

THE DEVELOPMENT OF HOUSING IN JEDDAH :
CHANGES IN BUILT FORM FROM THE TRADITIONAL TO THE MODERN

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ABSTRACT

Jeddah is one of the most rapidly growing cities in Saudi Arabia. It has been transformed from a small town, enclosed by walls, into a metropolitan area in only about three decades. Housing construction has taken place everywhere in the city.

This study describes the chronological development of the housing of Jeddah, the principal sea port of Saudi Arabia on the Red Sea and the gateway to the Holy City of Makkah. The study intends to identify the housing types and to analyse and illustrate the changes occurring in the residential units. It comprises four parts :

The first part gives general background information about Jeddah. The second discusses the housing in its socio-physical context within the city, including the environment in which houses were built, namely the neighbourhood, housing types and their spatial concepts and construction techniques. The third deals with the main factors promoting change in housing and the physical structure of the city. The fourth is an attempt to present an overview of the architectural styles and trends in the city.

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CONTENTS

	<u>Page</u>
ABSTRACT	i.
ACKNOWLEDGEMENTS	ii.
CONTENTS	iii.
LIST OF FIGURES	x.
LIST OF PHOTOGRAPHS	xii.
LIST OF TABLES	xiv.
<u>CHAPTER ONE : INTRODUCTION</u>	2
1.1 The Purpose of the Study	5
1.2 The Objective of the Study	6
1.3 Research Hypotheses	6
1.4 The Organisation of the Study	7
<u>CHAPTER TWO : THE GENERAL BACKGROUND OF THE CITY OF JEDDAH</u>	10
<u>Introduction</u>	11
2.1 Historical Outline	11
2.2 National Setting	14
2.3 Regional Setting	17
2.4 Topography	19
2.5 Function of the City	20
2.6 Climate	20
2.6.1 Rain	21
2.6.2 Temperature	21
2.6.3 Humidity	23
2.6.4 Wind	32
2.7 Demography	23
2.7.1 Population	23
2.7.2 Age-sex structure of the population	29
2.8 Historical Growth of the City	29
References	34

CONTENTS (Continued...)

	<u>Page</u>
<u>CHAPTER THREE : METHODOLOGY OF SURVEY</u>	37
<u>Introduction</u>	37
3.1 The Preliminary Survey	37
3.1.1 The aim of the survey	38
3.1.2 The procedure of the survey	38
3.1.3 Findings and recommendations	40
3.2 The Main Survey	41
3.2.1 Document collection	43
3.2.2 Sample areas	43
3.2.3 Physical survey	46
3.2.4 Site observation	46
3.2.5 The questionnaire	49
3.2.6 Interviews	51
3.2.7 Field work procedure	52
References	58
<u>CHAPTER FOUR : THE EVOLUTION OF THE OLD CITY</u>	60
<u>Introduction</u>	60
4.1.1 The area definition	61
4.1.2 The urban land use pattern	63
4.1.3 Social aspects	67
4.1.3.1 Ethnic groups	67
4.1.3.2 Types of employment	68
4.1.3.3 Income level	69
4.1.4 Utilities and services	70
4.1.4.1 Water	70
4.1.4.2 Sewerage	72
4.1.4.3 Storm water drainage	72
4.1.4.4 Fuel	73
4.1.4.5 Electricity	73
4.1.4.6 Transportation	74
4.2 Residential Districts	74
4.2.1 The relationship of quarters (Haras) within the old city	75
4.2.2 The spatial organisation of the old city	75

CONTENTS (Continued...)

	<u>Page</u>
4.2.2.1 The layout	77
4.2.2.2 The street patterns	78
4.2.2.3 The open spaces	81
4.2.2.4 The physical changes	83
4.3 The House and Construction Techniques	87
4.3.1 Housing types	87
4.3.2 Spatial organisation	89
4.3.2.1 The guest domain	90
4.3.2.2 The family domain	91
4.3.2.3 The stair case	92
4.3.2.4 The projecting spaces	92
4.3.2.5 The roof	93
4.3.3 The use of space	95
4.3.3.1 Activities	95
4.3.3.2 Furnishing	95
4.3.4 The exterior features of the houses	96
4.3.5 The relationship between internal and external spaces	99
4.4 Building Materials	99
4.5 Construction Techniques	100
4.6 Summary	103
References	104
<u>CHAPTER FIVE : THE EVOLUTION OF THE TRANSITIONAL AREA</u>	108
<u>Introduction</u>	108
5.1.1 The area definition	109
5.1.2 The urban land use pattern	112
5.1.3 Social aspects	114
5.1.3.1 Ethnic groups	114
5.1.3.2 Types of employment	116
5.1.3.3 Income class structure	116
5.1.4 Utilities and services	117
5.1.4.1 Water	117
5.1.4.2 Sewerage	118

CONTENTS (Continued...)

	<u>Page</u>
5.1.4.3 Storm water drainage	119
5.1.4.4 Fuel	119
5.1.4.5 Electricity	120
5.1.4.6 Transportation	120
5.1.4.7 Summary	121
5.2 Residential Districts	121
5.2.1 Relationship of haras	122
5.2.2 The spatial organisation of the transitional area	125
5.2.2.1 The layout	126
5.2.2.2 The open spaces	131
5.2.3 The physical changes	143
5.3 The House and Construction Techniques	144
5.3.1 Housing types	144
5.3.2 House function	149
5.3.3 The spatial organisation	150
5.3.3.1 Spatial organisation of Al Beut Al Shabiah	150
5.3.3.2 Spatial organisation of the apartment buildings	153
5.3.3.3 Spatial organisation of the villas	156
5.3.3.4 The rooms	158
5.3.3.5 The kitchen	159
5.3.3.6 The bathroom	159
5.3.3.7 The balcony	160
5.3.3.8 The roof	161
5.3.4 The use of space	162
5.3.4.1 Activities	162
5.3.4.2 Furnishing	165
5.3.5 The exterior features of the houses	165
5.3.6 The relationship between internal and external spaces	167
5.4 Building Materials	168
5.5 Construction Techniques	171
5.6 Summary	172
References	174

CONTENTS (Continued...)

	<u>Page</u>
<u>CHAPTER SIX : THE EVOLUTION OF THE CONTEMPORARY AREA</u>	176
<u>Introduction</u>	176
6.1.1 The area definition	177
6.1.2 The urban land use pattern	187
6.1.3 Social aspects	188
6.1.3.1 Ethnic group	188
6.1.3.2 Types of employment	190
6.1.3.3 Income class structure	190
6.1.4 Utilities and services	191
6.1.4.1 Water	191
6.1.4.2 Sewerage	192
6.1.4.3 Storm water drainage	192
6.1.4.4 Fuel	192
6.1.4.5 Electricity	194
6.1.4.6 Transportation	194
6.2 Residential Districts	195
6.2.1 Relationship of 'haras'	196
6.2.2 The spatial organisation of the contemporary area	198
6.2.2.1 The layout of the unplanned areas	199
6.2.2.2 The layout of the planned area	203
6.2.3 Open spaces	208
6.3 The House and Construction Techniques	209
6.3.1 Housing types	209
6.3.2 Spatial organisation	213
6.3.2.1 The rooms	215
6.3.2.2 The kitchen	217
6.3.2.3 The bathroom	218
6.3.2.4 The balcony	219
6.3.2.5 The roof	219
6.3.3 The use of space	219
6.3.4 The exterior features of the building	220
6.3.5 Relationship between internal and external spaces	223
6.4 Building Materials	223
6.5 Construction Techniques	224

CONTENTS (Continued...)

	<u>Page</u>
6.6 Summary	225
References	226
<u>CHAPTER SEVEN : CASE STUDIES</u>	228
<u>Introduction</u>	228
7.1 Case Study One : Traditional Building	228
7.2 Case Study Two : Al Bayt Al Shabi	242
7.3 Case Study Three : Apartment Building	247
7.4 Case Study Four : The Villa Type	257
<u>CHAPTER EIGHT : THE MAIN FACTORS INFLUENCING HOUSING CHANGE</u>	263
<u>Introduction</u>	263
8.1 Socio-economic Factors	263
8.2 Technological Factors	270
8.2.1 Transport technology	270
8.2.2 Building technology	273
8.2.3 Electrical and mechanical services	275
8.3 Institutional Factors	277
8.3.1 The planning regulations before 1970	277
8.3.2 The planning regulations after 1970	281
8.3.3 Real Estate Development Fund	286
8.4 The Role of the Architect	289
8.4.1 The foreign architect	291
8.4.2 The local architect	291
8.5 Summary	292
References	293

CONTENTS (Continued...)

	<u>Page</u>
<u>CHAPTER NINE : JEDDAH ARCHITECTURE</u>	296
Introduction	296
9.1 Traditional Architecture of Jeddah	296
9.2 Transitional Architecture of Jeddah	298
9.3 The transformation of some architectural elements of Jeddah	301
9.4 Contemporary Architecture of Jeddah	307
9.5 Summary	314
References	315
CONCLUSION & RECOMMENDATIONS	316
BIBLIOGRAPHY	328
GLOSSARY	338
APPENDIX I : Major Housing Projects	340
APPENDIX II : Summary of the Physical Checklist Survey	350
APPENDIX III : The Questionnaires	356
APPENDIX IV : The Design Criteria and the Built Area Agreement, REDF	364
APPENDIX V : Interview with Old Man (Omer, M. Ba Faraj) in Jeddah	365

LIST OF FIGURES

	<u>Page</u>
Figure 2.1 : The ancient city of Jeddah in 1962 and 1938.	12
Figure 2.2 : National setting of Jeddah.	16
Figure 2.3 : Regional setting of Jeddah.	18
Figure 2.4 : Rainfall.	22
Figure 2.5 : Temperature.	22
Figure 2.6 : Relative humidity.	24
Figure 2.7 : Wind rose.	24
Figure 2.8 : The population growth of Jeddah.	26
Figure 2.9 : Age-sex pyramid for Jeddah.	30
Figure 2.10 : Historical growth of Jeddah.	32
Figure 2.11 : Satellite photograph of Jeddah, 1983.	33
Figure 3.1 : Sample areas.	45
Figure 3.2 : Physical checklist.	48
Figure 3.3 : Aerial photograph of the Sample Area No.5.	54
Figure 3.4 : An example of the physical survey.	55
Figure 4.1 : The city of Jeddah in 1517.	64
Figure 4.2 : Aerial photograph of Jeddah in the 1940s.	64
Figure 4.3 : Life in the commercial heart of old Jeddah.	66
Figure 4.4 : The old town of Jeddah.	76
Figure 4.5 : Al Bulad (Sample Area No.1).	79
Figure 4.6 : The layout of the street of the old town.	80
Figure 4.7 : Open spaces in the old town.	82
Figure 4.8 : Roshan details.	94
Figure 4.9 : Roshan types.	98
Figure 4.10 : Typical construction of the traditional houses.	101
Figure 5.1 : Aerial photograph of Jeddah in 1948.	110
Figure 5.2 : Haras of the transitional part of the city.	123
Figure 5.3 : Sample areas in the transitional part of the city.	128
Figure 5.4 : Al Saheifah (Sample Area No.6).	129
Figure 5.5 : Aerial photograph of Jeddah in 1964.	132
Figure 5.6 : Al Rawais (Sample Area No.9).	133
Figure 5.7 : Al Kandarah (Sample Area No.7).	133
Figure 5.8 : Al Sharaffiah (Sample Area No.8).	134
Figure 5.9 : Al Hindawiah (Sample Area No.2).	134
Figure 5.10 : Al Nuzulah Al Sharqiah (Sample Area No.4).	135
Figure 5.11 : The street layout in Al Sharaffiah district.	136
Figure 5.12 : The street layout in Al Kandarah district.	137
Figure 5.13 : The street layout in Al Hindawiah district.	138
Figure 5.14 : The street layout in Al Saheifah district.	139
Figure 5.15 : Open spaces.	141
Figure 5.16 : A modified traditional house.	146
Figure 5.17 : Al Bayt Al Shabi.	152
Figure 5.18 : The apartment building.	155
Figure 5.19 : The villa type.	157
Figure 5.20 : The relationship of the spaces of Al Bayt Al Shabi with the outdoor spaces.	169
Figure 5.21 : The private indoor spaces of the apartment building in relation to public outdoor spaces.	169

LIST OF FIGURES (Continued)

	<u>Page</u>
Figure 5.22 : The private indoor spaces of the villa in relation to the public outdoor spaces.	169
Figure 5.23 : A typical construction of Al Beut Al Shabiah.	173
Figure 6.1 : The built-up area of Jeddah 1983.	182
Figure 6.2 : Aerial photograph of Jeddah in 1981.	186
Figure 6.3 : External storm drainage.	193
Figure 6.4 : Jeddah districts.	197
Figure 6.5 : Sample areas in the contemporary area of the city.	200
Figure 6.6 : Ghulayl (Sample Area No.3).	201
Figure 6.7 : Al Jameah (Sample Area No.5).	201
Figure 6.8 : Street pattern in the unplanned area (Al Jameah).	202
Figure 6.9 : Mushrefah (Sample Area No.10).	206
Figure 6.10 : Al Safa (Sample Area No.11).	207
Figure 6.11 : Al Rawdah (Sample Area No.12).	207
Figure 6.12 : The apartment building plan.	215
Figure 7.1 : Location of case studies.	229
Figure 7.2 : The ground floor plan of Al Shafiay house.	232
Figure 7.3 : The first floor plan of Al Shafiay house.	232
Figure 7.3a : Section through the guest area.	232
Figure 7.4 : Second, third and fourth floor plan of Al Shafiay house.	234
Figure 7.5 : Toilet plan.	234
Figure 7.6 : Roof plan of Al Shafiay house.	234
Figure 7.7 : The distribution of the semi private and private spaces of the house.	239
Figure 7.8 : Section through the Roshan.	239
Figure 7.9 : North elevation of Al Shafiay house.	241
Figure 7.10 : Wall construction.	241
Figure 7.11 : Floor/roof construction.	241
Figure 7.12 : House No.1.	243
Figure 7.13 : House No.2.	245
Figure 7.14 : Historical changes of house No.2.	246
Figure 7.15 : Roof construction.	246
Figure 7.16 : Apartment building No.1.	249
Figure 7.17 : South elevation of apartment building No.1.	250
Figure 7.17a: Section of apartment building No.1.	250
Figure 7.18 : Ground floor plan of apartment building No.2.	253
Figure 7.19 : Typical floor plan of apartment building No.2.	254
Figure 7.20 : Privacy problem in building No.1.	256
Figure 7.21 : Construction of the apartment building.	256
Figure 7.22 : Floor/roof construction.	256
Figure 7.23 : Ground floor plan of the villa.	260
Figure 7.24 : First floor plan of the villa.	260
Figure 7.25 : A comparison between original and existing facade of the villa.	261
Figure 7.26 : Privacy problem in the villa.	261

LIST OF PHOTOGRAPHS

	<u>Page</u>
Photographs 4.1-4.3 : Show different views of the streets of the old town of Jeddah.	80
Photograph 4.4 : Shows a view of the old town.	85
Photographs 5.1-5.3 : Show different views of Al Sharaffiah streets.	136
Photographs 5.4-5.6 : Show different views of Al Kandarah streets.	137
Photographs 5.7-5.10 : Show different views of Al Hindawiah streets.	137
Photographs 5.11-5.13 : Show different views of Al Saheifah streets.	139
Photographs 5.14-5.15 : Demonstrate that cars are found in every street.	140
Photographs 5.16-5.18 : Show different open spaces in Al Rawais district.	141
Photograph 5.19 : A view of the modified traditional house.	146
Photograph 5.20 : Shows a typical Sandakah dwelling.	148
Photograph 5.21 : Shows a Sandakah dwelling enclosed by walls.	148
Photographs 5.22-5.23 : Show the utilisation of the roof in the villa.	163
Photograph 5.24 : Shows the utilisation of the roof in the apartment building.	163
Photographs 6.1-6.3 : Show views of different streets in Al Jameah district.	202
Photographs 6.4-6.5 : Show views of different streets in Ghulayl district.	204
Photograph 6.6 : Shows a temporary blocking of the street.	204
Photographs 6.7-6.9 : Show different views of different streets in Mushrefah district.	206
Photograph 6.10 : Shows Sandakah on the roof of Al Buyt Al Shabi.	212
Photograph 6.11 : Shows Sanadek on a vacant site within the planned districts.	212
Photographs 6.12-6.13 : Show the low grade houses in the squatter settlement.	212
Photographs 6.14-6.15 : Show the contemporary use of Mashrabiah and Rawashin.	222
Photograph 7.1 : A view of Al Shafiay house.	231
Photograph 7.2 : Shows the opening in the staircase for light and ventilation.	236
Photograph 7.3 : Shows the main entrance door of Al Shafiay house.	236
Photograph 7.4 : Shows the other entrance door of Al Shafiay house.	236

LIST OF PHOTOGRAPHS (Continued...)

	<u>Page</u>
Photographs 7.5-7.6 : Interior views of the Roshan.	239
Photographs 7.7-7.8 : Show the extensive use of lattice wood inside the house.	240
Photograph 7.9 : Shows the higher opening for light and ventilation.	240
Photograph 7.10 : View of house No.1.	243
Photograph 7.11 : View of house No.2.	245
Photograph 7.12 : View of apartment building No.1.	249
Photograph 7.13 : View of apartment building No.2.	253
Photograph 7.14 : Interior view of reception room furnished with traditional furniture.	255
Photograph 7.15 : Interior view of reception room furnished with western type of furniture.	255
Photograph 7.16 : Interior view of the kitchen and building No.1.	255
Photograph 7.17 : Interior view of building No.1.	255
Photograph 7.18 : View of the villa.	259
Photograph 9 : Shows a clear contrast between traditional houses and modern buildings.	300
Photographs 9.1-9.9 : Show various types of windows.	303-304
Photographs 9.10-9.16 : Show the doorways of selected houses.	305-306

LIST OF TABLES

	<u>Page</u>
Table 2.1 : Jeddah population.	27
Table 4.1 : Summary of Housing types in the old part of the city	103a
Table 5.1 : Summary of Housing types in the transitional part of the city	173a
Table 6.1 : Distribution of nationality.	189
Table 6.2 : Percentage of housing types.	209
Table 6.3 : Habitable rooms in housing types.	215
Table 6.4 : Summary of Housing types in the contemporary part of the city	225a
Table 8.1 : Distribution of households by monthly income.	264
Table 8.2 : Number of times of change of house.	268
Table 8.3 : Reasons for selecting the neighbourhood.	268
Table 8.4 : Car parking spaces.	272
Table 8.5 : The utilisation of building materials.	274
Table 8.6 : Number of floors by width of frontage road.	284
Table 8.7 : Building designer.	290

CHAPTER 1

CHAPTER ONE : INTRODUCTION

- 1.1 The Purpose of the Study
- 1.2 The Objective of the Study
- 1.3 Research Hypotheses
- 1.4 The Organisation of the Study

CHAPTER ONE

INTRODUCTION

Cities are not static; throughout history the physical environment of societies has been transformed.

Development, progress and modernisation are the prime concern of the governments of developing countries. Their aspiration to development has led them to seek advice and help from the developed countries. This has created a drastic transformation of the traditional physical characteristics of such developing countries. Saudi Arabia is an example of a developing country which has experienced such a situation. The government has adopted concepts and solutions from the western nations in its architecture and physical planning. The effect of this is clearly illustrated in all major cities in Saudi Arabia. Although Saudi Arabia has a huge amount of wealth, this wealth could not reduce the impact of change. Instead it has helped to accelerate the process of change.

Rapid changes in the Kingdom of Saudi Arabia, which have taken place after the discovery of oil in a commercial quantity and the country's opening up to the western world, have made it hard to determine priorities for its people. The speed with which development has occurred and the hasty introduction of advanced technology experienced in the seventies, in every field, including construction, planning, industry, education, etc., have affected all aspects of living in the

country. Among those aspects which suffer most is the traditional environment. The attraction of the western way of life and the western concept of development have drawn Saudi attention far away from developing a clear understanding of their traditional residential environment, and of the value of its continuity.

Jeddah, the largest city in the western region of Saudi Arabia and principal sea port on the Red Sea, is an example of a rapidly growing city, where the living conditions and the physical environment are rapidly changing.

Over the last three or four decades the speed of the city's growth has been truly spectacular. Advanced technology and the influx of people from different professions and cultures, a direct result of the huge increase of oil revenues of the country, have affected the urban and social conditions of the city. Also, with the introduction of automobiles, new building techniques and materials, the whole urban fabric of the city has been changed. A completely new form of housing has emerged and new physical communication networks have become necessary to accommodate the new mechanical means of transportation.

Generally speaking, the city has been transformed from a homogeneous urban environment, consisting of a compact urban form, narrow winding streets, almost one housing type and a variety of open spaces, to a heterogeneous urban environment, with different housing types, wide dual carriageway roads, street intersections, flyovers and large areas of car parking spaces. Moreover the indigenous society has changed from being

a highly traditional Islamic society into a semi-cosmopolitan environment of the twentieth century. All this has led to the disappearance of the physical features and social values of the past and the acceleration of the urban growth of the city.

The builders of the traditional houses of Jeddah were able to design and build an appropriate built environment that satisfied the social needs of the society and the climatic requirements of the region. Not only that but also they paid great attention to the aesthetic values of their architecture. However, the collision of the traditional culture and the aspiration to western modernity has had deep effects on Jeddah society and its built form. Almost all the new planned areas of the city are alien to the traditional cultural experience of most of their inhabitants. Imported exotic architectural styles, more appropriate to a westernised cultural life, have become the major characteristic of the new built environment. In other words, the physical environment being constructed in Jeddah in recent times is alien to its architectural heritage.

Our emphasis throughout this study will be on the residential environment, housing in particular. It will be discussed from the architectural point of view, taking into consideration the development and changes that have occurred to the types of housing as well as to the environment in which they exist.

In order to have a comprehensive view and general understanding of the physical changes to the residential units as well as the urban

structure, we have divided the city spatially into three zones (the old town area, the transitional area and the contemporary area). This division is based upon the historical growth of the city and those events which have had a clear impact on the physical structure of the city, such as the demolition of the city walls, the first oil boom, the second oil boom, the master plan of the city, etc. The old town area will represent that part of the city which was enclosed by the walls, the transitional area will represent that part of the city that developed from the early 1950s (the first oil boom) to the early 1970s, and the contemporary area will represent that part of the city developed from the early 1970s (the second oil boom, the beginning of the preparation of the master plan of the city) until the present.

1.1 The Purpose of the Study

The residential environment of Jeddah has undergone a radical change. Moreover the city's identity has been lost. It has become a copy of a western city in its planning and architectural features. However, there is a growing tendency on the part of the authorities, professionals and residents to revive the traditional heritage of the built environment. It seems that this will not be achieved properly, in the residential environment, unless there is a clear understanding of the housing situation of the city, including the nature of the changes that have taken place and the reasons for their occurrence. Moreover we should not focus our attention only on the older traditional buildings, built before 1947, but also enquire whether there are any merits in some of the new housing that has emerged in the city.

Consequently, the primary concern of this research is to investigate and analyse the new housing which has emerged, and its development, design concept, spatial organisation and their exterior features. It is also hoped that the study will provide a good base for future study, will be useful for decision makers, and will help provide a better understanding of the housing conditions of the city.

1.2 The Objectives of the Study

The objectives of this study are firstly, to identify the housing types of Jeddah; secondly, to analyse and illustrate the changes occurring in the residential units; thirdly, to discuss the design and spatial organisation of each housing type; fourthly, to provide a comprehensive view of the social, physical and architectural changes experienced in the residential environment; finally, to discuss the factors of change that have contributed to the emergence of the new housing and to examine the extent to which they have changed the housing form of Jeddah.

1.3 Research Hypotheses

The hypotheses of this research are as follows :

- (1) The architectural heritage of old Jeddah - reflected in the traditional houses - is a physical manifestation of the inhabitants' culture and life style.
- (2) The traditional houses are quickly being replaced by new housing that pays little attention to the tradition and culture of their inhabitants.
- (3) Alien architectural and planning concepts are the chief factors that have accelerated the transformation of the residential unit as well as of the whole built environment.
- (4) The introduction of the automobile has had a significant impact (socially and physically) upon the built environment.

1.4 The Organisation of the Study

The study is divided into nine chapters. Chapter One is an introductory chapter. Chapter Two provides background information about Jeddah regarding its history, national and regional setting and function. It also sheds light upon the climate, population and the historical growth of the city.

Chapter Three describes the methods of the survey upon which most of the study is based.

Chapters Four, Five and Six deal with the old town, the transitional and the contemporary areas of the city respectively. To understand and document the chronological development and changes occurring to the residential units during the evolution of the city, is the main purpose of these chapters. However, since it is of limited value to discuss the residential units in isolation, an attempt is made to discuss them in the context of the residential environment of the city as a whole.

Each chapter is divided into four sections. Section One attempts to provide relevant information regarding the definition of the part of the city with which the chapter deals, including the urban land use and the social aspects of the city. It also highlights the essential utilities and services, such as water, sewerage, storm water drainage, fuel, electricity and transportation, which have affected the formation of the physical environment of the city. Section Two undertakes a brief analysis of the residential neighbourhoods. Section Three deals with the housing situation of the city. It starts by identifying the housing types and then provides a comprehensive analysis of the spatial organisation and the exterior features of the houses. It also discusses the relationship and the use of the spaces within the houses. Section Four deals with the building materials and construction techniques used in the housing construction.

Chapter Seven presents four case studies from different housing types. It discusses in detail their location, plan concept and construction details.

Chapter Eight discusses the main factors that have contributed to the emergence of the new housing types and the changes occurring in the residential units, and that have also led to the transformation of the social and urban fabric of the city.

Chapter Nine aims to provide an overview of the architecture of Jeddah, tracing its architectural styles and trends. Finally, the study is concluded by a resume of the whole work in which the author urges the professionals to have real understanding of the vernacular architecture and give more emphasis to the interior spatial organisation of the residential units.

CHAPTER 2

CHAPTER TWO : THE GENERAL BACKGROUND OF THE CITY OF JEDDAH

Introduction

2.1 Historical Outline

2.2 National Setting

2.3 Regional Setting

2.4 Topography

2.5 Functions of the City

2.6 Climate

2.6.1 Rain

2.6.2 Temperature

2.6.3 Humidity

2.6.4 Wind

2.7 Demography

2.7.1 Population

2.7.2 Age-sex structure of the population

2.8 Historical Growth of the City

References

CHAPTER TWO

THE GENERAL BACKGROUND OF THE CITY OF JEDDAH

Introduction

Knowing something of the background of the city is of great importance in understanding its urban form, housing conditions and its overall development. To this purpose this chapter is intended to provide the reader with a general brief containing information concerning the city. It starts with a historical review and is followed by the national and regional setting of the city. Later on in the chapter the climatic conditions, the population and the historical growth of the city are discussed.

2.1 Historical Outline

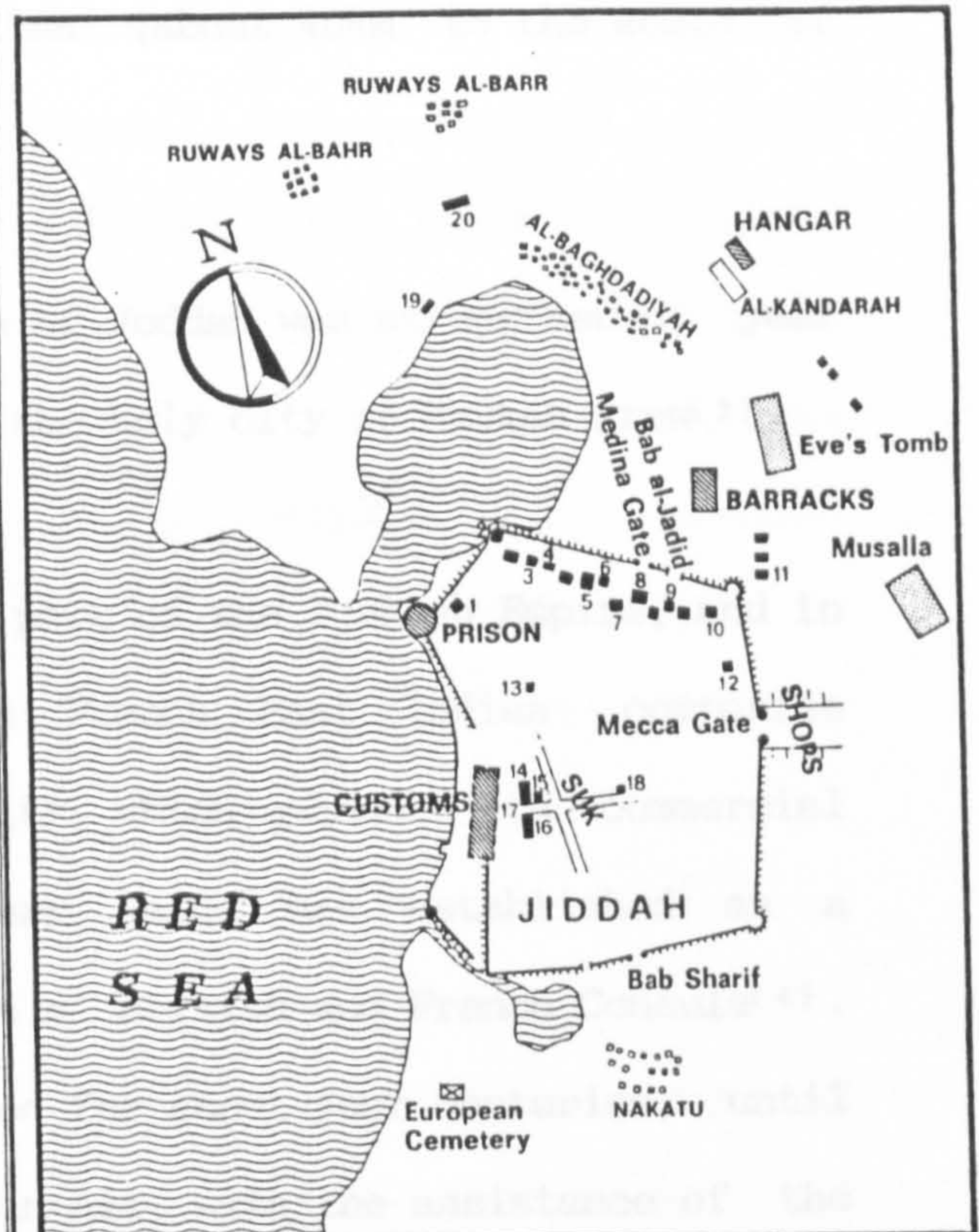
The name Jeddah, 'Grandmother', and the legendary tomb of Eve, located near the city, give a strong indication of the ancient character of the city. There are records of the first settlements of the Kodah tribe dating from about 2500 years ago, followed by traders of Persian origin who built a walled city port⁽¹⁾ (see Figure 2.1).

Although Jeddah has been inhabited since pre-Islamic times, the city's significance as the Port of the Holy City of Makkah, as well as a commercial centre, was laid down by the Caliph Uthman Ibn Affan, the



LEGEND

- 1) The house of the Pasha
- 2) Bab ash-Sharif
- 3) Bab al-Jadid
- 4) Bab Mecca
- 5) Watchtowers on the Mecca Road
- 6) Salt-flat, where salt is collected when the seawater evaporates
- 7) Christian Cemetery
- 8) An entirely destroyed tower with battery
- 9) The so-called Port of the Galleys
- 10) Niebuhr's house
- 11) The Customs House
- 12) The house of the Kiaya (the Pasha's lieutenant)
- 13) Eve's Tomb
- 14) Large hills of coral-rock and shells
- 15) Anchorage of India and Suez ships



- | | |
|--|--|
| 1 British Legation | 11 House of H. St. John B. Philby |
| 2 Police | 12 Al-Falah School |
| 3 Italian Consular Chancery | 13 Pasha Mosque |
| 4 Italian Legation | 14 Municipality |
| 5 British Consulate | 15 Akash Mosque |
| 6 Dutch Legation | 16 Post Office |
| 7 House of Calif. Ar. Standard Oil Co. employees | 17 Bab al-Bunt |
| 8 Qaimaqamat | 18 Mimar Mosque |
| 9 Egyptian Legation | 19 House of the Amir al-Bahr |
| 10 Mirs Hotel | 20 House of the Saudi Ar. Mining Syndicate employees |

1938

Source : Angelo Pesce, Jeddah, Portrait of an Arabian city, 1976.

Source : Plan of Jeddah in 1762 by C. Niebuhr
 Reproduced in Angelo Pesce, Jeddah, Portrait of an Arabian city, 1976.

FIGURE 2.1 : The ancient city of Jeddah in 1762 and 1938

third Caliph of Islam, in 646⁽²⁾. He was urged by the people of Makkah to abandon the old port of 'Al Shuaibah' (about 40km to the south of Jeddah) and use Jeddah instead.

With the spread of Islam, the function of Jeddah was strengthened, year by year, as the influx of pilgrims to the holy city of Makkah grew⁽³⁾.

During the 16th century Jeddah became part of the Turkish Empire, and in the 18th century the British and French East Indies companies established trading stations in the city, which enhanced its commercial functions. Early in the 19th century Jeddah was established as a diplomatic centre with the appointment of British and French Consuls⁽⁴⁾. The Ottoman domination of Jeddah lasted for about four centuries, until they were defeated by Sharif Hussan Bin Ali, with the assistance of the British, in 1919⁽⁵⁾.

The Hejaz (Western Region), including Jeddah, came under the jurisdiction of King Abdul Al Aziz Bin Saud in 1923⁽⁶⁾. Moreover, the unification of the country called the Kingdom of Saudi Arabia in 1932 was very significant for the future of the city of Jeddah. This was to lead to conditions different from earlier periods of political and economic instability. It is worth mentioning here that the vice royalty of Al Hejaz remained a separate administrative unit within the context of the Saudi state until the Council of Ministers was formed in 1953 and united the country under one administrative body⁽⁷⁾. From that time the country entered a period of political stability and internal security. Furthermore, after the exploitation of oil-fields in the Eastern

Province of the Kingdom in the first half of the 20th century, the country's economy has been affected. However, initially, when the oil production was low, the effect was minimal. Oil production averaged less than 20,000 barrels per day (bpd) in the early 1940s, but since then oil production has increased steadily. In 1948 it reached 400,000 bpd, but from 1950 onwards the world demand for oil began to increase dramatically and accordingly oil production followed this increased demand. For example, oil production rose from 546,703 bpd in 1950 to 3,548,865 bpd in 1970 and peaked at 9,631,366 bpd in 1980. In 1982 oil production stood at 16,327,220 bpd⁽⁸⁾. Currently oil production is approximately three to four million barrels per day.

The rising oil output and subsequent revenues, especially in 1973 and 1980, provided the government with an enormous amount of wealth. The results are impressive, between 1973 and 1981 the Gross Domestic Product (GDP) increased from 243 billion Saudi Riyals (SR) to 357 billion SR or by 8% annually⁽⁹⁾.

Consequently, the major cities in the country such as Riyadh, Dammam, Jeddah, etc. witnessed a rapid development.

2.2 National Setting

Jeddah is the main point of entry into the Kingdom of Saudi Arabia on the Red Sea, with a population that exceeds one million. It is located at the centre of the Western Region of the country, the most populous

region in the Kingdom. Jeddah is of prime importance, both socially and economically, to the Kingdom.

At present, Jeddah is the principal sea port in Saudi Arabia. In 1980, for example, approximately 80% of the foodstuff imported to the country arrived through the port of Jeddah⁽¹⁰⁾. This has been enhanced by the increasing use of the city's international airport and the associated development of commerce and trade (see Figure 2.2).

Following the unification of the country, Jeddah served as diplomatic centre for the Kingdom. However, the transfer of the Ministry of Foreign Affairs and the embassies of all foreign countries in 1986/87 to Riyadh (the capital city) resulted in the city losing its status as the diplomatic centre. However, due to the necessity of most countries for representation in Jeddah for Hajj or business, many consulates have remained in the city. Foreigners who have lived in Jeddah have brought with them different social and cultural values, and these have affected the city both socially and economically. Different values have gradually found their way into the traditional way of life and have made a significant change in the people's attitude towards their environment.

Jeddah plays an important role in the business and commercial activities of the Kingdom of Saudi Arabia. The national importance of Jeddah can be seen from various urban development projects that have been implemented in the city, such as the construction of modern roads and highways which connect Jeddah with other cities and towns in the country, the expansion of the sea port to accommodate the huge demand

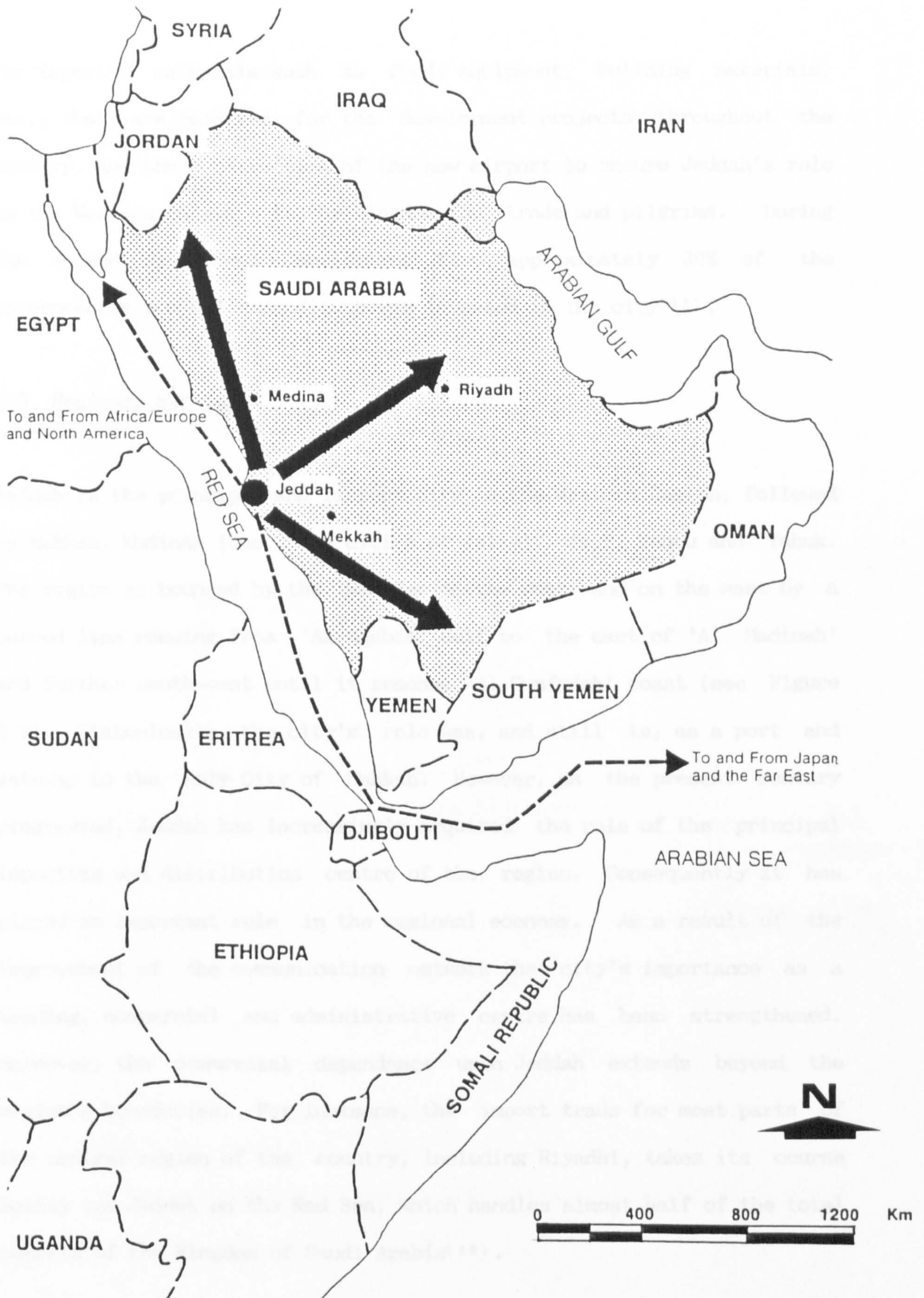


FIGURE 2.2 : National setting of Jeddah

Source : Jeddah Action Master Plan, Technical Report No.5, 1978

for imported materials such as food, equipment, building materials, etc., that are required for the development projects throughout the country, and the construction of the new airport to ensure Jeddah's role as the Western gateway to the Kingdom for trade and pilgrims. During the second Five Year Development Plan approximately 30% of the government's project expenditure was invested in the city⁽¹¹⁾.

2.3 Regional Setting

Jeddah is the principal and largest city in the Western Region, followed by Makkah, Madinah (the holy cities of Islam), Taif, Yanbu and Tabuk. The region is bounded by the Red Sea on the west and on the east by a curved line running from 'Al Aqabia' Gulf to the east of 'Al Madinah' and further south-west until it reaches 'Al Qunfudah' coast (see Figure 2.3). Historically, the city's role was, and still is, as a port and gateway to the Holy City of Makkah. However, as the present century progressed, Jeddah has increasingly acquired the role of the principal importing and distribution centre of the region. Consequently it has played an important role in the regional economy. As a result of the improvement of the communication network the city's importance as a trading, commercial and administrative centre has been strengthened. Moreover, the commercial dependence upon Jeddah extends beyond the region's boundaries. For instance, the import trade for most parts of the central region of the country, including Riyadh, takes its course mostly via Jeddah on the Red Sea, which handles almost half of the total imports of the Kingdom of Saudi Arabia⁽¹²⁾.

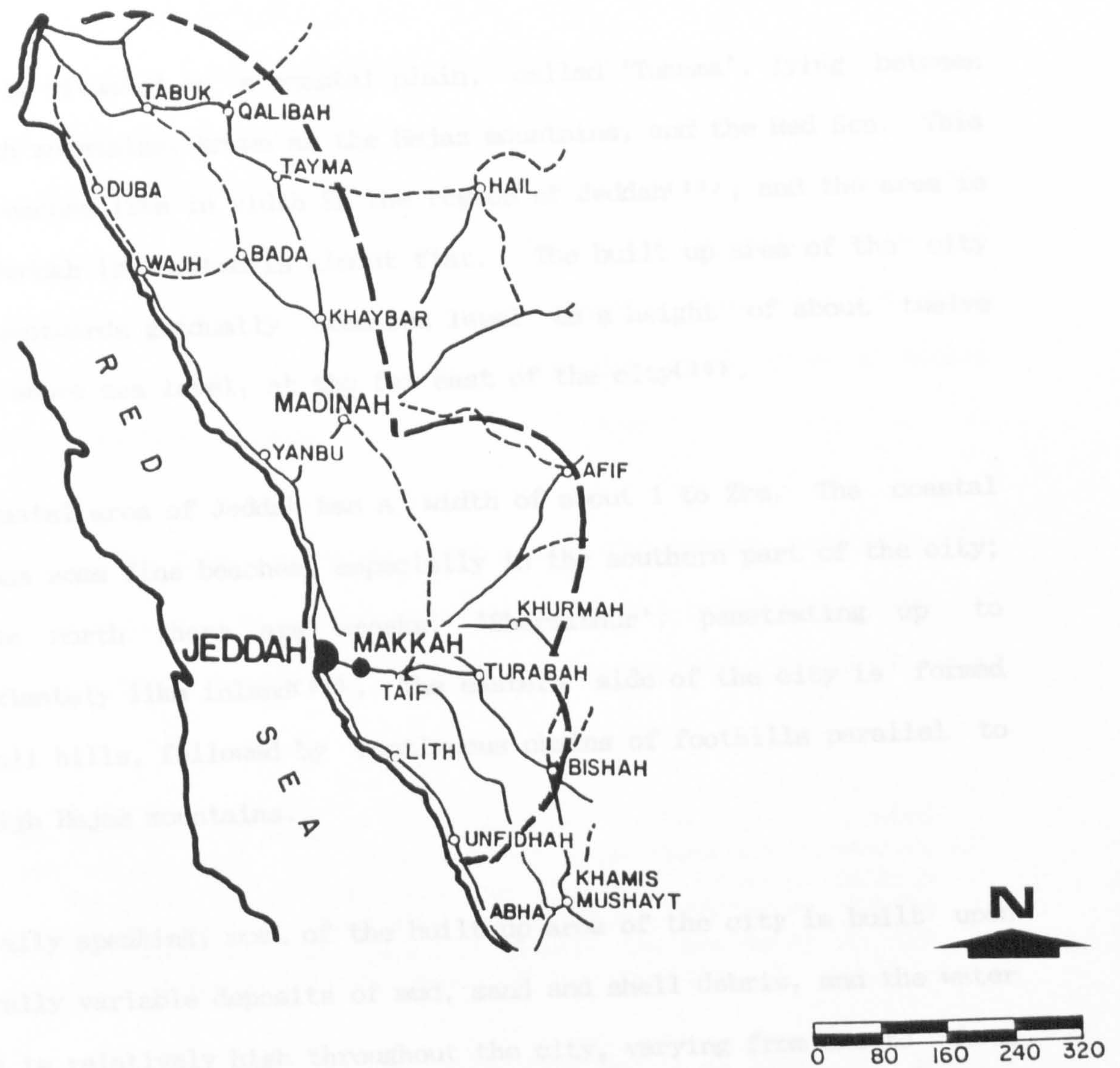


FIGURE 2.3 : Regional setting

Source : Jeddah Action Master Plan, Technical Report No.5, 1978

2.4 Topography

Jeddah is situated on a coastal plain, called 'Tuhama', lying between the high mountains, known as the Hejaz mountains, and the Red Sea. This plain reaches 12km in width in the region of Jeddah⁽¹³⁾, and the area in which Jeddah is located is almost flat. The built up area of the city rises eastwards gradually from sea level to a height of about twelve metres above sea level, at the far east of the city⁽¹⁴⁾.

The coastal area of Jeddah has a width of about 1 to 2km. The coastal area has some fine beaches, especially in the southern part of the city; to the north there are creeks, 'Shermibhur', penetrating up to approximately 11km inland⁽¹⁵⁾. The eastern side of the city is formed of small hills, followed by continuous chains of foothills parallel to the high Hejaz mountains.

Generally speaking, most of the built up area of the city is built upon naturally variable deposits of mud, sand and shell debris, and the water table is relatively high throughout the city, varying from one to three metres below ground level⁽¹⁶⁾. This causes various problems in some built up areas within the city. Jeddah is virtually free of topological relief, and the area north and south of the city is a sandy plain, except after the rainy season in which case some areas will be covered with grass and other shrubs.

2.5 Functions of the City

The most important functions of the city are that it is the commercial centre of the Western Region and one of the chief sea and air communication centres of the Kingdom, as well as a manufacturing and services centre. In fact, as a result of the significant location of Jeddah and its good communications, many manufacturing companies have been attracted to the city, in order to develop a close relationship with their consumer market.

Moreover, Jeddah functions as a major sports and recreation centre for the Western Region. The chief attraction in the recreational area is the corniche (sea front) and its associated services. Mohammed Farsi wrote,

"The Corniche of Jeddah is considered to be an integrated model of planning and execution of beautification projects, its designing is so fashioned as to appear to have various directions passing along the shoreline at different depths that reflect different shades of blue of the sea water to the onlooker, depending on the depth of the location"⁽¹⁷⁾.

The corniche is extended for more than 50km and it is used very heavily by Jeddah's inhabitants as well as by visitors from the Western Region and the other areas of the Kingdom.

2.6 Climate

Jeddah is located in the arid zone between the mild climate of the Mediterranean Basin and the monsoon climate of the Indian Ocean⁽¹⁸⁾. The climate of the city is directly affected by its geographical

location. The high temperatures are moderated by the Red Sea and, being a coastal city, the humidity is generally high. This has affected, to a large extent, the urban structure of the old part of the city as well as the traditional houses (see Chapter Four).

2.6.1 Rain

Rain is very rare in Jeddah. However, the city is subjected to winter and spring rainfall brought by the southerly winds from the Red Sea. This leaves the summer months dry and hot⁽¹⁹⁾. Although the average annual rainfall is very low, about 40mm, sometimes it falls in torrential bursts lasting for a few hours and causes dangerous problems of flooding for the city. However, the hazard to the city of flash-flooding from the intense storms has been countered by constructing large interceptor channels around the city⁽²⁰⁾ (see Chapters Five and Six). The average monthly rainfall in Jeddah between 1966-1980 is shown in Figure 2.4.

2.8.2 Temperature

Temperatures are, to some extent, modified by the proximity of the Red Sea. The average monthly temperature is between 25 to 30 degrees Centigrade. However it exceeds 40 degrees Centigrade in the summer months. Generally speaking, the lowest temperatures are during December and January, reaching 14 degrees Centigrade, and the highest temperatures are during June, when they may reach 47 degrees Centigrade or more. The distribution of the monthly temperatures between 1966 to 1980 is shown in Figure 2.5.

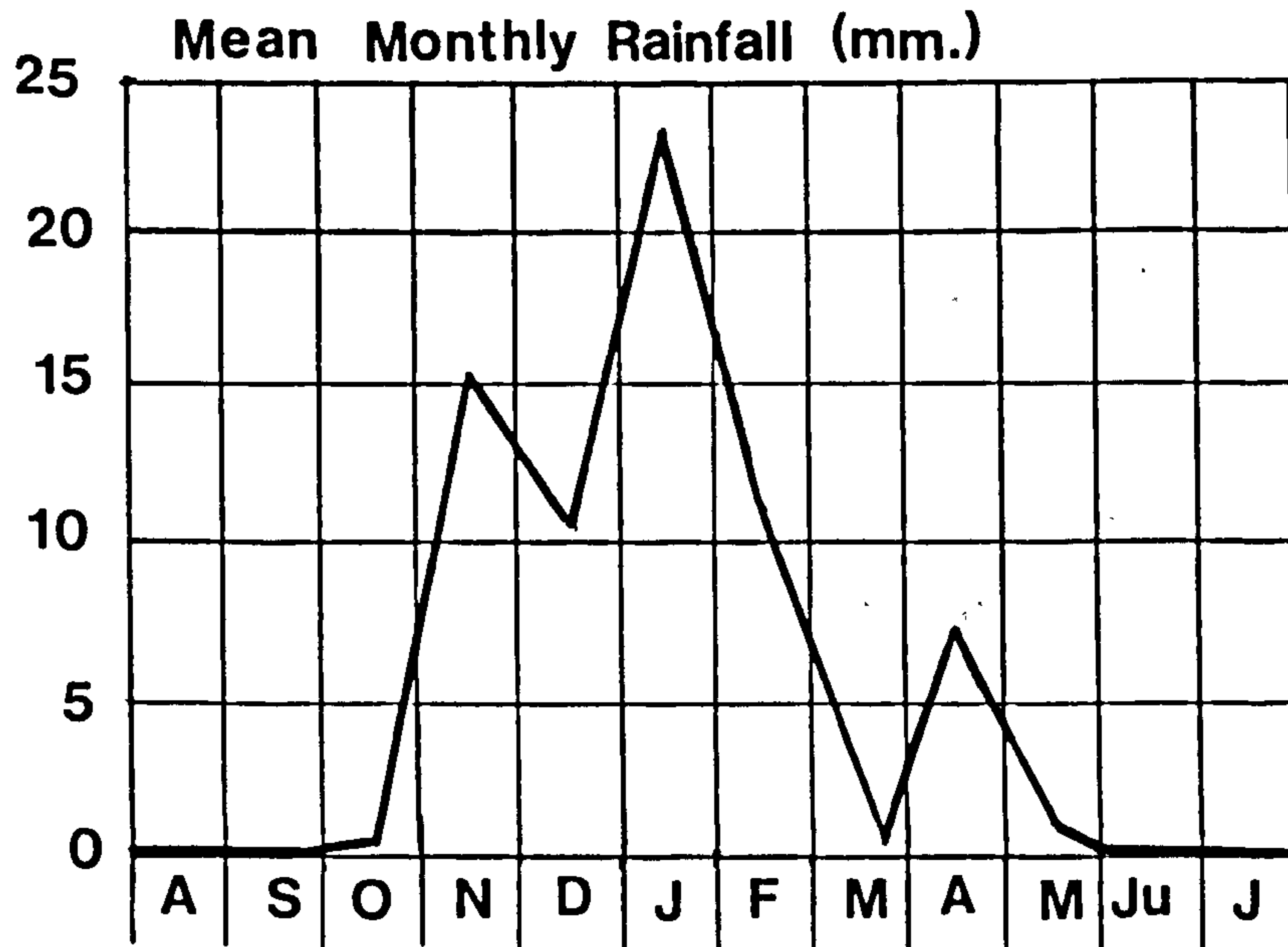


FIGURE 2.4 : Rainfall

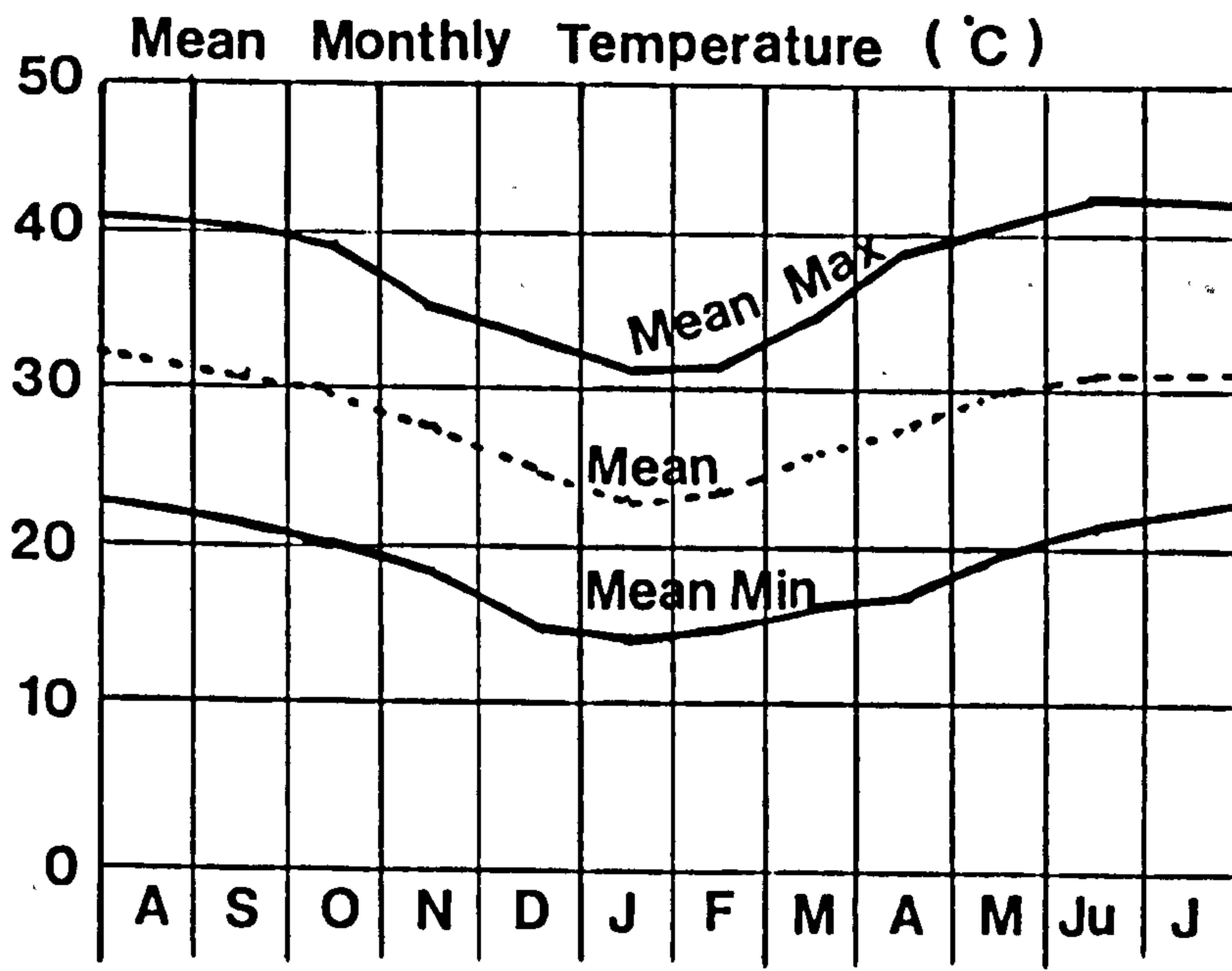


FIGURE 2.5 : Temperature

Source : Meteorological station, Jeddah (from 1966 to 1980)

2.6.3 Humidity

The coastal location of Jeddah results in high average relative humidity, especially during the summer. High humidity, coupled with high temperatures, is the major source of discomfort to the inhabitants of Jeddah. The distribution of the monthly relative humidity during 1966-1980 is shown in Figure 2.6.

2.6.4 Wind

The most prevailing winds are from the north and north-west. These winds have a light to moderate speed on most days of the year; they blow from the sea towards the land bringing the sea breeze to the built-up environment of the city. The other common winds are the southerly winds, blowing during the summer and occasionally becoming strong causing dust storms, and usually accompanied by low cumulus clouds which create thunderstorms, and easterly winds blowing during the month of June, accompanied by the simoon and its source of storm dust⁽²¹⁾ (see Figure 2.7).

2.7 Demography

2.7.1 Population

It is of great difficulty to establish exact figures for the population of Jeddah historically. All of the estimated population figures, before

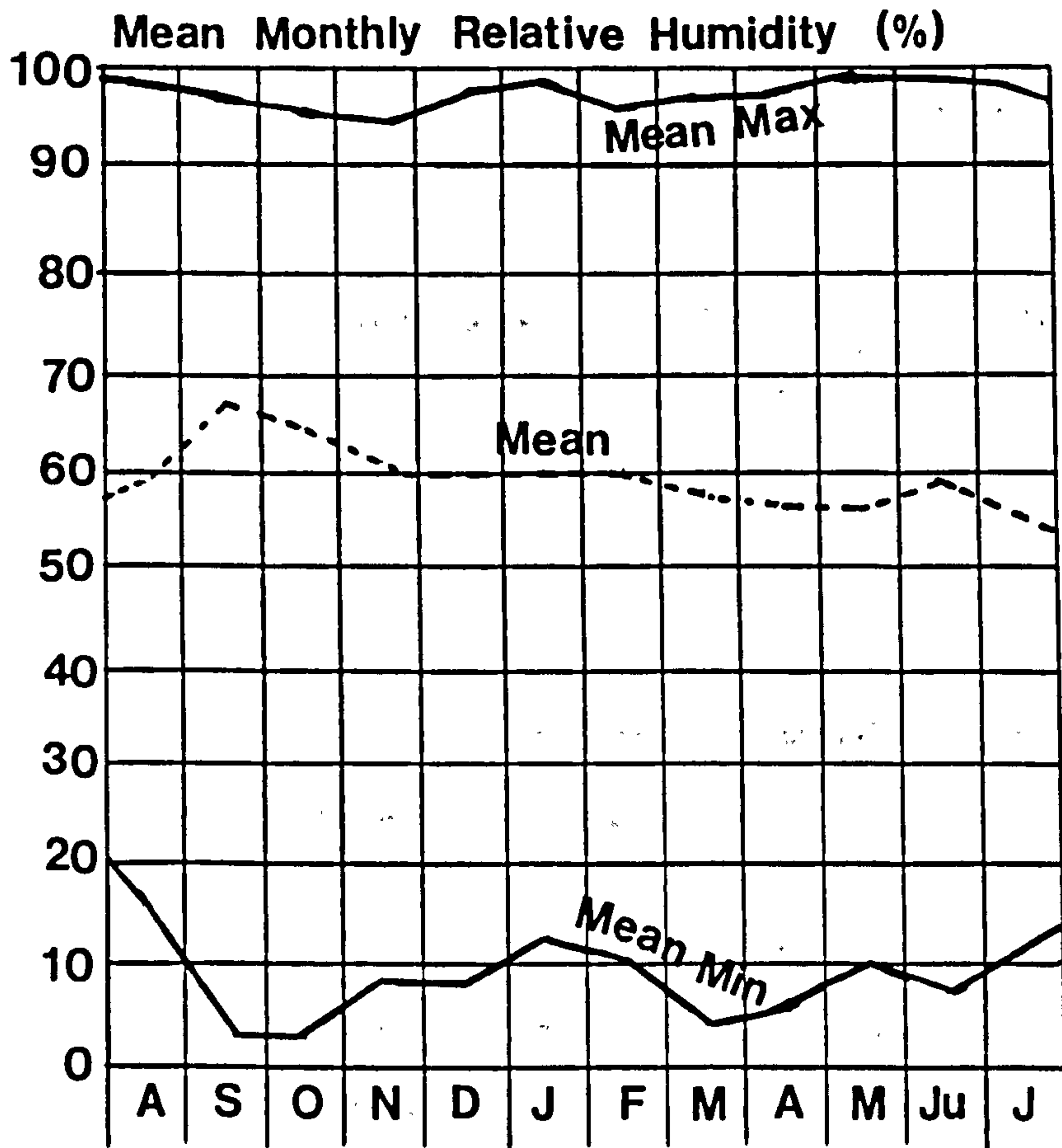


FIGURE 2.6 : Relative humidity
 Source : Meteorological station, Jeddah (from 1966-1980)

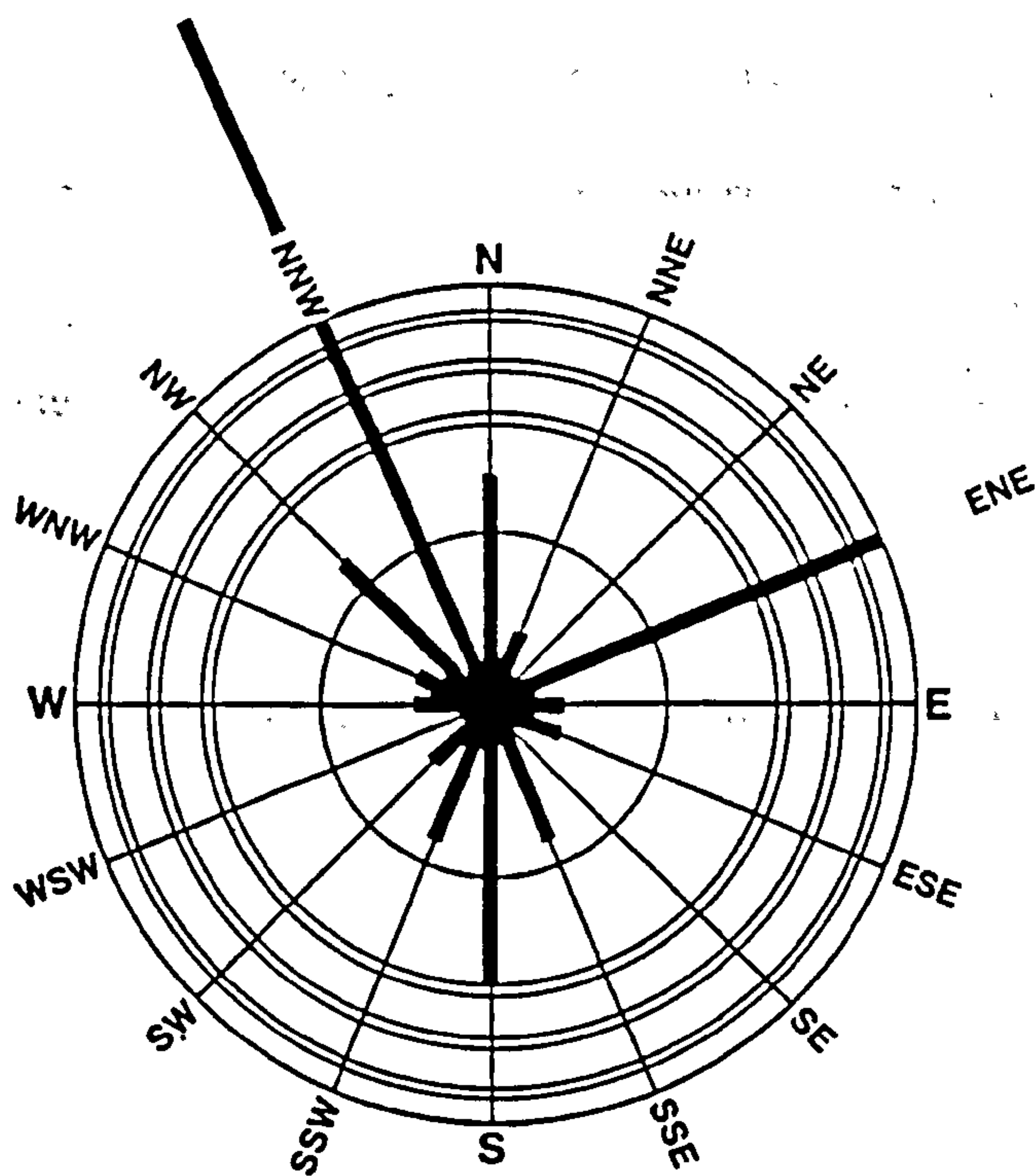


FIGURE 2.7 : Wind rose
 Source : Jeddah Action Master Plan, Technical Report No.5, 1978

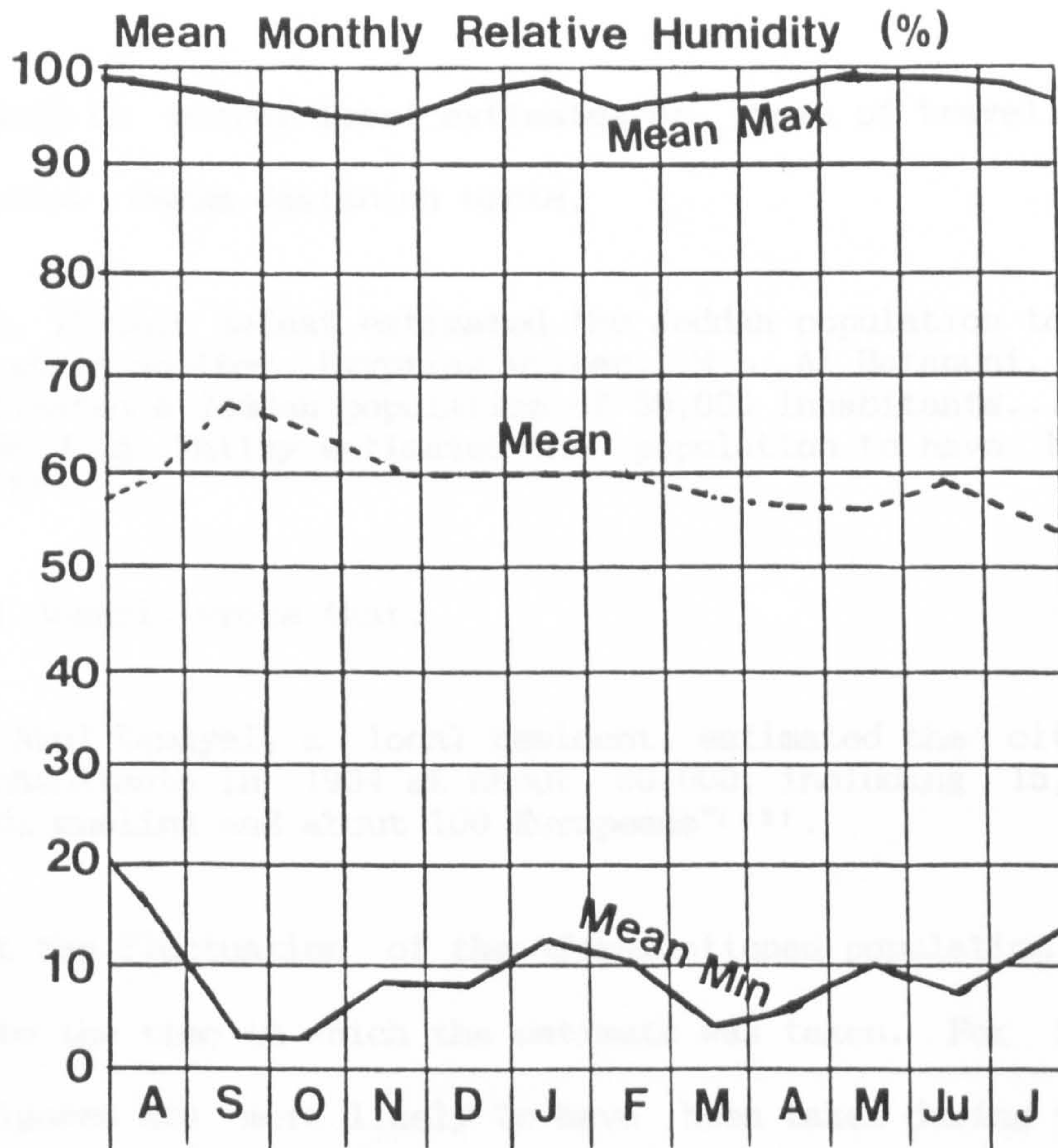


FIGURE 2.6 : Relative humidity

Source : Meteorological station, Jeddah (from 1966-1980)

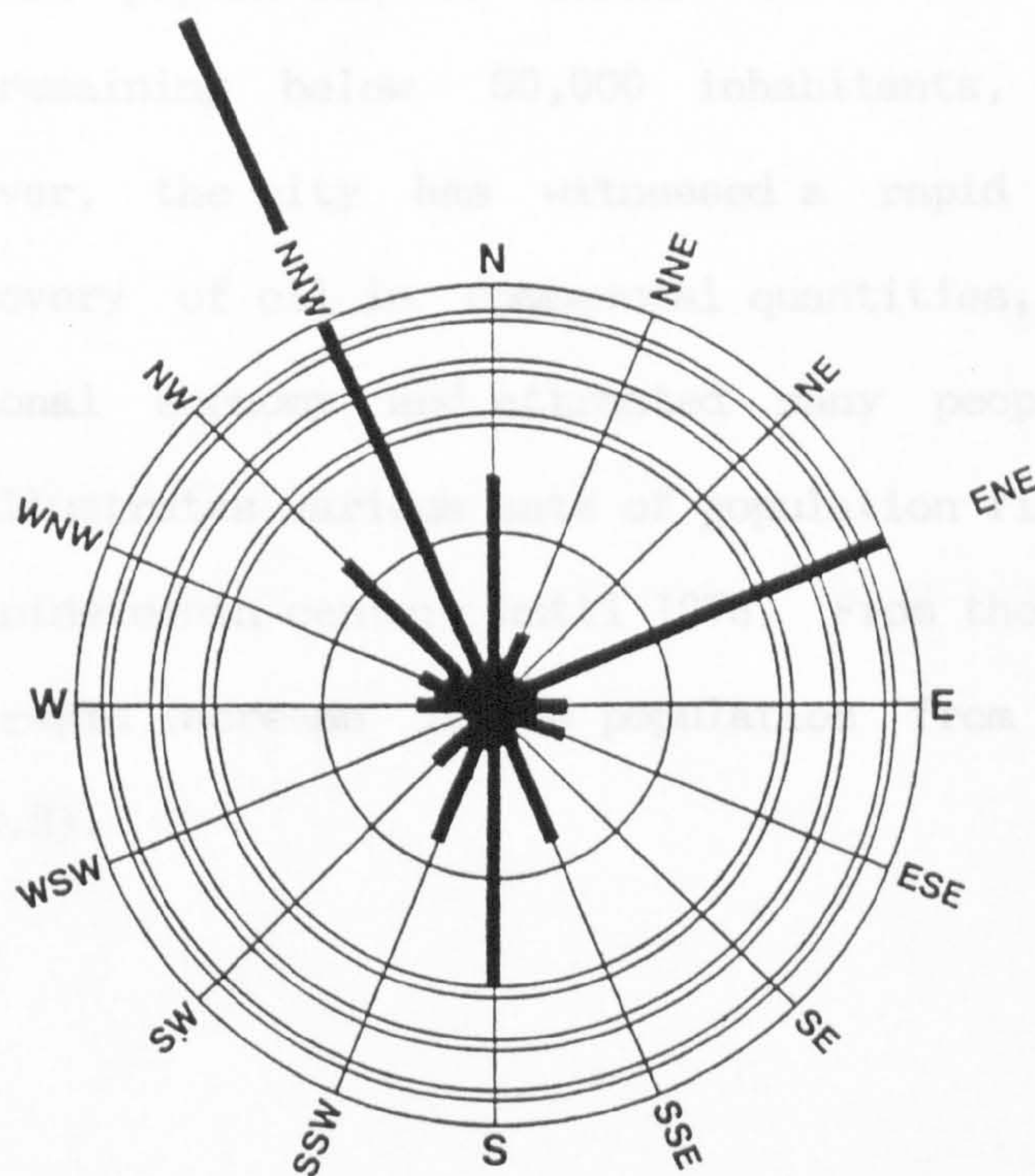


FIGURE 2.7 : Wind rose

Source : Jeddah Action Master Plan, Technical Report No.5, 1978

1960, were based on either local estimates or those of travellers who visited the city. Osama Jastaniah wrote,

"in 1901, Ibrahim Refaat estimated the Jeddah population to be 25,000, while another Egyptian writer, M L Al Batanuni, in 1909 estimated a Jeddah population of 50,000 inhabitants... in 1933 H St John Philby estimated the population to have been 30,000"⁽²²⁾.

Whereas A. Al Ansari, wrote that,

"Hassan Abul Hamayel, a local resident, estimated the city's total inhabitants in 1934 at about 60,000, including 15,000 non-Saudi muslims and about 100 Europeans"⁽²³⁾.

It seems that the fluctuation of the aforementioned population figures are related to the time in which the estimate was taken. For instance, the higher figures are more likely to have been taken during the Hajj months.

Generally speaking, the population of Jeddah until the 1940s was relatively small, remaining below 60,000 inhabitants, including foreigners⁽²⁴⁾. However, the city has witnessed a rapid population growth since the discovery of oil in commercial quantities, which has accelerated the national economy and attracted many people to the country. Table 2.1 illustrates various sets of population figures from the beginning of the nineteenth century until 1978. From the table, one can clearly see the rapid increase in the population from the 1960's onwards (see Figure 2.8).

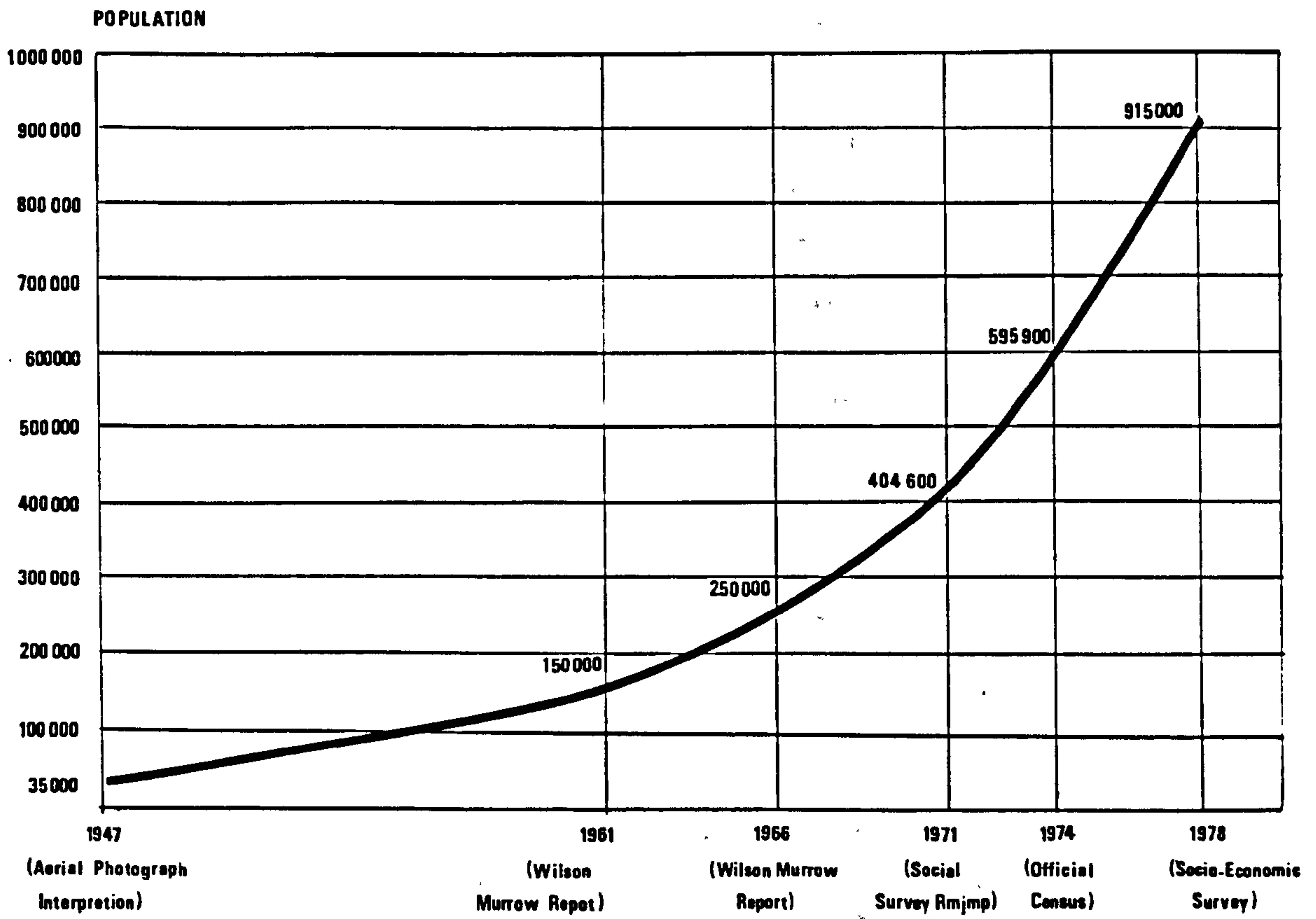


FIGURE 2.8 : Population growth 1947-1978

Source : Jeddah Action Master Plan, Technical Report No.5, 1978

TABLE 2.1 : JEDDAH POPULATION

YEAR	POPULATION	SOURCE
1807	5,000	Ali Bey
1814	12,000	Burckhardt, J L
1831	22,000	Dr Edward Ruffel
1839	15,000	Hericourt, R D
1854	30,000	Charles Didier
1901	25,000	Ibrahim Reffaaf
1909	50,000	Al Batanuni, M L
1933	30,000	H. St. John Philby
1934	60,000	Hassan Abu Al Hamayel
1958	200,000	Twitchell, K S
1959	106,000	The Consultant Engineering Office in Al Khobar
1961	150,000	Wilson Murrow Int
1962	147,900	First National Population Census
1971	* 381,000	Robert Matthew Johnson Marshall & Partners Survey
1974	* 569,204	Second National Population Survey
1978	* 862,363	Sert Jackson International Saudi Consult, Survey

Source : Osama Jastaniah, The Urban Function of Jeddah, 1984.

Note : * These figures have been adjusted by Sert Jackson International Saudi Consult in 1978 as follows : 381,000 to 404,000; 569,204 to 595,900; and 862,362 to 915,800.

According to the socio-economic survey conducted by Sert Jackson International Saudi Consult⁽²⁵⁾, adjusted figures, the population of Jeddah grew from an estimated 404,600 in 1971 to 595,900 in 1974, and 915,800 in 1978; this gives an exponential growth rate of 11.3% between 1974 and 1978. Since then the Jeddah population has shown a steady increase until it reached 1,234,200 inhabitants in 1985⁽²⁶⁾.

Two main factors have contributed to the increase in the population of Jeddah. Firstly, following the increase of national oil revenues, many development programmes have been initiated in various fields such as health, education, housing, construction, etc. These programmes created enormous job opportunities which led to the immigration of a large number of people from inside and outside of the Kingdom to find employment in those sectors. Secondly the general improvement in the health service resulted in a decrease in the death rate, especially the infant death rate, while the birth rate remained high.

It is worth mentioning here that throughout the centuries a large number of Jeddah's population has consisted of Muslims of different national origins, who came for Hajj and later on settled in Jeddah, in addition there have been a few non-muslims who came for trade, business, work or diplomacy. Indeed this can still be said for the present day composition of the Jeddah population. According to the census conducted by the Central Department of Statistics in 1963, the non-Saudis accounted for 51,732 persons, ie. almost 35% of the total population, whereas in 1978 the foreigners constituted about 52.8% (455,658 persons) as revealed from the socio-economic survey conducted by Sert Jackson International Saudi Consult.

This diversification of the population has played a significant role in the evolution of Jeddah's built environment as well as its architectural style (see Chapters Four, Five and Six).

2.7.2 Age/sex structure of the population

In Jeddah in 1978, 41.1% of the total population was less than 15 years old. Such an age structure is very common in the Third World countries. The percentage of the adult group (15-64 years) was 57.6%. The percentage of adults aged 65 years and over was 1.3% of the total population. Generally, the population structure of Jeddah has remained relatively stable during a recent rapid increase in its population⁽²⁷⁾ (see Figure 2.9).

2.8 Historical Growth of the City

As has been indicated earlier, the origins of Jeddah are very ancient. However its importance grew with the advent of Islam. Redevelopment took place on the raised mounds of former settlements up until the time of the Turks, and by the 18th century a fortified town had been built⁽²⁸⁾. From that time the city grew within its walls until the middle of the twentieth century (see Chapter Four).

The modern history of Jeddah is closely linked to the discovery of oil in large quantities, which provided the country with enormous wealth. The city of Jeddah experienced remarkable urban expansion during the period of the first oil boom, from the end of World War II up to 1956.

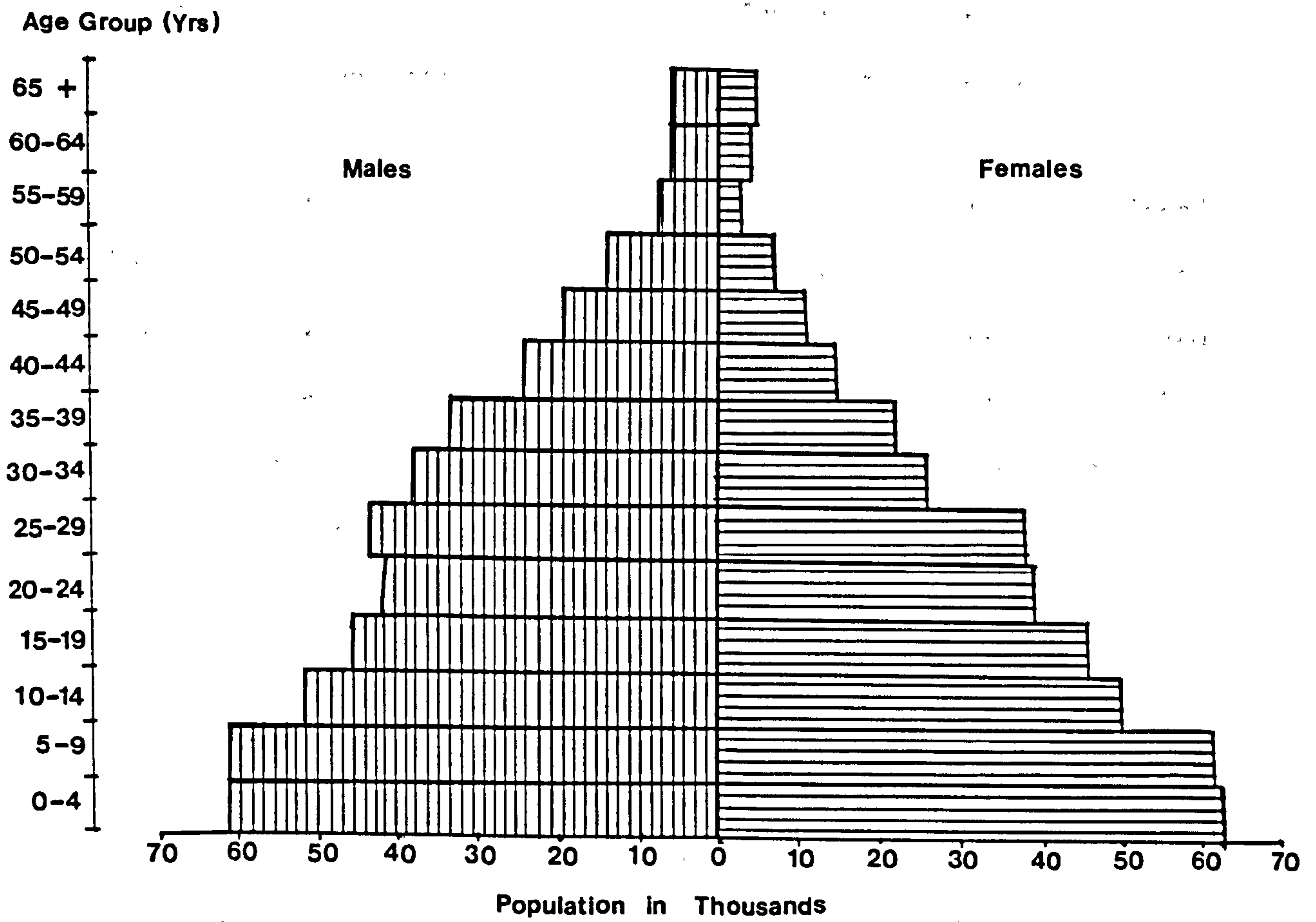


FIGURE 2.9 : Age-sex pyramid for Jeddah, 1978

Source : Jeddah Action Master Plan, Technical Report No.5, 1978

The major turning point of this period was the removal of the city walls which gave an open door for the rapid urban expansion of the city in the three directions (north, east and south). The urban patterns which were developed during that period still influence the present city.

From 1956 to 1964 the expansion of the developed area of the city slowed considerably, due to the financial difficulties which faced the country. However, the city's growth regained its momentum at a more controlled pace when King Faisal Bin Abdul Aziz Bin Saud assumed power in 1964⁽²⁹⁾. This growth rate continued until the early 1970s. The urban forms and changes which occurred from 1947 to the beginning of the 1970s are discussed in Chapter Five of this study.

The city's growth was also influenced by the second and third booms in oil prices in 1973 and 1978. From the early 1970's to date, Jeddah has witnessed a spectacular growth in its physical form⁽³⁰⁾. In fact this period is characterised by a planned development, during which master plans for the city were prepared and implemented (see Chapter Six).

Figure 2.10 shows the historical growth of the city and Figure 2.11 shows a satellite photograph of Jeddah in 1983.

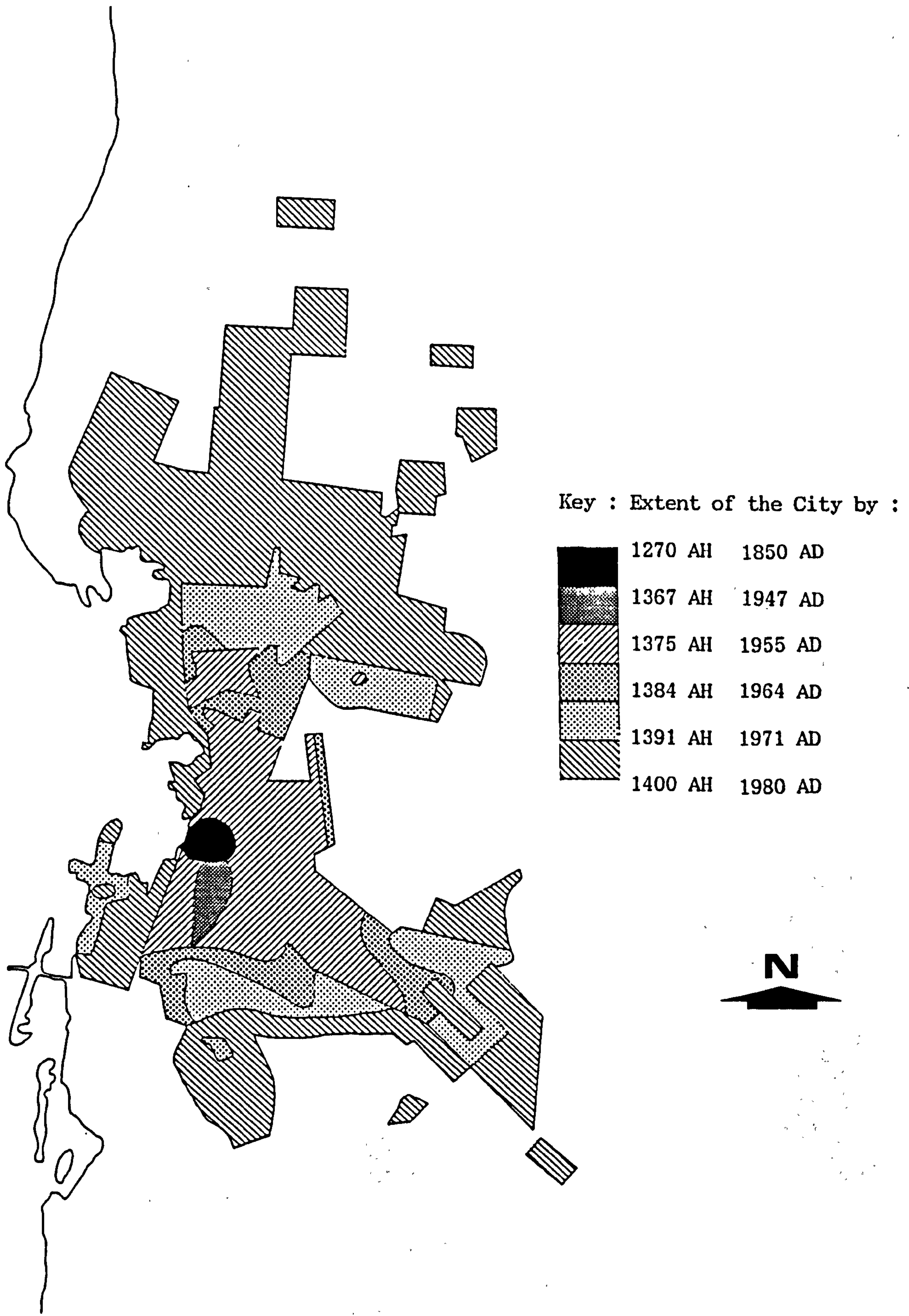


FIGURE 2.10 : Historical growth of Jeddah

Source : Jeddah Action Master Plan, Technical Report No.5, 1978



FIGURE 2.11 : Satellite Photograph of Jeddah, 1983.

Source : Urban mapping of the city of Jeddah, Kingdom of Saudi Arabia on the basis of high resolution satellite data - Mohamed Alwash, Fawaz Zakir and Abdul Razzak. Faculty of Earth Sciences, King Abdulaziz University, Jeddah.

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CHAPTER 3

CHAPTER THREE : METHODOLOGY OF SURVEY

Introduction

3.1 The Preliminary Survey

- 3.1.1 The aim of the survey
- 3.1.2 The procedure of the survey
- 3.1.3 Findings and recommendations

3.2 The Main Survey

- 3.2.1 Document collection
- 3.2.2 Sample areas
- 3.2.3 Physical survey
- 3.2.4 Site observation
- 3.2.5 The questionnaire
- 3.2.6 Interviews
- 3.2.7 Field work procedure

References

CHAPTER THREE

METHODOLOGY OF SURVEY

Introduction

This chapter is divided into two main sections. The first section deals with the preliminary survey which provided the author with sufficient information to formulate and organise the main survey. The second section deals with the main survey upon which the findings of the research will be based.

The main objectives of the field-work were firstly, to gather relevant data from various government agencies and secondly, to collect information relating to the residential units and neighbourhoods in the form of drawings, maps, photographs and verbal information.

3.1 The Preliminary Survey

This survey was carried out from 7 July to 20 August, 1986. Two sample areas were selected, one from the traditional area of the city and the other from the contemporary part of the city. Sketches and photographs were taken in addition to the completion of thirty questionnaires.

3.1.1 The aim of the survey

The aim of the survey was to find an appropriate way to gather data from different government agencies, to test the pilot study - pilot sample areas and questionnaires - and to identify the difficulties and obstacles of the research.

3.1.2 The procedure of the survey

The survey began by collecting data from the municipality of Jeddah such as base maps, aerial photographs for different dates for the city as well as the selected areas, and reports and statistical materials.

The researcher consulted some professionals who gave guidance, advice and information; among those were Dr George Duncan, a consultant in the municipality, and architect Musaad Al -Gandi, from the planning section of the municipality.

Each sample area was visited and some buildings were sketched and photographed for further analysis. Also some photographs were taken in each of the sample areas to illustrate the overall image of the built environment of the sample area.

The questionnaire was translated into Arabic. The people interviewed were the heads of the households, either house owners or tenants, selected randomly from both sample areas.

The questionnaire was divided into three sections. The first section was for all respondents (owners or tenants). It began with questions to obtain information about respondents and their families, including nationality, age, and number of family members in the residential unit. It then proceeded to obtain some data about the respondents' previous and present residential environment, including the previous house, length of residence at the present house, the number of rooms in the house, their satisfaction with the present house, and the amount of services in the neighbourhood. The second section of the questionnaire was only for the owners of the houses. It was designed to obtain information about the building such as the age and purpose of the building, the number of residential units in the building, and the building materials. It also sought to obtain information about the role of the Real Estate Development Fund (REDF) in the building construction, the role of the house designer, the participation of the owner in the design of the house and any changes carried out in the residential unit. The last section of the questionnaire was to be filled in by the researcher. It was designed to obtain information about the building type and area and the construction type.

