	0.5	0.30
	5	3	3	7	2	1	0.39
Category B							
	1	1	0.14	1	0.2	0.14	0.04
	2	7	1	7	0.2	0.16	0.13
	3	1	0.14	1	0.14	0.14	0.04
	4	5	5	7	1	5	0.51
	5	7	6	7	0.2	1	0.28
PLANNER							
	1	1	0.16	0.2	0.2	0.14	0.04
	2	6	1	5	4	1	0.40
	3	5	0.2	1	4	0.5	0.15
	4	5	0.25	0.25	1	0.33	0.11
	5	7	1	2	3	1	0.30
Fig. 7.5 Pairwise comparison matrices and weights for the 5 objective functions with respect to each interest group							

fig. 7.5). The overall weights broadly reflect the relative importance of each objective as expressed by the politician. On the other hand, the planner's views do not accord with the overall weights. This is thought to be consistent with 'real life' in that, in Libya, the politicians exert greatest influence and the planners the least.

To summarise so far, the overall weight for each objective function was calculated which takes into account the preferences of each actor for each objective and the influence that each actor has on the final decision.

Generation of optimal strategies

DOT₁ was originally used for single-objective decision-making; optimising one objective function (and thus using only one set of weights), subject to the constraints set beforehand. In this section an attempt has been made to formulate the multiple-objective problem in such a way that it becomes suitable for a DOT₁ application.

This was made possible by combining the weights for the objective functions (\underline{f}^*) derived by Saaty's method, with the 5 sets of option weights. In other words,

Let \underline{p}_i be the vector of weights for the 54 policy options associated with objective function i (where $i = 1, 2, 3, 4, 5$).

\underline{f}^* is the vector of overall weights for the 5 objective functions.

Thus $\underline{p}^* = \underline{P} \cdot \underline{f}^*$, where \underline{P} is the matrix concatenating the 5 \underline{p}_i (i.e. $\underline{P} = \begin{bmatrix} \underline{P}_1 & \underline{P}_2 & \underline{P}_3 & \underline{P}_4 & \underline{P}_5 \end{bmatrix}$), and where \underline{p}^* is the vector of composite weights (see Appendix 2).

Using this set of weights (\underline{p}^*), DOT₁ can be applied; and the

relative significance of objective functions and actors can be accounted for without loss of information. The optimisation program was then run subject to the 4 constraints previously specified (land, infrastructure, materials and cost) with DOT₁ aiming to maximise the total score of the composite option weights, subject to option bars and constraints.

The strategy selected by the program was identified and then compared with the residents' preferences expressed in the household survey. Other comparisons were made with different sets of strategies generated with different structures of the relative importance of the four actors.

Finally, the optimal strategy was subjected to a different form of analysis involving the testing of the sensitivity of the solutions to the tightening of the individual constraints.

The Results

a. The initial optimal strategy was generated using the composite weights in a DOT₁ run as a multi-objective solution (see fig.7.6).

In general, the policy options selected are consistent with the relative significance attached to the objective functions. For example, the selection of terraced housing, of a modest provision of community facilities and of central government as the main agent in housing provision are all consistent with the high priority given to maximising building rates and minimising cost. Similarly, the lack of control on urban development reflects the low weight given to environmental quality.

It must be noted that there is more than one possible optimal strategy. In decision areas 8 and 13 (size of housing projects, and urban containment policy respectively), more than one policy option has the same weight-value after the objectives are merged. Further investigation suggested that this is merely reflecting options that are not substantially different from each other.

b. Strategies preferred by Category A and Category B:

Fig.7.6 allows comparison of the multi-objective solution with two other strategies - each representing the two main resident groups A and B identified using the household survey data (i.e. the middle - and low-income earners). In some decision areas it was found that the generated strategy met the preferences of both of these two groups. Such examples can be found in the layout of dwelling units, the management of housing, the provision of community facilities and in the environmental aspect. However, as far as the type of dwelling unit and the allocation procedure are concerned, the preferences of category A do not find expression in the strategy. Similarly, there is a discrepancy between category B's preferences and the generated strategy; particularly over housing payment and the social aspects of the policy. In some areas, the desires of both residents groups are not fully satisfied, for example the location of projects, the provision of communal facilities and the housing provision agency.

These comparative analyses have helped to identify the more contentious decision areas and indicated the amount of trade-off that both residents groups have to make in order that a compromise solution

Fig. 7.6 Generated Strategies using DOT₁ as a Multi-Objective Technique

Decision Areas	Policy Options	STRATEGIES							
		1	2	3	4	5	6	7	8
1	1								
	2		*				*		
	3								
	4	*		*	*	*		*	
	5								
2	6	*	*	*	*	*	*	*	
	7								
	8								
3	9	*	*	**	*	*	*	*	
	10								
	11								
4	12	*			*	*		*	
	13								
	14		*	*			*		
5	15	*	*	*	*	*	*	*	
	16								
	17								
6	18		*	*	*				
	19					*	*	*	
	20	*							
	21								
7	22								
	23		*	*	*	*			
	24								
	25	*					*	*	
	26								
8	27	*		*		*	*	*	
	28		*		*			*	
	29	*			*	*			
9	30								
	31								
	32		*	*			*	*	
	33								
	34								
10	35								
	36	*	*	*	*	*	*	*	
	37								
	38								
11	39								
	40			*					
	41					*			
	42								
	43	*	*		*		*	*	
12	44								
	45								
	46	*		*	*	*	*	*	
	47		*						
13	48								
	49								
	50								
	51		*				*	*	
13	52								
	53			*	*	*		*	
	54	*		*	*	*		*	

- 1 - Strategy generated using initial composite weights in a DOT₁ run.
- 2 - Strategy generated in accordance with the preference of category A.
- 3 - Strategy generated in accordance with the preference of category B.
- 4 - Strategy generated when each actor has equal influence.
- 5 - Strategy generated when politicians have a reduced influence.
- 6 - Strategy generated when planners have an increased influence.
- 7 - Strategies generated when planners have complete influence.

The relative significance of objective functions and actors was accounted for, subject to the constraints previously specified.

can be achieved.

c. Strategies generated subject to changes in Relative Significance of the Interest Groups:

Three new pairwise comparison matrices were constructed and weights derived from them (fig.7.7). By the same procedure used previously, a set of overall weights was computed for the five objective functions.

Each of the three comparison matrices represented a different scenario. The first gave all actors an equal influence on decision-making. The second reduced the politician's significance. The third reduced the political input and increased that of the planner. A fourth scenario (that of complete planner control) was also included, using figures calculated earlier in the analysis. For each scenario the overall weights for the objective functions were combined with the option weights to form composite weights (Appendix 2).

When the influence of the 4 actors is considered to be equal, the objective function weights reveal maximising building rates as the dominant objective. Environmental quality is the least important.

When category B is given greatest influence, the relative weights attached to the objective functions are similar to those in the initial analysis except that cost minimisation is of much less significance.

When planners exert a greater influence (scenario 3), social equality and cultural attributes are of more importance. This is also the case when planners take complete control (scenario 4).

RELATIVE SIGNIFICANCE OF INTEREST GROUPS						RELATIVE SIGNIFICANCE OF OBJECTIVE FUNCTIONS			
EQUAL ACTORS INFLUENCE 1*		A	B	C	D	WEIGHTS			
Politicians	A	1	1	1	1	0.25	Minimise cost	1	0.1225
Category (A)	B	1	1	1	1	0.25	Maximise social equality	2	0.1925
Category (B)	C	1	1	1	1	0.25	Maximise environmental quality	3	0.0925
Planners	D	1	1	1	1	0.25	Maximise house building	4	0.3275
							Maximise cultural attitudes	5	0.2675
REDUCED POLITICIAN INFLUENCE 2*									
	A	1	0.33	0.16	2	0.11		1	0.6780
	B	3	1	0.25	6	0.24		2	0.1426
	C	6	4	1	7	0.61		3	0.0686
	D	0.33	0.16	0.14	1	0.05		4	0.4315
								5	0.2904
INCREASED PLANNER INFLUENCE 3*									
	A	1	3	0.25	0.16	0.09		1	0.0688
	B	0.33	1	0.14	0.12	0.04		2	0.2889
	C	4	7	1	0.25	0.26		3	0.1101
	D	6	8	4	1	0.60		4	0.2457
								5	0.2774
COMPLETE PLANNER INFLUENCE 4*									
(Figures from Fig. 7.5)								1	0.04
								2	0.40
								3	0.15
								4	0.11
								5	0.30