The collected data and questionnaires were analysed later in the University of Newcastle. All of the required information for the computer analysis was obtained from the computer centre in the University and these included, booklets, computer programme manuals as well as courses attended by the author to enable him to use the computer and to select the appropriate programme for the analysis. Consequently,

the questionnaire data were transcribed onto the coding forms*, from where they were entered into the computer.

3.1.3 Findings and recommendations

The preliminary survey was very important, as it enabled the author to understand the situation of the field work and the associated problems.

The analysis of the preliminary survey revealed that:

1. More information should be gathered.
2. The selected sample area was quite large and did not illustrate clearly the different stages of the transformation of the city.
3. Some questions required more explanation and rephrasing.

Moreover, it was found that in order to minimise the problems and difficulties which would be faced during the main survey, the following should be considered :

1. In order to gain access to adequate information and field work the researcher should have :
 - (a) A letter from the University to various related government agencies.

* A coding form is the document onto which the data is transcribed before it is entered into the computer.

- (b) A letter from the Ministry of the Interior or from the principality of Makkah area (Al Amarah) to permit the researchers to conduct the questionnaire and to take photographs.
2. Since it is very difficult for any strangers to view the interior of any house, because of the very strong local tradition of privacy, it is more appropriate to obtain the architectural plans of the house, if these exist, from the municipality or the house owner.
 3. Time and place should be taken into consideration while conducting the questionnaires.
 4. It is more appropriate to conduct the survey during the autumn, winter or spring in order to avoid the intensive heat of the summer season.

3.2 The Main Survey

The above findings and recommendations were taken into consideration when planning the main survey. This survey was carried out from the 22 January to the 25 March, 1987. Since the author's study was primarily concerned with the change of the built form of the residential unit, a considerable amount of time and effort was devoted to the physical survey in order to investigate the changes that had occurred in the housing types.

In order to collect relevant data and to alleviate the risk of dependence upon one particular method, for the collation of information required for the study, multiple information methods were employed. This included the collection and review of documents, physical survey (maps of the city, architectural drawings of the houses obtained from the municipality, house owners or drawings by the researcher, photographs, etc.), site observation, informal interviews and questionnaires. Several factors influenced the decision in selecting the aforementioned methods, they are as follows :

Firstly, the lack of a single method to provide an adequate data to complete the study. Secondly, the socio-cultural conditions of Jeddah society means that people are unable to envisage the importance of the questionnaires, also privacy is another point which was taken into consideration for instance, the majority of the residents objected to the author viewing the residential unit from inside. Furthermore, residents' hospitality should not be taken for granted especially in conducting interviews, and a state of rapport with respondents should be established to ensure honest answers.

As a matter of fact, using multiple information gathering methods allows the weakness of one method in particular to be compensated for by the strengths of another⁽¹⁾. For instance, the limitation of the physical survey in attempting to assess the degree of satisfaction of the tenant with the design of the residential unit, could be supplemented by using the questionnaires.

3.2.1 Document collection

Based on the aim of the study and the findings of the primary survey, more documents regarding the residential environment such as institutions, regulations, reports, research studies, etc. were scheduled to be collected. In this respect an official letter, from Umm Al Qura University to the appropriate government agencies, explaining the purpose and the importance of the study and asking for their assistance to the researcher in collecting necessary data, was taken. Hence a number of visits were made to the offices of the following :

1. Ministry of Housing and Public Works (Western Region).
2. Ministry of Planning (Western Region).
3. The Principality of Makkah area.
4. Municipality of Jeddah (including the sub-municipality).
5. Real Estate Development Fund (Western Region).

The above sources provided vital references and data which enabled the researcher to complete his study.

3.2.2 Sample areas

A large amount of the information was collected during the preliminary survey, including base maps and aerial photographs of the city. The aerial photographs had been taken on different dates, for example 1948, 1964, 1981 and 1983. After a careful study of the aerial photographs, twelve areas were selected from different parts of the city. These were

'Al Bald', 'Al Hindawiyah', 'Ghulayl' districts, 'Al Nuzlah Al Sharqeyyah', 'Al Jameah', 'Al Mushrefah', 'Al Safa', 'Al Rawdah', 'Al Saheifah', 'Al Sharaffiah', 'Al Kandarah' and 'Al Rawais' districts (see Figure 3.1). The selection was based on the following criteria :

1. The sample areas should, as much as possible, represent the urban structure of the city.
2. The date of the district, in which the sample area is located, should be taken into consideration.
3. The urban tissue of the neighbourhood should be representative of the changes of the urban layout of the city.
4. The sample area selected should be a residential area.

As mentioned earlier, the built up city has undergone rapid change. So many old buildings have been replaced by new buildings. Accordingly a site visit was conducted in each area identified in the aerial photograph, to determine the exact location and the size of the sample area which would form the base of the study, taking into consideration the limited time and resources of the researcher. In this respect the researcher sought the residents' help, in some areas, to locate the most unchanged area, especially in the transitional area of the city. A plot measuring approximately 250 x 300m (with an area between 6 to 9 hectares) was located in each area, in which the detailed physical survey was conducted.

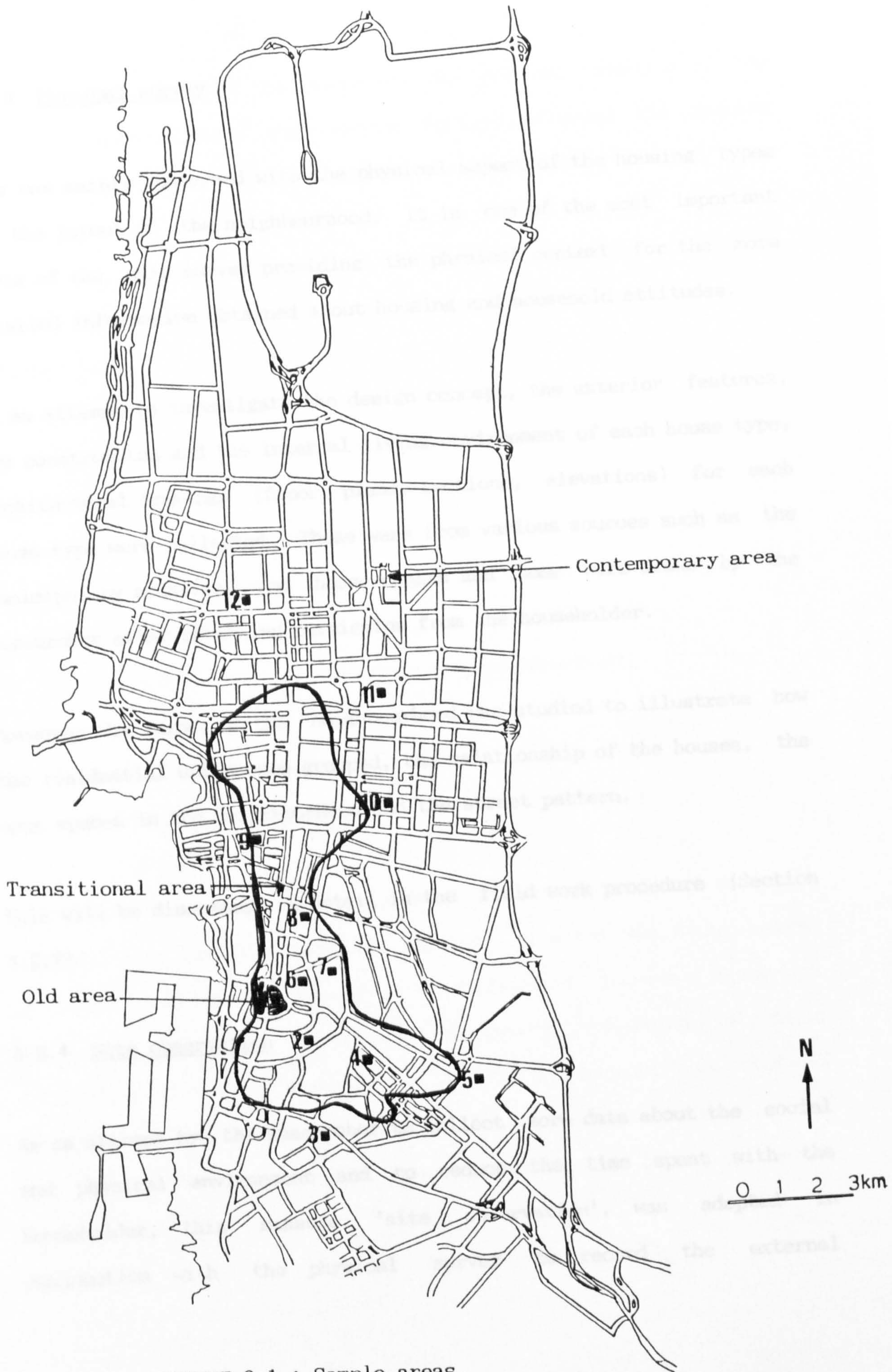


FIGURE 3.1 : Sample areas

3.2.3 Physical survey

This was mainly concerned with the physical aspect of the housing types and the layout of the neighbourhood. It is one of the most important parts of the main survey providing the physical context for the more detailed information obtained about housing and household attitudes.

As an attempt to investigate the design concept, the exterior features, the construction and the internal living environment of each house type, architectural drawings (floor plans, sections, elevations) for each house type were collected. These were from various sources such as the municipality archives, and house-owners and some were drawn by the researcher after obtaining permission from the householder.

Moreover the layout of the neighbourhood was studied to illustrate how the residential units were grouped, the relationship of the houses, the open spaces in the neighbourhood and the street pattern.

This will be discussed in detail in the field work procedure (Section 3.2.7).

3.2.4 Site observation

As an attempt by the researcher to collect more data about the social and physical environment and to reduce the time spent with the householder, this measure, 'site observation', was adopted in conjunction with the physical survey to record the external

architectural features of the house and the physical condition of the residential environment. This method neither affected the ongoing activities nor required the presence of the householder.

Field notes, a physical check-list and photographs were used in conducting this measure. In the field notes many observations were recorded such as the following :

1. Ongoing activities in the neighbourhood, which give an impression of the background of the inhabitants.
2. Unexpected patterns of activity that may emerge.
3. The utilisation of open spaces in the neighbourhood.
4. The physical alterations or changes that have been made to the residential units.

The physical check-list was intended mainly to collect as much information as possible about the physical site and the architectural elements of the house. Although it is difficult to prepare a check-list that covers all of the architectural features of the residential units of the city, an effort was made to identify the general categories of the architectural elements and then classify them according to the varieties of form or materials commonly used in the houses of Jeddah (see Figure 3.2).

	A	B	C	D	E	F
1 pld Coursec						
2 height						
3 wall finish						
4 wall tech						
5 roof						
6 openings						
7 window						
8 main door						
9 balconies						

	A	B	C	D	E	F	G
1	✓						
2			✓				
3					✓		
4		✓					
5			✓				
6	✓		✓				
7		✓					
8		✓					
9		✓					



LOCATION: Al Saheifah district (Sample Area No.6)

CONST. DATE: 1960-63

FILM NC. 5362-17

SURVEY DATE: 5-2-87

FILE NC. 6

FIGURE 3.2 : Physical checklist

More than seventy houses were surveyed by this measure, using the physical check-list. Each house was systematically documented, the location, the date of construction (if possible) and the date of survey were noted and a photograph of each house was taken. The result of this survey is shown in Appendix II.

3.2.5 The questionnaire

Questionnaires are useful and efficient data-gathering methods⁽²⁾. Surveys usually require large sample sizes of sufficiently varied characteristics that adequately reflect the variation that might exist in the total populations⁽³⁾. However, a large sample was beyond the scope of the study, especially when the limitation of time and resources is considered. Nevertheless the researcher tried his best to survey as many cases as possible. It was suggested that 20 to 30 cases should be selected randomly from each sample area. Accordingly 25 cases were selected from each sample area, and in total 300 cases from all sample areas were selected.

Based upon the findings of the preliminary survey some questions were rephrased and the questions with an open-ended format were changed to questions with appropriate response categories, to ensure that all the questions should be capable of being answered adequately. This was because, as Arnold M Rose has observed,

"there is little purpose in asking people questions for which they do not have an answer, or for which they cannot readily formulate an honest complete answer"⁽⁴⁾.

An effort was made to try not to surprise the respondents on their doorstep to avoid any hostility for both respondents and the researcher. Therefore the respondents were met in person in the street before entering their homes, or sometimes at social events, for example in those areas where people usually grouped together at dusk in front of their houses to play cards or dominoes. In both cases respondents were approached and briefed about the nature and the purpose of the study to gain their trust, which was needed to conduct the questionnaires. As a matter of fact, most of the questionnaires were conducted near the respondents houses and some questionnaires, a very limited number, no more than 30 cases, were conducted inside the homes, when the respondent insisted on the researcher entering the house to complete the questionnaire and have some tea or coffee.

The researcher decided to conduct the questionnaires by himself due to following reasons :

1. The difficulty of conducting telephone questionnaire interviews because of the socio-cultural background of the society.
2. The mail questionnaire interview procedure is inappropriate in a society such as Jeddah society. People seldom use the mail, especially within the city.
3. A great benefit was found by the researcher, whilst conducting the questionnaires, because it was found respondents always prefer to talk rather than answer questions. The side talk which usually

took place during the filling in of the questionnaire was of great importance because it revealed and explained some aspects which were not covered by the questionnaire.

3.2.6 The interviews

Several extended interviews were conducted with some residents, especially old men, architects and other officials from the municipality and other related government agencies. The latter usually took place in the process of document collection.

Although interviews were time consuming, the average duration of the interview being approximately two hours, the interview revealed itself as a successful source of background information, especially information which cannot be found in a written form such as in books, documents, reports, etc. Also the interview was a means of assessing people's reactions towards their dwellings, neighbours, way of life and the whole built environment.

All interviews were unstructured ones, the person interviewed was invited to talk freely and at length. Also an effort was made to make the interview spontaneous as if in ordinary conversation to put the respondent at ease whilst talking to him about the subject. However, it was found that some respondents, particularly the officials, were quite reluctant to be interviewed, so they released information with some reservations, discussing the subject that they felt safe with, and without, sometimes, answering questions raised by the researcher.

Nevertheless some interviews were very useful; as an example of these, an interview conducted with an old man, Omer M. Bafaraj, living in the transitional area of the city (see Appendix V).

It was not feasible to record the interviews with a tape recorder since all respondents were reluctant to use such measures. However, notes were taken and almost the whole interview was written up immediately after the completion of the interview.

3.2.7 Field-work procedure

Field work is time consuming so it should be well planned. Taking this into consideration the author started the survey by commencing the administrative work, followed by a few steps, carried out before the actual work in the field. These included :

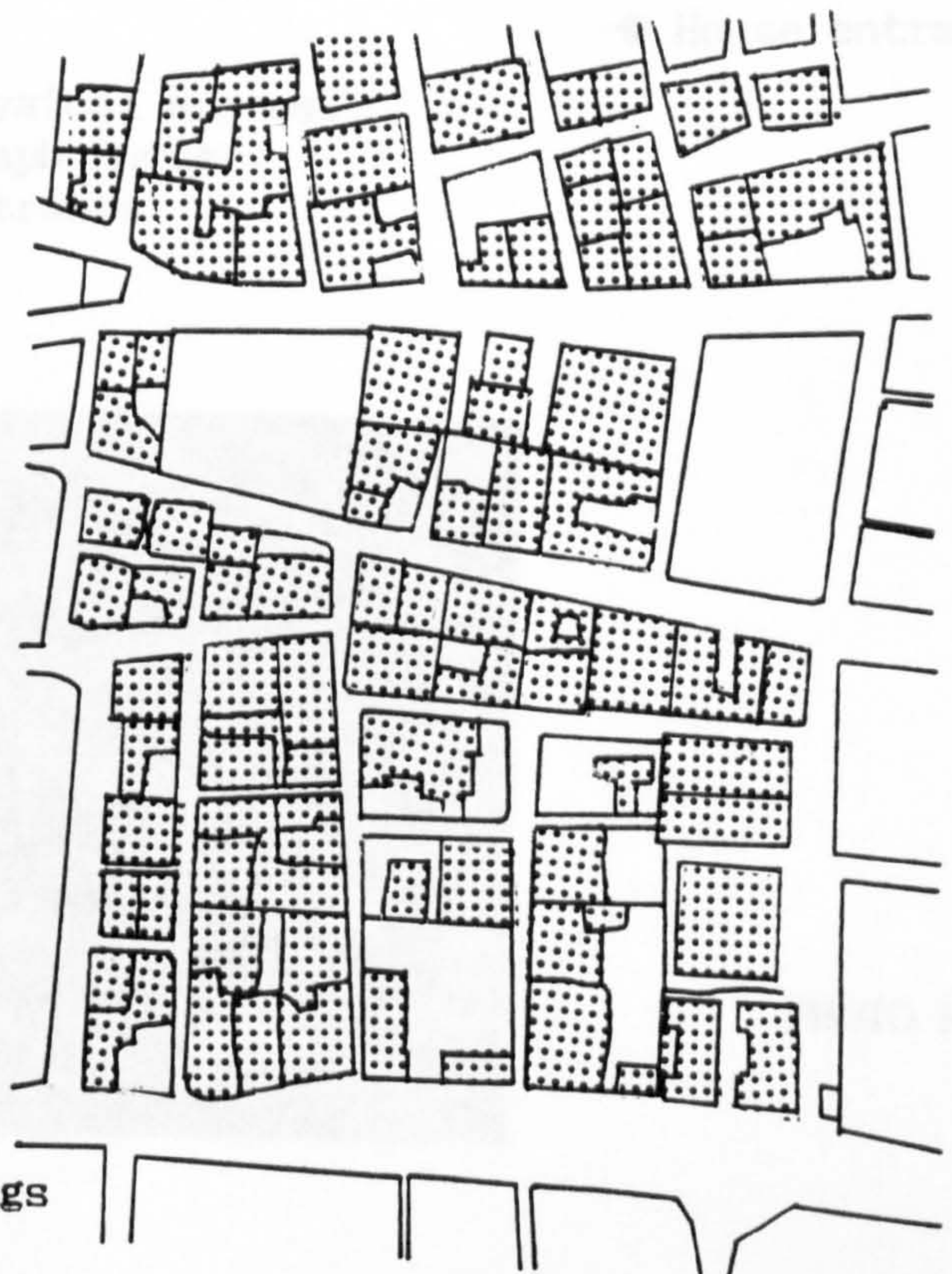
1. Obtaining permission from the principality of Makkah area for carrying out the research, especially the questionnaires and photographs.
2. Obtaining aerial photographs for all sample areas.
3. Preparing the materials and tools required for the survey such as tracing papers, pens, pencils, field notebooks, camera, films, etc.
4. Printing and photocopying the required number of questionnaires.

Immediately following the above steps the work began in the first sample area as follows :

1. Confirmation of the aerial photograph of the sample area. Since the latest aerial photograph available to the author, which was taken in 1983, few changes have been made in the built environment. For instance some plots have been built on and some buildings demolished to provide an open space. Therefore a site visit was conducted to observe and note the changes in the aerial photograph.
2. The sample area was drawn on tracing paper (scale 1:2500).
3. Several copies from the drawn sample area were prepared.
4. Several site visits were made to conduct the following :
 - (a) To select some houses for detailed study.
 - (b) To take photographs of the houses, open spaces and streets, showing the angle of the view for each photograph on the map of the sample area.
 - (c) To define the boundaries and the type of the open spaces. Each one was marked in a separate copy of the sample area.
5. The head of the household of the selected house was approached in order to get permission to sketch the plan of the house and to photograph the interior spaces. The facades of the house were



FIGURE 3.3 : Aerial photograph of the sample area No.5



Map showing open spaces and buildings of Sample Area No.5.





 View Angle
 House entrance

FIGURE 3.4 : An example of the physical survey.
 It shows the photograph number,
 view angle, homes entrance



PHOTO No.5





 View Angle
 House entrance

FIGURE 3.4 : An example of the physical survey.
 It shows the photograph number,
 view angle, homes entrance



PHOTO No. 5

either sketched on the site or photographed to be drawn later. If this was not achieved, an alternative measure was taken such as :

- (a) Asking for a copy of the architectural drawings of the house, if they were available from the house owner; or
- (b) Asking for the construction permission number, in order to obtain the architectural drawings from the municipality archive.

As a matter of fact the last two measures were only appropriate for the contemporary buildings, ie. the buildings which were built from the late 1970s onwards, because before then the municipality and the house owners rarely kept the architectural drawings of the houses.

- 6. All the sketches collected during the day of the survey were drawn properly, to scale, during the following evening.
- 7. During each site visit observations were recorded in the field note book, as well as making some physical check-lists and completing questionnaires.

The aforementioned steps were followed in each sample area respectively, the information from each sample area being kept in one file.

Finally all the questionnaires were collected and built into a computer file. The data was analysed via the SPSSX* programme which is available in the University of Newcastle computer MTS**.

* SPSSX is a large and powerful computer programme for the statistical analysis of data. Copyright: SPSS Inc., 1983, suite 3300, 444 North Michigan Avenue, Chicago, Il 60611, USA.

** MTS is corresponding to the operating system Michigan Terminal system which is implemented at Northumbrian Universities Multiple Access Computer (NUMAC).

References for Chapter Three

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- (3) Rossi, P.H. and Freeman, H.E. (1982), Evaluation : A systematic approach, Beverly Hills : Sage Publications, p.120.
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CHAPTER 4

CHAPTER FOUR : THE EVOLUTION OF THE OLD CITY

Introduction

- 4.1.1 The area definition
- 4.1.2 The urban land use pattern
- 4.1.3 Social aspects
 - 4.1.3.1 Ethnic groups
 - 4.1.3.2 Types of employment
 - 4.1.3.3 Income level
- 4.1.4 Utilities and services
 - 4.1.4.1 Water
 - 4.1.4.2 Sewerage
 - 4.1.4.3 Storm water drainage
 - 4.1.4.4 Fuel
 - 4.1.4.5 Electricity
 - 4.1.4.6 Transportation
- 4.2 Residential Districts
 - 4.2.1 The relationship of quarters (Haras) within the old city
 - 4.2.2 The spatial organisation of the old city
 - 4.2.2.1 The layout
 - 4.2.2.2 The street patterns
 - 4.2.2.3 The open spaces
 - 4.2.2.4 The physical changes
- 4.3 The House and Construction Techniques
 - 4.3.1 House types
 - 4.3.2 Spatial organisation
 - 4.3.2.1 The guest domain
 - 4.3.2.2 The family domain
 - 4.3.2.3 The stair case
 - 4.3.2.4 The projecting spaces
 - 4.3.2.5 The roof
 - 4.3.3 The use of space
 - 4.3.3.1 Activities
 - 4.3.3.2 Furnishing
 - 4.3.4 The exterior features of the houses
 - 4.3.5 The relationship between internal and external spaces
- 4.4 Building Materials
- 4.5 Construction Techniques
- 4.6 Summary

References

CHAPTER FOUR

THE EVOLUTION OF THE OLD CITY

Introduction

The historical accounts make it clear that there was a settlement in the area of the present day Jeddah approximately 2,000 years before Islam. It can be seen, then, that the area has been inhabited since pre-Islamic times. However, as mentioned earlier, the city's significance was established in 646 by Uthman Ibn Affan, the third Caliph of Islam.

As a result of political circumstances which faced the Western Region of the Arabian Peninsula and Jeddah in particular, the city passed through a period of growth and then stagnation and decline in many fields, such as commerce and the social and built environment, etc.

While it is beyond the scope of this study to present a detailed history of the city, a mention of major points which, it is believed, had an impact on the architecture and built environment, will provide a good base with which to begin.

This chapter starts by giving general information about the old town of Jeddah and its inhabitants, and describing its residential districts, and then continues with an analytical study of the traditional houses and their construction techniques.

4.1.1 The area definition

This area is the part of the city which was enclosed by walls until 1947. It was bounded by the Red Sea from the western side and the other three sides were defined by its walls.

Many historians and travellers wrote about Jeddah as a fortified commercial town. It was surrounded by walls. Ibn Jubayr mentioned that the first wall of Jeddah was built by the Persians and that when they built it they did it skilfully, making the width ten spans. They put four gates in the wall; one was Bab Al Dawmah on the northern side; Bab Al Madbaghah on the southern side; Bab Makkah on the qiblah/eastern side; Bab Al Furdah on the side facing the sea⁽¹⁾. The latest walls were built in the sixteenth century and rebuilt in the first half of the nineteenth century and they were standing until 1947.

Also the travellers wrote about the town concerning its unique location as a gateway to Makkah, and its beautiful houses and the overall built environment. Bokhari Abdullah Yahia mentioned many of the traveller's comments in his thesis entitled "Jeddah : A study in urban formation"⁽²⁾. For example, he mentioned that Ibrahim Refaut Pasha described Jeddah in 1901 as a big city surrounded by a pentagonal wall, built first by Sultan Al Ghauri of Egypt in 1509. The wall was four metres high and had nine gates, six of them were on the seaward side and the other three were on the landward side. He added that the city had about 3300 houses built of white stones acquired from the sea. All the houses were about two and three storeys high, with facades beautified by

balconies ('roshan' or 'mashrabiah') constructed of carved red Indian wood. The city had a government headquarters, soldiers' barracks, a telegraph office, a fine building for the municipal assembly, a quarantine house and a customs house. About Jeddah's streets he said that their width varied from eight to fifteen metres and there were in addition narrow and irregular roadways. He estimated the population at about 25,000, which usually increased to 50-60,000 during the Pilgrimage. About 120,000 pilgrims passed annually through the city.

T E Lawrence visited Jeddah in 1916. He described the town :

"it was a dead city, so clean underfoot and so quiet. Its winding, even streets were floored with damp sand solidified by time, as silent to tread as any carpet. The lattices and wall returns deadened all reverberation of the voice. There were no carts, nor any street wide enough for carts. One would say that for years Jeddah had not been swept through by a firm breeze, thus its streets kept their air from year's end to year's end, from the day they were built for so long as the houses should endure. The streets were alleys, wood roofed in the main bazaar, but elsewhere open to the sky in the little gap between the top of the lofty white-walled houses. These were built four or five stories high, of coral rag tied with square beams and decorated by wide bow windows running from ground to roof in grey wooden panels. The doors were heavy two-leaved slabs of teak-wood, deeply carved, often with wickets in them, and they had rich hinges and ring knockers of hammered iron"⁽³⁾.

Jeddah was also described by J M Richards in 1947,

"Jeddah however, is at the same time a thriving mercantile town in its own right : for centuries it has been the principal port of the Arabian Peninsula. Its great days were those of the India trade, as a way of increasing the revenue of the country; Jeddah still preserves evidence of its old position on the India trade route. There is virtually no timber in the whole of the Hejaz and the timber super-structure of Jeddah's towering houses - mostly teak - came from as far away as the East Indies".

"The walls are still in fairly good condition, so that the only entrance to the town is by battlemented gateways, one on each side, and by a smaller pedestrians gate on the north. Inside the walls of the town the pattern is one of closely packed buildings arranged in no regular plan; there are few streets of any length, the tall buildings giving the impression of having been stacked inside the town walls like flower-stalks into a vase. They are separated by narrow alleys that open out here and there into little squares. The streets and squares are clean; in fact the cleanliness of Jeddah is one of the surprises in store for the visitor accustomed to the dirt and smells of other middle eastern cities"(4).

Thereafter the built-up area of Jeddah was constrained by its encircling wall which had four main facets, with a total perimeter of approximately 1600 metres. The height of the wall was about 4 metres, about the usual height of walls around the courtyards of the houses. It had gates, six of them on the seaward side, and the other three on the landward side(5) (Figures 4.1 and 4.2).

4.1.2 The urban land use pattern

The old town was tied to the activities of the port and this was very evident in its physical structure. The larger open spaces of the town were therefore found associated with the customs building and the harbour. Outside this area the open spaces showed an irregular shape and size as far as the other end of the city - the eastern side - where



FIGURE 4.2 : Aerial photograph of Jeddah in 1940s before the demolition of its walls
 Source : Jeddah Municipality - Planning Department.

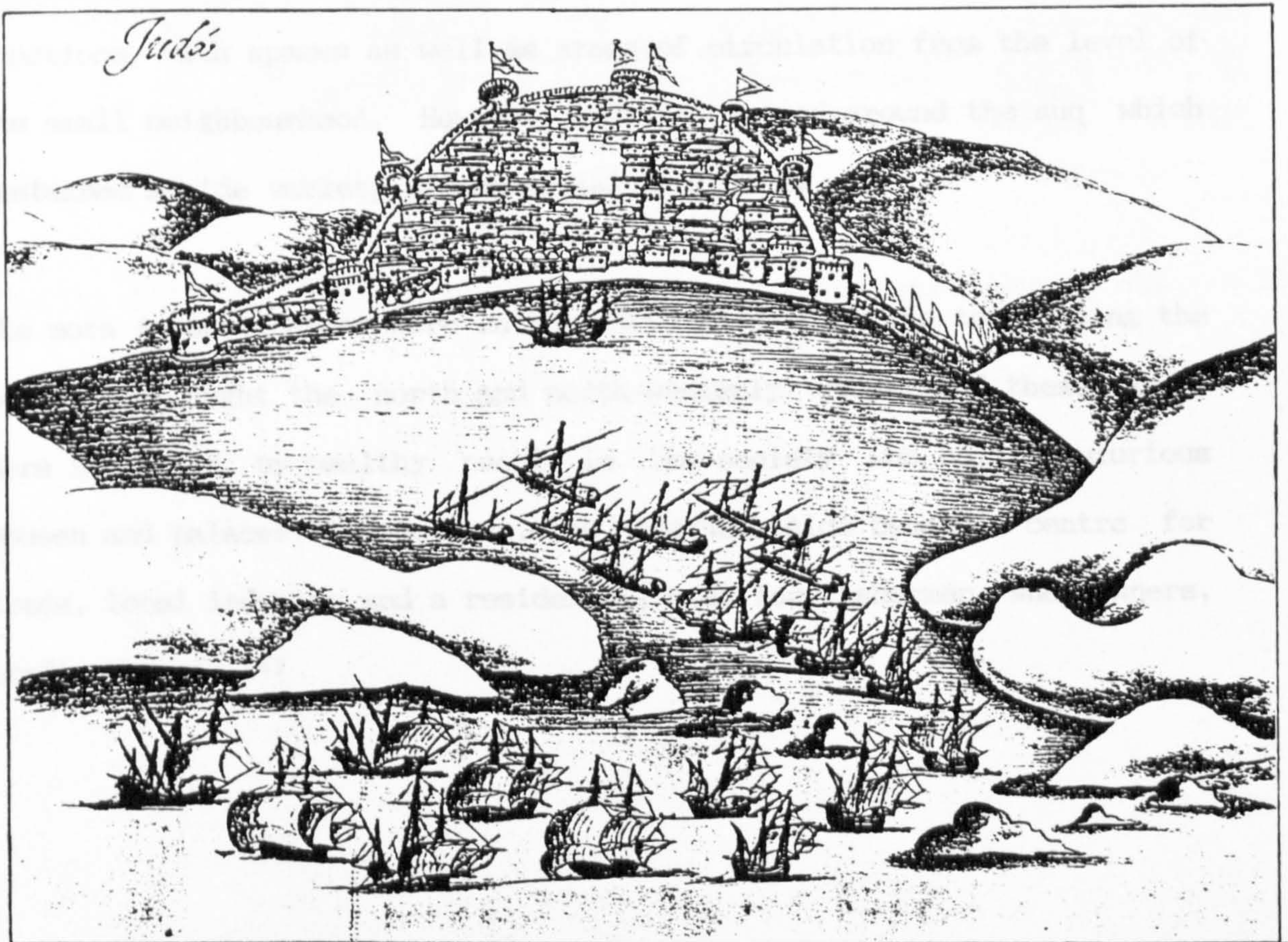


FIGURE 4.1 : The City of Jeddah in 1517
 Source : From a drawing by Gaspar Correa, Lisbon Geographical Society Archive.
 Reproduced in Angelo Pesce, Jeddah, portrait of an Arabian city, 1976.

small open places were usually used for open markets. Nevertheless the town contained almost every necessity for urban life and many different kinds of buildings were found, such as mosques, caravanserais 'khans', warehouses, traditional buildings, public buildings, etc.

The city functions - commercial and religious - affected the distribution of land use, so the buildings related to the trade or the pilgrims were found near the sea or gateways, such as 'Bab Makkah' (Makkah gate), and were connected in between with a series of irregular commercial spines such as 'Shara Al Alawi'. The storage facilities were located immediately behind the shops, or sometimes on the ground floors of the residential quarters of the shop owners (Figure 4.3).

Generally, there was a hierarchy of multiple levels of well linked functions, with spaces as well as areas of circulation from the level of the small neighbourhood. However, it was centred around the suq which contained a wide variety of commercial activities.

The more favoured areas were in the northern part of the town facing the sea, which caught the north and north-westerly winds, and these areas were inhabited by wealthy people in the society who built luxurious houses and palaces; in contrast, the southern side became a centre for trade, local industry and a residential area for fishermen, shop owners, craftsmen, etc.⁽⁶⁾.

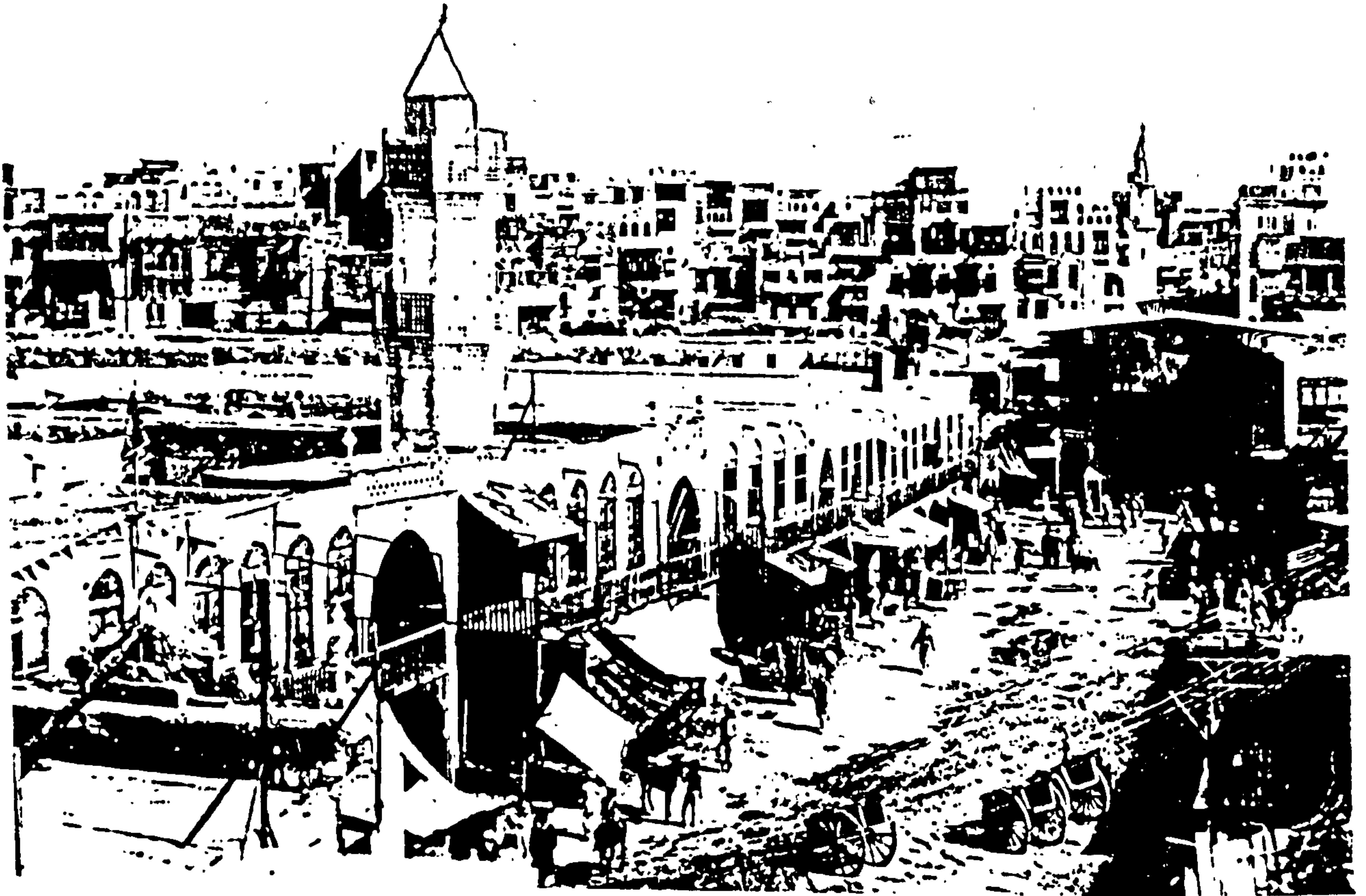


FIGURE 4.3 : The town in 1920 - life in the commercial heart of old Jeddah

Source : Stacey International, Jeddah old and new



FIGURE 4.3 : The town in 1920 - life in the commercial heart of old Jeddah

Source : Stacey International, Jeddah old and new

4.1.3 Social aspects

4.1.3.1 Ethnic groups

From the town's earliest days, as a result of its function as a gateway to Makkah and commercial centre for the western region of the Arabian peninsula, the inhabitants of Jeddah have been in constant contact with different races and nationalities from almost all over the world. These have included Turks, Persians, Yemenis and Hadramis (Arabs from the Yemen and the Hadramout), Bukharis, Indians, etc. The local people came under pressure from different customs and norms, and consequently some of these habits were adopted. Over time the absorption of these external influences, coupled with strong local customs, gave its inhabitants their distinctive identity.

J L Buckhardt visited Jeddah in 1814 and he wrote that the inhabitants of Jeddah, like those of Makkah and Madinah, were almost exclusively foreigners or the descendents of foreigners who had settled earlier in the city. These were particularly from Hadramout and Yemen. He found that there were in Jeddah settlers from India, Malaya, Egypt, Syria, Barbary (in North Africa), European Turkey and Anatolia, who were all naturalised, mixed in one mass and lived and dressed in the same Arab manner⁽⁷⁾.

The travellers and writers in the nineteenth and twentieth centuries realised that the inhabitants of Jeddah consisted of Muslims of various national origins who had large extended families composed of several

related nuclear families with strong ties among the family members. Most of them had to come to Jeddah to perform Hajj and in one way or another had settled and become permanent residents of Jeddah, which offered them job opportunities and a better livelihood.

4.1.3.2 Types of employment

The majority of the people in the old town worked in the field of trading, importing and distributing goods in the region. A. Bokhari writes,

"Most of the traditional families were active traders (tujjar), each specialising in one or more commodities, bequeathed from one generation to the next"⁽⁸⁾.

The sea was also considered as one of the fundamental factors which shaped the lives of many families. Quite a large number of the inhabitants made their livelihood from the sea or in related activities such as fishing, shipbuilding, etc.

For centuries Jeddah was considered as one of the pilgrim cities in addition to Makkah and Madinah. Many facilities had to be provided for the pilgrims, such as services and accommodation, etc. Therefore the earnings of many families depended on this occasion.

Other people worked in various other fields such as building construction (builders, workers specialised in cutting and shaping the coral reef stones, etc.), services (working in coffee shops, distributing fuel and water to the houses, cleaning the town, etc.) and

local industries. It is worthwhile to mention that the industrial activities at the beginning of the twentieth century were mainly traditional crafts developed for the needs of local people. These included woodworking, textiles, goldsmiths, pottery, tailoring and shipbuilding, in addition to other handicrafts.

4.1.3.3 Income level

The old town was populated by different classes of people. There were high class people (merchants), middle class (usually government employees and religious scholars) and ordinary people. They all lived together as one community. However, there were some areas of predominantly high class people as mentioned earlier. Nevertheless the people helped each other; for example, many facilities such as 'Madares' (schools), mosques, houses for the poor and elderly people were endowed by the well-to-do inhabitants. Thus the residential quarters experienced a real community feeling and formed a kind of large unit beyond the traditional extended family, which characterised the social structure of the inhabitants of the old town.

No matter what the class of people, the old and young men gathered after dusk in the outdoor spaces in front of the houses where passive recreation took place (recitation from the Quran and Hadith, ie. the traditions of the Prophet, drinking tea and coffee, playing cards, etc.). Also, to stay late at night, inside the houses or the 'gahawy' (coffee shops), was one of their social customs. On the other hand the children had their own social customs, with their own spaces to play in.

these activities were carried out with great respect for neighbours' privacy. In other words, the privacy of other people was taken into consideration in the performance of these activities, whether outside or inside the house.

4.1.4 Utilities and services

4.1.4.1 Water

Undoubtedly the severe scarcity of potable water in the town played a great role in the overall image of the built environment and there were no gardens or parks, or areas of vegetation of any kind. The Persian poet, Naser Khusraw, visited the town in 1050 and mentioned that there were no trees or any vegetation at all, but all that was necessary for life was brought in from surrounding villages⁽⁹⁾.

Abdul-Qaddous Ansari, said that initially the residents depended only on two sources of water, rain water and spring water, which they tried to bring from places far from or near to the town, but these latter attempts were not very successful. Therefore the inhabitants tried to utilise the former source, rain water. They dug cisterns (sahareege) to collect the rain water and special care was given to them. The cisterns were found in great numbers inside as well as outside the wall, a matter of interest to travellers and historians, who described them.

A. Bokhari, writes that,

"Ibn Al Majawir, in his description of Jeddah, mentioned that its inhabitants feared a shortage of water and they constructed 68 reservoirs within the old town and as many outside, adding that whenever the reservoirs lying outside the city were filled by heavy rainfall, slaves carried this water on the back pack animals and with it filled the house reservoirs"⁽¹⁰⁾.

The scarcity of water in Jeddah encouraged people to think seriously of how they could benefit from the rain water even at the level of the individual house. J.L. Burckhardt, realised this situation in his book entitled "Travellers in Arabia", reported the solution invented by Jeddah's inhabitants for the constant water shortage. He said that every house of moderate size had its own cistern. Such cisterns were filled by rain water which was collected first on the flat roof of the house and then directed into the underground cistern and preserved for the various uses. However, when the rain was not regular or abundant enough to fill cisterns of the houses, water was carried from several pools outside the town⁽¹¹⁾.

In addition to cisterns there was well water from nearby villages such as 'Al Kandarah', 'Bani Malik', etc. The residents depended on cistern water until the sixteenth century, when the Mamluk Sultan of Egypt, Qansuah Al Ghuri, brought piped water from nearby suburbs, and this was called 'Al Ain Alwazeria'⁽¹²⁾. This project was carried out and developed throughout the Turkish period until it was taken over by the Saudi Government. Later on another source of potable water was added to the city, that of condensing sea water to produce 'Kendassah' water. The main water source during 1926-1947 was 'Kendassah' water plus Al Ain Alwazeria⁽¹³⁾.

K S Twitchell visited Jeddah in 1931 and wrote about the shortage of water. He wrote that much of the drinking water supply was previously obtained by condensing sea water in a plant with a daily capacity of 150 tons. The desire of the government for a more adequate source was met by the water resources of the springs up the 'Wadi Fatimah' being tapped by the use of a pipeline approximately 75km in length⁽¹⁴⁾.

4.1.4.2 Sewerage

Historically the disposal of waste water and sewage from the houses was achieved by means of cesspit drainage. The traditional houses had quite a reasonable system for sewage; all baths were arranged vertically above each other and connected with sewage ducts extending from the roofs to the cesspit, which was built particularly under the building. The inhabitants used the available water very economically, because of the shortage of water mentioned earlier. The cesspit tank was cleaned annually.

This continued until the 1970s, when every traditional house in the city was connected to the main sewerage system.

4.1.4.3 Storm water drainage

For centuries the town was surrounded by a wall and there were many cisterns dug outside the wall in order to collect the rain water. All these protected the town from the floods from nearby hills. Also the rain water from the roofs was collected in underground cisterns. This

was done both for the benefit from the rain water and at the same time, it is believed, to protect the town from floods caused by rain over the town in sudden storms.

4.1.4.4 Fuel

For centuries the inhabitants of Jeddah used charcoal and firewood for cooking their food in the residential units.

4.1.4.5 Electricity

Until the introduction of electricity to Jeddah in the 1940s, the only source of lighting was Kerosene and candles. Later on the government offices and diplomatic centres, as well as well-to-do people started to have their own generators. Electricity has been available to a limited degree in the city since 1941. It was not properly organised until 1952 when the Saudi National Water Company for Electrical Power was established in a Saudi joint-stock company and was granted the concession of generating and distributing power within the city of Jeddah⁽¹⁵⁾.

Initially the electricity was used for lighting only, but after the people adapted themselves to it, they started to use it gradually in various aspects of living until it became one of the essential requirements in the house.

4.1.4.6 Transportation

The main modes of transportation in the town were animals (horses, camels, donkeys, mules), carts (pulled by animals) and walking. This continued until approximately the 1940s, when the car became the major mode of transportation in the city. The first motor-car was introduced by Sharif Husayn bin Ali, probably at the beginning of the 1920's⁽¹⁶⁾.

4.2 Residential Districts

From the descriptions given of the town by travellers and writers, during the last four centuries until the 1940s, it could be said that during that period there were insignificant changes in the basic structure and the overall image of the town.

The city, as mentioned before, was surrounded by walls. There was little outside the walls apart from a small number of scattered settlements and villages consisting of huts built of palm trees, reeds and brushwood. These included 'Al Kandarah', 'Al Hindawiah', 'Al Baghdadiyah', 'Al Nuzian al Yamaniah', 'Al Rawais', and 'Bani-malik'.

Mahmud Aref writes,

"The inhabitants of these villages were bedouins and settlers whose main occupations were fishing or sheep trading or acting as middlemen between merchants and bedouins, who carried their merchandise by camel from Jeddah to Makkah"⁽¹⁷⁾.

These people entered the city only to earn their living.

4.2.1 The relationship of quarters (Haras) within the old city

Inside the wall the residential area consisted of four quarters 'Haras' or 'Mahalla' as they were called locally. 'Mahallet alsham' was situated in the north/north-west of the old town and 'Mahallet Almazloun' in the east. The most crowded residential area with more shopping facilities and mosques than any other quarter was 'Mahallet al Yemen' to the south/south-east, while 'Mahallet al Bahar' was in the south/south-west of the town (Figure 4.4).

These quarters were interlinked and there were no physical boundaries between them; furthermore, the boundaries of each quarter were known only to the older men of the town. In these quarters were mainly family houses, mosques and 'zawayah' (small mosque) and most of the social activities were centred around them. The entire town, physically and socially, had a sense of being one large residential district. Nevertheless, by looking carefully at each quarter one could find a subtle difference, in terms of the architectural features of buildings as well as the spatial organisation of the quarter.

The houses, streets and open spaces were grouped together and this formed a sense of community and enhanced the social integration amongst the inhabitants.

4.2.2 The spatial organisation of the old city

The residential quarter was composed of family houses, so privacy and security were highly respected. The whole town was organised and

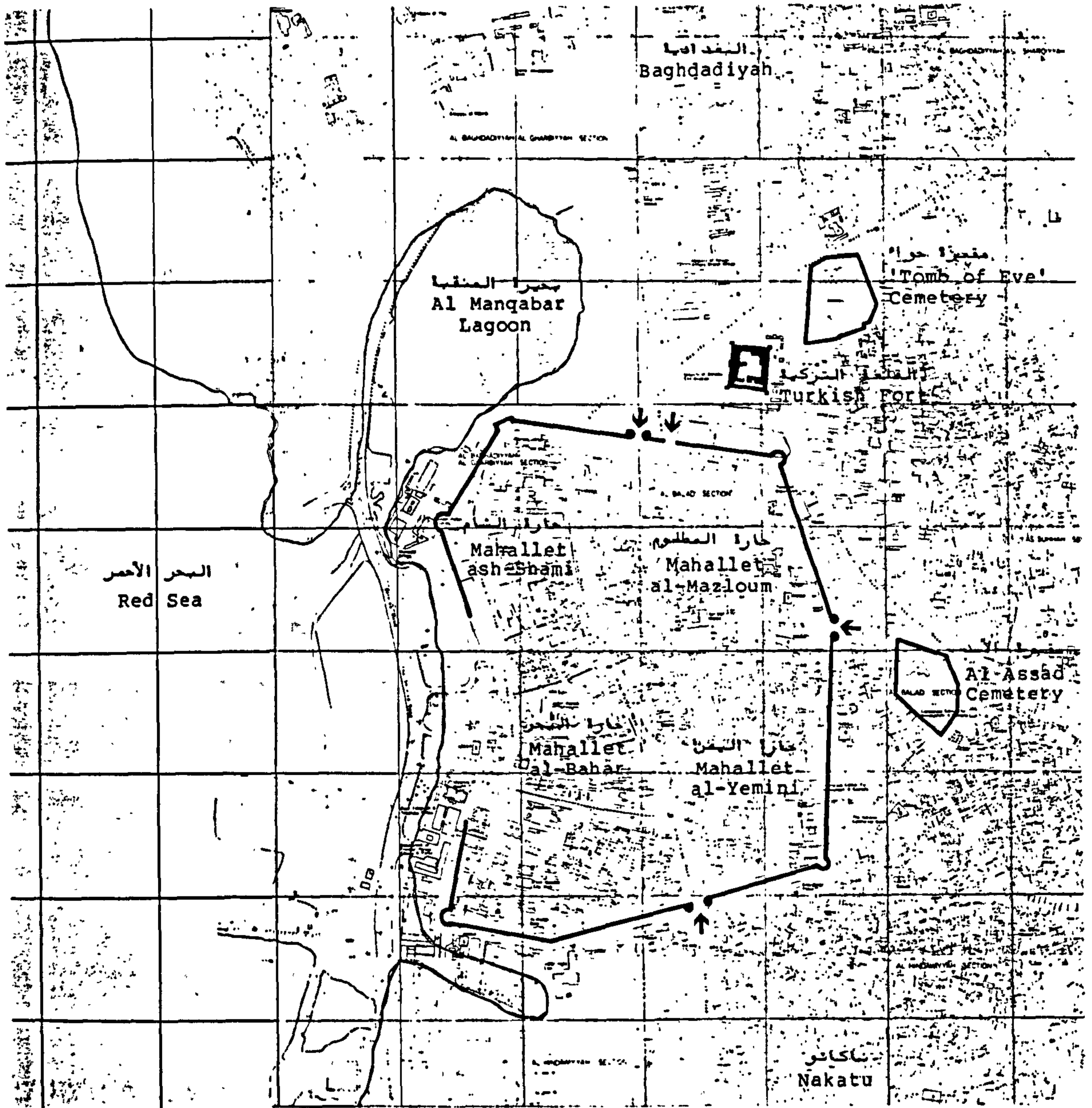


FIGURE 4.4 : The old town of Jeddah

Source : Ministry of Municipal and Rural Affairs, Jeddah Historical area

governed according to the 'Shariah' (the Islamic Law); consequently, an overall social unity was established in the old town.

It is believed that the spatial pattern of the old town related directly to the traditional social organisation. The requirements of private family and public activities played a great role in forming the urban spaces in the town. Consequently the separation of spaces into a hierarchy from totally public to completely private can be seen clearly.

4.2.2.1 The layout

The old city of Jeddah is considered to be a representative example of an Islamic city, comprising the home, mosque and 'suq' (market). Although it shares many characteristics of the Islamic cities, such as compact urban form, harmony and unity of urban environment, the city was not planned around a central mosque like most of the Islamic cities. Nevertheless, the public areas close to the quarter's mosque are the focus of all social activities in the town. Generally the old town is characterised by a dense, compact residential area, with narrow winding alleyways, a hierarchy of open space and an urban pattern and social solidarity which is based on shared religious identity. The town developed organically within its protective wall and the residential area consists of comparatively homogenous communities.

Ahmed Eyuce writes,

"Each and every individual building is an integral part of the whole settlement and plays an indispensable role in the

provision of liveable open spaces of activity and circulation"(18).

Most of the open spaces, alleyways and streets, grew and developed as a result of many small scale decisions which were made by different parties. Taking into consideration that these areas are owned by the community it follows that no individual can take part of the street or open space and build on it.

The author selected an area from the old town to illustrate the traditional layout of the residential quarter (Figure 4.5).

4.2.2.2 The street pattern

The street pattern has responded to the climatic conditions; the town is oriented towards the north-west to benefit from prevailing north-westerly winds, and it demonstrates a gradual transition from the public spaces of the 'suq' (market) through the pedestrian lanes to the semi-private dead-end street and the privacy of the houses. The internal street system in the residential quarter is designed for pedestrian and animal circulation. The narrow winding alleyways are in harmony with each other, and provide shade and channelled cool air for the pedestrian (Figure 4.6 and Photographs 4.1-4.3).

The width of the streets depends on their function and location. The wider streets are found on the periphery of the town and get narrower as they reach the centre of the neighbourhood. The alleyways are as narrow as two metres, while other streets in the 'suq' area, at the periphery,



FIGURE 4.5 : Al Balad (Sample Area No.1)



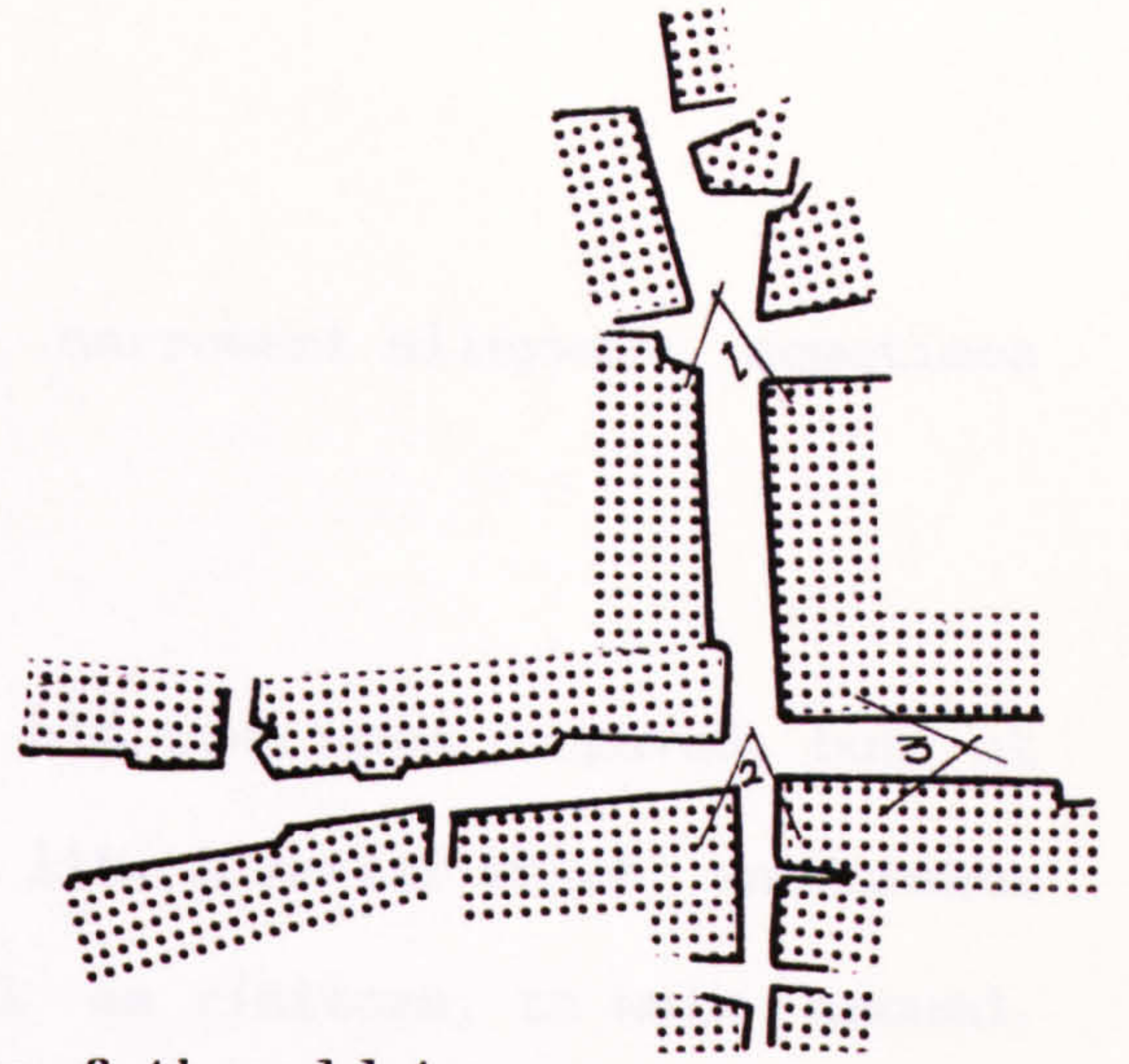
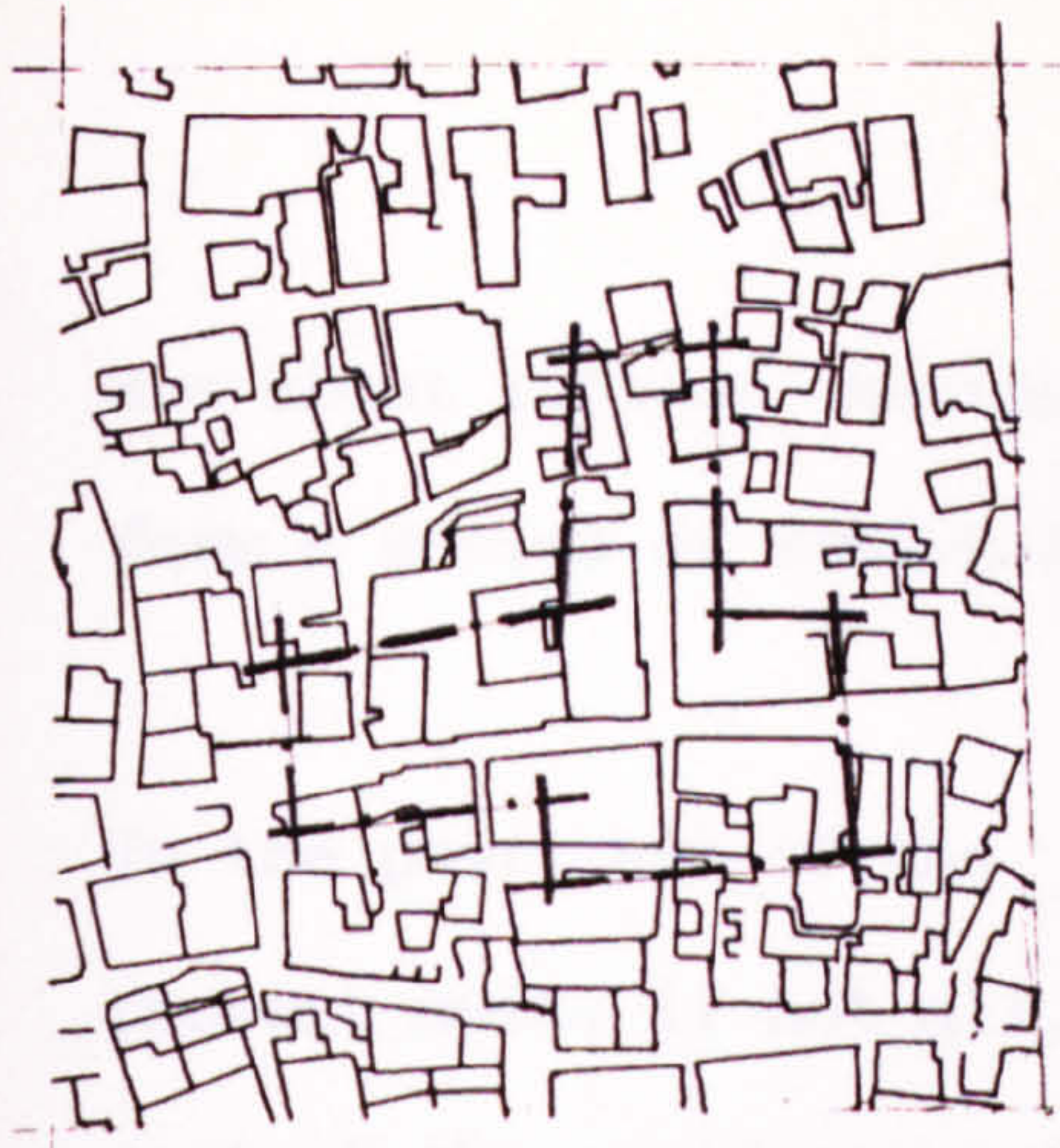


FIGURE 4.6 : The layout of the streets of the old town



PHOTO 4.1



PHOTO 4.3



PHOTO 4.2

Photographs 4.1-4.3 show different Views of the streets of the old town of Jeddah

are about fifteen metres or more. The narrowest alleyways sometimes form a series of semi-private spaces.

In the past all of the streets of the old town were unpaved, but at present most, if not all, are paved and lit, a matter which encourages most of the residents of Jeddah, as well as visitors, to walk around, and to see and feel the richness of the area, both architecturally and socially.

4.2.2.3 The open spaces

It is believed that the overall arrangement of spaces in the old town was guided by the Islamic principle of life, so that they were an essential consideration of public and private life. In his study on the old city of Jeddah, Sultan M Khan found that,

"The characteristic Islamic concern for privacy and clear separation of public life from private life by a hierarchical sequence of progressively more private transitions, was the dominant force shaping the building and interconnecting spaces in Jeddah's old, residential quarters"⁽¹⁹⁾.

Old Jeddah exhibited a recognisable hierarchy of open spaces, and in the residential quarter studied it was found that the narrow streets connect the active public area to secondary public spaces, then through the narrower walkways to small common areas (Figure 4.7). Thus the communal spaces are distributed in the town so that each of the houses is oriented to at least one such space. These communal areas sometimes are very small, perhaps a corner of a winding street, or a set back in a

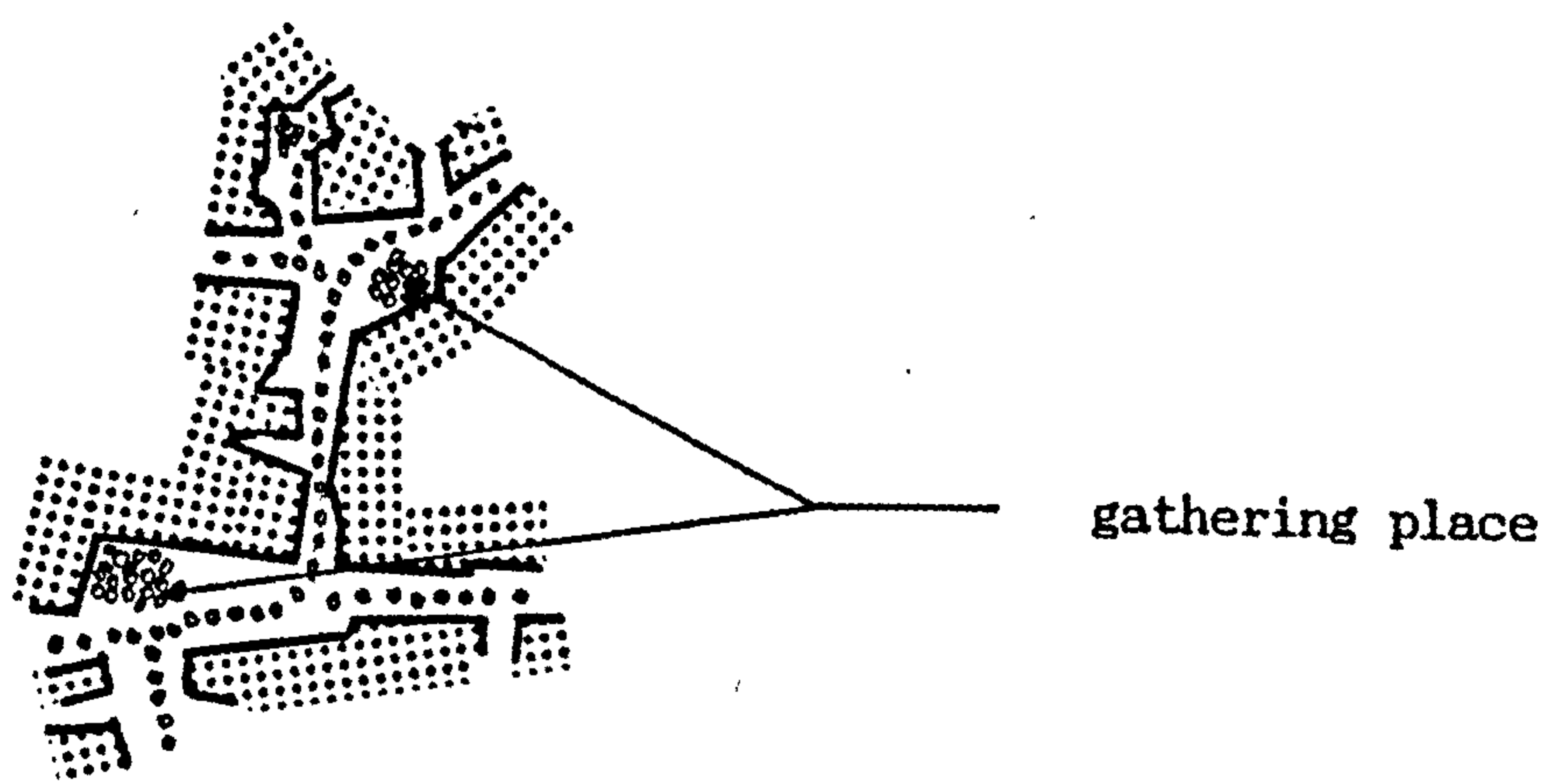


FIGURE 4.7 : Open spaces in the old town

junction of two alleyways, or a cul-de-sac. These spaces are defined by the properties that adjoin them and nobody can change them.

The use of these spaces varied according to their function and size. In the residential quarter most of the spaces, and the culs-de-sac in particular, are used by children, as secure places where they can play. Not only that, but they are also used as places for men to gather, sit, talk and play games, whilst enjoying the advantage of the climatic conditions of the spaces. These spaces are shaded by the adjacent buildings and by projecting windows (rawashin, plural) in particular, as well as being cooled by the air circulation.

The alleyways, streets and open spaces, as well as buildings, emphasise a human scale built for man, and reflect the harmonious relationship man and his environment have with each other.

4.2.2.4 The physical changes

During the last three decades the old town has witnessed many changes. The mixed urban activities in the central area of Jeddah have generated heavy traffic loads in the network of the narrow winding streets in the old part of the city, which was originally meant for pedestrians only. Drastic decisions to introduce vehicular traffic into the old part of the central area of Jeddah by constructing new roads have caused these areas to lose their historical and environmental value as residential districts. For example, the construction of King Faisal street which

runs from the north to the south of the old town, in the mid 1960s, divided the historical area into two parts.

The changes have taken place not only on the periphery of the old city but also within the old area, where the older buildings have been demolished and new buildings have been constructed in their place. Also the open spaces in the residential quarters have been taken over for car parking spaces.

The western section of the old city, closer to the sea, has witnessed tremendous changes. Many high-rise buildings, mainly for commercial and office use, in addition to other urban developments, have replaced many of the traditional houses, as well as changed the image of the historical town, especially along the sea-front. In the past the skyline was dominated by the mosques and minarets, as in other Islamic cities, but nowadays this has changed to modern high-rise buildings, in an international style of building, with reinforced concrete, steel, glass, etc. It is worthwhile noticing here that these new buildings, which have been constructed on the sea-front and along the wide streets, have hidden the remaining traditional buildings (Photograph 4.4).

The other section of the old city that is the eastern part, nowadays represents the traditional residential area with its traditional 'suq', mosques and 'zawyahs'. The physical condition of this part of the town started to deteriorate as a result of the ignorance of the house owners, investors and the municipality. This situation continued until the 1970s when the municipality realised the urban and architectural value

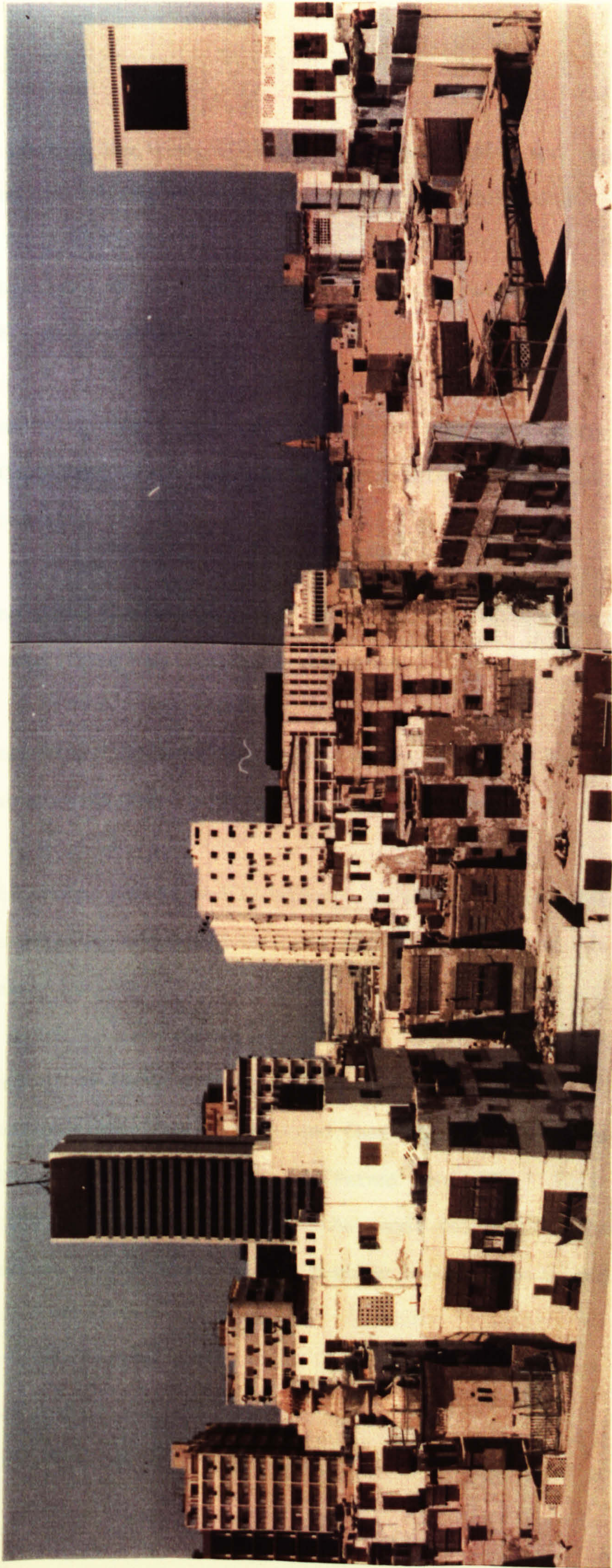


PHOTO 4.4

Major destruction has taken place in the old town. The mosque minarets, which dominated the skyline of the old town, are hidden by high rise buildings. New buildings obstruct the view of the sea and the sea breeze

of this part of the town. Consequently conservation and rehabilitation has taken place under the supervision of the municipality.

The principles of the restoration work, as stated by Mohammed S. Farsi⁽²⁰⁾, are as follows :

1. Preserving the type of materials used and refraining from introducing alien materials inconsistent with the traditional materials.
2. Preserving the architectural aspect of the model without modifying or amplifying the general appearance.
3. Preserving the architectural texture and the surrounding open spaces, with the layout out of small gardens.
4. Introducing slight modifications to the internal distribution of the building elements in order to bring them into line with new uses.

Although most of the surviving traditional houses have been preserved, a new character has been added and that is the painting of doors, 'rawashin', 'mashrabiah', with different colours. This matter has changed the original colour of the wood and might accelerate the deterioration of the wood, unless regular maintenance is undertaken.

4.3 The House and Construction Techniques

4.3.1 Housing types

Up until the late 1940s the entire old part of the city was dominated by one house type that was the traditional house. The traditional houses of Jeddah shared many architectural features with those of other cities in the Western Region of the Arabian peninsula such as Makkah, Madinah, Taif, Yanbo.

The geographical location, social and climatic conditions played a major role in shaping the urban pattern as well as the house form in the old town. Jeddah's climate is considered to be hot-humid, and so consequently all the houses have a large opening, for cross ventilation, with a wooden screen ('Mashrabiah' or 'shish'), to protect the indoor spaces from solar radiation.

The surviving traditional houses in the old town are either in Turkish or Egyptian style or a combination of the two. Jeddah was under the control of the Ottoman empire from the sixteenth century until the beginning of the twentieth century. This period felt the impact of the influence and finance at the hand of the Ottoman. Most of the surviving houses were built in the Turkish style, but in the last half of the nineteenth century, the Egyptian style began to emerge in the construction of Jeddah houses. There was no clear separation between the two styles (Turkish and Egyptian) because the construction was done in both styles at the same time, and the two styles were found in the same building⁽²¹⁾.

However, as a result of some studies carried out on the traditional historical buildings by Robert Mathew, Johnson Marshall and partners, consultants it has been found that there are some characteristics to distinguish between the two styles and these could be summarised as the following.

The houses built in the Turkish style were characterised by small rooms and stairs, two to four storeys high, square or arched openings, simple wooden doors and small 'rawashin', the latter sometimes being found on the ground floor. Houses built in the Egyptian style were characterised by large rooms and stairs, and were usually more than four storeys high, with elongated or square openings; the doors usually had carved ornamentation, sometimes wrought iron-work and glass were used and large 'rawashin' sometimes were connected vertically or horizontally with each other⁽²²⁾.

In spite of all these minor differences, the houses shared many features in general. The limited spaces available within the walls of the town enforced the residents to make full use of space, so the houses were extended vertically to provide sufficient spaces for the extended large families, as well as to catch the sea breeze. The houses were built in various sizes, small, medium and large the area of the majority of the houses ranges from 180 to 400 sq.m., and could be divided into three types according to their location in the urban fabric. The first was the house which had one elevation with many large openings, to provide adequate ventilation, with the 'roshan' and 'mashrabiah' covering the whole elevation. The second, was the house which had two elevations and the third type was the house with more than two elevations. The

openings in the last two types were considerably smaller than in the former, and they were distributed in the elevations to maximise the cross ventilation; most of these openings were covered with 'mashrabbiah'.

4.3.2 Spatial organisation

The surviving houses in the old town illustrate its domestic vernacular architecture. They represent the type of housing that occupied the greater proportion of the land within the wall. They also exhibit the rich architectural heritage of the city.

The organisation and the spatial division of the traditional house in old Jeddah is more or less similar to that of the Islamic house. The spatial division of a muslim house reflected the major social division of the salamik, the domain of the men and guests, and the haramlik, the domain of the women and the private family sanctuary⁽²³⁾. Thus climatic conditions and the strong tradition, usually based on religious requirements, dictated the arrangement of the interior spaces as well as the relationship between the interior and exterior spaces.

As has been mentioned earlier, the houses within the old town are a combination of different styles and sizes; nevertheless they have concepts in common (concept of layout, plan, elevation, treatment, construction techniques, etc.) and share similar characteristics.

In general, the plan of the ground floor is composed of the main entrance hall (dahleez), (usually there were two entrances one for the

men and the other for the women), a reception room for the guests, the office of the head of the family (al maqad), and the servants rooms, bathroom and a space for making tea and coffee (either in a corner of the reception room, or in a separate kitchenette).

The plans of the upper three to four floors are similar to each other. Each floor is composed of a big family room (suffah). The 'suffah' often had its own kitchen and bathroom and was used for eating and entertaining guests of the women and children⁽²⁴⁾. There is another large room (majlis), in addition to medium-sized living and family rooms, and a kitchen and bathroom at the rear of the house; this section is called 'Al Muakhir'. The 'majlis' is usually located towards the street, to catch the breeze, and it is believed that this is normally the coolest room in the house (see Chapter Seven, Section 7.1).

Sultan Khan writes,

"The traditional houses of Jeddah had no rooms which were used solely for one purpose. Rooms in these houses were not allocated to specific use as bedrooms, dining rooms, living rooms, and so on. Interior spaces were functionally polyvalent and non-specific, and were at different times used for eating, sleeping, recreation or domestic tasks"⁽²⁵⁾.

4.3.21 The guest domain

One of the design features of the traditional house was the separation of male and female quarters and this is achieved by the vertical arrangement of the house. Consequently the ground floor, and sometimes the first floor, is considered as semi-private space, where the reception room(s) are usually located near the main entrance hall.

Generally this area is arranged in a way that allows male visitors and guests easy access without disturbing the privacy of female members of the household.

4.3.2.2 The family domain

The upper floors are generally regarded as the living quarters of the family, often the extended family. Rooms and spaces are interchangeably used for various activities, such as sitting, eating, sleeping, etc., so the whole private quarters serve as multi-functional living spaces. However, certain rooms, sometimes serve specific functions, such as the reception room (for female guests) or a sleeping area for use during the afternoon. The respect for privacy in this section of the house is clearly achieved through the overall arrangement of the space as well as the wooden lattice work, 'Mashrabiah', which covers most window openings.

In addition to the habitable rooms, these parts of the house include the kitchen and bathrooms, usually located at the rear of the building, where the domestic smells do not disturb the living quarters. These services are not equipped with modern cooking equipment; the kitchen has a reasonably sized stove and built-in shelving and cupboards for dishes. The kitchen and bathroom did not used to have piped water; water was stored in a container which was filled manually. Nowadays most, if not all, of the houses in the old town have a piped water supply which is connected to a main network.

4.3.2.3 The staircase

The traditional houses have various sizes and shapes of staircase. Usually it is located in the centre of the house, and plays a major role in the arrangement of the interior spaces, where all of the floors and rooms are distributed around the vertical stair well. Not only that but it also allows air movement within the building, ie. it allows a continuous air movement from the ground floor to the roof, drawing in the cool air from the adjacent streets and alleyways through the open design of the rooms, in a similar way to a courtyard which collects cool night air. Also the stair well works to some extent as a wind catcher, (Malqaf), catching the cool breeze and circulating it through the house. In some houses there are additional separate stairs which are used mainly by servants.

4.3.2.4 The projecting spaces

The projecting interior spaces of the houses in the old town were only of two types. Firstly, balconies were used in a minority of houses to connect the rooms of the upper floors, usually at the same floor level; these balconies had decorated wooden columns and were screened with wooden work, both for safety and privacy. They were used for leisure, ie. sitting and enjoying the cool sea breeze, as well as for providing shade for the interior spaces. Secondly, there was projecting space from inside the room (roshan). This type was very common and carefully distributed into different spaces within the house. The 'roshan' was raised about 60cm or more above the room floor level and provided an

extension of the inner space, which the residents could use as a sitting or sleeping space. It was found in different shapes and sizes. Ashraf Salloum writes,

"The usual dimensions of the single (roshan) were 3 metres in height, 2.3 metres in width and 1.1 metres to 1.9 metres in depth; this was to allow sufficient space for a sleeping adult. Some of the roshan were built to a depth of 1.9 metres to accommodate a man and his wife"⁽²⁶⁾ (Figure 4.8).

4.3.2.5 The roof

The roof was considered to be one of the important parts of the house. It played a significant social role where the members of the family, especially women, gathered after sunset in an elevated and private open space. The roofs were surrounded by a high parapet wall, with a series of openings. These openings were covered with wooden screens and decorated in different shapes, in such a way that air movement was allowed as well as the freedom to view, out without disturbing the privacy of those on the roof. The roof was used extensively during the summer nights for gathering and sleeping, as well as for the celebration of family occasions such as weddings, births, etc.

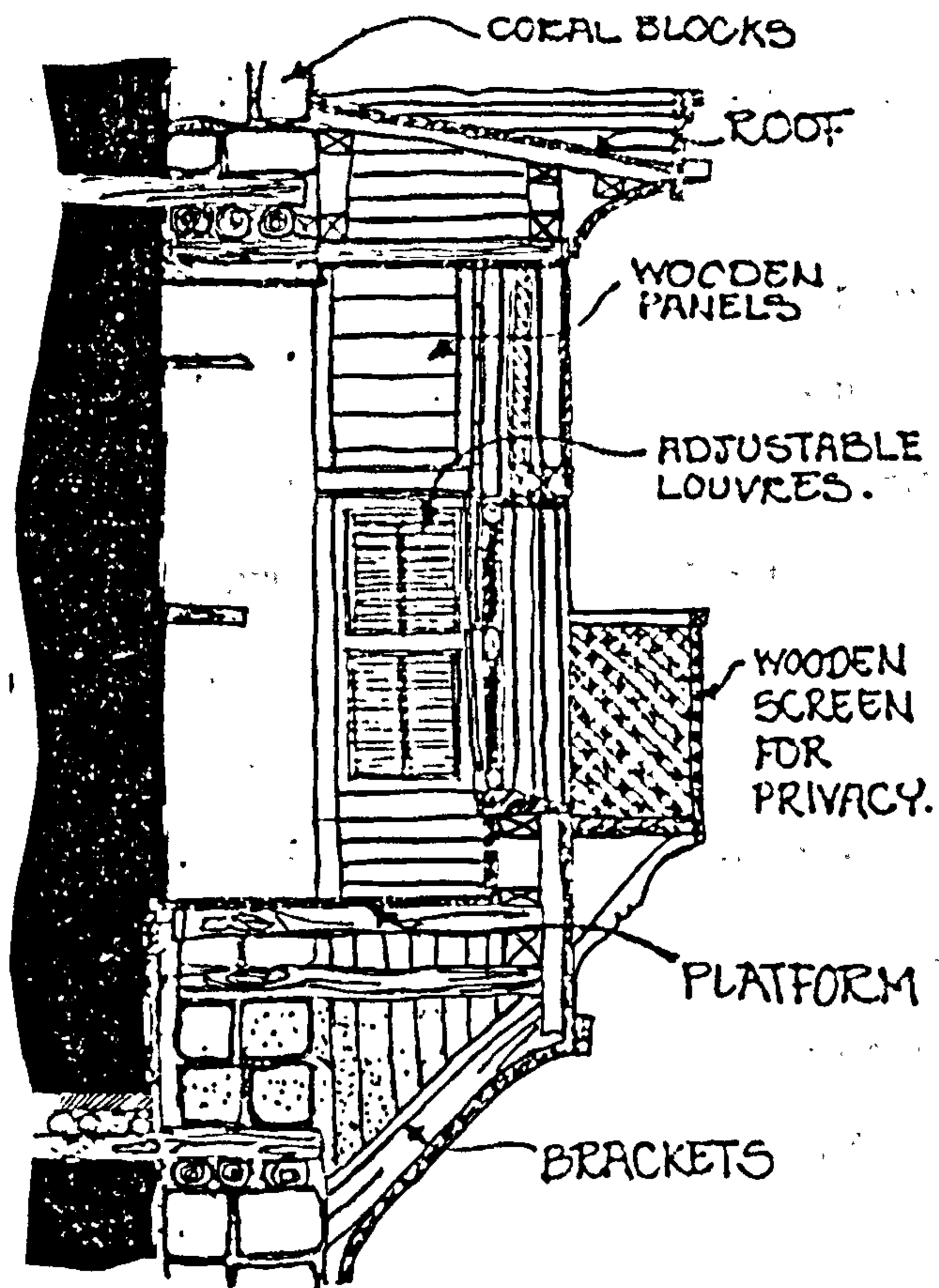


FIGURE 4.8 : Roshan details

Source : Ashraf, S., 1983

4.3.3 The use of space

4.3.3.1 Activities

The use of spaces inside the house is affected by the traditions and way of life of the residents. Men usually gather in the men's domain, to discuss their daily business or problems as well as play games (cards, dominoes, etc.). In the family quarters, the women's domain is the busiest part of the house, a place where the women spend most of their time inside the house, ie. preparing the food for the family, cleaning, looking after the children. Their additional activities include meeting friends, sitting with other members of the family and sleeping. It is worthwhile mentioning that, female neighbours usually visit each other and break up their free time by discussing their daily matters, listening to the radio or spending their time productively, preparing food for a large party, or making handcrafts and food, for sale in the suq by men.

Most of the activities can be carried out in any room of the house, for example the members of the family could sleep in the reception room or guest room whilst there were no guests.

4.3.3.2 Furnishing

The houses are furnished with simple adequate furniture with carpets, mats and cushions being the main items of furniture. These are easy to roll up and store after use. Sufficient storage space is provided in

the house for this reason, in the form of cupboards or open niches built into the walls. The reception area, where male guests are entertained receives a lot of attention from the owner of the house. It is usually the most decorated and best furnished of the rooms. Most, if not all of the reception area is furnished with long upholstered wooden benches which are usually covered with colourful rugs and strewn with soft cushions.

4.3.4 The exterior features of the houses

The facades of the traditional houses of old Jeddah are characterised by their wooden fixtures, doors, windows and 'Rawashin', (singular 'Roshan').

In spite of the differences between the Turkish and Egyptian styles, the facades of the buildings share common features. Generally speaking, the facades were simple in concept, a rectangular wall with various openings, but the combination of these openings at different levels, with different features ('Roshan', 'Mashrabiah', 'Shish'), provided an excellent solution to the climatic and social requirements. In addition to that, the projecting spaces, such as wooden balconies and 'Rawashin', the wooden and plaster ornamentation and the roof treatment, emphasised the richness of the facades of these houses.

In older Jeddah houses, the emphasis has been given to the windows, whether flat or projected. A window should provide adequate ventilation, reduce the bright glare of the sun and maintain the desired

level of privacy for the occupants. To achieve this the builders, after trial and error, adopted effective devices to cover the openings. These are 'Roshan' or 'Mashrabiah', and 'shish' (see Glossary).

The 'Roshan' is one of the most distinguished external features of the traditional houses of Jeddah. It is the focal point of life within the room. 'Rawashin' were constructed from teak, and in some houses the 'rawashin' were continuous from the ground floor to the top floors. According to Sultan Khan,

"'Rawashin' were used singly, stacked vertically or arrayed horizontally according to the needs of the house. They varied in quality and in size, according to the owner's means and taste. Timber reinforcing was provided in the masonry walls to support them and of course woodworking skills abound in intricate panels, cornices, eaves and shutters"⁽²⁷⁾.

They display a large variety of size, treatment and arrangement on the facade, so that it is hard to find two identical 'rawashin' in the traditional houses of old Jeddah. However, it is worthwhile mentioning the six general types as identified by Sultan Khan (Figure 4.9). Concerning the details of each type, although they vary from one house to another, they all serve similar functions of controlling the ventilation of the interior, maintaining privacy and enhancing the architectural character of the exterior of the traditional houses.

Among the main exterior features of the traditional house are the distinctive entrances. These entrances were made of teak boards. Most, if not all, of the doors were decorated with very rich incised designs. Abdulla Bhokhari writes,

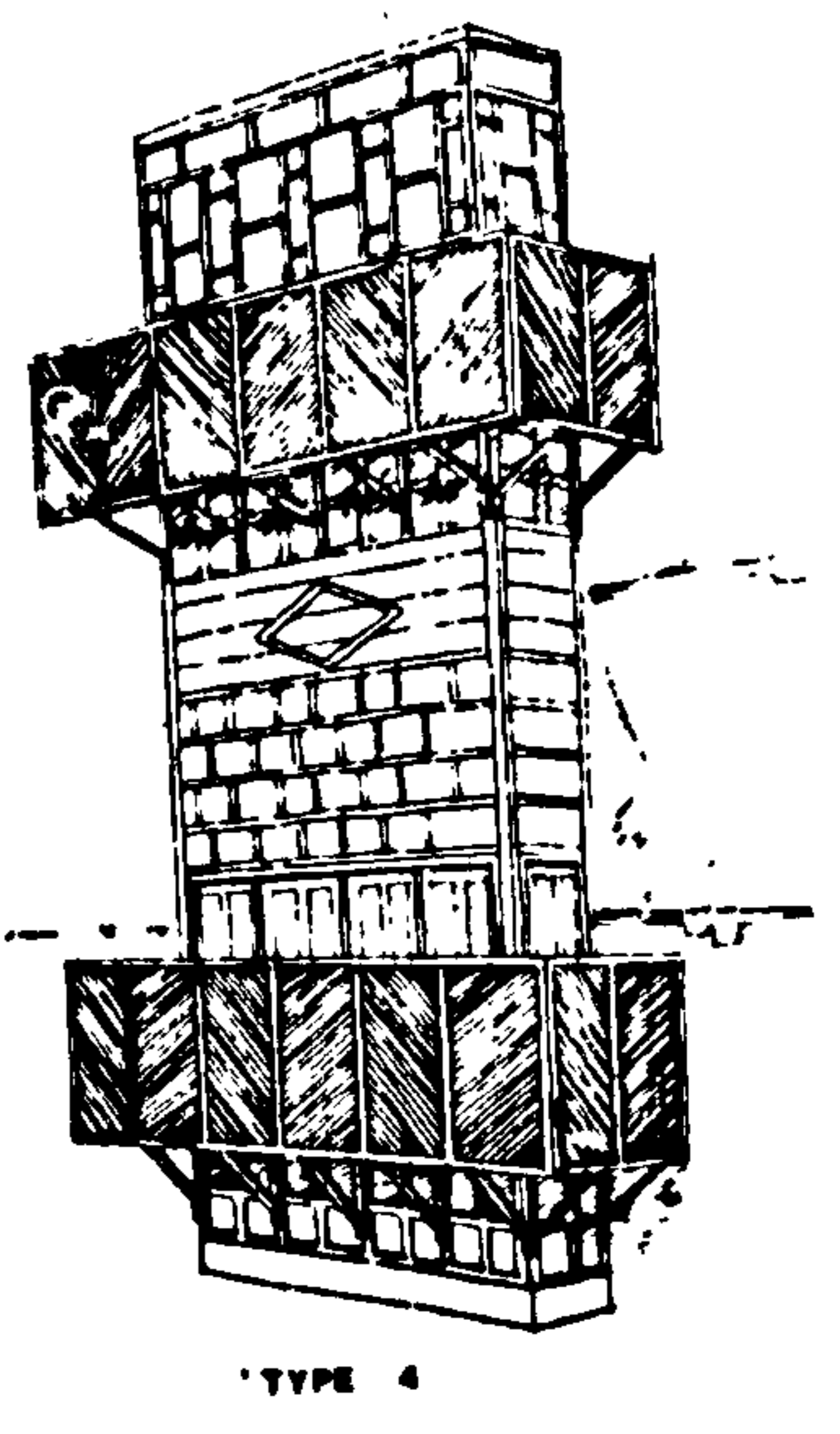
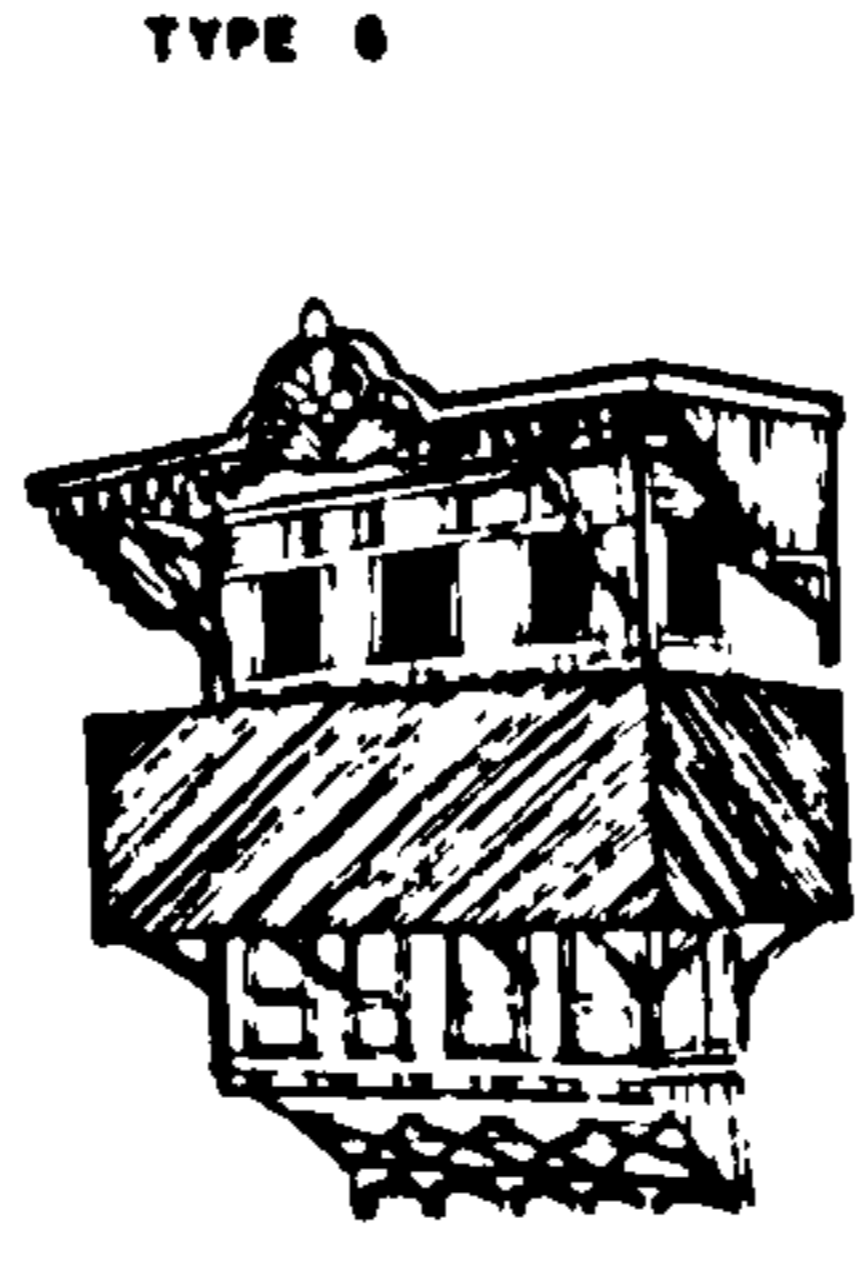
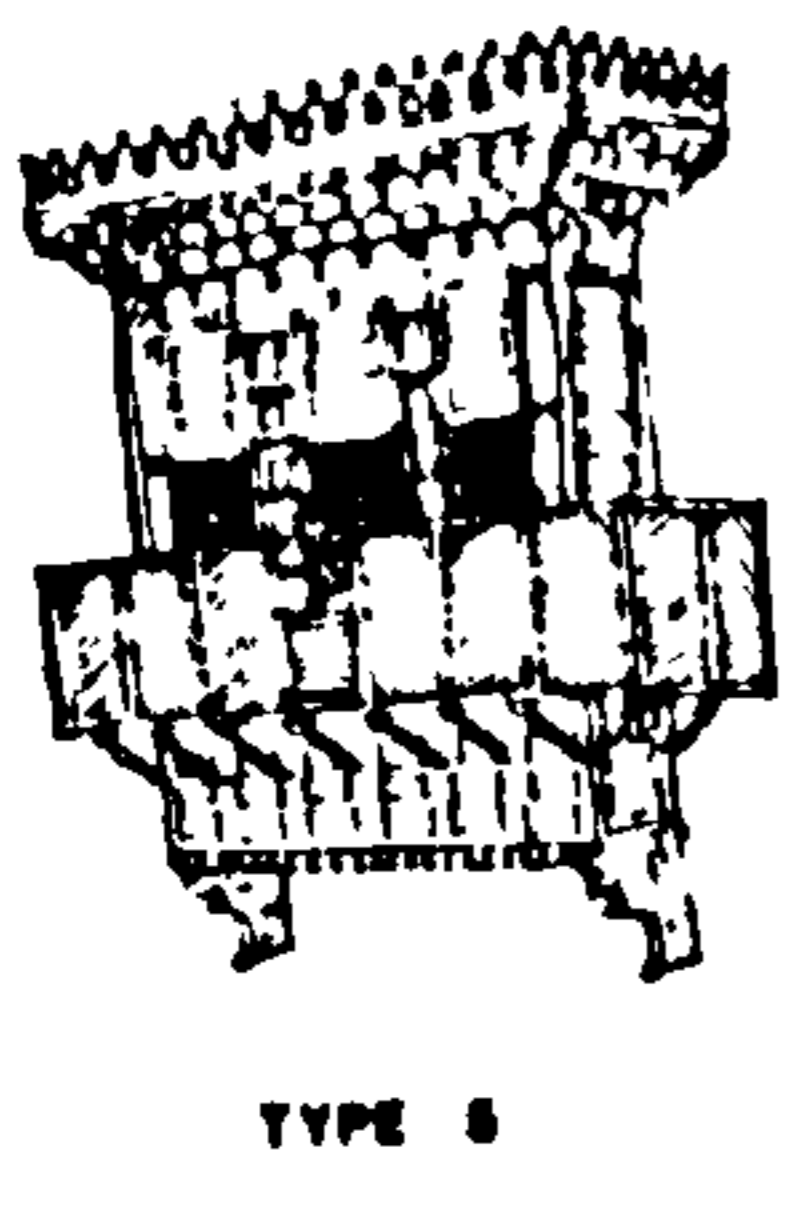
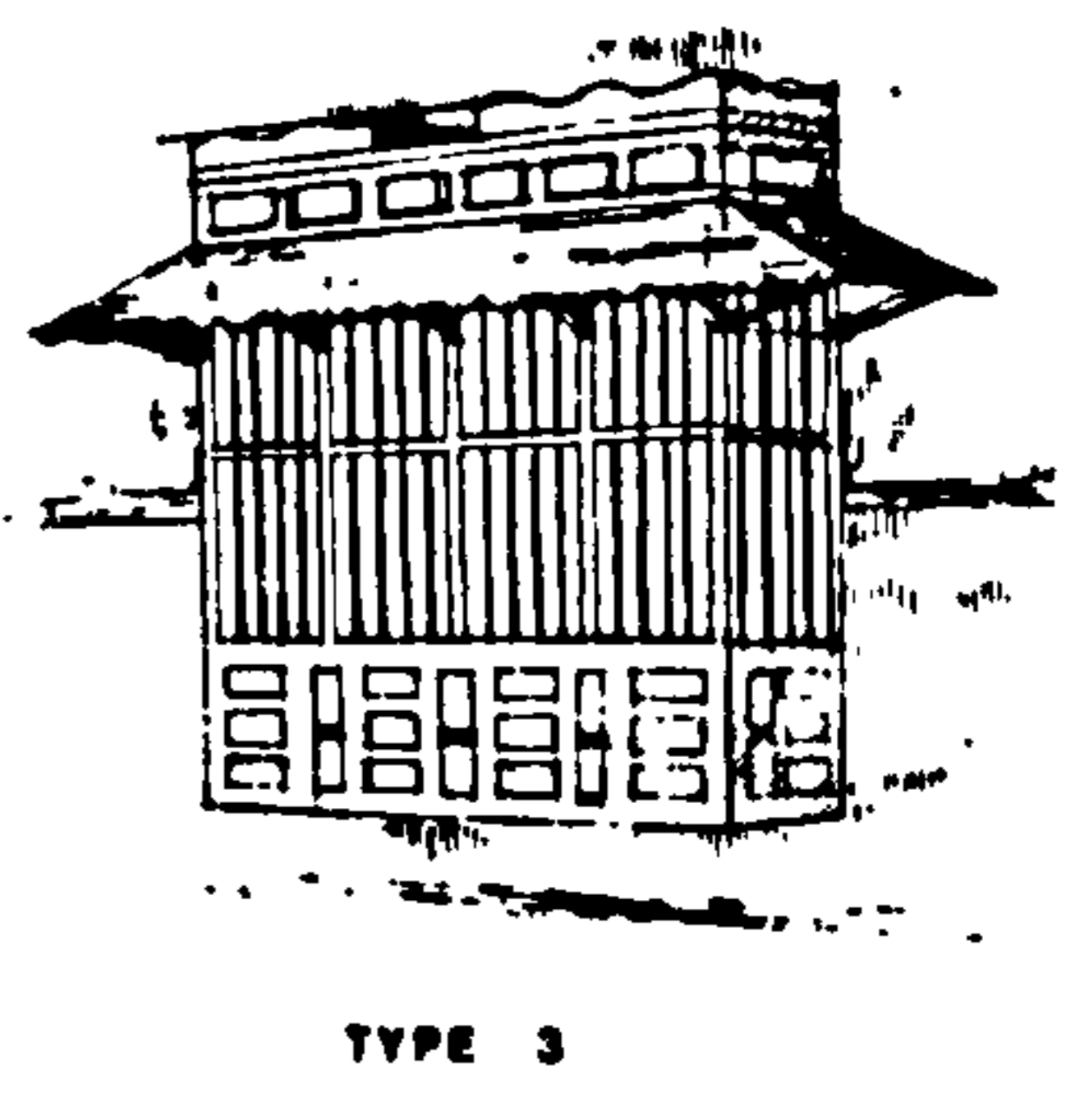
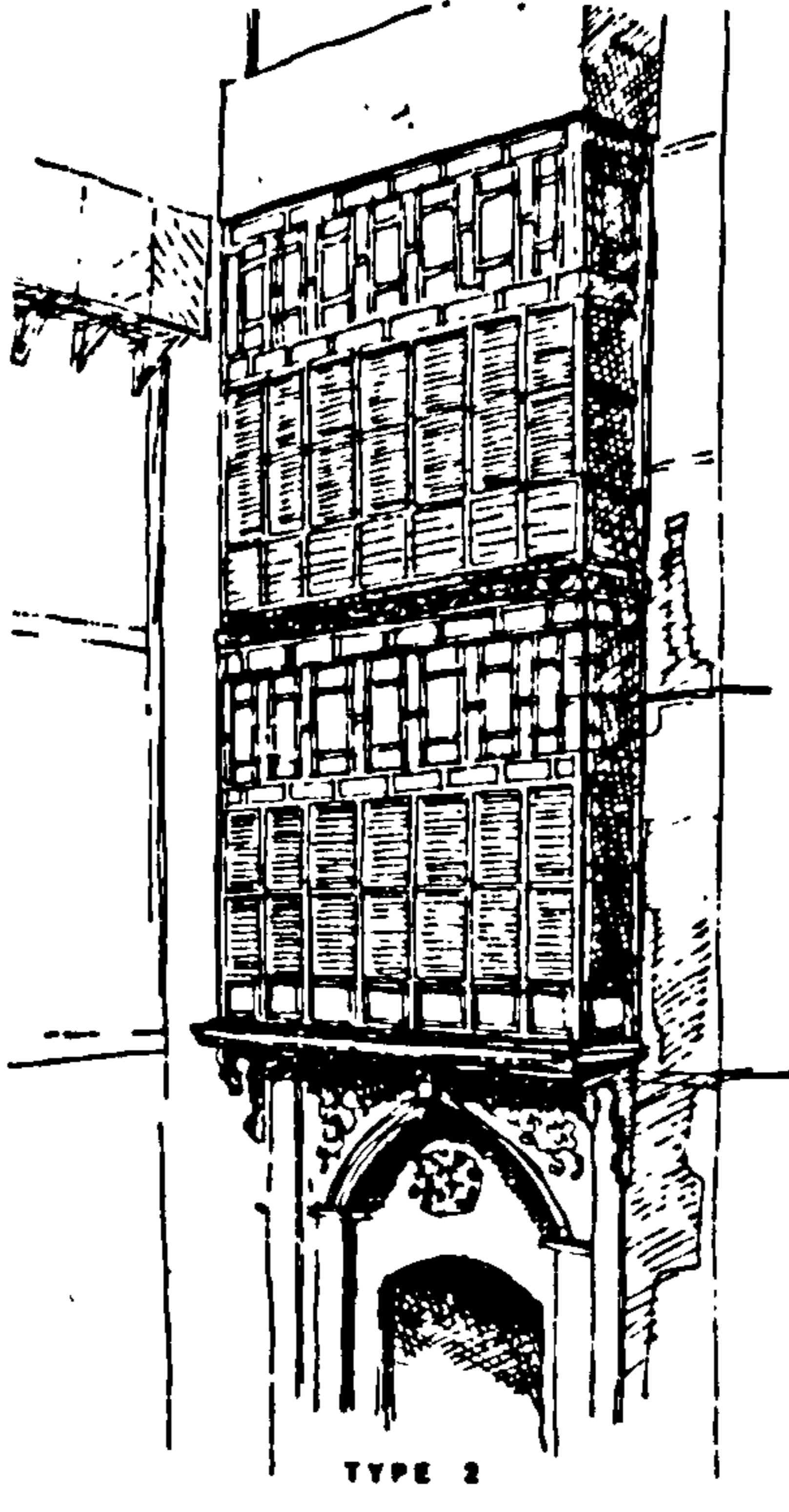
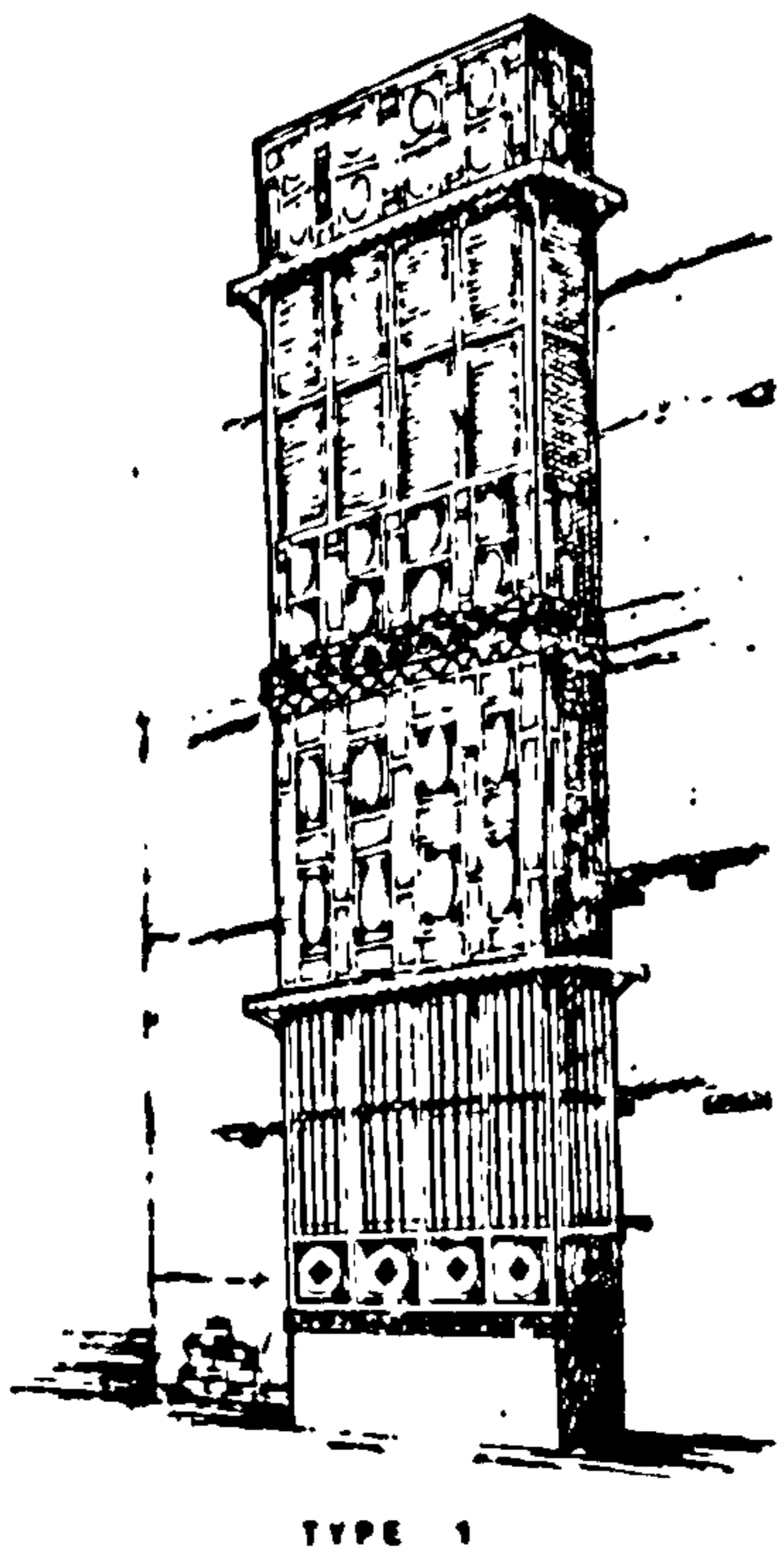


FIGURE 4.9 : Roshan types
Source : Khan, S., 1981

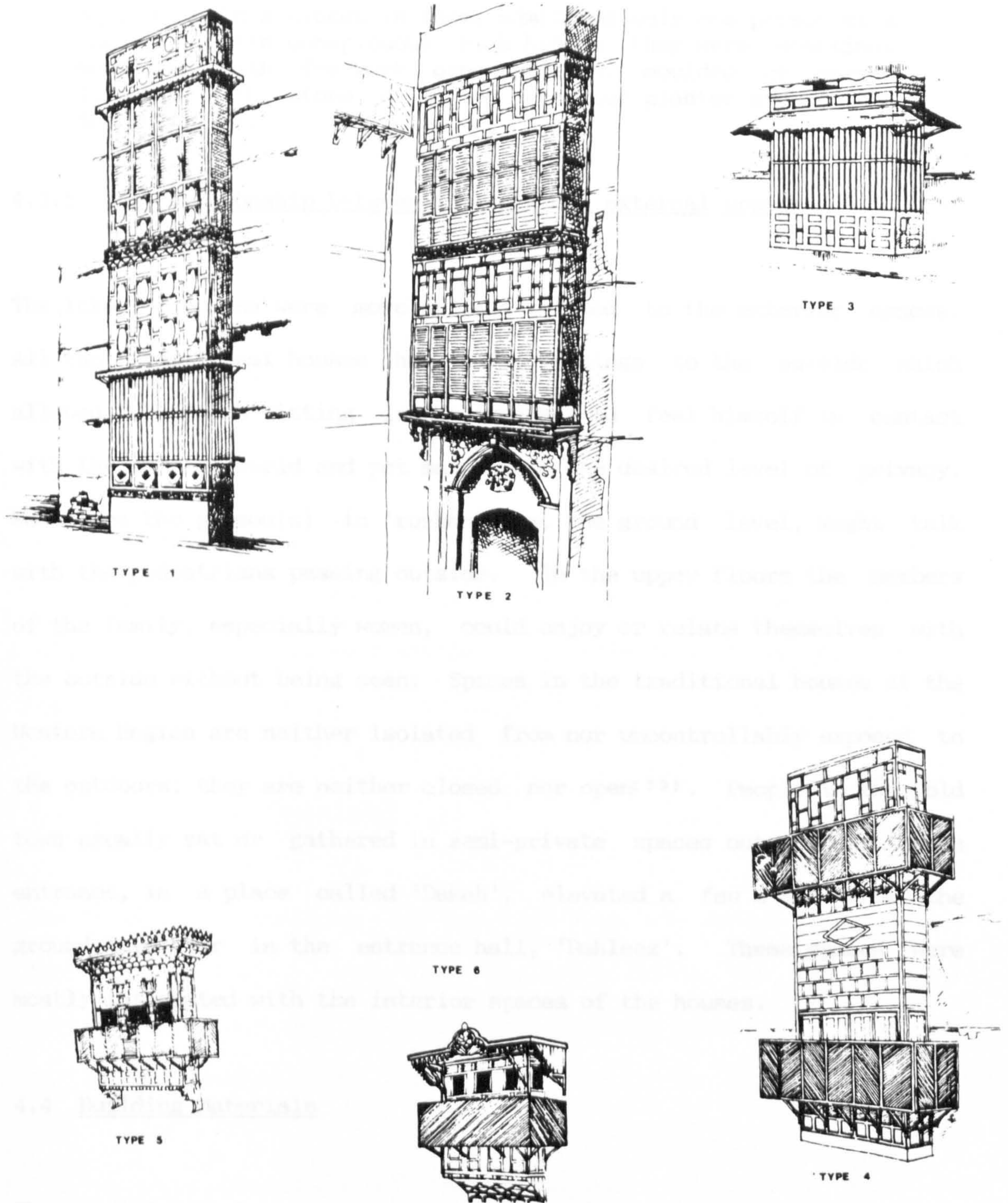


FIGURE 4.9 : Roshan types

Source : Khan, S., 1981

"Almost all front doors in the old Jeddah were made of two identical heavy slabs. Quite often the door slabs were equipped with a wicket in them, admitting only one person at a time, and with conspicuous rich hinges they were sometimes decorated with fretwork ornamentation, moulded or carved directly on the stone or on the exterior plaster around the doorways"⁽²⁸⁾.

4.3.5 The relationship between internal and external spaces

The interior spaces were more or less related to the exterior spaces. All the traditional houses had large openings to the outside which allowed the person sitting in the 'roshan' to feel himself in contact with the outside world and yet maintained the desired level of privacy. Sometimes the person(s) in 'roshan', at the ground level, might talk with the pedestrians passing outside. In the upper floors the members of the family, especially women, could enjoy or relate themselves with the outside without being seen. Spaces in the traditional houses of the Western Region are neither isolated from nor uncontrollably exposed to the outdoors; they are neither closed nor open⁽²⁹⁾. People in the old town usually sat or gathered in semi-private spaces outside the house entrance, in a place called 'Dakah', elevated a few steps from the ground level, or in the entrance hall, 'Dahleez'. These spaces were mostly integrated with the interior spaces of the houses.

4.4 Building Materials

The traditional houses were constructed of local building materials, except for wood which was imported. Coral reef stone (Hajar Mangaby or Cashur) was the main building material. It was used for the construction of the walls, partitions and foundations. It was found in

large quantities, near the old town called 'Al Mangabah', where the specialised labour force cut the coral stone into pieces and shapes as required. Wood was the second main building material. It was imported mainly from India and Java. The skilled carpenters shaped the wood into different forms according to the needs; it was used for doors, windows, 'rawashin' or 'mashrabiah', decoration as well as structural elements such as beams and lintels. Palm trunks were also used as beams.

Gypsum and Lime were used to plaster the walls and ceilings; the latter was obtained by burning the small coral stones in special ovens.

Mud was obtained from the sea bed (particularly from the lagoon called 'bahyrat al arbaeen') as well as from a nearby site outside the city wall, builders used it as a mortar or for plastering some parts of the house.

4.5 Construction Techniques

The building techniques in the old town of Jeddah consisted of traditional methods, which were characterised by the use of local building materials and indigenous methods and techniques. They were mainly load bearing walls (Figure 4.10).

The whole construction of the traditional houses was under the supervision of the builders, 'Muallemeen', who drew the foundation plan directly on the ground as well as the location of the walls, rooms, stairs, etc. It is worth mentioning here that all of the construction

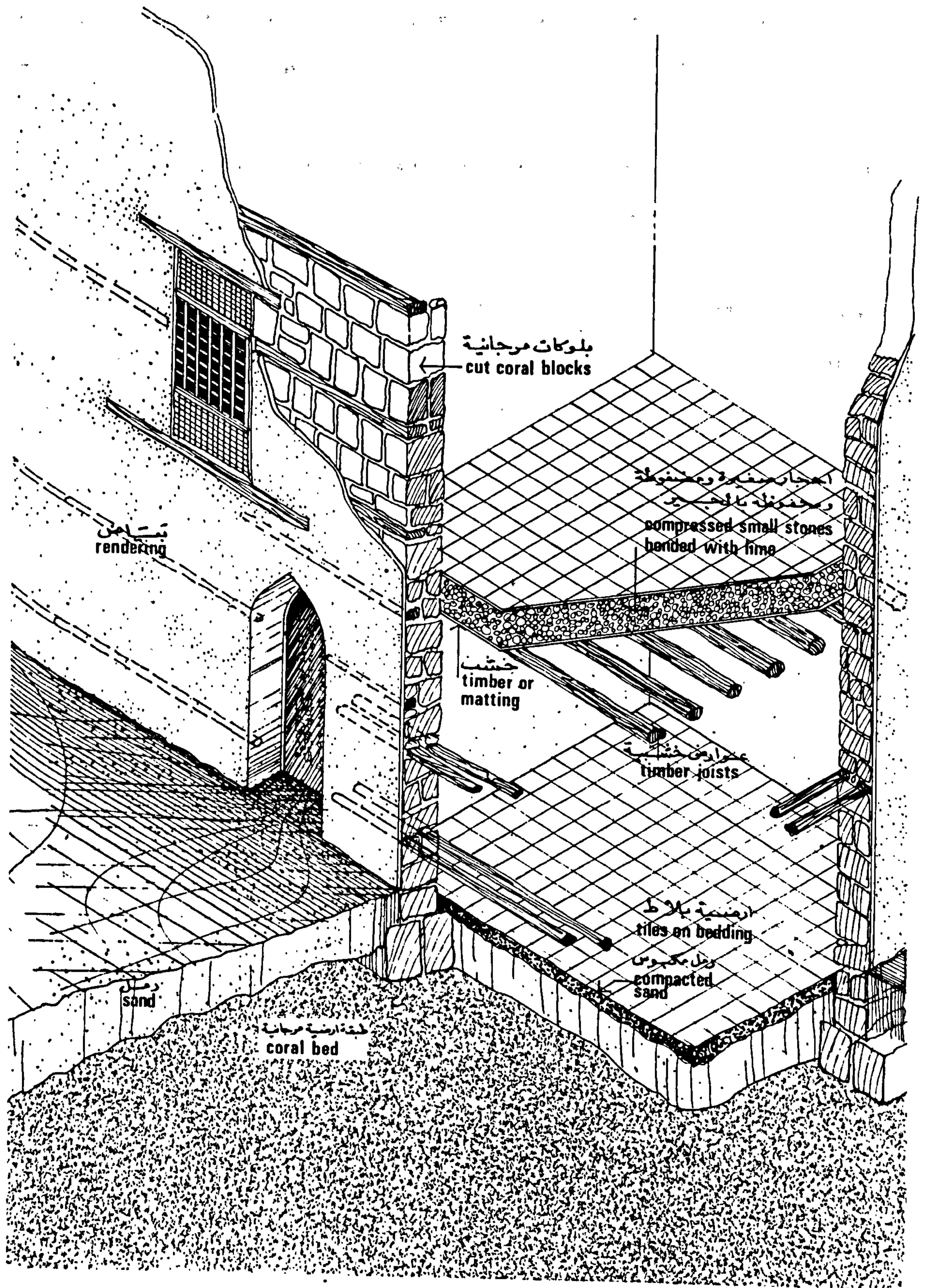


FIGURE 4.10 : Typical construction of the traditional houses

Source : Training Seminar for Engineers, 1984

work was done manually and the average erection time of one of the traditional houses was approximately four to five years⁽³⁰⁾.

The foundation of the buildings was constructed with coral limestone or sometimes stone with mud mortar at a depth of 1 metre.

The walls were constructed of a block of coral limestone. The external walls were reinforced with horizontal wooden beams (gandel) which were placed equally at every five to six courses of coral stone. Consequently the wooden beams enabled the builders to build higher buildings, and to maintain them. For instance, any crack or deterioration in a part of the wall could be maintained by the suspension of the other part from the wooden beam. The walls were plastered both inside and out, but the wooden beams were usually left exposed.

The openings in the walls were spanned by wooden lintels or sometimes by masonry arches.

The floor was constructed with wooden beams (gandel) or palm trunks. On top of that was laid timber boards, which were then covered with a layer of clay or rubble of coral limestone and lime mortar.

The roof was constructed in the same way as the floors, but with a thicker layer of limestone rubble and lime mortar. Sometimes the roofs were constructed differently, as described by Sultan Khan,

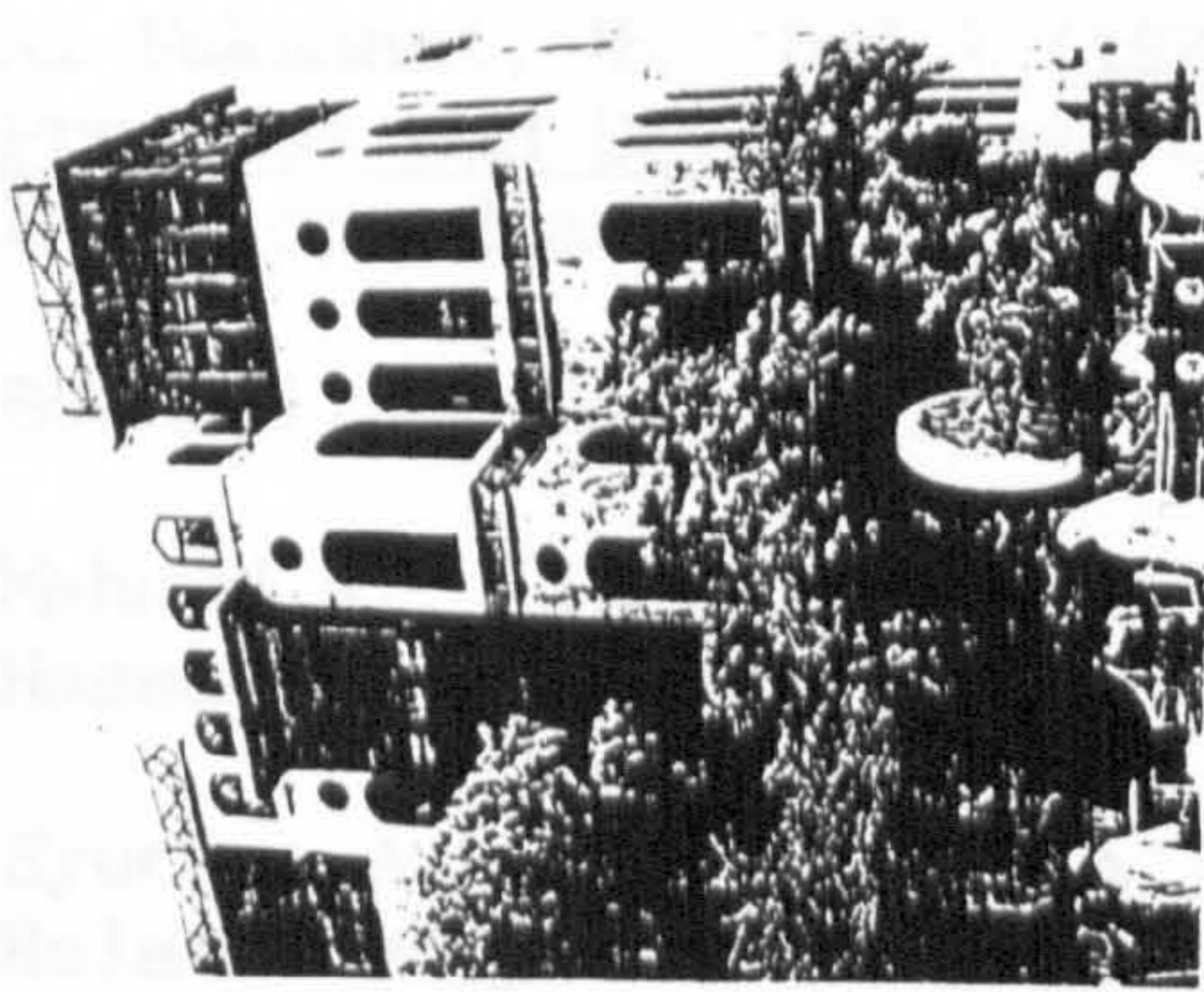
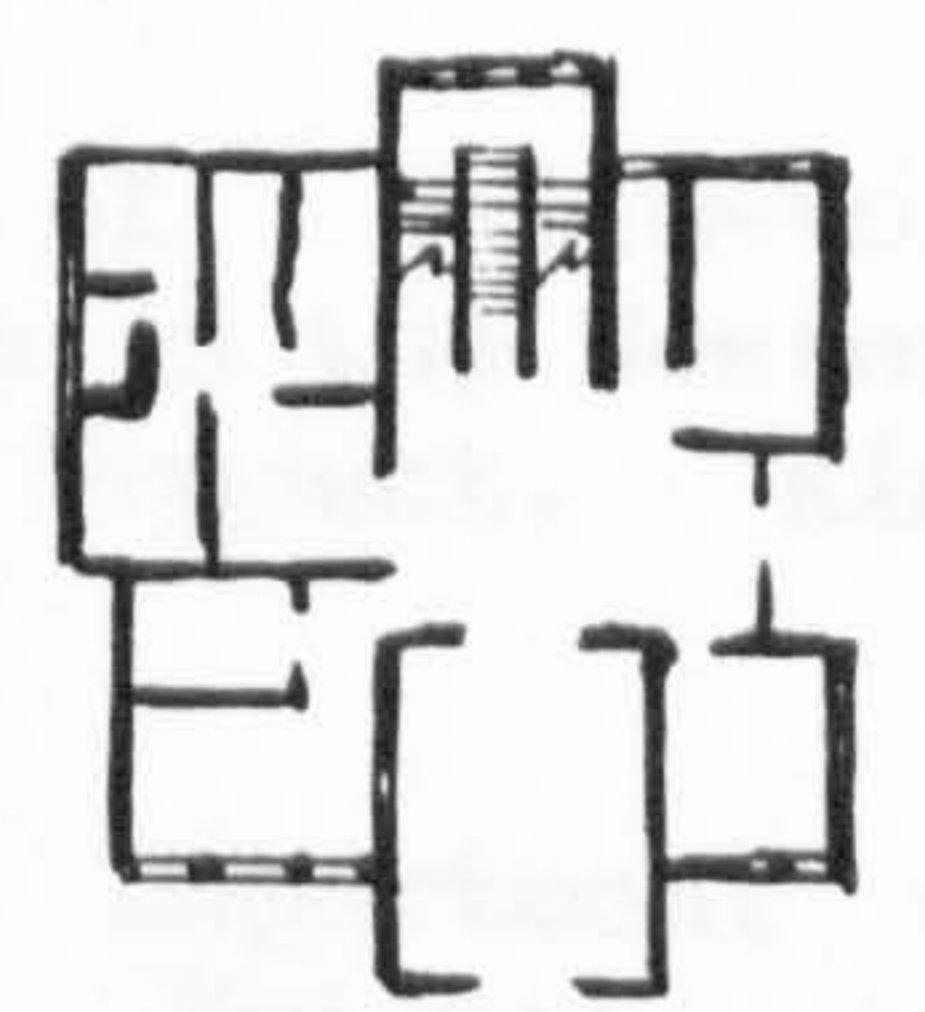
"on the top of the joists (timber joists) was placed one centimetre of smooth planking with straw mats on top. followed by layers of four centimetres of wet earth, three centimetres of dry earth, three centimetres of pulverised pebbles and lime. and, finally a top coat of smooth lime-based plaster"⁽³¹⁾.

The roofs were usually laid to a slight fall to allow rainwater to drain and collect, as mentioned earlier.

4.6 Summary

The inhabitants of the old city of Jeddah were able to adapt themselves to the harsh environment of a very hot humid climate, a scarcity of water, and of other facilities. They built a homogeneous environment. The narrow streets and the traditional houses are the main feature of the old city of Jeddah. The houses were designed with full consideration for the social and climatic requirements (see table 4.1). Buildings were constructed apart from each other and provided with large openings in the facades, to allow free movement of air, both through and around the buildings, whilst maintaining the desired level of privacy.

TABLE 4.1 : SUMMARY OF HOUSING TYPES IN THE OLD PART OF THE CITY (up to late 1940s)

<p>TRADITIONAL HOUSE</p>	
	
<p><u>% of distribution</u> Until the late 1940s the entire old part of the city was dominated by one house type that is traditional house.</p>	
<p><u>Area</u> 180-400m²</p>	
<p><u>Height</u> 3-5 storeys high</p>	
<p><u>Plan</u></p> <ul style="list-style-type: none"> - Compact plan - Rooms are arranged around central stair- case - Reception areas usually faced the street 	<p><u>Rooms</u></p> <ul style="list-style-type: none"> - Not confined to specific function - Differ in size <p><u>Kitchen</u></p> <ul style="list-style-type: none"> - Small kitchen - Not equipped with piped water - Some fixed cooking equipment - Built-in dish shelf - Usually located within the rear of the house <p><u>Bathroom</u></p> <ul style="list-style-type: none"> - Small bathroom - Not equipped with piped water - Usually located in the rear of the house <p><u>Balconies</u></p> <ul style="list-style-type: none"> - Not all houses have balconies - Small and narrow - Usually constructed in wood <p><u>Roof</u></p> <ul style="list-style-type: none"> - Surrounded with high parapet walls - Opening within the parapet walls - Sometimes it is divided into different zones - Usually has one to two rooms <p><u>Building materials</u></p> <ul style="list-style-type: none"> - Coral reef stone - Wood - Mud - Gypsum - Lime

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CHAPTER 5

CHAPTER FIVE : THE EVOLUTION OF THE TRANSITIONAL AREA

Introduction

- 5.1.1 The area definition
- 5.1.2 The urban land use pattern
- 5.1.3 Social aspects
 - 5.1.3.1 Ethnic groups
 - 5.1.3.2 Types of employment
 - 5.1.3.3 Income class structure

5.1.4 Utilities and services

- 5.1.4.1 Water
- 5.1.4.2 Sewerage
- 5.1.4.3 Storm water drainage
- 5.1.4.4 Fuel
- 5.1.4.5 Electricity
- 5.1.4.6 Transportation
- 5.1.4.7 Summary

5.2 Residential Districts

- 5.2.1 Relationship of 'haras'
- 5.2.2 The spatial organisation of the transitional area
 - 5.2.2.1 The layout
 - 5.2.2.2 The open spaces

5.2.3 The physical changes

5.3 The House and Construction Techniques

- 5.3.1 Housing types
- 5.3.2 House function
- 5.3.3 Spatial organisation
 - 5.3.3.1 Spatial organisation of Al Beut Al Shabiah
 - 5.3.3.2 Spatial organisation of the apartment buildings
 - 5.3.3.3 Spatial organisation of the villas
 - 5.3.3.4 The rooms
 - 5.3.3.5 The kitchen
 - 5.3.3.6 The bathroom
 - 5.3.3.7 The balcony
 - 5.3.3.8 The roof
- 5.3.4 The use of space
 - 5.3.4.1 Activities
 - 5.3.4.2 Furnishing

- 5.3.5 The exterior features of the houses
- 5.3.6 The relationship between internal and external spaces

5.4 Building Materials

5.5 Construction Techniques

5.6 Summary

References

CHAPTER FIVE

THE EVOLUTION OF THE TRANSITIONAL AREA

Introduction

Up until the late 1940s most of the city's physical development took place inside the wall. In 1947, however, the city wall was demolished to meet the expectations of future development. In the early 1950's the city witnessed tremendous growth, and this was associated with rapid changes both in the physical and social life-style of the inhabitants. These included changes at the house level and at that of the neighbourhood.

This chapter will discuss the transitional area of the city and its residential areas. It starts with the area definition, the essential aspects that affect the built environment and the residential districts and is followed by an analytical study of the housing types that have emerged in this part of the city.

5.1.1 The area definition

The transitional area is considered to be that part of the city outside the walls which was constructed mainly between the late 1940s and the early 1970s. The area consists of one large development area called 'Al Sabeel', adjacent to the old town, and other scattered developments located near the major urban developments. These include the airport, the 'Khazam' Royal Palace, the Turkish fort (now the Military Headquarters in Jeddah), the harbour and the oil refinery. These are in addition to the other settlements north and east of the city, mentioned before in Chapter Four. In every case the suburban pattern is a typical organic layout, haphazardly planned.

From the aerial photograph of the city in 1948 (Figure 5.1) one could say that the built-up area at that time covered almost all of the total area of the old town. All of the land surrounding Jeddah was undeveloped, vacant desert used as grazing land, except for a few scattered residential settlements on the outskirts. However, the photograph also shows the early signs of the physical expansion which took place to the south and east of the city.

With the demolition of the old town wall in 1947 (1367 AH), Jeddah entered a new phase of development. The construction of the urban projects, mentioned earlier, accelerated the growth of the city. Consequently the old town, as well as each of the satellite suburbs, expanded and covered the undeveloped land around old Jeddah. It is noticeable that most of the urban expansion took place along the two

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SUBURBAN
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OLD CITY

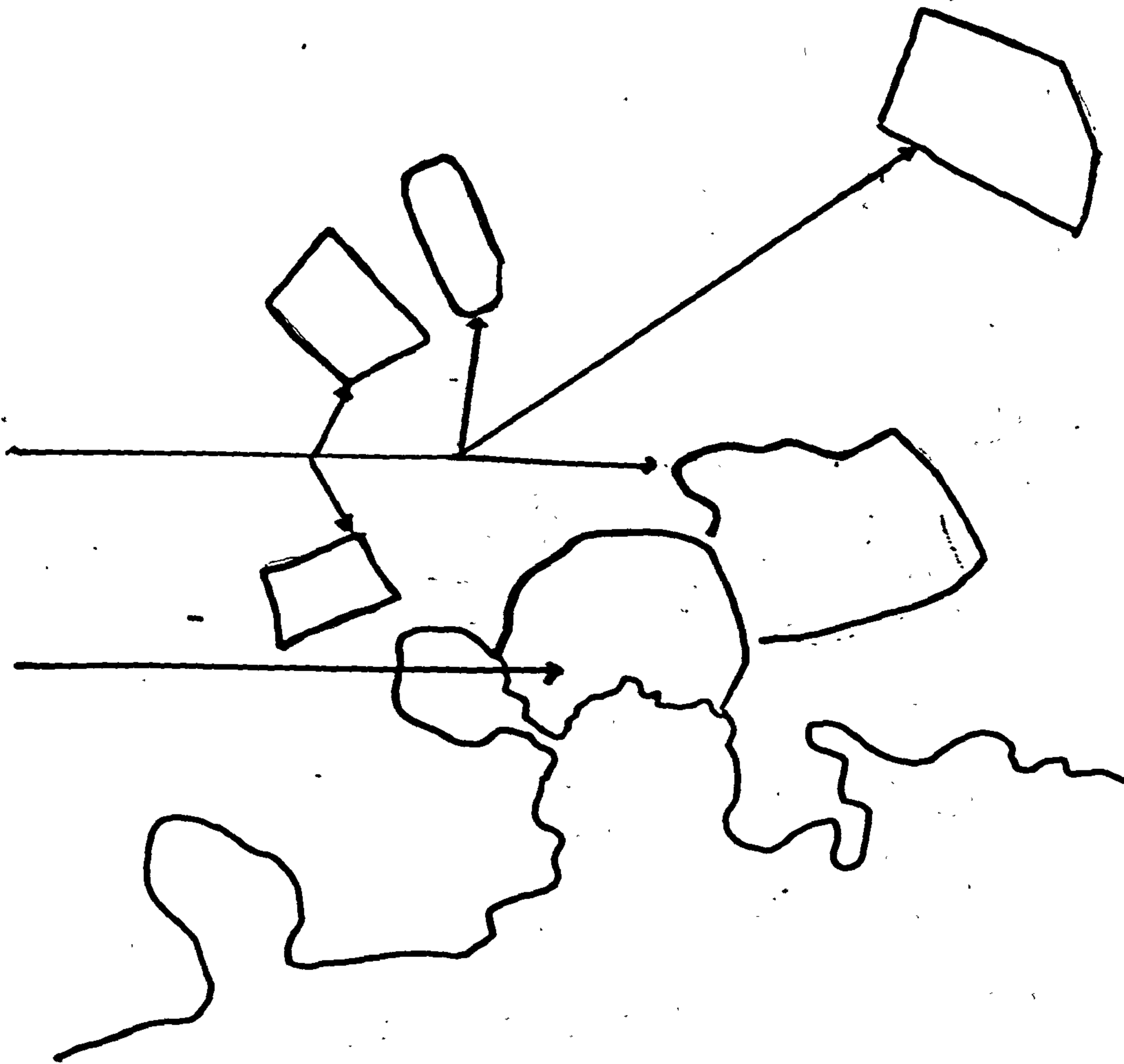




FIGURE 5-1: Aerial Photograph of Jeddah in 1948
Source : Jeddah Municipality - Planning Department



FIGURE 5.1: Aerial Photograph of Jeddah in 1948
Source: Jeddah Municipality - Planning Department

major roads, the Makkah road to the east and the Madinah road to the north of the city, which were the only two roads outside the old city walls. The developments along these roads were better than in the other areas of the city because they received a good deal of attention from the municipal authorities. Consequently better housing conditions, as well as new types of residential units were first introduced in these areas and were inhabited by well-to-do people. Other areas, especially in the southern part of the city, were congested with low grade housing and shanties. M.H. Assad, writes,

"In the southern sector of the city nearly a third of the dwellings are shanties - 92% of Jeddah's shanties being concentrated here and most of the rest are low grade cluster houses"⁽¹⁾.

The major roads in this part of this city were the Makkah road and the Madinah road. The first ring road was the King Abdul Al Aziz road which developed from the original road system and ran along some parts of the inner sides of the old town walls. The second ring road connected the Madinah road, the airport, the Makkah road and the sea port. In fact, these roads played a major role in the overall image of the transitional part of the city, as new structures were erected along them, and the area in between the roads was filled with various residential areas.

The transitional area contains housing in both the traditional building style as well as in the more recent styles which are associated with the rapid development of Saudi Arabia since the 1960s.

5.1.2 The urban land use pattern

The tremendous growth of the city has resulted in clear differentiation between some of its sectors. Furthermore, the transitional areas which developed within the second ring road are slightly different from those in the central area, in the southern part of the city or along the Makkah road and the Madinah road.

The central area - the old town - retains its position as the commercial centre of the city, containing shopping facilities, offices, the commercial and banking centre and hotels with associated parking spaces. In addition there are residential areas within the central area.

The predominant land use of the transitional area enclosed by the second ring road is housing. The commercial activity is located along the major roads in the area. M.H. Assad, writes,

"The commercial activity in this part of the city employs 45% of the total city work force, engaged mainly in the service industry and service trade sector"⁽²⁾.

Many features of the old town are found in this part of the city, such as a few traditional buildings and architectural elements in addition to the hierarchy of open spaces, urban pattern, etc.

Most of the city's manufacturing and industrial activities are located in the southern part of the transitional area of the city. However, this area shares a common characteristic with the other part of the city which is the high residential component.

The areas developed along Makkah road and Madinah road are of high income housing in the form of palaces, villas and apartment buildings. The government departments and foreign embassies are also found in these areas. On the periphery of the transitional area, in addition to commercial activities, there are some isolated industrial plants, such as marble works, a rubber-foam factory, etc., in the Madinah road area.

Generally, the transitional area is characterised by mixed residential, commercial and light industrial activities. Here it is worthwhile to mention that the commercial activities in the old town are gathered in spaces such as 'Khans', 'suq', etc. However, in the transitional area a new phenomenon has been introduced, in that the ground floors of most of the developed area - particularly that along the major roads - are given to commercial and light industrial use. All other facilities such as schools, clinics, hospitals, etc. are scattered throughout the city.

Housing on the periphery of the transitional area, particularly in the north and south-east, is in contrast with that in the south and central area. In the north, scattered detached villas and apartment buildings are found; while shanties, low grade houses and traditional buildings are found in the south and central part of the city.

The recreation areas in this zone are mainly along the sea front, with a few open spaces in the residential areas where the children can play and enjoy themselves. It is interesting to note that there are some areas, especially in the southern part of the city, which are very compact and crowded, which need such open spaces, yet where there are very few

provided. In contrast, in the northern part of the city there are a reasonable number of open spaces surrounded by trees, and some open grassed spaces with facilities for sitting.

Finally, the undeveloped land in between the developed areas has become an attractive site for squatters. Therefore, the transitional areas contain a number of squatter settlements, particularly in the southern part of the city.

5.1.3 Social aspects

5.1.3.1 Ethnic groups

As mentioned in Chapter Four, the inhabitants of Jeddah are ethnically Arabs, with a mixture of non-Arab adherents of Islam, who immigrated as pilgrims and settled in the city. Later on these settlers became totally integrated and hardly distinguishable from the natives of the area. Among these foreign communities some of the nationalities have decreased in number in relation to each other, such as Persian, Turks and Berbers. However the Yemenis and Hadramis have increased because they work in building construction and trade. In addition to this, many Saudi families have migrated to Jeddah from different parts of Saudi Arabia, such as Makkah, Madinah, Yanbu, Najd (the central part of the Kingdom), etc., in order to obtain better living conditions, trade and employment⁽³⁾.

In early times most of the foreigners who came to Jeddah were wealthy people and traders. They contributed to the physical development of the city by erecting a number of examples of traditional buildings, with fine architectural elements, as well as contributing to the economic development of the city. On the other hand, the majority of newcomers who came as a result of the rapid economic growth of the country since the 1950s were low income people from the working class. They came in order to gain work. They settled in groups in certain parts of the city, especially near the old part of the town and the southern part of the city. Later on these settlements took their names such as 'Al Bukhariyah' - a 'Hara' inhabited by people who originally migrated from 'Bukhara' - and 'Al Hindawiah' - an area of Indian settlement. However all those people became integrated within Jeddah society, because most, if not all, the people who came to Jeddah were Muslims, and they shared a common tradition and standards based on an Islamic background.

In the past the traditional society of old Jeddah was able to adopt and assimilate the foreign customs and norms without losing its distinctive identity. But from the 1950's onwards, and as a result of the economic boom and modernisation processes in most Saudi cities, Jeddah's society could no longer cope with or resist the high pressure of urbanisation. As a result, many of the traditional ways of life, and expressions of cultural identity started to disappear in some places and were ignored in others. Consequently the homogeneity of the society has been lost, and almost the whole society has become complex and less integrated. This has led to the first sign of social discontinuity in the urban life of Jeddah.

5.1.3.2 Types of employment

Until the discovery of oil in large quantities in Saudi Arabia, the pilgrimage and the commercial activities provided the main revenue of Jeddah. The city for centuries has functioned as the major trade centre for the Hejaz Region.

The economic growth led many people from the surrounding regions and countries to migrate to the major cities for better employment opportunities. Jeddah in particular attracted different classes of people. For example, low income people came to work in the construction and service activities, and these mainly are Yemenis, Indians, Pakistanis, etc. There are also professionals such as teachers, doctors, engineers, etc., and those are mainly from Egypt, Sudan, Iraq, Syria, Jordan and Palestine, etc.

From the early 1950s onwards the city witnessed rapid urban expansion. Most of the people worked in building construction as well as service activities. So in general,

"the urban economy is predominantly a service one, and the highest level of services in the region and particularly in the financial, commercial and distributive sectors are usually found in Jeddah. A substantial majority of all bank offices in the Western Region are in Jeddah"⁽⁴⁾.

5.1.3.3 Income-class structure

Jeddah houses different classes of people from unskilled labourers to highly skilled technicians and industrial workers, from simple

government employees to high professionals. They are diffused throughout the city. However the new arrivals to the city always tried to live as close as possible to their place of work, which has meant that in many cases they formed local communities. Some social classes are therefore concentrated in certain areas of the city.

In general the lower income people mainly occupy the southern part of the city. The middle income people are in the south-west and central area, mainly within the second ring road, and also in the eastern part of the city. The upper middle and high income residents are found in the Madinah and the Makkan road areas and mainly the northern part of the city.

5.1.4 Utilities and Services

5.1.4.1 Water

Water supply remains a constraint on growth. From the beginning, the shortage of fresh water was the major problem of the city. The main water resource of Jeddah has been, and still is, underground water from 'Wadi Fatima' and 'Wadi Khlais'. In the 1960s, and as a result of the rapid increase in population and the vast expansion of construction developments, these two sources of water could not meet the water demand. So an alternative source of water was introduced, this being sea water. Following the construction of a desalination plant at Jeddah in 1970 a considerably increased quantity of potable water was made available⁽⁵⁾.

In all cases the water is stored in service reservoirs located on the Makkah road (Wadi Fatima water) and Madinah road (Wadi Khlais and desalinated water) on the northern side of the city. In 1972 it was reported that,

"Water is distributed to the population in a number of ways : by direct house connection to the distribution network, by lorry or donkey-cart, tanker delivery or by local public standpipes"⁽⁶⁾.

At that time piped water was limited to certain areas of the city, being only available in the Makkah road and the Madinah road suburban areas, whereas the other areas were supplied by the other methods, as mentioned in the previous paragraph. Nevertheless, most of the houses had an individual underground reservoir.

Undoubtedly, water supply is the most vital of all public utilities and the availability of water has determined the standard of the residential unit, both from the health and structural points of view, a matter which will be discussed later in this chapter.

5.1.4.2 Sewerage

The disposal of waste water and foul sewage from the properties has been, and still is in many parts of the city, achieved by means of cesspit drainage. However, as the city increased in size and density of population, these means were considered to be inadequate for waste disposal. In the early 1960s an extensive programme of foul sewage disposal systems was introduced in the city, and nowadays most, if not

all, of the properties in the transitional area are connected to the main sewerage system.

5.1.4.3 Storm water drainage

Rain is very rare in Jeddah. However, sometimes it rains very intensively. The city is subject to flooding from two sources, run-off from rain falling on the city and Wadi run-off from rain-storms occurring inland. Formerly there were not any precautions against either of these two sources. However in the early 1970s the municipality began to construct ditches to the north and south-east of the city, to intercept run-off coming from nearby hills outside Jeddah and prevent it from causing embarrassing conditions within the city⁽⁷⁾. Here it is worthwhile mentioning that during his field-work, the author noticed that most of the ground floors of the houses are raised a few steps above ground level, a feature which is believed to be one way of protection from flooding.

5.1.4.4 Fuel

Kerosene and dried tree branches, 'Hatab' (firewood), used to be the main source of fuel in the city. Lately, after the discovery of oil in the Kingdom, gas has become the major fuel source. Gas distribution in the city was, and still is, by bottled gas.

5.1.4.5 Electricity

Electricity has only recently become generally available in the city. The system for power distribution within the city grew out of the first casual public supplies taken from the generating plant owned by a United States company constructing the airport in 1948-49⁽⁸⁾. From the beginning of the 1950's the generation and distribution of electricity to the inhabitants became the responsibility of the Saudi National Company Limited, as mentioned in the previous chapter. However there was at that time a considerable amount of private generating capacity in the city with a total of about 25% of public supply⁽⁹⁾.

5.1.4.6 Transportation

At first animals were used as a means of transport in the transitional area. However, from 1940 onwards the motor car became the main mode of transportation in the city. Many types of transportation are found in Jeddah, such as private cars, motor-cycles, buses and goods vehicles, in addition to walking.

Over the years the amount of cars used has gradually increased, with a corresponding decrease in the amount of pedestrians. This means that cars now circulate in areas which were originally meant for pedestrians, creating a situation of conflict between cars and pedestrians.

5.1.4.7 Summary

Although public utilities, such as water, roads, electricity, sewage, etc., are the essential requirements of any urban development and should be planned and constructed before any construction development takes place, unfortunately in most urban areas in Saudi Arabia, and particularly in Jeddah, construction developments have been laid out and buildings erected before the public utilities were available.

The task of providing such public utilities in a built-up area is one of great difficulty, creating disruptive situations for the inhabitants. In fact, most of the heavily populated older areas in the city are lacking many essential utilities, a matter which has encouraged people to move to other parts of the city, leaving the older residential units to deteriorate.

5.2 Residential Districts

As mentioned earlier, the residential component dominates the overall land-use pattern of the city. This phenomenon has continued as the city has grown.

The residential quarters within the second ring road (the Bagdadiyah - airport - harbour ring road) are more or less similar to those of the old town, although a sign of change can be seen in the urban forms of the 'Haras'. Yet the new residential areas which have developed outside this ring road in the transitional area have little in common with the

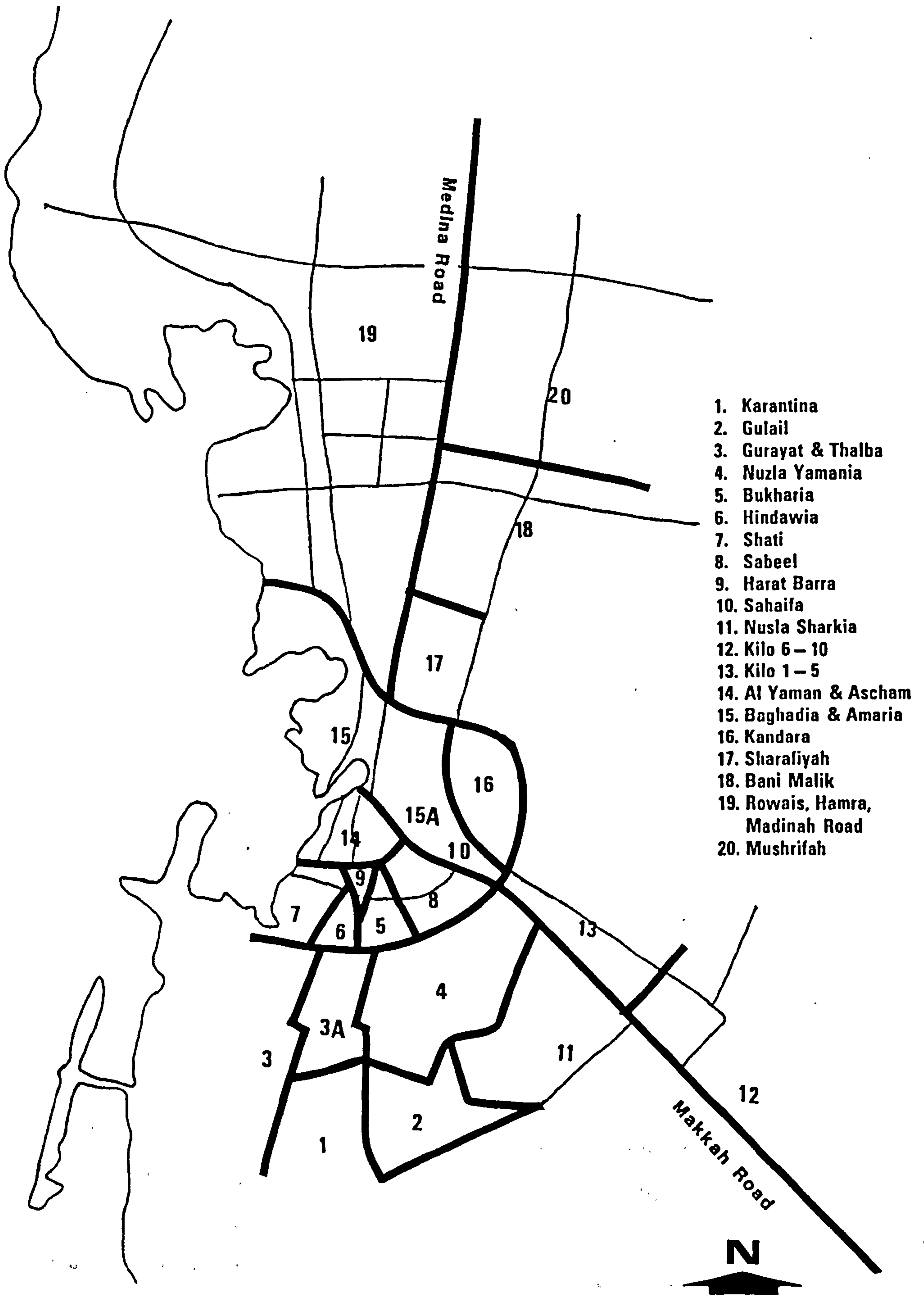
old community pattern, since their structure was not based around pedestrian movement and their planning was neither rational nor adequate.

By the end of the 1940s the social geography of the city was almost delineated, and the overall urban images of the south, east and north were established. High income residents were unlikely to reside in the southern part of the city and the low income families were inhibited from settling in the northern or eastern part of the city, except in a few enclaves as a result of the high land prices and a lack of unappropriated property. Almost the whole urban growth of the city, as well as the new developments, followed such a pattern.

Consequently, the residential quarters in the southern part of the transitional area are poorer in quality than the northern quarters. The expensive, good quality buildings, such as palaces, luxurious villas and new apartment buildings are found in the eastern and northern part of the city, while the unfavourable urban elements, such as the oil refinery, warehouses and industrial establishments are found in the southern part of the city.

5.2.1 Relationship of 'Haras'

The transitional area consists of many 'Haras' (see Figure 5.2). The relationship of these 'Haras' is closely connected to the social traditions and norms of the residents. It is believed that the religious, social and economic circumstances have played a great role in



1. Karantina
2. Gulail
3. Gurayat & Thalba
4. Nuzla Ymania
5. Bukharia
6. Hindawia
7. Shati
8. Sabeel
9. Harat Barra
10. Sahaifa
11. Nusla Sharkia
12. Kilo 6 – 10
13. Kilo 1 – 5
14. Al Yaman & Ascham
15. Baghadia & Amaria
16. Kandara
17. Sharafiyah
18. Bani Malik
19. Rowais, Hamra,
Madinah Road
20. Mushrifah

FIGURE 5.2 : Haras of the transitional part of the city
 Source : Jeddah Action Master Plan,
 Technical Report No.5, 1978

determining and shaping the built-up area of the city. For example, the extended family played a major role in forming the neighbourhood of the old town; undoubtedly this phenomenon has been continued in the neighbourhoods of the transitional area. Some families moved from the old town to new neighbourhoods in the transitional area and these newcomers lived near each other, forming clusters of dwellings of the same family or tribe. However, the increased number of immigrant people created some differentiation between the 'Haras' in the transitional area.

Broadly speaking, most of the residential quarters in the transitional area followed the same principles as the old town quarters in terms of planning. It is believed that the relationship between the 'Haras' was very strong and the boundaries of each 'Hara' were well known by the local residents. However, the introduction of the motor car with its requirements of wide streets, made it necessary to simplify the 'Haras' boundaries. So today each 'Hara' is bounded by the streets or roads surrounding it.

One significant change in Jeddah has been in the names of the 'Haras'. New official names have been given, each covering several old 'Haras'. For example 'Al Balad' now represents 'Al Sham', 'Al Mazloum', 'Al Bahar' and 'Al Yemen' 'Haras', and 'Al Hindawiah' now represents 'Al Buckhariya', 'Al Shatie', 'Harat Barah' and 'Al Hindawiah' 'Haras'. This is as a result of their similarities in size, building types and environmental conditions. Also they are interlinked with each other, which makes them hard to distinguish. Nevertheless the residents still use the original name of their 'Hara'.

In fact, the relationship between 'Haras' used to be stronger than it is today, due to various factors which might be summed up in the following way. Firstly, in the past, before the oil boom in particular, most of the residents shared similar living conditions (economically, socially, etc.). Secondly, the similarity of urban tissue of the residential quarters, (eg. compact urban form, narrow winding streets, various open spaces), encouraged the sharing of social activities which is characteristic of many 'Haras'. Thirdly, the means of transportation, mainly walking, enabled the residents to strengthen their relationships with each other, ie. while walking they could talk and discuss topics of common interest. However these factors might not be applicable in the new residential quarters, at the periphery of the transitional area. This is particularly so in those quarters which were established during the economic and building boom, where the area is planned primarily for the use of the motor car with the accompanying feature of both wide and straight streets.

5.2.2 The spatial organisation of the transitional area

Most of the transitional quarters of the city are organically planned, except for a few areas in the north and east of the city along Madinah Road and Makkah Road.

Unfortunately the pressure of urban expansion, due to many reasons such as the population increase as a result of the high level of migration, the increase of the country's wealth associated with large movements of

investment capital into building and property speculation, modernisation, etc., caused the city to expand very rapidly and the changes became very dramatic and sudden. Thus was created a situation with which the people and the community could not cope. A vast range of completely new building types started to emerge.

5.2.2.1 The layout

Most of the neighbourhoods of the transitional part of the city, particularly those which were established and developed in the 1950s-1960s, share many characteristics of the urban form of the old town of Jeddah and other Islamic neighbourhoods. These include the compact urban form, the narrow winding streets, the variety of open spaces, etc. Yet at the same time the introduction of motor cars, as a means of transportation, affected the layout of the neighbourhood as well as the city.

The transitional area witnessed an introduction of various new types of dwelling (see section 5.3.1). The layout of the dwellings varies from one neighbourhood to another. The dwelling types, land ownership and the socio-economic factors seem to play an important role in shaping the overall layout of the quarter or 'Hara'. For example, the areas which are dominated by 'Al Beut Al Shabiah* (singular 'Al Bayt Al Shabi') in the south and south-eastern quarters, differ from those which are dominated by the apartment buildings or villas.

* This term refers to detached or attached dwellings, mostly with courts, usually built by unqualified builders of permanent construction with concrete blocks or bricks and slabs, one or two storeys high.

The former were developed by their inhabitants on the basis of the concept of 'Urf' (action of belief in which persons persist with the concurrence of reasoning power and which their natural disposition agrees to accept as right, custom⁽¹⁰⁾). This means an agreement among the people who live there for leaving an open space, alleyway, street, etc., ending up with a neighbourhood planned according to their needs. On the other hand in the villa areas, mainly in the northern part of the transitional area such as 'Al Sharaffiah' quarter, one finds a contrast in layout of wider, car oriented streets arranged in a grid-iron pattern.

The analysis of the selected examples of sample areas will illustrate the overall urban form of the transitional part of the city.

The selected areas are taken from various 'Haras' such as 'Al Hindawiah' (Sample area No.2), 'Al nuzlah Al Sharqiah' (Sample area No.4), 'Al Saheifah' (Sample area No.6), 'Al Kandarah' (Sample area No.7), 'Al Sharaffiah' (Sample area No.8) and 'Al Rawais' (Sample area No.9) (Figure 5.3). These areas are selected to illustrate the transformation of the urban tissue of the transitional area of the city. For example, 'Al Saheifah' quarter or 'Hara' (Figure 5.4), was one of the villages outside the city walls. After the demolition of the walls in 1947 the area witnessed rapid development, which replaced the old slum of shacks and mud houses. It is characterised by a compact urban form with narrow irregular streets. A few wide streets radiating from the town centre are found in this 'Hara'. They are used for vehicular movement.

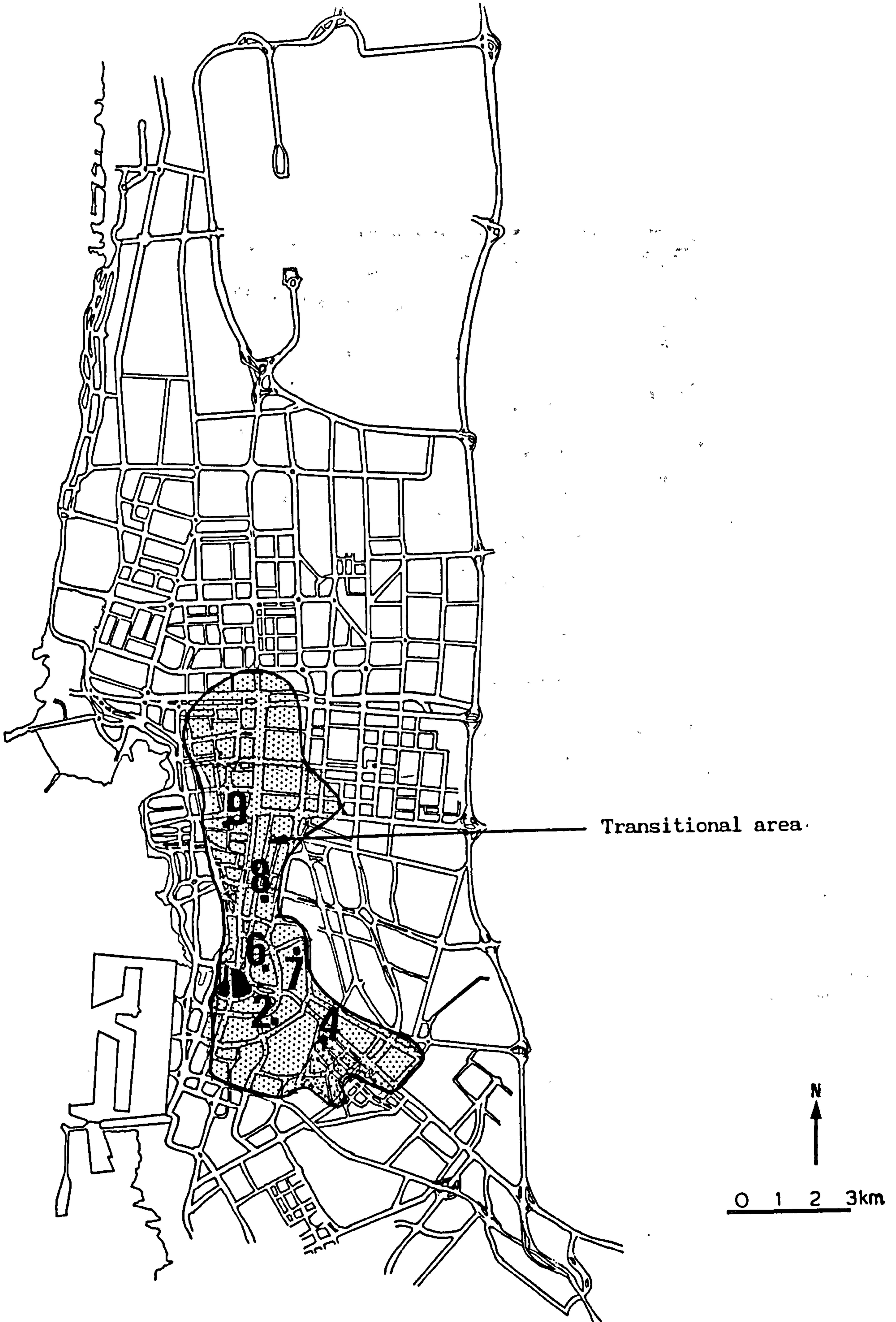


FIGURE 5.3 : Sample areas in the transitional part of the city

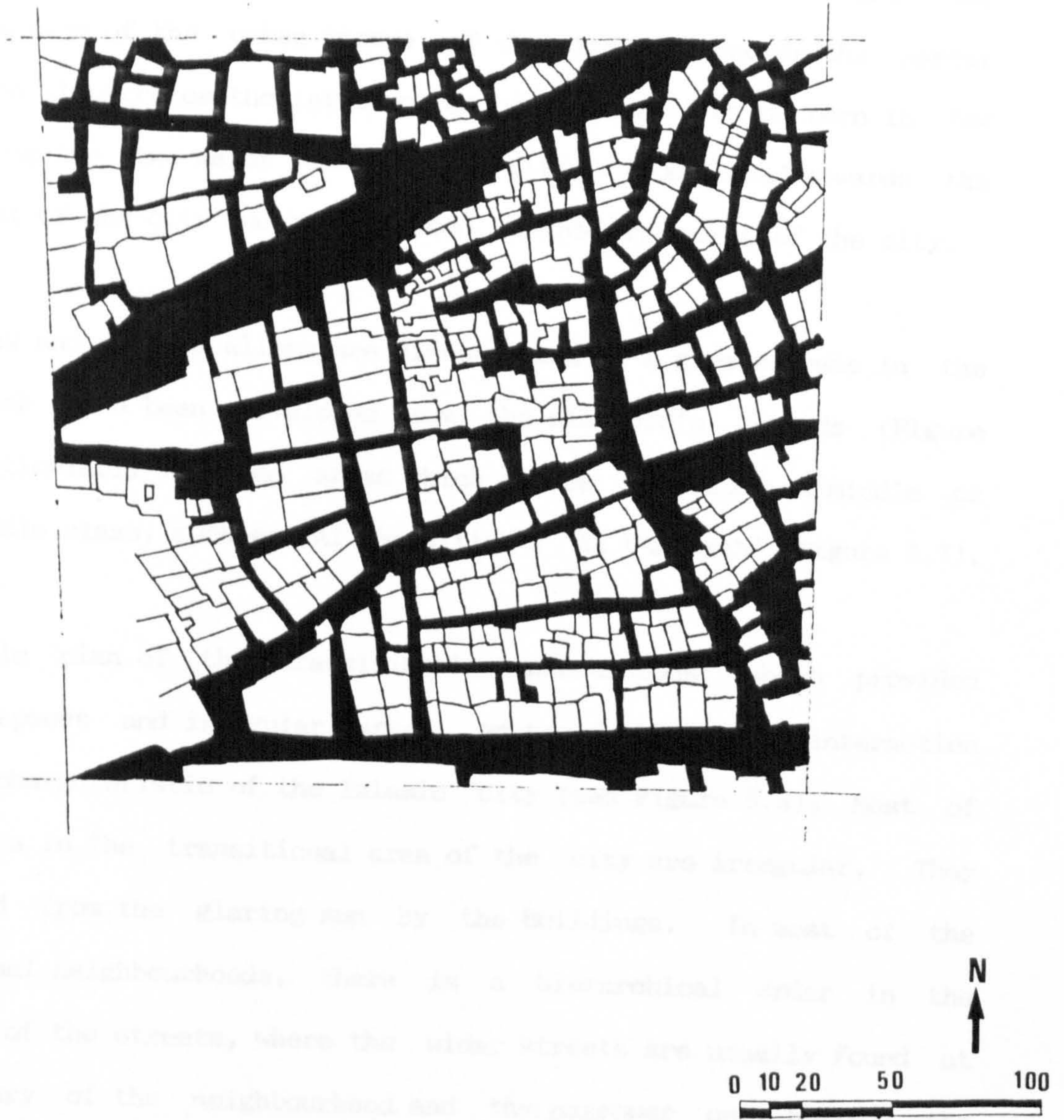


FIGURE 5.4 : Al Saheifah (Sample Area No.6)

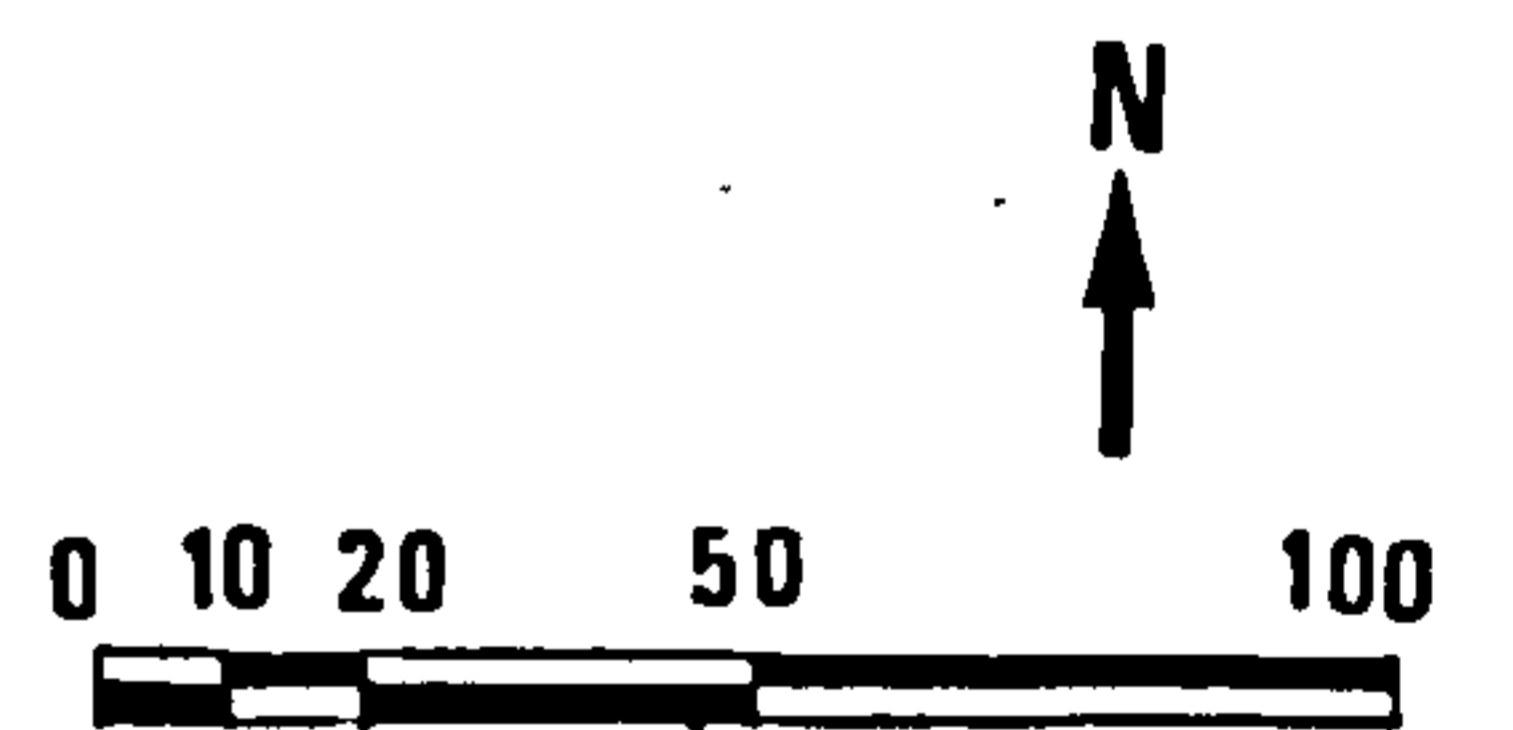


FIGURE 5.4 : Al Saheifah (Sample Area No.6)

The stages of historic growth of the transitional area of the city are clearly expressed in the city's urban fabric. Looking at the aerial photograph of Jeddah in 1964 (Figure 5.5) in conjunction with the maps of the selected areas, one is able to see and understand the transformation of the urban tissue of the city. Moreover the aerial photograph illustrates the introduction of the grid-iron pattern in few areas along the two major roads in the city, Makkah road towards the south-east of the city and Madinah road towards the north of the city.

The narrow and winding alleys are disappearing at a greater rate in the areas which have been developed from the mid-1950's onwards (Figure 5.6), particularly in those areas which can be described as middle or upper middle class, such as 'Al Sharaffiah', 'Al Kandarah' (Figure 5.7).

The organic plan of the transitional neighbourhoods, which provided intimate spaces and irregular areas, enhanced the urban interaction which is characteristic of the Islamic city (see Figure 5.8). Most of the streets in the transitional area of the city are irregular. They are shaded from the glaring sun by the buildings. In most of the transitional neighbourhoods, there is a hierarchical order in the formation of the streets, where the wider streets are usually found at the boundary of the neighbourhood and the narrower ones towards the centre (Figure 5.9) (see Figures 5.11-5.14 and Photographs 5.1-5.13).

The above mentioned hierarchy of streets seems to have been clearly implemented when the automobiles were limited in the city. However, as a result of the increasing number of automobiles the hierarchy of

streets has broken down. In some areas, especially those at the periphery and the transitional part of the city, the streets became wide and relatively straight and sometimes they were in a grid-iron pattern (Figure 5.10). The latter were found in areas which were planned by the municipality and occupied by higher income people. In these areas the car appeared as the main mode of transportation.

At the present time, cars are introduced into every part of the neighbourhood creating a situation of conflict between the pedestrian and vehicular traffic. The street which was meant for pedestrian traffic, nowadays is used for cars and is mainly used by those who want to avoid the congestion and traffic delays at main roads (Photographs 5.14-5.15).

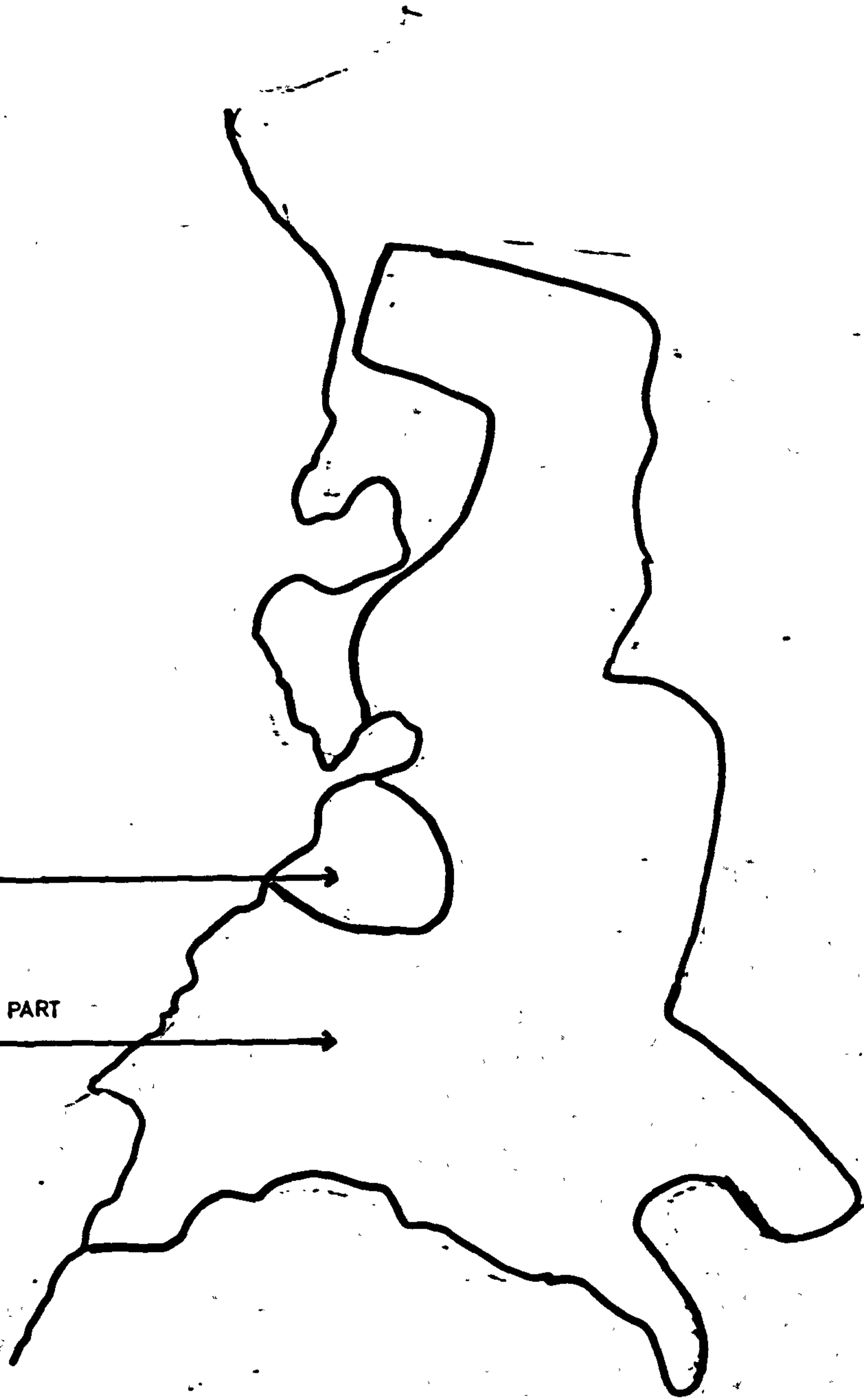
5.2.2.2 The Open Spaces

What has been mentioned about the streets and layout of the transitional area is more or less applicable to the open spaces. It can also be seen that the availability of open spaces in most of the transitional neighbourhoods is very limited.

At present, the utilisation of the open spaces is different from one neighbourhood to another within the transitional areas. For instance all the open spaces which have any access for cars are mainly used as car parking spaces, whereas those which have no access for cars are used as children's playgrounds (Figure 5.15 and Photographs 5.16-5.18).