1-4* - four new scenarios

Fig. 7.7 Changes in the relative significance of interest groups and objective functions in four new scenarios

DOT₁ runs were then made for each scenario, and the results analysed. Within these structures of relative importance the strategies produced (see fig.7.6: 4,5,6 and 7) indicate those decision areas that are insensitive to changes in the relative significance of actors. These include the layout of the dwelling unit, communal facilities, environmental aspects, size of housing project, housing management, and the allocation procedure. In other decision areas there are changes in the policy options selected when different actors are given priority. The decision areas which are found to be sensitive to changes in the relative significance of actors include community facilities, housing provision agency, housing payment and urban containment policy.

d. Comparative evaluation of the generated strategies:

By incorporating Saaty's weighting method into a single objective DOT₁ program the strategies generated are multi-objective in nature. Furthermore, they fully reflected the relative importance of each interest group and each objective function. Therefore, it is not difficult to identify the effects of varying the relative influence of each interest group on the choice of solutions. The results (summarised in fig.7.5) represent only a fraction of the strategies or possible solutions which could have been generated if further combinations of relative importance were to be expressed and elaborated. However, the strategies described here reflect the sets of weights and the relative importance ranking of actors which were thought to be reasonably close to those likely to be obtained in practice.

Fig.7.6 indicates that policy options selected in 12 out of the

13 decision areas within the strategies selected were in accordance with people's preferences (in either or both of the categories) and are thus insensitive to changes in the relative significance of actors.

In the case of the decision relating to the type of residential development, category A's preference was for a villa type which does not differ in principle from the option chosen by all strategies i.e. single-family dwelling unit. All strategies without exception included the option whereby physical as well as social requirements have to be satisfied in dwelling unit layout. They also all included the same options in decision areas five (environmental aspects) and ten (housing management). Concerning communal facilities people prefer not to have shared facilities while in other strategies the choice was for minimisation of such facilities rather than exclude them altogether. Nevertheless, none of the strategies included maintaining the present system. In decision area four (community facilities), despite the few alternatives available, all strategies picked up the option where additional public facilities had to be provided. Most strategies included the option where facilities are provided for social interaction and a few others included the alternative option where physical environment which caters for such interactions should be provided at the least. All strategies excluded the option of self-contained housing development in terms of location and size. With respect to sources of housing finance, strategies in accordance with people's preferences and those of the planners selected the policy option where loans are made accessible to individuals as well as technical assistance. The other set of strategies selected the central government as main source

of housing finance (both options are adopted simultaneously in the current housing policy in Libya). The category A preferred strategy included owner occupation which was selected by most of the other strategies while the category B strategy preference was for subsidised sale which is very much as expected. Nevertheless, the two policy options emphasise the preference of one type of tenure which is home-ownership.

Concerning urban containment, again the category A strategy coincided with planners' preferences when both selected the option of conservation of the city surroundings as a green belt as a policy while the category B preference is in accordance with other strategies where no reservation of urban land is the policy option chosen.

From this comparative analysis it is clear that there are quite a number of policy options in all decision areas which feature in strategies generated with regard to different structures of relative significance and preferences of the four actors involved. These policies are believed to be consistent and logical and could fit into a strategy which might serve as a compromise solution which satisfies the constraints on the problem under different conditions. By and large, many other policy options were not selected as part of any strategy under any conditions (see fig.7.6). A compromise solution satisfying most - if not all - interest groups and objective functions would be expected to avoid such policies.

e. Changes in the constraints

In this exercise an attempt is made to assess the response of the

generated policy to a separate tightening of each constraint as follows:-

Constraint	Previous Value	New Values*			
		1	2	3	4
Land	-350	-250*	-350	-350	-350
Infrastructure	-370	-370	-270*	-370	-370
Materials	-300	-300	-300	-200*	-300
Cost	-370	-370	-370	-370	-270*

With all other data remaining the same, four more DOT₁ runs were made, one for each of the new constraint values. The results are shown in fig.7.8.

Generally speaking, tighter land and cost constraints create little deviation from the original solution. The strategy is not sensitive to reductions in land or cash availability.

The strategy is more sensitive to changes in building materials supply and infrastructure. However, shifts in option selection are concentrated in a few decision areas including types of dwellings, internal design of dwelling units, shared facilities, community facilities and the environmental and social aspects. These results may indicate that under certain changes in exogenous factors such as building materials supply and infrastructure, changes must be made to the chosen strategy accordingly.

Decision Areas	Policy Options	Initial DOT ₁ Run	Change to Land	Change to Infrastructure	Change to Building Materials	Change to Cost
1	1					
	2					
	3					
	4	*	*			*
	5			*	*	
2	6					
	7	*	*			*
	8			*	*	
3	9	*	*			*
	10					
	11			*	*	
4	12					
	13	*	*			*
	14					
5	15	*	*			*
	16					
	17			*	*	
6	18					
	19			*	*	
	20	*	*			*
	21					
7	22					
	23					
	24					
	25	*	*	*	*	*
	26					
8	27				*	*
	28	*				
	29		*	*		
9	30	*	*	*	*	
	31					
	32					*
	33					
	34					
	35					
10	36	*	*	*	*	*
	37					
	38					
	39					
11	40					
	41					
	42					
	43					
	44	*	*	*	*	*
	45					
12	46			*	*	
	47	*	*			*
	48					
	49					
	50					
13	51					
	52	*	*	*	*	
	53					
	54					*

7.6 Concluding Remarks

The application of DOT and the discussion of the results presented in this section have indicated how it is possible to use the technique in the generation of alternative strategies for the development of housing policy. It has been shown how the technique can be adapted for use for this purpose by making use of information drawn from a wide range of different sources. The applications described have illustrated the potential of the technique for use in formulating a flexible housing strategy which is responsive to public preferences while being feasible in terms of available resources as represented by the constraints imposed on the solution. It has been demonstrated that it is possible to employ Saaty's method as a means of deriving composite weights for use in a single objective DOT program to generate strategies which reflect not only the preferences of individual actors with respect to policy options but also the relative importance of each actor and each objective function. This approach could in these terms be referred to as being explicitly multi-objective in nature. The range of strategies generated reflected also the effect of varying not only the relative influence of each actor but also varying the strength of constraints imposed on the strategy selection procedure. Subsequent analysis of the generated strategies revealed the most sensitive design areas in the sense that different policy options were chosen by different actors. Examination of the strategies also indicated the decision areas in which there was little or no difference in the choice of policy options by different groups. In this way it has been shown how application of the technique provides a means of identifying those decision areas on which there is likely to be

general agreement with respect to different actors and, perhaps more importantly, those decision areas in which different choices are likely to be made and which will thus prove more contentious. It was found that a large proportion of decision areas seemed to be insensitive to changes in the priorities and preferences of the interest groups and that the more contentious decision areas were few in number.

In this respect it is suggested that the facility whereby the strategies can be subjected to sensitivity testing by varying the constraints could be useful in drawing up contingency plans for use in the event of a change, for example, in the availability of building materials or manpower or even when people's preferences are thought likely to change as a result of far reaching socio-economic changes which may be experienced in Libya over a number of years.

It is important to note that the examples of the applications of DOT presented here have only served to demonstrate the operation of the technique. However, it is thought that it is sufficiently flexible to allow its use at a wide range of different scales in identifying appropriate housing strategies. Thus, given a suitable means of obtaining the views of relevant actors or interest groups, it should be possible to use a DOT based approach as an aid in formulating strategies or policies from the national level down to the level of even a housing estate.

The success of such applications is likely to lie in the appropriate identification of the problem and the 'correct' definition of decision areas, policy options and constraints. Although it would be desirable to seek suitable weights for use in such applications

directly from the actors concerned, the examples described in this section have demonstrated how this is not crucial, but that progress can be made even if all that is available is only a general impression of the relative weights which actors are likely to place on individual policy options. At least the effects of changing the weights or even refining them as more information becomes available can be tested relatively easily. In this way the technique could be used as part of a continuous decision-making process in re-evaluating strategies as views and circumstances change.