OLD PART OF
THE CITY

TRANSITIONAL PART
OF THE CITY



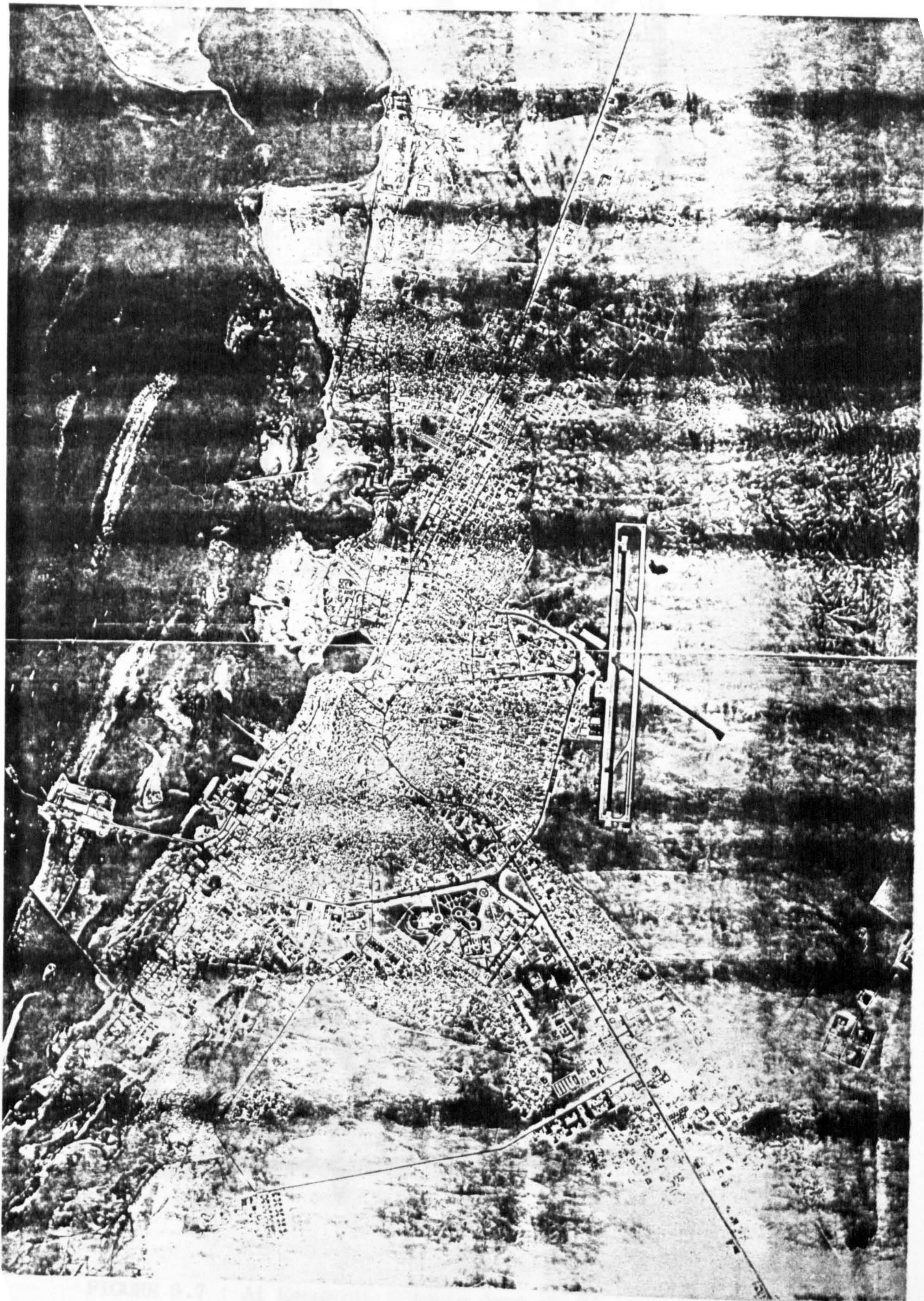


FIGURE 5.5: Aerial Photograph of Jeddah in 1964
Source: Jeddah Municipality—Planning Department

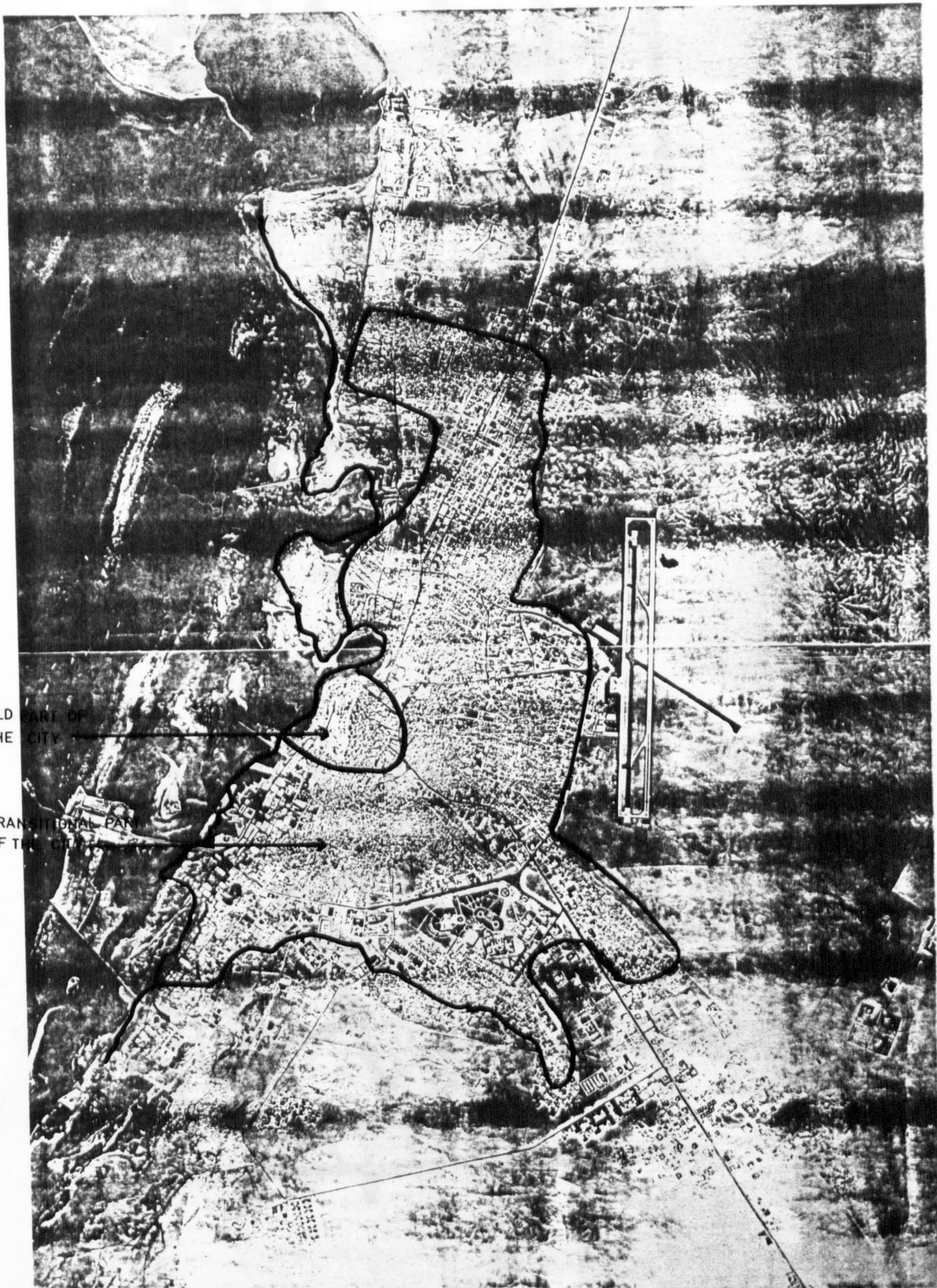


FIGURE 5.5: Aerial Photograph of Jeddah in 1964
Source: Jeddah Municipality – Planning Department

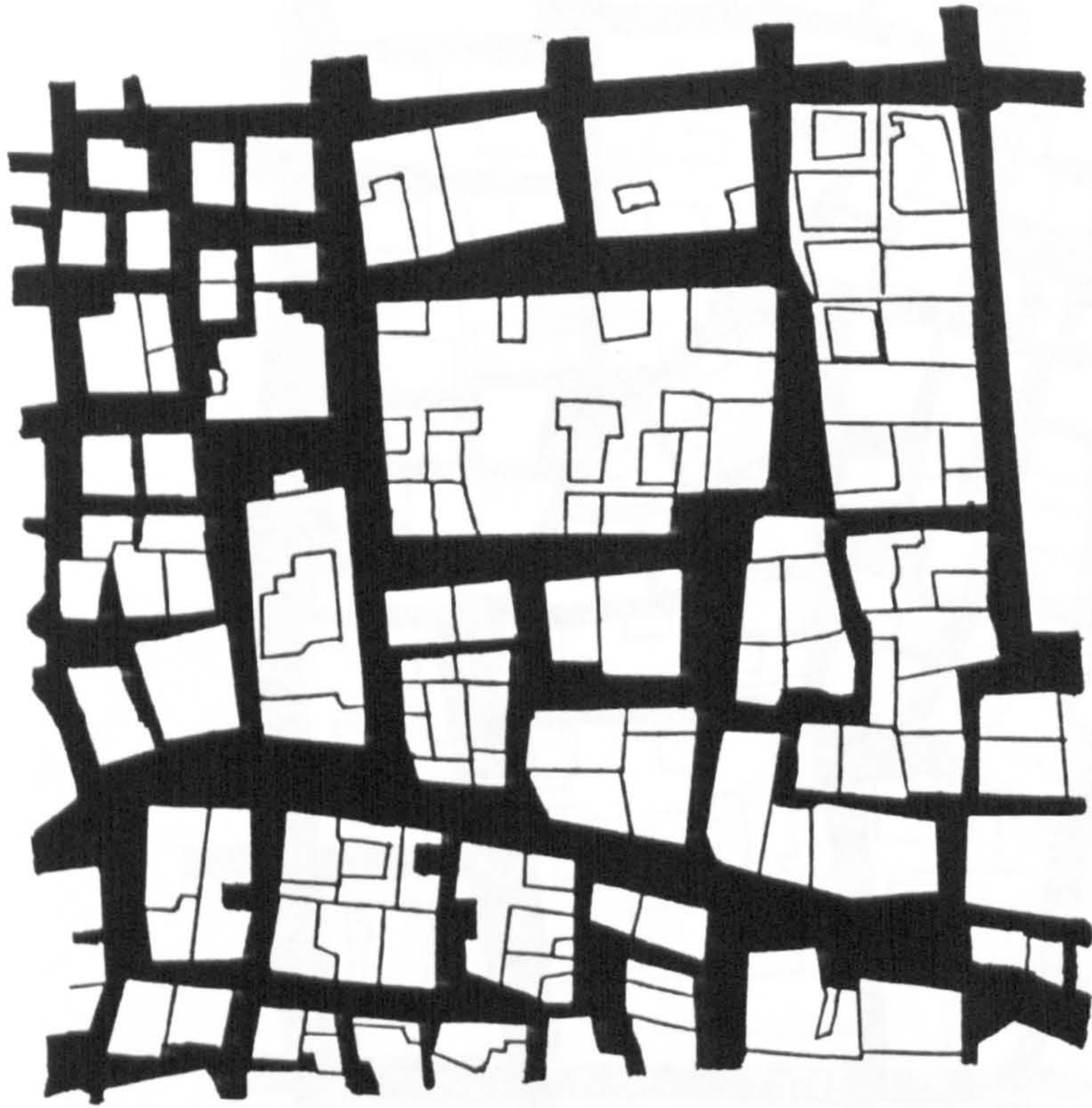


FIGURE 5.6 : Al Rawais (Sample Area No.9)

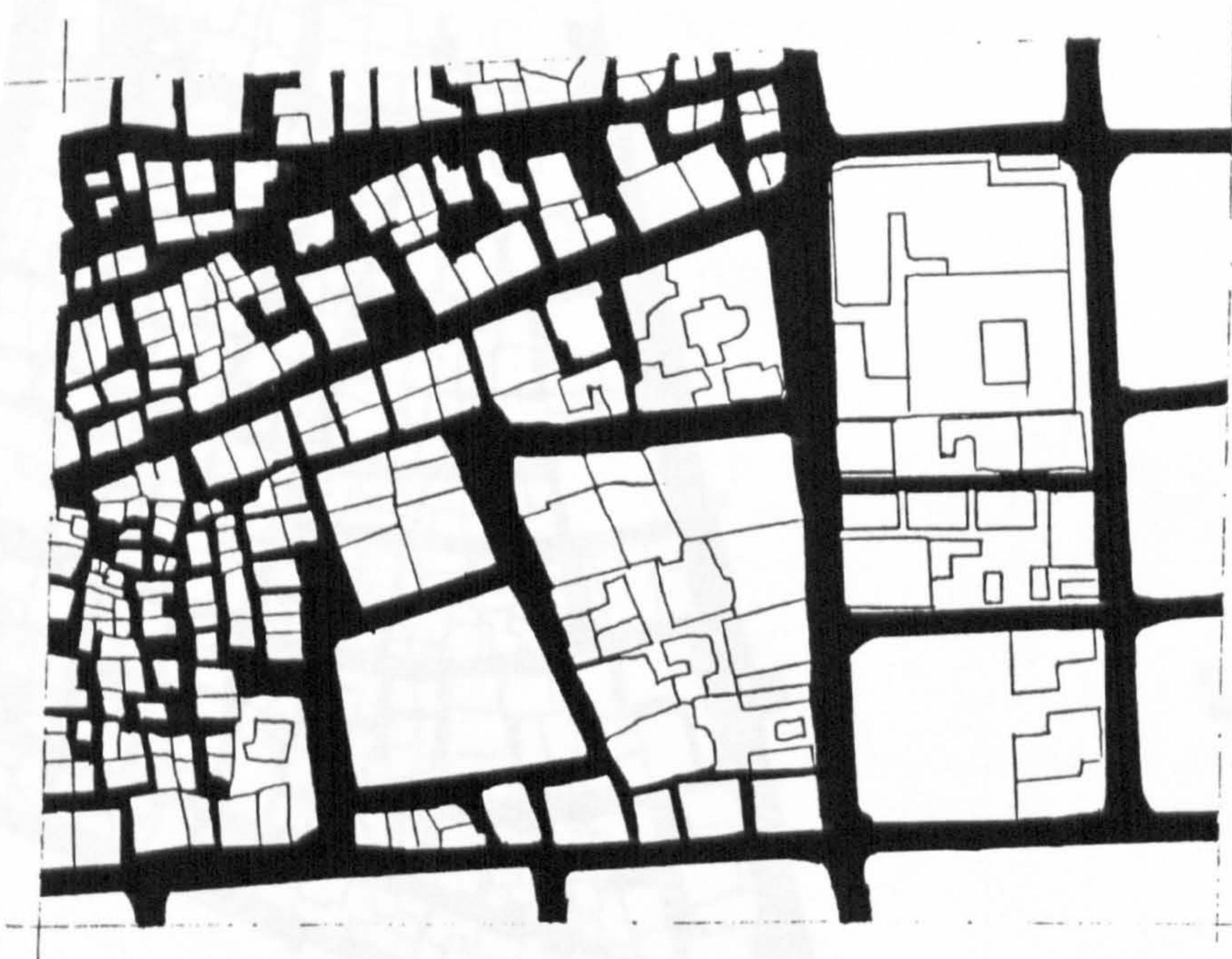


FIGURE 5.7 : Al Kandarrah (Sample Area No.7)

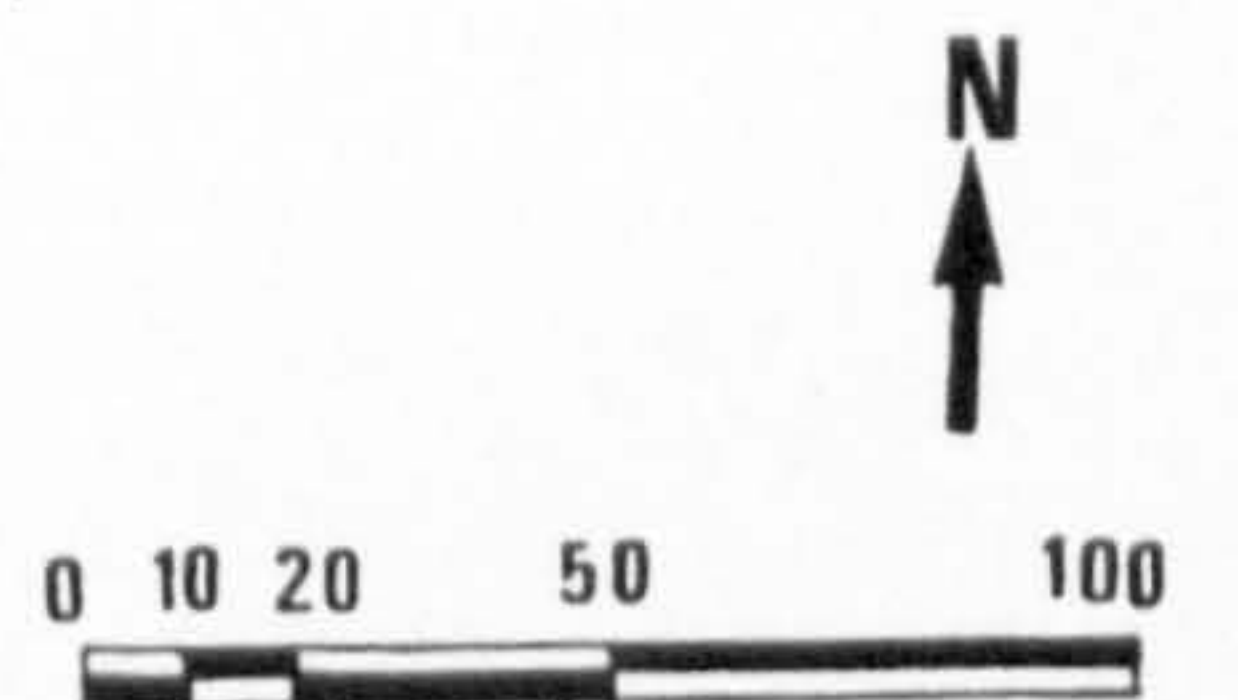




FIGURE 5.8 : Al Sharaffiah (Sample Area No.8)

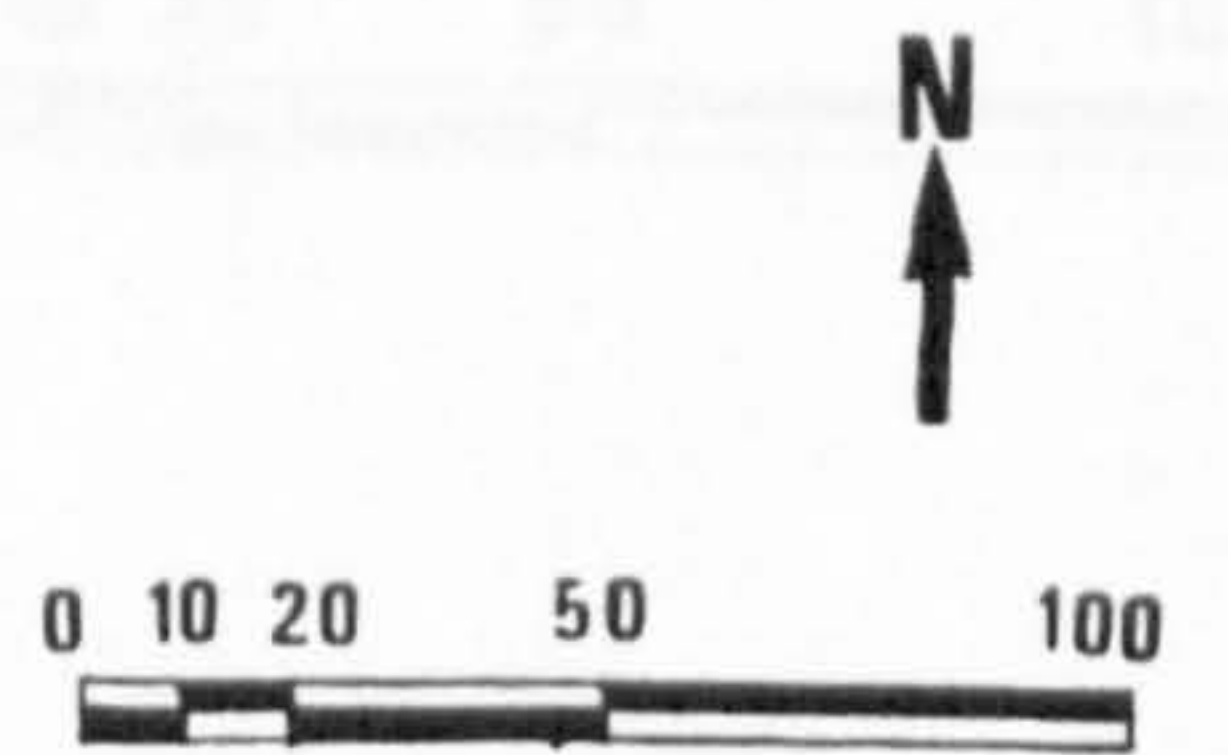


FIGURE 5.9 : Al Hindawiah (Sample Area No.2)

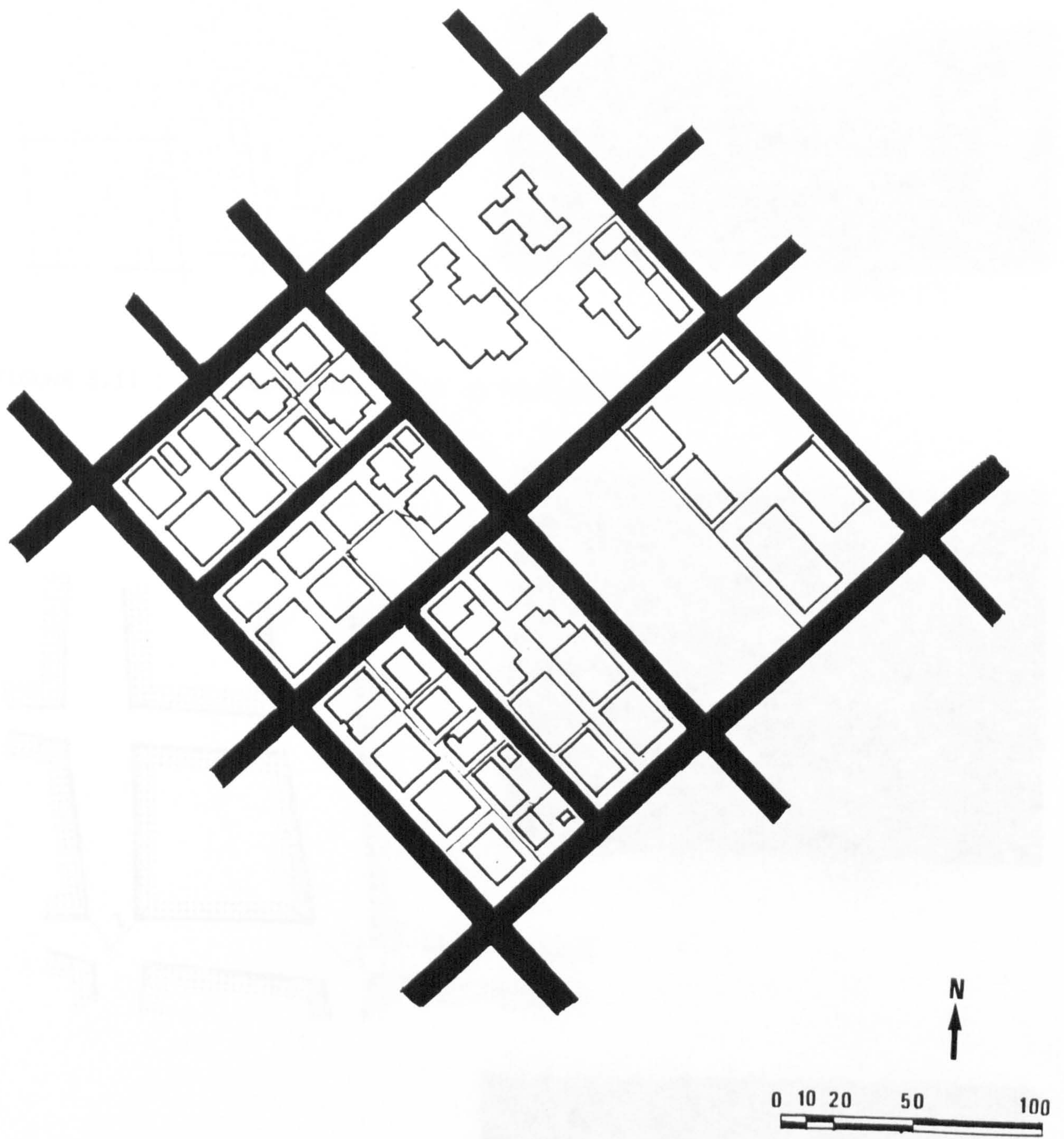


FIGURE 5.10 : Al Nuslah Al Sharqiah (Sample Area No.4)

Photographs 5.1-5.3 show
different views of Al Nuslah
streets

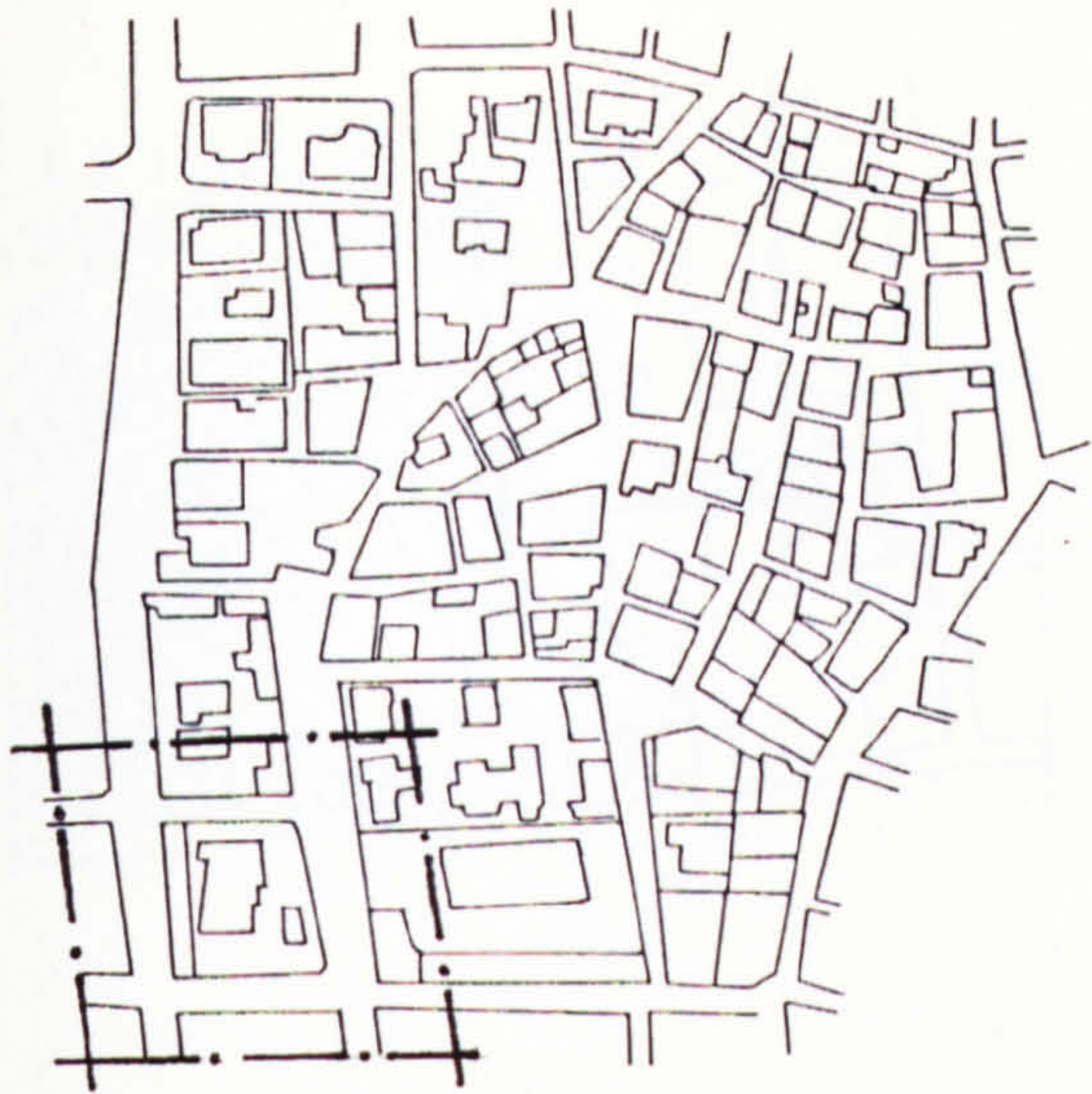


PHOTO 5.1

FIGURE 5.11 : The street layout in Al Sharaffiah district



PHOTO 5.2

Photographs 5.1-5.3 show different views of Al Sharaffiah streets



PHOTO 5.3



PHOTO 5.4

FIGURE 5.12 : The street layout in Al Kandarah district

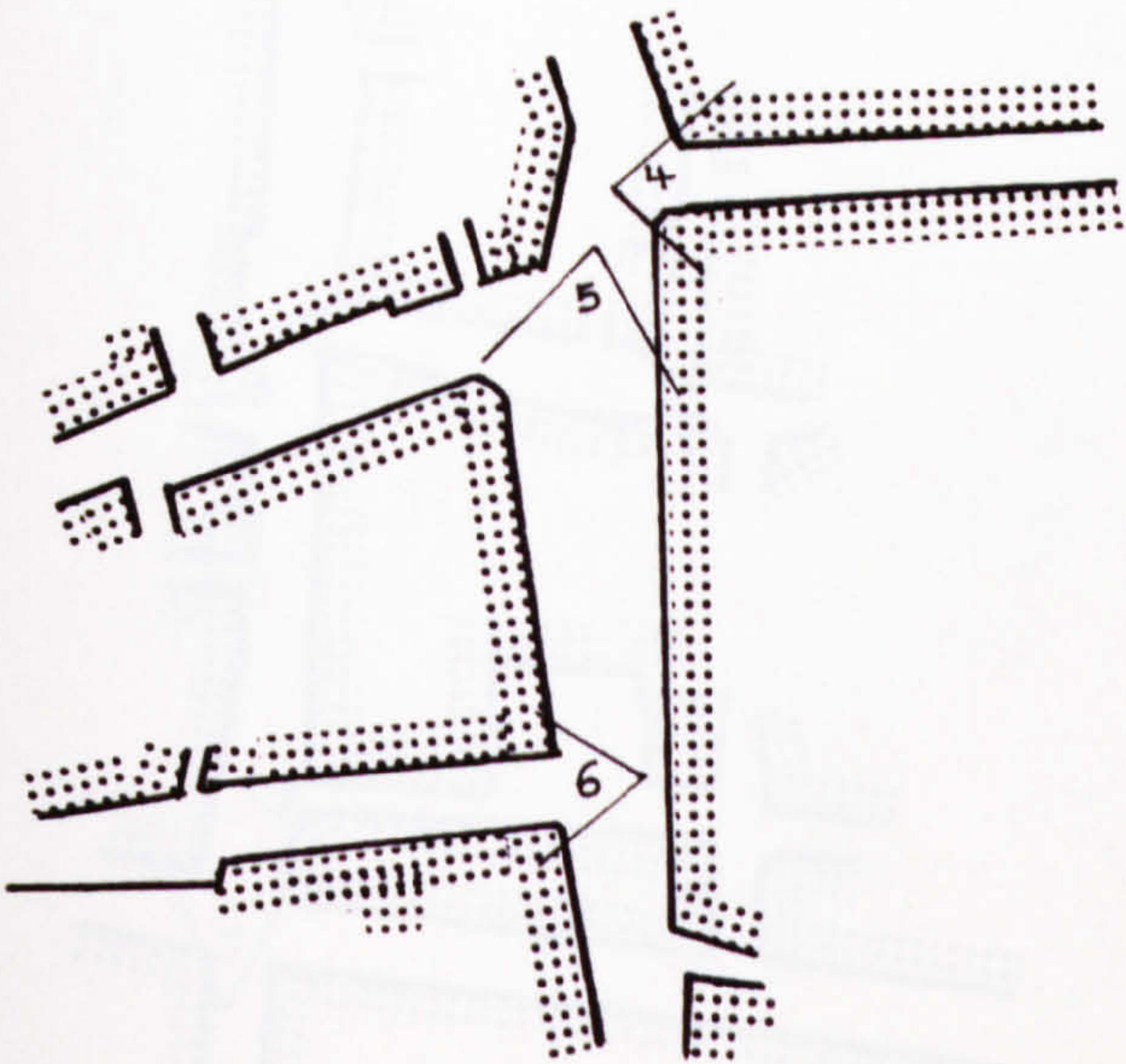


PHOTO 5.5

Photographs 5.4-5.6 show different views of Al Kandarah streets



PHOTO 5.6



PHOTO 5.7

FIGURE 5.13 : The street layout in Al Hindawiah district

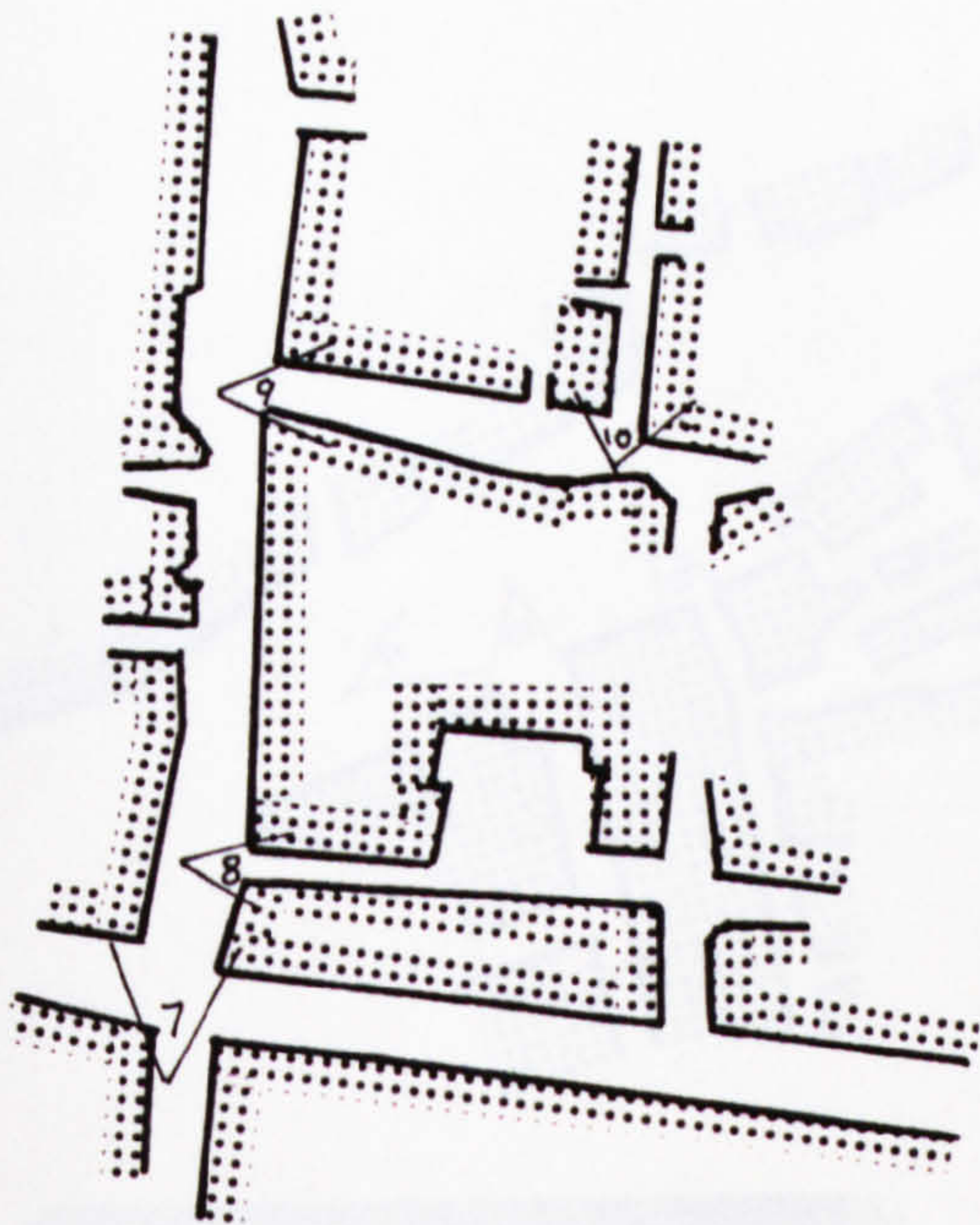


PHOTO 5.8

Photographs 5.7-5.10
show different views
of Al Hindawiah
streets



PHOTO 5.9



PHOTO 5.10



FIGURE 5.14 : The street layout in Al Saheifah district

PHOTO 5.11

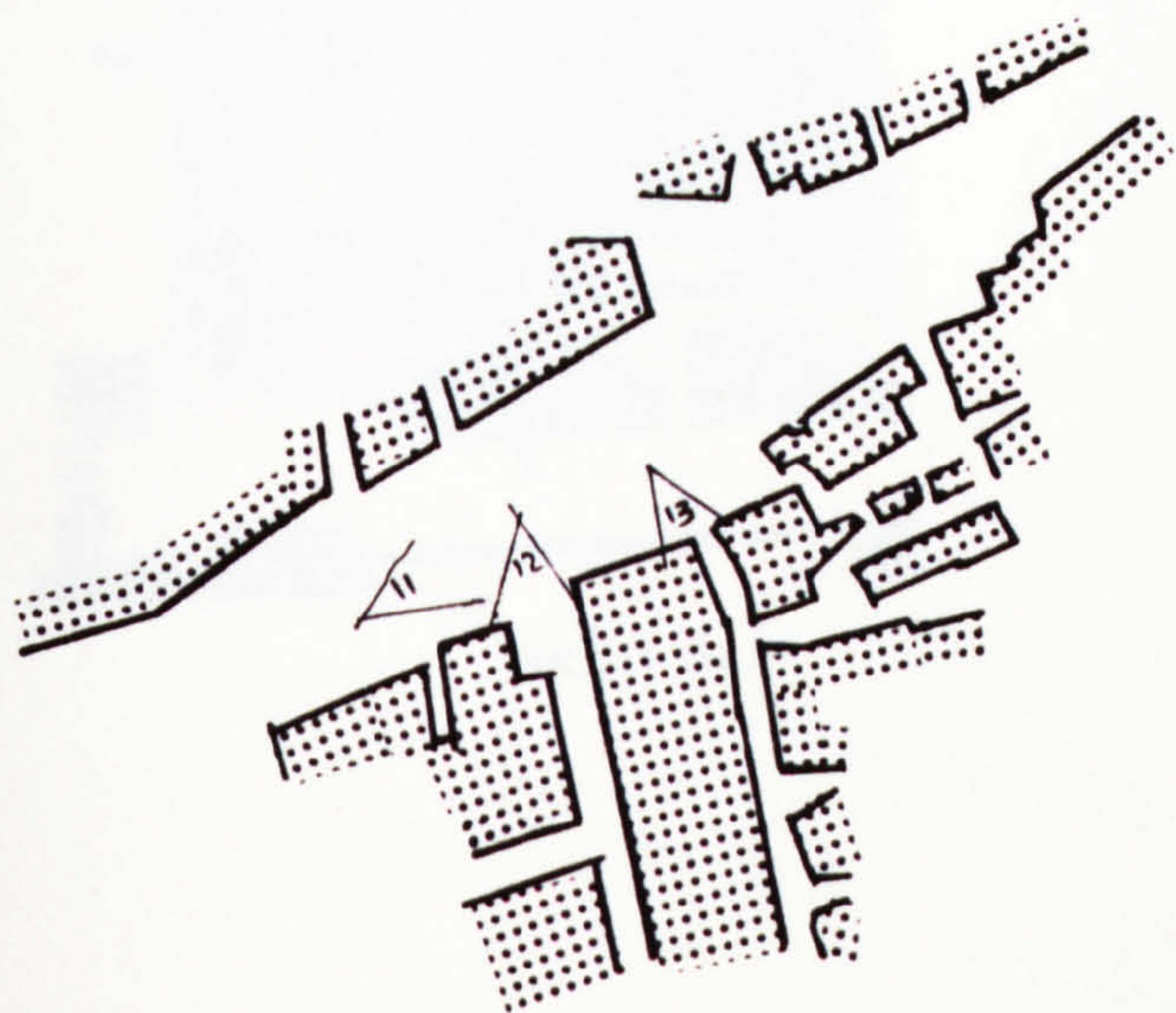


PHOTO 5.12

PHOTO 5.13

Photographs 5.11-5.13 show different views of Al Saheifah streets

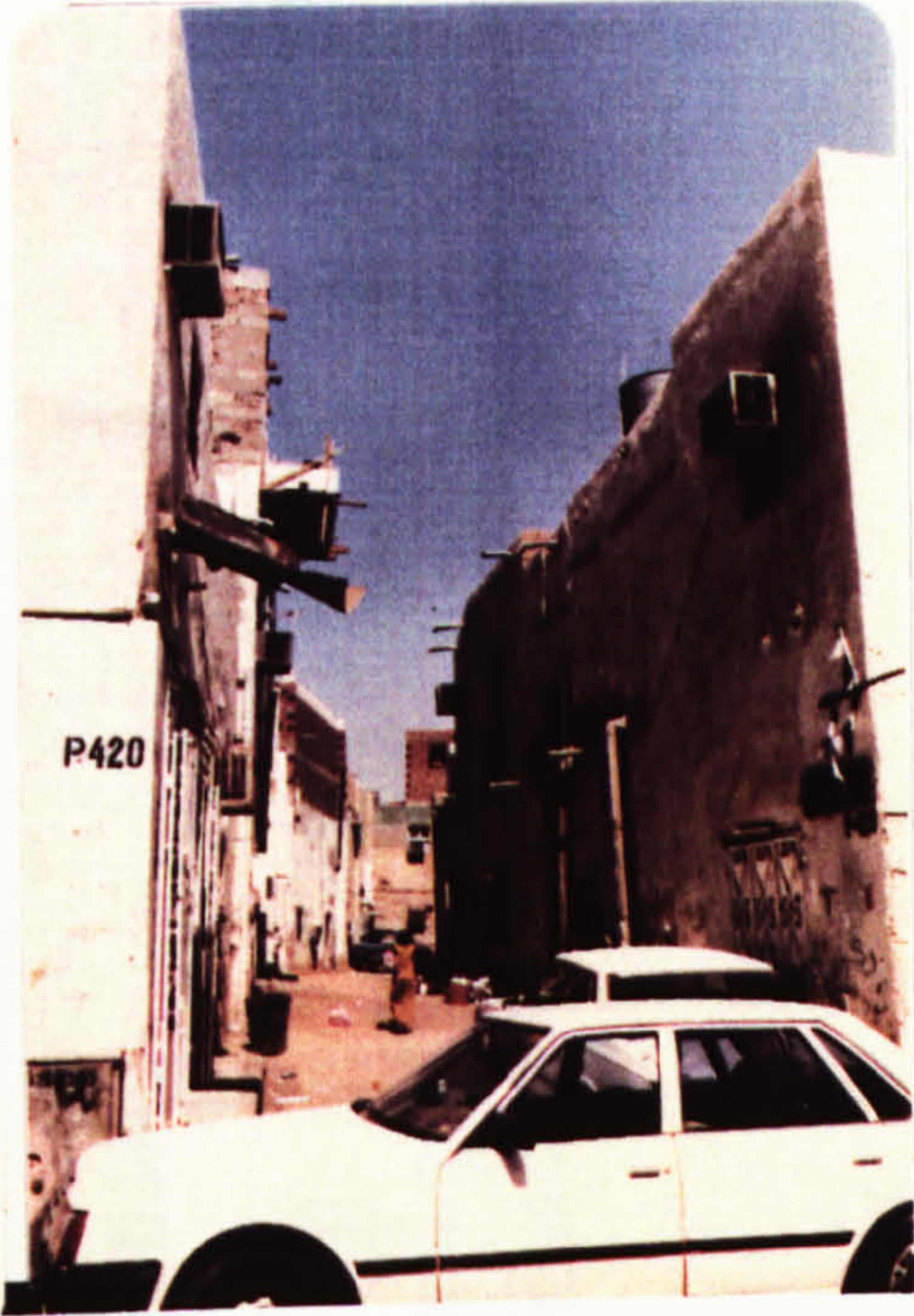


PHOTO 5.14



PHOTO 5.15

Photographs 5.14 and 5.15 demonstrate that cars are found in every street. This creates a harmful situation for the pedestrian



FIGURE 5.15 : Open spaces

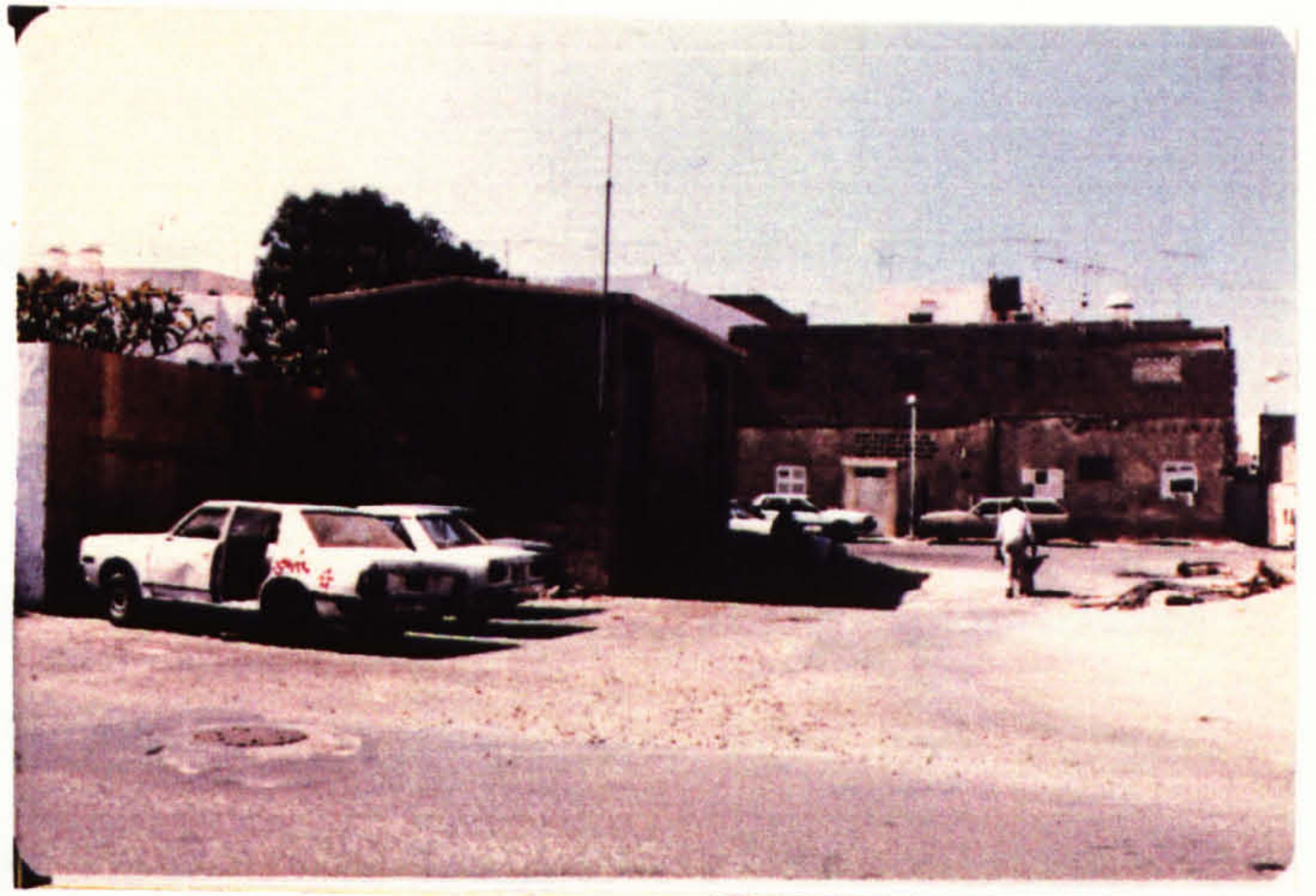


PHOTO 5.16

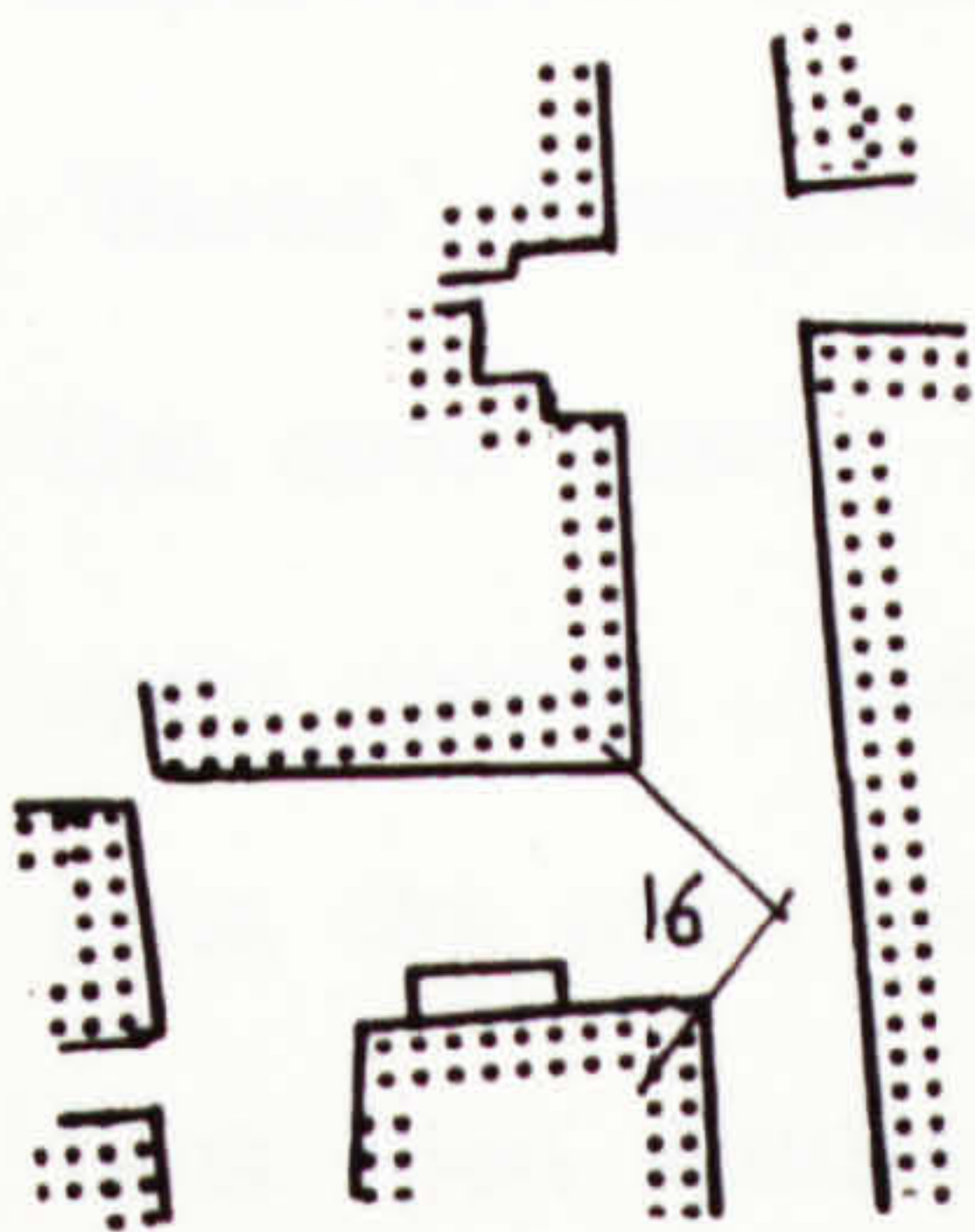


PHOTO 5.17

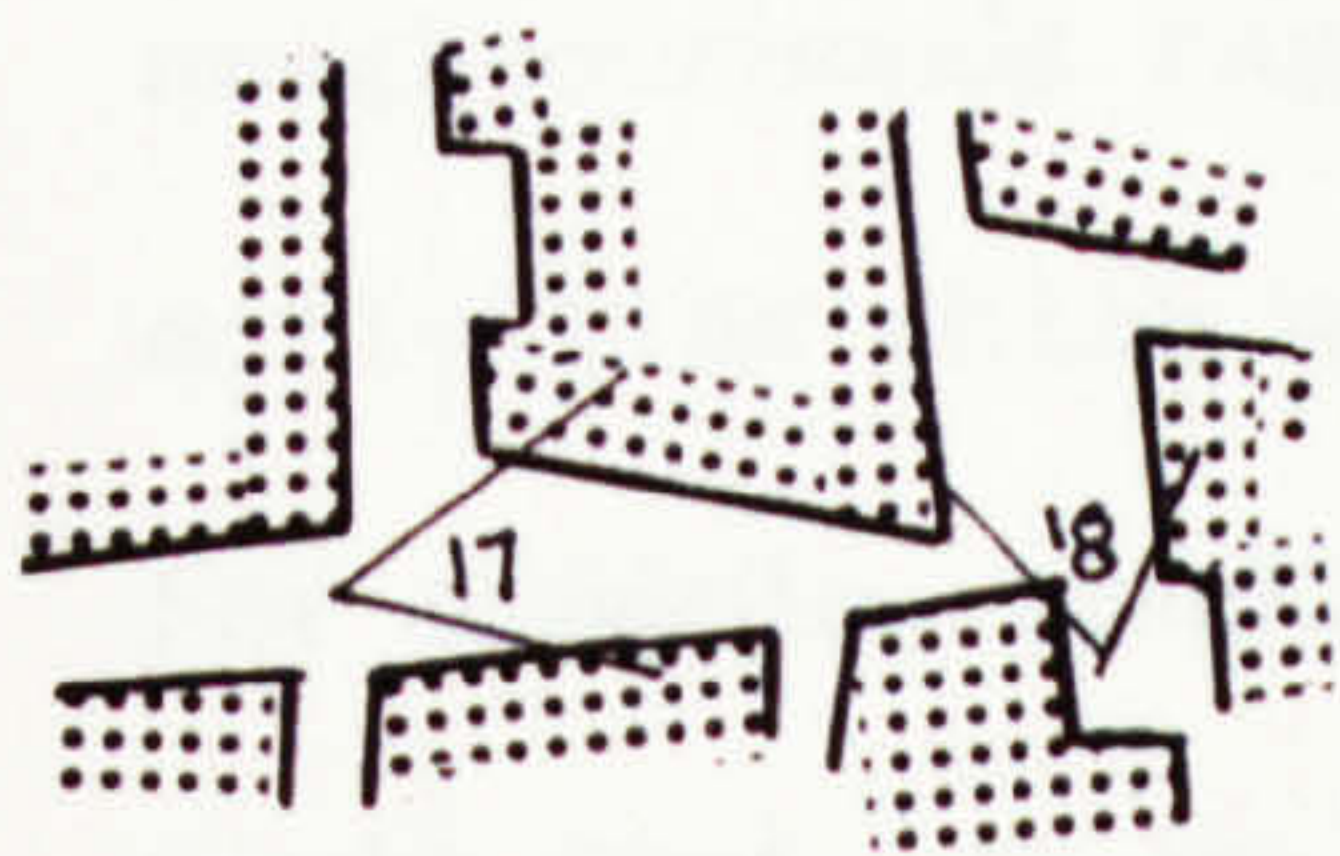


PHOTO 5.18

Open spaces are very limited and if there are any open spaces in the neighbourhood they will be used as car parking spaces, Photograph 5.16. However, some of the open spaces in the old quarters of the transitional areas provided a reasonable area for children to play or gather in shaded areas, Photographs 5.17 and 5.18.

During his field work the author was able to meet some people, in various parts of the city, and discuss various aspects of the built environment. The information regarding the open spaces in the neighbourhoods could be summarised as follows : the existing open spaces are unlike those of the past. In the past there were more and larger open spaces in various 'Haras' such as 'Al Hindawiah', 'Al Kandarah', 'Al Nuslah', etc. However, during the building boom and as a result of the increase in the number of immigrants as well as the lack of supervision from the municipal authorities, some open spaces in the 'Haras' disappeared or were misused. For example, some people built in the open space and others extended their dwellings into the adjacent open space. Also in a few neighbourhoods people enclosed some areas from the open space for their animals. Consequently many 'Haras' now lack open spaces. In the past the open spaces played an important role in strengthening the social interaction among the residents because they provided a place for gathering, especially on occasions such as marriage or 'Eid'. There was a kind of competition between residents of neighbourhoods regarding the beautification of the open spaces and the activities which were carried out during Eid or wedding celebrations. For example, shading was provided in some areas by the erection of a small tent, or by hanging clothes or a canopy between the houses. Also the open spaces were lit by various shapes of coloured lamps, etc.

It has been noticed that the remaining open spaces in the compact areas are distinct from the ones in the other areas, because they have a harmonious relationship with the other buildings and provide more air

and light, as well as a break from the monotony of the densely packed housing in some areas.

5.2.3 The physical changes

The transitional area of the city has experienced a remarkable physical transformation. New building types have replaced many of the shacks and mud houses, which were formerly found on the outskirts of the old town. The southern section of the city, as mentioned earlier still contains many slum areas of low grade housing. However the new road networks helped in clearing away some of these slums in parts of the city, especially those in the southern part of the city.

In the late 1960's and early 1970s the urban tissue of the transitional area underwent great change. An intensive street and road construction programme took place in all parts of the city. Most of the existing streets were widened to accommodate the heavy traffic loads generated by the mixed urban land use of this part of the city. Also new streets were constructed such as 'Al Amir Fahad', 'Al Televizyoun', Palestine, 'Walee Alhad', 'Al Falah', etc. In addition to this, new flyovers were erected in different parts of the city. The primary aim of this network is to provide easy access and to connect the various areas of the city. The network also alleviates the heavy traffic congestion at intersections such as Makkah road with 'Al Amir Fahad' street, or 'Al Malek Khaled' street and Madinah road with Palestine street, etc.

Consequently a major upheaval occurred in the built environment with many residential dwellings being demolished and others being disturbed by the flyovers.

It is relevant to note that, while the predicted growth of the city will create severe demands for land use for expansion, the residential use of most of the central parts of the transitional area have been declining, and there dwelling units are mostly occupied by older, poorer people and newcomers to the city. This situation has led to the deterioration of most of the dwelling units, changing the social aspect of the neighbourhood, etc.

5.3 The House and Construction Techniques

5.3.1 Housing Types

There are many different types of dwelling which can be found in the transitional area of the city. These could be categorised as 'Al Beut Al Shabiah' (singular Al Bayt Al Shabi), apartment buildings, villas, shanties 'sanadek' (singular Sandakah), in addition to the modified traditional houses. The distribution of each house type varied within this part of the city (see Chapter Six, Section 6.3.1).

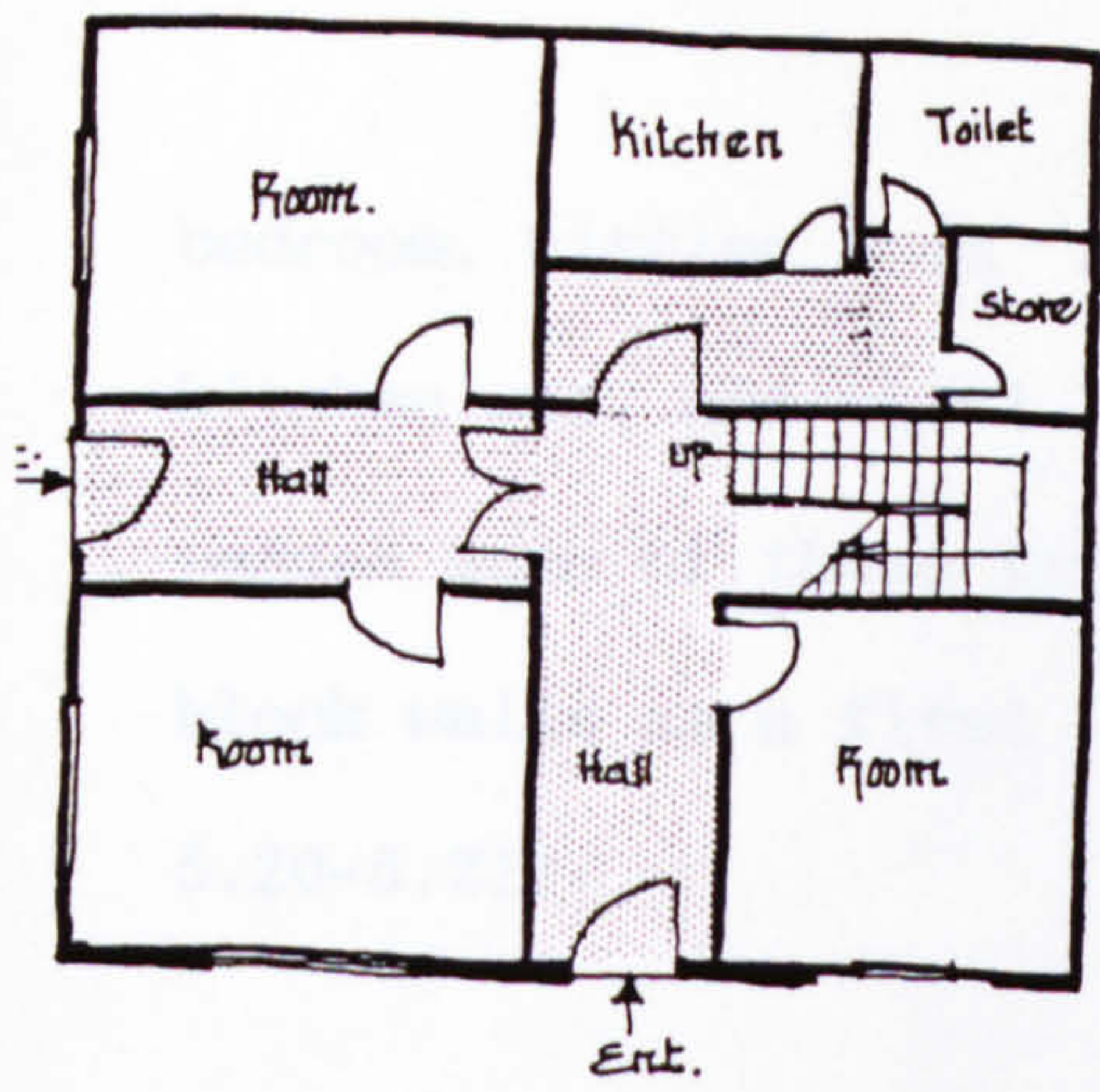
The majority of the houses which are found in the old quarters of the transitional area such as 'Al Saheifah', 'Al Kandarah', 'Al Sharaffiah', etc., are to some extent similar in design and method of construction, to the coral reef stone houses of the old town, with the exception of a

few characteristics. The modified traditional houses which were built after the demolition of the city walls in 1947. The survey revealed that the area of the houses ranges from 100 to 140 sq.m. They were two to four storeys high. They used new building materials such as cement block, brick and glass. Sometimes a combination of old and new building materials are used. In addition to that, the extensive decoration inside and outside the house is minimised and the wooden lattice work on the facade is simplified. However these houses by no means disregarded the socio-cultural value of the society. Unfortunately this phenomenon did not last long (Figure 5.16 and Photograph 5.19).

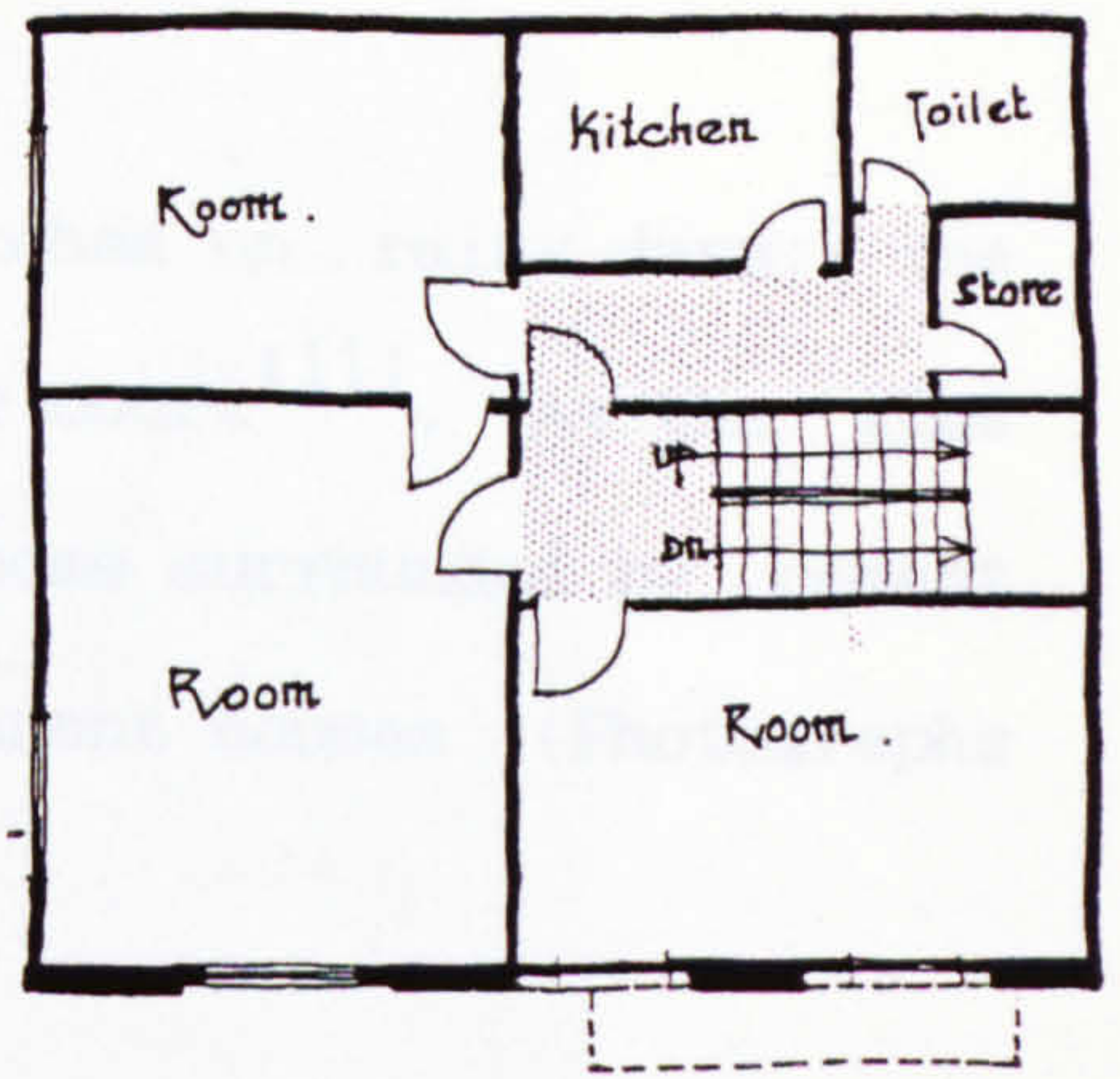
It is worth mentioning here that very few examples of traditional building are found in the transitional area of the city. Sadly enough most, if not all, of these houses are left to deteriorate, to be abused by new occupants, or to be used as a storage area until they collapse or are ordered to be demolished by the owner or the authorities.

Shanty dwellings or 'sanadek' have existed before the 1950s, in various parts outside the city walls. However as a result of the huge numbers of low income immigrants, 'sanadek' gradually have expanded in areas where vacant land was available in proximity to work places. Most of 'Sanadek' dwellings, as mentioned earlier, are found in the southern part of the city where factories, warehouses and the harbour are found.

'Sanadek' are constructed of waste timber, wooden boxes, cardboard, oil drums, tin sheets, etc. Broadly speaking 'sanadek' have no specific form, they are associated with open spaces or courtyards and their areas range from nine to sixteen sq.m. Each single 'sandakah' is used as

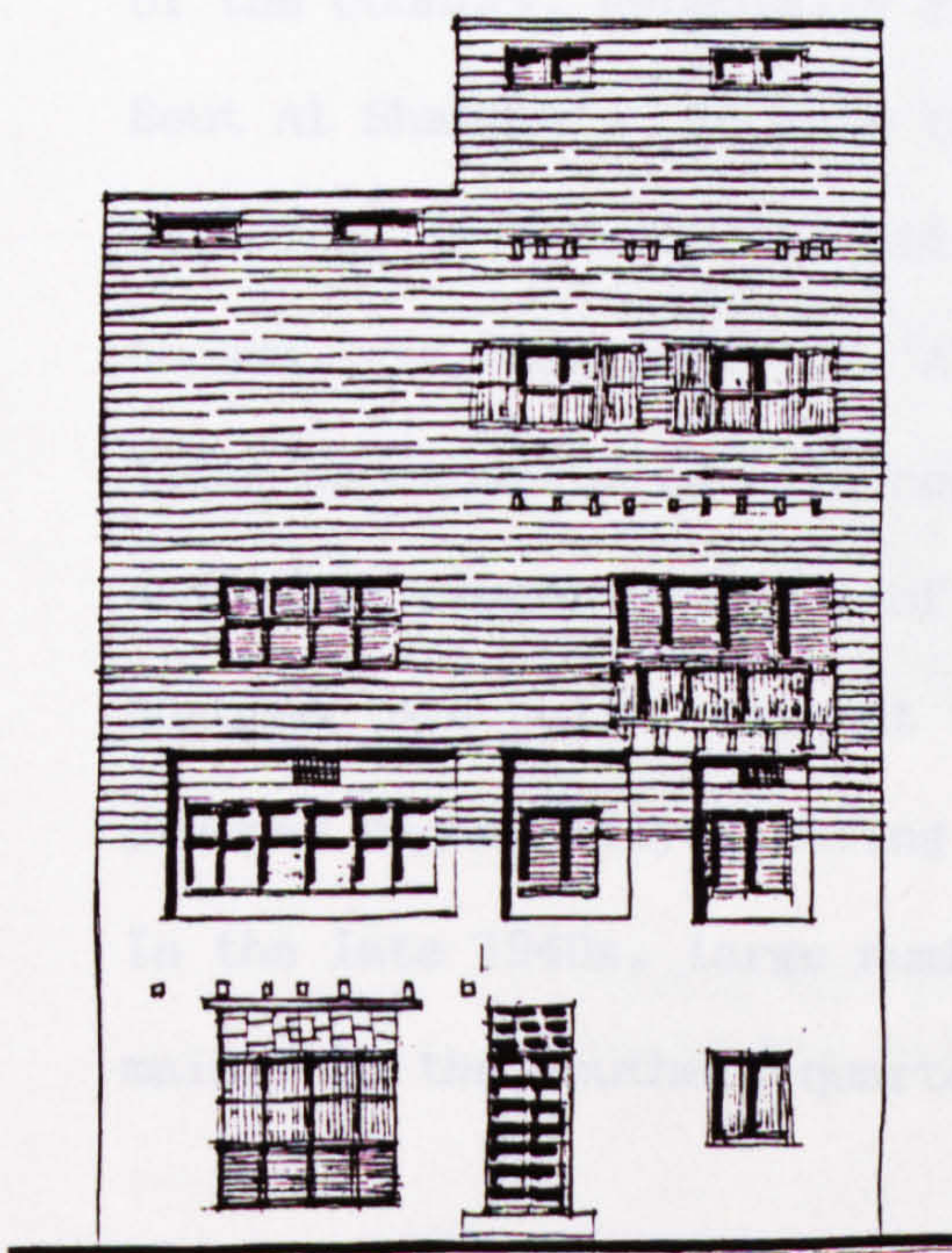
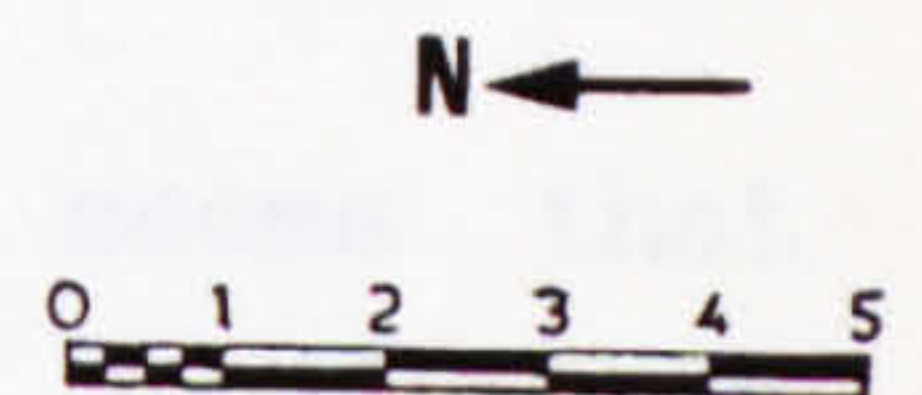


Ground floor plan



Typical floor plan

FIGURE 5.16 : A modified traditional house



West elevation



PHOTO 5.19

A view of the modified traditional house

bedroom, sitting room and sometimes as a kitchen on rainy days; the kitchen was, and still is, always a part of the court⁽¹¹⁾. As the time passed some of these types of dwelling have become surrounded by cement block walls as a first stage to building permanent houses (Photographs 5.20-5.21).

This part of the city witnessed the introduction of new dwelling types such as the apartment building and the villa and 'Al Bayt Al Shabi'. The latter was introduced in the city to accommodate the newcomers who came mainly from the southern part of the Arabian Peninsula and some African countries, such as Ethiopia, Sudan and Somalia. It seems that the cultural background of the newcomers, as well as the emergence of new building materials played a major role in the appearance of this type. As a matter of fact many people who migrated from different parts of the country, especially from villages towards Jeddah had live in 'Al Beut Al Shabiah'. So when they came to the city and could not find or afford to live in the traditional houses of the old town they built such houses. In fact most of 'Al Beut Al Shabiah' were built with mud or later on constructed with cement block or brick bearing walls and wood and earth cement-coated roof. The majority, if not all, the 'Al Beut Al Shabiah' are built without the help or advice of experts. They are grouped haphazardly, leaving very narrow spaces between the buildings. In the late 1940s, large numbers of 'Al Beut Al Shabiah' have been built mainly in the southern quarters, such as 'Al Hindawiah', 'Ghulayl', etc.

The introduction of the apartment buildings in the city was mainly to meet the great demand for housing in the mid 1950s as a result of the increase of population including foreign professionals (teachers,

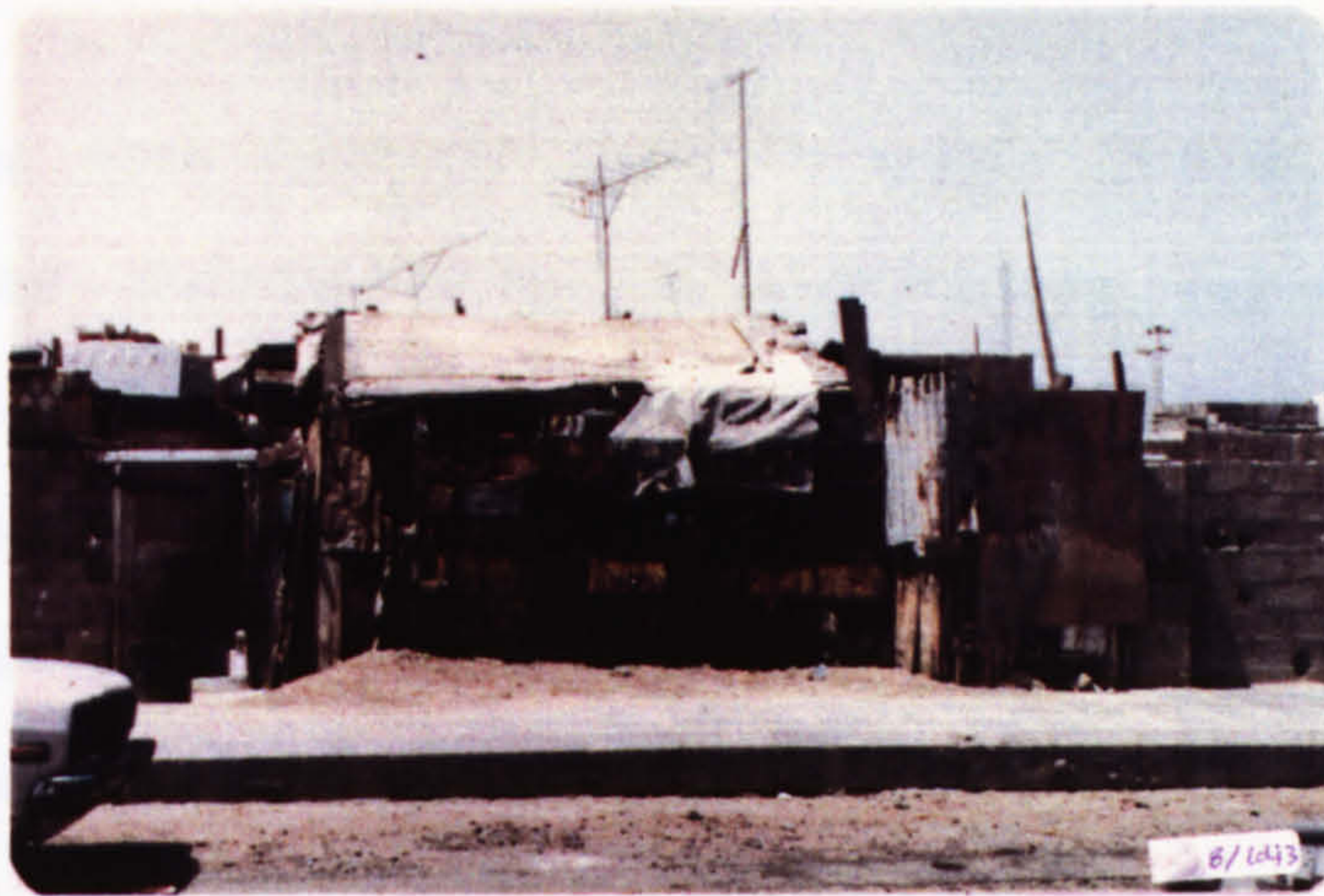


PHOTO 5.20 : Shows a typical sandakah dwelling



Photograph 5.21 shows a sandakah dwelling enclosed by walls and with a cement block addition

doctors, etc.) from Arab countries such as Egypt, Jordan, Lebanon, Palestine, etc. They contributed to the construction and spread the concept of flats in the city because each family resides in a relatively small area. The apartment buildings are found mainly in Al Hindawiah, Al Sharaffiah, Al Kandarah, Madinah road area, Makkah road area and along the major roads in the city.

The villa type of dwelling was introduced to the city in the 1950s as offering suitable accommodation for high class families (mainly traders, merchants and high ranking government officials) who started to move from the old town as it became congested by business activities and crowding to quiet areas in the northern part of the city such as 'Al Sharafiah', 'Al Bagdadiah', Madinah road areas and some areas along Makkah road. So the villas are found in a limited area in the transitional area of the city.

5.3.2 House Function

The primary function of the house is to provide a residence for the inhabitants. It was very rare to find commercial activities such as shops in the traditional house except in those which were located in 'Khan' or 'Suq' areas. In the early 1950s a new phenomenon was introduced into the residential buildings which were built in the transitional part of the city; that was a mixture of residential and commercial activities in the same building. The commercial activities were located on the ground and first floor while the upper floors were used for residential purposes. This phenomenon is found in most of the

apartment buildings in the city, particularly those which are located along the major roads; a matter which created great change in the urban image of the neighbourhood as well as the city.

5.3.3 The spatial organisation

Any analysis of houses would be incomplete without mentioning the significance of their internal spatial organisation which reveals much about their inhabitants' socio-cultural value and life-styles. It seems that, from time to time, certain events dictate that society re-examine its goals and adjust it to meet the new needs, requirements and challenges. The built environment, and housing in particular, is one of the things that reflects changes in the society. In Jeddah city this is clearly evident in the development of the housing form, from traditional houses to various housing types.

Due to the lack of information regarding the new dwelling types in the transitional area of the city, the analysis becomes very difficult. However a fair idea can be gained from a dialogue conducted by the author with some citizens, who were or still are living in this part of the city, in addition to personal observation and the physical survey.

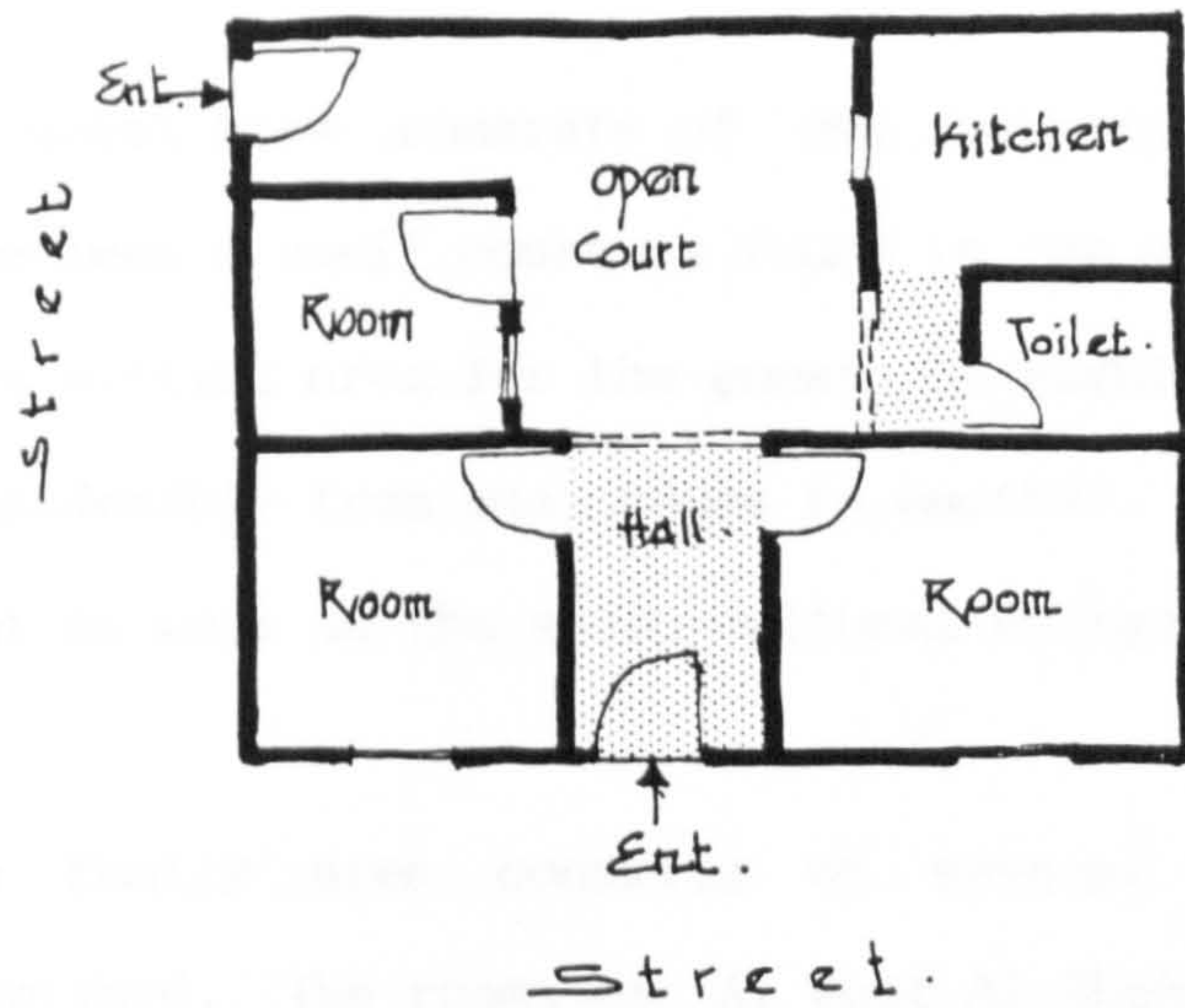
5.3.3.1 Spatial organisation of 'Al Beut Al Shabiah'

As mentioned earlier 'Al Beut Al Shabiah' were built by their owners and local builders without any expert help. The first stage of house construction was to build the boundary walls to mark the plot. Then the

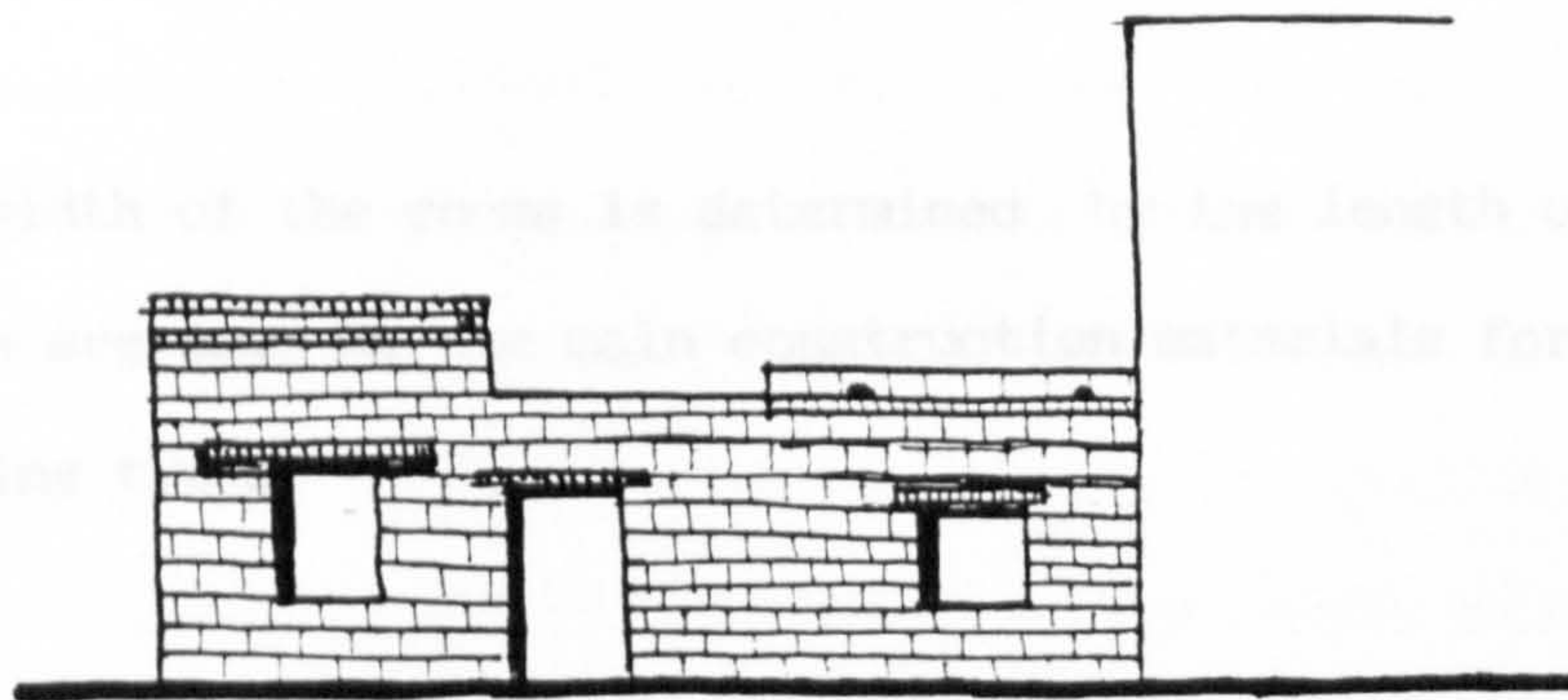
head of the family, and sometimes the builder, would divide the plot into sections, whilst always keeping in mind the possibility of any future expansion. So the house occupied a part of the plot and the other part would be kept for the courtyard. Later on, as the family grows the house will expand first horizontally and then vertically. The house usually reflects the owners' culture, life style, tradition, etc. So the spatial organisational concept differs from one house to another.

Broadly speaking the majority of 'Al Beut Al Shabiah' have courtyards, a feature which was first introduced in Jeddah city in such housing types. They are a distinctive feature of this type of housing in the city and introduced a new attitude of space organisation in the city. The courtyard has a significant role to play in the spatial organisation; the rooms are arranged in a way that leave an open courtyard which is used for all outside functions such as sitting, washing and children's play; sometimes even livestock would be kept there. However it seems that, from the author's observation, the courtyard is not utilised sufficiently. For example, all the windows and openings are found to be opening to the outside, creating difficulties in controlling the visual privacy. If they opened towards the courtyard this problem could be avoided.

The survey revealed that the area of the houses ranges from 80 to 130 sq.m. The house is one or two storeys high. It consists of a guest area, a family area, a courtyard and usually has two entrances. Quite often in the initial layout the built-up area did not cover the whole plot and the house may have more than one courtyard (Figure 5.17).



House plan



Front elevation

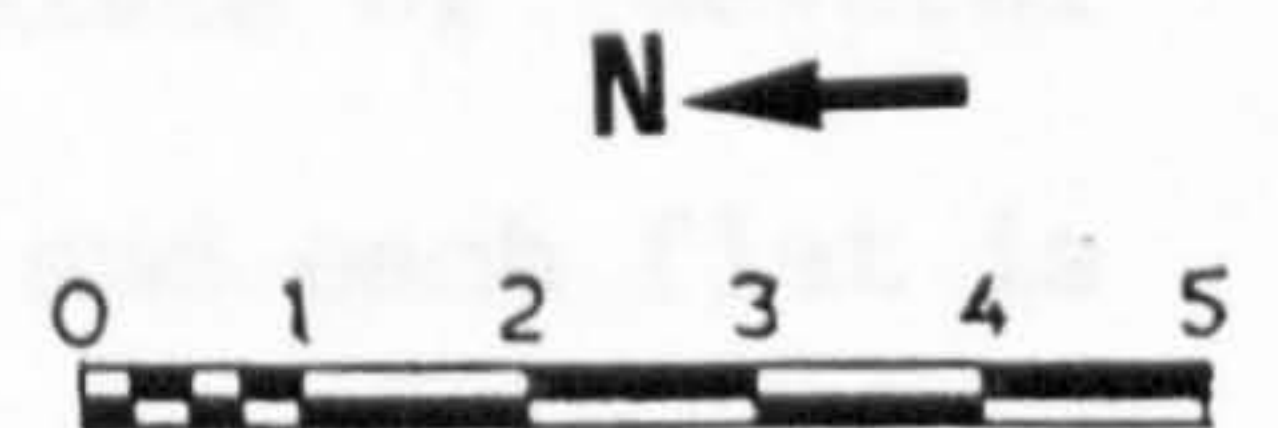


FIGURE 5.17 : Al Bayt Al Shabi

The guest area consists of one reception room near the entrance and sometimes a small court is found in the guest area where it is utilised as a sitting area for the guests at night. The size of this area varies considerably from one house to another, depending on the size of the plot as well as the socio-cultural background of the family.

The family area consists of several rooms, kitchen, toilets and courtyard. The rooms of 'Al Bayt Al Shabi' usually do not have specific functions. The entrance of this section of the house is either from the court or hallway 'salah' leading to the court. The 'salah' in 'Al Bayt Al Shabi' is the main area for the family where they spend most of their time. Usually it has three walls and opened to the court providing a reasonably ventilated area.

The width of the rooms is determined by the length of the wooden beams which are used as the main construction materials for the roofs of such housing types.

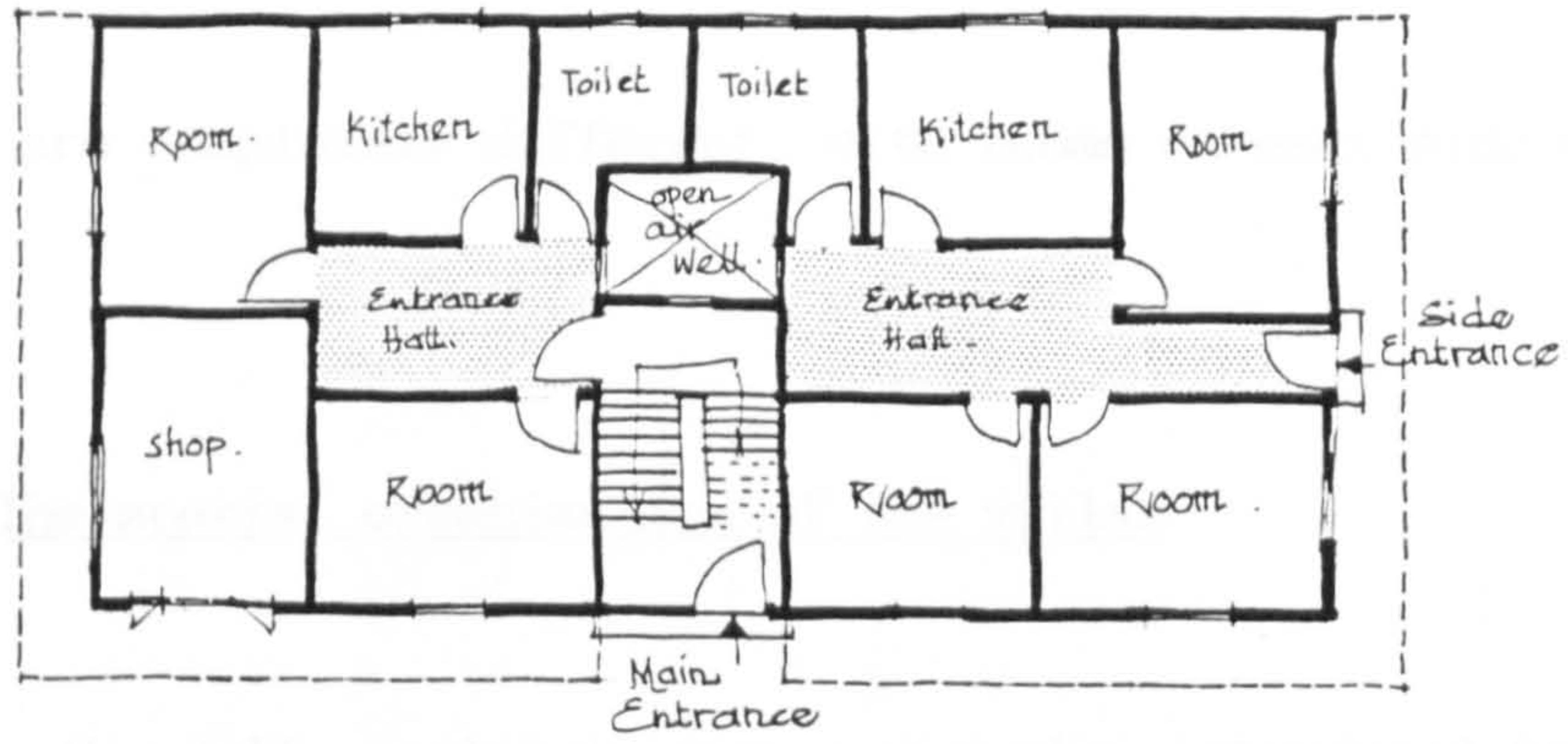
5.3.3.2 Spatial organisation of the apartment buildings

The spatial organisation of the apartment building differs from the traditional house and 'Al Bayt Al Shabi' in that it consists of several flats per floor, the majority having two to four flats, and each flat is considered as a separate dwelling unit. Each dwelling unit consists of habitable rooms, a kitchen and usually two toilets the area of the flats ranges from 80 to 110 sq.m. The number of the habitable rooms varies; it has been found that 57.2% of the flats have four rooms and 32% have three rooms (see Chapter Six, Section 6.3.2.1).

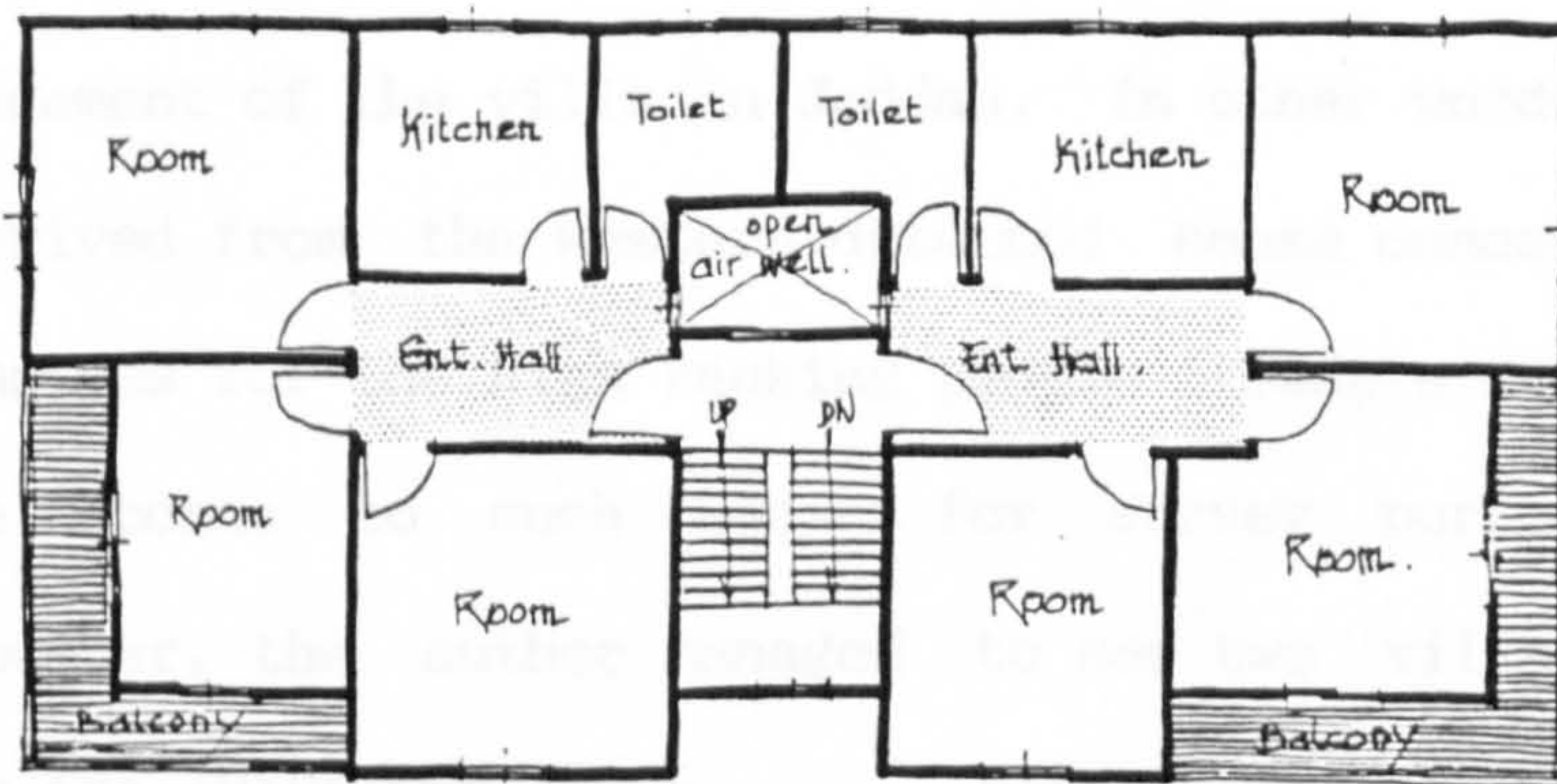
Initially the apartment buildings were designed by architects. It is worth mentioning that in the 1950s the architects were very limited in numbers. There were no Saudi architects in the city and the few architects in Jeddah were newcomers, either from other arab countries, such as Egypt, Lebanon, Jordan, Palestine, etc., or they were western architects who came to the city in the employment of contracting companies. The great demand for housing and the lack of municipality control on building design encouraged many people, such as civil engineers, draftsmen, surveyors and even contractors, to participate in the design of the apartment buildings.

Consequently a wide variety of design concepts was introduced in the new buildings, particularly in the apartment buildings. Generally speaking the flats were designed in such a way that most of the rooms were arranged in a linear manner leaving a narrow corridor for circulation between them, or sometimes the rooms were arranged around a central hall (Figure 5.18). The different sections of the dwelling unit, such as the guests domain, or the family domain were hardly distinguishable. The main entrance of the flats within the building usually faced each other.