CHAPTER EIGHT

SUMMARY AND CONCLUSIONS

The purpose of this study was to examine trends in the provision of public housing with special reference to factors which contribute to the level of housing satisfaction in the light of family and community needs. The method of inquiry employed enabled an examination of a wide range of variables which are related to the residential and social functions of housing development. This provided a perspective of various factors that affect people's evaluation of their housing needs and environment. From the assessment of the housing policy and practice then produced it was clear that a method was needed for developing a housing strategy which would balance people's desires with feasibility in housing provision. The application of a decision-making technique has indicated aspects of a housing policy framework that should be modified and adapted in order to make possible the evolution of a housing policy capable of meeting the objectives and aspirations of society.

Any proposals or recommendations for improvements or changes in national or local public housing policy must be based on an analysis of known deficiencies and failures in the existing process and its products. This thesis incorporates an examination of positive and negative aspects of the situation as the various strands of the research were developed. The aim in this final chapter is to bring together the main findings of the different sections of the research and to present some final conclusions.

8.1 Summary

The most significant cultural and historical changes occurred in Libya when the Moslem Arabs conquered the country in 642 A.D. They brought with them a new religion, Islam, and a culture, language and pattern of living which has dominated the culture of the country ever since.

In 1911 the Italians invaded Libya and continued to rule the country until the end of the second world war. In 1952 Independence was achieved and Tripoli was declared the capital. During the occupation Libyans, particularly the inhabitants of Tripoli, in working with and for the Italians, came into direct contact with the western way of life. At this stage and during the early period of independence the city of Tripoli experienced a series of significant economic, social and political changes, as did the country as a whole. However, the major economic changes occurred in the early 1960s when oil was first exploited. Political and social changes accelerated in the late 1960s and particularly after the First of September Revolution in 1969 when the country became the Libyan Arab Republic.

Since the early 1960s in addition to experiencing the far reaching socio-economic changes that have affected the country as a whole, Tripoli has been undergoing a very rapid population growth and an extensive process of urbanisation. The pattern of the urban fabric has changed in response to historical influences on Libyan culture and how these influences and socio-economic forces have affected people's perceptions of housing, its design and form. Tripoli's housing stock is characterised by a variety of styles, which reflect

in part the fads and fashions that have become prevalent as a result of revised, if transient, social values consequent upon rapid socio-economic changes. Very few of these variations are relevant to the basic differences in life style of the various socio-economic groups. Despite external influences and the fact that the country has been in a transitional phase, many aspects of the traditional pattern of living, social values and habits are still valid and are maintained as strongly as ever. The expansion of the city on an enormous scale has led to the scattered and premature subdivision of land which was not ideal for development, adding much to the problems of public services and not least to those related to housing. This physical expansion has been, for the most part, unplanned or with the smallest degree of planning control. Furthermore, the city has been exposed to many changes due to external influences and concepts both in housing and planning adopted during a critical stage in its development. The various policies and plans produced in a number of attempts to deal with the situation seem to have proved ineffective and appear to have been chosen on an unsystematic or even ad hoc basis.

Although a great deal of physically sound public housing has been built in Tripoli during the last two decades, there are doubts about its quality. Many of the housing projects may be criticised on the following essential points:

- a) They appear frequently to fail on social grounds
- b) They rarely offer the alternative or equivalent to private housing
- c) They fail to provide the right kind of housing stock.

As an ex-colonial nation, Libya was subject to autocratic and arbitrary

decisions in the field of housing during its period of foreign rule. The same haphazard and arbitrary approach to the problem of housing has been continued since Independence.

The magnitude and nature of the problem of publicly provided housing in Libya as well as the current system of housing provision, existing difficulties and constraints have been discussed in the various chapters of this study. It is clear that there has been a tremendous growth of housing investment since 1964, at a rate disproportionate to the necessary increase of other human and material resources, the provision of which are essential elements in making progress in housing. A great range of specific, related problems have been involved, many of which, however, have laid beyond the capability of the present condition of the machinery of public housing provision. Nevertheless, the resources that are available could allow for policies which would decrease the grave discrepancy that still exists between the housing product and people's need in the local context.

The effectiveness of decision-making with respect to public housing is definitely constrained by the way in which housing problems are perceived. In Libya housing has been always viewed as being essentially a problem of matching numbers of households to numbers of dwelling units. As a consequence, housing policy and investment have focused exclusively on catering for existing and predicted shortages in dwelling units in relation to population estimates. Even if numbers of rooms and numbers of people are used, these are but a crude guide to appropriate housing standards, adequacy and satisfaction, both

physically and socially.

It is certain that public housing has gathered many more critics and opponents than supporters on social grounds. Nevertheless it would not be wholly accurate to assert that public housing has never been a programme to catch people's imagination or to inspire great civic pride; its accomplishments have been overshadowed by its shortcomings, as a result of a short-sighted policy framework. Public housing has been suffering far too long from the imposition of instant remedies to ill-defined problems.

A further factor which has contributed to the present situation has been the lack of local expertise and trained technical professional personnel who, had they been available, would have been involved in plan-making and, perhaps more importantly, in formulating planning objectives.

Within the institutions concerned with planning in general and housing in particular, there seems to have been an absence of adequate co-ordination and liaison. Similarly, it is suggested that inadequate consideration has been given to the relationships between housing and other relevant activities.

Apart from the above-mentioned difficulties and the complexity of the planning problems themselves, there are several basic development problems whose solutions rely upon the existence of a sound national policy framework regarding objectives and financial priorities, which in practice seems to have been difficult to establish.

In relation to housing, decision-makers have focused their

attention on only 'one side of the coin' by attempting to accommodate the rising tide of shelter demand. This is reflected in both the broad policies and the specific plans and programmes adopted.

It is now widely recognised that public housing policies cannot be formulated solely on the judgements of policy-makers, professionals or administrators. User satisfaction and preferences must become a major concern of housing authorities. In mass housing, evaluating user preferences and incorporating them in the decision-making process is not an easy task. Furthermore, the decision-makers are faced with the problem of balancing the individual and family interests of the majority to be housed with those of the community as a whole. For the purpose of this study, however, information has to be available in order to assess to what extent the public housing process and product has satisfied the user needs and has met his preferences. Although problems arise in the identification and measures of user satisfaction and preferences, several sources of information might offer a simple guide:

- a) Information recorded and collected from housing management
- b) Evidence on household behaviour patterns within the housing system
- c) Collection of information through household interviews.

Within the study context, the lack of an efficient structured housing management system made it difficult to get references or records of application forms or any relevant information that could be used in assessing people's preferences. The rigidity of the provision system and lack of choice and user involvement in it made

it impossible to trace the patterns of household behaviour or preferences. The direct approach of assessing preferences through household interview was the only possible means of evaluating the satisfaction and preferences of public housing occupants.

It is clear that, in quantitative terms, considerable progress has been made by the public sector in recent years in meeting housing shortages, mainly by means of housing construction programmes. Nevertheless, this success has in turn generated further problems. The emphasis on quantity, on the provision of sufficient dwellings, has not meant that these dwellings are physically and structurally of low quality, but rather that they are not always of the right sizes and types for the occupants, and they do not necessarily relate to the reasonable preferences and aspirations of those occupants. User dissatisfaction has become more manifest recently, but may have existed latently in the past when in periods of sheer shortage one could not have appeared to be too critical. However, successful public housing should be conducive to the satisfaction and contentment of as many as possible of its users.

Preferences evolve continually as fads and fashions become diffused throughout society. Moreover, as stated in Chapter 5, people are not always articulate about their dissatisfaction or otherwise. Therefore, an attempt was made here to assess satisfaction of public housing users with respect to the basic housing requirements. Preferences or aspirations of the study groups were judged in the light of the preferences and standards attained by similar groups in the private housing sector. Within the framework of these conceptions

this research has served to reinforce a fundamental belief concerning the most appropriate direction of enquiry. This belief is that in order to plan for equitable satisfactory housing facilities it is vital to recognise and take account of the relationship between the overall concept of housing satisfaction and, within that overall concept, concept of individual preference. To this end it is seen as important to have a better understanding of the way in which these concepts are related in turn to people's housing needs, the spatial distribution of household characteristics and the various features of the housing system. Within this framework the writer has made an attempt to explore and highlight the nature of some of the problems of housing needs and satisfaction in the study area.

The analysis of the data collected in the field survey of 1977, which has been described in detail in Chapter 5, was used in identifying a number of key demographic, socio-economic and household characteristics of the population which contribute towards explaining variations in occupants' needs and which have some influence on their preferences and satisfaction. The investigation has been exploratory in nature, the approach adopted being based on the systematic study of residents' attitudes. However, the significance of the data presented should rest not only on their role in evaluation: but also upon the relative importance that one is prepared to place on the range of opinions and subjective views of the people interviewed. The analysis and discussion centred around the examination of occupants' degree of satisfaction with the major features of the dwelling unit, housing estate and environment in which they live. The analysis of the data revealed that such states of universal satisfaction or dissatisfaction are not

expressed with reference to any particular aspects of housing. Therefore, evaluation of housing satisfaction must be viewed from a number of points of view, including not only measures of satisfaction related to specific elements and standards of the physical environment, but also those related to factors of a social and psychological nature. Accordingly, the aim of providing decent, safe and sanitary housing must be complemented by a strong emphasis on community development and prosperity. Policy makers need to review the conceptual principles of public housing, focusing predominantly on the local perception of contemporary socio-cultural norms, life style, housing demands and reasonable preferences of the people to be housed within the context of changes in society.

It is appreciated that there are limitations to the application of the approach discussed here but nevertheless this application would broaden the assessment of future housing needs and system to include measures not only of its quantitative aspects but also of qualitative performance in relation to social needs and family way of life of the groups to be served.

The search was continued for a more systematic technique which would enable the identification of an integrated framework for a sound, flexible, short-term problem oriented housing policy that is profoundly concerned with all existing factors and current events, and long-term contributions to a better housing quality for human and environmental interactions. The rate of change, the lack of information, the incomplete knowledge and controls of planning systems, and the shortage of qualified informed decision-makers, are major factors that have led

to the adoption of the existing inappropriate, excessively land-use oriented housing programmes and plans that are static and inflexible. In this respect, a good plan design technique is required, capable of fulfilling adaptable policies in response to changes in housing requirements and in people's preferences. The technique should make it possible to rapidly and readily modify, extend or replace existing policies as circumstances change. One such technique is that developed by Openshaw and Whitehead and known as the Decision Optimising Technique (DOT). The application of this technique could aid the production of decision orientated plans and provide a capability to select a set of decisions to form rational housing policy permitting continuous re-evaluation, monitoring and adaptation in accordance with any changes that may occur during the progress of the scheme.

As public housing policy must inevitably be one of compromise between the different objectives of different interest groups, the study had to rely on information about people's preferences as recorded during the field survey and on the views expressed in government publications which might not fully represent the reality. The systematic approach and the hierarchical structure were adopted in formulating the study problem in order to minimise that effect.

Although the survey conducted as part of this research yielded a considerable amount of data, this was not collected with any specific technique in mind. However, the nature of the data and the complexity of the problems under consideration, as well as constraints of time available for analysis, indicated that the DOT methodology would be appropriate for application to a study of possible policy issues and

combinations of possible policies. The DOT methodology is capable of providing guidance for policy oriented decisions at a strategic level adaptable to changes as they occur.

8.2 Conclusions and Recommendations

This research programme has focused on past and present trends of housing policy and practice in Libya in relation to transitional features of socio-economic development and the norms, values and life style of Libyan urban society. An attempt has been made to identify relationships existing between physical elements of and conceptual perspectives on housing functions and the space allocated for housing. It has also been a purpose of the research to broaden the assessment of housing systems to include measures not only of quantity, but also of qualitative performance in relation to the needs and desires that families and society place upon housing. Finally, the research has been designed to show how this better assessment and definition of priorities and of the relationships between major aspects of housing policy might be articulated to achieve a higher degree of public satisfaction and improved environmental quality.

The investigation and analysis made it clear that the current housing policy must be revised if public housing is to fulfil social and economic goals. The analysis and discussion were able to illuminate the conceptual elements that should form an important dimension of housing policies and strategies. A rational housing policy could be found through a number of changes to the major parameters governing the formulation of housing strategies; these changes are seen as a long term, perhaps idealistic, solution which requires far-reaching study and investigation beyond the scope of the present thesis.

Strategic Elements of Housing Policy

Certain considerations are important in determining the conceptual

basis of the policy and thus the framework within which the housing process operates.

Housing policy and practice should be designed to fit the objectives of society and be appropriate to its needs within prevailing cultural concepts and local physical conditions.

The social nature of housing policy must be recognised. Progress cannot be measured purely in terms of dwelling units constructed nor can success be judged solely by the numbers of families housed: account must be taken of the impact of dwelling units on different sections of society and people's aspirations, for a social approach is essential for a comprehensive, human and flexible policy for housing. Housing policy and practice must reflect closely the changing needs and preferences of society without ignoring the enduring norms, values and patterns of living retained by the majority. Greater flexibility in consideration of various aspects of housing performance is required if these needs are to be catered for comprehensively within the limitations of the available resources.

The provision of public housing should be conceived, similarly to private housing, as an activity in which the users may play a major role at any level and in every aspect. This can be achieved through the mobilisation of the occupants' financial resources and by other forms of participation at defined stages of the development process. Involvement of the potential user can narrow the gap between him and the decision-makers and decrease the conflict of their interests; it can also help to shift the housing burden from the public sector to private individuals.

Since housing provision forms part of a comprehensive national policy, social and economic strategies must recognise the needs of housing strategies and be fully co-ordinated with them.

Investment and expenditure on housing should not be solely employed on dwelling construction, but should be directed towards all aspects of housing. Funds for construction should be balanced against considerations of resources available, land development, the supply of building materials, manpower availability, programmed provision of utilities and public facilities as well as the development of the building industry itself.

Land development, planning and subdivision should be comprehensively organised so as to ensure a balance between the needs of the physical and social structure of society, and to help in the development of a thriving community spirit with a sense of pride in belonging. The physical and social integration of public housing development with other elements in settlement structure is a major factor in its success and people's contentment.

A scheme for urban redevelopment and improvement of existing residential areas should be incorporated in the housing policy through urban amelioration programmes, balanced provision being maintained between the differing demands of dwelling units, environmental amenity and community facilities.

Housing policy should include provision for renovation to cater for home improvement. A balance should be maintained between investment in new housing and the improvement and repair of old stock in order to reflect individual and community needs as well as cost considerations.

Schemes, loans and grants for home improvement should be provided for people who are willing to maintain their present environment. This could reduce the demand for new housing and help in the conservation of worthwhile housing stock and traditional communities.

Concentration exclusively on extensive dwelling construction for one section of society in the absence of effective management and maintenance can, because of rapid deterioration of the housing stock, increase the demand from that section and, since the construction capability is limited, other sections of the population will be left with a very low level of housing provision. Equitable, balanced housing policies must ensure that housing is accessible to all sections of society in order to fulfil social and economic objectives.

Housing environments should be characterised by a balance of forces involved: of the professionals who create the environment and of the users who live in it. The one-sided professional force which has been exercised in mass housing provision should accommodate influence of the user through his participation: a designer can only create the framework, a house or flat, in which the potential user will build his own home. Professional awareness should always be conditioned by the knowledge and understanding of the socio-cultural values and conceptions of potential occupants. Where it is practicable, freedom of choice in type and location of dwelling should be granted to the potential occupant whether he can participate or not.

It is important to maintain a monitoring capacity in the housing process, because this can alert policy-makers to the development of potential housing problems, give guidance in future housing policy

formulation and be used to measure progress and satisfaction in housing. Monitoring changes in housing stock and its use, in housing requirements and preferences, as well as progress in meeting policy goals, could be included in the organisation of housing provision. This would involve recording, collecting and analysing information over a wide range of issues through the census, household survey, routine records and through the periodic collection of data from management and other public housing agencies.

Detailed Elements of Housing Policy

It is important to adopt a dynamic long-term housing policy as a basis for decision-making rather than one that is static and geared to the implementation of standardised prototype solutions. The policy should be comprehensive in conception and practical in its application. Comprehensive studies and programmes should be conducted in order to evaluate, develop and improve standards better to meet housing requirements and create a community environment appropriate to local physical and socio-cultural conditions, within the limitations of available human and financial resources. This is not to imply that current standards are inadequate in meeting physical and structural needs, but rather that they are insufficient to provide social and cultural satisfaction. Human factors are fundamental elements in the design and establishment of housing standards, which reflect people's socio-cultural patterns as expressed in the use they make, and the performance they expect of space, dwellings and their community environment. Systematic knowledge of the potential user is essential to provide a

proper foundation for creative development by both the decision-maker and the designer in planning and providing for housing, in the design of individual dwellings as well as in the creation of the total environment. Individual needs in public housing can only be met satisfactorily through the involvement of individuals and this is only possible if public housing is considered to be an open system for as large a section of society as possible. The openness may be achieved through financial and tenurial arrangements on the lines set out below.