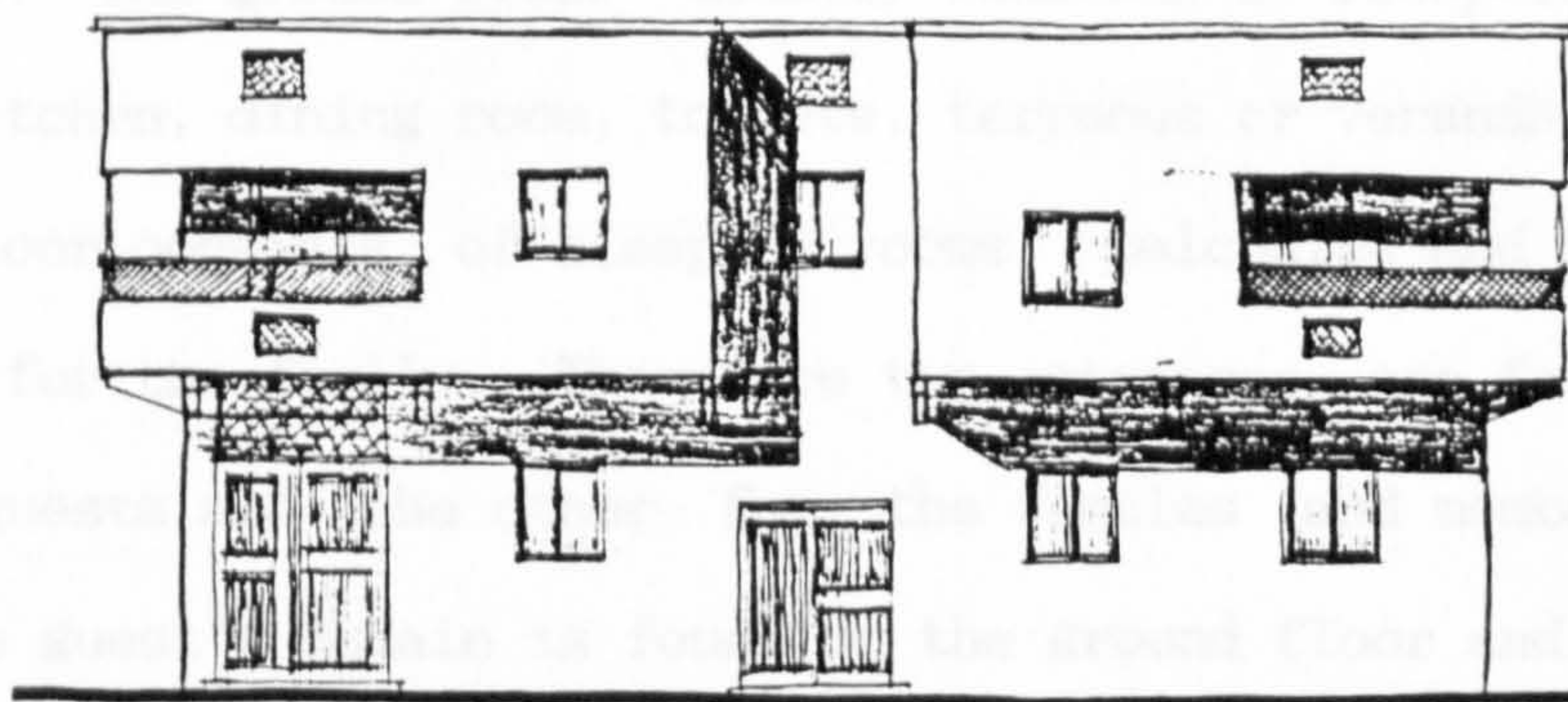
It was noticed during the physical survey that most of the traditional houses in the old town maintained certain arrangements, to benefit from the sea breeze. Thus whenever possible the habitable rooms such as reception rooms, family rooms, etc. are located in the northern side of the house and most of the service areas, such as the kitchen, toilets and stairs are located towards the southern side of the house. However,



Ground floor plan



First floor plan



Front elevation

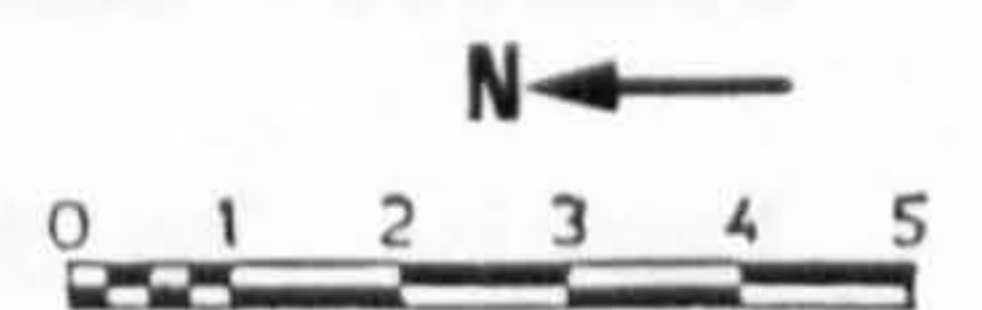
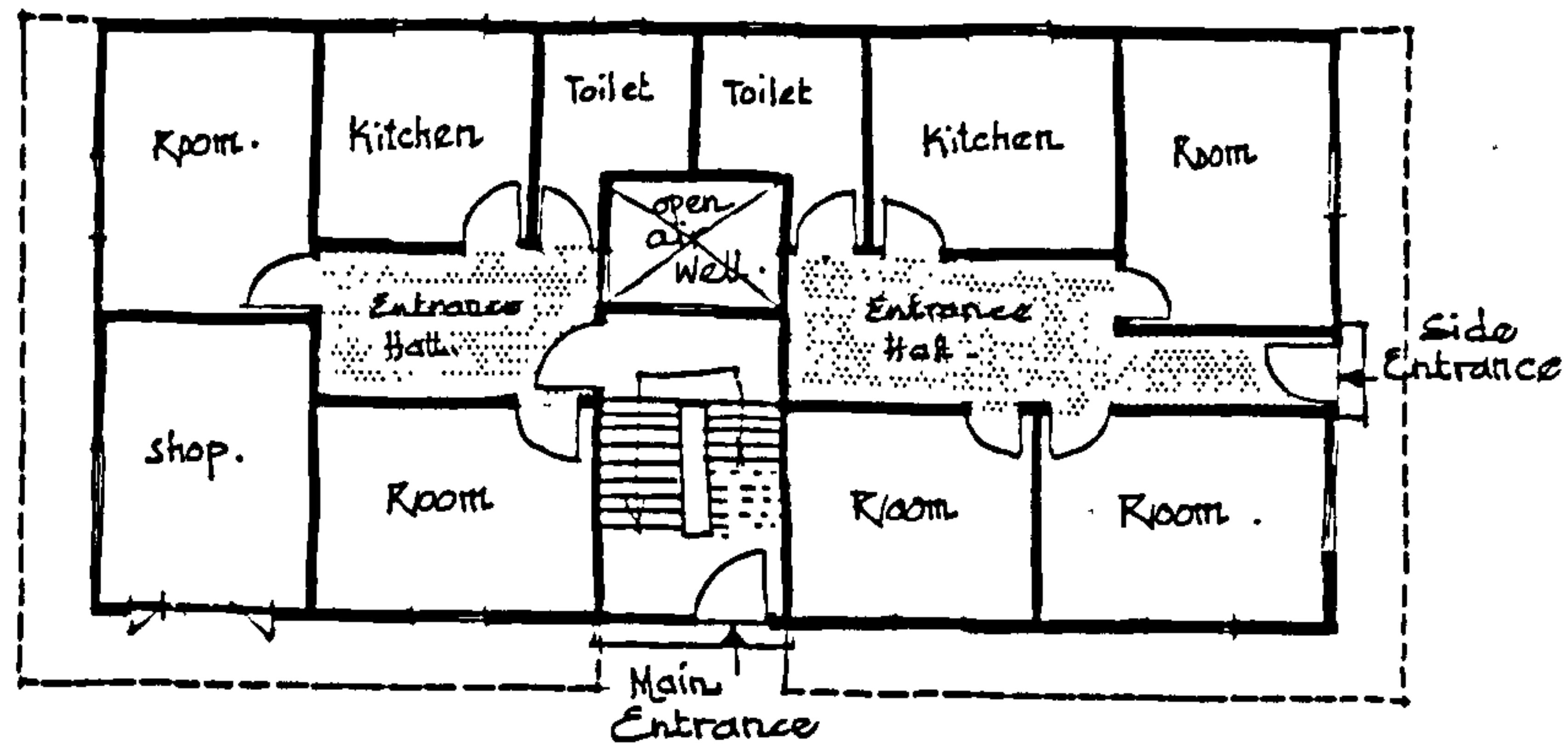
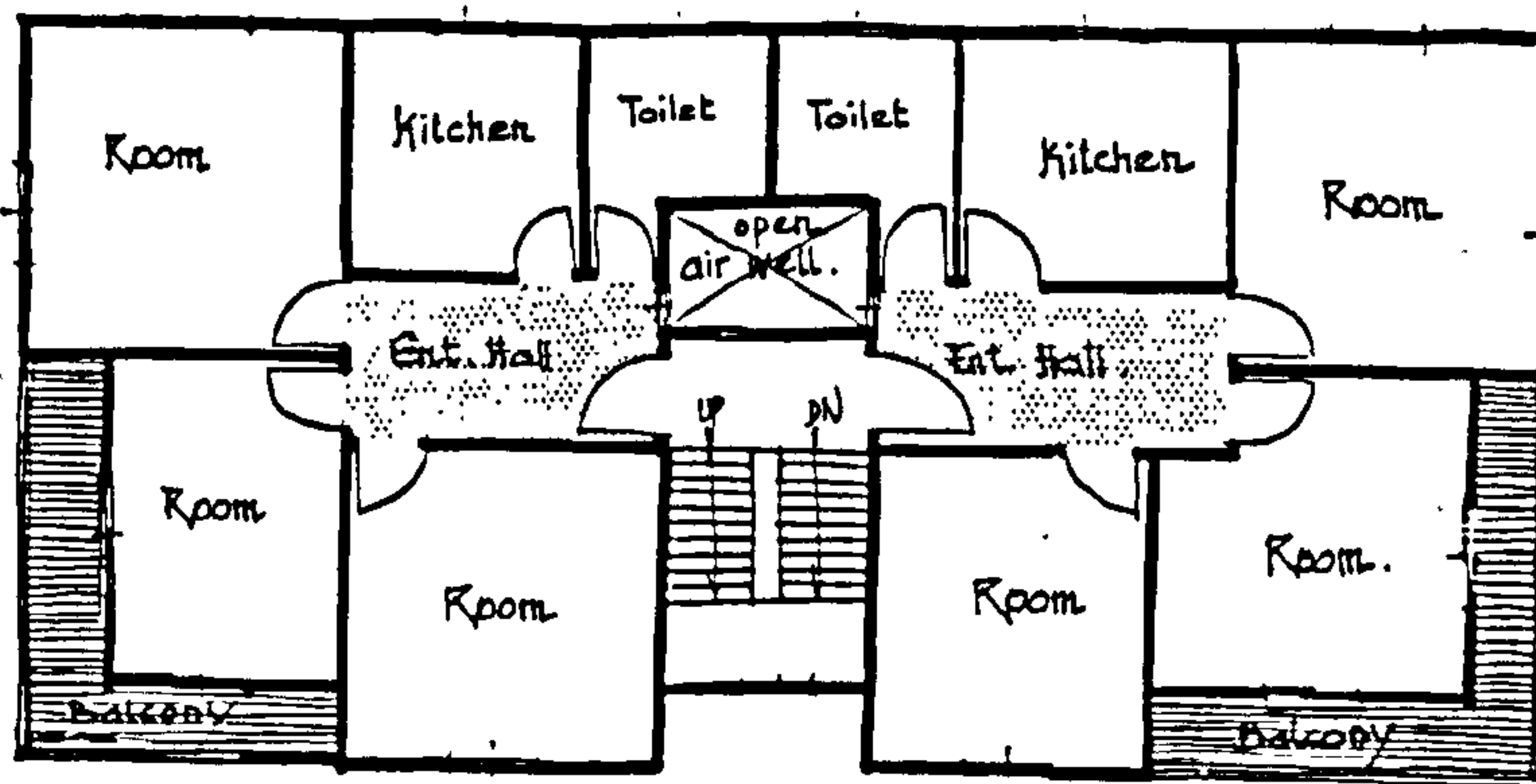


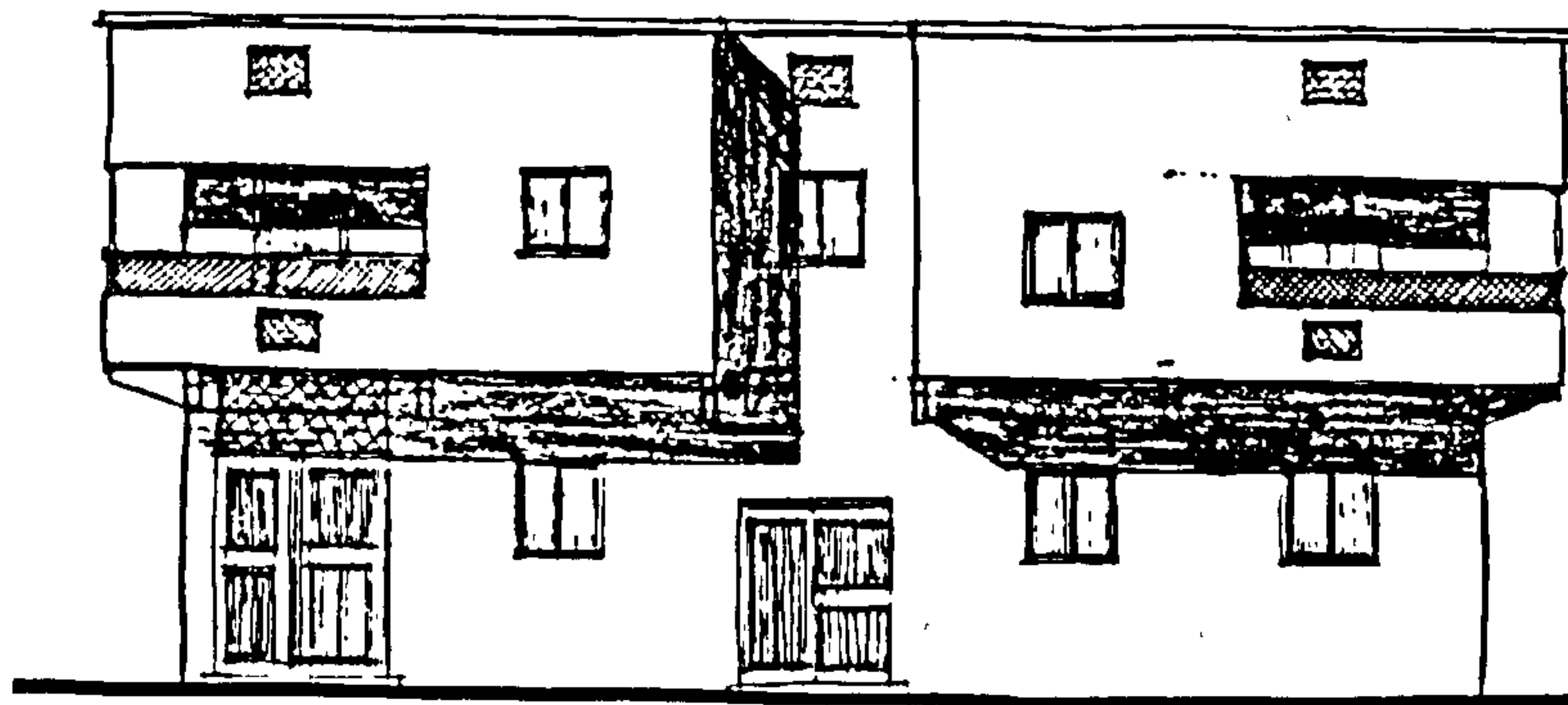
FIGURE 5.18 : The apartment building



Ground floor plan



First floor plan



Front elevation

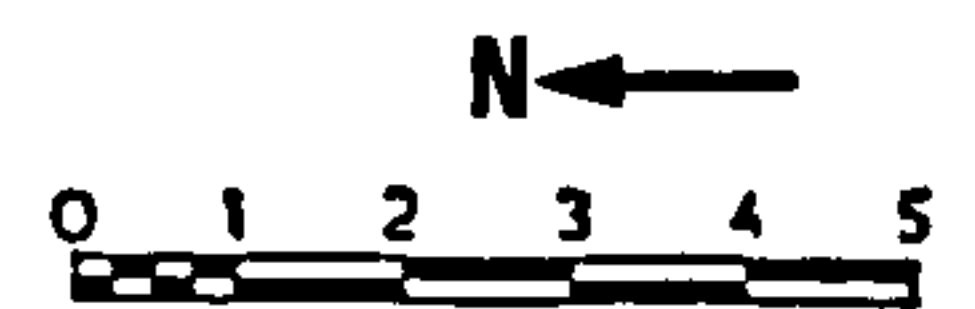


FIGURE 5.18 : The apartment building

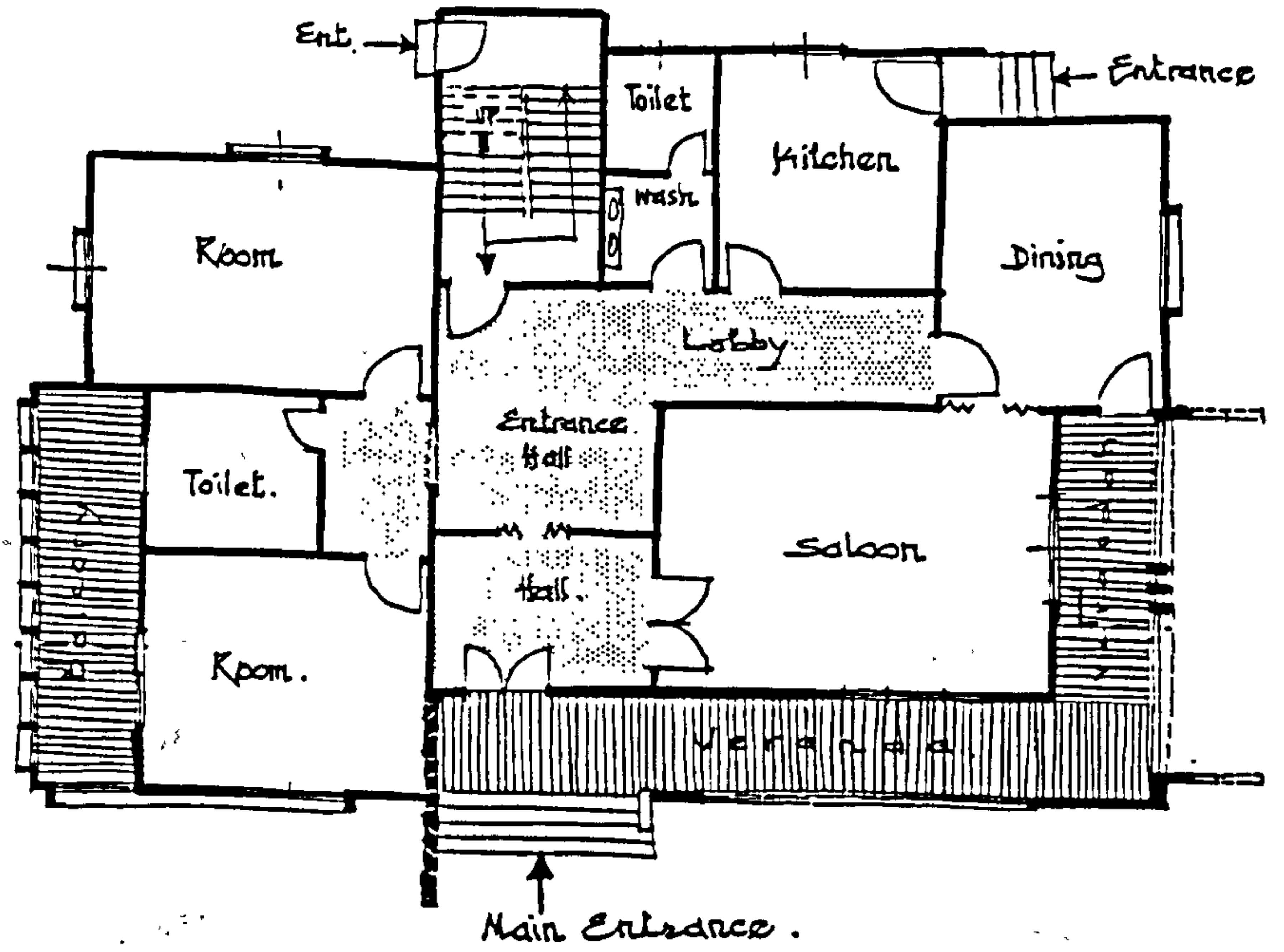
the new houses are completely different with rooms on each side of the building.

5.3.3.3 The spatial organisation of the villas

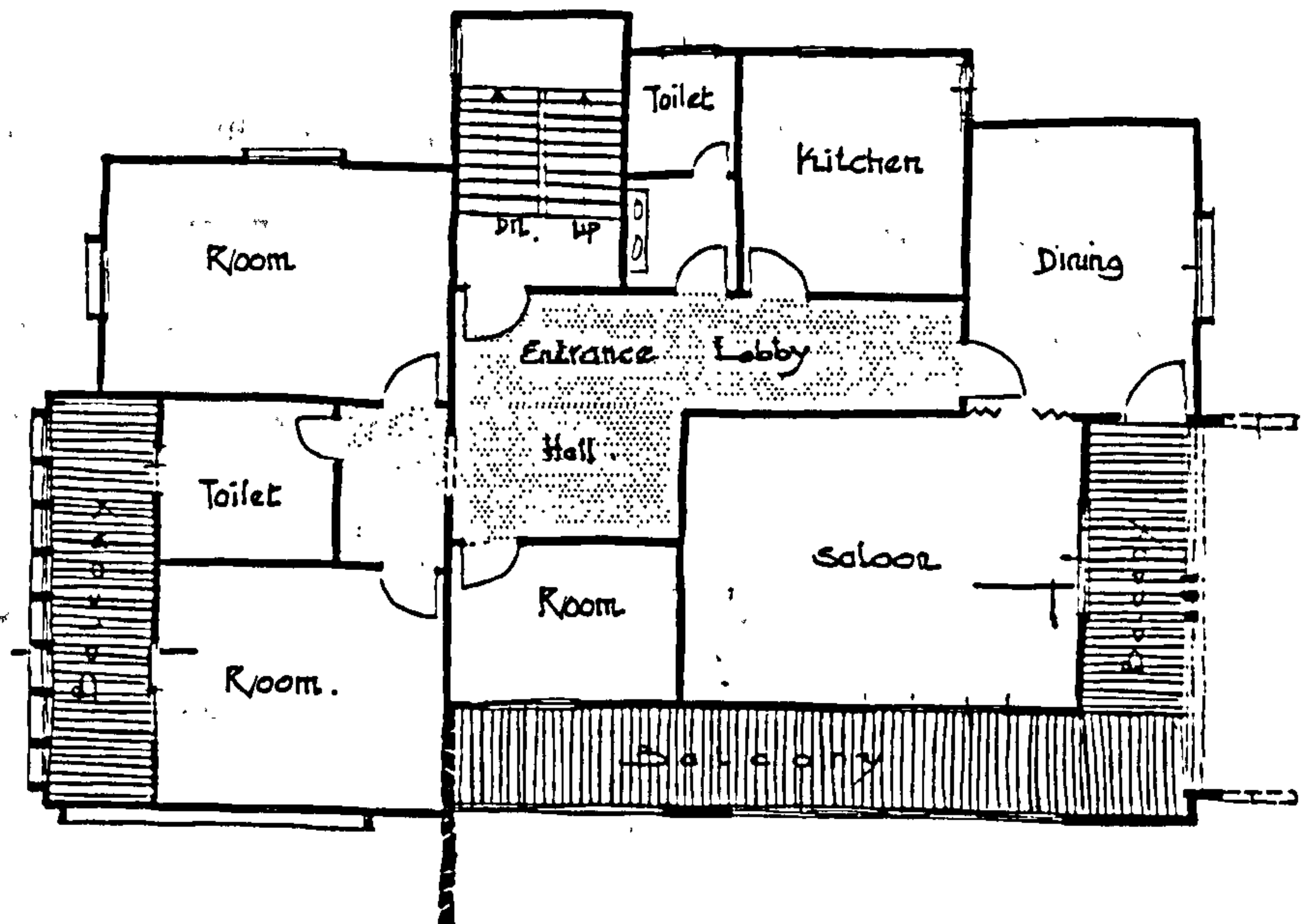
The concept of the villa dwelling type was newly introduced into the city in the mid 1950s. Undoubtedly the influence of the western plan type of the European detached house on the architect's mind affected the internal arrangement of the villa in Jeddah. In other words, the villa concept was derived from the western detached house concept. As this type of housing was for the high ranking people (traders and government officials) the access to such houses for survey purposes is very difficult. However, the author managed to see two villas which were constructed in the 1950s and 1960s.

These types of housing are two storeys high with an area ranging from 220-270 sq.m. The ground floor usually consists of reception rooms or salons, a kitchen, dining room, toilets, terraces or veranda and stairs. The first floor consists of sleeping rooms, balconies and sometimes a living room for the family. There are two entrances, one for the males and their guests and the other for the females and members of the family. The guest's domain is found on the ground floor and the family domain is found partly on the ground floor and on the whole of the first floor. The whole plot is surrounded by high walls with the home located in the centre surrounded by a garden; therefore the windows and terraces are opened to their own domain of open space and some extent of visual control is provided (Figure 5.19).

Ground floor plan



First floor plan



North elevation

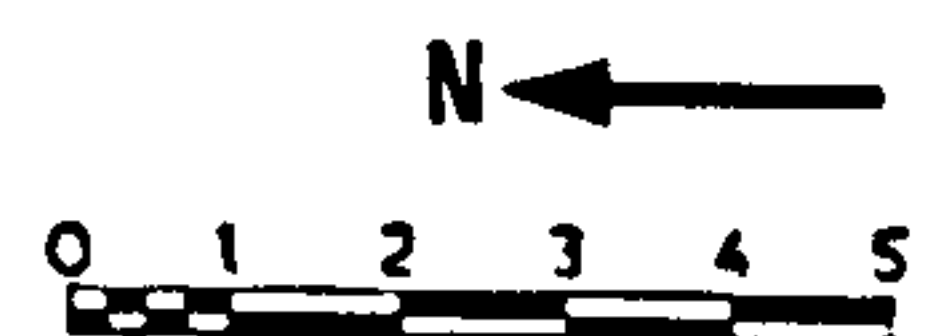
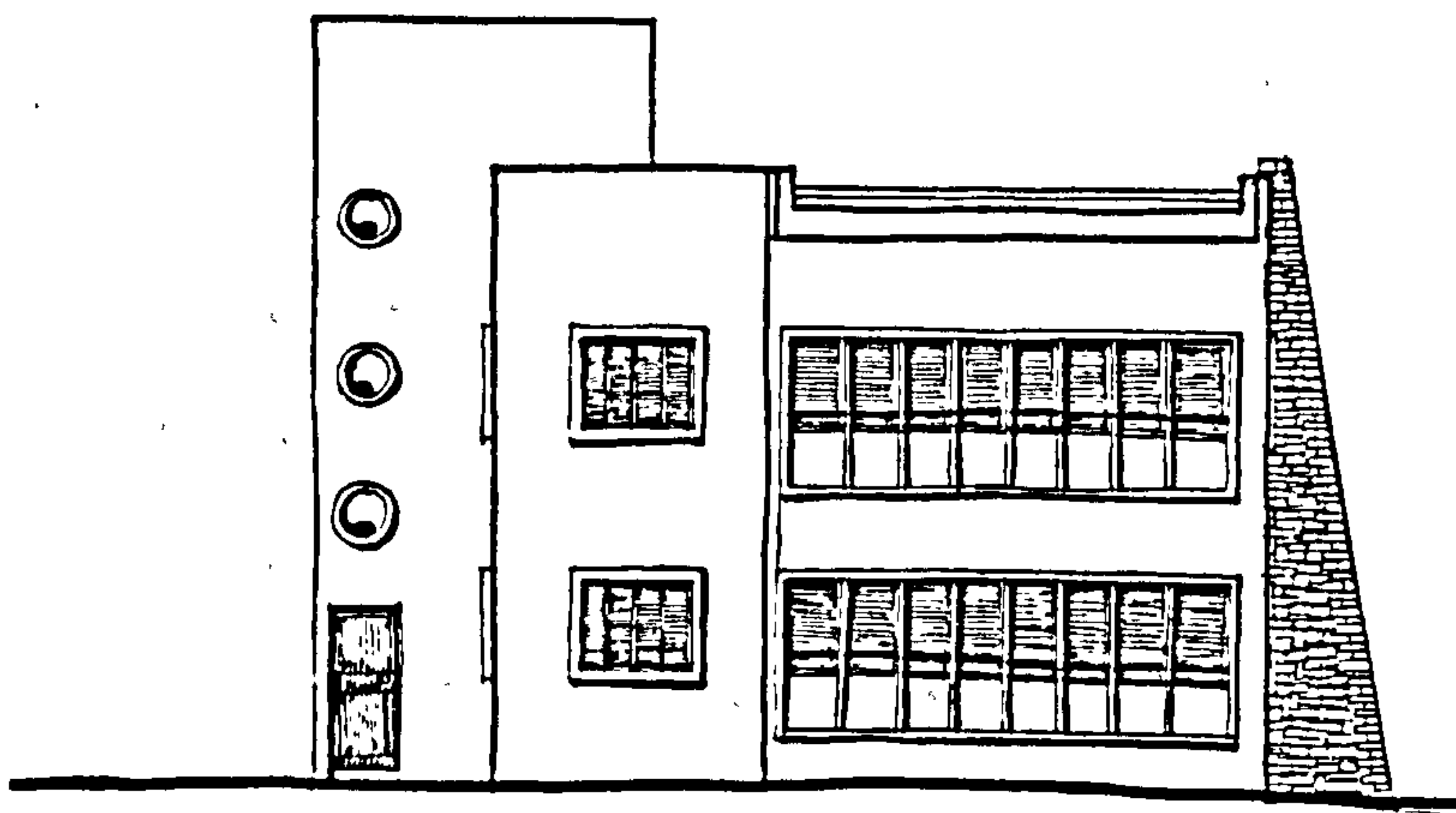
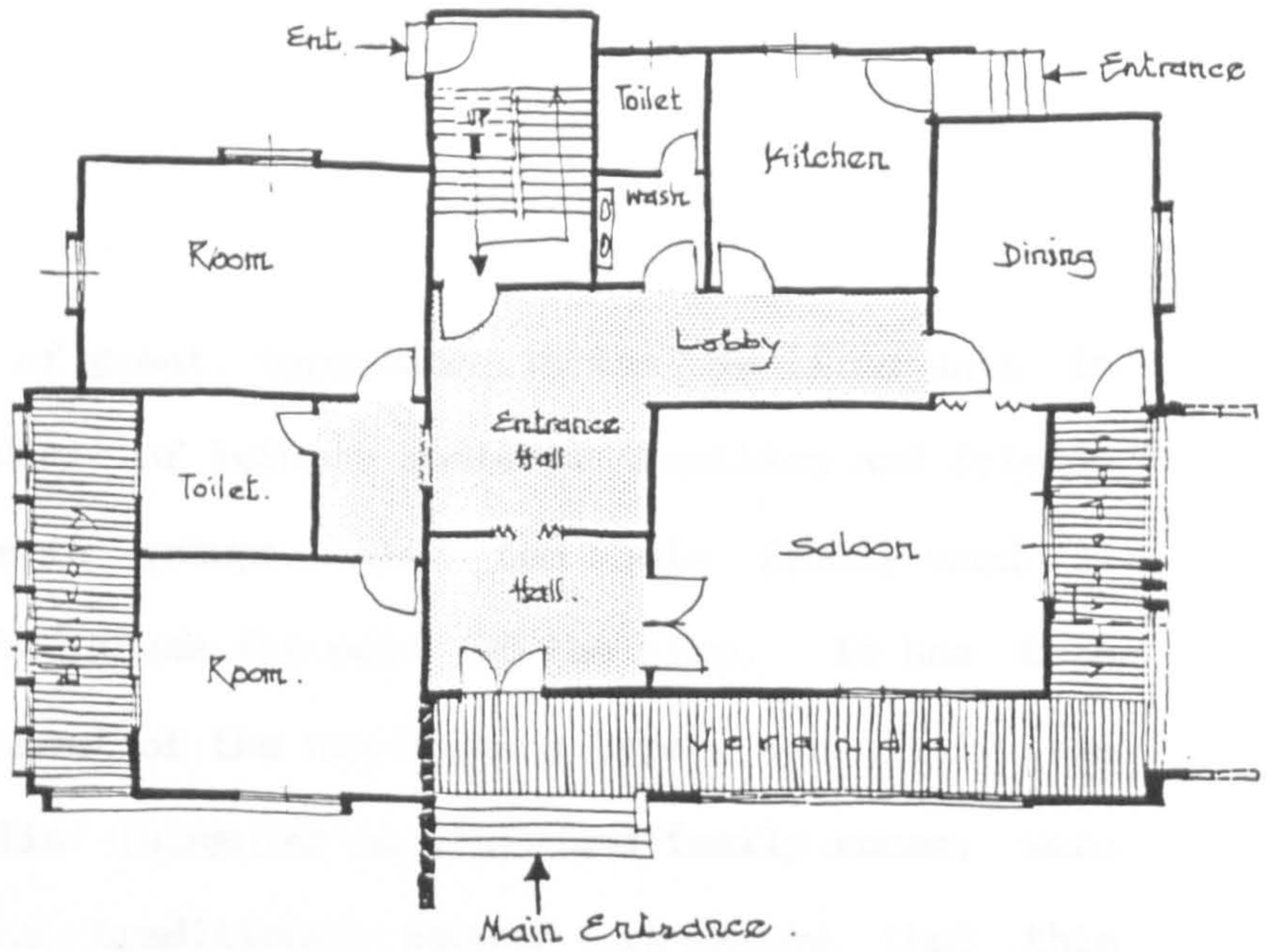
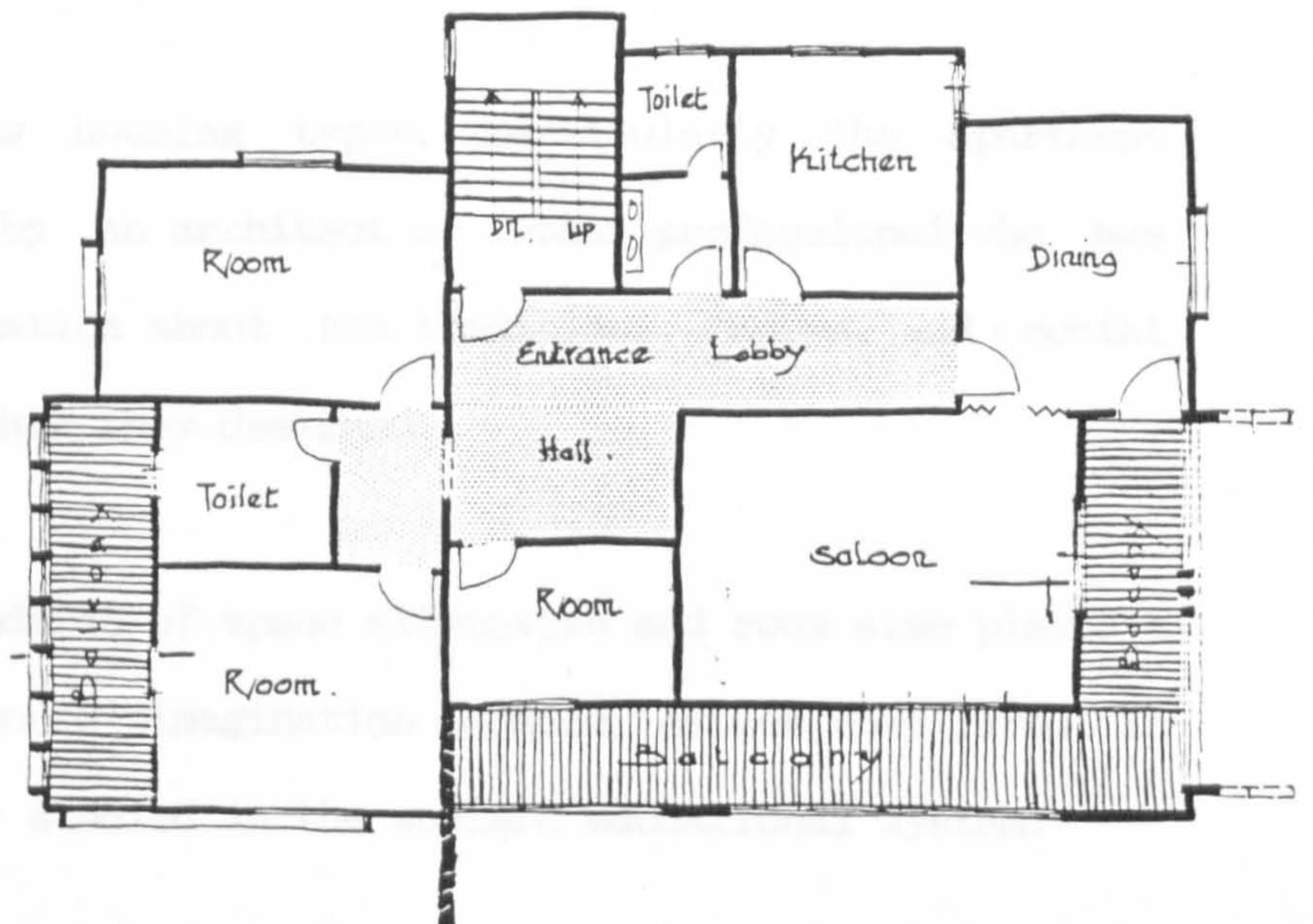


FIGURE 5.19 : The villa type

Ground floor plan



First floor plan



North elevation

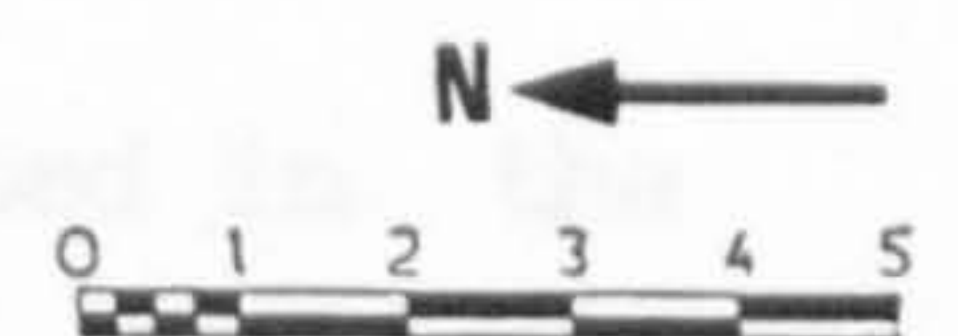
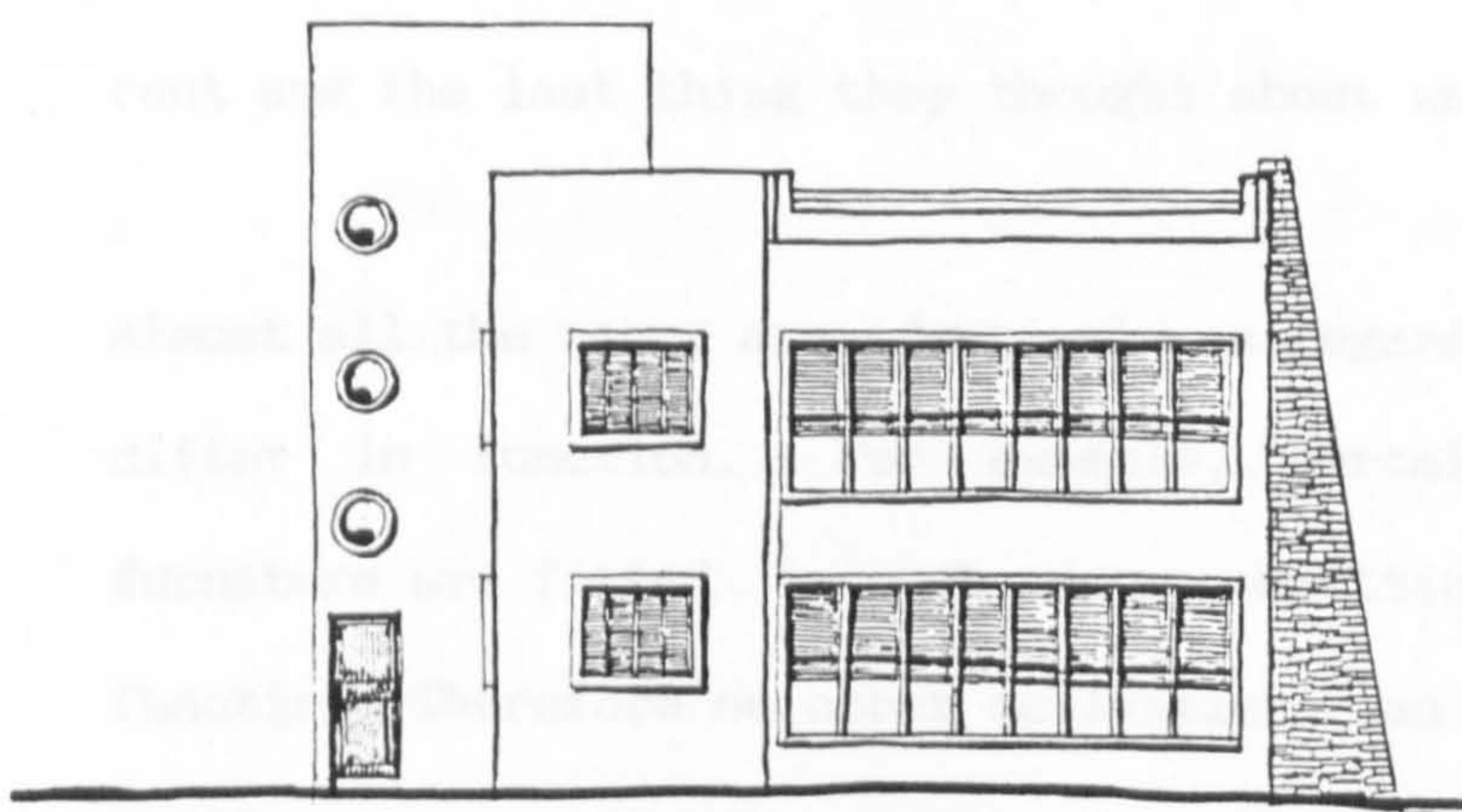


FIGURE 5.19 : The villa type

5.3.3.4 The rooms

The size of the room is of great importance in the dwelling unit in Jeddah society as in the whole of Islamic society. Families and friends used to visit each other in groups. Also the whole family used to gather in one place in the house for most of the time. It has been noticed that the rooms of most of the new housing types, especially the reception rooms or 'majalis' (singular majlis) and family rooms, were smaller than those of the traditional houses. It seems that this phenomenon appeared for the following reasons :

First, most of the new housing types, particularly the apartment buildings, are designed by an architect or other professional who has not had adequate information about the traditions, norms, and social life of the people for whom they designed.

Second, the western standards of space allocation and room size played a great role in the designers' imagination because either they lived in the western countries or studied in the western educational system.

Third, the majority of the building owners built their buildings for rent and the last thing they thought about was the tenant.

Almost all the rooms are identical as regards shape and size, but they differ in function. For example, certain types of hard-to-move furniture are fitted in each room committing each room to a special function. Therefore no other activities can be easily conducted in the space.

5.3.3.5 The kitchen

The kitchen is regarded as the female area; traditionally it received a lot of attention in the spatial organisation of the house. In the traditional houses the kitchen has a unique location from the privacy and odour point of view. Usually it is found at the rear of the house on the southern side, to minimise the disturbance caused by the smell of cooking food, permeating the living area of the house. In the new housing types, the kitchen has no specific location. However, sometimes in 'Al Beut Al Shabiah' it is found associated with the courtyard because some cooking activities were carried out in the courtyard and also this situation provides good ventilation for the kitchen. The kitchen is generally small but varies in size from one house type to another. It seems that the kitchen in the flats is smaller than that in the villa type or 'Al Bayt Al Shabi', because the owner of the apartment buildings was interested in the number of rooms in the flats, which usually played an important role in determining the rent value. Less attention was given to the service rooms such as the kitchen and bathroom.

5.3.3.6 The bathroom

In the 1950s-1960s there was considerable change in the sanitary standards of bathrooms in the new housing types in comparison to those of the traditional houses. This was due to the availability of water in a reasonable quantity in the city, and to the installation of new equipment in the bathrooms. In addition to the privy (this type is called eastern or arabic bathroom), additional equipment was introduced

such as washbasins, bathtubs and bidets (called a western bathroom). Thus, in one house, one could find two types of bathroom. Accordingly, the design and size of the bathroom has been changed.

In the traditional house, the toilets are located as far away from the living area as possible, to allow any odour to disperse. But as the condition and standard of the toilets has been improved, they have been found nearer the living area and associated with some area such as a guest reception area.

It should be noted here that the most important technical innovation to be introduced was the installation of piped water to the bathroom and the kitchen. This has affected the design as well as the hygienic standard of the dwelling unit, in that the kitchen and bathroom are usually located next to each other whenever possible.

5.3.3.7 The balcony

The extension of the indoor spaces towards the outside by means of projecting spaces was not new in the houses of Jeddah. Traditionally these spaces received considerable attention from the builders when they extended the interior spaces in the form of 'rawashin', or balconies, and treated them in a way that allowed the occupants to use such spaces without any invasion of interior privacy. This phenomenon gradually disappeared with the introduction of the new housing types. An open balcony appeared instead which was merely an outdoor space attached to the private indoor space.

Open balconies were, and still are, a distinctive feature of the apartment buildings and villas. They were rarely found in 'Al Beut Al Shabiah'.

The size, shape and orientation of the balconies differ from building to building. It has emerged from the physical survey and personal observation that the majority of the balconies are very small and narrow, sometimes less than two square metres, and most of them are totally exposed to the external environment, generating a privacy problem, which makes their utilisation extremely difficult.

On the one hand balconies are found in a reasonable position, for example in the sitting room or in the family domain. They could be used, if they were treated appropriately, by the members of the family to relate themselves to the outside environment. On the other hand they have been found in some buildings in the guests domain, ie. in the reception room, which makes it hard for members of the family to use them, especially when a guest is present, or for any other uses except as storage space for children's toys and house furniture.

5.3.3.8 The roof

The roof still maintains its traditional use, where the facility of roof space exists. However it has been noticed that in 'Al Beut Al Shabiah', particularly in those buildings which have a courtyard, the roof space is not utilised because most of the activities which were carried out on the roof have been transferred to the courtyard.

The roof of the apartment building is normally used by the apartment owner if he lives in the building. Alternatively the roof space is divided equally between the occupants of the upper floor for their use.

In the villa dwelling type the roof is not used at all except in some cases, where some parts of the roof of the ground floor are not built upon, this part is used as an open or semi-open terrace (Photographs 5.22-5.23). In fact some villas have a pitched roof, a phenomenon alien to the local architectural tradition.

Generally speaking all the used roof spaces are surrounded by solid high parapet walls, to maintain the desired level of privacy; openings are seldom seen in such walls (Photograph 5.24).

5.3.4 Use of space

5.3.4.1 Activities

The activities which are carried out inside the dwelling unit have been affected by the social traditions of the inhabitants. It has been found that, in the late 1940s and 1950s, people continued with their traditional practices, ie. people continued to sit, eat and sleep on the floor. Lately chairs, tables, sofas and beds have been introduced into many homes, in particular the apartment buildings and villas. In fact, the first space of the house to be affected by the introduction of such types of furniture was the guest domain or reception area. In other words, the spaces used for the guest were, and still are, considered the



PHOTO 5.22



PHOTO 5.23

Photographs 5.22 and 5.23 show the utilisation of the roof in the villa



PHOTO 5.24

Photograph 5.24 shows the utilisation of the roof in the apartment building

most important expression of the owner's or occupier's state and status, so almost all of these spaces were furnished with the new fashionable furniture.

The family domain in all housing types maintained its function as the busiest section of the house, where cooking, washing, looking after the children and other domestic activities were conducted. It is worth mentioning that in the late 1960's a new activity was introduced in this section, mainly in the living room, which was watching television. The television was introduced in Saudi Arabia in 1965, immediately playing a dominant role in the daily life of Saudi society⁽¹²⁾. Also it affected the ideology of the people by its panoramic view of the outside world. Accordingly, in one way or another, some social traditions have disappeared. Also the space utilisation of the dwelling unit has been affected. For example, traditionally the members of the family spent their time in a constructive manner; educating their children, discussing their daily life, their problems and their plans for the future, preparing food or other goods for sale, etc. But after the introduction of the television all the family members gathered in one place watching TV almost all of the time (from the first minute of broadcasting until the station closed down). In the end they reached a stage where they would apply all they had seen on the television to their arrangement of furniture, the way of life, etc. Kaizer Talib writes,

"It should be mentioned that the intrusion of the living space by the television has further affected the organisation of the house, down to the placement of the furniture"⁽¹³⁾.

There were not any significant changes regarding the type of activities carried out to the house except watching the TV. However the improvement of the services inside the house as well as in the city, affected some activities certainly with regard to performance, such as washing, cooking, etc. For example, traditionally people used to wash their clothes by hand, but after the availability of water in a reasonable quantity, the introduction of piped water and electricity in the house, people began to use the washing machine. Also in the kitchen, cooking was affected by the provision of a new source of fuel - gas. It followed that new equipment was installed in the kitchen. The kitchen is only used for cooking activities and very rarely used for eating, except in a minority of house types such as villas.

5.3.4.2 Furnishing

All the inside spaces of the dwelling, except the wet areas such as bathrooms and the kitchen, have carpets or mats as a floor covering and mattresses for sitting. However, all kinds of modern furniture or what is described as hard-to-move furniture such as sofas, armchairs, beds, tables, etc., have been gradually adopted in the houses. Consequently, the house has spaces assigned to specific activities as the furniture used dictates the use of space. For instance, the dining room is not generally used except for that function which seems a waste.

5.3.5 The exterior features of the houses

The simplicity of the exterior features was the major characteristic of the houses in the transitional area of the city. The size, shape and

treatment of the openings of the buildings have been changed gradually. It has been noticed that the openings were smaller in size than those of the traditional houses. The upright rectangle of the traditional openings is replaced with a horizontally laid rectangle. The quality of wood work of 'rawashin', windows and other openings has been simplified in the modified traditional houses and the new housing types, especially those which were constructed in the late 1940s and 1950s.

Instead of detailed lattice woodwork of 'Mashrabiah' and decorative features which covered almost the whole facade of the traditional building, a simple wooden panel or wooden louvers covered the openings of the new houses. Unlike the traditional houses, almost all the openings and the solid surface of the walls of the new houses were on the same plane. From the 1960s onwards a new phenomenon appeared in the exterior facades of the building, in that glass panels (in different types and colours) with an aluminium frame covered the opening of the new houses. Also the concept of 'Roshan' had disappeared in all the house types. Panoramic glazed windows appeared instead on openings in all the newly introduced housing types. The positions of these glazed windows did not correspond to the spatial organisation of the interior space; for instance, the living room, bedroom and reception room were exposed to the outside by similar openings. From this, one could say that neither the clients nor the designer were aware of how the facade of the building would look. It seems that the major aim of the designer was to provide an opening for each space regardless of its social function.

It is worth mentioning that the major element which has been added in the facade of these buildings is the window type air conditioning unit.

5.3.6 The relationship between internal and external spaces

The inside spaces must be different from the outdoor spaces. They should be separated, yet at the same time they have to be connected in a way that enhances the indoor-outdoor relationship. It is a complex situation which results in conflicting criteria. For example, the requirement for the provision of ventilation and adequate sunlight conflicts with that of the desired level of privacy. This is one of the highlighted problems which face the architects who want to achieve a reasonable interaction between the interior and exterior spaces. Ahmet Eyuce writes,

"The conditions between the inside and the outside makes the treatment of in-between a delicate issue to be tackled during the conceptualisation of the architectural and product"⁽¹⁴⁾.

According to personal observation, it seems that in most of the new housing types, 'Al Beut Al Shabiah' and the apartment building, the relationship between the private indoor spaces and public outdoor spaces was only achieved by openings in the solid walls which defined the spaces.

In 'Al Beut Al Shabiah', where the courtyard is introduced, a great opportunity is provided to develop a good relationship between the interior and exterior spaces. Unfortunately, as mentioned before, the courtyard was not fully utilised. However, by taking a closer look at

the arrangement of one such house type, one can find that most of the halls or 'Salat' (singular Salah) or the corridors of 'Al Bayt Al Shabi' were facing the courtyard and could be considered as transitional spaces between the indoor and outdoor spaces (Figure 5.20).

In the apartment building the relationship of indoor to outdoor is very weak, particularly in the upper flats. The occupants can only relate themselves visually to the public outdoor spaces via the windows or the balconies where they can sit, if possible, and enjoy the view of the outdoors (Figure 5.21).

In the villa dwelling type a new concept has been observed. The relationship between the public outdoor spaces and the private indoor spaces is achieved via private outdoor space (Figure 5.22). The indoor spaces are connected with the private outdoor space through terraces or verandahs, transitional spaces, and the large glazed openings provided in the living areas.

5.4 Building Materials

In the early 1950's natural local building materials (coral reef stone) were used. These have been gradually abandoned and new and different building materials have taken their places. This has been for many reasons, such as:

Firstly, coral reef stones were not available in a reasonable quantity on the market. Secondly, coral reef stones required skilled labourers

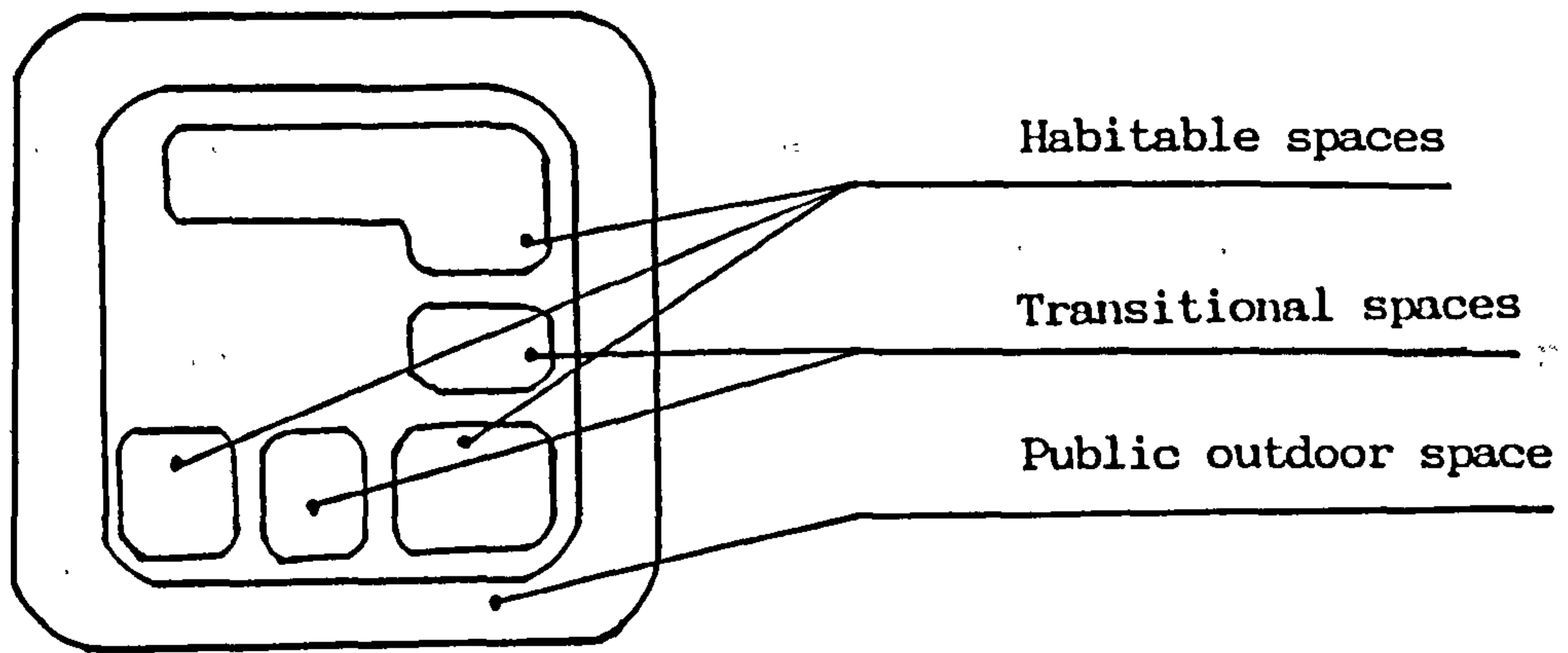


FIGURE 5.20 : A diagrammatic plan of Al Bayt Al Shabi shows the relationship of the house spaces with the outdoor spaces

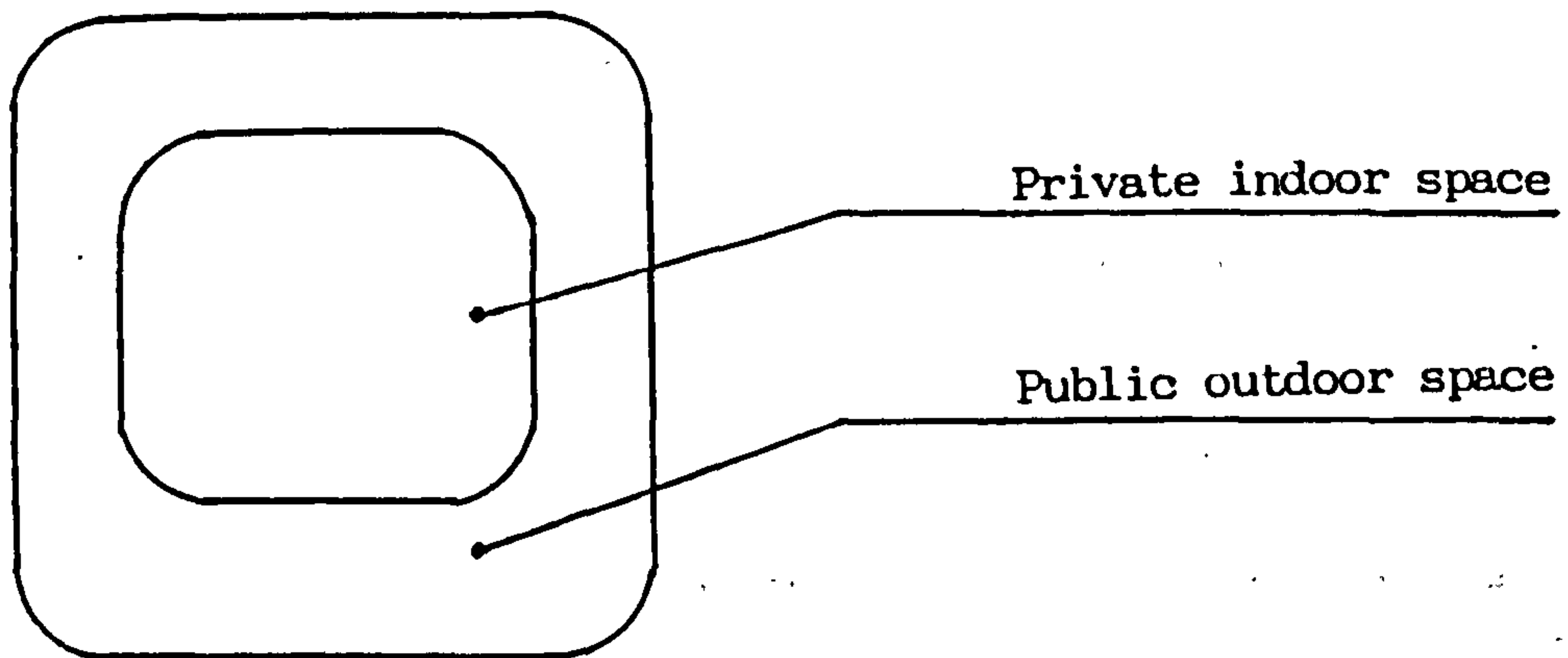


FIGURE 5.21 : The private indoor spaces of the apartment building in relation to public outdoor spaces

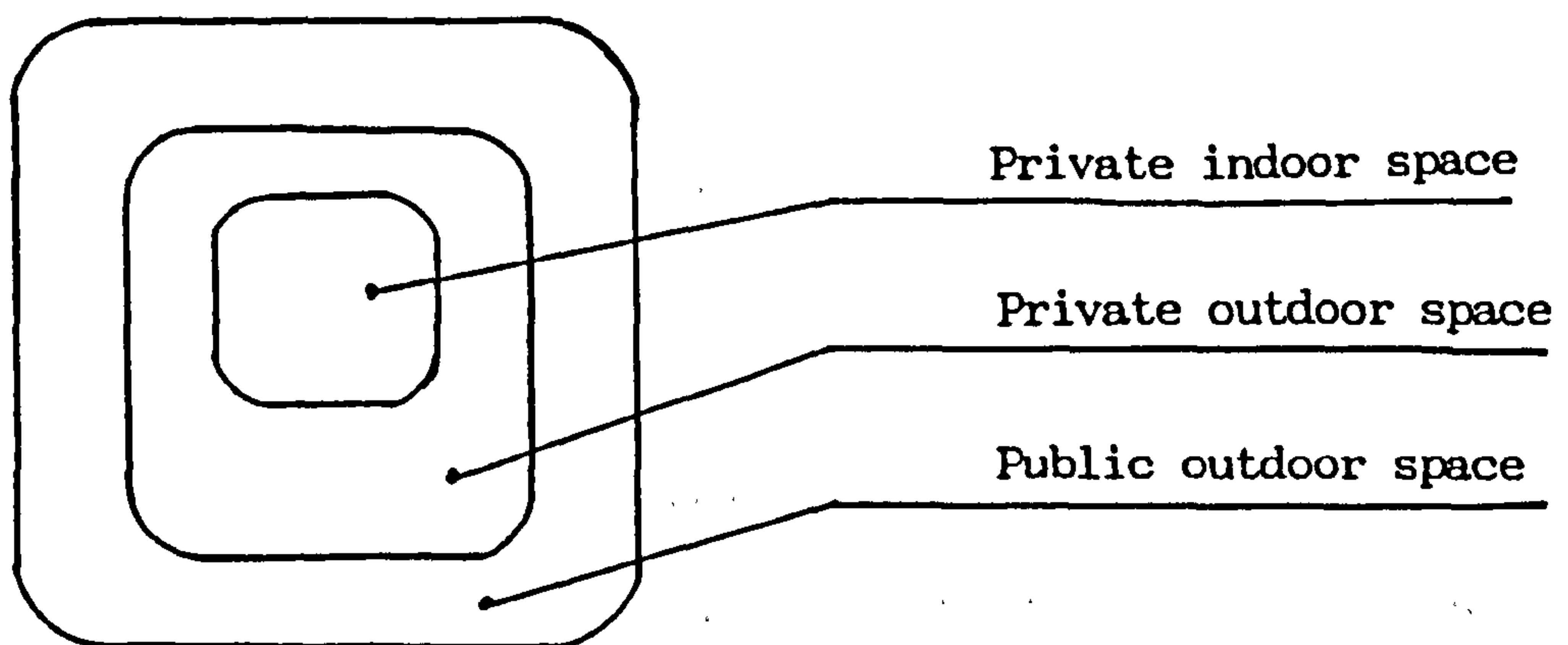


FIGURE 5.22 : The private indoor spaces of the villa in relation to the public outdoor spaces

to extract them and to cut them into the required size and shape. Thirdly, there was a continuous reduction in the numbers of master builders who were expert in construction with such building materials. Also there were no incentives for the younger generation to work in the field. In fact the younger generation preferred education, trading, etc. Fourthly, to construct a house using natural building materials takes a long time, sometimes more than two years⁽¹⁵⁾. Fifthly, new building materials were introduced in large quantities in the market. Finally, the improvement of the economic situation of people, particularly after the increase of oil revenue, enabled them to buy and construct their houses with new building materials.

The major building materials which were introduced in the city were as follows :

Cement represents the major ingredient of many new building materials such as bricks, blocks, reinforced concrete, etc. It is used in almost every part of the building such as the foundation, walls, roofs, etc.

Sand-cement blocks and bricks are available in different types and sizes. They are used mainly for walls and foundations.

Reinforced concrete is the predominant building material used in the new housing types.

Timber is used for doors and windows. However, it is gradually being replaced by aluminium and steel. Also it is used for roof construction in 'Al Beut Al Shabiah'.

Gypsum is used for ceilings, walls and as plastering materials.

Lime was used in the past as a constituent of masonry mortar, but in the last three decades cement has replaced it for this purpose. However, it was and still is used as a plastering material.

Glass is available in different types, initially it was used for only the interior part of the window, but later on the whole window opening was covered with glass panels with an aluminium frame.

5.5 Construction Techniques

Traditionally, the local master builders developed an efficient utilisation and understanding of the characteristics of the local building materials and techniques which responded successfully to the local climatic conditions. Unfortunately this approach has been replaced by new methods.

In fact the new building materials and techniques were first introduced into the city by well-to-do families. Abdul-Quaddous Alansa'i indicates that in 1929 the Zainal family was the first to build a reinforced concrete house, three storeys high, in Jeddah⁽¹⁶⁾. However the major introduction of new building materials and techniques occurred towards the end of the 1940s and 1950s when the new housing types were introduced.

The load bearing walls were no longer used as a construction technique except in 'Al Beut Al Shabiah'. A new construction technique was introduced using cast in place (in-situ) posts and beams with cement blocks or brick infill walls, and cast in place floors and roofs: openings in the walls were achieved by concrete beams. All the apartment buildings and villas are constructed by such techniques, using reinforced concrete for foundations, posts, beams, floors and roofs. In fact this technique is most commonly used by local general contractors.

The construction technique of 'Al Beut Al Shabiah' is as follows : The foundation is constructed with three to four courses of cement blocks (approximately 60cm deep); sometimes bricks are used. The load bearing walls are constructed using similar materials. The roofs are constructed using wooden beams, covered by timber boards, a layer of earth and a layer of concrete is laid on top of that. The openings in the walls are achieved by wooden beams (Figure 5.23).

5.6 Summary

The city witnessed rapid growth due to the influx of people from outside and inside the country. People from different ethnic groups settled in the city, a matter which affected its social and physical condition. The introduction of the automobile had had a clear impact upon the urban tissue of the city (see table 5.1). Many housing types have been emerged in the transitional areas of the city. They differ from the traditional houses in plan concept, building materials and forms. The new building techniques and materials have replaced the traditional building materials.

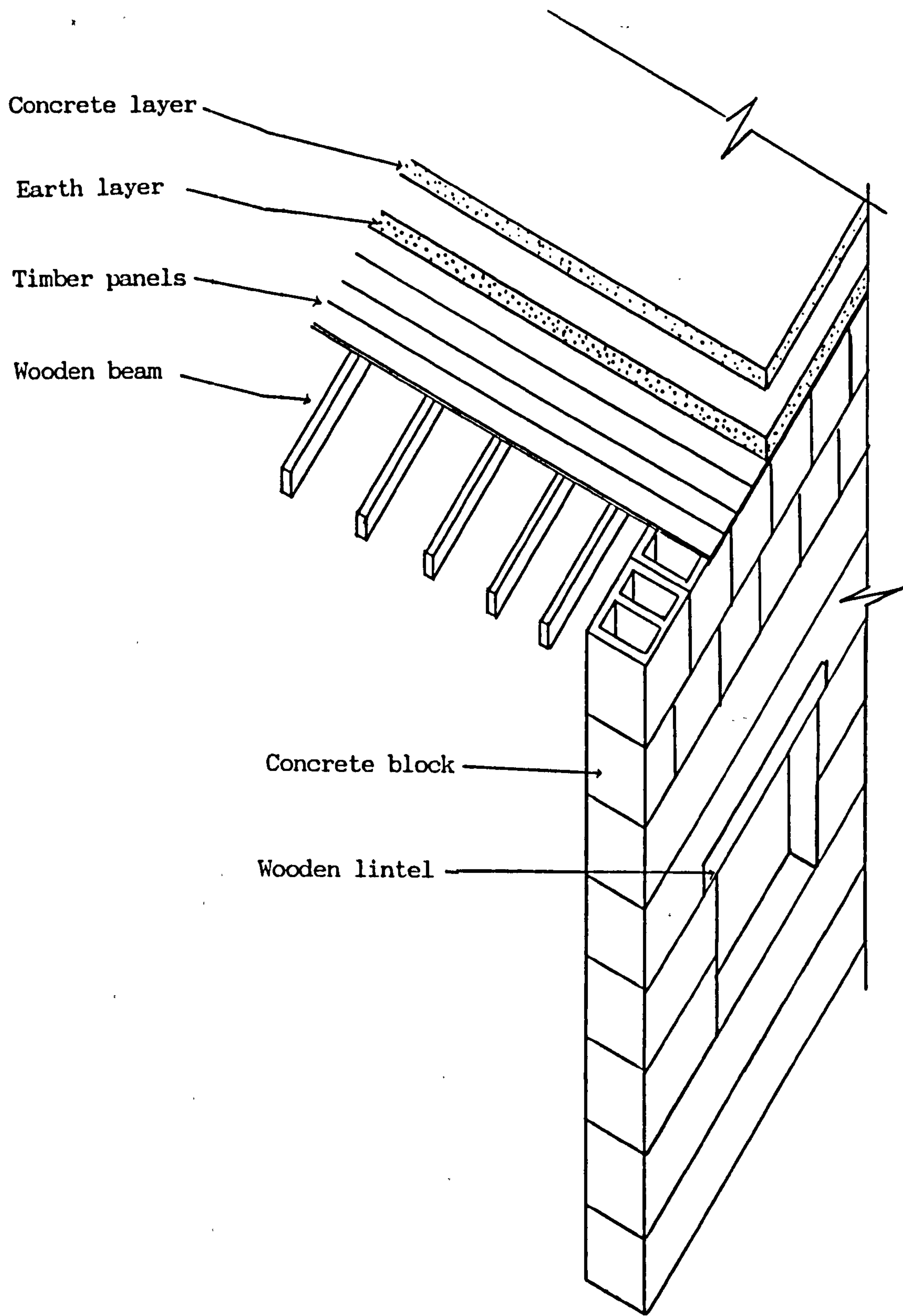


FIGURE 5.23 : A typical construction of Al Beut Al Shabiah

TABLE 5.1 : SUMMARY OF HOUSING TYPES IN THE TRANSITIONAL PART OF THE CITY (from the late 1940s to 1970)

	MODIFIED TRADITIONAL HOUSE	ALBAYT ALSHABI	SANDAKAH	VILLA	APARTMENT BUILDING
<u>% of distribution</u>	5%	24.8%	4.0%	3.4%	62.8%
<u>Area</u>	100-180m ²	80-130m ²	9-16m ²	220-270m ²	80-110m ² *
<u>Height</u>	2-4 storeys high	1-2 storeys high	1 storey high	2 storeys high	2-5 storeys high
<u>Plan</u>	Rooms arranged around central stair	Rooms arranged ground courtyard	Group of sanadek arranged randomly leaving small open spaces between them	Large hall, reception rooms, stair and kitchen in the ground floor. Sleeping rooms in the first floor.	The spaces in the flat arrange around corridor or hall
<u>Rooms</u>	<ul style="list-style-type: none"> - Not confined to specific function - Rectangular rooms 	<ul style="list-style-type: none"> - Not confined to specific function - Rectangular rooms 	<ul style="list-style-type: none"> - No division for rooms all sandakah is multi-functional space 	<ul style="list-style-type: none"> - Spacious rooms - Rectangular or square room - Each room confined to specific function 	<ul style="list-style-type: none"> - Identical in shape and size - Rectangular or square room - Some rooms confined to specific function

* The area for a single flat in the apartment building

<u>Kitchen</u> - Small kitchen - Not all kitchen equipped with piped water - Located at the rear of the house	- Small kitchen - Sometimes cooking is carried out in the courtyard - Not all kitchen equipped with piped water	- Does not have specific location. Cooking usually carried out in the outdoor space	- Large kitchen - Modern cooking equipment - Equipped with piped water	- Small kitchen - Some modern cooking equipment - Equipped with piped water
<u>Bathroom</u> - Small bathroom - Not all bathrooms equipped with piped water	- One to two bathrooms - Not all bathrooms equipped with piped water	- One bathroom - Not equipped with piped water	- Three bathrooms - Equipped with piped water - Washbasin, bathtub, two bidets	- Two bathrooms - Equipped with piped water - Washbasin, shower, two bidets
<u>Balconies</u> - Rarely found	- No balconies	- No balconies	- Large open balconies - Commonly used	- Small open balconies - Rarely used
<u>Roof</u> - Surrounded by parapet walls with some opening - Commonly used	- Not all have parapet wall - Rarely used	- Not used	- Not all have parapet walls - Rarely used	- Surrounded with solid parapet wall - Sometimes used
<u>Building materials</u> - Coral reef stone - Sand-cement block - Sand-cement brick - Wood	- Sand-cement blocks - Sand-cement bricks - Cement - Wood - Paint	- Wooden box - Oil drums - Tin sheets	- Sand-cement block - Sand-cement brick - Cement - Steel - Wood	- Glass - Paint

References for Chapter Five

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- (4) Rupert Matthew, Johnson-Marshall & Partners (Consultants) (1972), Western Region Plan, Master Plan Report, Jeddah. Unpublished Report, Ministry of Interior, Municipal Affairs, Jeddah, p.184.
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- (7) Ibid, p.172.
- (8) Ibid, p.166.
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- (10) Abdul Khaliq, A.A. (1985), 'Traditional values in rapidly growing communities', Unpublished MSc Thesis, Harvard University, p.163.
- (11) Assad, op.cit., pp.56-69.
- (12) Al Fakahani, op.cit., p.201.
- (13) Talib, K. (1983), 'Changing Patterns of Housing - Saudi Arabia', Housing Science, Vol.7, No.1, p.57.
- (14) Eyuce, A. (1986), 'A Comparative Analysis of Solid-Void Relationships of Traditional and Contemporary Houses in the Western Region of Saudi Arabia', Unpublished Research Project, King Abdulaziz University, Saudi Arabia, p.67.
- (15) An interview with Omer M. BaFaraj (see Appendix V).
- (16) Al Ansari, op.cit., p.34.

CHAPTER 6

CHAPTER SIX : THE EVOLUTION OF THE CONTEMPORARY AREA

Introduction

- 6.1.1 The area definition
- 6.1.2 The urban land use pattern
- 6.1.3 Social aspects
 - 6.1.3.1 Ethnic group
 - 6.1.3.2 Type of employment
 - 6.1.3.3 Income class structure

6.1.4 Utilities and services

- 6.1.4.1 Water
- 6.1.4.2 Sewerage
- 6.1.4.3 Storm water drainage
- 6.1.4.4 Fuel
- 6.1.4.5 Electricity
- 6.1.4.6 Transportation

6.2 Residential Districts

- 6.2.1 Relationship of 'haras'
- 6.2.2 The spatial organisation of the contemporary area
 - 6.2.2.1 The layout of the unplanned areas
 - 6.2.2.2 The layout of the planned areas

6.2.3 Open spaces

6.3 The House and Construction Techniques

- 6.3.1 Housing types
- 6.3.2 Spatial organisation
 - 6.3.2.1 The rooms
 - 6.3.2.2 The kitchen
 - 6.3.2.3 The bathroom
 - 6.3.2.4 The balcony
 - 6.3.2.5 The roof
- 6.3.3 The use of space
- 6.3.4 The exterior features of the building
- 6.3.5 Relationship between internal and external spaces

6.4 Building Materials

6.5 Construction Techniques

6.6 Summary

References

CHAPTER SIX

THE EVOLUTION OF THE CONTEMPORARY AREA

Introduction

The revolution in the economy of the country, which began in 1973 and continued until 1985, affected the socio-physical characteristics of Jeddah. The city witnessed a massive building boom and rapid development in economic sectors, especially in distribution and public services, which transformed Jeddah from a small city to a metropolitan area. This chapter discusses the evolution of the contemporary part of the city. It starts with a brief approach to the master plans of the city and then highlights the changes that occurred to the residential districts and housing types.

6.1.1 The area definition.

The area under consideration is that which has developed between the early 1970s and the present time. During this period the city experienced rapid urban expansion. The built-up area increased from 4,777 hectares (= 48km²) in 1971 to 16,860 hectares (= 168km²) in 1978⁽¹⁾. Since then the built-up area has continued to increase rapidly.

From the mid 1960s onwards, many urban activities and projects took place in the city. These included the expansion of the sea port and the construction of new factories in the south and south-eastern parts of the city, the expansion of the airport in the north-eastern part of the city, the construction of the desalination plant and recreational facilities in the north-western part of the city, and the opening of the King Abdul al Aziz University in the eastern part of the city. Furthermore, most of the major roads and streets in the city and the surrounding suburbs were widened, asphalted, paved and provided with lighting. All of this acted as a "pull" factor for the urban growth of the city, attracting more people from both inside and outside the country.

The urban expansion of the city has continued in the absence of effective regulation for development control; there are still some areas in and around the city which remain undeveloped or partially developed. In the early 1970's, a comprehensive study of the city, as well as a master plan, was absolutely essential. In 1971 the Ministry of Municipal and Rural Affairs (MMRA) appointed Robert Matthew, Johnson,

Marshall and Partners, consultants, (RMJM & P) to prepare a regional physical plan and master plans and also detailed plans of the major cities in the Western Region of Saudi Arabia, one of which was Jeddah⁽²⁾. It was the first master plan prepared for the city, and covered a 20 year period (1971-1991). Although this has been altered and updated by other consultants, it still provides a solid base for the city's growth and development control. In fact the plan has affected the existing built up area as well as putting forward guidelines for future development. The master plan aimed to achieve 13 key objectives. These objectives as mentioned in the Master Plan Report (1973)⁽³⁾, were to :

- (1) Provide sufficient information on which to base requirements, to ensure an adequate and continuous supply of water and energy.
- (2) Provide for the maintenance of public health at all levels.
- (3) Provide an adequate road network at city and local level.
- (4) Encourage the development of appropriate public transport systems in order to assist in achieving a balanced choice between public and private transport.
- (5) Achieve, by the balance of residential density and housing types, an appropriate mixed distribution of high, medium and low income groups, to maintain social cohesion and well-being as part of city growth and development.

- (6) Provide sufficient religious, medical, administrative and educational facilities to meet the needs of the population, according to recognised international standards, taking account of special aspects of life in the Kingdom of Saudi Arabia.
- (7) Encourage the development of local industry and employment.
- (8) Support the development of business and commercial planned activities.
- (9) Control the growth of the city to the extent that is necessary to allow maximum benefit to all, with the minimum inconvenience.
- (10) Provide development controls to ensure the beneficial and balanced growth of the city.
- (11) Safeguard areas or buildings of outstanding architectural or historic value as part of the conservation of the Islamic tradition.
- (12) Relate and develop techniques and methodology as part of a dynamic sequence of city planning, which will be able to respond to the pressure of growth and change.
- (13) Establish an effective information and classification system of data storage and retrieval.

The development programme started with an extensive programme of improving minor and major roads, utility services and community facilities in the city. Also a planning framework was set out in which more detailed urban design work and project work could be undertaken. During the second part of the 1970s many urban developments took place as proposed by the master plan. New development areas continued to expand, mainly to the northern part of the city and to some extent towards the eastern and southern sections of the city, in addition to redevelopment and infill development that took place in the vacant sites within the existing built-up area.

Unfortunately, the Robert Matthew plan did not envisage some factors which have a direct effect on the plan and which have led to the non-adherence of the plan. The first of these factors was that there was a rapid influx of population, especially that of imported labour in the early 1970s, the period when the first National Development Plan (1970-75) got off the ground⁽⁴⁾. The private sector responded to the needs of this population very rapidly, and in such a way that effective systematic planning was not possible. Secondly, there was a great increase in the revenues of the country as a result of the increase of oil prices and production. George Duncan writes,

"the price of oil increased from \$1.80 per barrel in 1970 to \$36 per barrel in 1981, and Saudi Arabian output increased from 3.5 million bpd to 9 million bpd. This resulted in an increase in annual revenue of the order of \$9.256 million, ie. from \$2,300 million in 1970 to \$11,826 million in 1981"⁽⁵⁾.

Because of this both public and private funds were available for investment in various development projects such as land speculation. The amount of building development increased enormously and this accelerated the urban expansion of the city and generated tremendous pressure on any development boundary.

Generally speaking, the entire development programme was thrown off balance due to the excessive growth of the city beginning in the early 1970's. During 1976-81, RMJM & P proposed that the new development areas in the northern part of the city should extend to the northern storm water ditch, and those to the south-east would extend to the southern storm water ditch. The population was expected to reach 500,000 by 1981, and in the year 1991 and beyond the estimates varied from 800,000 to 1.6 million people. However, the city grew beyond the predicted boundaries and the residential development expanded beyond the ditches (Figure 6.1). Not only that, but also the population has increased enormously. A. Bokhari, writes that,

"by 1977 Jeddah's population had already reached the projected low estimate of growth which was assumed by RMJM & P to be reached in 1991"⁽⁶⁾.

Taking all this into consideration, in 1977 the municipality appointed Sert-Jackson International to review the growth of the city and to evaluate and update the existing master plan.

Sert-Jackson International produced the revised master plan in 1980. In fact the planning objectives do not differ significantly from the original master plan (RMJM & P master plan). The main elements of the

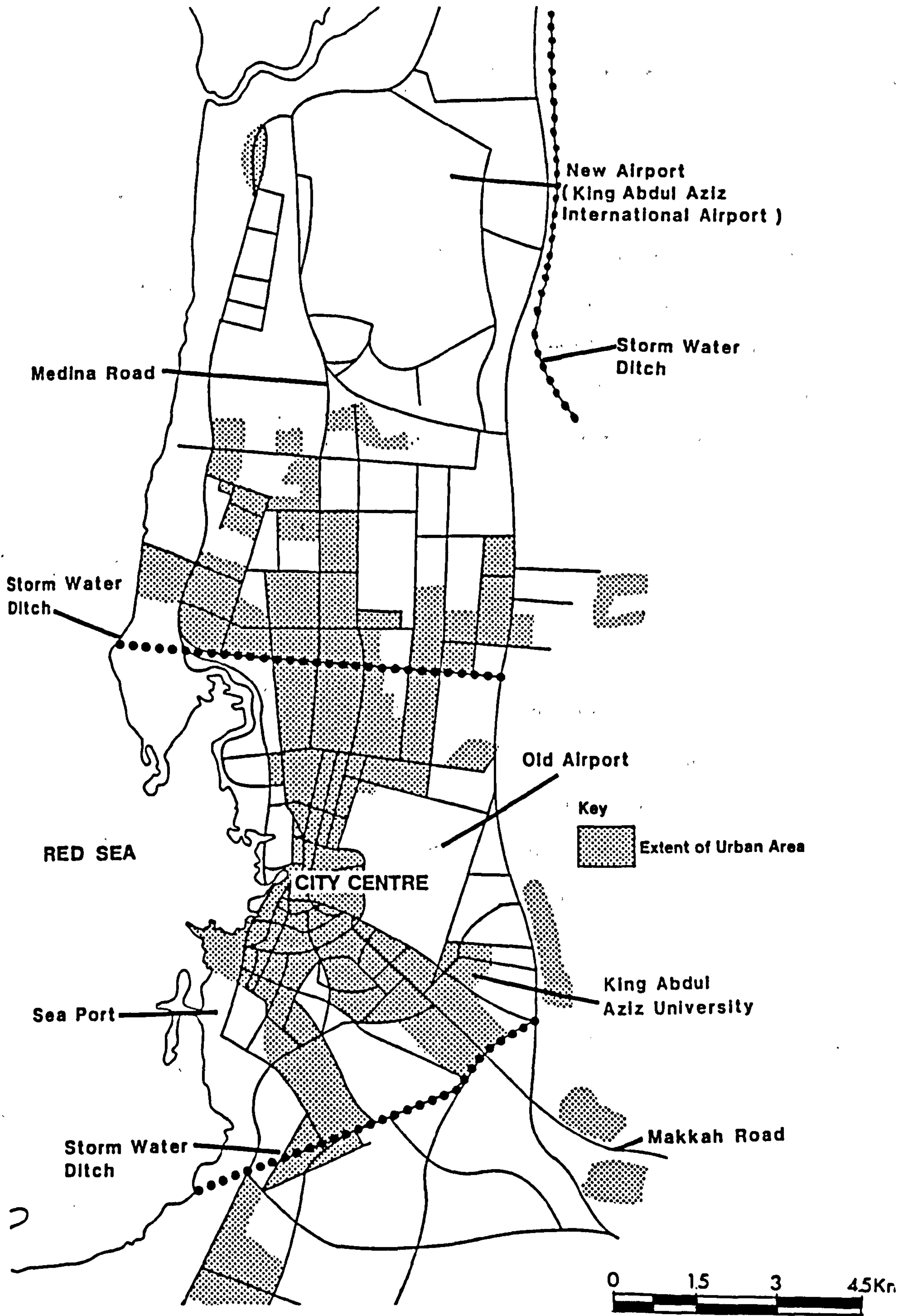


FIGURE 6.1 : The built-up area of Jeddah 1983
 Source : Farsi, Evolution of the Urban Pattern of Jeddah

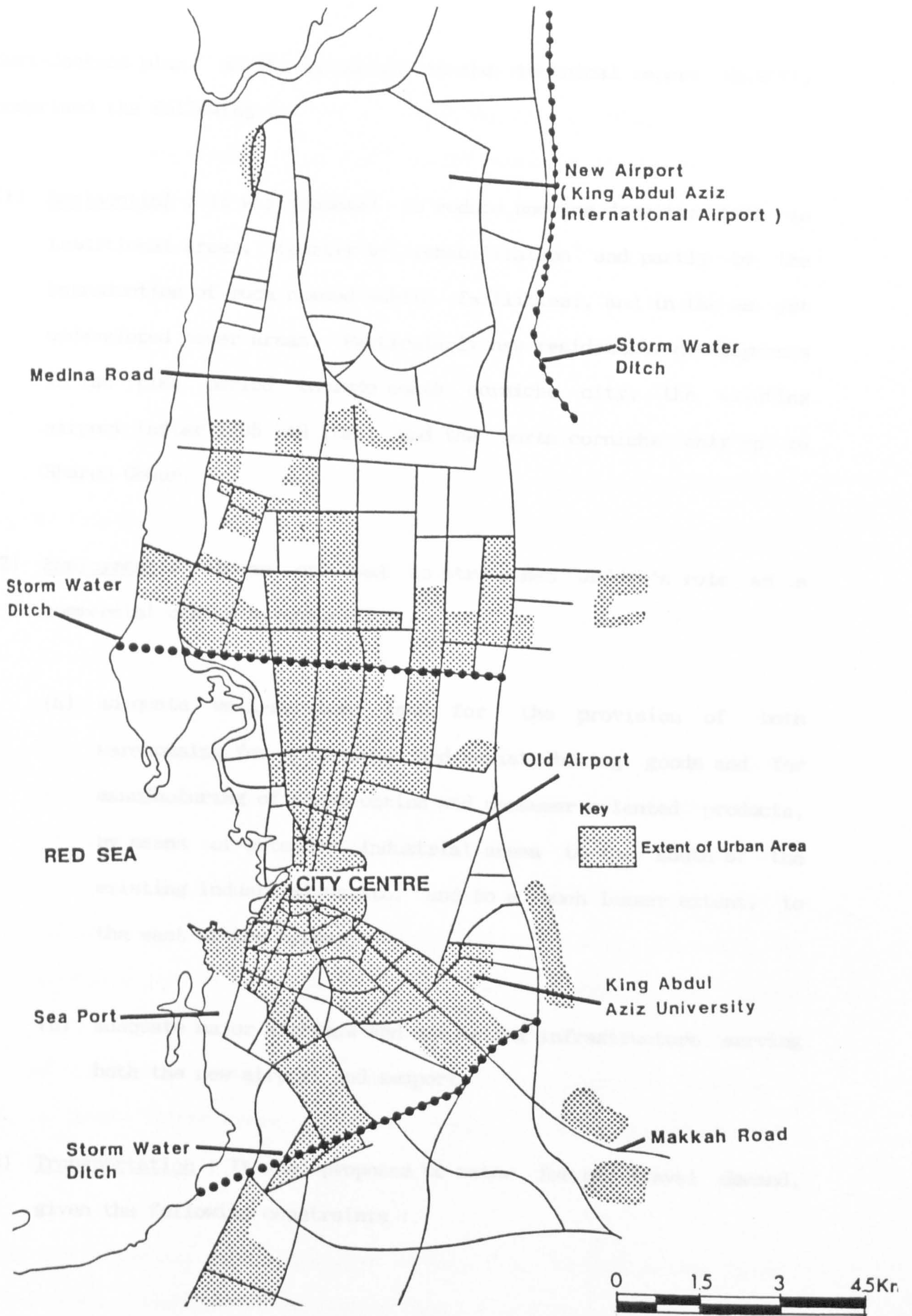


FIGURE 6.1 : The built-up area of Jeddah 1983

Source : Farsi, Evolution of the Urban Pattern of Jeddah

Sert-Jackson plan, as it is stated in the technical report No.9(7), comprised the following :

- (1) Residential : It was proposed to reduce housing densities both in traditional areas, (partly by rehabilitation and partly by the introduction of much needed public facilities), and in the as yet undeveloped newer areas. Particularly new residential developments in the plan period include south corniche city, the existing airport (after 1405 AH 1985) and the north corniche only up to Sharum Obhur.

- (2) Employment : It was proposed to strengthen Jeddah's role as a commercial centre by ensuring :
 - (a) adequate well-serviced land for the provision of both warehousing for processing and redistributing goods and for manufacturing of construction and consumer oriented products, by means of extended industrial areas to the south of the existing industrial estate, and to a much lesser extent, to the east of the bypass.

 - (b) adequate major highways and supporting infrastructure serving both the new airport and seaport.

- (3) Transportation : It was proposed to cater for all travel demand, given the following constraints :

- (a) restricted growth on central area employment;
- (b) controlled development of commercial spine roads;
- (c) reduced densities in existing and proposed residential areas;
- (d) limitation on car accessibility and usage for work journeys.

In order to facilitate the demand for travel movement, a public mass transit system would need to be introduced by 1985.

- (4) Hierarchy of facilities and centres : In order to better provide for the various service requirements of the community, a hierarchy of centres was proposed; these would provide for social needs and would include mosques, shops, open space and schools in such a way as to minimise travel, increase amenity and give a focus to the local community.
- (5) Form of the city : It was proposed to emphasise the natural features of the city region, namely the coast and the hills, and to conserve these as much as possible for future public enjoyment and leisure. These features both contain and give rise to the resulting linear shape of the city. The latter would generally be extensive and low rise in form, with the exception of the spinal corridors radiating from the existing city centre, the older part of which it was proposed to conserve, and the corniche frontages. In those latter areas a higher density of development would be accepted.

After the completion and submission of the final revised master plan, Sert-Jackson International disbanded and a new consultancy, called Sumait, was formed in 1981. The major aim of the latter was to prepare detailed studies and plans for different action areas within the city.

It is worth mentioning that the urban form of the whole city, but especially that of the contemporary area, has been affected by the proposals of the master plan, so that almost all the newly developed areas are guided by the planning regulations.

From the aerial photograph of the city in 1981 (Figure 6.2) one can clearly see the distinguished feature of the newly built-up area, especially in the northern part of the city, which shows the grid pattern and the low densities of single urban dwelling units. This is in addition to a significant amount of the vacant land which has already been subdivided into lots, following the same pattern as the adjacent built-up area.

Also the aerial photograph illustrates that not all the contemporary areas are planned, but that there are un-planned areas in the eastern, south-eastern and southern part of the city. These areas are characterised by high density building and irregular streets. However, in the early 1980s there were considerable attempts from the municipality to improve such areas by providing public open spaces, public car parking spaces and opening new roads and widening some of the existing streets to provide a good access and connection with the rest of the city.

The contemporary part of the city, from the 1970s onwards, witnessed new types of urban projects which created a major change in the urban form of the city. These projects emerged as a consequence of a severe shortage in housing and the inflated rent value of the existing

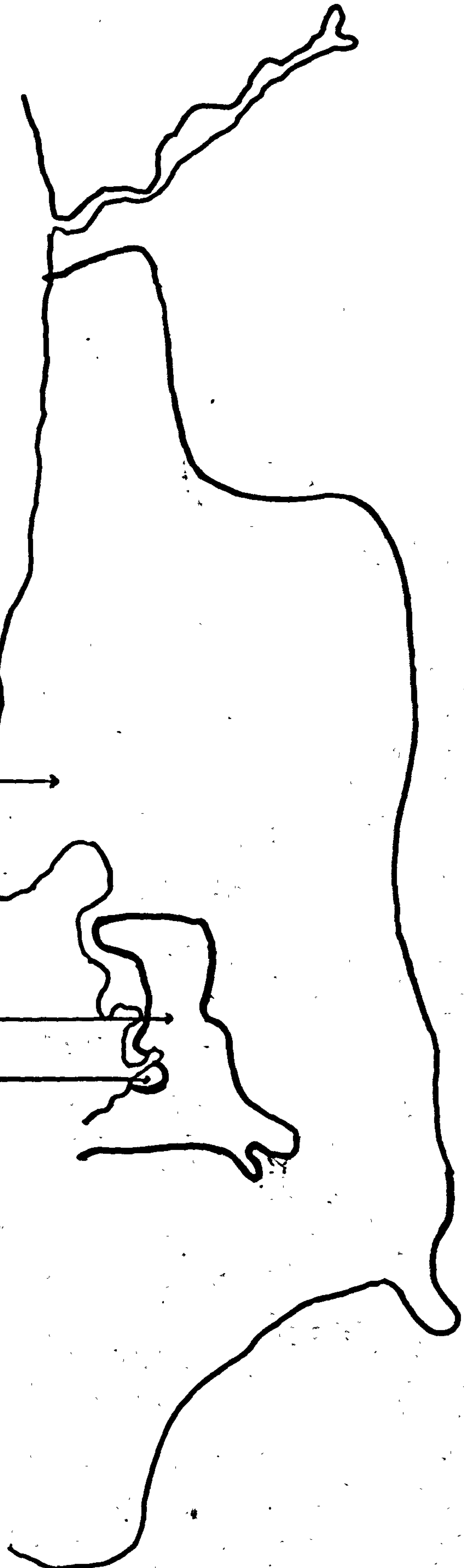
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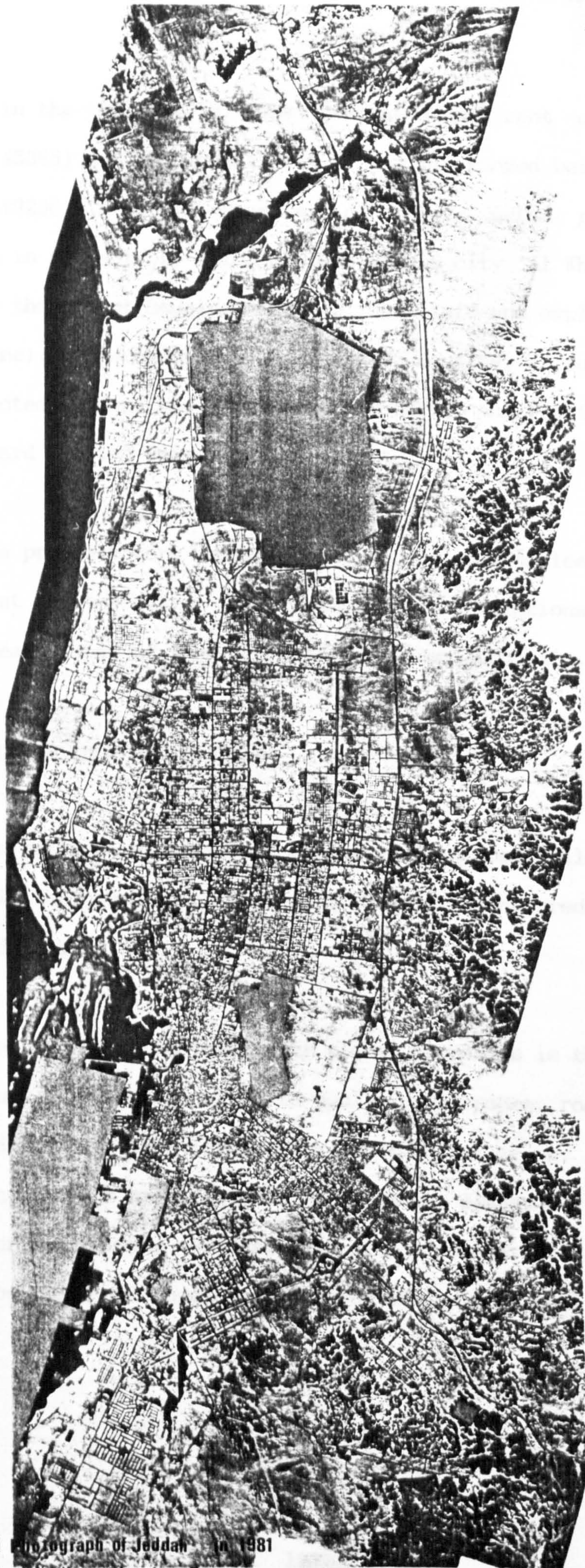


FIGURE 6-2: Aerial Photograph of Jeddah in 1981
Source: Jeddah Municipality—Planning Department

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THE CITY

FIGURE 6-2: Aerial Photograph of Jeddah in 1981
Source: Jeddah Municipality—Planning Department

properties in the mid 1970's. The average annual rent of a flat was SR35000 (= £5385) and the annual rent of a villa ranged between SR60000-SR100000 (£9230-£15,385). Examples of these urban projects are highlighted in Appendix I, which include Saudia city 'Al Khalidiah' (to accommodate the urgent housing need for the staff and employees of the Saudi Airline), Prince Fawwaz Cooperative housing, a public housing project erected through the Ministry of Housing and Public Works, the National Guard Housing Project, etc.