Financial arrangements

Public housing needs should be met through private initiative with government assistance in order to relieve some social pressures in housing for a larger number of population.

A shift of the major burden of house construction should be made from the public sector to individual households, except those in greatest need: the poverty group, elderly, handicapped and others who cannot secure, or participate in, housing themselves. Public assistance may be financial, in terms of loans and grants or subsidised housing sites and building material, or it may take the form of the provision of technical assistance and skills.

Loans and mortgage facilities should be provided to individuals at any stage in housing themselves. Loans to buy land or build a dwelling or both should be available for the individual buyer to pay for a dwelling built by housing agencies or in the private sector. Loans, or perhaps grants, should be available for home improvements, extensions or adaptation of existing accommodation.

Loans and mortgage conditions should not be standard, but should be related to an individual's ability to repay and to the cost of the dwelling. The lower the total cost of the dwelling the greater the loan should be in terms of percentage of the dwelling cost. In such cases, moreover, the repayment period should be longer and down payments smaller. People should be widely encouraged to participate in housing provision, but if there are still certain groups which cannot afford to do so their housing needs must continue to be met free of charge by housing authorities.

Tenurial arrangements

The multi-family type of tenure which is the present practice in public housing is usually a form of home ownership in which the occupant and his neighbours own their property jointly and do not enjoy the advantages of single family home ownership which are a major factor in housing satisfaction. For this reason multi-family residential development should be substituted by single family tenure development whenever it is possible since the former has proved not to be suitable for local conditions. Low-rise high density development might perhaps be a physical form suitable for single-family tenure which could be more widely appreciated, mainly by the lower income groups. Public housing policy should be directed towards better terms of home ownership. Free occupation and ownership should be very limited and avoided whenever possible. Payment for housing provision, however minimal, should be required as it affects the sense of ownership which in turn influences the individual's enjoyment and appreciation of, and satisfaction with, his house.

Different types of tenure in public housing should be available so that the user would be able to choose that which would best satisfy his needs, preference and capability.

Design and Physical Form

Housing design and layout contribute greatly to the level of occupant's satisfaction. Space should be organised in such a manner as to provide for the domestic and social needs of the user in the most economic and efficient way. Innovative approaches to design and technology that are characterised by low labour content, low building material consumption and fast erection techniques may bring about cost reductions. However, the extent to which they are adopted should be governed by local conditions and reflect people's conceptions of satisfactory housing.

Physical measures and standards should be based upon an appreciation of the traditional social and cultural values. They should provide for a household's need of privacy and for the essential visual and functional distinction between private and public space. They should strengthen and maintain the sense of neighbourhood and social community by adapting to the changing needs and preferences of users and thus the employment of local trained professionals well acquainted with the social outlook of the local people is essential. High quality housing design allowing flexible use of space could meet the principal requirements in terms of both functional flexibility and adaptability.

Layouts like most typical contemporary housing projects consisting of groups of dwelling units in monotonous, standardised housing blocks,

should be avoided. More attention should be paid to the appearance of public housing and its integration within its locality. Housing locations should be decided on basic planning criteria such as residential density, accessibility and environmental amenities and the practicability of providing basic services economically. The basic features of dwelling design should not be determined solely on an economic basis. Size, type and components of a dwelling unit should also accord with other criteria such as climatic factors, social interests and, not least, the family way of living. Desirable standards in housing are related to changes in standards and pattern of living; standards of public housing, therefore, should be monitored and adapted to these changes in order to maintain a reasonable level of housing satisfaction in the public sector.

Importance should be attached to the design and layout of particular parts of dwelling units, such as private outdoor space and its relationship with other elements of the dwelling. Kitchens should be given special attention, particularly in relation to size, location and storage space. Another important element in a Libyan house is the living room and its size, privacy and relationship with the rest of the dwelling components. Importance should be given to the need to attain a high degree of user satisfaction in relation to the various aspects of design and space arrangement.

General Issues

To lower the rate of obsolescence of housing stock, surveys and programmes of rehabilitation and improvement of old houses should be

prepared in order to prolong the life of some housing. As has been said, this could decrease the need for more housing facilities and relieve dissatisfaction with new housing.

Future developments in the building materials industry will affect the housing sector. Studies should be promoted to explore the potentials of local building materials and traditional construction systems in the light of local conditions. Further studies of industrial production of building materials should be pursued within the same context. Trained managerial and administrative personnel should be available, not least the technical and professional staff in all fields. All necessary training programmes should be developed. The user should be prepared for his new housing environment and his awareness of its capabilities and limitations should be extended through this involvement in management and maintenance. This will affect his attachment to his house and raise his level of housing satisfaction.

Better co-ordination and stronger ties should be maintained between different institutions with public housing responsibilities in order to secure a better match between housing progress and housing needs in terms of people's preferences. Public housing authorities should be more aware of the unbalanced situation and lack of co-ordination in decision-making by institutions participating in the housing process. Relevant legislation and regulations should be defined and enforced to back up the housing system and to secure better co-ordination and co-operation in the housing field.

Positive intervention of local authorities should be practised to

ensure co-ordination and adoption of reasonable physical measures and acceptable standards in public housing planning, design and construction.

Equity in housing provision should not only be in terms of the efficient provision of dwelling units, but should also be seen in terms of equitable sharing of community facilities through their better provision and promotion of multiple uses for existing facilities whenever it is appropriate. The deficiencies in social and service infrastructure have a direct impact on residential satisfaction; dissatisfaction is frequently being caused by ill-programmed provision of community facilities. Environmental amenities should be secured so as to attain better social acceptability for public housing developments.

Housing authorities should secure the provision of the necessary labour force through training of local construction manpower and by better arrangements for the permanent supply of imported skilled and non-skilled labour.

Further research should be undertaken aimed at economy in building, through efficient structural design, construction techniques and managerial skills throughout the process.

This study is mainly concerned with aspects of housing policy which can contribute to better housing satisfaction and which are responsive to changes in people's desires and preferences.

It is suggested that the evaluation of public housing satisfaction might be more representative and indicative of policies required were it to be assessed in the light of the performance of the total housing system, public and private rather than sectorally. Thus further

studies and research should be organised in this respect to help decision-makers establish housing policies and allocate resources for housing activities.

This research can be seen as having initiated an approach recently recognised by many housing authorities in different parts of the world, but which is still far from recognised in the present conditions of housing in Tripoli. It is hoped that this research will have succeeded in illuminating aspects of housing that need better understanding if the public provision of housing is to fulfil its social and economic end objectives.

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APPENDIX 1

Questionnaire

Date: Name of Interviewer:

Name of project or case: Block No:

The respondent: Husband Wife Others

Type of dwelling unit: Flat House Villa

Number of floors: 2 3 4 5 more

1. What is the size of your household:

2 or less 3 4 5 6 7
 8 9 10 more than 10 Specify

2. Have you got a car: Yes No

3. Does any member of the household go to school? Yes No

	Name of the institution	How far (in minutes)
Elementary school		
Preparatory school		
Secondary school		
University		
Other		

4. Member of the family and adults who go to work:

Member of household	Age	Occupation	Place of Work	Trip taken by:					Journey Time	Remarks
				Walk	Bus	Pr. Car	Bycle	Empl. Car		
Father										
Wife										
Son										
Son										
Son										
Daughter										
Daughter										
Daughter										
Others										
Others										

5. Do you think this is the right accommodation for you and your family?

Yes No

- a) Not the right size or type
- b) Not enough privacy
- c) Too hot in summer and cold in winter
- d) Draughty
- e) Poor building materials
- f) Poor arrangement of the facilities
- g) Noise from: Stairs/Lifts Neighbours Street Playgrounds
- h) Other Specify:

6. Are you happy with your living room?

Yes No

- a) Not enough privacy
- b) Not spacious enough
- c) Ventilation and daylight not adequate
- d) Poor location
- e) Lack of nice external views
- f) Other: Specify:

7. Are you happy about the arrangement of your bedrooms? Yes No

- a) Lack of privacy
- b) Not adequate for the family
- c) Not enough space
- d) Lack of sunlight
- e) Restriction of furniture arrangement
- f) Noise from: Kitchen Living Room Neighbours Street
- g) Other: Specify:

8. Do you think you have got the right kitchen? Yes No

- a) It is not large enough
- b) The layout arrangement is not satisfactory
- c) The appliances are not adequate
- d) Water supply and drainage are not satisfactory
- e) The window(s) is/are: poorly located too small
- f) Storage space does not exist there is not enough
- g) There is no service entrance
- h) Poor location
- i) Other: Specify:

9. Where do you usually receive your guests?

Living Room

Guestroom

Is this due to:

Are you happy with your guestroom?