All of these projects were designed as separate communities in isolation from the rest of the city. They seldom have a relationship with the adjacent areas. Most of them are self sufficient projects.

6.1.2 The urban land use pattern

The land use pattern in this part of the city almost follows the same pattern as in the transitional area of the city; the predominant land use is residential.

What has been noticed from the master plans' proposals is that there is a great amount of attention given to public open spaces, roads and green areas in addition to the low density residential areas. So all the newly developed areas have adequate open spaces, either for recreational facilities or car parking spaces; they are also characterised by wide roads and low rise buildings, two to three storey apartment buildings or villas.

The commercial activities are continuing to develop along the major arterial roads. Also small shopping centres with a supermarket as the principal terminal have appeared in many of the districts.

The community facilities, recreational activities and service industries are distributed throughout the city to serve the maximum number of people.

6.1.3 Social aspects

6.1.3.1 Ethnic groups

As noted in the previous chapters, the population of Jeddah is a multi-national mixture of people from different parts of the world. In the late 1970s the non-Saudi proportion of the population of Jeddah increased; in 1978 it was over 50%, whereas it was approximately 43% in 1971⁽⁸⁾. This reflects the large influx of foreign immigrants as well as the availability of and demand for employment created as a result of the expanded programme of development of the city. No doubt the settled foreign communities have a great influence on the city's way of life.

The distribution of the nationalities differs from one part of the city to another. However, it seems that groups of people, with the same origin or nationality, tend to live near to each other.

TABLE 6.1 : DISTRIBUTION OF NATIONALITY*

Nationality	Transitional Area	Contemporary Area
Saudi	42.1	55.2
Yemeni	12.0	11.2
Jordanian/Palestine	5.8	8.2
Sumali	6.6	2.4
Egyptian	9.5	7.1
Pakistani	7.5	1.2
Sudanese	8.3	5.9
Indian	6.5	0.7
Syrian/Lebanese	1.7	8.2
TOTAL	100	100

Source : Field survey.

Table 6.1 illustrates that the proportion of the Saudi population in the contemporary area is more than that in the transitional part of the city, a difference of 13.2%. This reflects the tendency of Saudi families to move to new areas of the city, where the new houses and planned areas are found. Their places in the transitional area of the city have been taken by newcomers to the city.

* These data were collected during field work and it should be noted that this does not represent the total of different nationalities living within the city.

6.1.3.2 Types of employment

Jeddah retains its function as the largest and most important commercial and service centre in the Western Region. Services, commerce, construction and transportation are the major fields of employment in the city. The service industry attracts the bulk of the employed population. However, in the late 1970s, construction was the leading sector attracting more immigrants to the city, and generating most of the market for manufacturing as well as a range of professional services.

Most of the employees in the manufacturing or construction fields are from those sections of the population which would not be expected to stay long in the city, while the other sections of the population are more likely to be employed in the commercial or service fields, or have employment in government departments. It has been noted that the majority of the Saudi employed population is found in commerce and service industries in addition to government employment.

In fact, the opportunity of work has played a major role in the population distribution and income class structure within the city.

6.1.3.3 Income class structure

The rapid improvement in the general standard of living, which occurred in Saudi Arabia after 1973 due to the oil price boom, is reflected in the household income level, as well as in the built environment. The general picture of the city illustrates this further, in that the higher

income people have occupied the north and north-western part of the city, while the lower income people are mainly found in the south and south-western part of the city. The middle income people are scattered around the city.

6.1.4 Utilities and Services

6.1.4.1 Water

Water is still obtained from underground water reserves in the 'Wadi Fatima' and the 'Wadi Khalis', and from sea water. At present the sea water is the major water source, the government realised the potential of sea water in the early 1970's and since then desalination plants have been implemented in stages. In 1982 the planned daily water supply was 25,000 cubic metres from the underground water reserves and 265,600 cubic metres from the desalination process⁽⁹⁾.

The water is delivered directly to the household. However, the piped water distribution system has failed to keep pace with the physical growth of Jeddah and water is supplied by tankers instead, in the newly developed areas in the north, north-east and east side of the city. Almost all the houses in this part of the city have individual underground water tanks, this being in addition to the tank located on the roof.

6.1.4.2 Sewerage

The main sewerage system for waste disposal does not cover the whole of the built-up area of Jeddah. In most of the contemporary area of the city the disposal of waste water and foul sewage is achieved, as mentioned in the preceding chapters, by cesspit drainage.

6.1.4.3 Storm water drainage

Floods are only of short duration, yet they may cause considerable damage as a result of the large volume of accumulated water. In the late 1970's a new interceptor channel was constructed, to protect the new airport and the northern part of the city from wadi run-off from the nearby hills, this channel being in addition to the existing systems. However, the gap between this later addition and the existing channels leaves the areas in between at risk (Figure 6.3).

In the contemporary area there is no provision for internal drainage. However, a number of precautions have been taken. For example, on the roads there are facilities to drain the flood water from low spots within the built-up area. In addition to that all the interior spaces of the buildings have been raised a few steps above ground level.

6.1.4.4 Fuel

Gas is the main fuel in the city, and its distribution within the city is by bottled gas. Every household collects its own gas bottle. However a

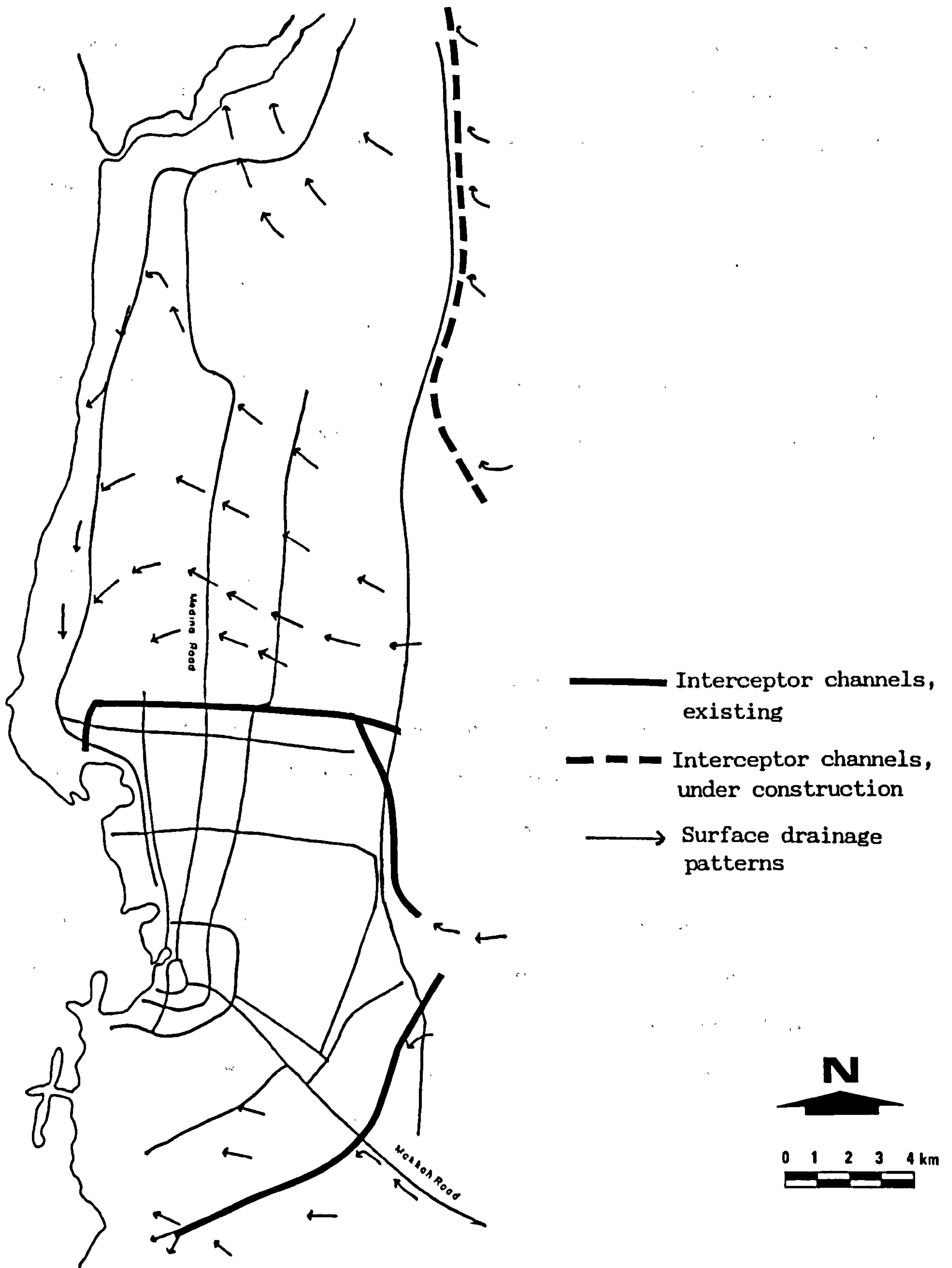


FIGURE 6.3 : External storm drainage

Source : Jeddah Action Master Plan, Technical Report No.5, 1978

new phenomenon has been observed in a number of new buildings, especially in the apartment buildings, where gas is distributed to the individual flats within the building from a large storage tank located in the yard of the building.

6.1.4.5 Electricity

Electricity is available in the whole contemporary part of the city, every property being connected to the main supply by means of underground cables.

6.1.4.6 Transportation

Motor cars are still the main transportation mode in the city. Private cars, taxis' and buses are the predominant transportation types used in Jeddah. People depend mainly on the motor car for their movement within the city and even within their neighbourhood.

The network of roads and streets in most of the contemporary areas is constructed of sufficient size and proven design to cope with the increasing traffic density and pressure of the large numbers of vehicles using them. Also several bridges and flyovers have been constructed to ensure the smooth flow of traffic.

6.2 Residential Districts

The contemporary area of the city is characterised by two types of residential district, the planned and unplanned.

The unplanned districts are those which emerged during the economic and building boom in the early 1970s. They are mainly found in the eastern, south-eastern and southern parts of the contemporary area (Figure 6.4). They are very few in number if compared with the planned districts. The main element of the unplanned quarters is the residential dwelling, the owners' main aim being to make the maximum use of their plot of land, with the land that is left over being used as a street. This has resulted in narrow winding streets, difficulties in getting access to some dwellings in these areas and a lack of open spaces. The predominant building types in such quarters are 'Al Beut Al Shabiah' and apartment buildings.

The planned districts are those which have been developed recently, in addition to those which are located in the central and northern part of the contemporary areas. The majority of these quarters are provided with essential services. The predominant building types are the apartment buildings and villas.

All the areas which have been developed in recent years are characterised by a network of streets which facilitates the maximum use of automobiles. Pedestrian traffic is kept to a minimum due to the lack of shade along the roads.

6.2.1 Relationship of 'Haras'

The contemporary area of the city consists of many 'Haras' (Figure 6.4). All the contemporary 'Haras', except those in the unplanned areas, have a uniform appearance from the planning point of view. The only boundaries between 'Haras' are major roads. Physically each 'Hara' is well connected with the others, a matter which makes it hard to distinguish between the two 'Haras' except by looking at the roads and streets sign where the name of the 'Hara' is written.

The lack of a hierarchical order of open spaces and streets in the contemporary 'Haras' affects the relationship between people and their community. This relationship is not well developed as once a man has left his dwelling he is transplanted to the city without the intermediate hierarchy of spaces.

In fact the relationships and social ties among the residents started to weaken with the demolition of the city walls. Nowadays people depend almost entirely on cars for their movement within the city. Also the planning of each 'Hara' enhances the weakness of the relationship between the residents; each 'Hara' has its own essential services, so it is seldom that residents of two 'Haras' can see each other.

The gap between the traditional 'Haras', with their hierarchical open spaces, streets and living environment, and the contemporary 'Haras' widens every day.

CONTEMPORARY
DISTRICTS

TRANSITIONAL
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OLD AREA

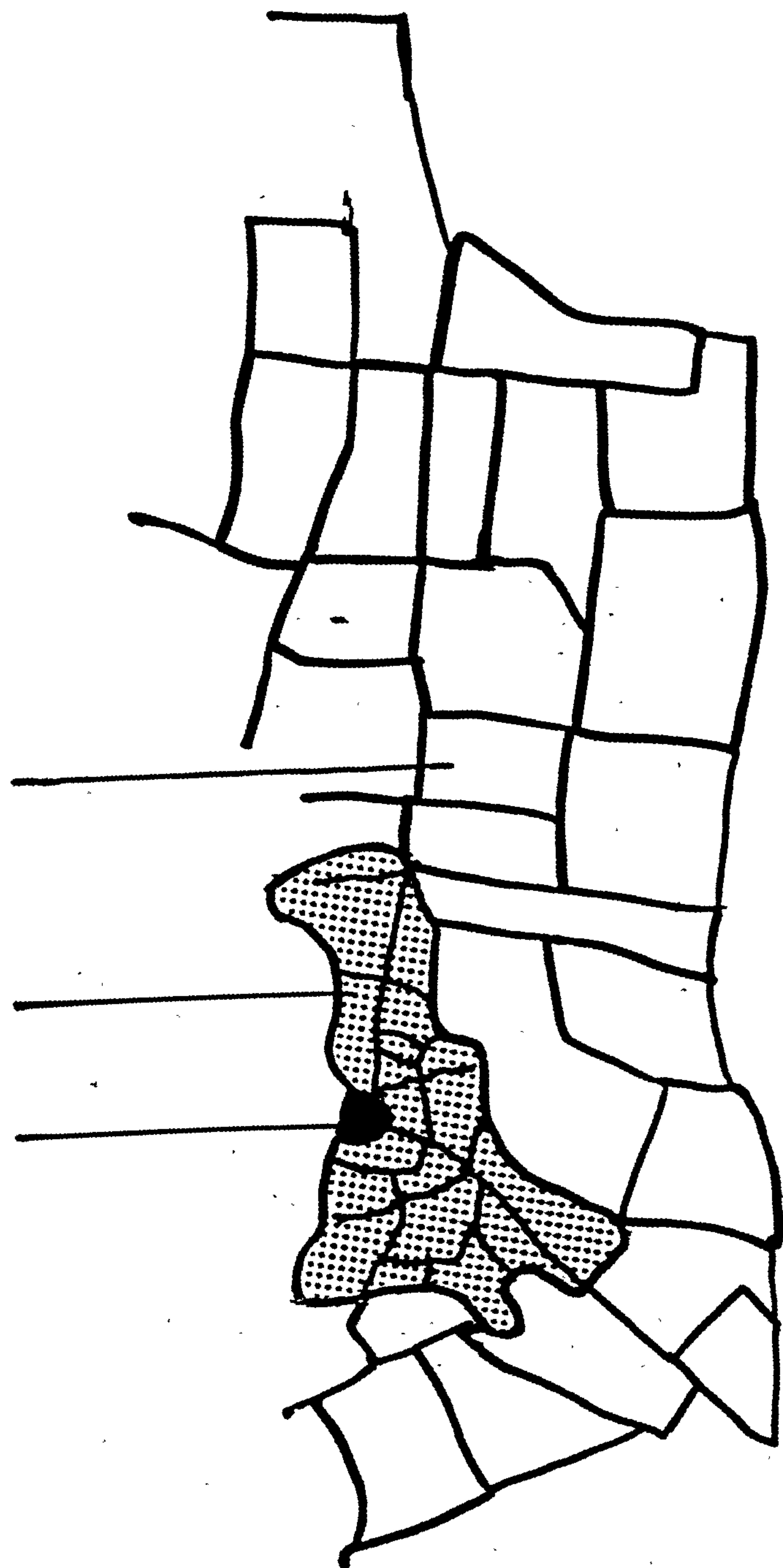




FIGURE 6.4 : Jeddah districts
Source : Farsi, Saki, 1985

CONTEMPORARY
DISTRICTS

TRANSITIONAL
DISTRICTS

OLD AREA



FIGURE 6.4 : Jeddah districts
Source : Farsi, Saki, 1985

6.2.2 The spatial organisation of the contemporary area

The urban structure of the city completely changed from an organic pattern to a pattern of geometrical shapes in a short period of time.

The overall pattern of the contemporary areas is affected by the concept of the master plans which are based on western models of development. Generally speaking, due to the increase in vehicle ownership within the city, the entire plan of Jeddah shows great emphasis on transportation and circulation. According to the socio-economic survey of 1978, the vehicle ownership increased from 50 vehicles per 1000 persons in 1971 to 120 vehicles per 1000 persons in 1978⁽¹⁰⁾. Also, Osama Jastaniah writes that,

"the number of private cars has increased greatly, for example, from 105,455 in 1978 to 348,552 in 1981"⁽¹¹⁾.

Consequently, a super grid network has been introduced into the city, replacing the semi-circular streets that characterised the old town. At the points of intersection, bridges and flyovers are constructed to avoid traffic jams. New residential areas are planned in between the intersections of the major roads.

Also the plan adopted the grid-iron pattern at the neighbourhood level, enhancing the emergence of the new housing pattern with larger individual plots which produce lower densities. There is a significant increase in the proportion of public areas of land which are assigned to streets and open spaces. The plan creates a new physical environment

differing from the traditional one in scale, density and pattern.

6.2.2.1 The layout of the unplanned areas

Most of the contemporary areas are planned. However, there is a continuation of the unplanned areas in this part of the city. The rapid expansion of the urban areas is one of the reasons for the existence of the unplanned areas of the city.

Two sample areas have been selected in the unplanned areas of the contemporary part of the city, sample area No.3 (from Ghulayl district) and sample area No.5 (from Al Jameah district), to illustrate the overall layout of such areas (Figure 6.5).

The dwellings in those two areas are grouped randomly, leaving a narrow access for cars around them (Figures 6.6-6.7). The streets are irregular in layout and they do not have a regular width. Nor are they built to a standard specification. All the open spaces in such areas are private lots on which no construction has taken place (Figure 6.8 and Photographs 6.1-6.3).

These areas are self planned, where people either buy or squat on a large plot of land, surround it with walls and leave narrow streets, just for one or two cars to pass, between the plots. After that the plots are subdivided into smaller plots.

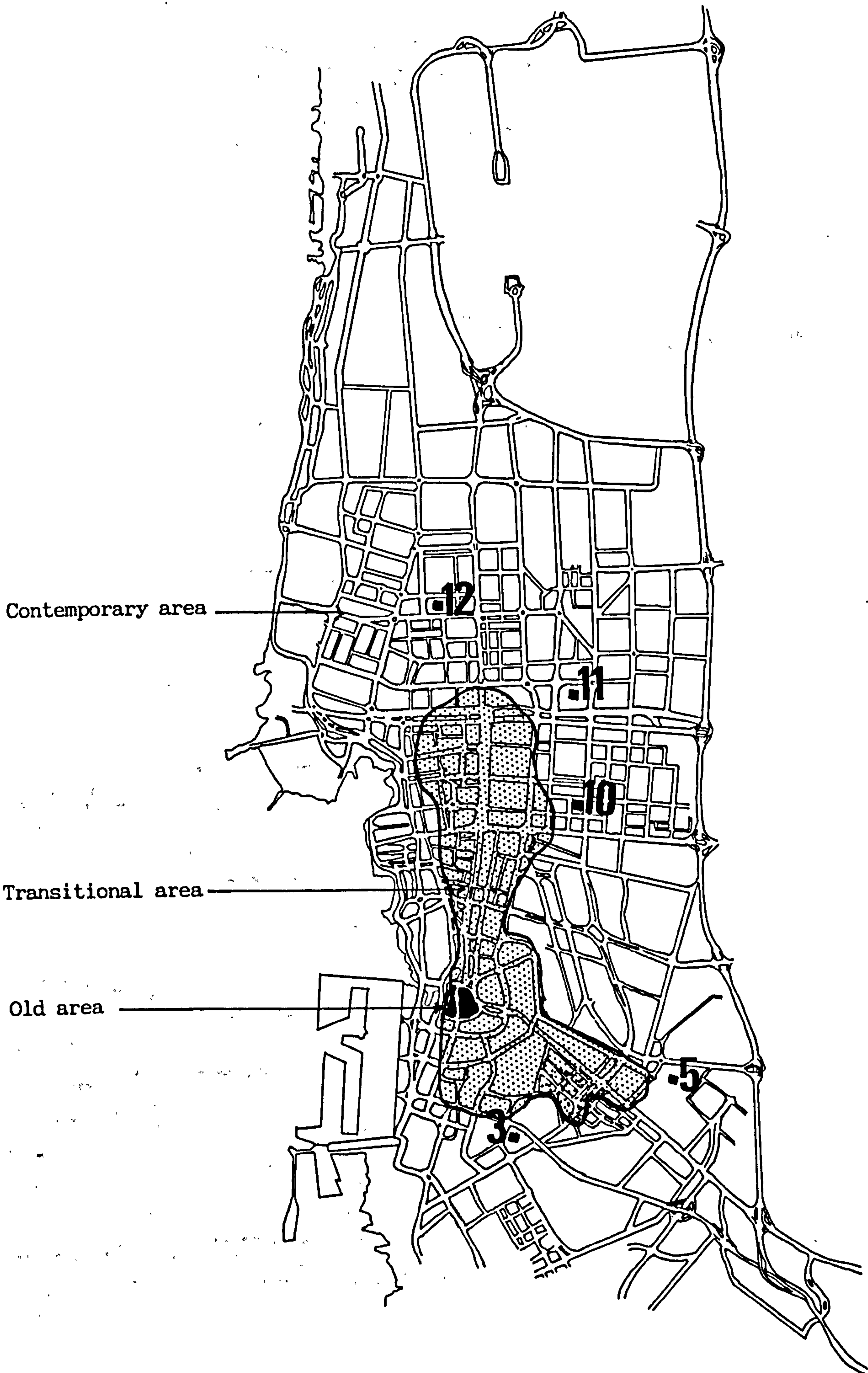


FIGURE 6.5 : Sample areas in the contemporary area of the city

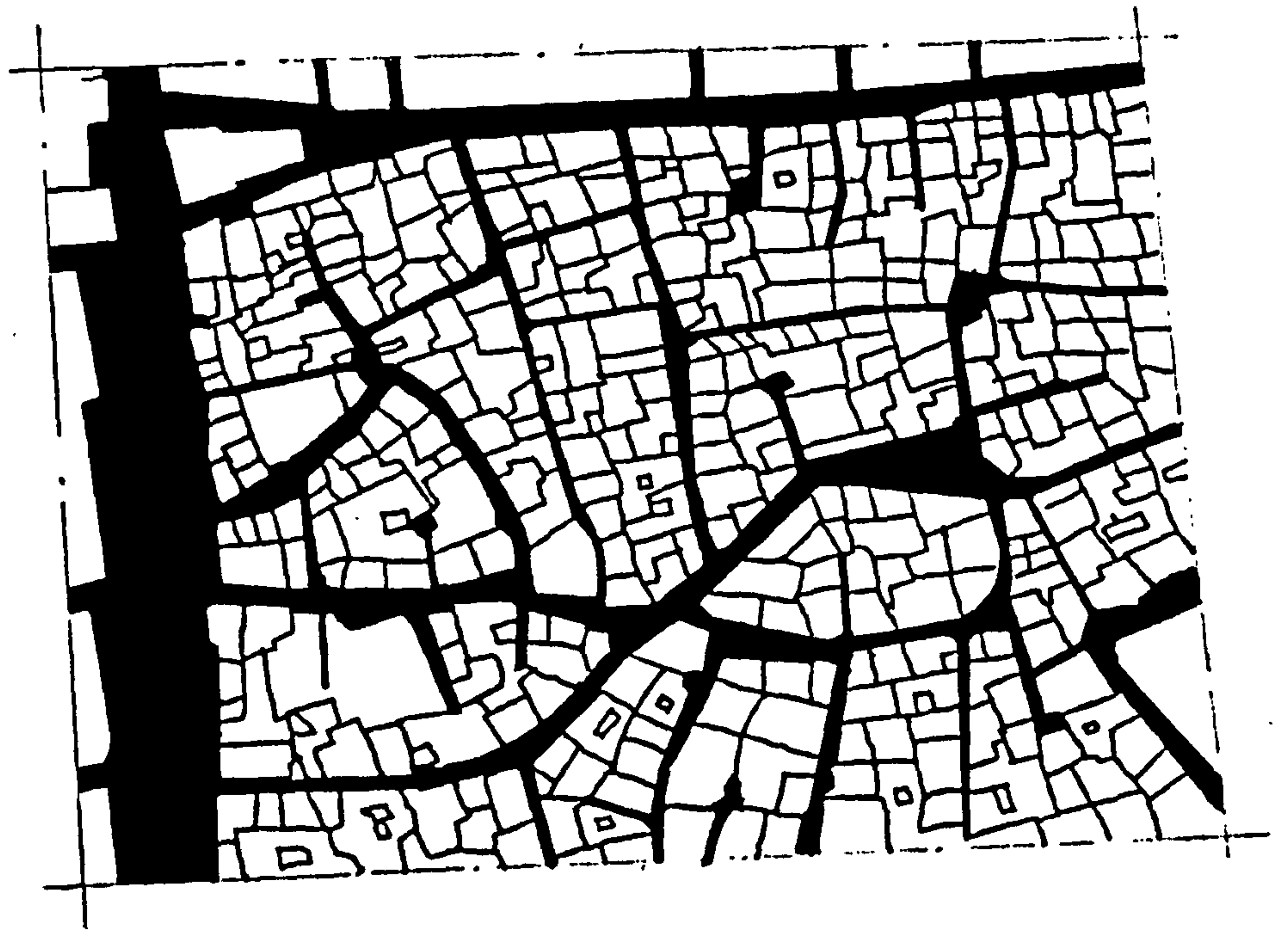


FIGURE 6.6 : Ghulayl (Sample Area No.3)

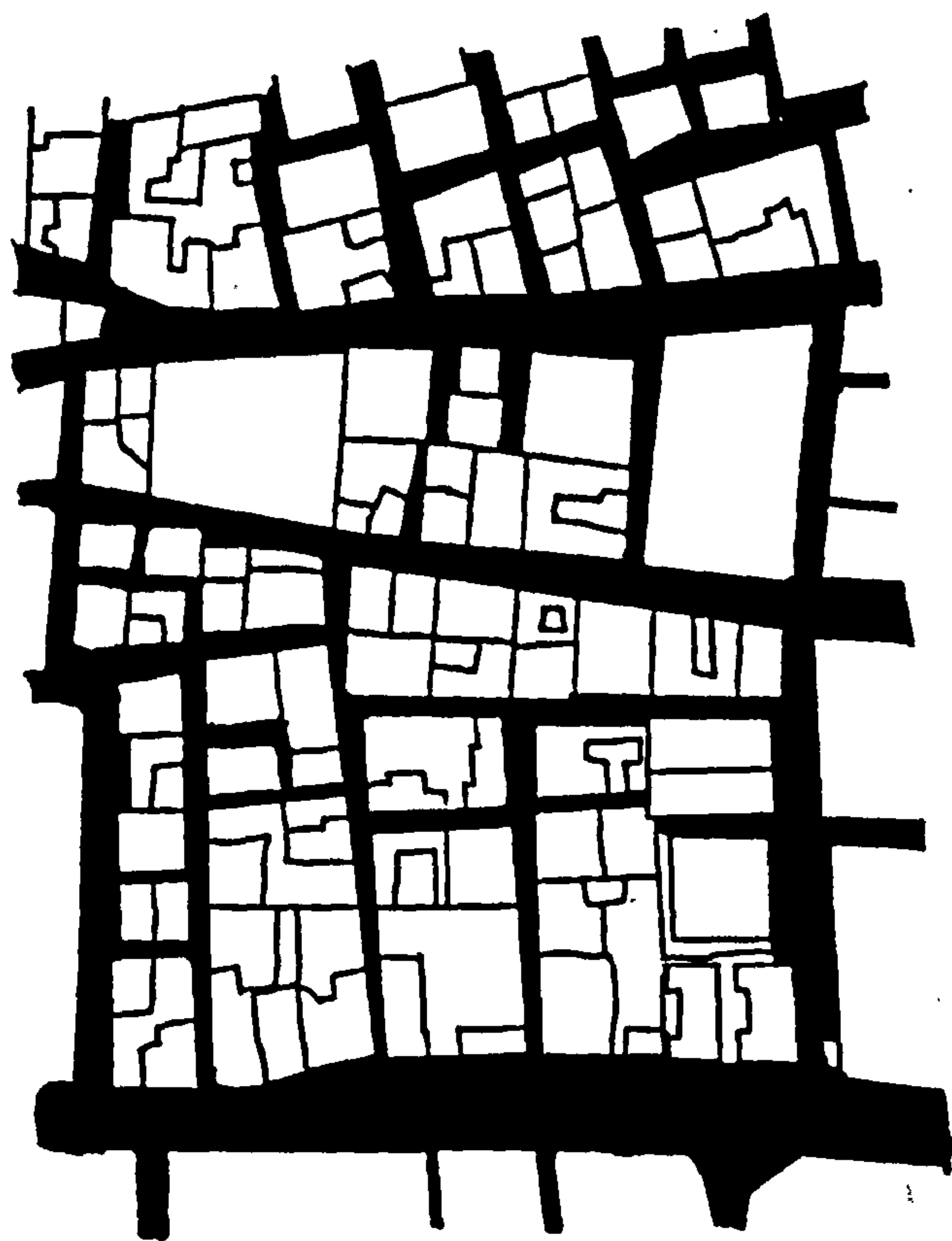


FIGURE 6.7 : Al Jameah (Sample Area No.5)

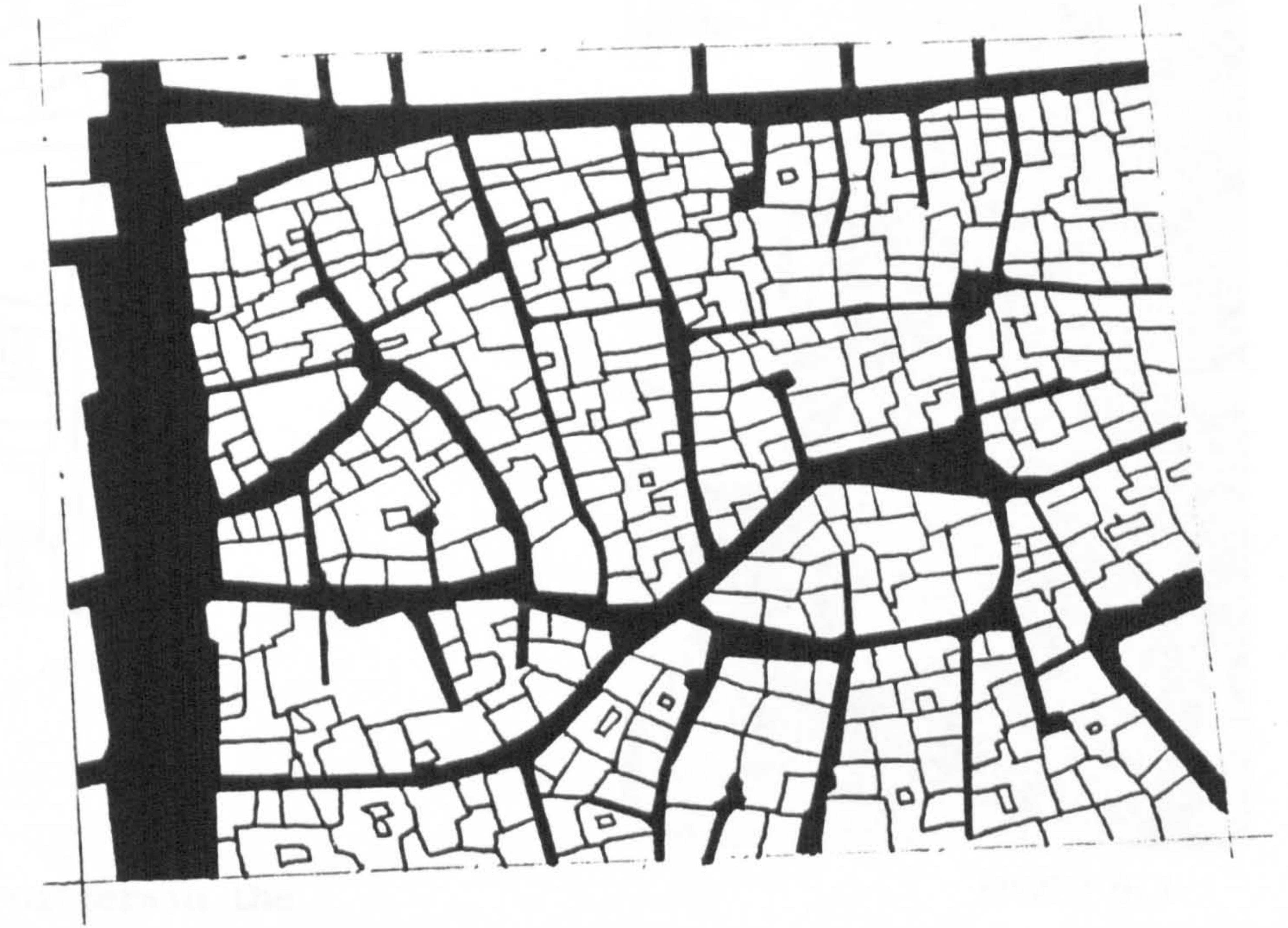


FIGURE 6.6 : Ghulayl (Sample Area No.3)

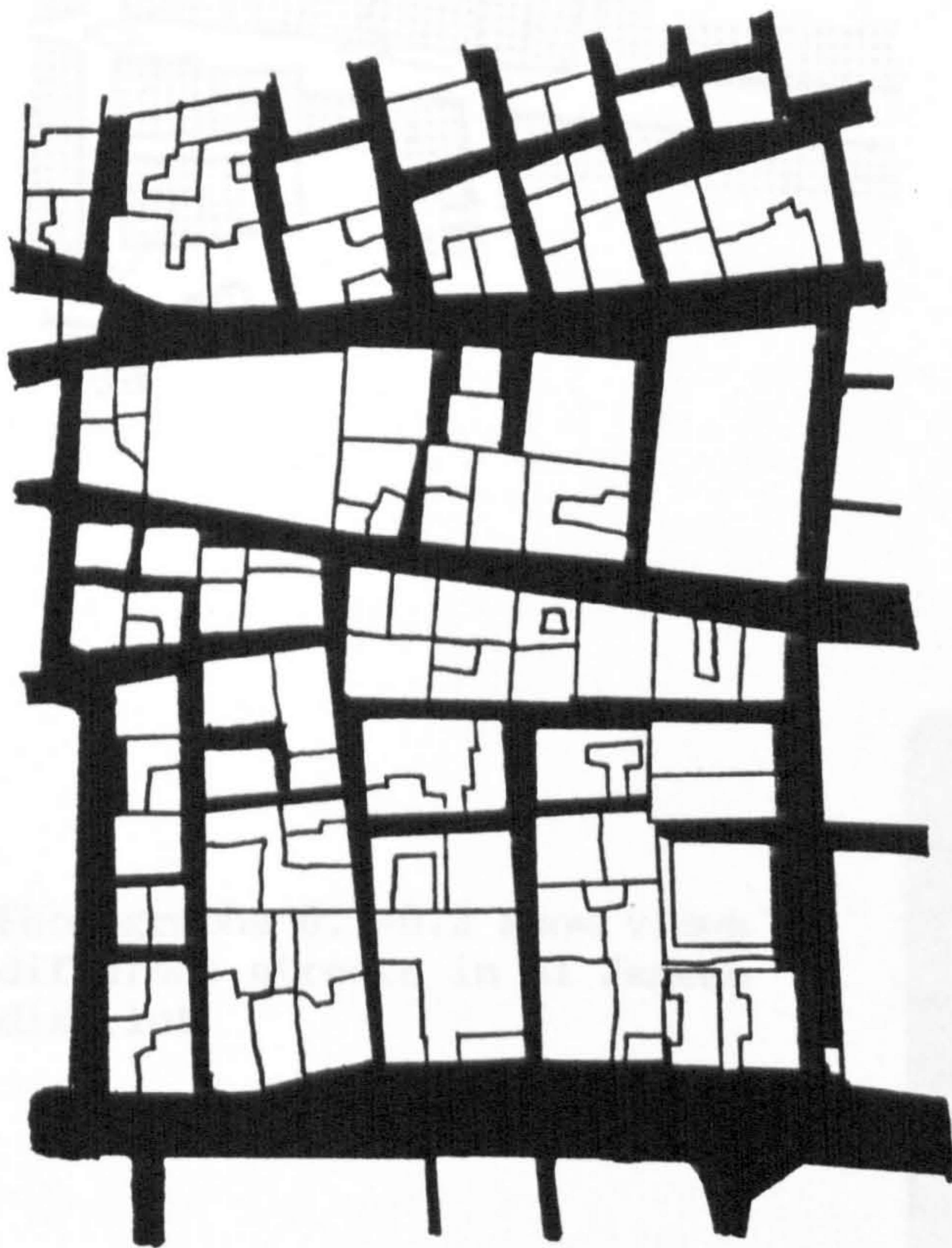
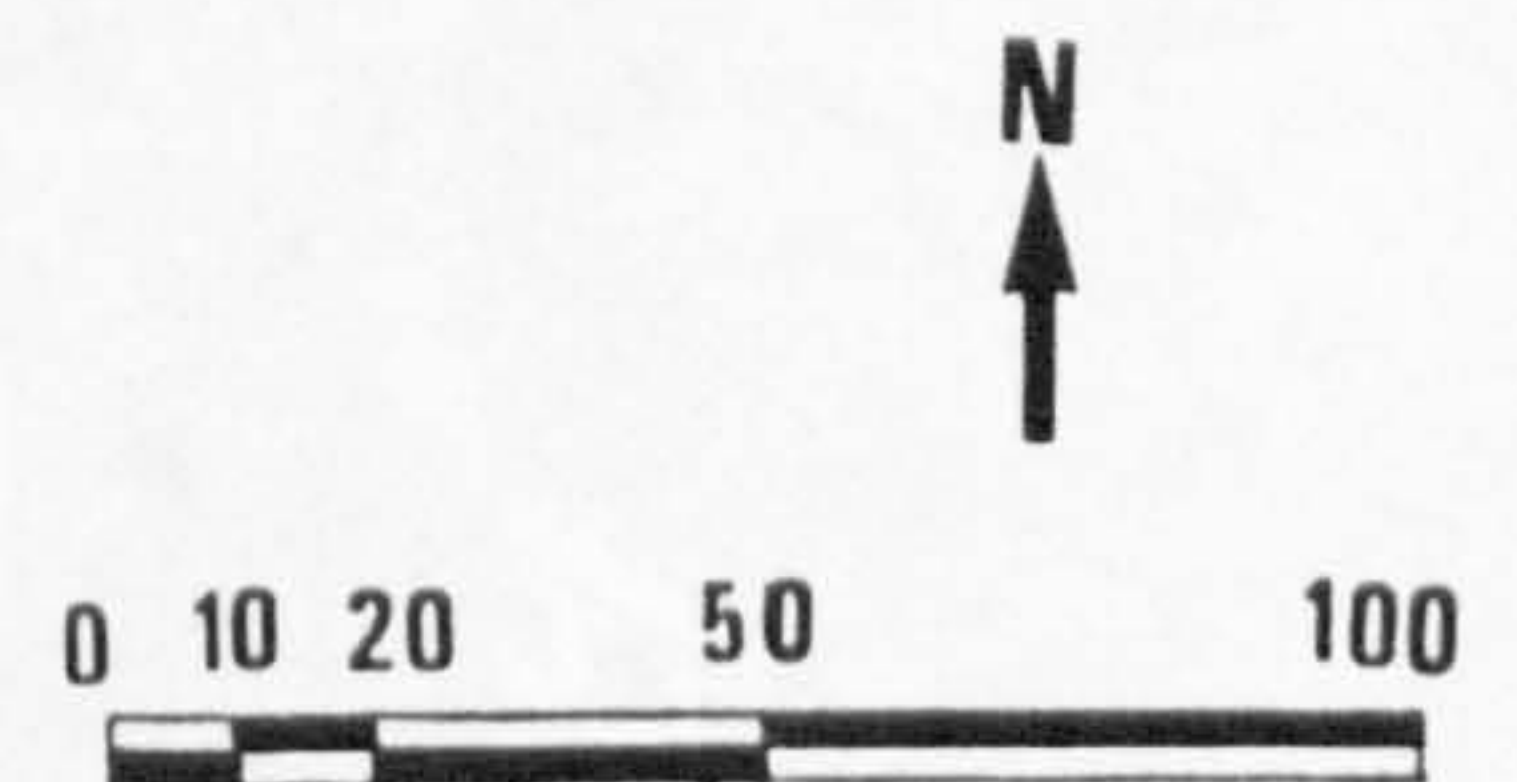


FIGURE 6.7 : Al Jameah (Sample Area No.5)



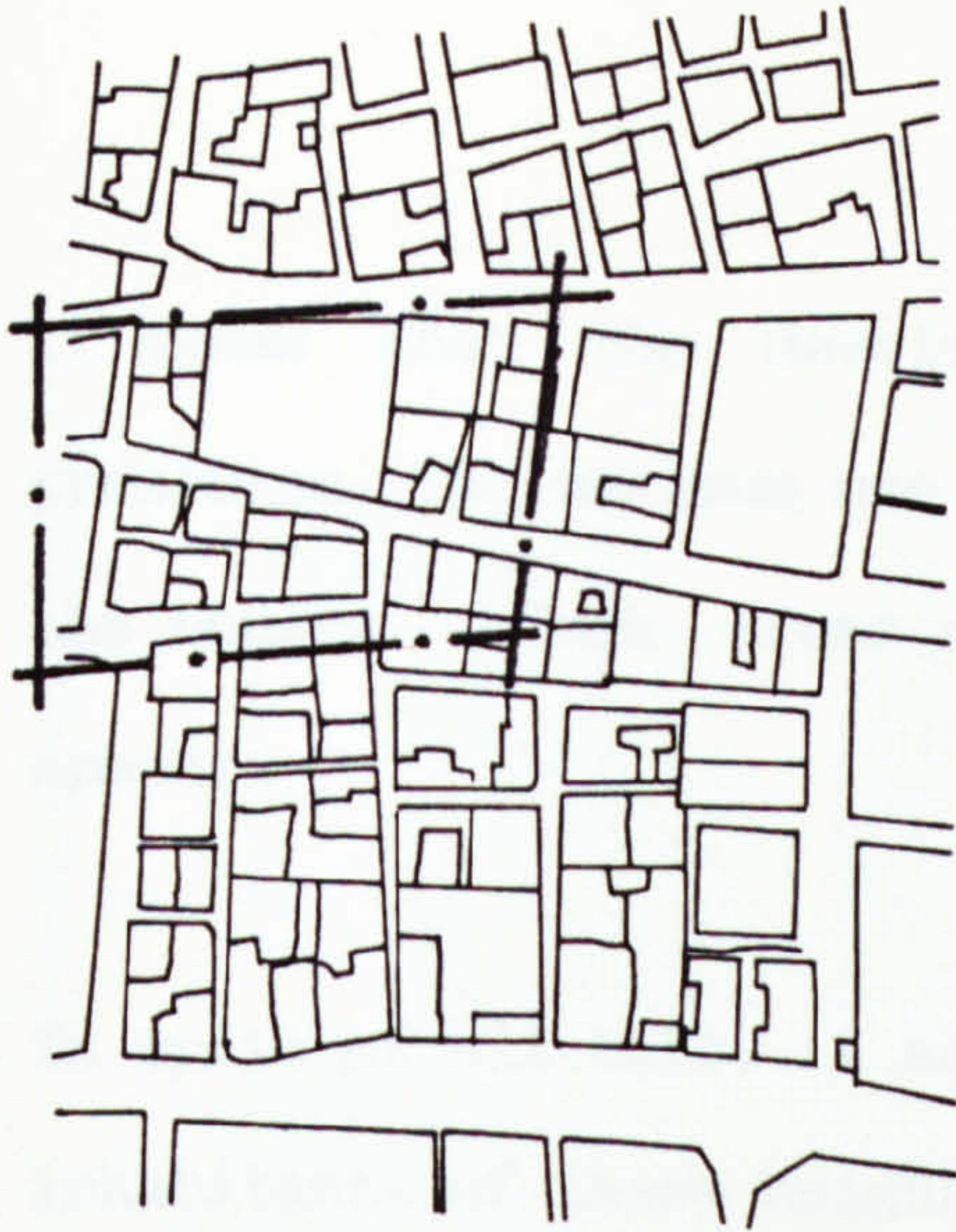


FIGURE 6.8 : Street pattern in the unplanned area (Al Jameah)

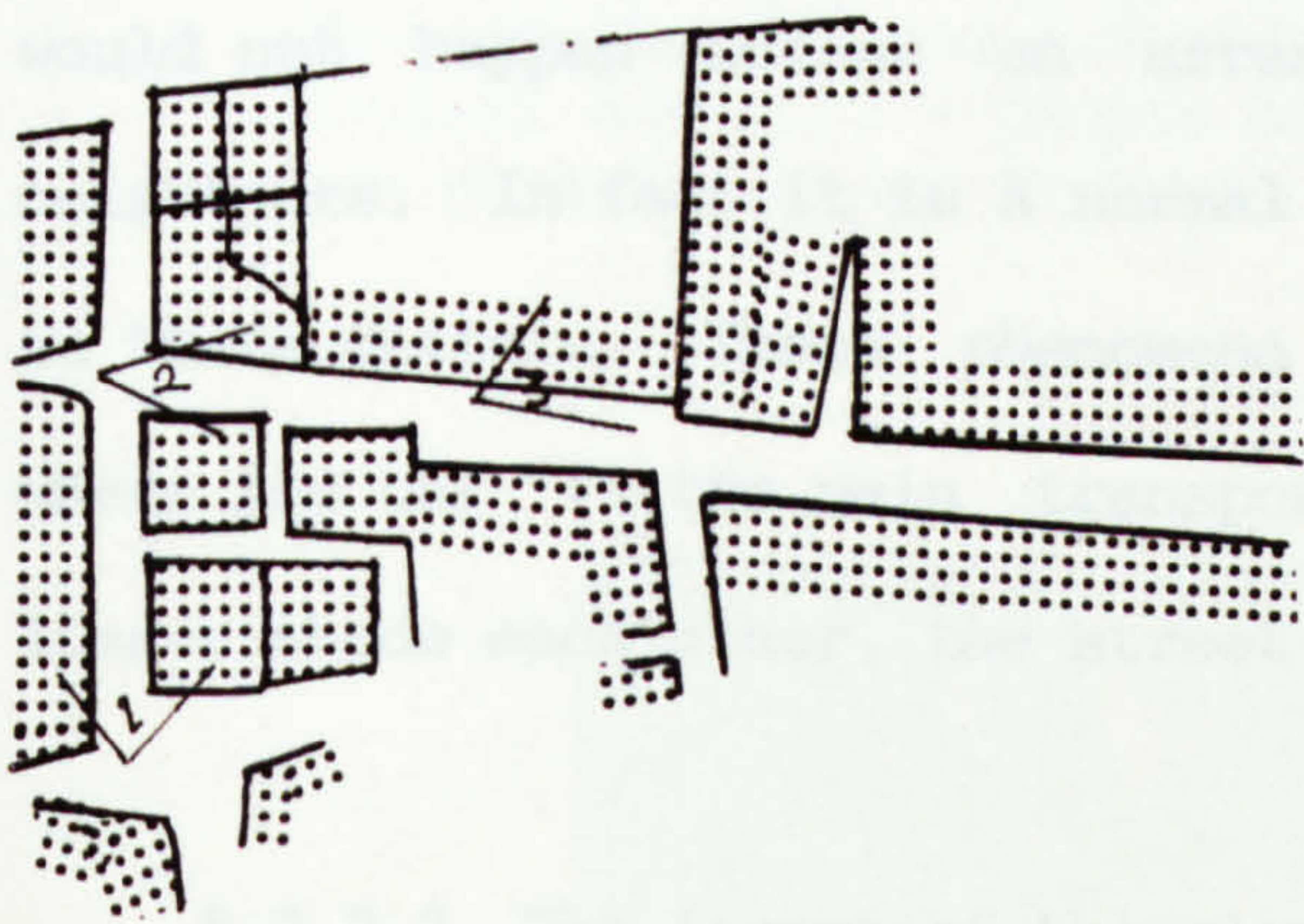


PHOTO 6.1



PHOTO 6.2

Photographs 6.1-6.3 show views of different streets in Al Jameah district



PHOTO 6.3

It seems that the developers of these areas are subject to two pressures, the maximum use of the plot and the provision of access for the houses. Such areas are lacking in public facilities and open spaces.

In spite of all this, it seems that the social relationship between the inhabitants of these neighbourhoods is among the best developed in the city. This is represented in the behaviour of the people, the use of space, etc. In the two sample areas people were found walking and discussing in the streets (Photograph 6.4), children were seen playing together (Photograph 6.5) and sometimes a temporary blocking of the street took place for a marriage ceremony (Photograph 6.6). The latter would not happen unless an arrangement had been reached with the neighbours. In fact it is a normal custom for the neighbours to assist in these matters. These phenomena are not found in the planned areas where the car is the main transportation mode and where buildings no longer shade each other, the street or the pedestrian.

6.2.2.2 The layout of the planned areas

The basic urban structure of the contemporary planned areas is alike, looking at the aerial photograph of the city in 1981, one can see the closeness and similarity of the urban anatomies. The grid-iron street pattern, buildings standing in the middle of the plots, the square and rectangular shapes of flat-roofed buildings, etc., all combine to give the contemporary areas a distinctive urban form which contrasts with that of the traditional areas.



PHOTO 6.4



PHOTO 6.5

Photographs 6.4 and 6.5 show views of different streets in Ghulayl district - people are encouraged to walk, also children can play in shaded areas in the narrow street.



PHOTO 6.6

Photograph 6.6 shows a temporary blocking of the street - for a social activity (marriage) - a natural phenomenon in such districts.

Three sample areas have been selected, sample area No.10 (from Mushrefah district), sample area No.11 (from Al Safa district) and sample area No.2 (from Al Rawdah district), to illustrate the urban form of the new quarters.

The basic layout is a square or rectangular grid. This simplifies expansion and the provision of the infrastructure services to all areas. The roads are straight and wide, requirements imposed by the great demands of the automobile. The street patterns are regular and hardly distinguishable from one another (Figure 6.9 and Photographs 6.7-6.9).

The planning of the new quarters is based on the western concept of real estate speculation. Each quarter is subdivided into small blocks, each with an average size of 50 x 50m, or larger blocks of 50 x 200m, surrounded by streets, and each block is subdivided into smaller lots, with an average size of 25 x 25m. This division is based on a grid pattern (Figures 6.9-6.11).

It has been noticed that there is no significant change, between 'Al Safah' (Figure 6.10) and 'Al Rawdah' quarters (Figure 6.11) apart from the size of block division. 'Al Safah' quarter, developed recently, has a division of approximately 50 x 200m blocks, which minimises the number of intersections and improves the quality of the traffic. 'Al Rawdah' quarter, developed in the first half of the 1970s has a smaller block division.

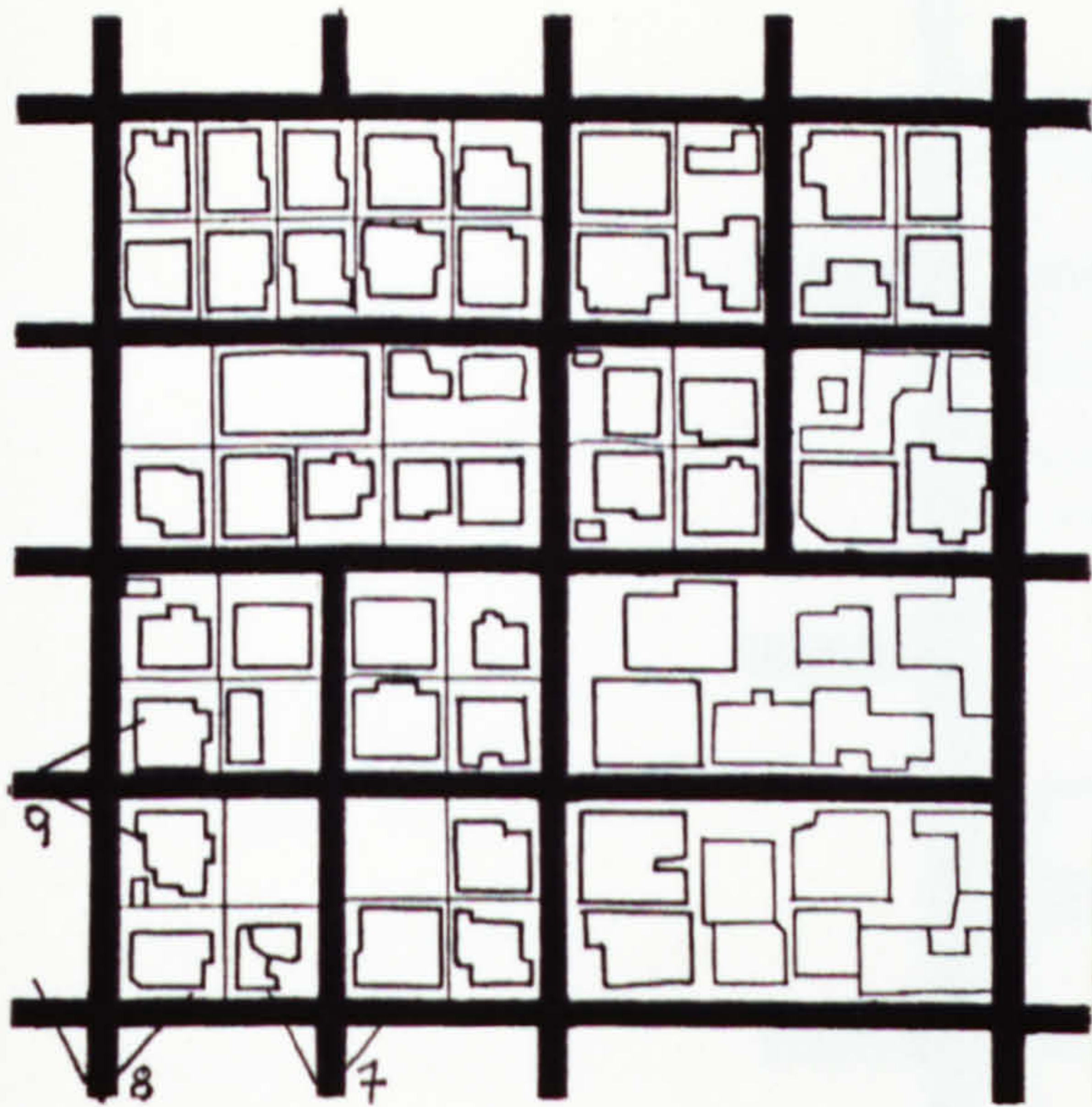


PHOTO 6.7

FIGURE 6.9 : Mushrefah (Sample Area No.10)



PHOTO 6.8



PHOTO 6.9

Photographs 6.7-6.9 show different views of different streets in Mushrefah district

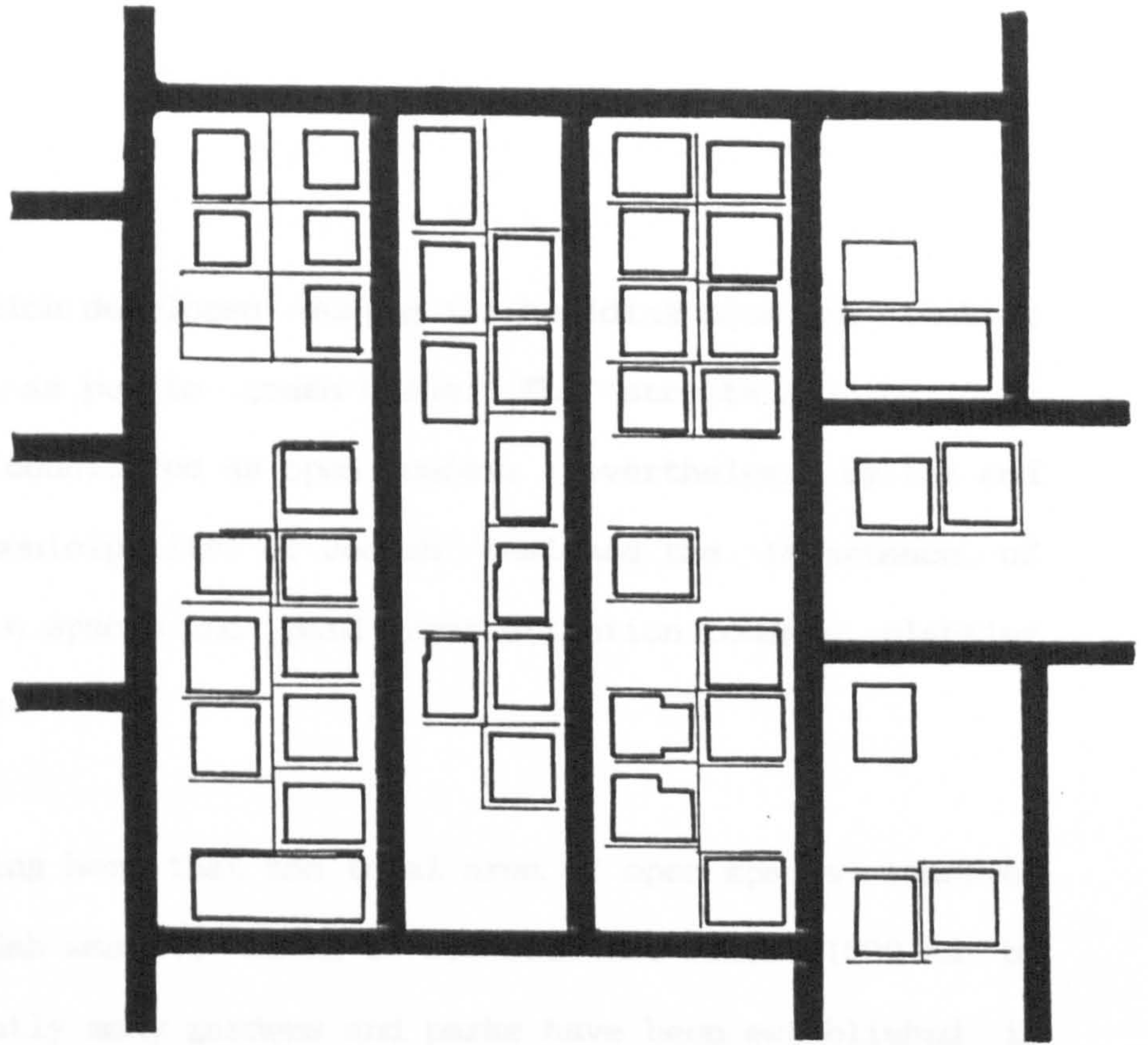


FIGURE 6.10 : Al Safa (Sample Area No.11)

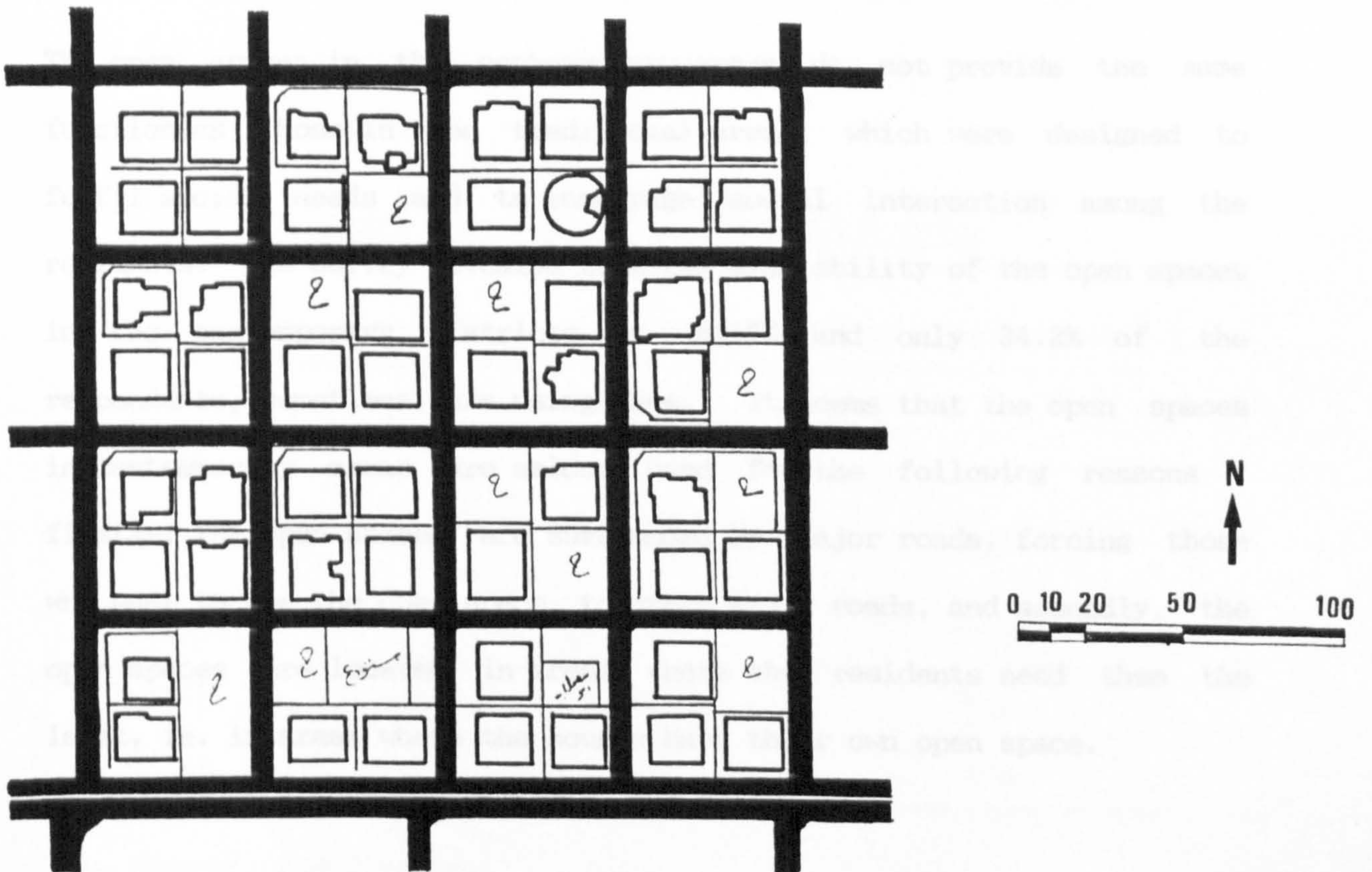


FIGURE 6.11 : Al Rawdah (Sample Area No.12)

6.2.3 Open spaces

Most of the areas which developed during the building boom are lacking open spaces as well as public green areas. The streets are the only spaces which can be considered as open spaces. Nevertheless, by the end of the 1970s the municipality of Jeddah realised the importance of providing enough open spaces and paid great attention towards planting grass in these areas.

It is worth mentioning here that the total area of open spaces reserved for gardens in Jeddah was 140 ha in 1978, but will reach 1600 ha by 1990⁽¹²⁾. Consequently many gardens and parks have been established in the city; unfortunately most of these facilities are difficult to reach, even if they are in the neighbourhood, except by car.

The open spaces in the contemporary areas do not provide the same function as those in the traditional areas, which were designed to fulfil social needs and to encourage social interaction among the residents. The survey revealed that the availability of the open spaces in the contemporary districts is 64.7% and only 34.2% of the respondents, sometimes, are using them. It seems that the open spaces in contemporary areas are seldom used for the following reasons : firstly, the open spaces are surrounded by major roads, forcing those who want to use the open space to cross major roads, and secondly, the open spaces are located in areas where the residents need them the least, ie. in areas where the houses have their own open space.

In fact, the lack of communal spaces in the neighbourhood will encourage the residents to keep most of their children's activities behind the walls, in spaces surrounding the building. Not only that but also some traditions and customs, such as gathering outside the dwellings, will disappear. It is believed such actions have a significant impact on minimising social contacts and encouraging individualistic attitudes among neighbours.

6.3 The House and Construction Techniques

6.3.1 Housing Types

All the housing types which have been discussed in Chapter Five are found in the contemporary part of the city, except for one type and that is the modified traditional building. However, the percentage of each house type differs from the transitional areas to the contemporary areas of the city (Table 6.2).

TABLE 6.2 : PERCENTAGE OF HOUSING TYPES

Building Types	Transitional Areas	Contemporary Areas
Traditional building	5.0	-
Bayt Shabi	24.8	14.1
Apartment building	62.8	77.1
Villa	3.4	6.5
Other	4.0	2.3

Source : Field survey.

From Table 6.2 one can see that there is a significant difference in the percentage of 'Al Beut Al Shabiah' in the contemporary area, 14.1%, from that of the transitional area, 24.8%, and there is an increase in apartment buildings and villas. Many factors have contributed to such changes. These include :

- (1) 'Al Beut Al Shabiah' are mainly found in the unplanned areas and these areas are limited in the contemporary part of the city.
- (2) The municipality has improved its control systems, with respect to newly built housing. Permission to build 'Al Beut Al Shabiah' is minimised and permission is not given in some areas, particularly those which are located in the northern part of the city.
- (3) The high demand for housing in the 1970's, as well as the economic utilisation of the plots, encouraged people to build multi-storey apartment buildings.
- (4) In the 1970s and 1980s the majority of people preferred to live in apartment buildings or villas, because they believed that living in such building types represents a development or a modern way of life.

'Al Beut Al Shabiah' are more popular among the low income sector of the population. It has been noticed that there are two standards of this housing type available in the contemporary area, fair and poor. The first is the house which is erected on a legal plot of land, and usually

contains the essential services such as water and electricity. The second is that which is built on illegal land, with unapproved construction, usually built overnight or during a weekend.

It is worth mentioning that the shanties (sanadek) dwellings showed a significant decrease in their percentage. According to the socio-economic survey of 1978 the percentage of the 'Sanadek' dwellings decreased from 15.7% in 1971 to 3% in 1978⁽¹³⁾. However, the vacant sites, within the built-up areas of the contemporary part of the city, are still attract the low income immigrants to construct 'sanadek', low grade or poor dwellings. The latter are constructed of cement block, asbestos sheets, corrugated iron, etc. Few 'sanadek' have been observed, either on the ground or on the roof of some houses (see Photographs 6.10-6.13).

The apartment buildings are scattered all over the contemporary areas. Villas are currently the most desirable housing type for Saudi families in Jeddah. Their numbers are increasing in the developed areas.

It is worth mentioning here that since the late 1960s a change in family composition has begun to take place, with the nuclear family becoming more frequent as most of the young Saudis choose to live independently after marriage. So the number of residential units is increasing in the city annually. The number of the residential units increased from 173,489 units in 1978 when the population was 981,000, to 259,050 units in 1984 when the population was 1,234,200⁽¹⁴⁾.



PHOTO 6.10 : Shows sandakah on the roof of Al Bayt Al Shabi



PHOTO 6.11 : Shows sanadek on a vacant site within the planned districts



PHOTO 6.12



PHOTO 6.13

Photographs 6.12-6.13 show the low grade houses - in the squatter settlement

6.3.2 Spatial Organisation

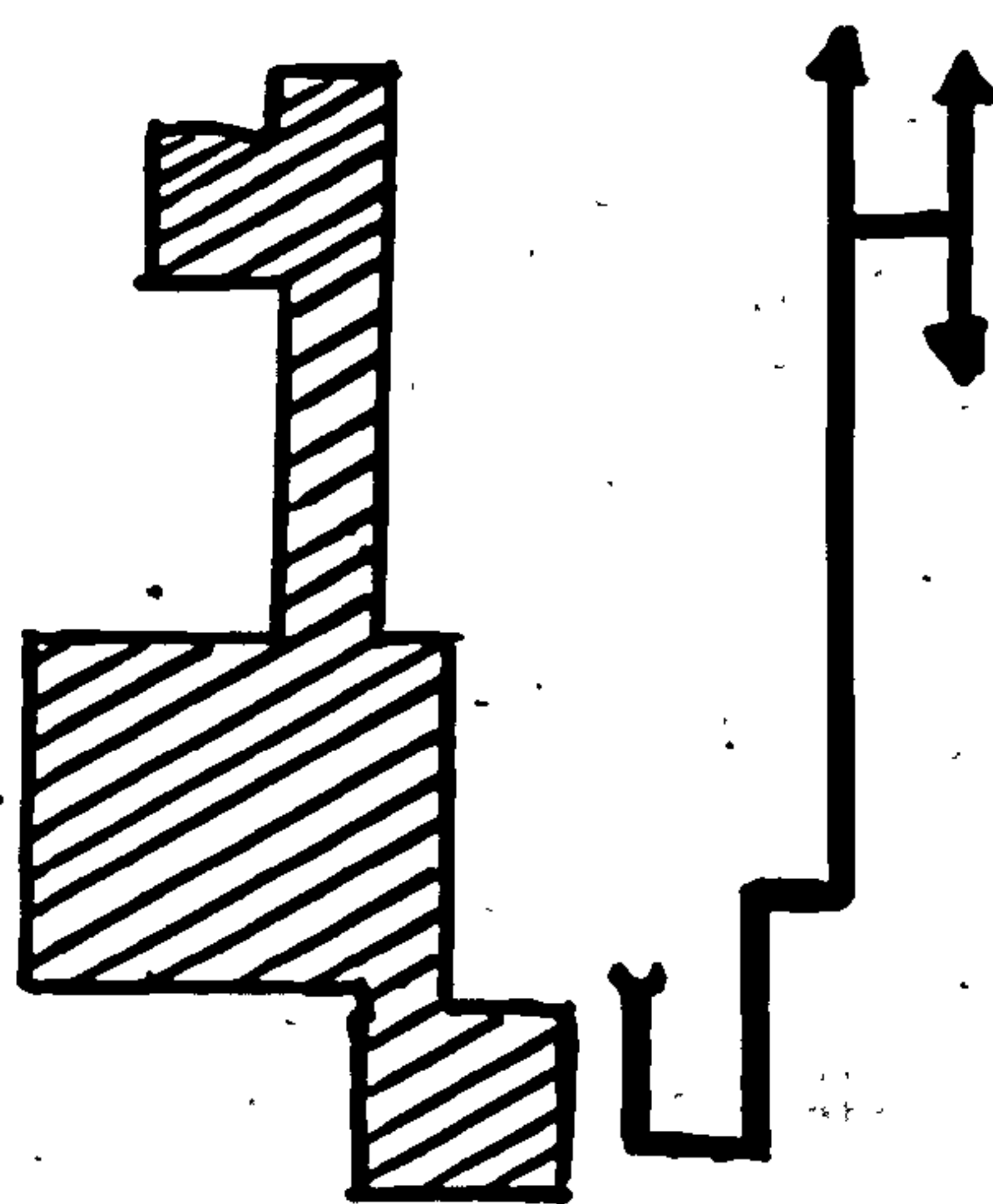
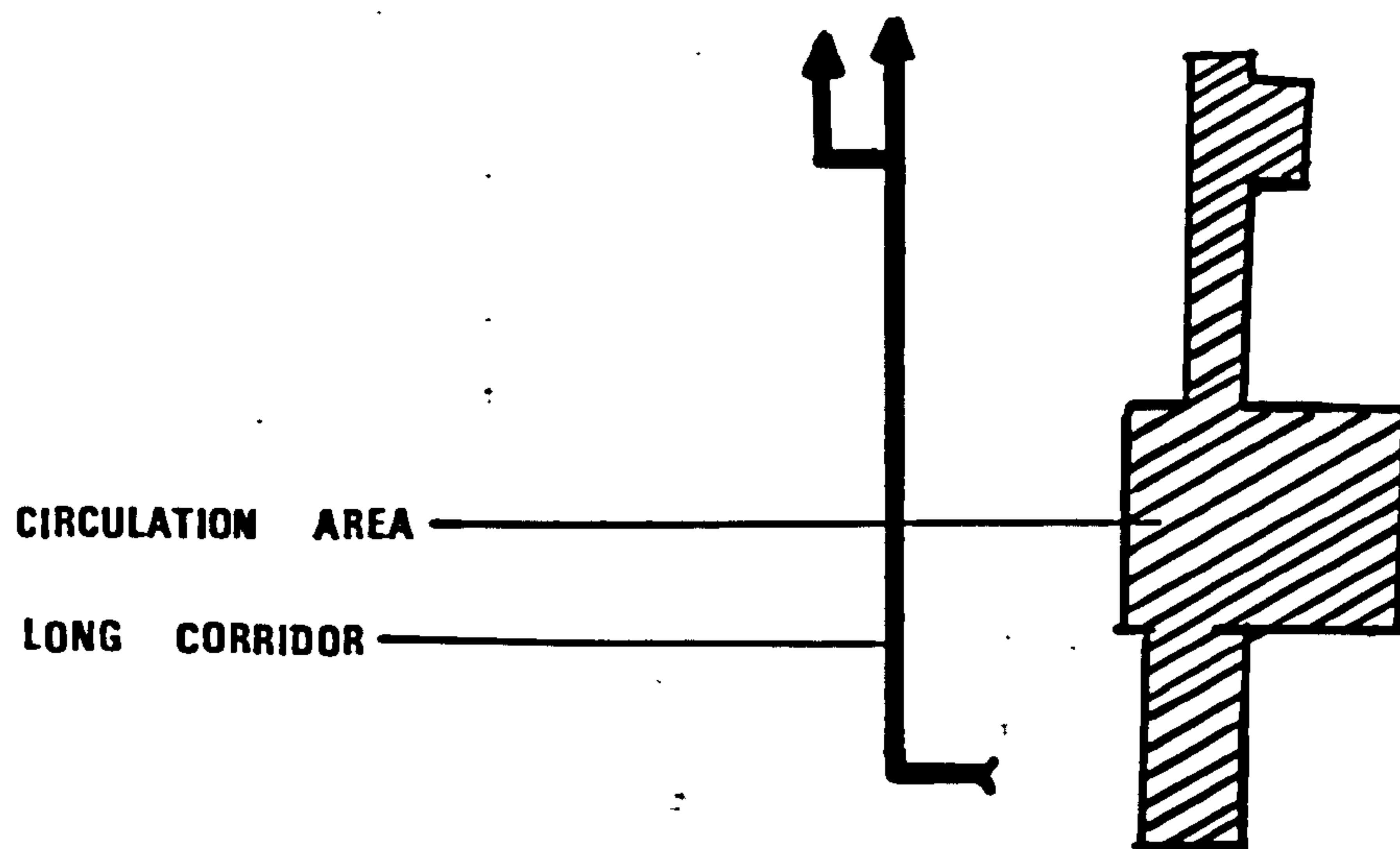
Since there is no significant difference in the housing types in the contemporary part of the city the internal space arrangement of the dwellings follows the same principles which were used in the transitional areas. However, it has been noticed that a few changes, regarding the area, the number of rooms and the exterior features of the houses, have occurred in the new residential units.

'Al Beut Al Shabiah' are still built without the help of professionals. The overall arrangement is the same as those discussed earlier. The courtyard and the two entrances are the main characteristics of this housing type. However, it has been noticed that the courtyards are decreasing in size and number in the newly built houses. This is believed to be due to the following reasons. Firstly, the increase of the land value has dictated the maximum use of the land, therefore the owners have built on almost the whole of the plot, leaving a minimum space for the courtyard. Secondly, the dependence of the people on the mechanical air cooler - air conditioning - reduces the role of the courtyard as a temperature regulator as well as a social place for the family. The courtyard becomes too hot so that the people cannot use it. Thirdly, the changing of the family structure, from the extended family to a nuclear family, has affected the size of the courtyard in the house. One nuclear family lives in one house, and does not require a large courtyard.

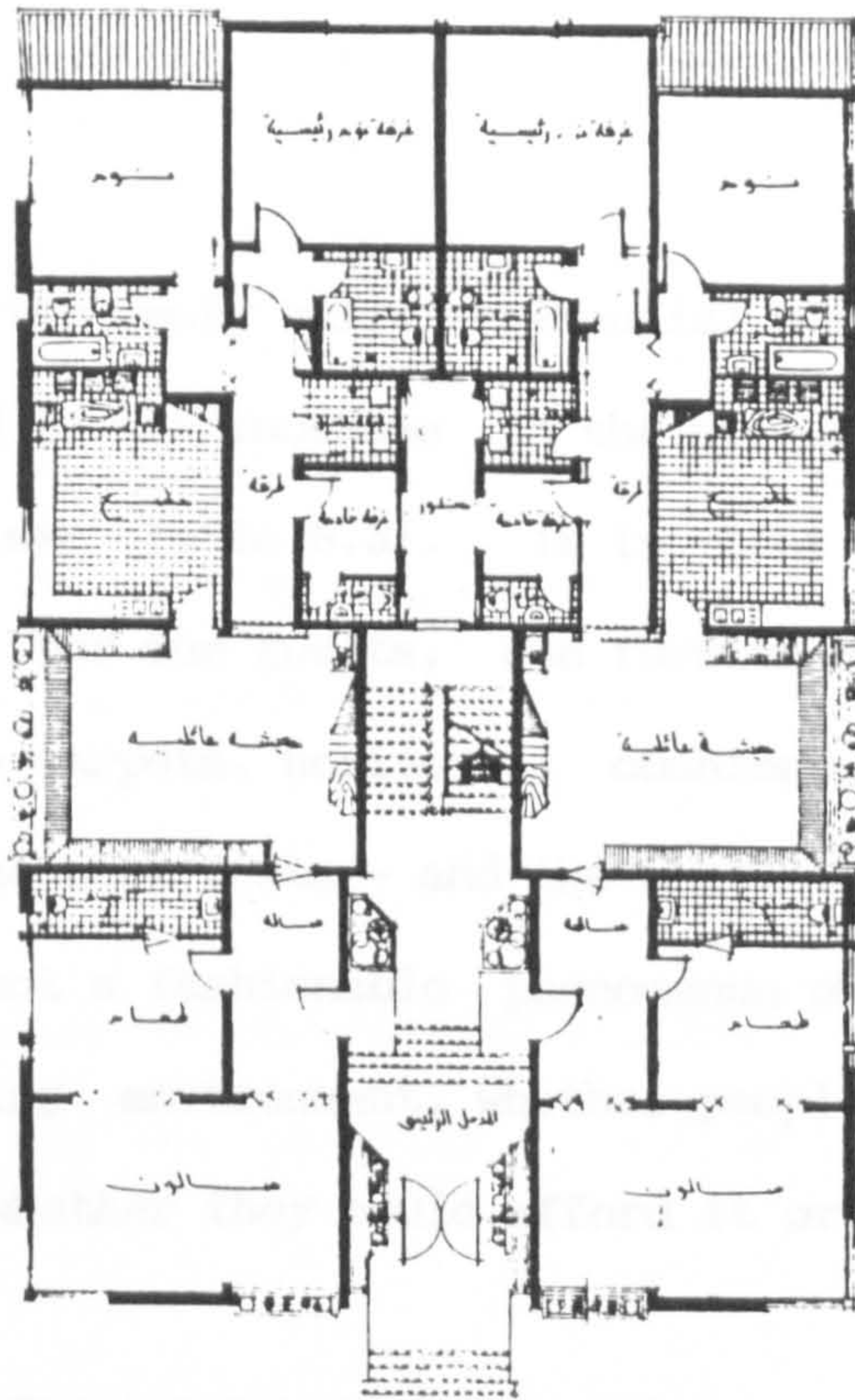
In fact not only is the courtyard decreasing in size, but as also the whole area of the house. The survey revealed that the average house area built in the transitional part of the city is 122m², while the average size of the house area in the contemporary areas is 100m².

The apartment buildings, the flats, have retained their characteristic form. There is one main entrance, the guest domain is near the entrance and the family domain towards the rear of the flat. It is worth mentioning here that the specific usage of space of the contemporary flats leads to many room types in larger flats. This has led to the increase of areas such as corridors, which are used only for circulation, (Figure (6.12)). There has been a considerable increase in the overall area of the flats. The survey revealed that the average flat area in the transitional areas is 106m², while in the contemporary areas it is 117m².

The villa is virtually uniform in each neighbourhood throughout the city. Wherever they are found, the reception and dining rooms, and the guest domain, are in the front of the ground floor, followed by the kitchen and staircase. Bedrooms are located on the first floor. The specific function of the room, such as the dining room, sitting room, living room, etc., is adopted more in villas than in other housing types in the city. It has been found that the average area of the villa in the transitional area is 246m² and in the contemporary part of the city is 287m².



Ground floor plan



No. of Apartments	Typical Building Area	Typical Building Volume	Typical Building Height	Typical Building Density
2 rooms	-	-	-	-
3 rooms	-	-	-	-
4 rooms	-	-	-	-
5 rooms	-	-	-	18.7
6 rooms	-	-	-	18.3
7 rooms	16.7	-	-	18.3
8 rooms +	12.3	-	-	18.7

Fig. 6-3

1 - The Transitional Area
2 - The Contemporary Area

Source : Field survey.

Typical floor plan

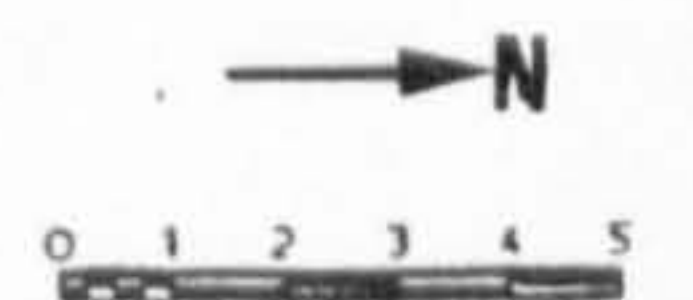
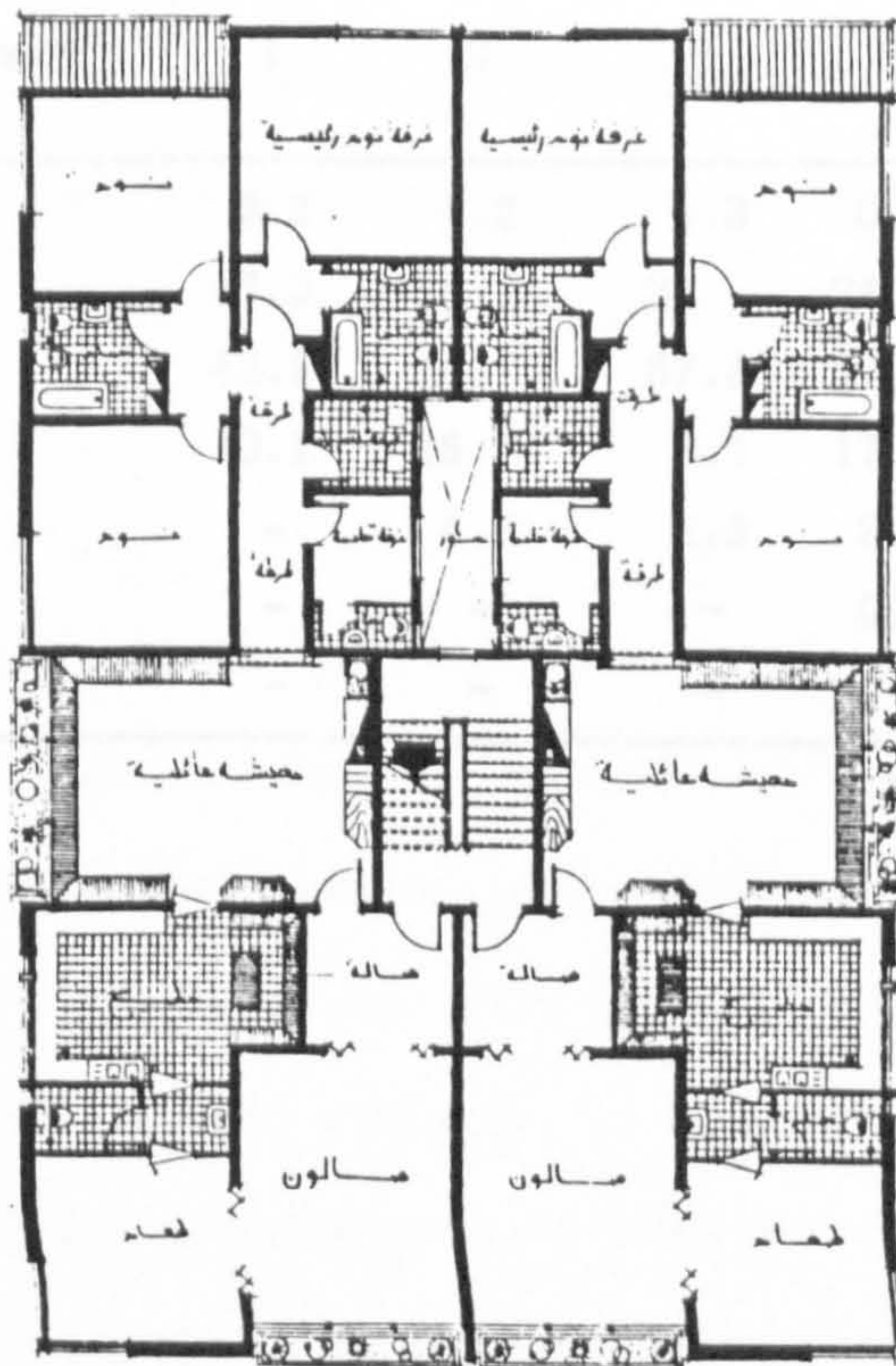
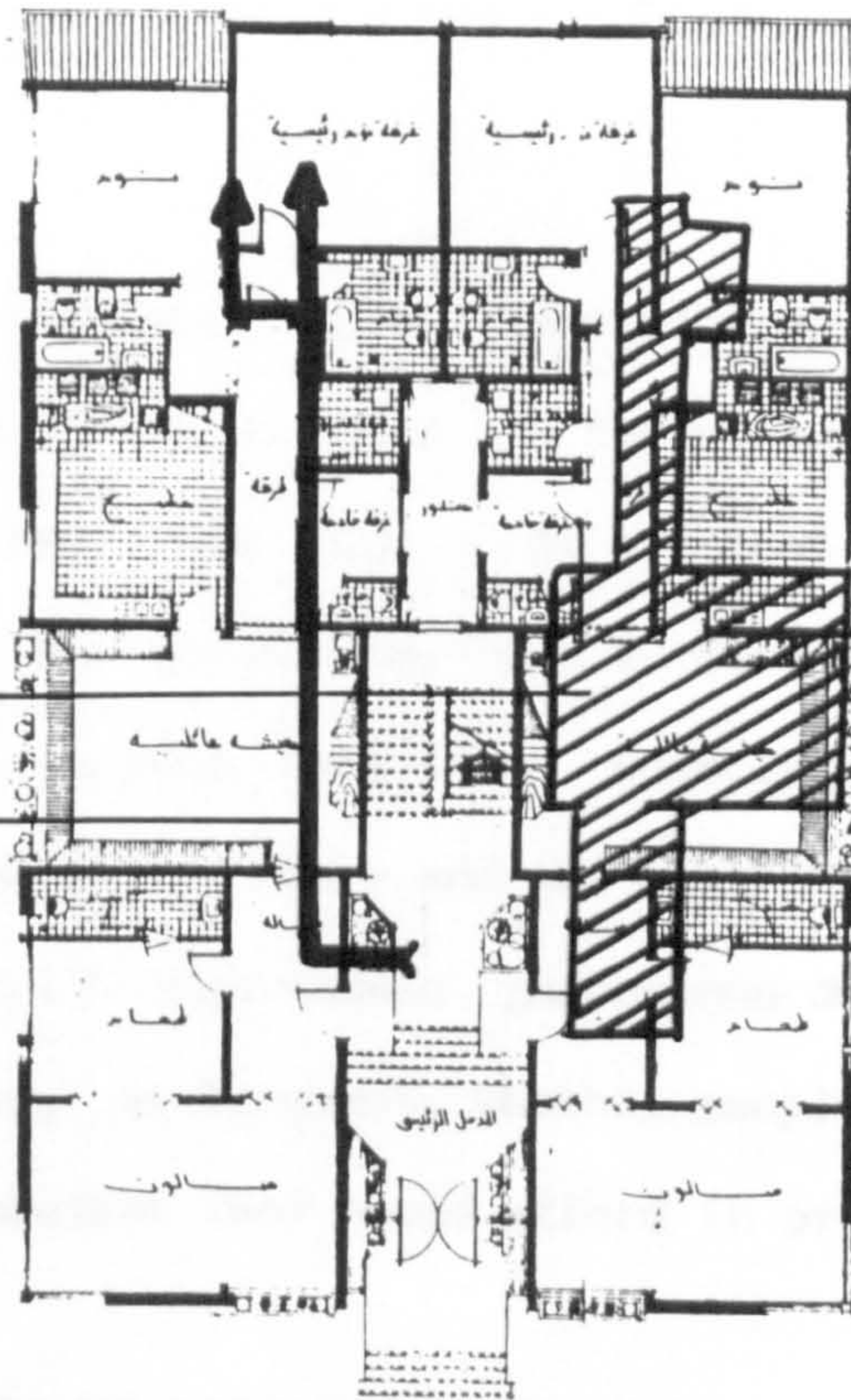


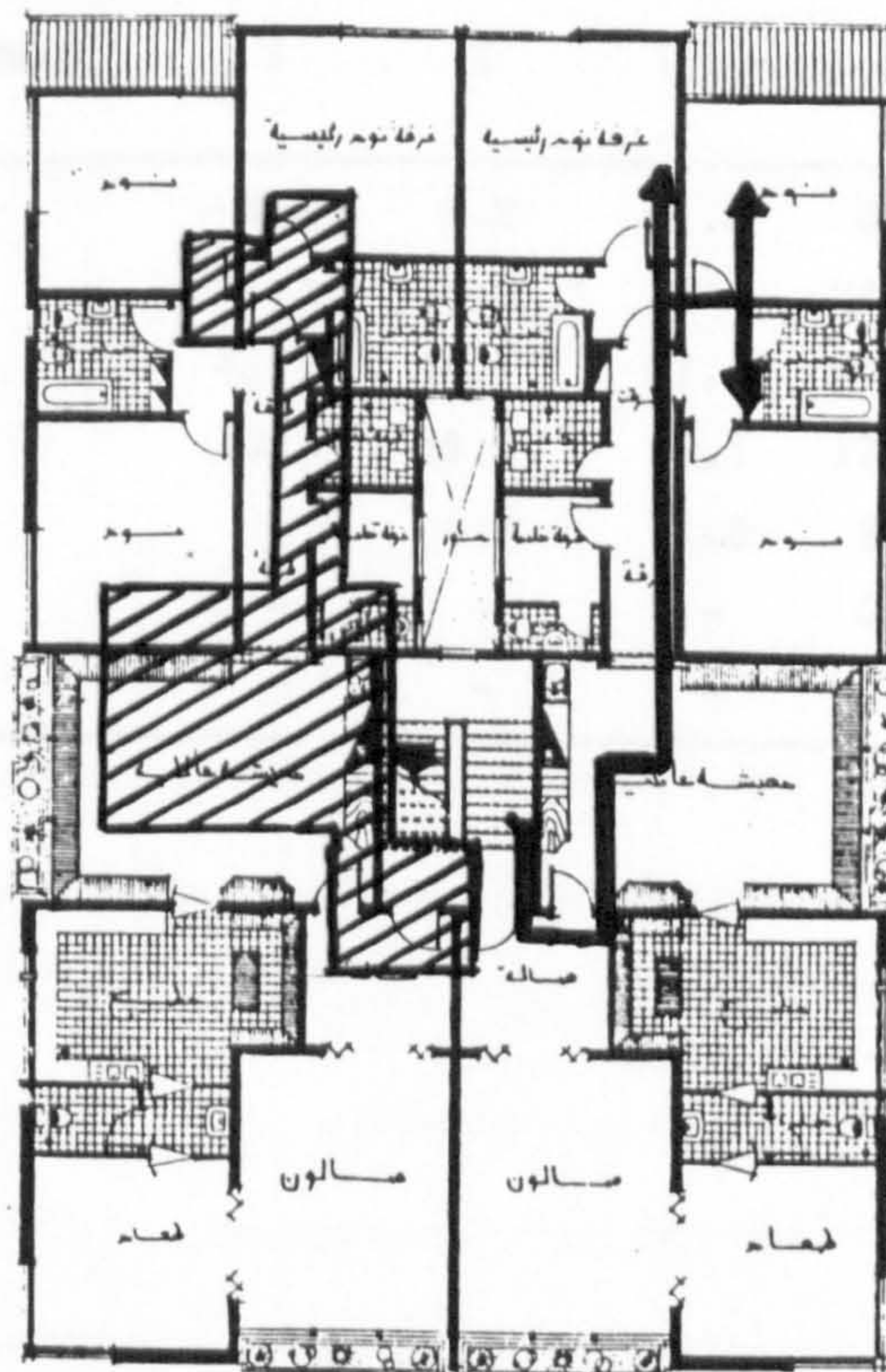
FIGURE 6.12 : The apartment building plan

CIRCULATION AREA

LONG CORRIDOR



Ground floor plan



Typical floor plan

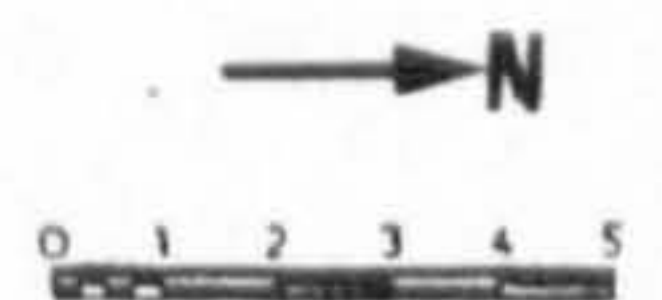


FIGURE 6.12 : The apartment building plan

6.3.2.1 The rooms

A new phenomenon has appeared in the newly built residential units which affects their design and has led to the increase in the number of the rooms in the residential unit (see Table 6.3). It is that most of people prefer to have two rooms for the guests, one furnished in the traditional style - rugs on the carpets, horizontal cushions for the seat and vertical cushions for the back rests - and the other in western style. It seems that this is not a fashionable phenomenon only, but became a feature in the new living environment, whether people really felt the need for it or not, or whether they could afford it or not.