- a) Not having a special room for guests
- b) Not needing a special room for guests
- c) We use the guestroom for other purposes
- d) Other: Specify
- e) Not separated from the rest of house
- f) No associated cloakroom
- g) No direct access to the outdoor
- h) Other: Specify

10. Do you like your bathroom? YES No

- a) Too small in size
- b) Not convenient
- c) No proper appliances
- d) Water supply is not adequate
- e) Drainage is difficult
- f) Other: Specify

11. Are you happy about the other services in your dwelling? Yes No

	Location	Size	Not available	Appliances	Others
a) Water supply					
b) Electricity					
c) Drainage					
d) Separate toilet					
e) Laundry					
f) Drying space					
g) Access to roof space					
h) Service court or balcony					
i) Circulation (corridors)					
j) Bulk storage					
k) Stairs					
l) Lifts					
m) Garage					
n) Rubbish disposal					
o) Built-in conveniences					

12. Do you do the same amount of housework in your home since moving?

- a) More work than before
- b) Less work than before

13. Are you enjoying the outdoor space in the estate? Yes No

- a) Not properly prepared
- b) Not provided with pedestrian routes
- c) " " " playgrounds for children
- d) " " " parking lots
- e) Not protected from traffic
- f) Too noisy
- g) Not clean enough
- h) Other: Specify

14. Is this a good neighbourhood in which to live with your family? Yes No

- a) No nursery school
- b) Too far from elementary school
- c) " " " preparatory school
- d) Lack of health facilities
- e) " " cultural facilities
- f) " " recreational facilities
- g) " " religious facilities
- h) Too far from shopping areas
- i) Has no proper access to other parts of the city
- j) Existence of social problems
- k) Poor environmental quality
- l) Other: Specify

15. Do you have a parking place for your own car?

Yes

No

- | | |
|--------------------------------|----------------------------|
| a) A garage | d) On the side of the road |
| b) A parking lot in the estate | e) On the pavement |
| c) Road side parking | f) Nearby open area |

16. Thinking of the people living in the estate, do you get on all right:

- a) With all of them
- b) Some of them
- c) None of them

17. Do your children play in the outdoor space available in the estate? Yes No

- a) It is not appropriate for play
- b) It is not safe
- c) They do not get on with other children in the estate
- d) They play at home
- e) Other: Specify

18. Do you think you have changed in any of these aspects? Yes No

- a) Home gathering
- b) Social relationships
- c) Children play time and place
- d) Shopping habits

19. Would you prefer to move away from the estate? Yes No

- a) You prefer another estate
- b) " " to build your own home
- c) " " different type of dwelling unit
- d) Difficulty in coping with shared facilities
- e) Lack of maintenance
- f) " " social and administrative supervision
- g) Psychological dissatisfaction
- h) Other: Specify

20. Are you happy living in the inner city? Yes No

- a) Overcrowded
- b) Lack of amenities
- c) Traffic problems
- d) Transportation difficulties
- e) Lack of social and personal relationships
- f) Psychological reasons
- g) Other: Specify

21. Coming from a neighbourhood do you miss the social and sentimental relationships?

Yes No

- a) You had none before
- b) You enjoy new relationships
- c) You have same neighbours
- d) You have better environment
- e) Life has changed in many aspects
- f) Other: Specify

22. Do you think it is a good idea to build residential areas elsewhere?

Yes No

Say why?

23. Do you see your old friends and relatives?

Yes

No

- a) As frequently as before we moved
- b) More frequent
- c) Less frequent
- d) Lack of entertaining facilities
- e) Far away from them
- f) Now have new relationships
- g) Other: Specify

24. Were you the first to inhabit this dwelling? Yes No

- a) You decorated it before moving in
- b) Ministry of Housing carried out the decorations
- c) No decoration or maintenance took place

25. Have any decorations or maintenance been carried out since moving in? Yes No

- a) By you
- b) By the housing authorities
- c) By your employer
- d) Just inside the dwelling
- e) All the internal and external
- f) Part of the shared facilities

26. How did you get this dwelling unit? (Date of moving into dwelling) 19 __

- a) Application
- b) Exchange
- c) Emergency case
- d) Special case (provided by employer)
- e) Occupation without allocation
- f) Demolished/collapsing by the Government
- g) Other: Explain

27. How is this dwelling unit financed?

- a) Housing allowance
- b) Monthly rent (how much % of your income)
- c) Purchased by regular installments (how much % of your income)
- d) Purchased by irregular installments
- e) Cash purchase
- f) Other: Explain

28. Where did you live before moving here?

- | | | |
|---------------------------|--------------------------|---------|
| a) Tripoli | Another town | Village |
| b) Flat | Town house(Arabic style) | Villa |
| c) This is our first home | Been living abroad | Other |

29. Before moving, did you share the dwelling unit Yes No

- a) With parents
- b) With relatives
- c) With others

30. Why did you move to this estate?

- a) Better dwelling unit
- b) Better neighbourhood
- c) Less expenses
- d) Relatives and friends
- e) Convenience
- f) Close to your place of work
- g) Other: Specify (Collapsing/demolished previous home, special case etc.)

31. When you moved to this place did any of the family members change their jobs?

Member	New Occupation	Location of New job	Yes No	
			Reason of change	Mode of transport

Any proposal or comments will be of great help, would you like to say something about your dwelling unit or about the neighbourhood you live in?

APPENDIX 2

Detailed Formulation of the Problem

I Dwelling Unit:

- | | |
|--------------------------|-------------------------|
| 1. Type of Dwelling Unit | 7. Guest-room |
| 2. Internal layout | 8. Private open space |
| 3. Living room | 9. Storage facilities |
| 4. Bedrooms | 10. Services |
| 5. Kitchen | 11. Communal facilities |
| 6. Bathroom | 12. Parking |

II Residential Areas:

- | | |
|-------------------------------|-----------------------------|
| 13. Community facilities | 17. Children's play areas |
| 14. Educational facilities | 18. Outdoor space |
| 15. Shopping facilities | 19. Urban Environment |
| 16. Social Aspects of Housing | 20. Recreational facilities |

III General Issues

- | | |
|--|---|
| 21. Location of Housing Projects | 26. Housing Finance |
| 22. Size of Housing Projects | 27. Public and Private transport Policy |
| 23. Housing Management and Maintenance | 28. Traffic Policy |
| 24. Allocation procedure | 29. Urban Containment Policy |
| 25. Agency of Housing Provision | 30. General Housing Policy |

The formulation of policy options was more difficult since official strategic policies of some issues have not been as yet established or published.

Saaty's technique

The method suggested by Saaty is a way of assigning weights to different activities (Saaty and Rogers, 1975; Saaty and Khouja, 1976; Saaty, 1977). It centres around constructing a matrix of pairwise comparisons of activities. The entries suggest the dominance of one over another with respect to a specific comparison criterion. If a_{ij} is the entry, it is taken as an estimate of the ratio w_i/w_j , the dominance of i th compared to j th activities. If there are n objects to be compared, a matrix of $n \times n$ order can be constructed:

$$\underline{A} = \begin{bmatrix} a_{11} & a_{12} & \dots & a_{1n} \\ a_{21} & & & \vdots \\ \vdots & & & \vdots \\ a_{n1} & \dots & \dots & a_{nn} \end{bmatrix} = \begin{bmatrix} w_1/w_1 & w_1/w_2 & \dots & w_1/w_n \\ w_2/w_1 & & & \vdots \\ \vdots & & & \vdots \\ w_n/w_1 & \dots & \dots & w_n/w_n \end{bmatrix}$$

This formulation can be translated into an eigenvalue problem. The Perron-Frobenius theory of positive matrices states that a unique positive eigenvalue exists for matrices with only positive entries. The corresponding normalised eigenvector therefore becomes the vector of relative weights of the activities being compared.

In the matrix \underline{A} above, the diagonal will be all unity as $a_{ij} = w_i/w_j$, and if $i = j$, a_{ij} must be equal to 1. Also, it is assumed that this matrix has positive entries elsewhere and satisfies the reciprocal property $a_{ij} = 1/a_{ji}$.

Furthermore, let \underline{w} be the vector of weights. That is $\underline{w} = (w_1, w_2, \dots, w_n)$, and it is obvious that,

$$\underline{Aw} = \begin{bmatrix} w_1/w_1 & w_1/w_2 & \dots & w_1/w_n \\ w_2/w_1 & w_2/w_2 & \dots & \vdots \\ \vdots & \vdots & \vdots & \vdots \\ w_n/w_1 & \dots & \dots & w_n/w_n \end{bmatrix} \begin{bmatrix} w_1 \\ w_2 \\ \vdots \\ w_n \end{bmatrix} = \begin{bmatrix} nw_1 \\ nw_2 \\ \vdots \\ nw_n \end{bmatrix} = n\underline{w} \tag{16}$$

, where n is a scalar value (the number of objects).

It is easily recognised that the situation is the same as the eigenvalue/eigenvector problem in matrix algebra. If \underline{w} and n are unknown, and only $\underline{\lambda}$ is available; \underline{w} and n can be solved as they are the eigenvector and

eigenvalue of the matrix $\underline{\lambda}$ (for which there is a non-zero solution for \underline{w} - the trivial solution for \underline{w} is that when all w s are zero). Equation (16) can thus be written as:-

$$(\underline{\lambda} - n\underline{I}) \underline{w} = 0 \quad (17)$$

Where, \underline{I} is the identity matrix, and,

$$n\underline{I} = \begin{bmatrix} n & 0 & 0 \\ 0 & n & 0 \\ 0 & 0 & n \end{bmatrix}$$

The theory of positive matrices is important for it implies that:-

1. The matrix $\underline{\lambda}$ is of unit rank since every row is a constant multiple of the first row.
2. The sum of the eigenvalues (there are n eigenvalues for a matrix of n order) is equal to the trace of the matrix (the sum of the diagonal element).

Since $a_{ij} = 1$, if $i = j$,

$$\sum_{i=1}^n \lambda_i = \text{tr}(\underline{\lambda}) = n \quad (18)$$

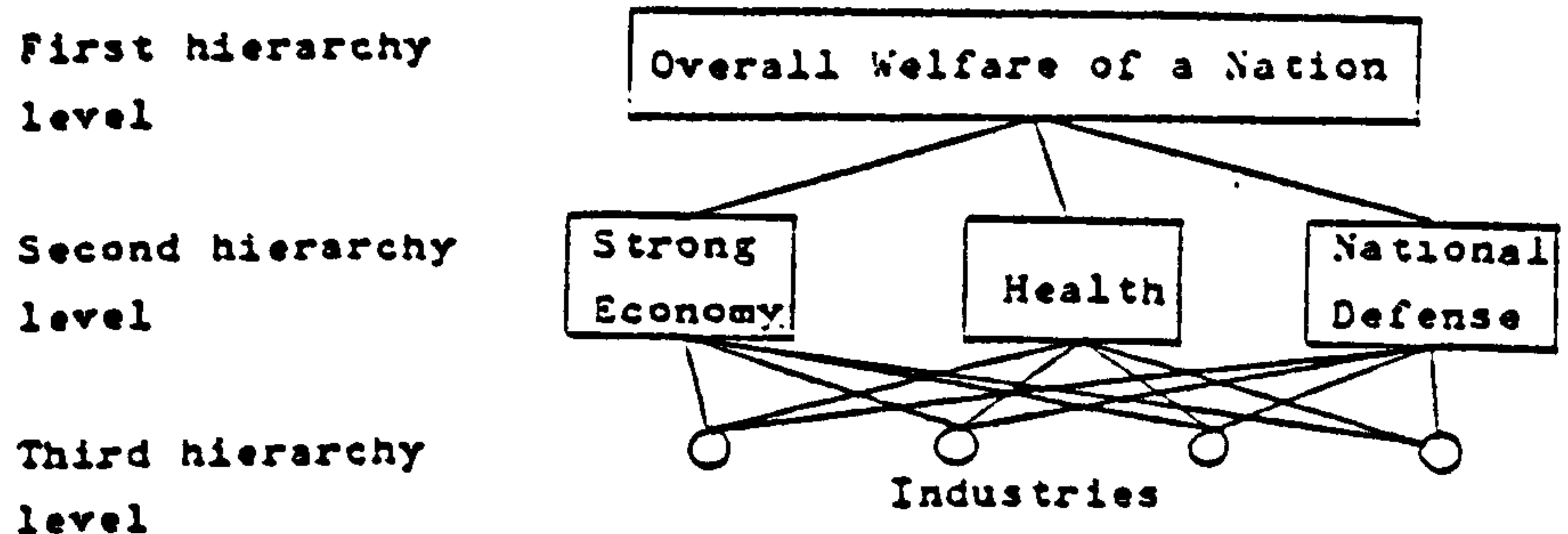
Where, λ_i are the eigenvalues ($i = 1, 2, \dots, n$). It is also found that only one of the λ_i is equal to n , and all the other $\lambda_i = 0$. \underline{w} is the normalised eigenvector of $\underline{\lambda}$.

Furthermore, the pairwise comparison matrix $\underline{\lambda}$, if satisfying the reciprocal property, is regarded as strongly consistent, and the entire matrix can be calculated from one single row. However, Saaty suggests that this strong consistency property can be violated. This is realistically true because human judgement often fails to be consistent and intransitive. The corresponding consequence of small inconsistency will

elements falling in any single level of the hierarchy.

As mentioned above, there must be some rationale on which to base pairwise comparisons. For example, if the objects to be compared are some policy options, a possible criterion to compare them may be an objective of the decision maker. However, a hierarchical notion becomes important when one realises that there might be more than one objective (i.e. a multi-objective problem) and that these must be prioritised or ranked in terms of another (higher-level) set of objectives. The priorities thus obtained are then used as weighting factors on the policy options. In many situations, the problem involves several levels in a hierarchical structure and the relative significance of elements in one level depends on those at the next level up, and so on. Hence Saaty arrives at his "Scaling Method for Priorities in Hierarchical Structures."

In order to illustrate this further, an example is used. This concerns a hierarchy for priorities of industries (Saaty 1977 p.258) as shown below.



The aim is to determine the impact (or weight value) of the industries on the overall welfare of a nation through the intermediate second level objectives of a strong economy, health and national defence. Using each of these three second-level objectives separately as criteria for evaluation, and using a scale from 1 to 9; pairwise comparisons are made between industries and 3 sets of matrices are constructed. From these,

be one of creating perturbation in the eigenvalues:-

$$\underline{A} \underline{w}' = \lambda' \underline{w}'' \quad (19)$$

The more consistent the matrix, the nearer the value of λ' to n .

Saaty's method can be used when it is possible to obtain the matrix of pairwise comparisons from interest groups or decision-makers. Comparisons can be made between options or objectives or between anything corresponding to the problem in question. The analyst asks the decision-maker to fill in the matrix, and following the mathematical reasoning described above, the weightings for the particular objects can be calculated.

In theory, the scale of values to be used for filling in the pairwise comparison matrices can be one of any kind. However, some criteria are suggested:-

1. It should be possible to represent the full range of the decision-maker's opinions.
2. It is necessary to make sure that the decision maker will be aware of the scale's graduation at the time of comparing the objects.

Saaty has proposed a scale which takes the intensity of importance of one object over another as being between 1 and 9 (table 2-1). During some later applications (e.g. Blair, 1979), the same judgement scale has been used with satisfactory results. It was therefore, a subsidiary objective of this project, to evaluate the "user-friendliness" of this scale, and of pairwise comparisons in general.

A further extension of Saaty's method is the introduction of the notion of a hierarchy - the application of the eigenvalue approach to scaling complex problems structured hierarchically. This results in a unidimensional composite vector for scaling the

INTENSITY OF IMPORTANCE	DEFINITION	EXPLANATION
1	Equal importance	Two activities contribute equally to the objective
3	Weak importance of one over another	Experience and judgement slightly favour one activity over another
5	Essential or strong importance	Experience and judgement strongly favour one activity over another
7	Demonstrated importance	An activity is strongly favoured and its dominance is demonstrated in practice
9	Absolute importance	The evidence favouring one activity over another is of the highest possible order of affirmation
2,4,6,8	Intermediate values between the two adjacent judgements	When compromise is needed
Reciprocals of above non-zero	If activity i has one of the above non-zero numbers assigned to it when compared with activity j, then j has the reciprocal value when compared with i	
Rationals	Ratios arising from the scale	If consistency were to be forced by obtaining n numerical values to span the matrix
Eigenvalue prioritization model: Judgement scale (source Blair 1979, p.31 from Saaty, 1977)		

normalised eigenvectors are derived, containing option weights for each objective. Then pairwise comparisons are made between the three objectives to determine their relative influences on the nation's welfare. The results are used to compute a further eigenvector. Finally the relative importance of each industry and each objective are combined through multiplication to determine the overall influence (priority) of an industry on national welfare.