TABLE 6.3 : HABITABLE ROOMS IN HOUSING TYPES

No. of Habitable Rooms	Traditional Building		Al Bayt Al Shabi		Apartments		Villa	
	Transitional Area	Contemporary Area	1	2	1	2	1	2
2 rooms	-	-	3.3	4.2	1.3	0.8	-	-
3 rooms	-	-	43.3	33.2	32	24.3	-	-
4 rooms	-	-	43.3	41.7	57.2	54.2	-	-
5 rooms	-	-	10.1	16.7	8.1	17.6	16.7	36.4
6 rooms	-	-	-	4.2	1.3	2.3	33.3	36.4
7 rooms	16.7	-	-	-	-	0.8	33.3	9.1
8 rooms +	83.3	-	-	-	-	-	16.7	18.1

KEY to Table 6.3

- 1 = The Transitional Area
- 2 = The Contemporary Area

Source : Field survey.

Table 6.3 illustrates that there is a general tendency for the residential units which are built in the contemporary areas - ie. modern houses - to have more rooms than units in the transitional area. For instance, the percentage of three roomed flats in the transitional areas is 32%, while in the contemporary areas it is 24.3%, and the percentage of five roomed flats is 8.1% in the transitional areas, but in the contemporary areas it is 17.6%.

Also from Table 6.3 one can see that the majority of the flats and 'Al Beut Al Shabi' have four rooms and the majority of villas have six rooms.

6.3.2.2 The kitchen

It has been indicated earlier that the kitchen is a female area; it is one of the most private sections of the residential unit. Access to such places is extremely difficult and sometimes impossible for anyone except a member of the family.

Generally speaking, kitchens receive great attention from both the owner and the designer. The quality of the finished kitchen has improved and instead of a bare, plastered wall, ceramic tiles with different shapes and different colours are used. The level of ventilation inside the kitchen has also improved; instead of only opening to a narrow, light well, 'Manwar', additional mechanical ventilation is used to circulate the air and to extract the smell of cooking. In addition to the improvements outlined above modern cooking equipment and furniture are installed in the kitchen, which has led to a considerable increase in

the kitchen size of most of contemporary housing. The typical kitchen will now have as standard fittings, a gas or electric cooker, a refrigerator, a washing machine and a dishwasher.

6.3.2.3 The bathroom

The sanitary standards of bathrooms are much more advanced than those built in the transitional area of the city, although the equipment is the same. The difference in standards is due to the following :

- (1) The availability of a water supply to each house.
- (2) The number of qualified personnel who do the plumbing and carry out the installation of bathroom equipment has increased.
- (3) The quality of the installation work of bathroom equipment has improved, so that the leakage of water down the facade of the building - a common feature of most of the houses in the transitional areas - is rarely seen in these new homes.
- (4) The use of ceramic tiles for the walls and floor, enables the residents to maintain higher standards of cleanliness within the bathroom.

Bathrooms were usually located in certain areas of the residential unit, but nowadays, as a result of the improvements in the sanitary standards, the bathroom is being introduced adjacent to, or sometimes within, the sleeping rooms. The adoption of the bathroom as a part of the sleeping area is a revolutionary change in the design of housing.

6.3.2.4 The balcony

There has not been a significant change in peoples' attitudes towards the balcony. All balconies in the contemporary buildings follow the same patterns as those in the transitional areas. They are all similar, with the exception that the new ones are provided with a protective device of either wooden or aluminium lattice work.

6.3.2.5 The roof

The roof maintains its function as an elevated open space surrounded by parapet walls. However, it seems that the roof of some of the new houses does not have the same role as it had in the traditional houses. This is due to the following reasons :

- (1) There is an alternative space such as the courtyard in 'Al Beut Al Shabiah', or the private outdoor spaces in the villa type.
- (2) As a result of the use of mechanical cooling devices, people are rarely sleeping on the roof.
- (3) It is hard to maintain privacy on the roof, as a result of the different heights of the different contemporary buildings.

6.3.3 The use of spaces

People, especially females, spend most of their time inside the residential unit, cooking, sitting, sleeping, discussing, watching TV,

etc. Each of these activities is conducted in a specific space within the house.

Although most people are attracted to the western way of life, adopting many western habits, they still practice the traditional norms and customs to some extent, such as sitting and eating on the floor. It is commonly seen that both two types of furniture, the traditional (carpets, rugs, mattresses, cushions) and the western (sofa, armchairs, tables and chairs), are used in the same residential unit.

The life style in the newly built residential units has become less flexible, as a result of the introduction of this furniture, which has committed each space to a specific purpose. The multi-functional spaces - an essential characteristic of the traditional house - are no longer found in the modern houses. Each room is designed for one primary function.

It is interesting to note here that the adoption of mechanical cooling systems such as air-conditioners, as the most practical means of achieving thermal comfort inside the house, has affected the utilisation of space in the house. For instance, it causes the occupier not to prefer certain space over another within the house, an essential feature of the living environment of the traditional building.

6.3.4 The exterior features of the buildings

The rectangular facade with small square or rectangular openings is the major characteristic of the contemporary houses. The glazed windows

with aluminium frames have become the predominant feature of the openings of all houses built in the contemporary part of the city. This continued until the early 1980s, when a few elements of the traditional architecture such as 'Mashrabiah' or 'Roshan', and treatment of roof lines, began to emerge.

The traditional architectural elements appeared first in the new buildings, to cover the openings and balconies (Photograph 6.14). Later on this phenomenon spread throughout the buildings in the city, especially in those buildings facing the main roads. It is believed that the municipality originally adopted this idea and imposed it, in one way or another, throughout the city.

One of the first examples of such use is seen in the central Municipality Building. It consists of four apartment buildings, three storeys each, the main elevations being joined and covered with wooden lattice work similar, to some extent, to that of traditional buildings (Photograph 6.15).

As a matter of fact, the exterior features of the buildings constructed from the mid 1970s until the early 1980s witnessed various changes as far as the colour and materials were concerned. Limestone blocks (Riyadh Stone) were used to cover the whole or some part of the elevation of the buildings at a certain time, and marble was used for another. Lately the white colour recommended by the municipality is being used. This is not only happening in the contemporary houses but in all the buildings throughout the city. H. Amer, writes that,



PHOTO 6.14



PHOTO 6.15 : The municipality building

Photographs 6.14 and 6.15 show the contemporary use of mashrabiah and rawashin



PHOTO 6.14



PHOTO 6.15 : The municipality building

Photographs 6.14 and 6.15 show the contemporary use of mashrabiah and rawashin

"the municipality necessitates that the owner should observe the aesthetic appearance of the facades of their buildings such as to cover them with limestone block (Riyadh Stone), marble or simply white paint. The cavities should be covered with simple wooden rawashin or other similar woodwork derived from our rich Islamic heritage"⁽¹⁵⁾.

6.3.5 Relationship between internal and external spaces

The contemporary houses followed, more or less, the same principles as those built in the transitional part of the city. Apart from the villa type, the relationship between the interior and exterior spaces is kept to the minimum in most of houses built in the contemporary areas of the city. The visual relationship is the only opportunity provided for the apartment building occupants.

In the villa type, as described in Chapter Five, the private outdoor spaces enabled the occupants to have a reasonable relationship between the interior and exterior spaces, enabling them to extend some of their activities to outdoor spaces, a matter which has made the villa type the most desirable house type in the city.

6.4 Building Materials

With the increase of housing demand in the 1970s, many different building materials are used in the city. Some are produced in the country, such as cement, steel, aluminium, gypsum, etc., and the others are imported as the local production cannot meet market needs.

Concrete, cement blocks, sand cement bricks, glass and aluminium are the main building materials used in the construction of the contemporary houses. The national traditional building materials are completely abandoned in the contemporary part of the city.

Although most of these building materials were used in the 1950's and 1960's, their performance was not as good as those of the present, and that was mainly due to the inappropriate use of the building materials. For instance, salt water was widely used in building construction and this affected the appearance of the buildings, leading to cracking walls and deterioration of the buildings. This has made most of the buildings look older than their real age. However presently, and as a result of the improvement of building techniques, and municipality supervision of the construction, the quality of the buildings has been improved.

6.5 Construction Techniques

The reinforced concrete frame construction is the main housing construction technique in the city. Apart from 'Al Beut Al Shabiah' all housing types are constructed with a reinforced concrete frame consisting of columns, beams and slabs. 'Al Beut Al Shabiah' are still constructed with load bearing walls - cement blocks or sand cement brick walls - and timber roofs.

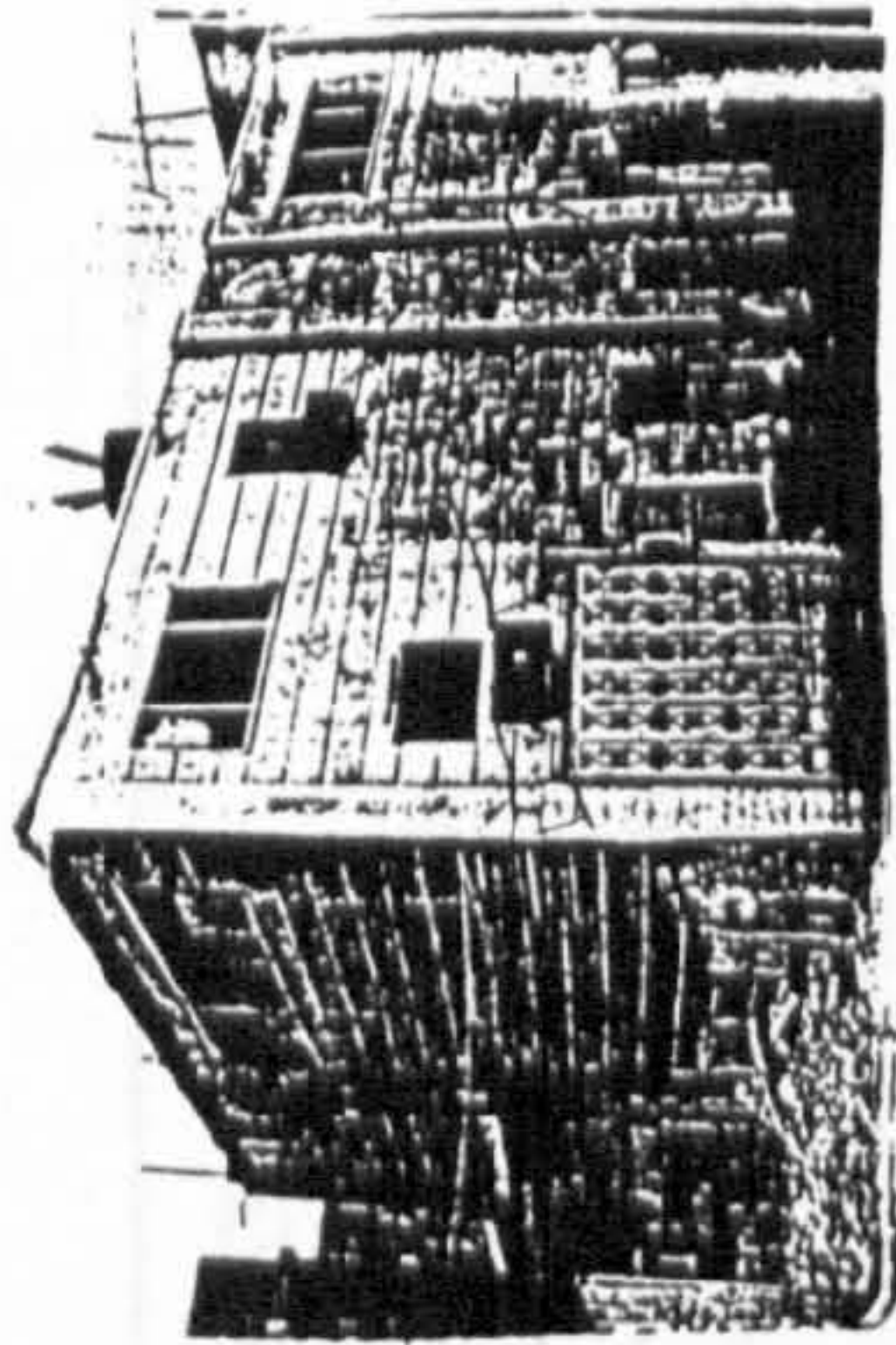
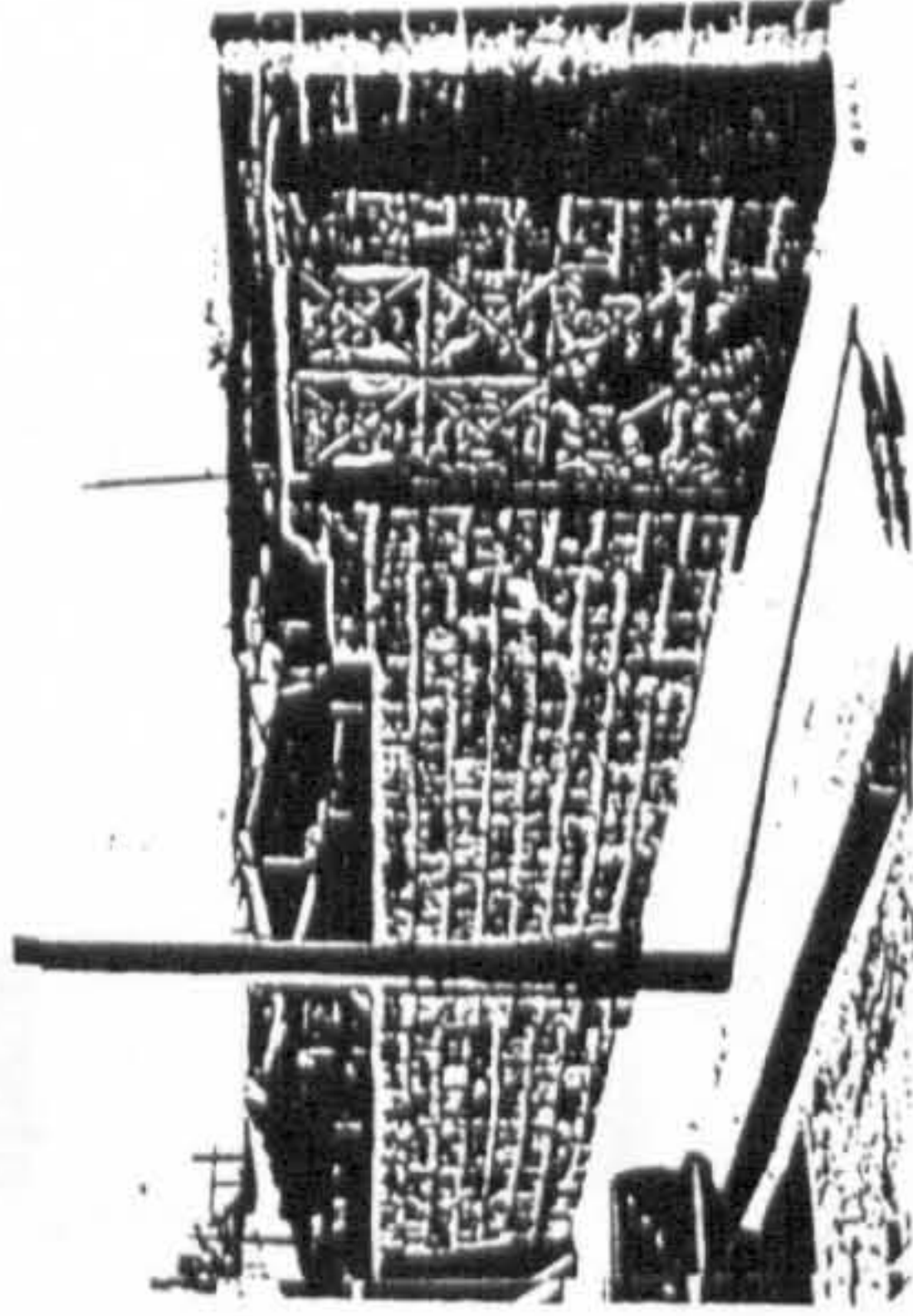

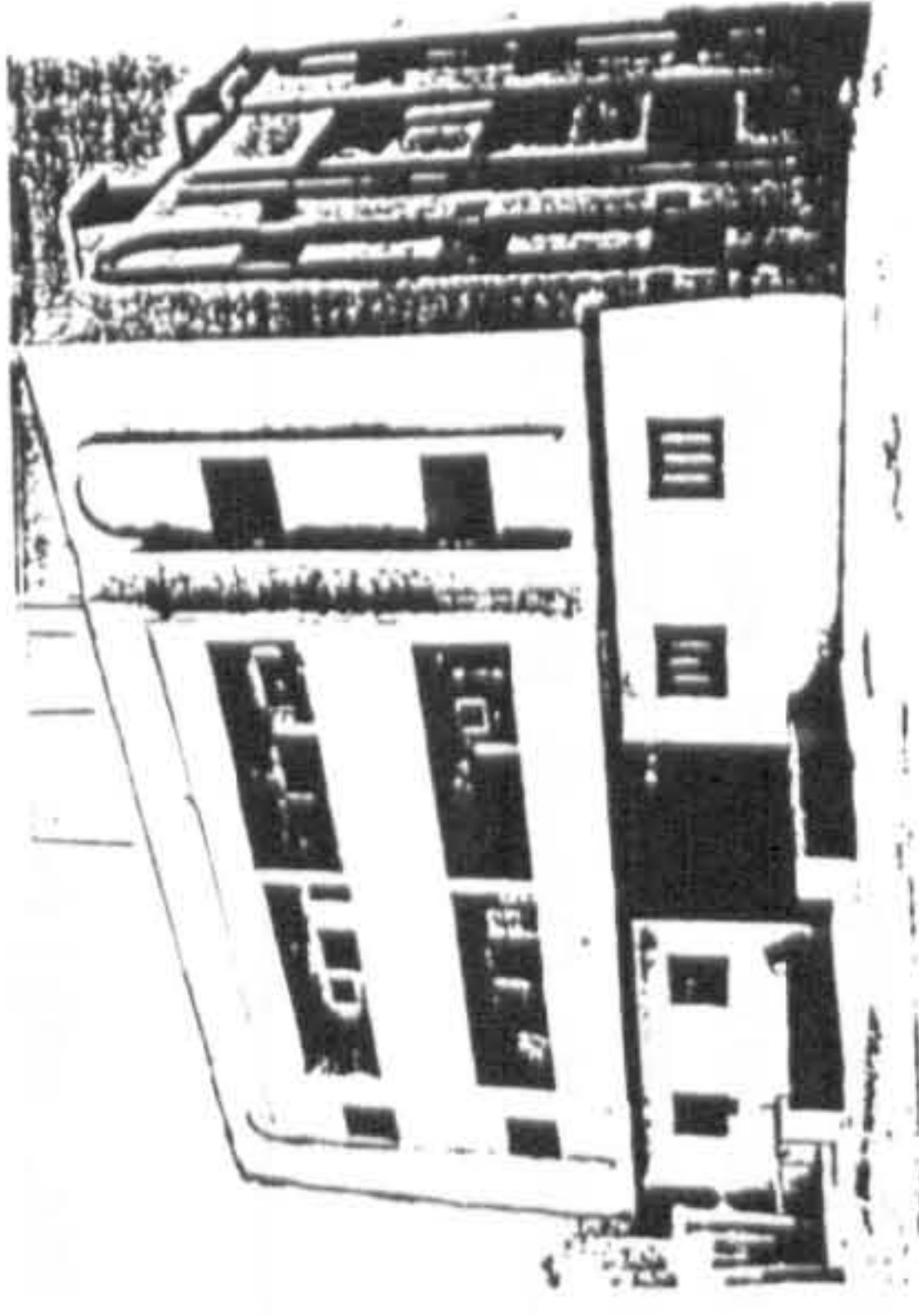



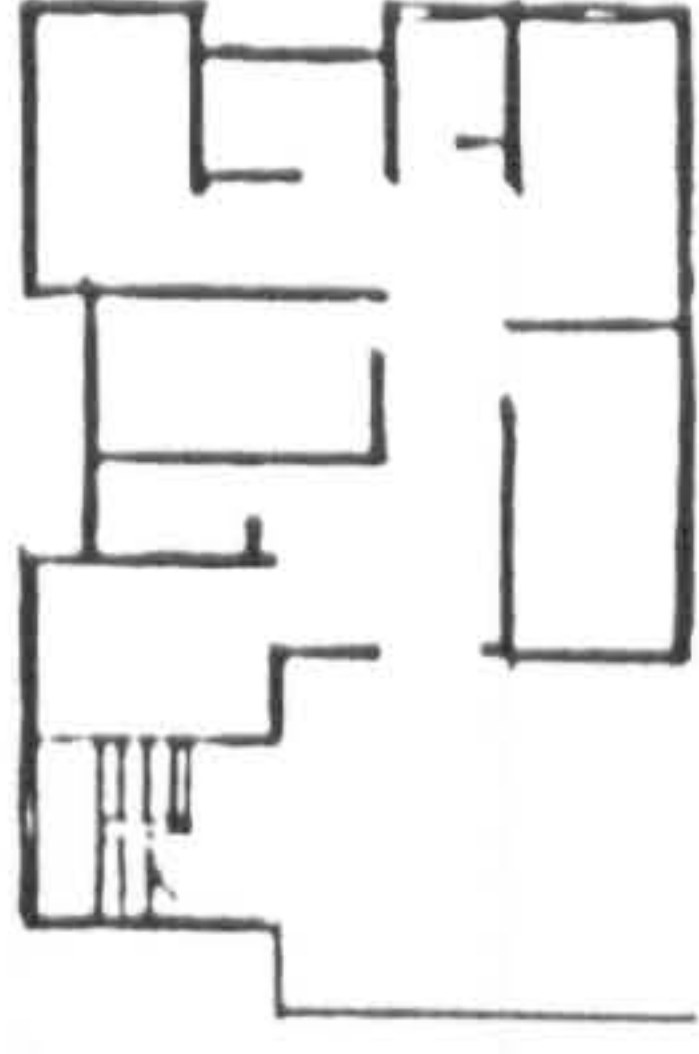
However, a new phenomenon has been introduced in the construction of 'Al Beut Al Shabiah' in the contemporary part of the city, in that reinforced concrete beams are used to bind all the walls of the house

together. In some houses reinforced concrete beams are used in the interior to provide lintels to door and window openings in walls, ie. at an approximate height of two metres from the ground level. In the other houses these are used at roof level, as a ring beam. Undoubtedly the introduction of the concrete beams has strengthened the construction of 'Al Beut Al Shabiah'.

6.6 Summary

The contemporary part of the city is affected by the concept of the master plan and its regulations which are based upon the western models of development. The automobile is the predominant factor of the planning of the new areas of the city. The grid-iron pattern is adopted as the basic model for the road and the street layout. Moreover the low density residential areas of the apartment buildings and villas is the main feature of the newly developed areas. The newly built houses show a general improvement in the construction techniques, as well as in the services and amenities available in the houses (see table 6.4).

TABLE 6.4 : SUMMARY OF HOUSING TYPES IN THE CONTEMPORARY PART OF THE CITY (from 1970s to present)

ALBAYT ALSHABI	SANDAKAH	VILLA	APARTMENT BUILDING
			
<p><u>% of distribution</u> 14.1%</p>	<p>2.3%</p>	<p>6.5%</p>	<p>77.1%</p>
<p><u>Area</u> 70-120m²</p>	<p>9-20m²</p>	<p>240-320m²*</p>	<p>110-160m²*</p>
<p><u>Height</u> 1-2 storeys high</p>	<p>1 storey high</p>	<p>2 storeys high</p>	<p>2-5 storeys high or more</p>
<p><u>Plan</u> Rooms around corridor, and leaving small courtyard at the rear of the house</p> 	<p>Randomly grouped, leaving irregular open spaces</p> 	<p>Reception rooms, kitchen, large hall and stair in the ground floor. Sleeping rooms and living room in the first floor</p> 	<p>Rooms arranged around corridor or hall</p> 
<p><u>Rooms</u></p> <ul style="list-style-type: none"> - Some rooms confined to specific function - Rectangular rooms - Increased in number 	<ul style="list-style-type: none"> - Multi-functional space 	<ul style="list-style-type: none"> - Spacious rooms - Rectangular or square room - Each room confined to specific function 	<ul style="list-style-type: none"> - Rectangular or square room - Each room confined to specific function - Increased in number

* The area for a single flat in the apartment building

<u>Kitchen</u> <ul style="list-style-type: none"> - Large kitchen - Some modern cooking equipment - Equipped with piped water - Ceramic tiles on the floor and walls 	<ul style="list-style-type: none"> - Does not have specific location - Sometimes cooking is carried out at the corner of the sandakah or in the outdoor space 	<ul style="list-style-type: none"> - Large kitchen - Equipped with modern cooking equipment - Ceramic tiles on the floor and walls 	<ul style="list-style-type: none"> - Large kitchen - Equipped with modern cooking equipment - Ceramic tiles on the floor and walls
<u>Bathroom</u> <ul style="list-style-type: none"> - One to two bathrooms - Equipped with piped water - Washbasin, shower, bidets - Ceramic tiles on the floor and walls 	<ul style="list-style-type: none"> - One bathroom - Not equipped with piped water 	<ul style="list-style-type: none"> - Three bathrooms or more - Washbasin, bathtub, two bidets - Ceramic tiles on the floor and walls 	<ul style="list-style-type: none"> - Two to three bathrooms - Washbasin, bathtub, two bidets - Ceramic tiles on the floor and walls
<u>Balconies</u> <ul style="list-style-type: none"> - No balconies 	<ul style="list-style-type: none"> - No balconies 	<ul style="list-style-type: none"> - Large open balconies - Commonly used 	<ul style="list-style-type: none"> - Small open balconies - Rarely used
<u>Roof</u> <ul style="list-style-type: none"> - Some have parapet walls - Rarely used 	<ul style="list-style-type: none"> - Not used 	<ul style="list-style-type: none"> - Some have parapet wall - Rarely used 	<ul style="list-style-type: none"> - Surrounded with solid parapet walls - Commonly used
<u>Building materials</u> <ul style="list-style-type: none"> - Sand-cement block - Sand-cement brick - Cement - Wood - Glass 	<ul style="list-style-type: none"> Recycled materials : - Wooden boxes - Tin sheets - Cardboard 	<ul style="list-style-type: none"> - Sand-cement block - Sand-cement brick - Cement - Steel - Wood 	<ul style="list-style-type: none"> - Glass - Aluminium - Marble - Paint

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- (13) Sert Jackson International/Saudi Consult, op.cit., Technical Report No.5, Vol.3, p.114.
- (14) Farsi, M.S. (1987), 'Arabian cities (theory and practice) case study for the city of Jeddah, Kingdom of Saudi Arabia', Unpublished PhD Thesis, Alexandria University, Egypt, p.177.
- (15) Amer, op.cit., p.25.

CHAPTER 7

CHAPTER SEVEN : CASE STUDIES

Introduction

7.1 Case Study One : Traditional Building

7.2 Case Study Two : Al Bayt Al Shabi

7.3 Case Study Three : Apartment Building

7.4 Case Study Four : The Villa Type

CHAPTER SEVEN

CASE STUDIES

Introduction

After discussing the transformation of the city and the housing types in the previous chapters, it will be very useful to have a detailed description of some of the houses in order to give a comprehensive idea of the concept and living environment of each house. This chapter discuss four representative case studies of different housing types in the city (Figure 7.1). Each case study will include a description of the concept of the plan, architectural drawings and construction details.

7.1 Case Study One : Traditional Building

Al Shafiay house is selected for this study. It was built approximately in the late nineteenth century. It is a representative example of the domestic vernacular architecture. This house is located in 'Almazloun Hara' ('Al Balad' district, in 'Nadiyah Benkhaled' lane). It is a four storey building occupying a plot of land 19 x 13.7m (Photograph 7.1). It has been used by an extended family, but currently no-one lives in the house as it is undergoing restoration, this work being carried out by the municipality.

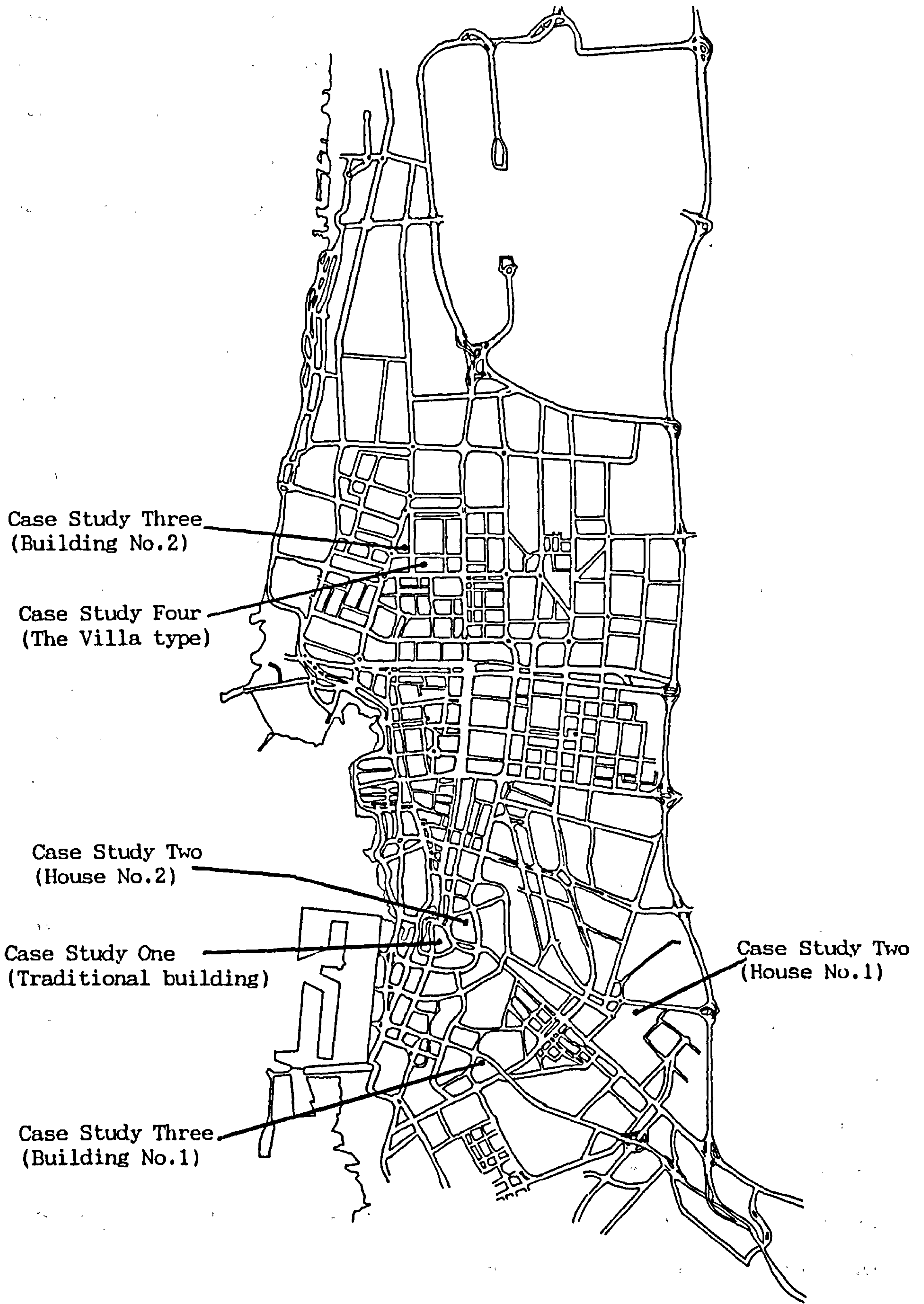


FIGURE 7.1 : Location of case studies

Tradition, climate, privacy and the separation of public life from private life have dictated the interior arrangement of the house. Generally speaking, the flow of space, the openness of the facades and through ventilation, as a response to the hot humid climate, were the major characteristics of the traditional houses.

The ground floor of Al Shafiay house was a semi private zone where the main entrances, entrance hall ('dahleez'), the family head's office ('al maqad'), the stairs, toilets and servants rooms were located (Figure 7.2).

The first floor was divided into two domains, the guests domain and the family domain (Figure 7.3). The guest domain was composed of one big room ('majlis') divided into two portions by an arch, the tea and coffee room, and the store and entrance hall. The latter was one step lower than the main sitting area; it was an un-carpeted area, and shoes were usually left in this space (Figure 7.3a).

The second, third and fourth floors were the living quarters of the family. They were similar to each other. Each floor was composed of a big family room ('suffah') in addition to medium-sized living and family rooms, kitchens and toilets. In the family quarters there was a 'majlis', on the second floor, used for female guests, and a store room called 'khazana' where they kept their valuable clothes and jewellery. In this section it has been noticed that there are many built-in shelves and cupboards which were used to store furniture such as rugs, mattresses and cushions, and sometimes used for keeping traditional

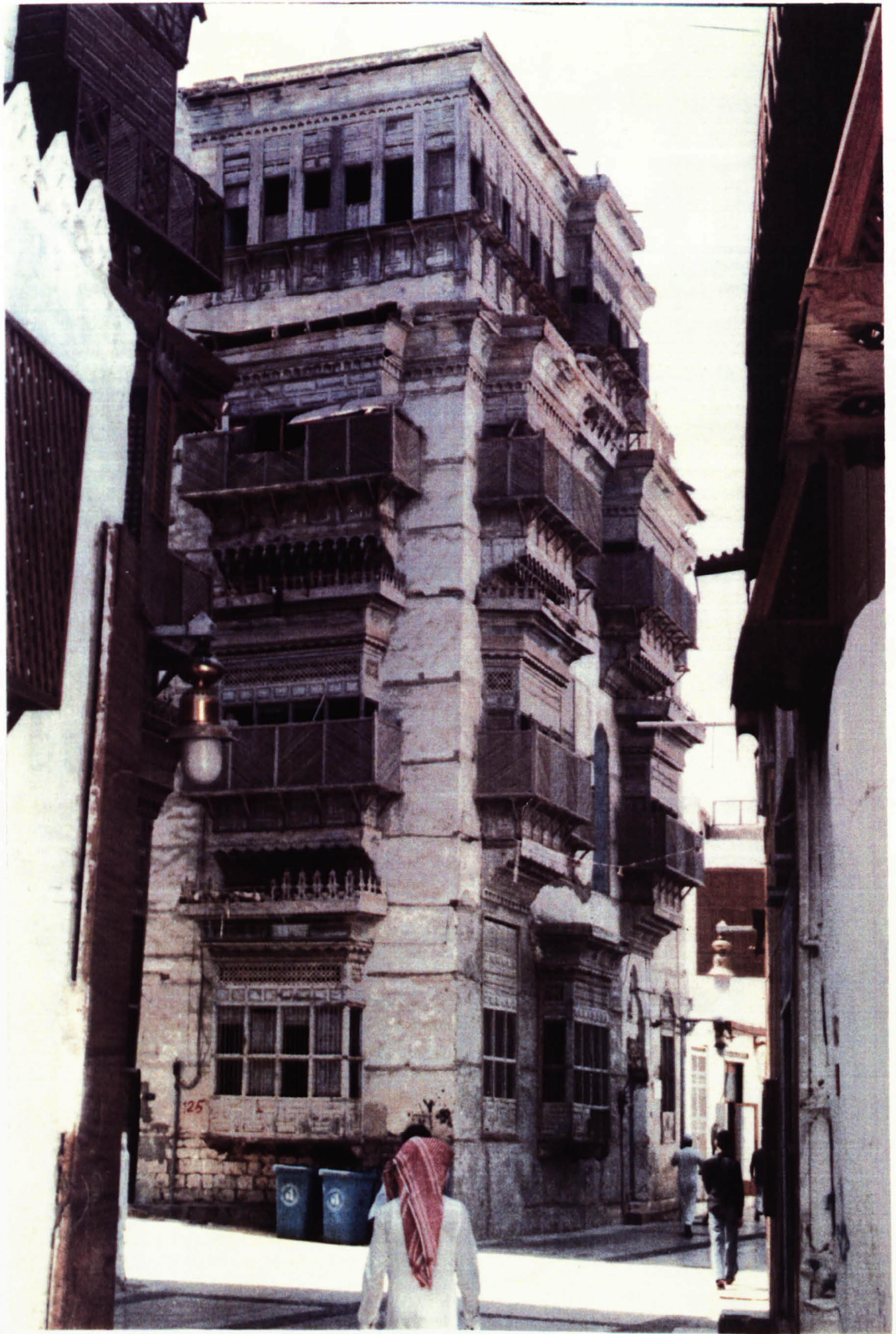
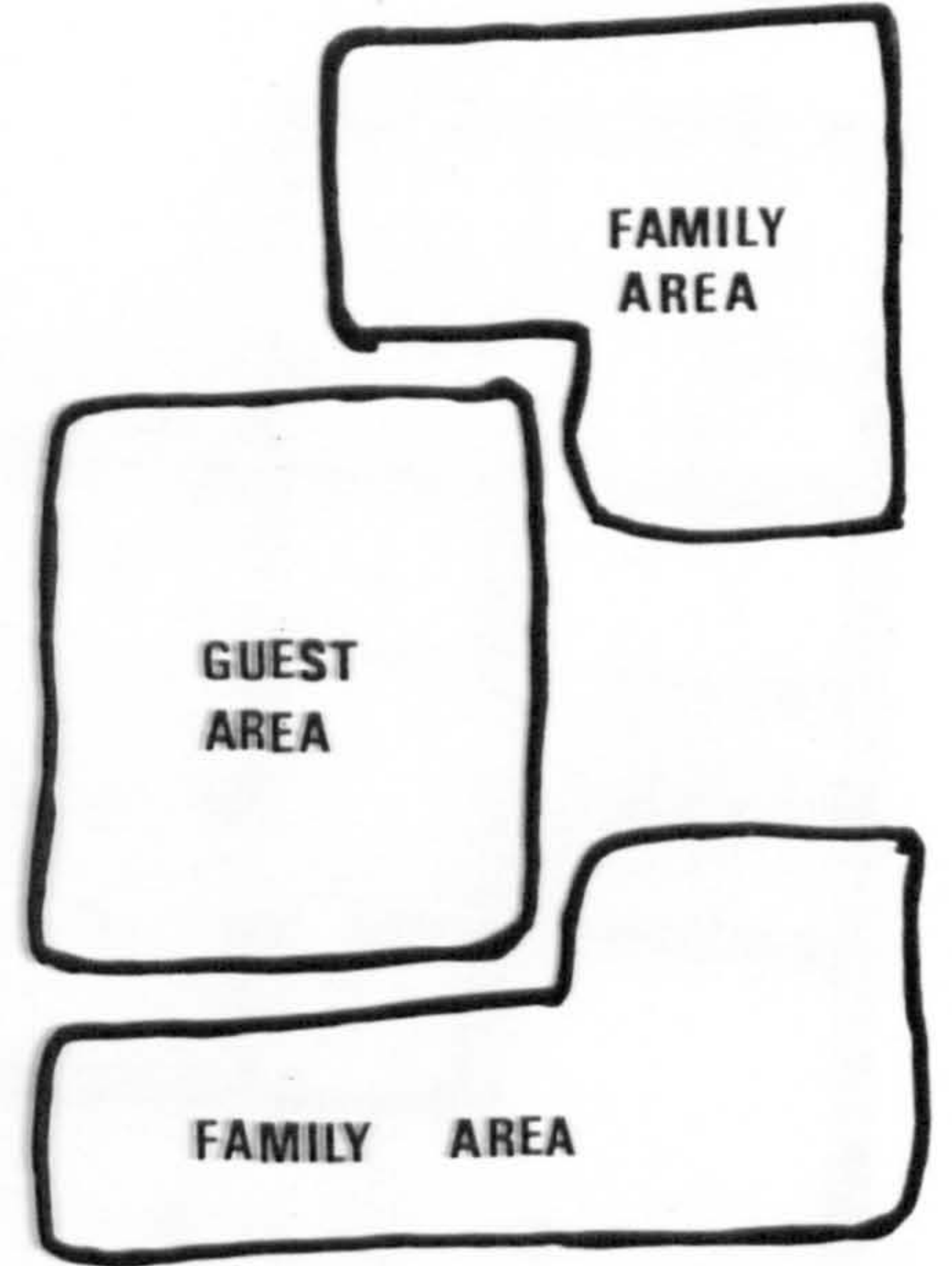
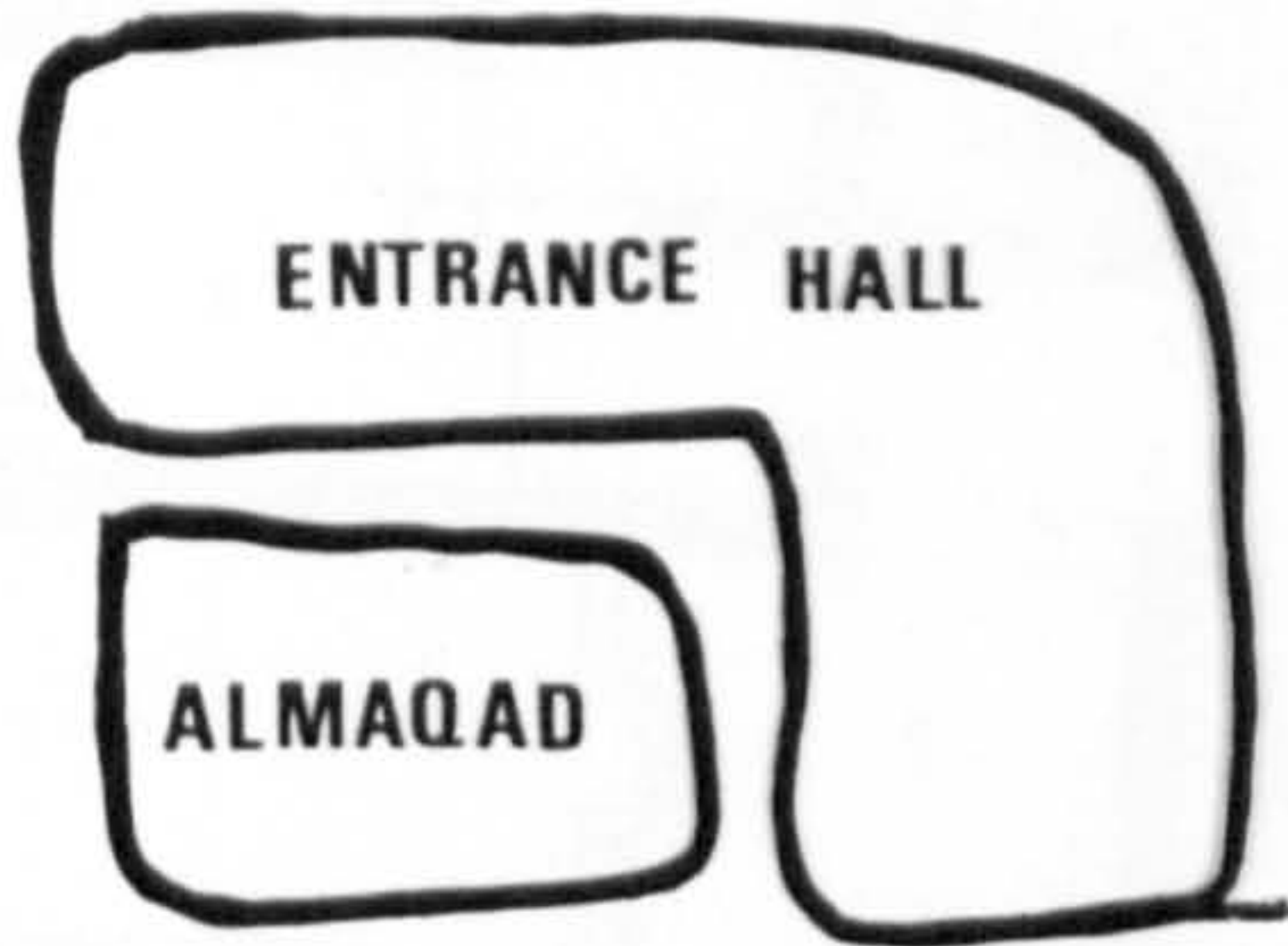
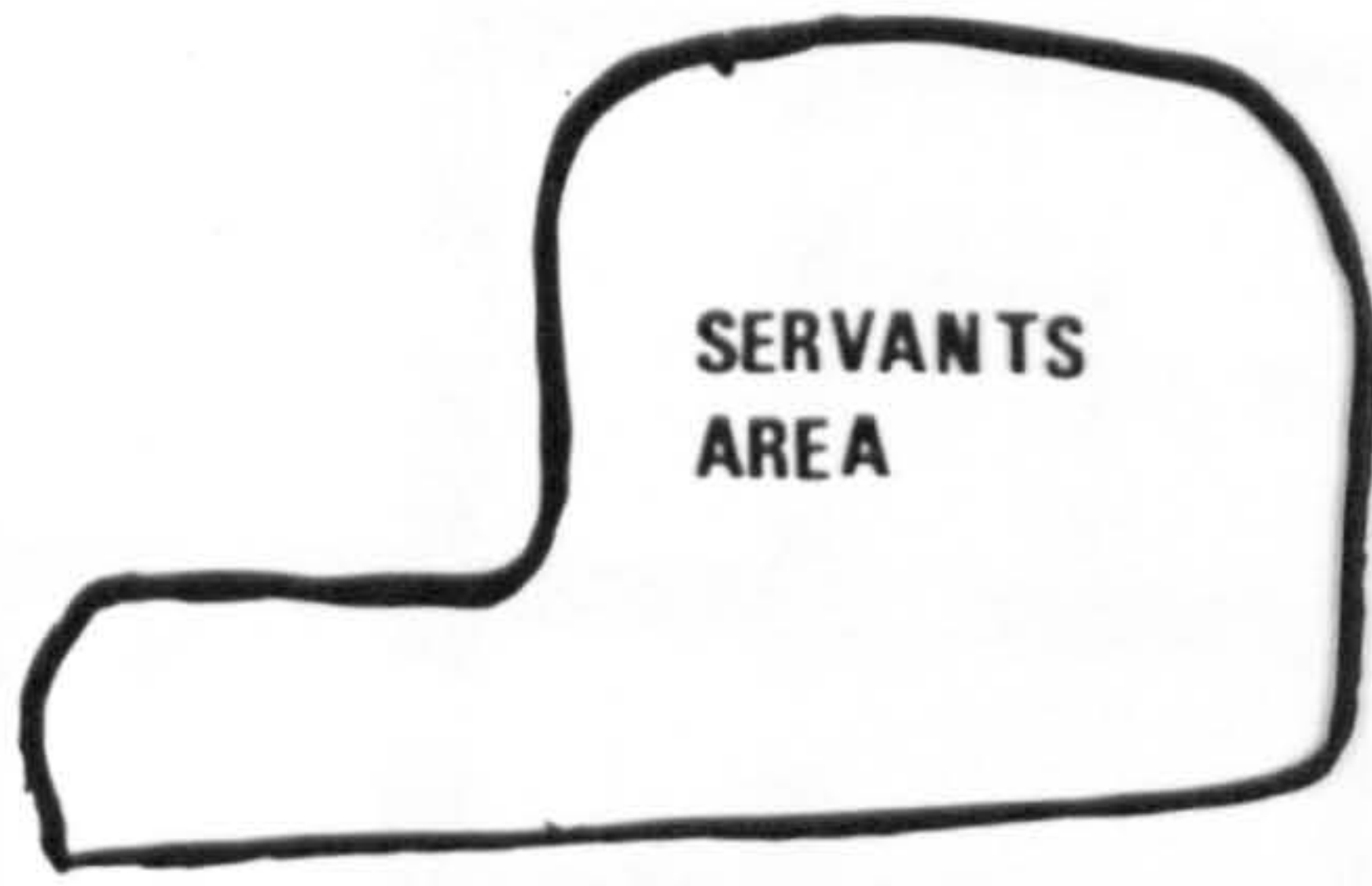


PHOTO 7.1 : View of Al Shafiay house



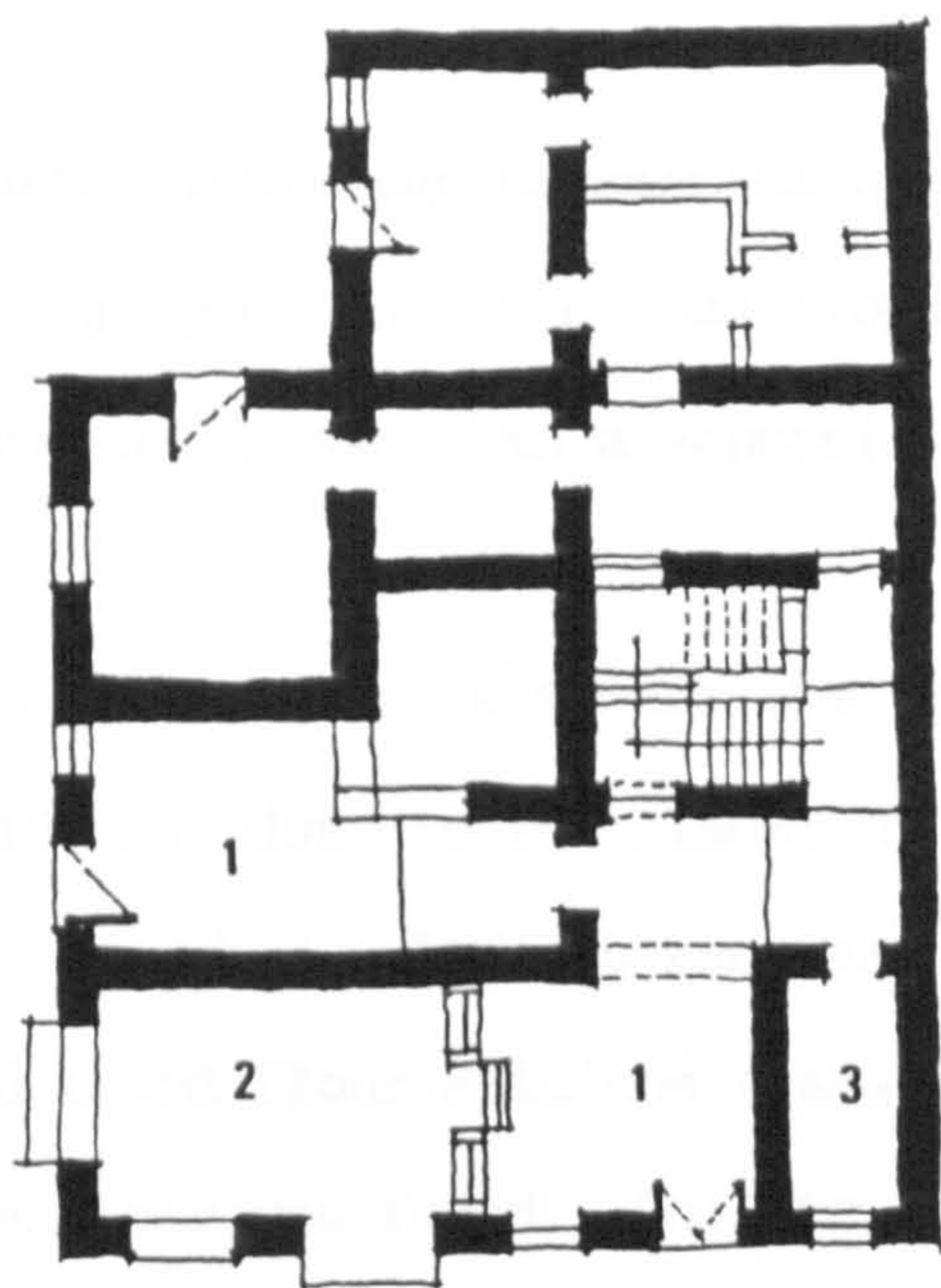


FIGURE 7.2

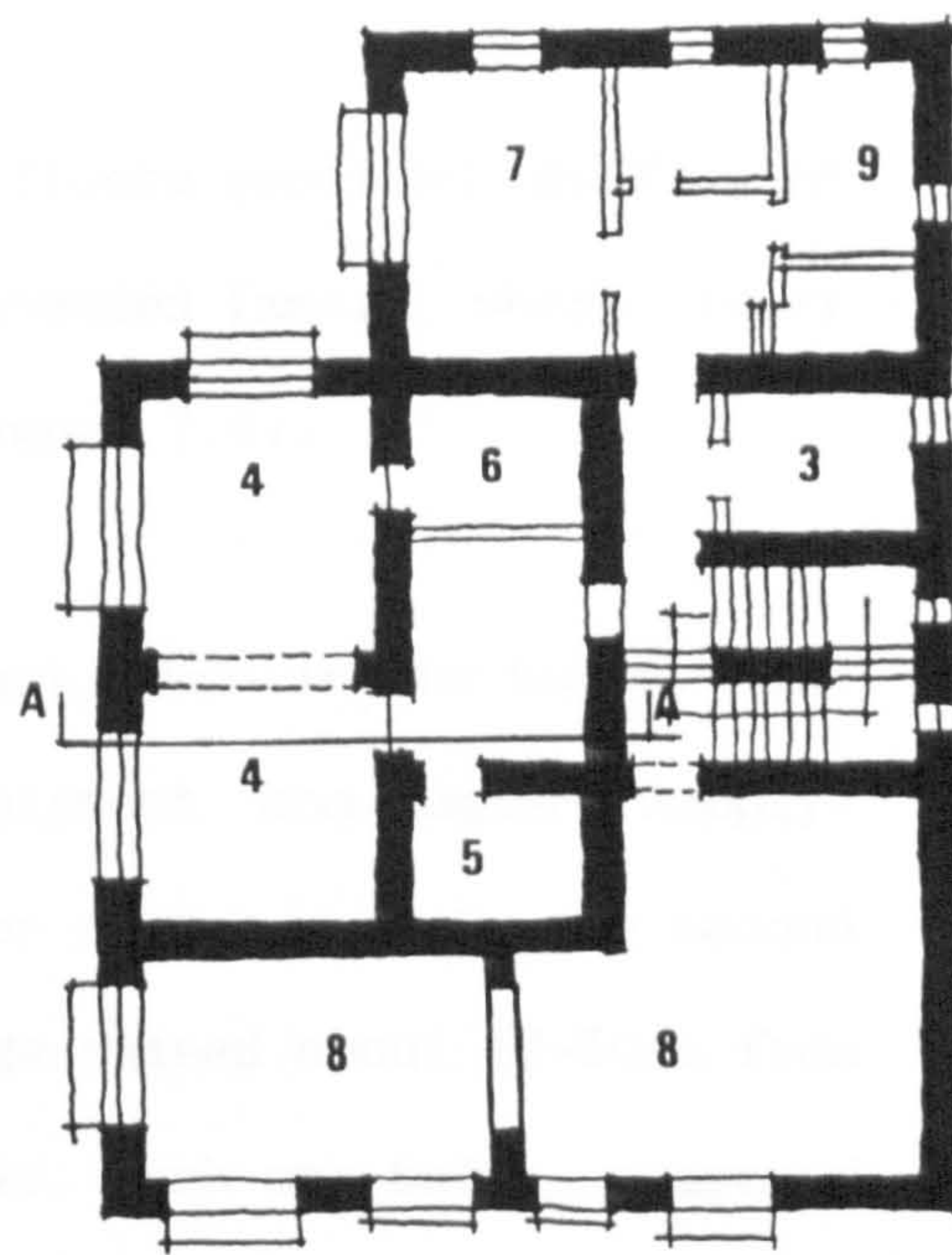


FIGURE 7.3

FIGURE 7.2 and FIGURE 7.3 : Ground and First floor plan of al Shafiay house

- Key :
- 1 Dahleez
 - 2 Al Maqad
 - 3 Toilet
 - 4 Majlis
 - 5 store
 - 6 Coffee/Tea room
 - 7 Room
 - 8 Suffah
 - 9 Kitchen

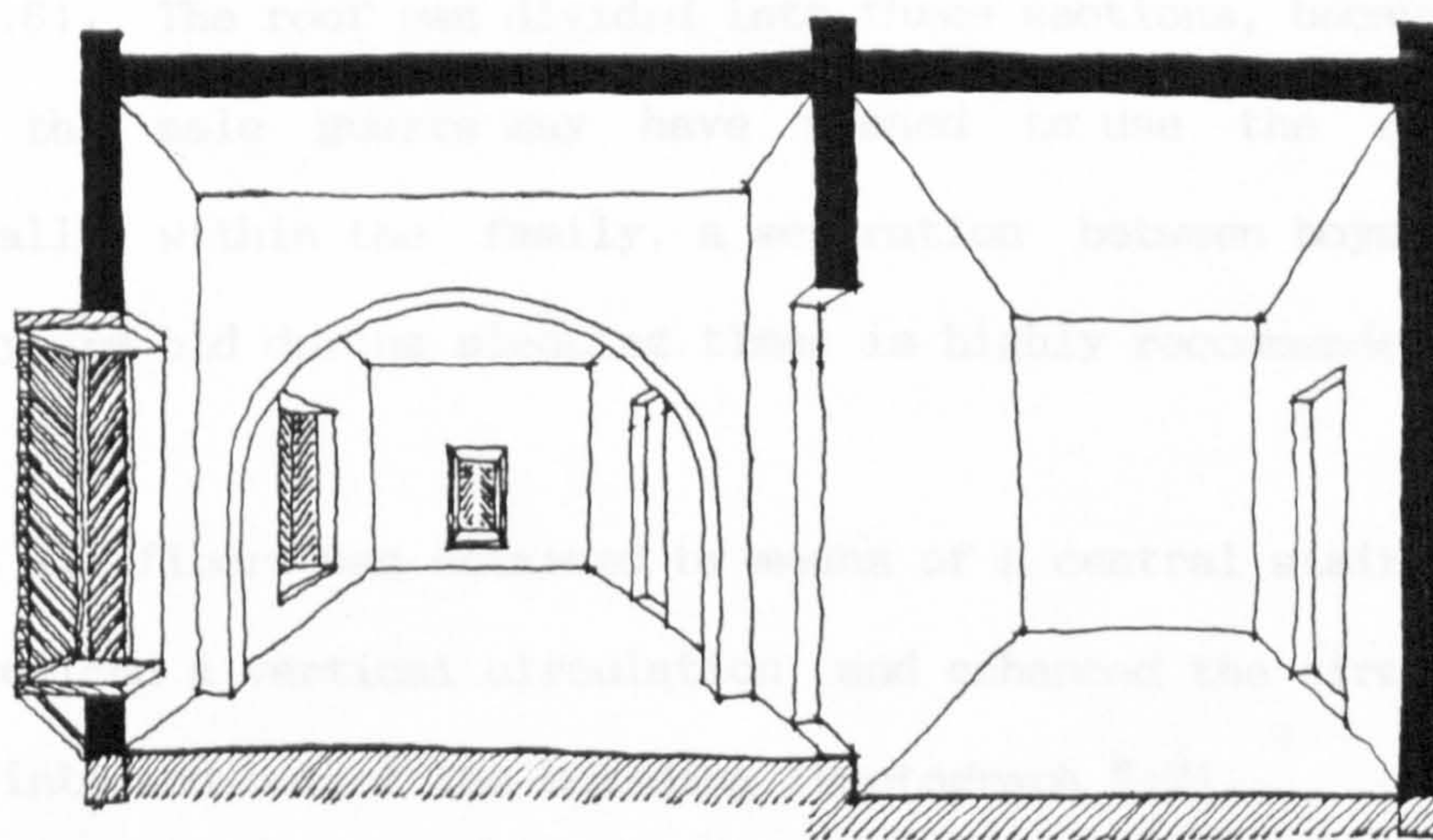
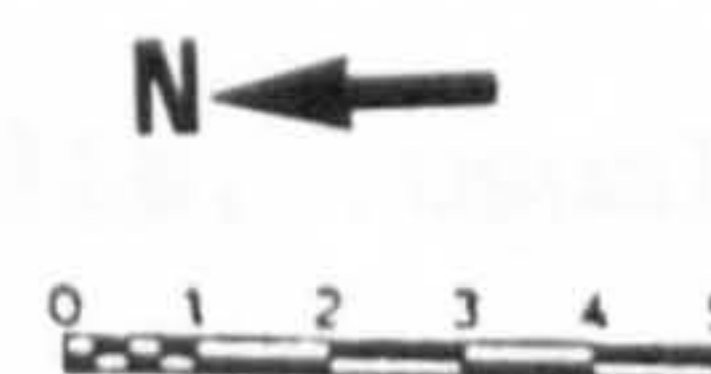


FIGURE 7.3a : Section through guest area (section AA)

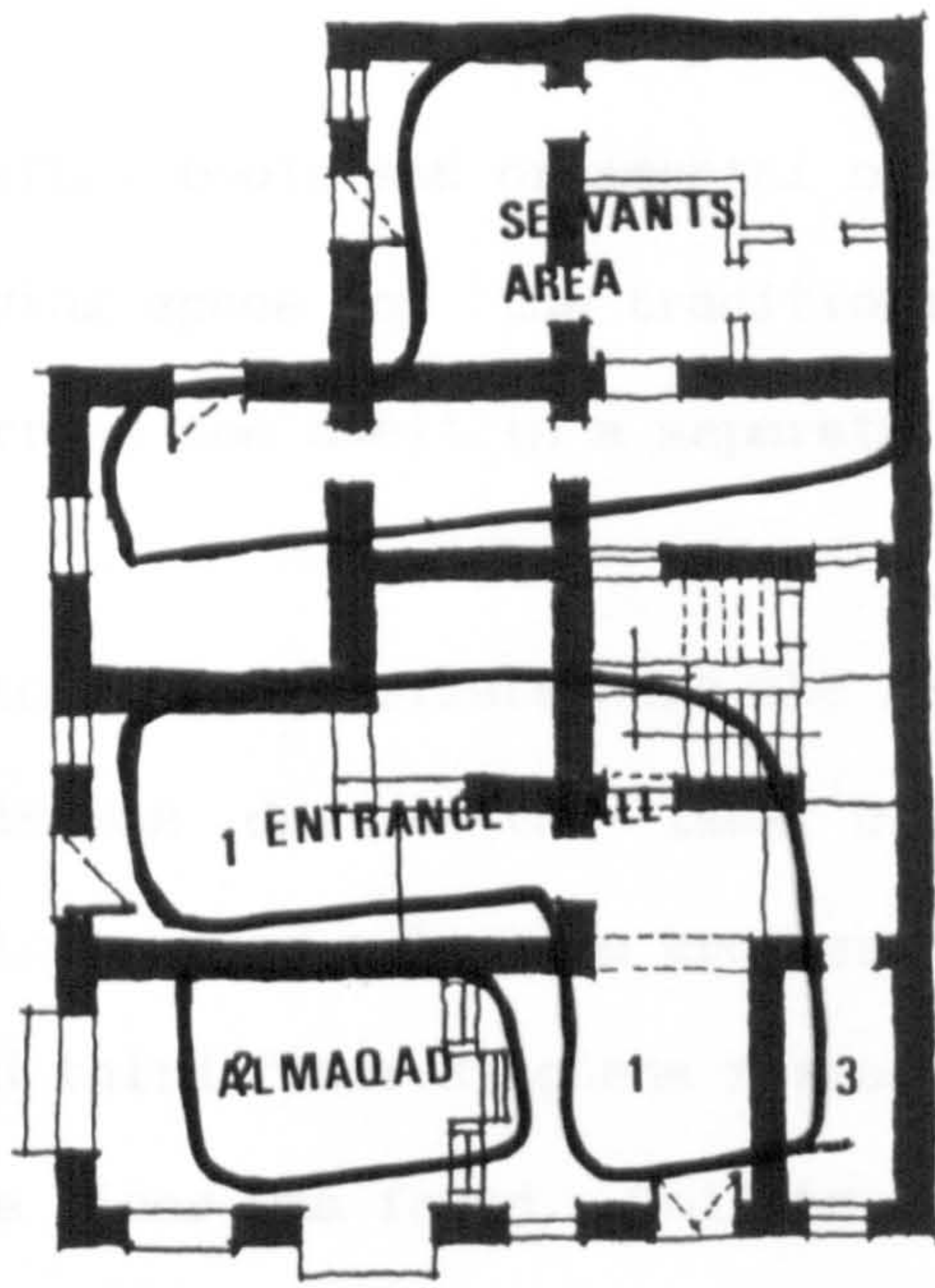


FIGURE 7.2

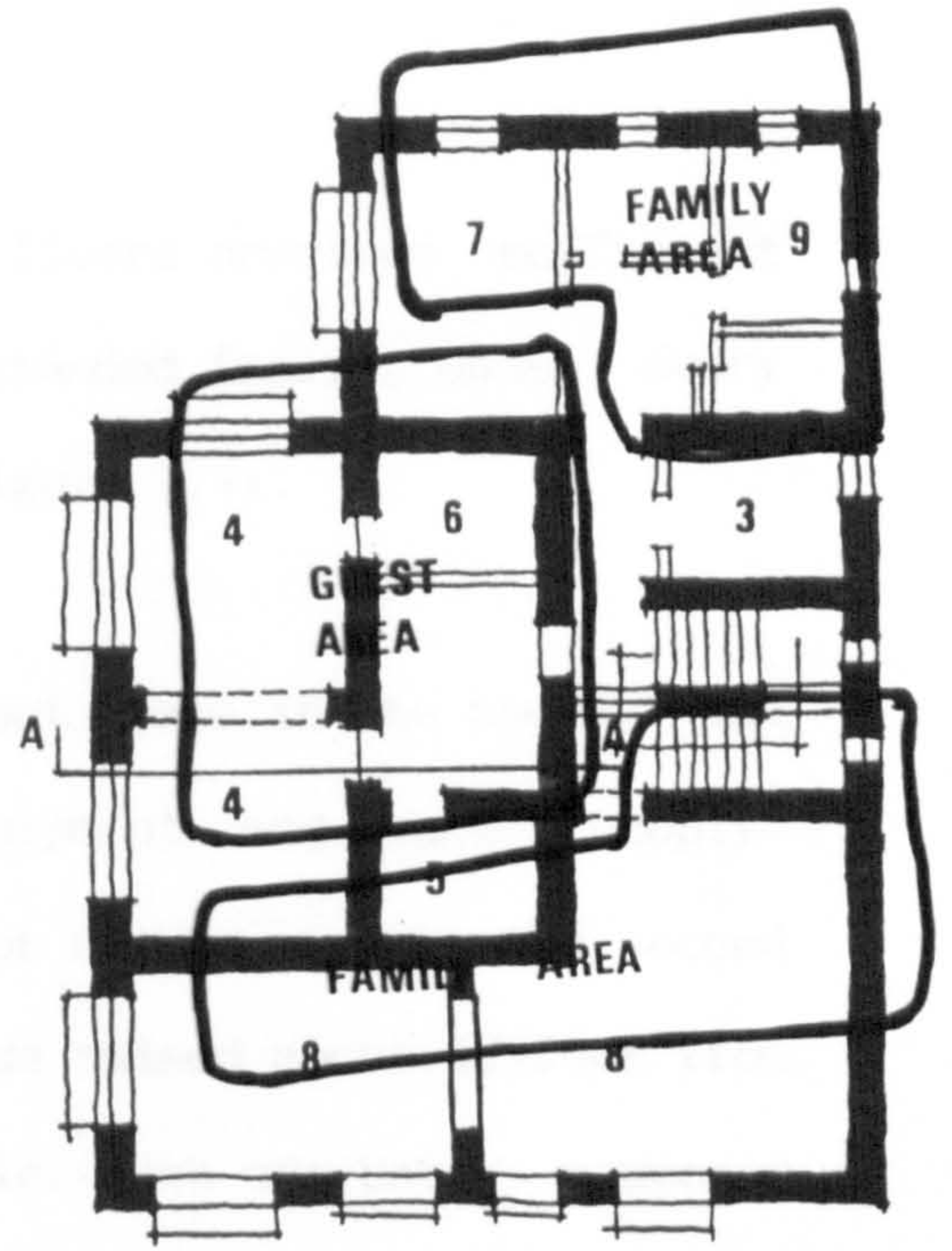


FIGURE 7.3

FIGURE 7.2 and FIGURE 7.3 : Ground and First floor plan of al Shafiay house

- Key :
- 1 Dahleez
 - 2 Al Maqad
 - 3 Toilet
 - 4 Majlis
 - 5 store
 - 6 Coffee/Tea room
 - 7 Room
 - 8 Suffah
 - 9 Kitchen

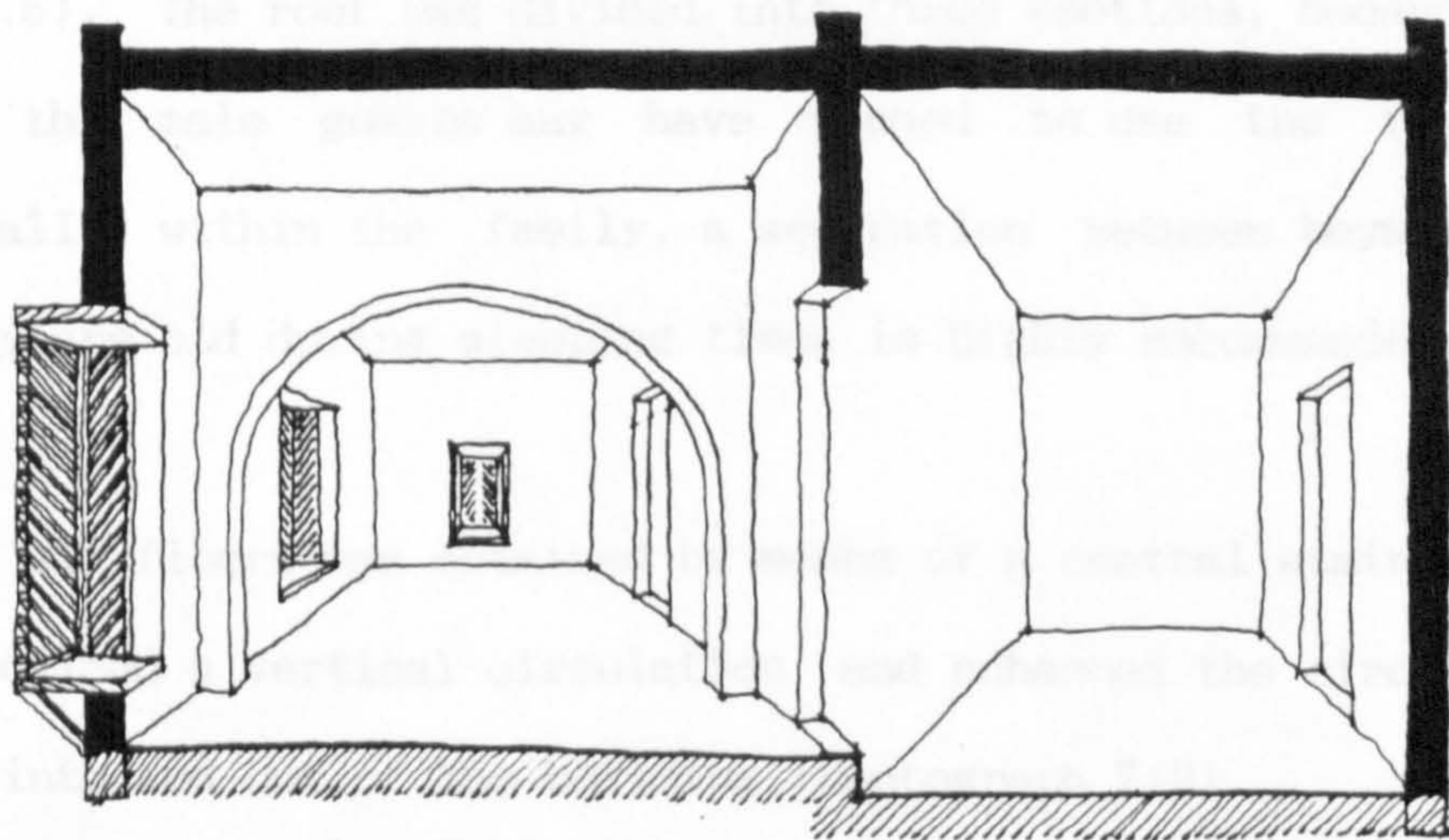


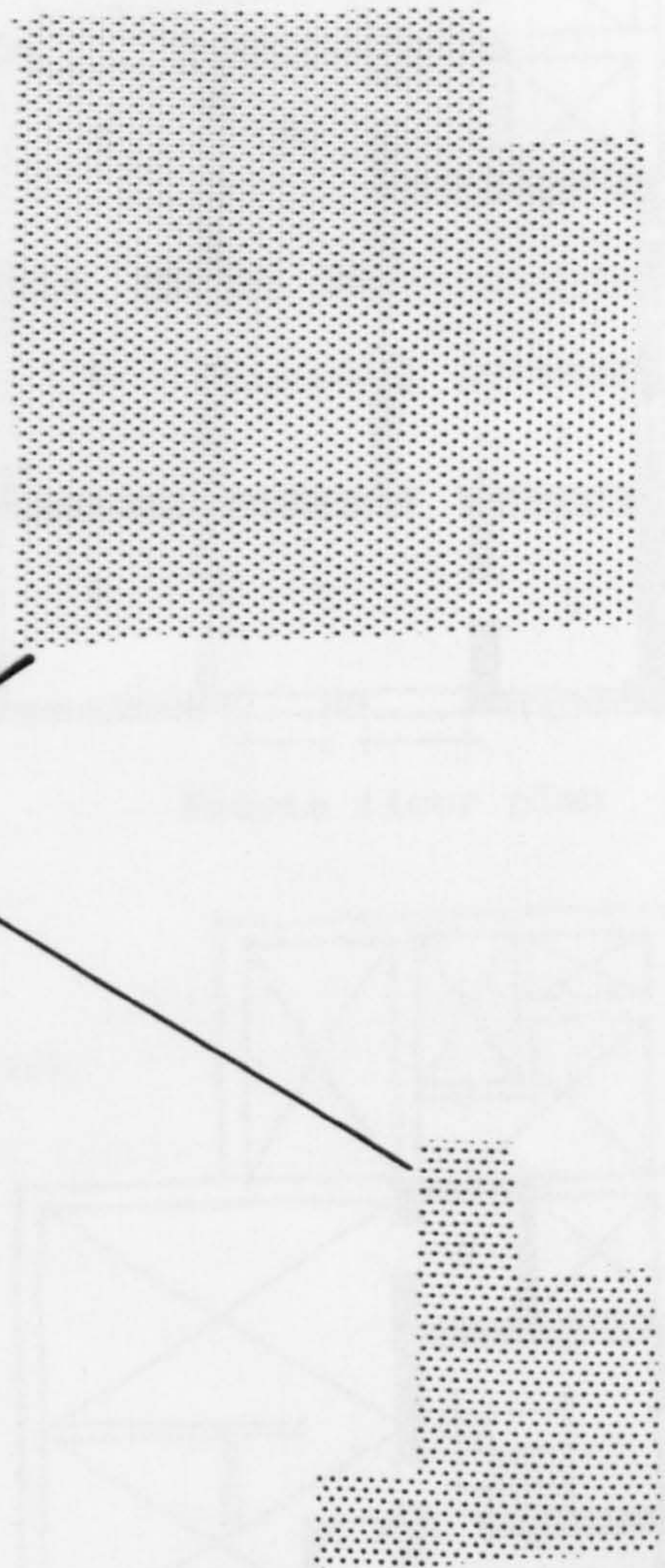
FIGURE 7.3a : Section through guest area (section AA)

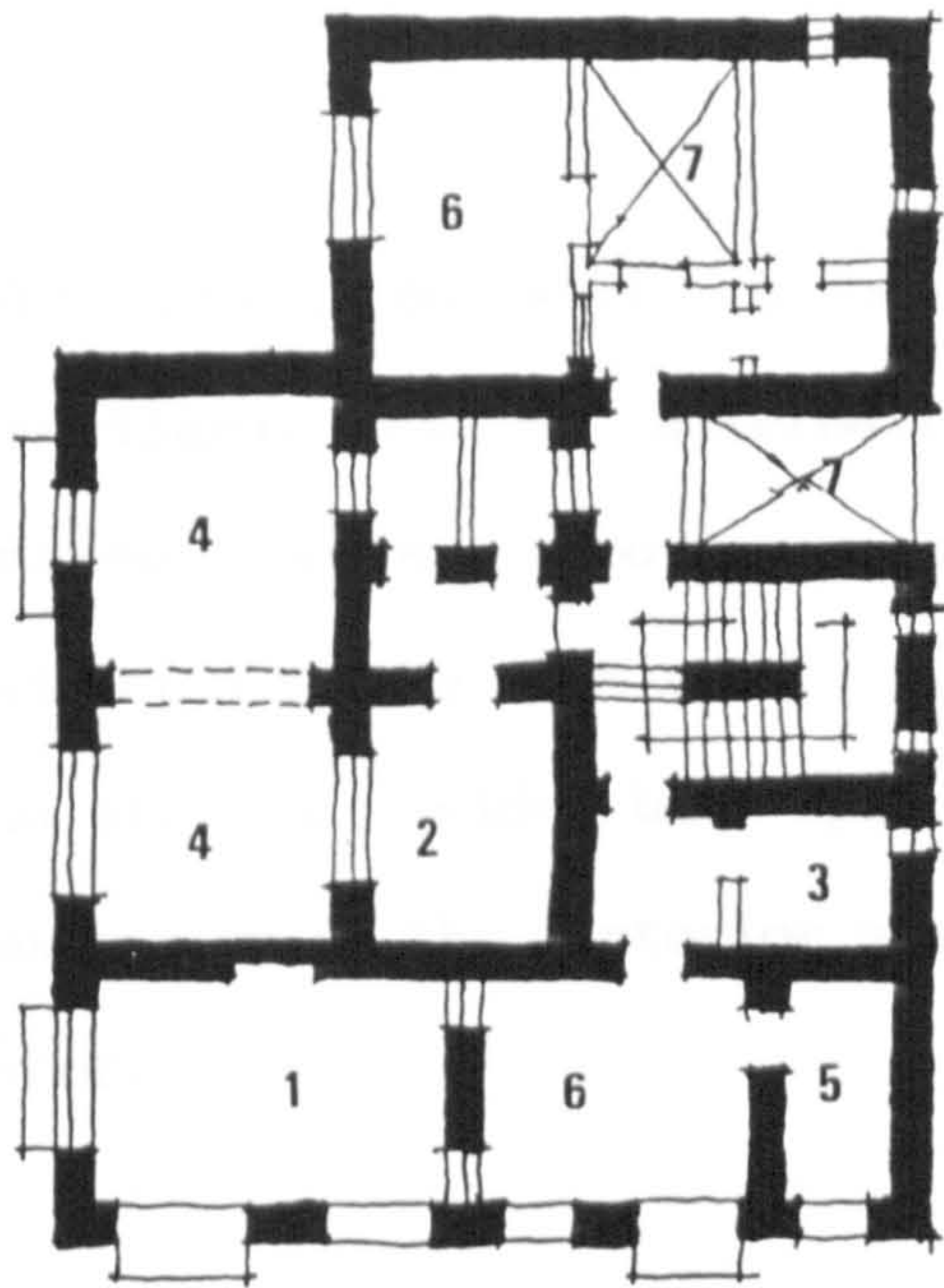
crafts, tools and ornamental objects. These floors provided sufficient living space for the traditionally large extended family, where every married son dwelt in a separate apartment (Figure 7.4).

Kitchens and toilets were the least convenient space in the house, and this was due to the lack of sanitary equipment and water supply. Kitchens had only some grooves in the wall for dishes, and in the second and third floor kitchens a small cooking-range raised about 40-50cm from the floor was found. Toilets were very simple, each one being composed of a space to discharge the human waste and a water container, called 'zeer', on a platform, about 50cm from the floor (Figure 7.5). It has been noticed that the position of the toilets was influenced by the religious injunction relating to the sanctity of the Makkah orientation 'qiblah', the person should not face or turn his back to 'qiblah' while he was using the toilets a phenomenon which is not always considered in the new housing. The roof was the main elevated open space for the family and it was surrounded by semi-solid parapet walls, usually infilled with wooden lattice. It had two small rooms to store the furniture, which was used for sleeping and sitting, during the daytime (Figure 7.6). The roof was divided into three sections, because on some occasions the male guests may have wished to use the roof. Also traditionally, within the family, a separation between boys and girls above 10 years old during sleeping times is highly recommended.

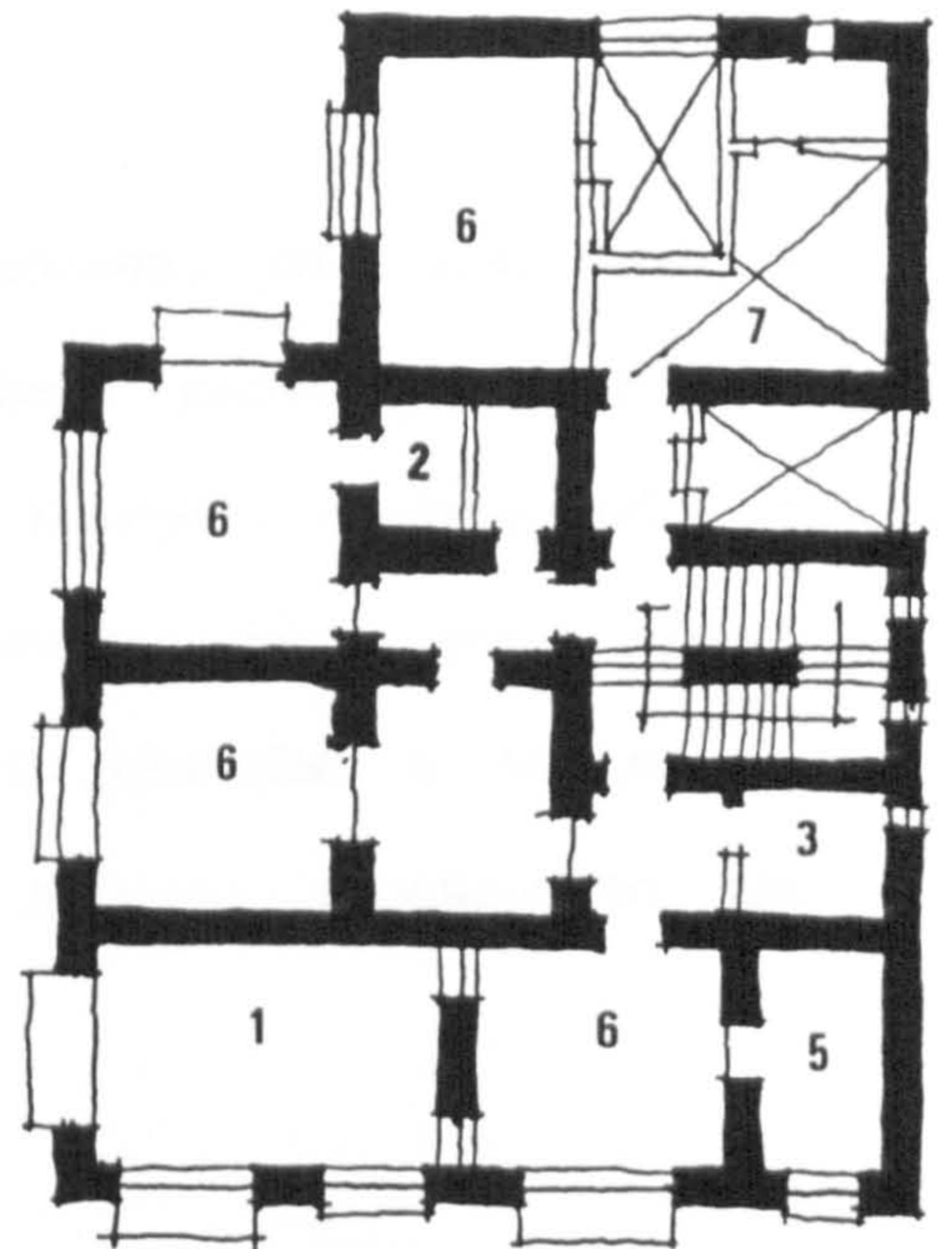
Access to all floors was obtained by means of a central staircase, which mainly provided a vertical circulation and enhanced the circulation of air both into and out of the building (Photograph 7.2).