In such a way, Saaty's method produces weights: values that can be used in programming procedures that select optimal strategies (e.g. DOT1, DOT2, MPOS). It is possible to use weights derived from any of the levels; the whole hierarchical procedure does not have to be completed; giving the technique flexibility and adaptability.

APPENDIX 3

The Climate

The Mediterranean sea and the land mass of Northern Africa are the principal influences on the climate of Libya (Buchanan 1975). Generally speaking the climate of the country can be divided into two distinct types.

The Northern Coastal Regions climate and the Sahara Desert climate. The former is a typical 'Mediterranean climate', cold and wet in winter and hot and dry in summer, whereas the latter is dry and leads to high temperature variations between day and night and between winter and summer.

A more detailed classification of the characteristics of the country's climate is shown in the table below.

Characteristics of the climate zones

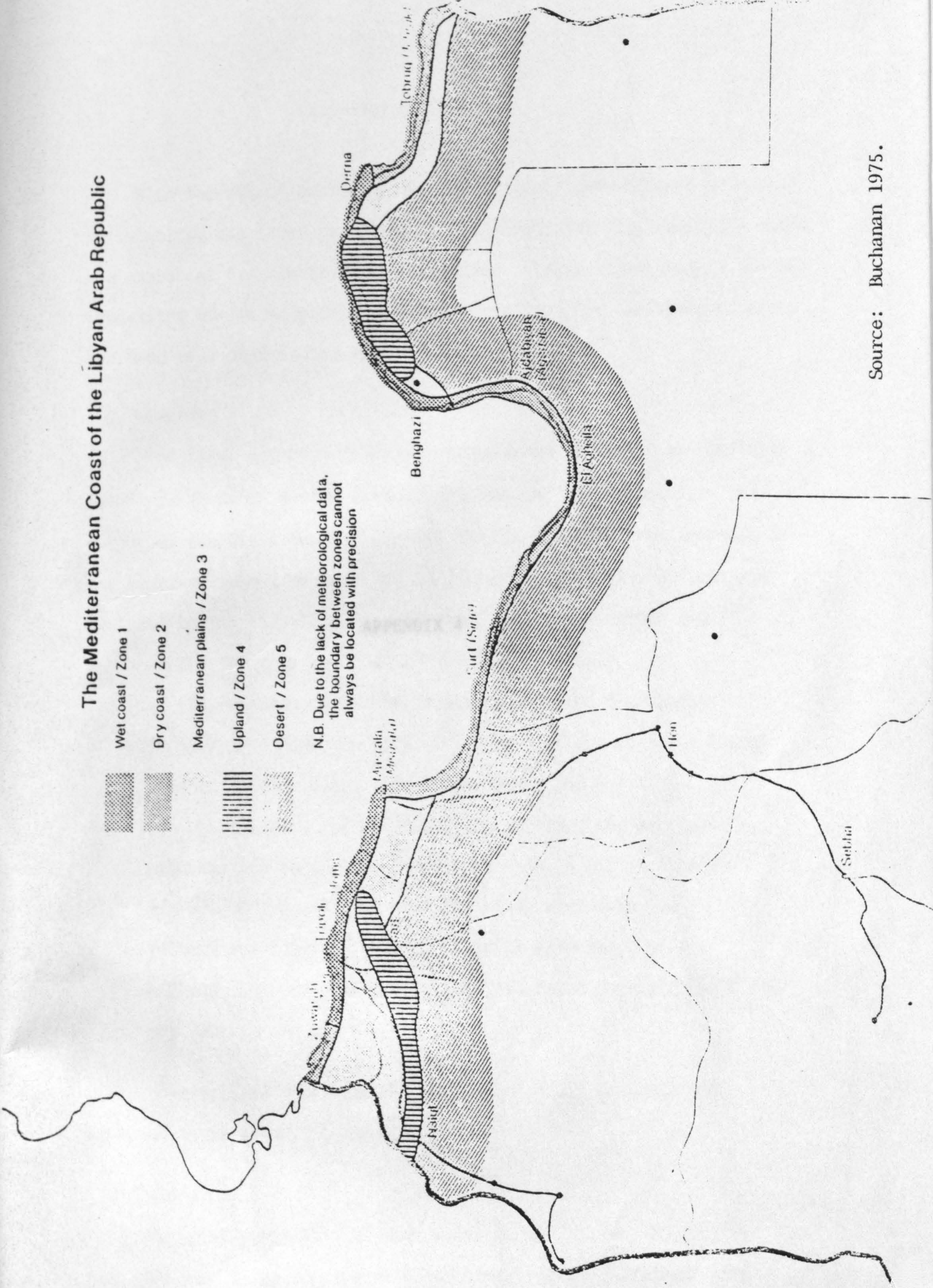
Climate characteristic	Unit	Zone				
		1	2	3	4	5
Annual average rainfall	mm	200-350	100-200	75-200	200-600	0-75
Annual average humidity	%	60- 80	55- 70	55- 65	50- 75	30-50
Annual average temperature	°C	19- 21	19- 21	19- 21	16- 19	20-23
Temperature range	degC	35- 50	45- 50	42- 53	43- 50	49-60
Average daily temperature range	degC	8- 13	10- 13	13- 15	9- 13	14-16
Maximum of average monthly maximum temperatures	°C	29- 36	30- 36	31- 36	28- 34	36-42
Minimum of average monthly minimum temperatures	°C	6- 10	6- 10	4- 7	4- 6	3- 6
Minimum average monthly humidity	%	52- 77	50- 70	52- 59	33- 67	21-40

Source: Buchanan 1975.

The Mediterranean Coast of the Libyan Arab Republic

- Wet coast / Zone 1
- Dry coast / Zone 2
- Mediterranean plains / Zone 3
- Upland / Zone 4
- Desert / Zone 5

N.B. Due to the lack of meteorological data, the boundary between zones cannot always be located with precision



APPENDIX 4

Building Materials

With the aim of achieving self sufficiency many efforts were made to establish the local production of different building materials which are essential for construction activities. These relate mainly to the processing of raw materials available locally. The following progress has been made towards the achievement of this aim:

I. Cement:

The first cement factory was established in Kumis town in the 1960's followed by one in Benghazi and one in Suge Elkamees. The output of the first two in 1972 was 300,000 ton/year. An increase in the combined annual capacity of the factories to 1,040,000 tons was included in the 1973-75 Plan. However, the actual output for 1975 was only 515,000 tons and the 1976-80 Plan included:

- a) Second-phase increase in the capacity of the Benghazi factory to 400,000 by late 1978. To meet the regional demand another factory was planned in Benghazi for May 1980.
- b) For the same purpose the Tripoli region was provided with another factory in Kumis town with an annual capacity of 800,000 tons in 1981. In addition, Suge Elkamees factory was built to provide ultimate production of one million tons per year but by 1981 had reached only 800,000 ton per year.

However, the total annual capacity of these factories is expected to be 4,440,000 tons by 1982.

II Lime stone:

The local production of this material in 1975 was 10,500 ton but increased to 48,000 ton as a result of the establishment of a

Benghazi quarry. The total annual capacity is expected to increase to 110,000 ton when Suge Elkamees limestone quarry starts production.

III Bricks and cement blocks:

The establishment of two brick factories in Tripoli and Benghazi with a capacity of 200,000 tons and 160,000 tons respectively, was included in the 1973-75 Plan. However the actual implementation took place in the late 1970's with a capacity much less than was initially planned (140,000 and 42,000 tons respectively). Another factory was established in Benghazi for cement block production with a 100,000 ton annual capacity.

VI Other building materials:

There are many small factories most of which started as private enterprise, but all of which now belong to the Ministry of Industry. The production includes cement tiles, and pipes, concrete blocks, ceiling panels, hollow brick beams, asbestos and many other building materials. In addition there are many quarries for aggregates for concrete production and for stone blocks which are widely used for construction mainly in low-rise housing.