ROOFED AREA

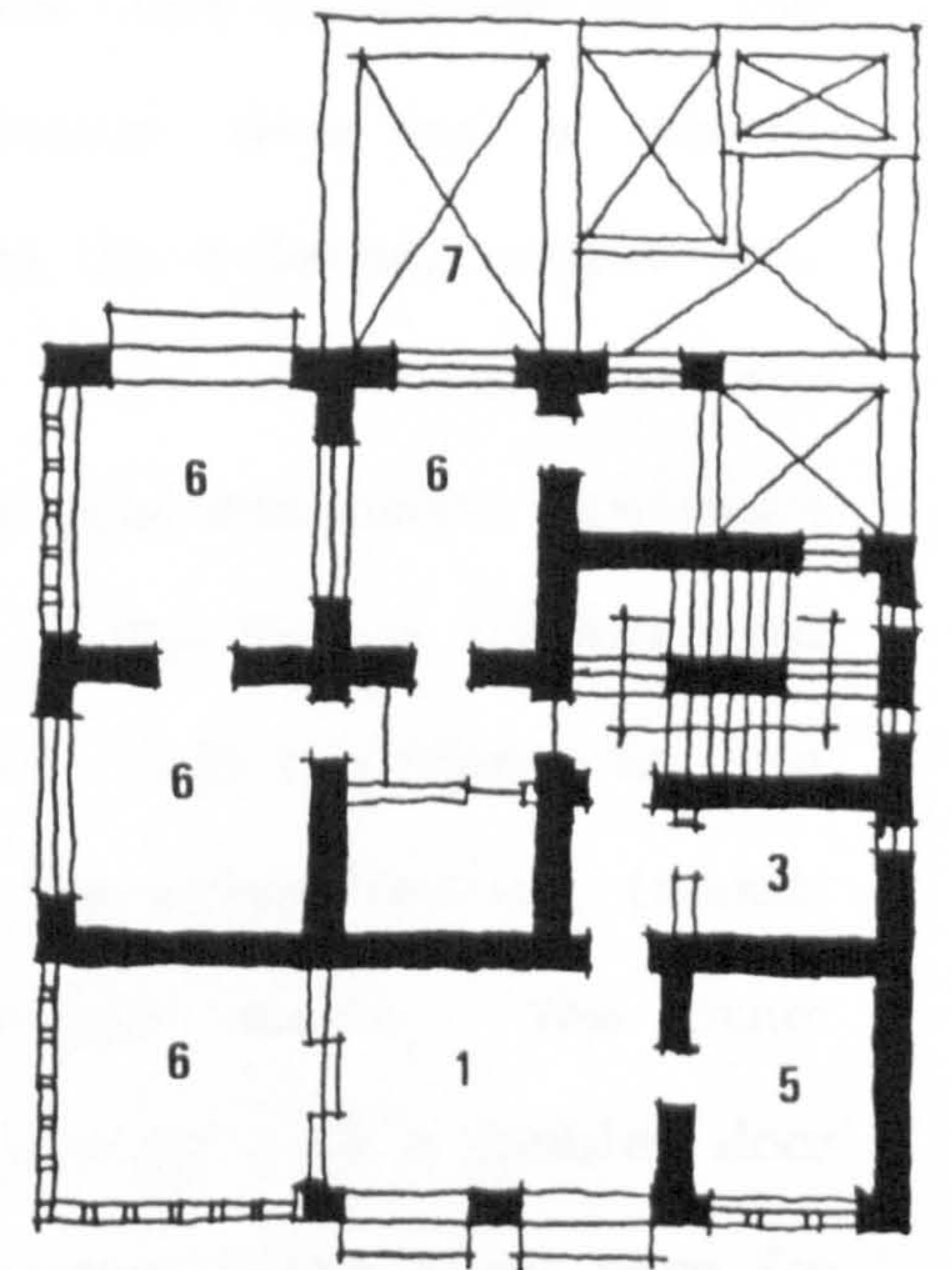




Second floor plan



Third floor plan



Fourth floor plan

FIGURE 7.4 : Second, third and fourth floor plan of Al Shafiay house

- Key :
- 1 Suffah
 - 2 Khazana
 - 3 Toilet
 - 4 Majlis
 - 5 Kitchen
 - 6 Room
 - 7 Kharja



FIGURE 7.6 : Roof plan

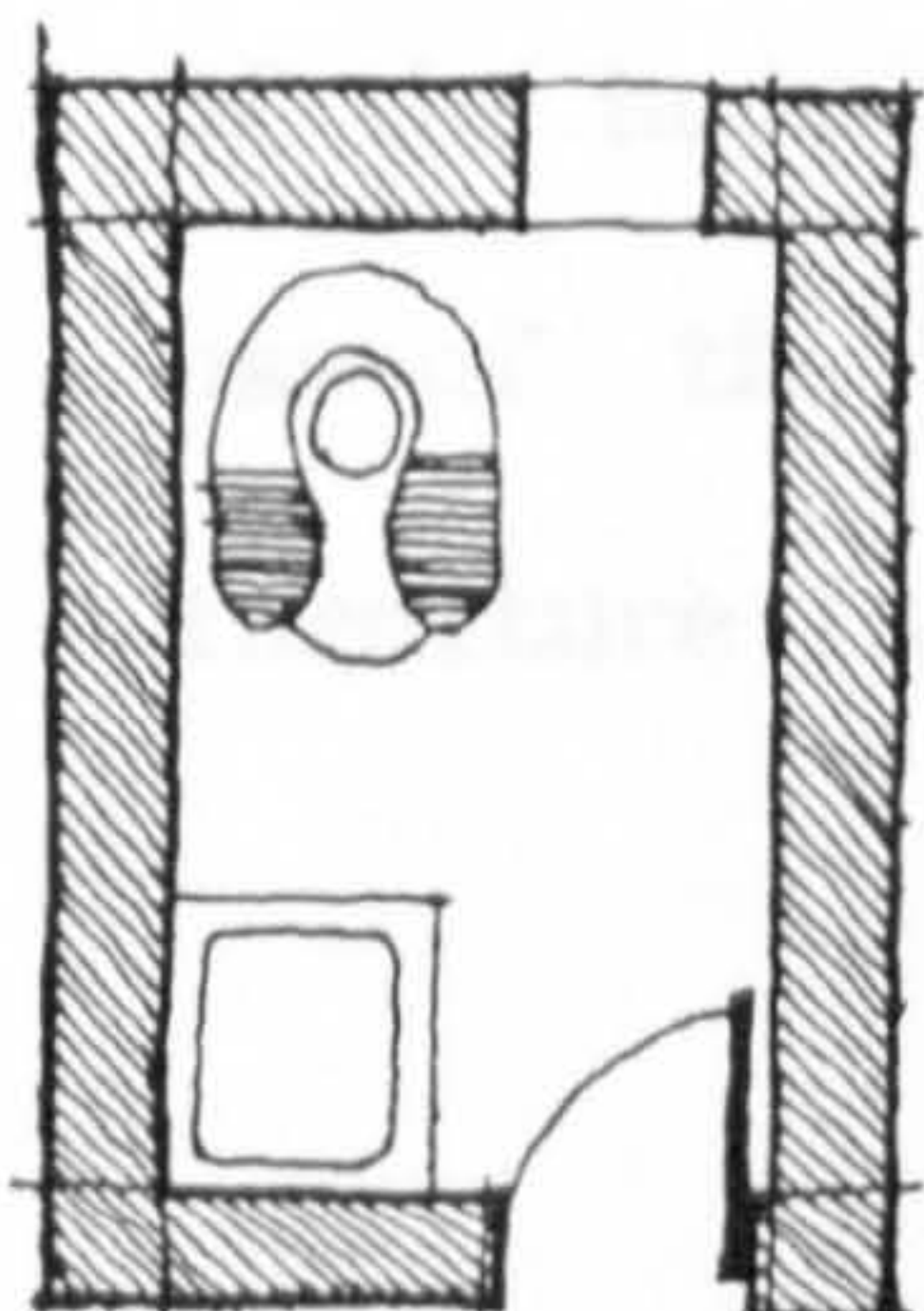
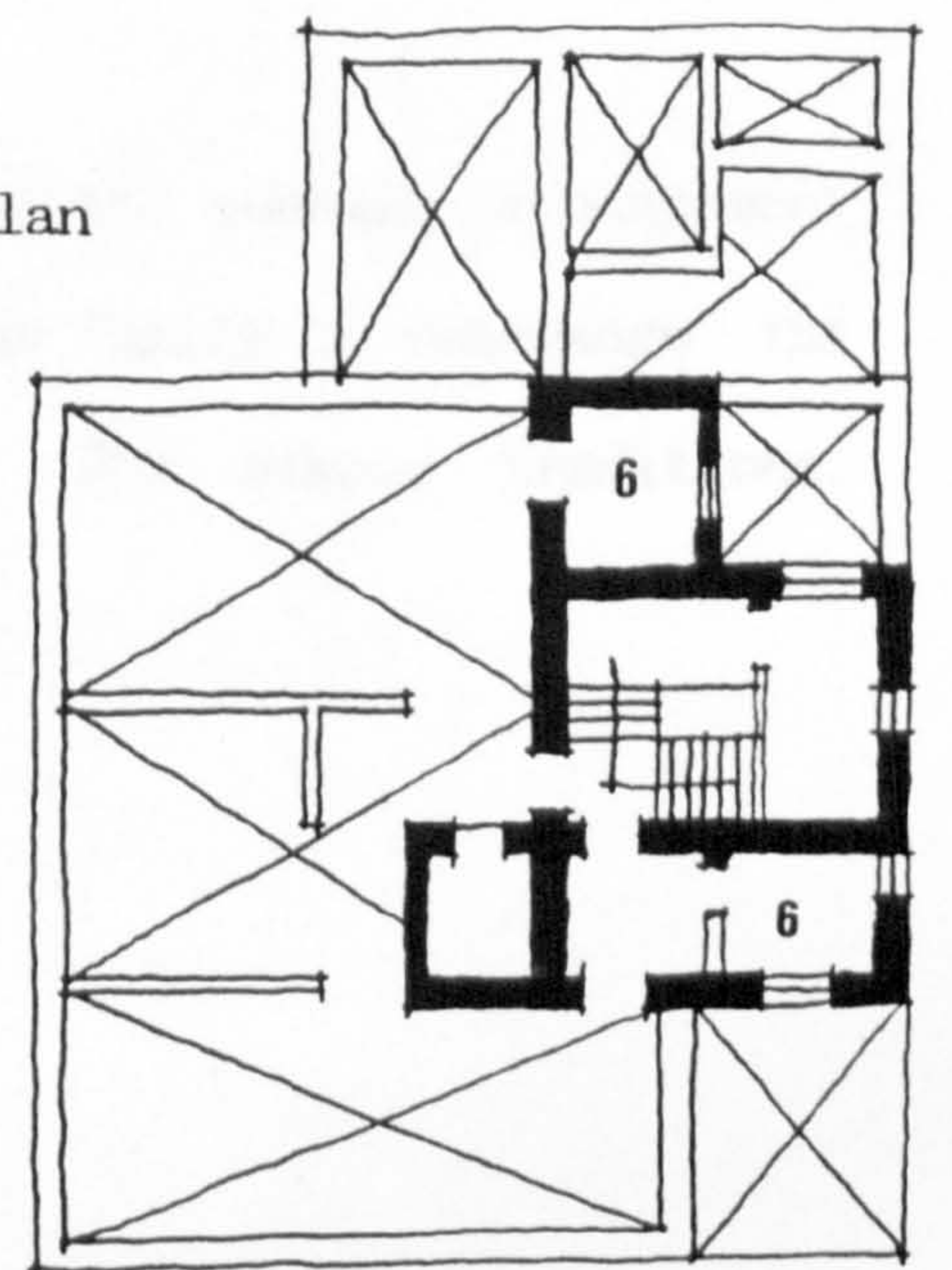
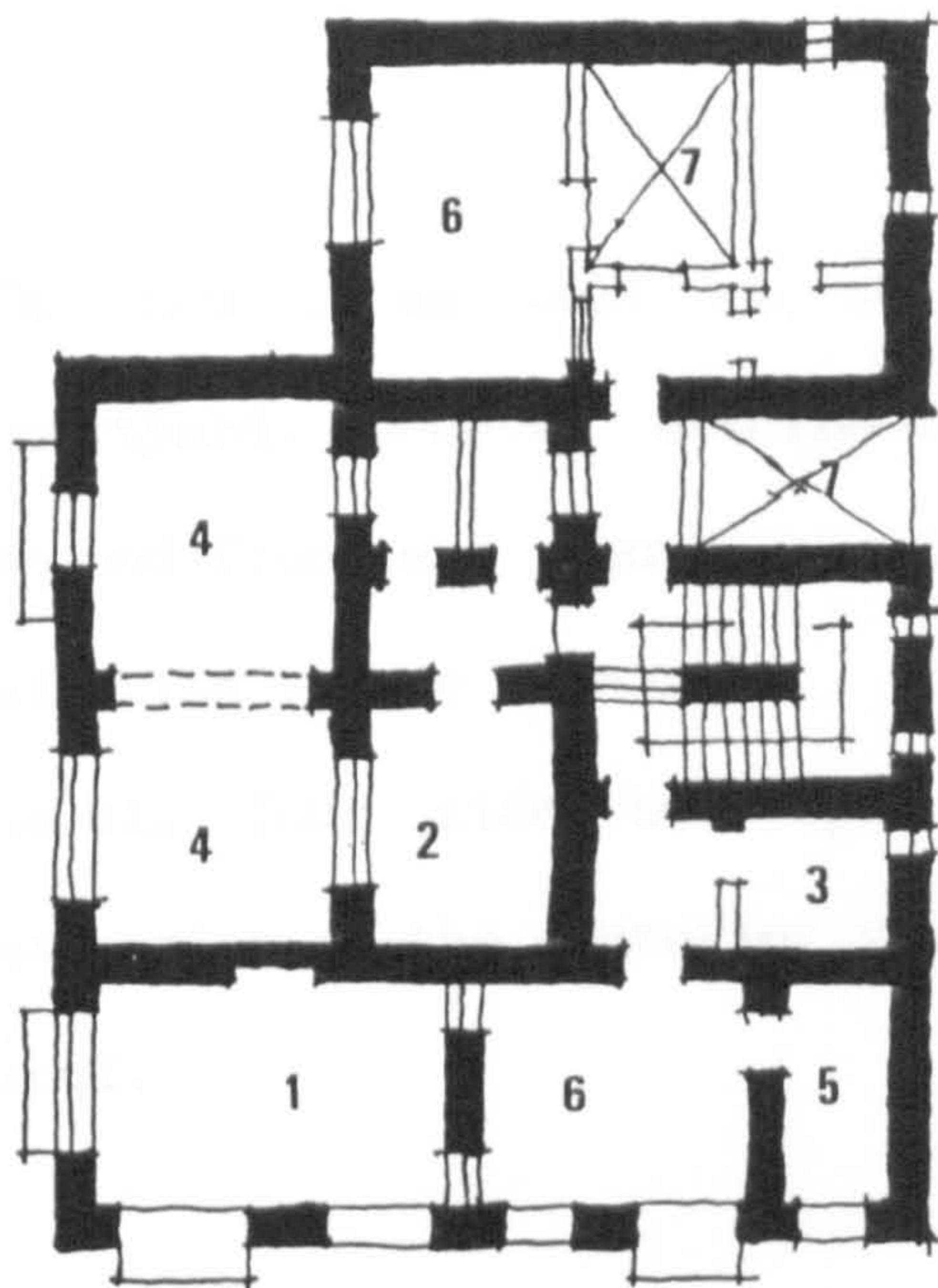
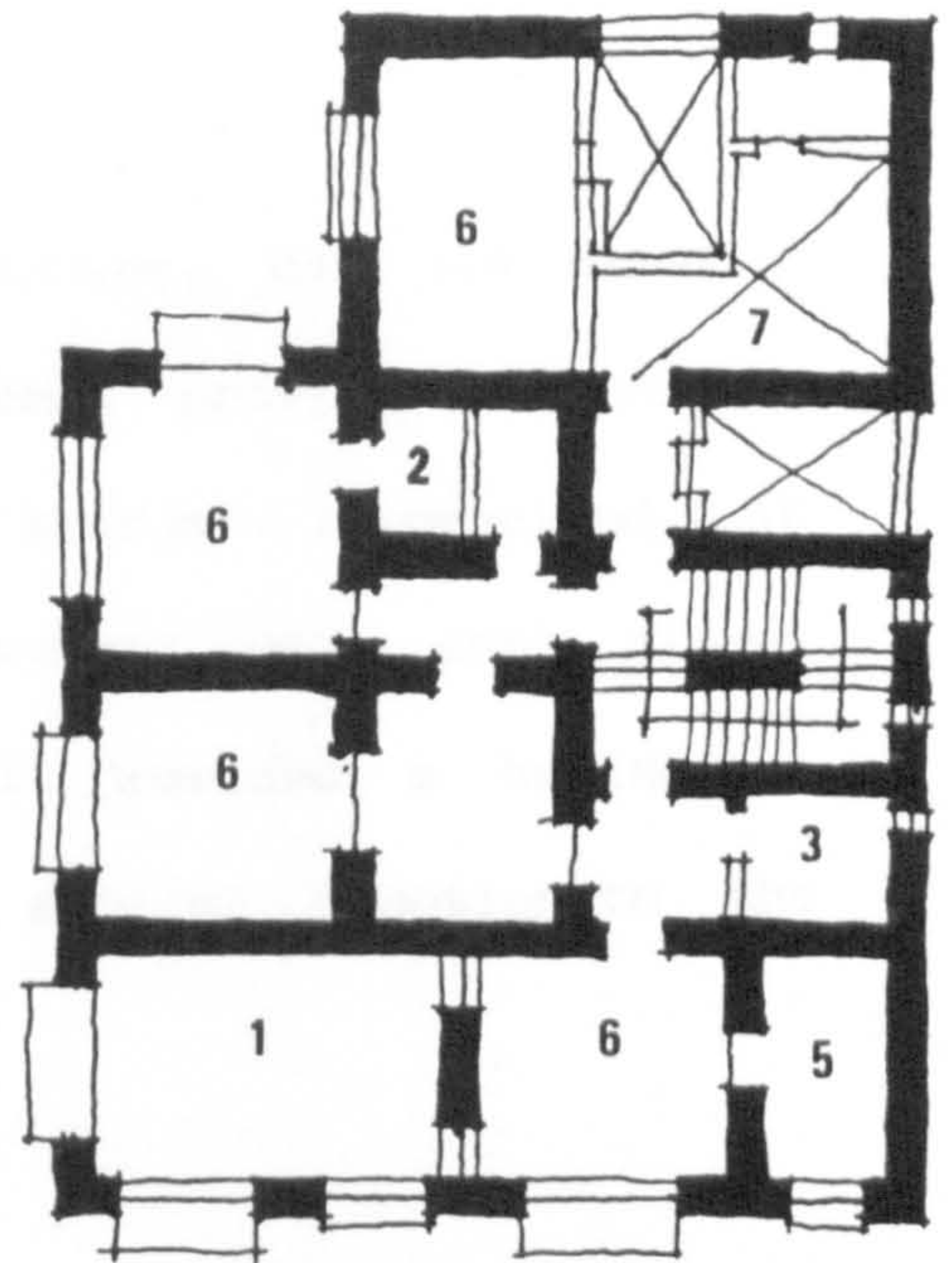


FIGURE 7.5 : Toilet plan



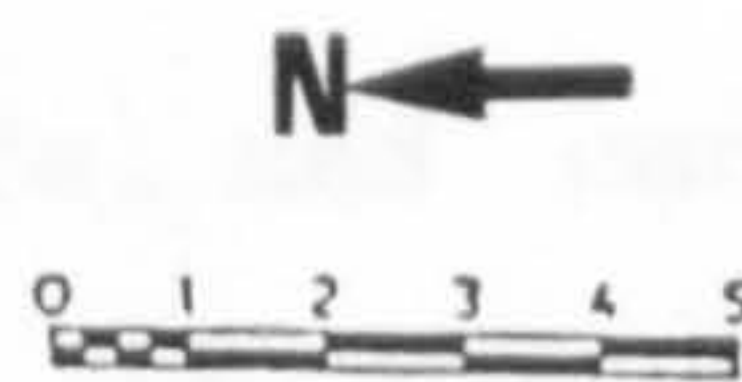
Second floor plan



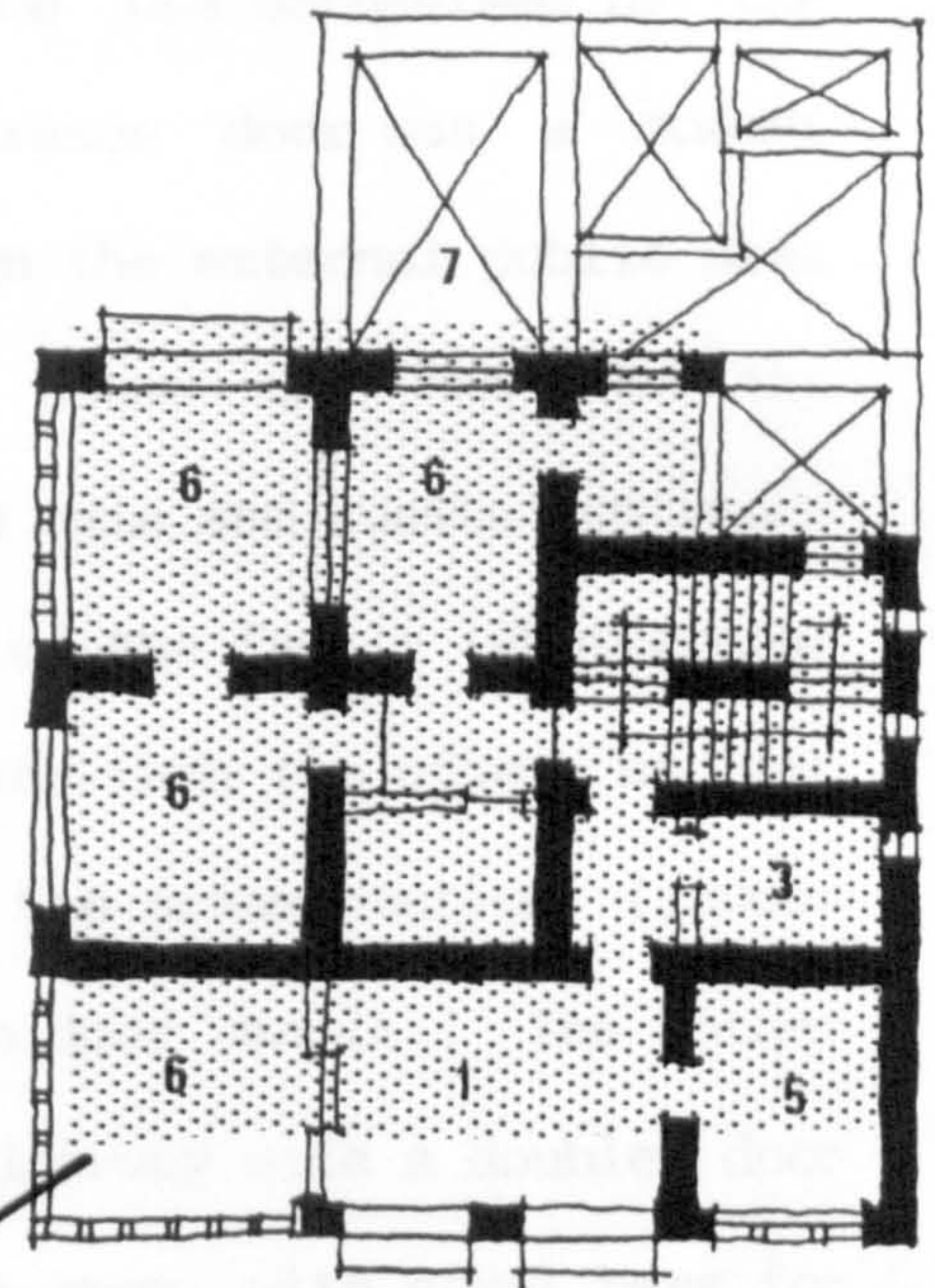
Third floor plan

FIGURE 7.4 : Second, third and fourth floor plan of Al Shafiay house

- Key :
- 1 Suffah
 - 2 Khazana
 - 3 Toilet
 - 4 Majlis
 - 5 Kitchen
 - 6 Room
 - 7 Kharja



ROOFED AREA



Fourth floor plan

FIGURE 7.6 : Roof plan

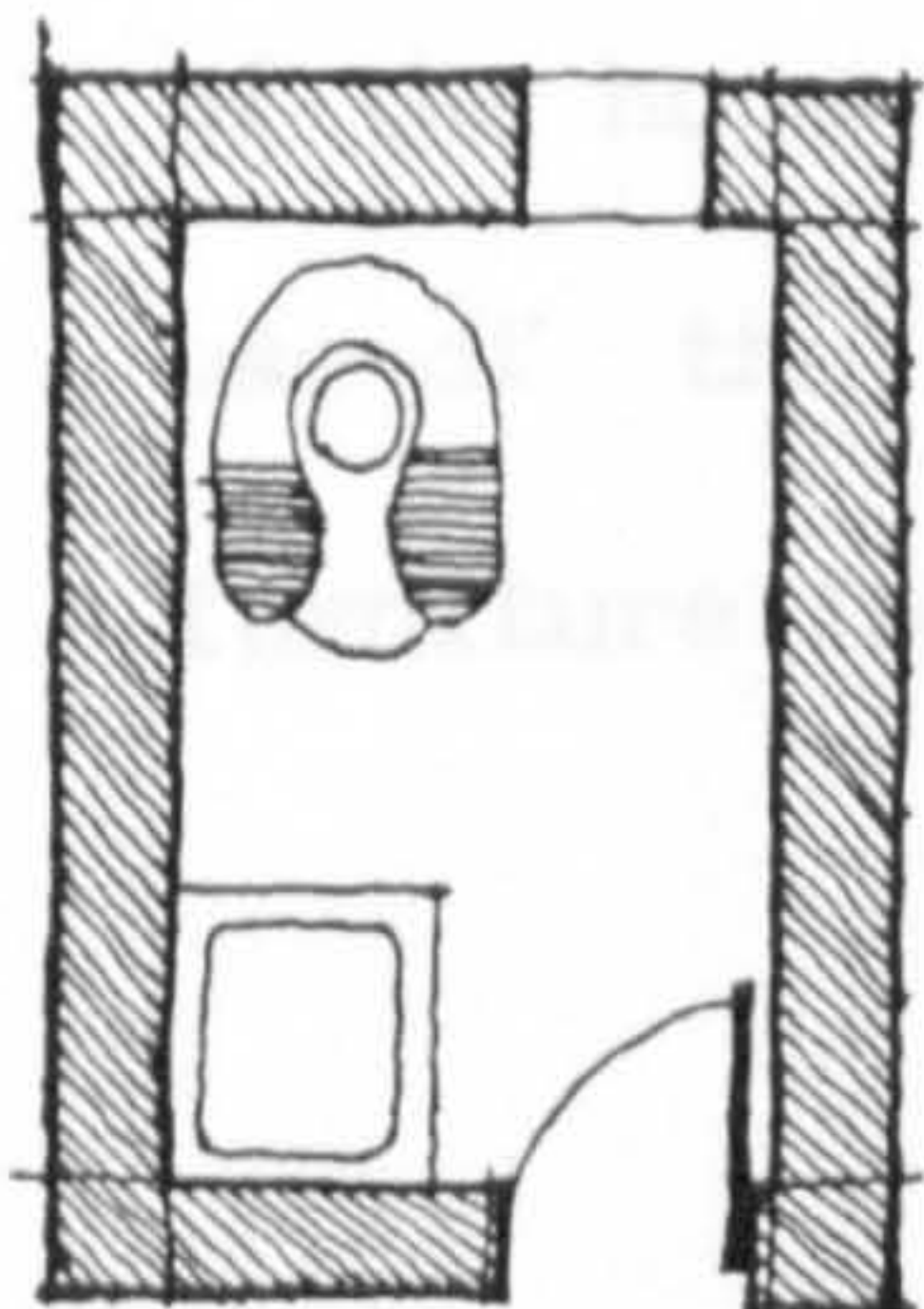
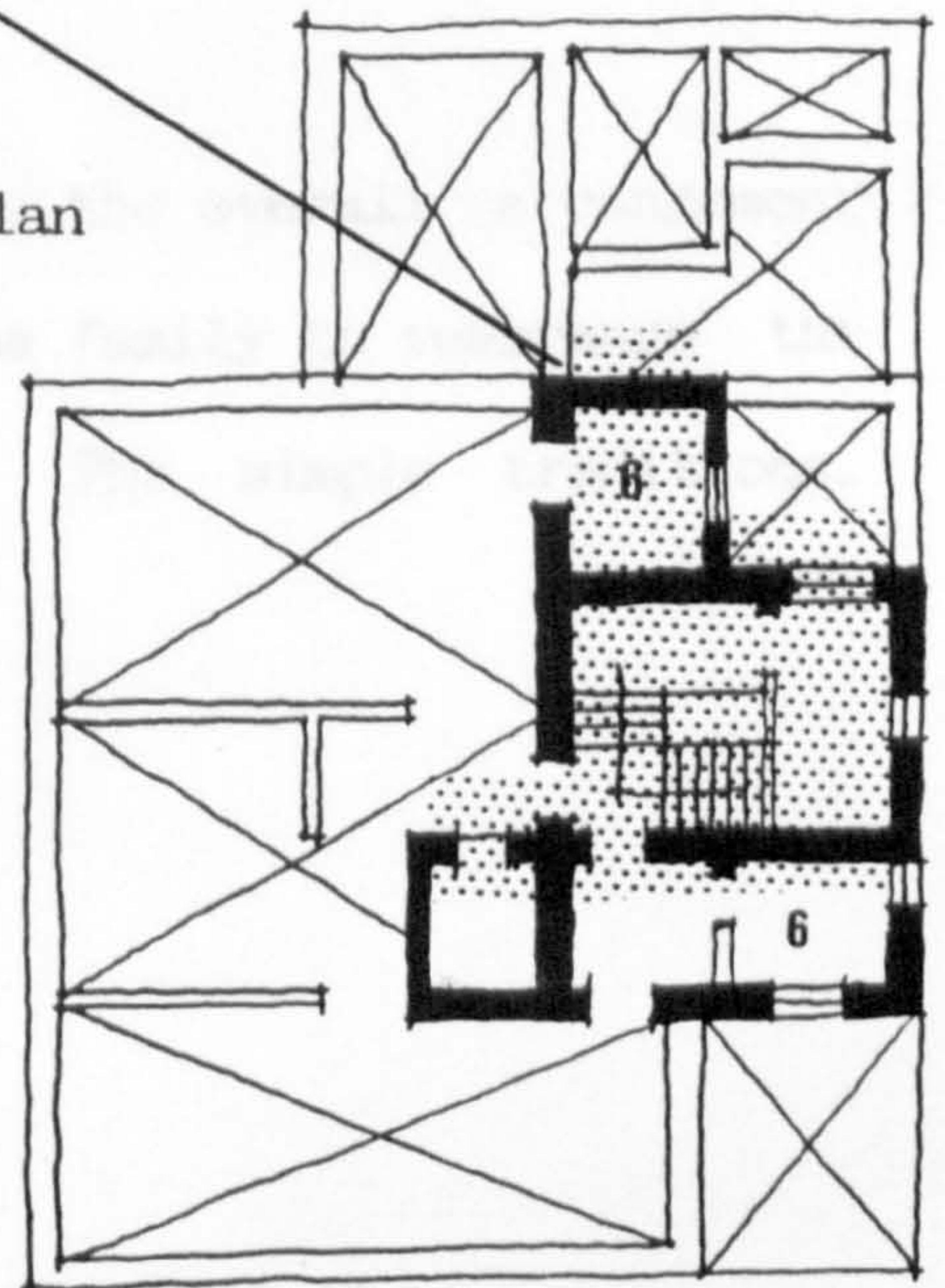


FIGURE 7.5 : Toilet plan

MAKKAH DIRECTION



This house, as well as other traditional houses, did not have a courtyard. However alternative spaces have been provided. From the second floor and above an open area called 'kharja' is provided, in addition to the main roof. 'Kharja' was an elevated space, semi closed on all four sides but open to the sky. It provided a horizontal extension of the interior space and served a similar function to the roof.

The builders and the owners of the houses paid a great amount of attention to the house entrance; its importance was emphasised by the construction of decorated doorways. The entrance door was a common feature which emphasised the sharp line between the external public area and the internal private zone. In this house one can see the differentiation between the two entrances, the male and guests' entrance and the other one, used by the female members of the family (Photographs 7.3-7.4). The first one received more attention than the other, as can be seen from the shape of the opening and the ornamentation (stucco decoration above the lintel and carved wooden door panels). The other entrance was simple in its design, an arched doorway with a double door below the lintel, and a semi-circular fanlight over, with steel bars for security and decoration.

Traditionally there was no single use of rooms, the overall arrangement of the house giving maximum flexibility for the family to rearrange the use of the rooms according to its needs. The simple traditional furniture facilitated this.

PHOTO 7.2 : Shows the opening in the staircase for light and ventilation

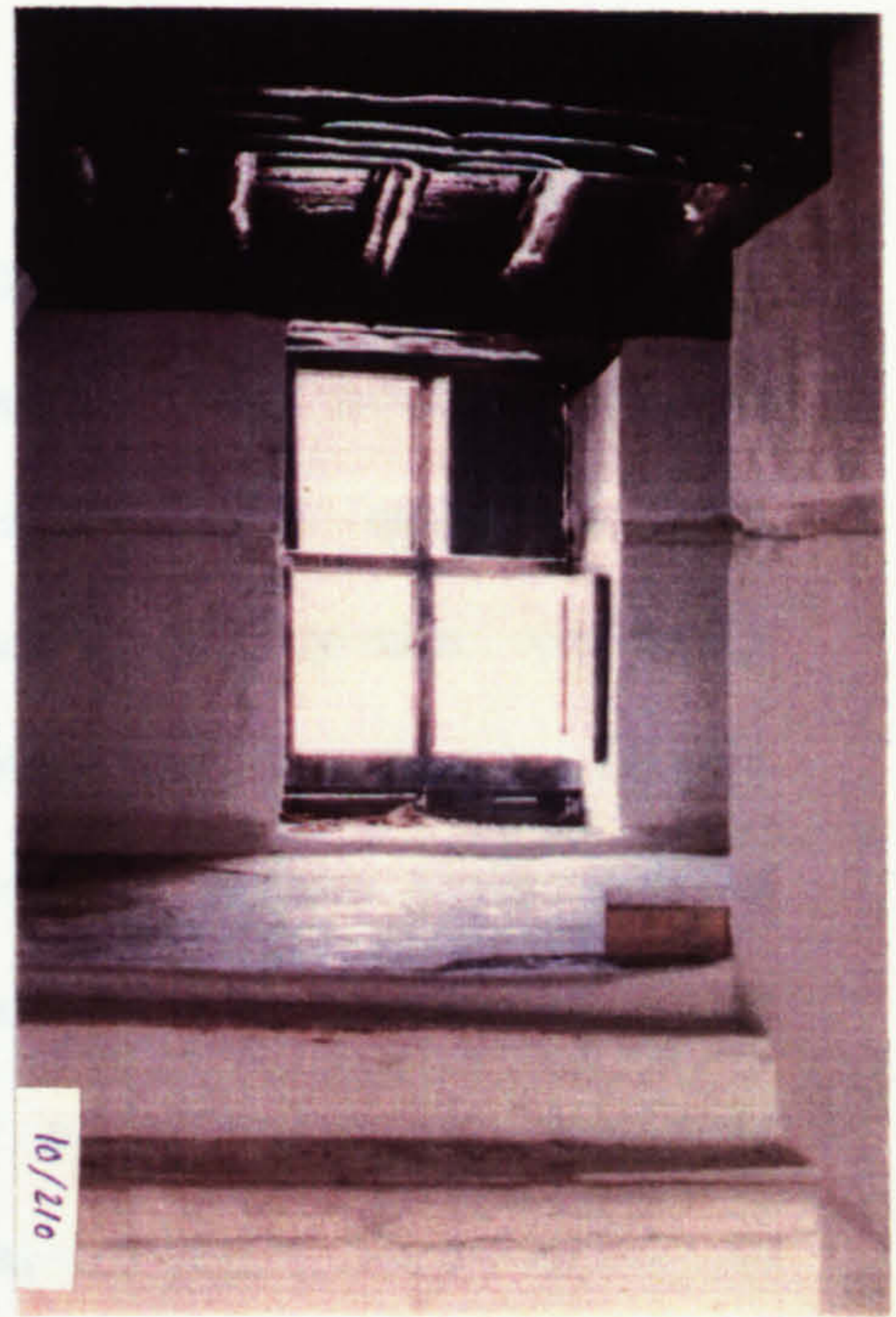


PHOTO 7.2



PHOTO 7.3



PHOTO 7.4

PHOTO 7.3 : Shows the main entrance door of Al Shafiay house

PHOTO 7.4 : Shows the other entrance door

A maximum emphasis has been given to privacy in the organisation of space within the house. The respect for privacy can be seen clearly in the internal spatial organisation of this house. The house has two entrances, the separation between the male and female quarters, an essential feature of Islamic society, being achieved by the vertical arrangement of the house (Figure 7.7). The ground and the first floors are arranged in a way that allows male visitors and guests easy access without disrupting the privacy of female members of the household. In the family living quarters a certain degree of privacy is achieved through the overall arrangement of the spaces, so that it is hard to view the whole interior.

As with all the traditional houses, a distinctive feature of the house is the series of 'rawashin', which project from the facade, and the extensive use of woodwork inside and outside the building. Such spaces were created with the help of the wall thickness and wooden lintels. These spaces, with the wooden lattices, enhanced the quality of the interior spaces, allowed in the required light and air and provided an area in which the occupants could observe the outside world while maintaining their privacy (Figure 7.8).

Photographs 7.5 and 7.6 show the 'roshan' from inside the house with wooden shutters and steel bars, for security. The house was surveyed when it was undergoing rehabilitation work, so most of the wooden lattice work has been removed. Photographs 7.7 and 7.8 show the extensive use of woodwork in the interior spaces, both for decoration and space division.

The facades of the house exhibit the skills of the craftsmen (carpenters), as well as the builders who made the maximum use of the available building materials and fulfilled the social and climatic requirements. They adopted an effective device known as 'mashrabiah' to cover the big opening of the facades (Figure 7.9).

Not only those but also a number of high level openings with wooden shutters, or 'mashrabiah', located just under the ceiling, were found to improve the quality of light in the interior spaces and enhance through ventilation (Photograph 7.9).

The house was mainly constructed of indigenous building materials, except for the timber, which was imported from abroad, probably from Java or India. Coral reef stones mortared with mud brought from the sea was used to form the foundations and walls. Wooden beams called 'gandel' were used, in the wall structure, at intervals of about 1.2 to 1.3m high, to strengthen the wall structure (Figure 7.10).

The upper floors and the roof were constructed of wooden beams, 'gandel', placed at intervals of 30cm, supporting timber boards, with a layer of earth or coral limestone rubble and a layer of lime mortar (Figure 7.11). It has been noticed that in some places the 'gandels' were exposed and in others were covered with decorated timber boards. The latter were mainly found in the guests' areas.

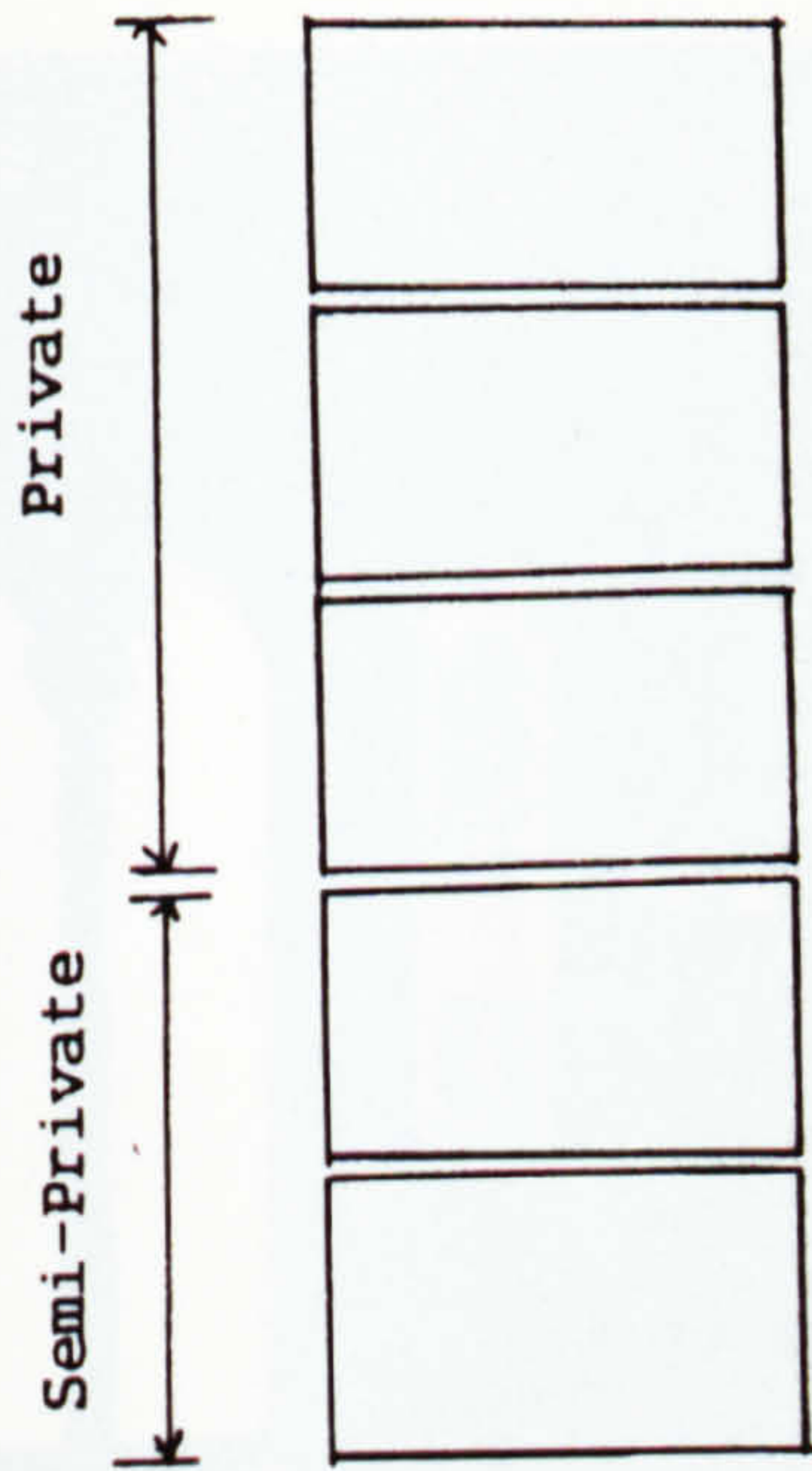


FIGURE 7.7 : A graphical distribution of the semi private and private spaces of the house

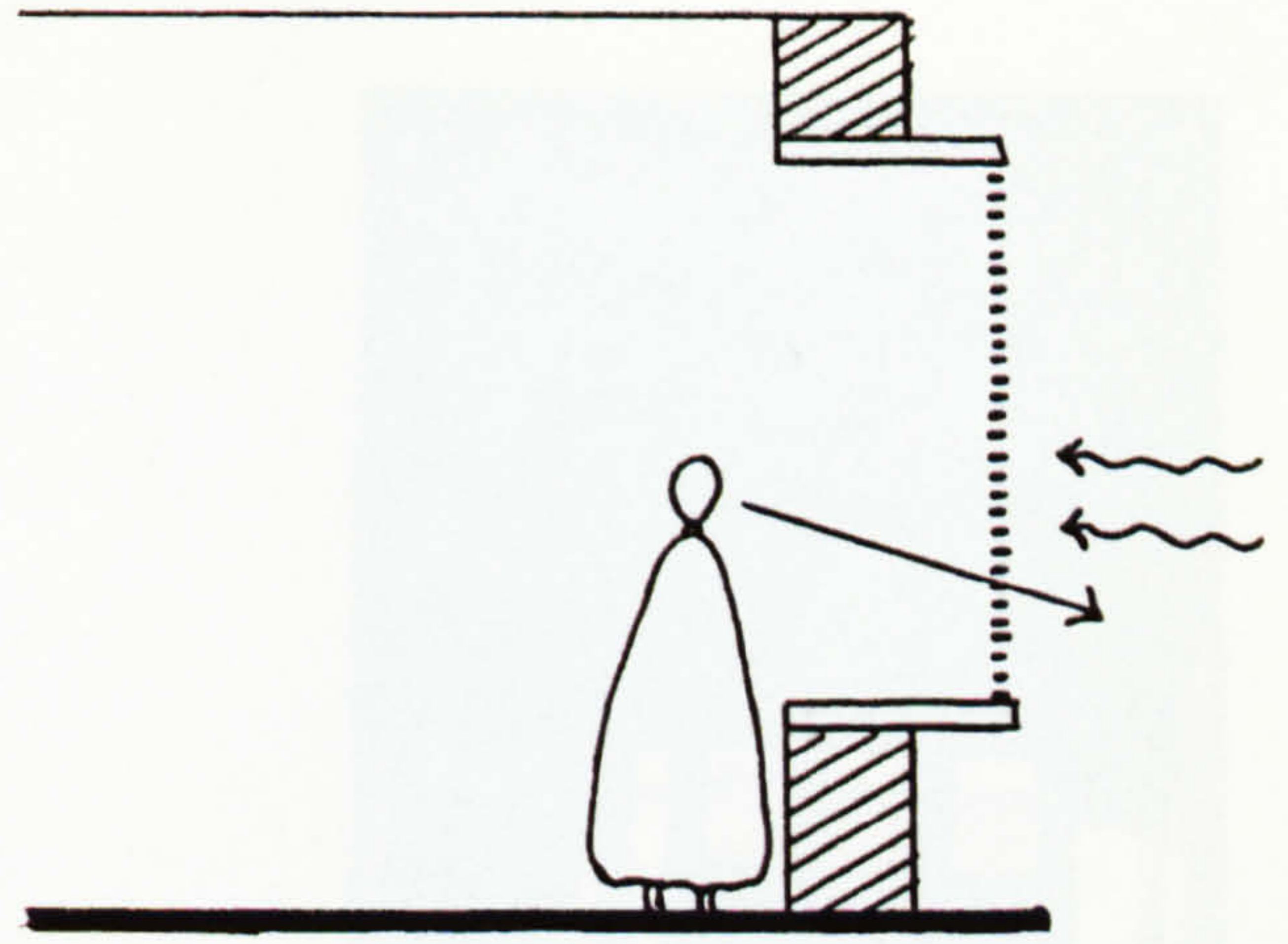


FIGURE 7.8 : Section through the Roshan

Photographs 7.5-7.6 show the extensive use of lattice work inside the house



PHOTO 7.5

Photographs 7.5-7.6 interior views of the Roshan



PHOTO 7.6

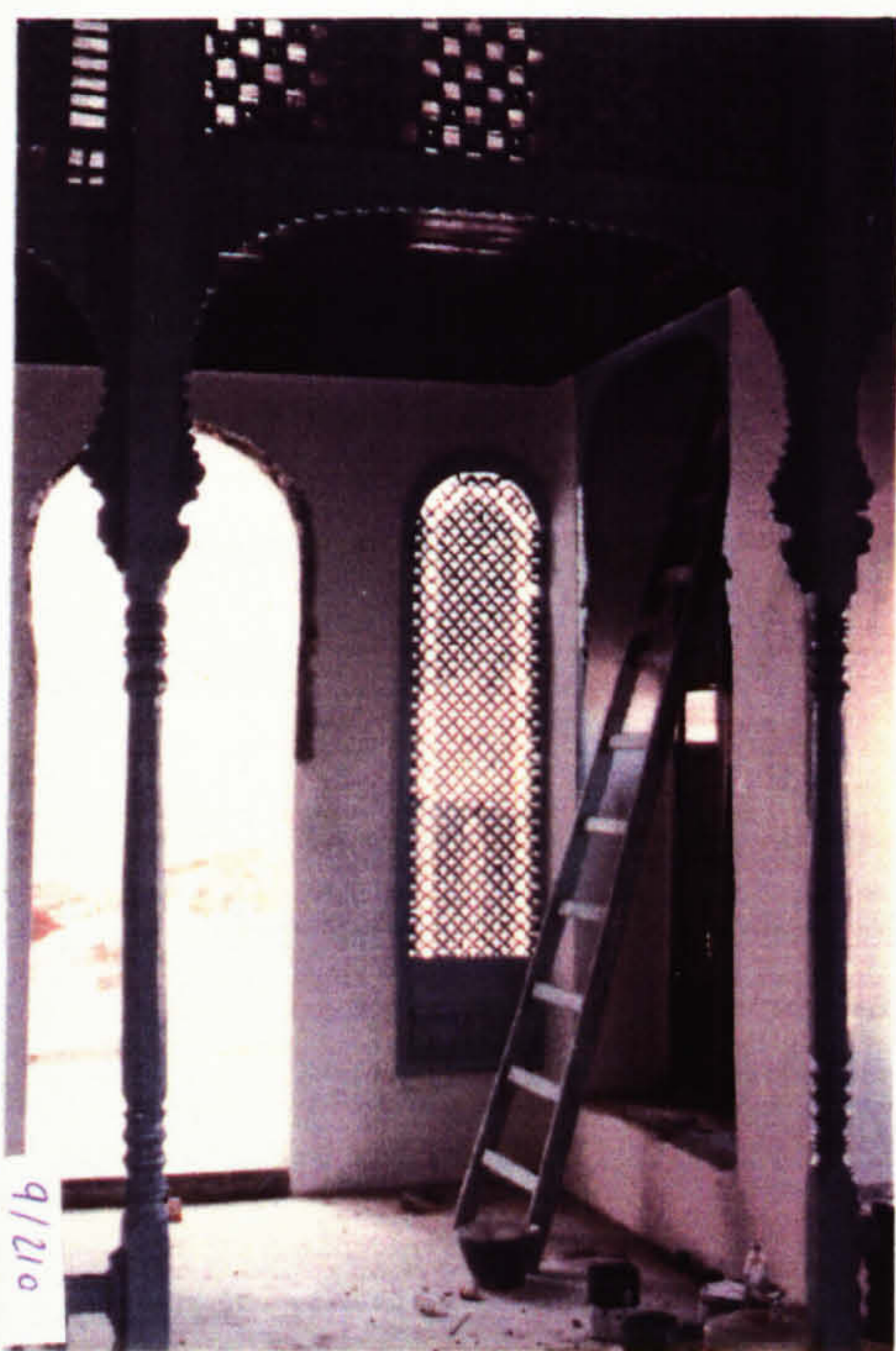


PHOTO 7.7



PHOTO 7.8

Photographs 7.7-7.8 show the extensive use of lattice wood inside the house



PHOTO 7.9

Photograph 7.9 shows the higher opening for light and ventilation

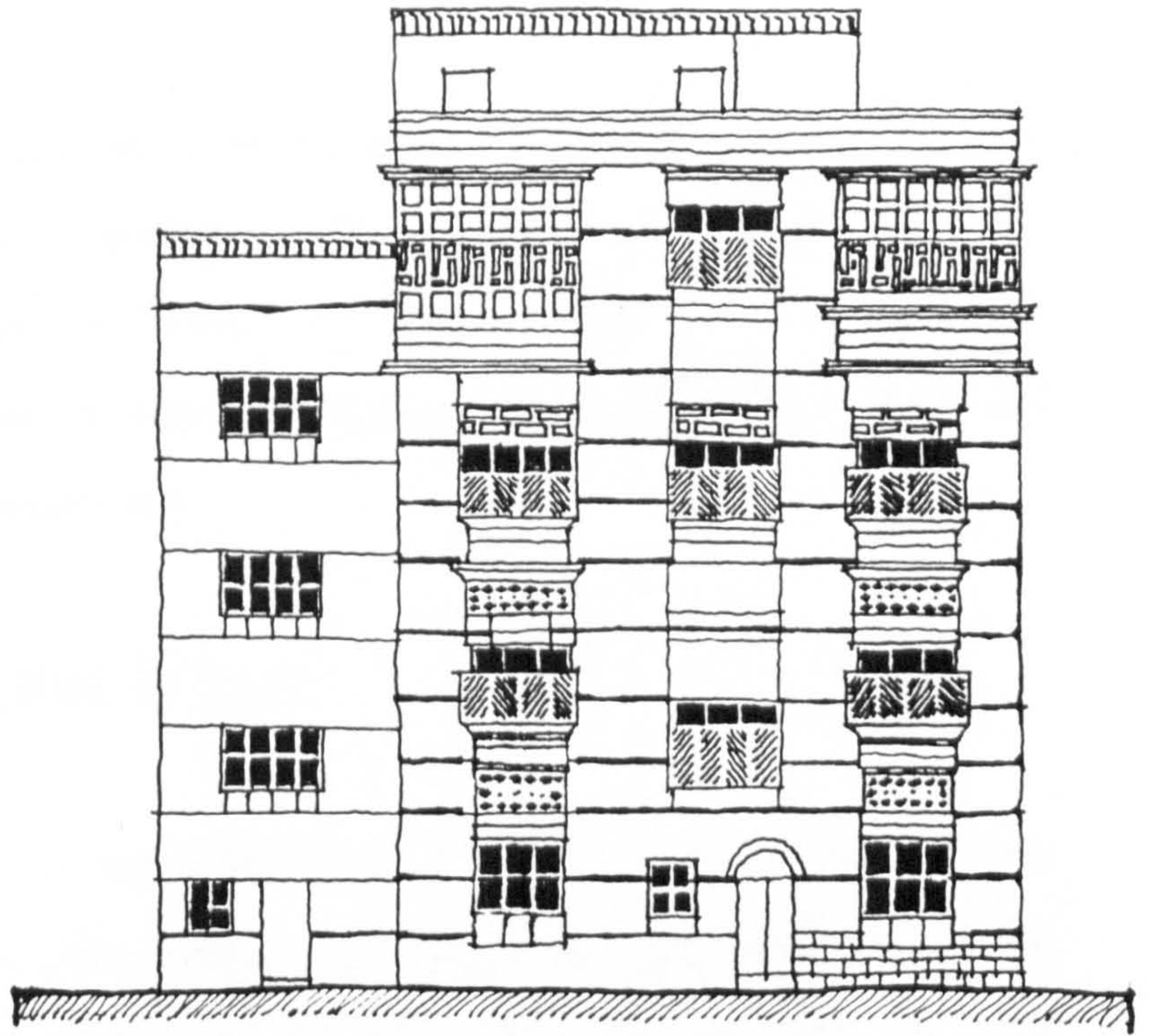


FIGURE 7.9 : North elevation of Al Shafiay house

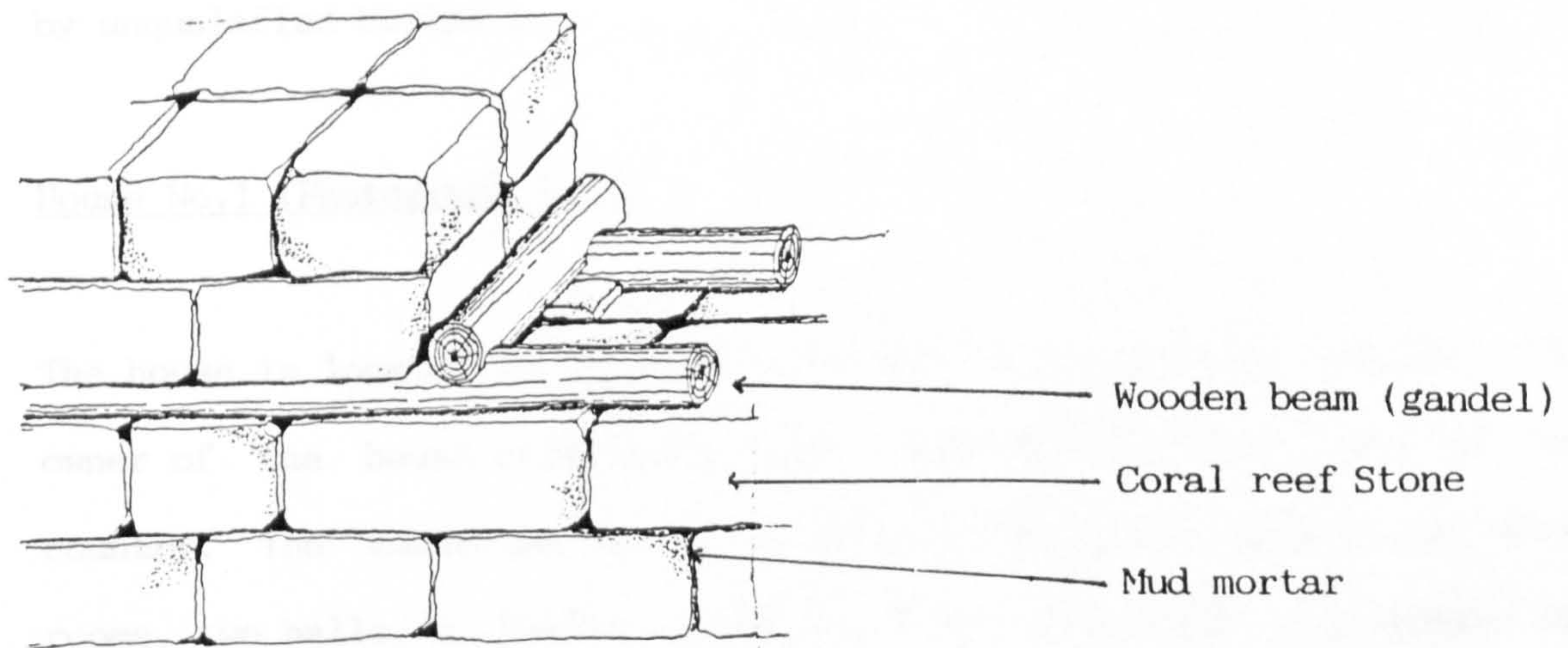


FIGURE 7.10 : Wall construction

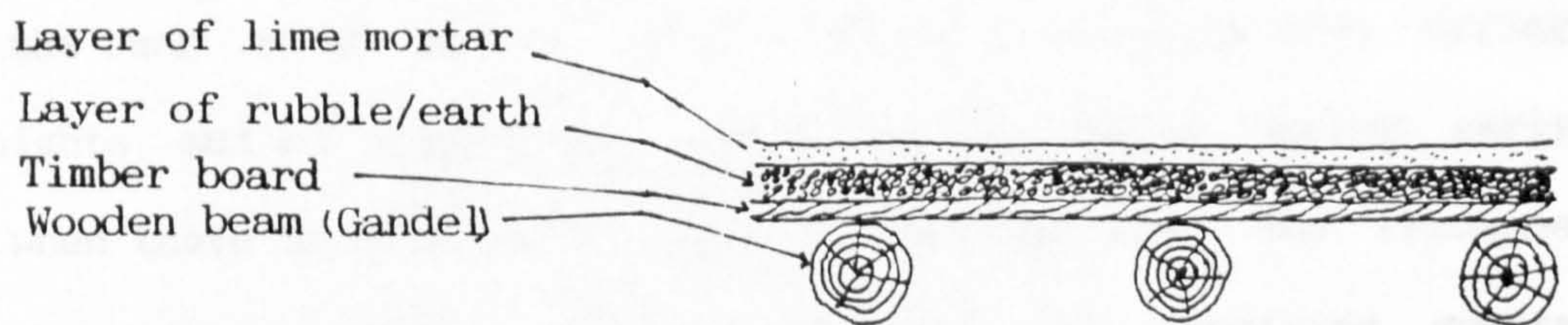


FIGURE 7.11 : Floor/roof construction

To sum up, the spatial organisation of interior spaces of this house is typically Islamic with two entrances and the clear separation of the male and guests domain from the female and family domain. Moreover the house exhibit a homogeneous living environment and a maximum use of the available local building materials.

7.2 Case Study Two : 'Al Bayt Al Shabi'

Two houses are selected, a one storey house (house no.1) and a two storey house (house no.2). The author was able to have access to both houses. The plan is drawn approximately as it was not possible to take an inside picture. Both houses were designed by their owners and built by unqualified builders.

House No.1 (Photograph 7.10)

The house is located in 'Ghulayl' district in 'Albeermany' street. The owner of the house originally came from the southern part of the country. The house was built in 1978/79, and it consists of three rooms, two halls, a toilet, a kitchen and a courtyard. The rooms are arranged along the two sides of the plot which face the streets. One room is reserved for the guests and is located near the entrance door; the other two are multi-functional rooms. The courtyard is located towards the rear of the house; it is used as a sleeping area during summer nights and as a gathering space for the family during early morning when there is sufficient shade in the courtyard. The entrance hall is sometimes used as an extension space for receiving guests (Figure 7.12).

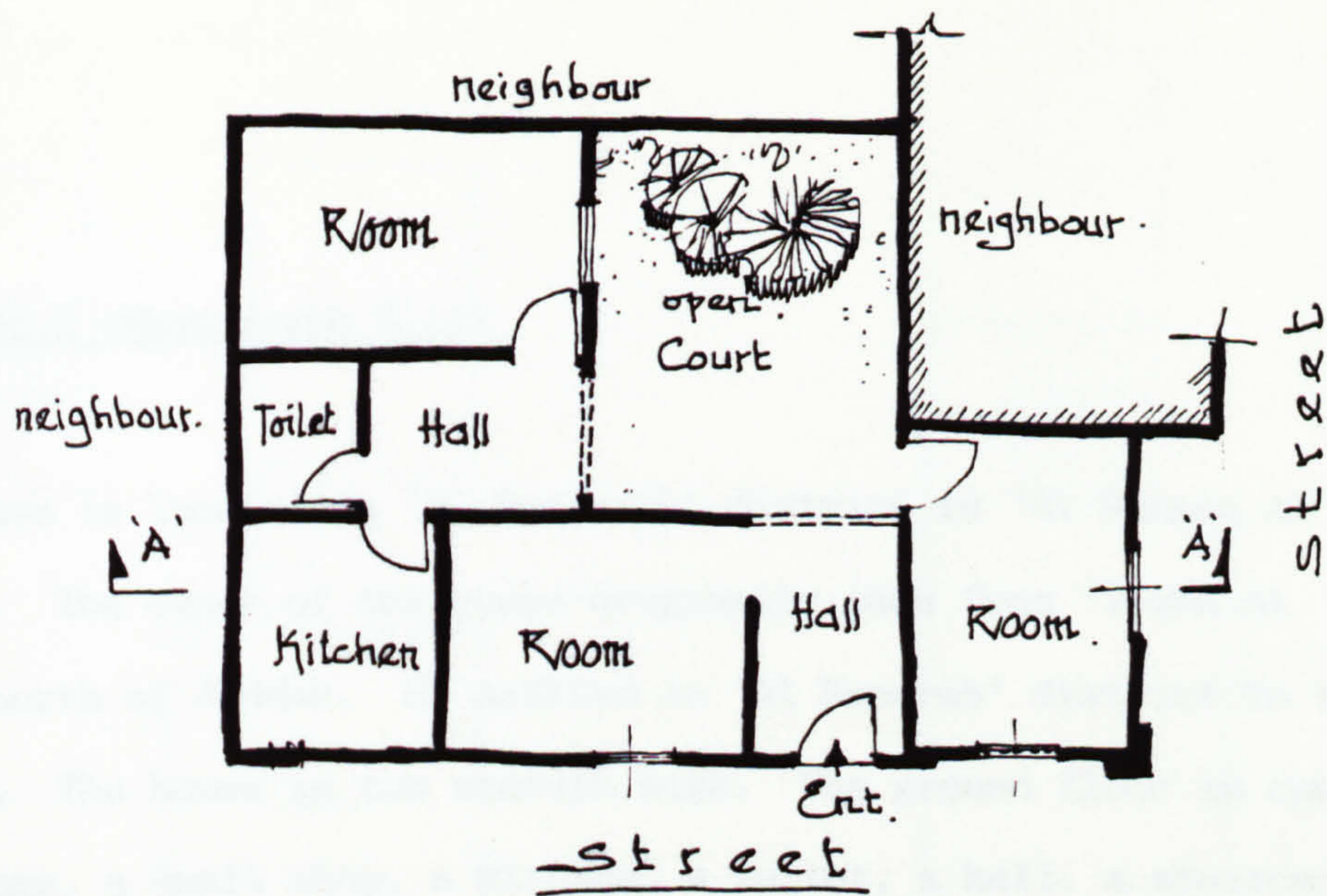
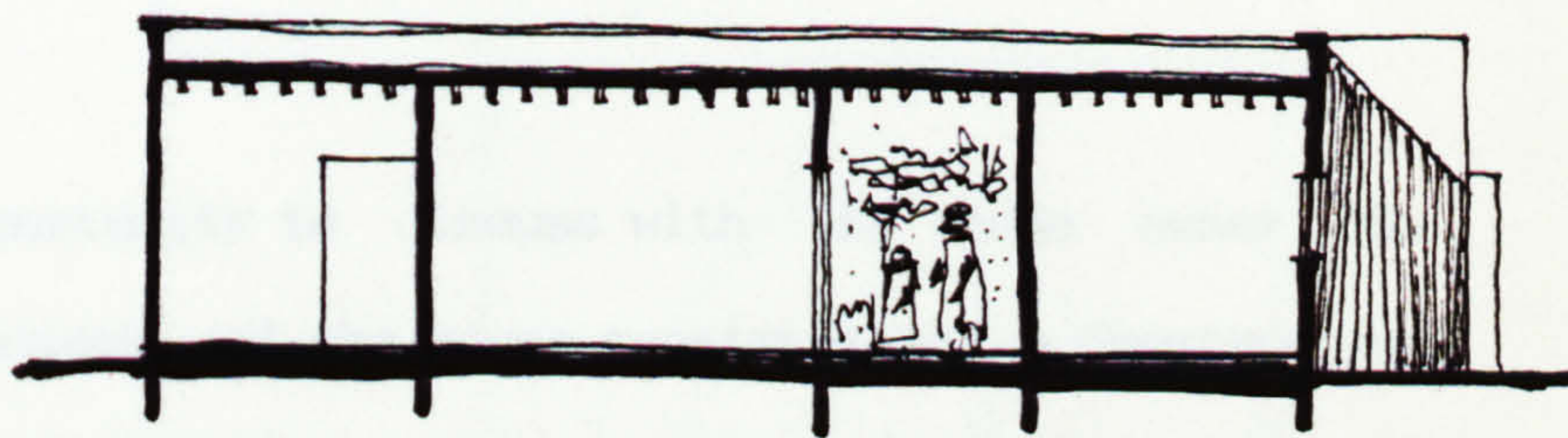
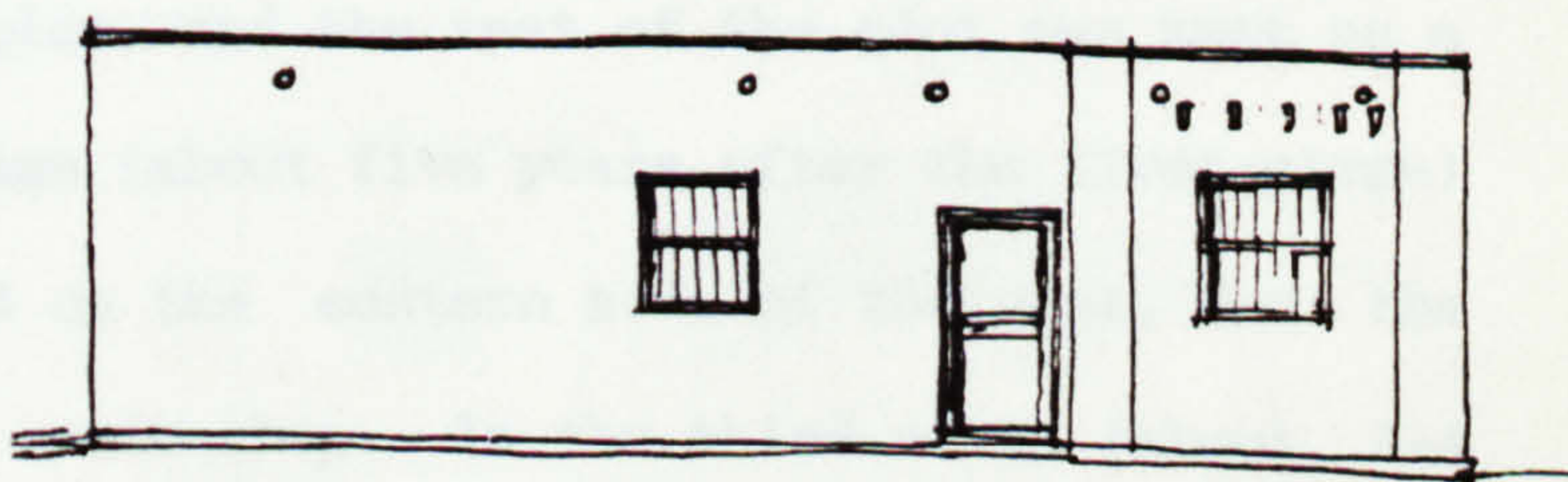


FIGURE 7.12 : House No.1

Plan



Section



West elevation



PHOTO 7.10 : View of house No.1

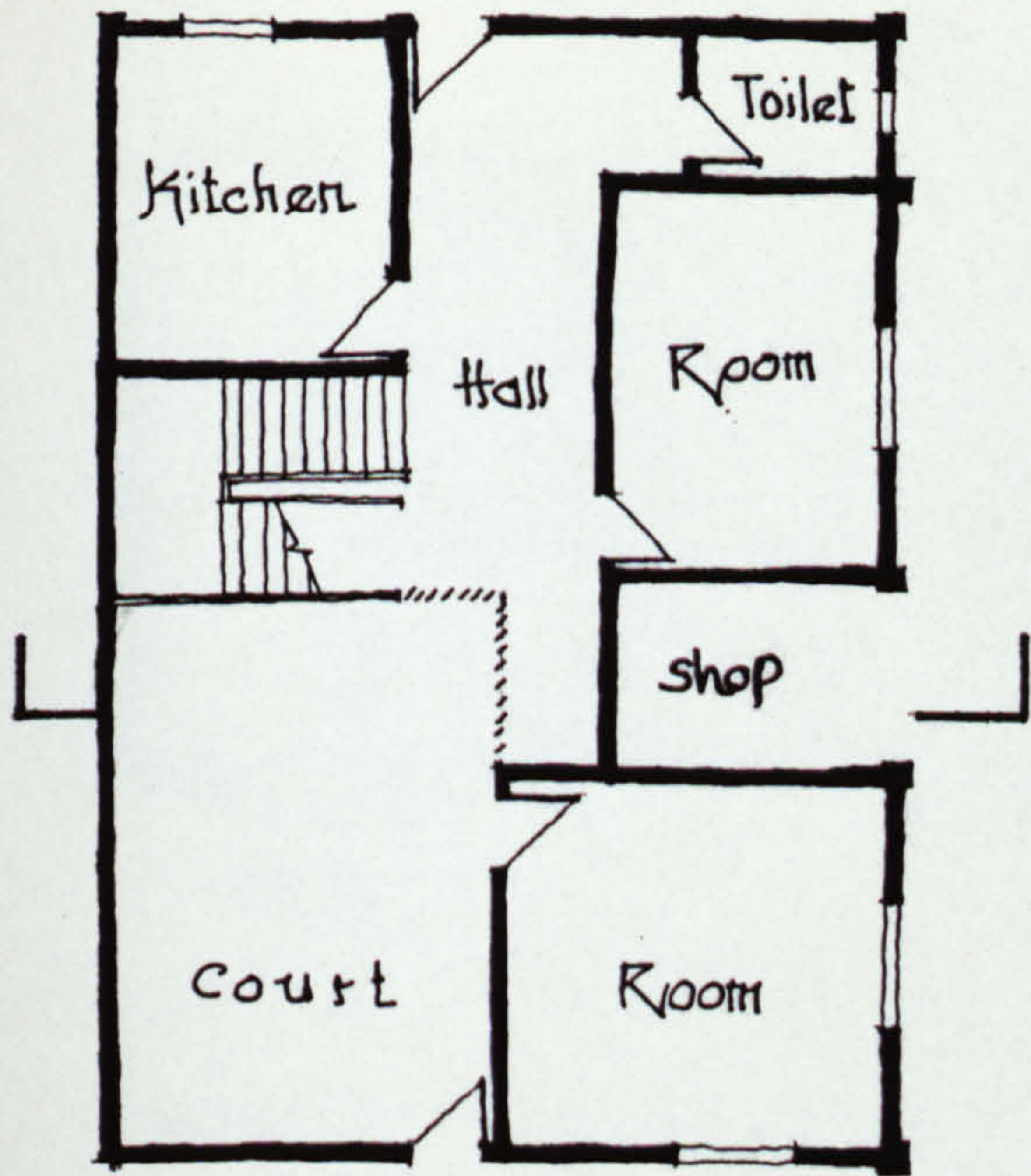


House No.2 (Photograph 7.11)

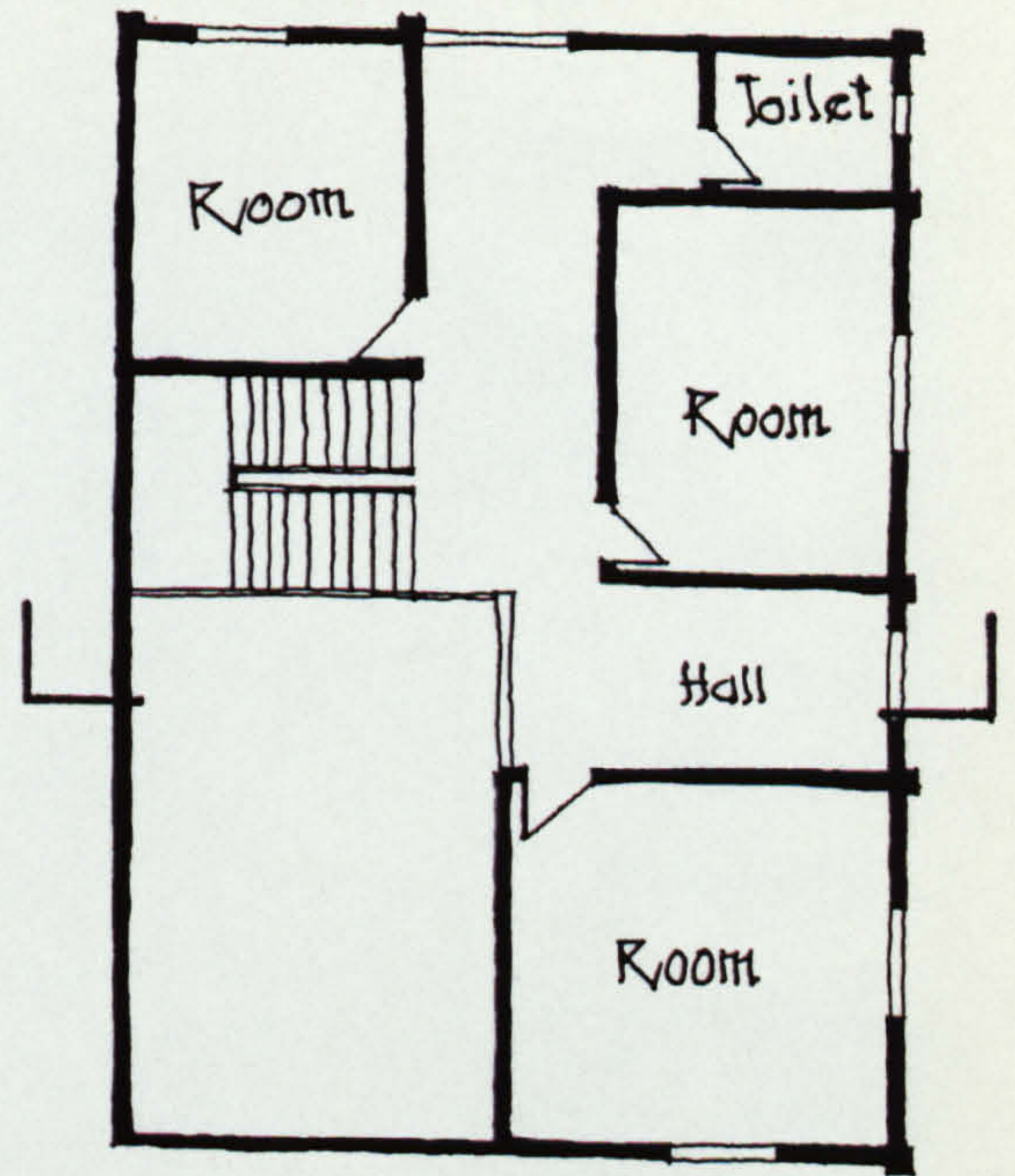
The house is located in 'Al Kandarah' district in 'Al Hassan Al Nabaway' street. The owner of the house originally came from 'Yanbu Al Nakhal', 400km north of Jeddah. He settled in 'Al Kandrah' district in the late 1960's. The house is two storeys high. The ground floor is composed of two rooms, a small shop, a kitchen, a toilet, a hall, a staircase and a courtyard. The first floor is composed of three rooms, a hall and a toilet (Figure 7.13).

The author had the opportunity to discuss with the house owner the historical changes and stages of the house construction. Construction started in 1966/67, initially the house was composed of two rooms, a kitchen, a toilet and a courtyard. They were arranged in a linear shape on the southern side of the plot, and the rest of the plot was kept as a courtyard. In the second stage (about five years after the first stage) a new kitchen was constructed on the eastern side of the plot, and the old one was converted into a small shop. In the third stage (about 3-4 years after the second stage) one room and one toilet was constructed on the first floor. In the final stage (1983/84) two rooms were constructed on the first floor (Figure 7.14).

The facades of both houses are very simple. From the photograph, the windows appear to be closed by wooden louvred shutters. Privacy is only maintained while the windows are closed. It is interesting to note here that the mechanical air coolers, air conditioners, were not considered

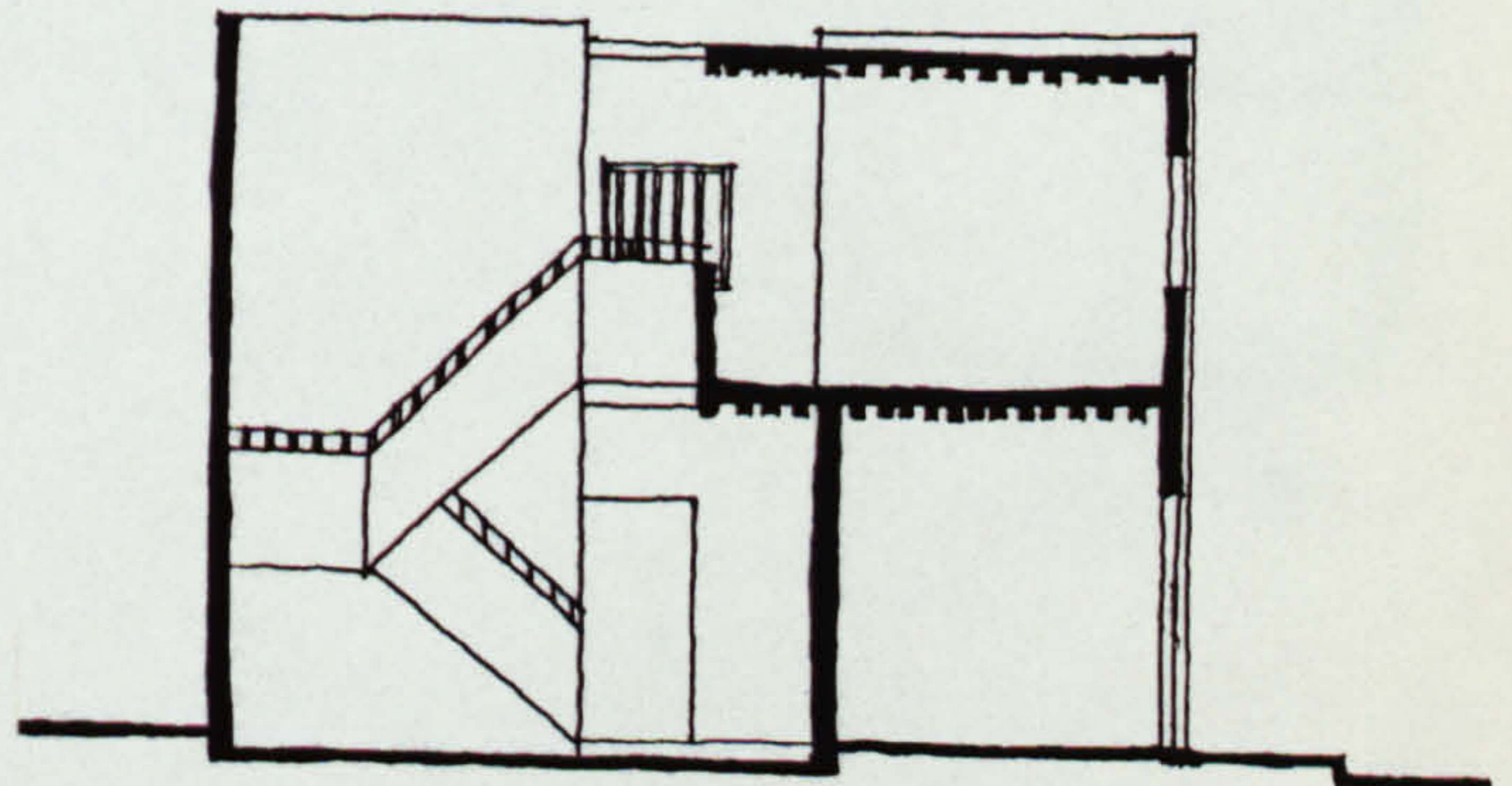


Ground Floor Plan

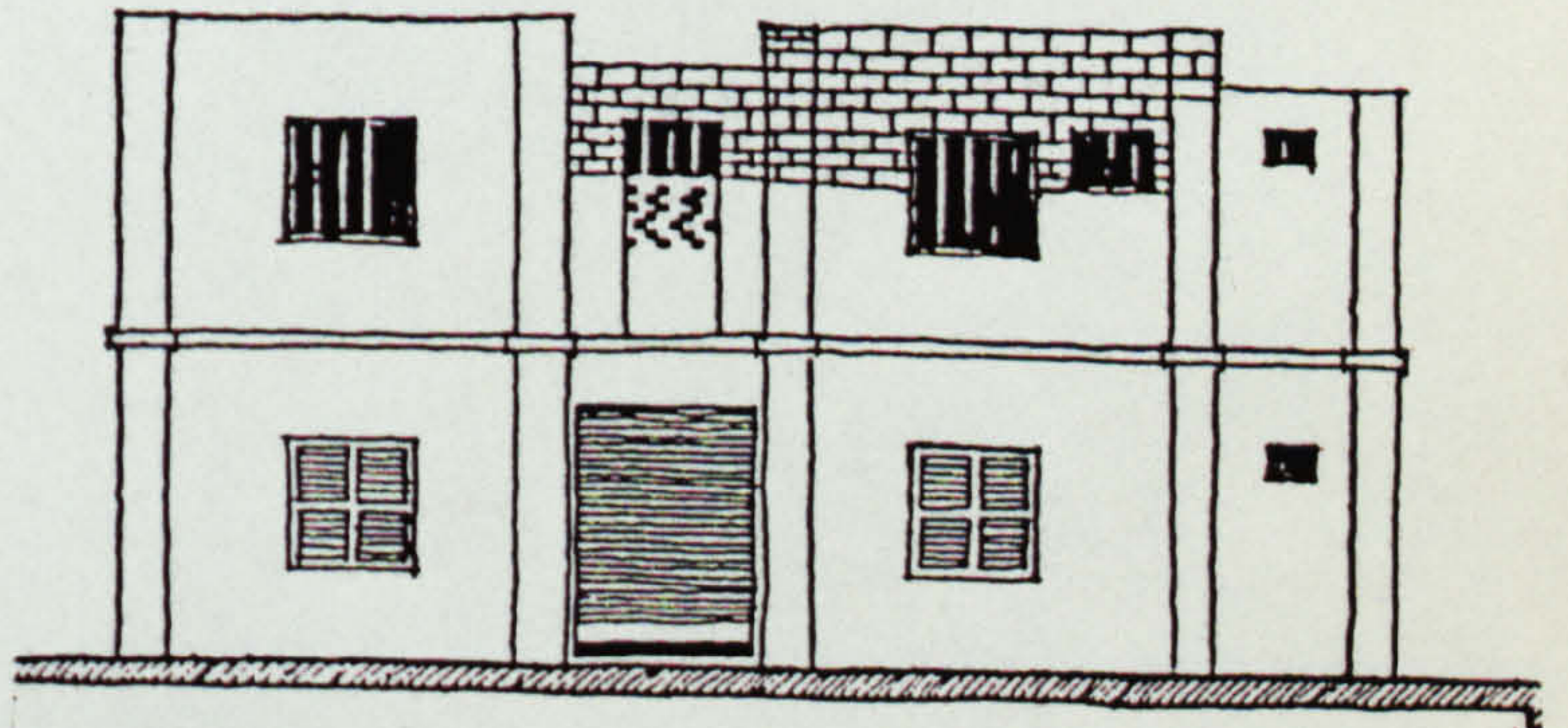


First Floor Plan

FIGURE 7.13 : House No.2



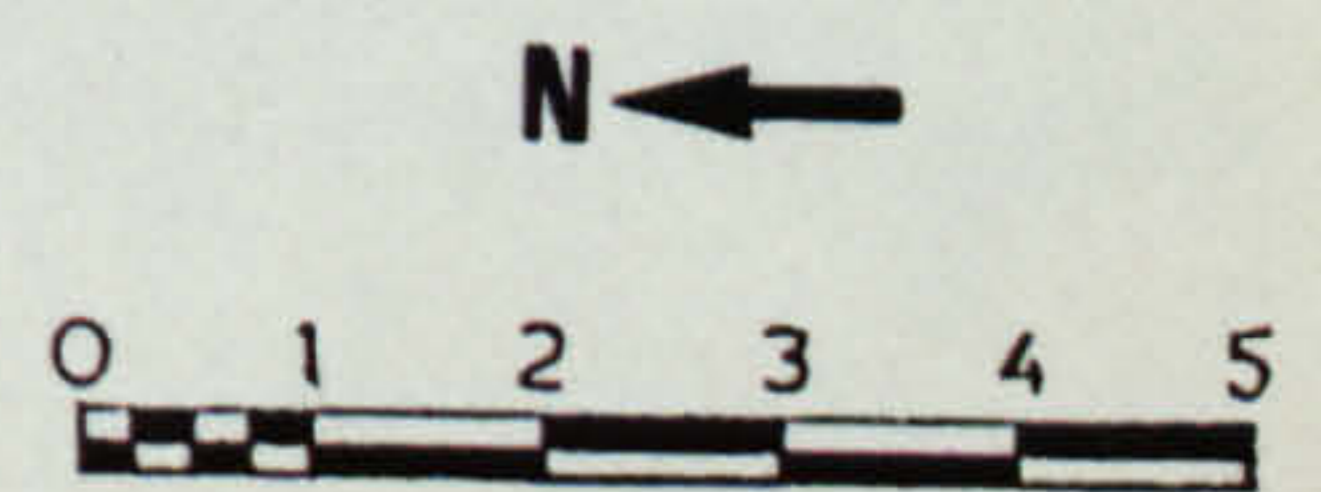
Section

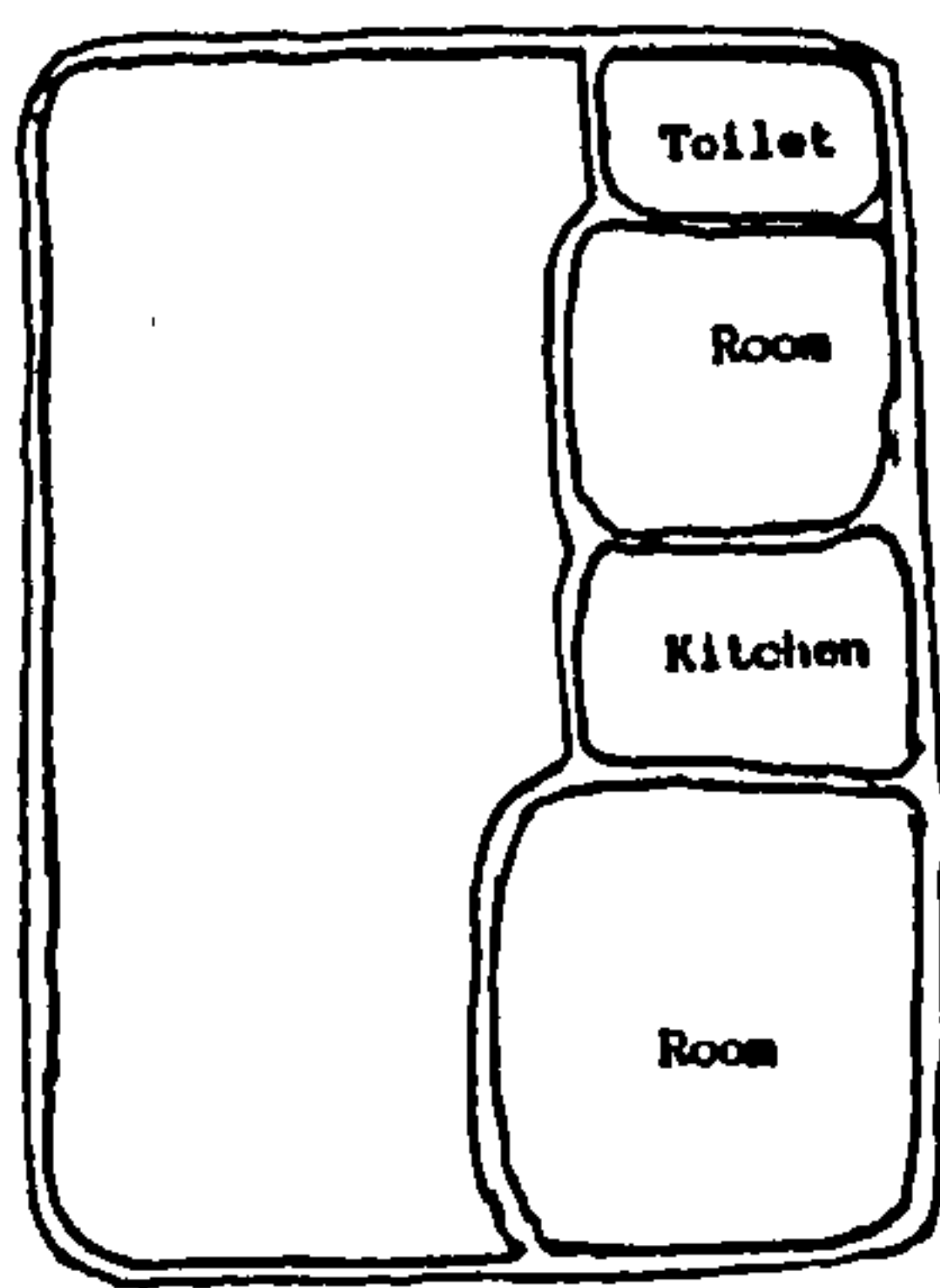


South elevation

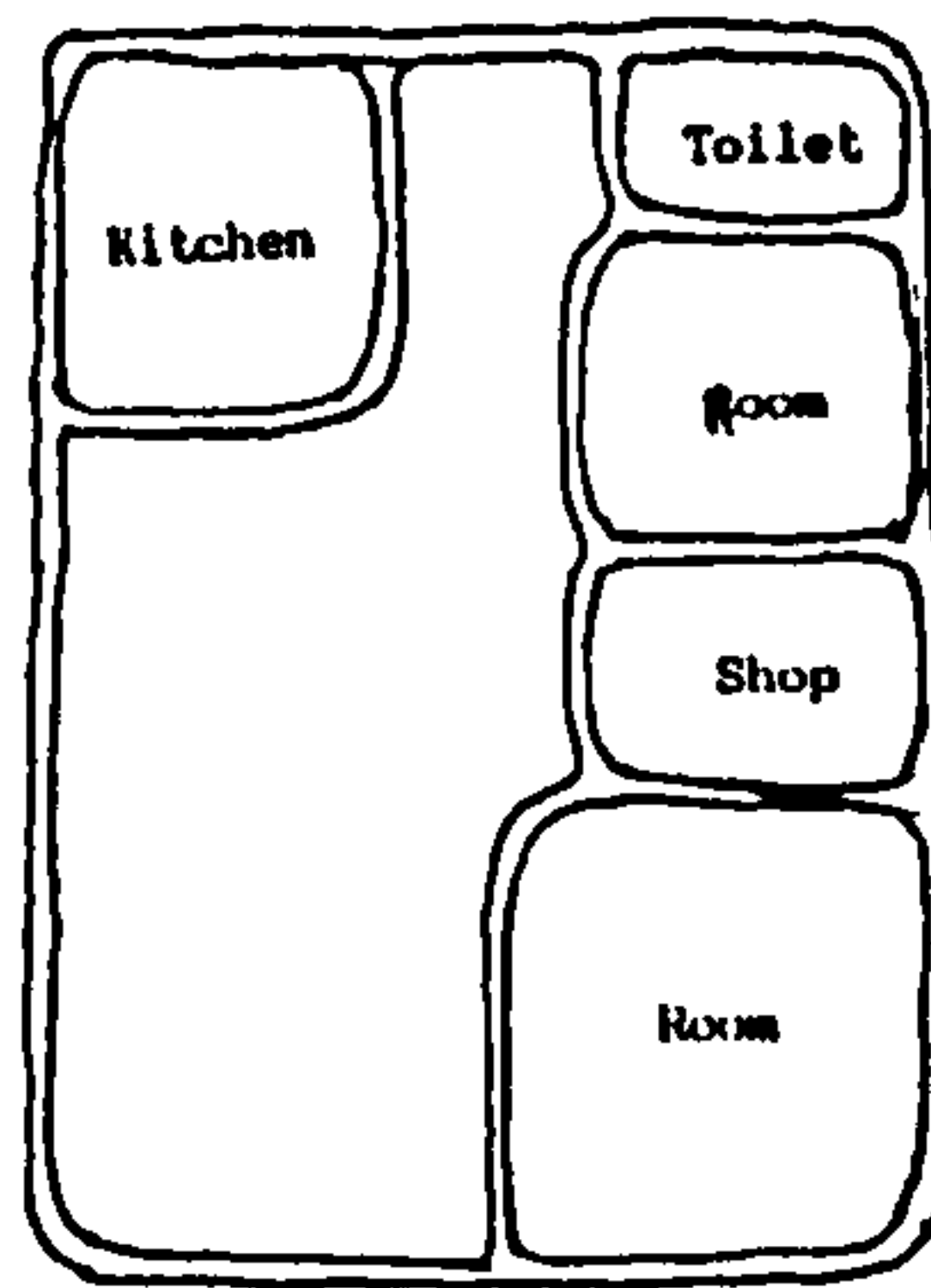


PHOTO 7.11 : View of house No.2

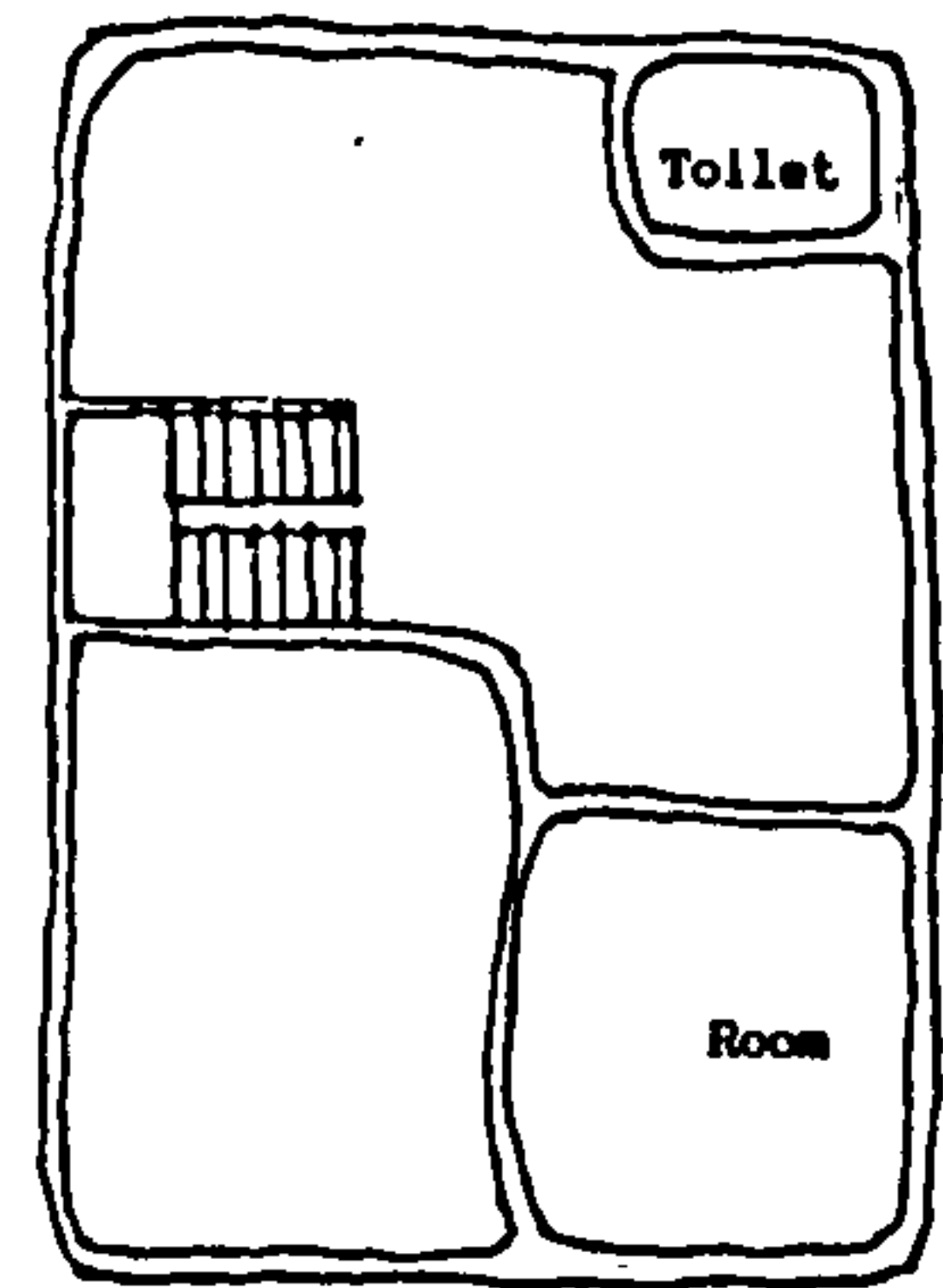




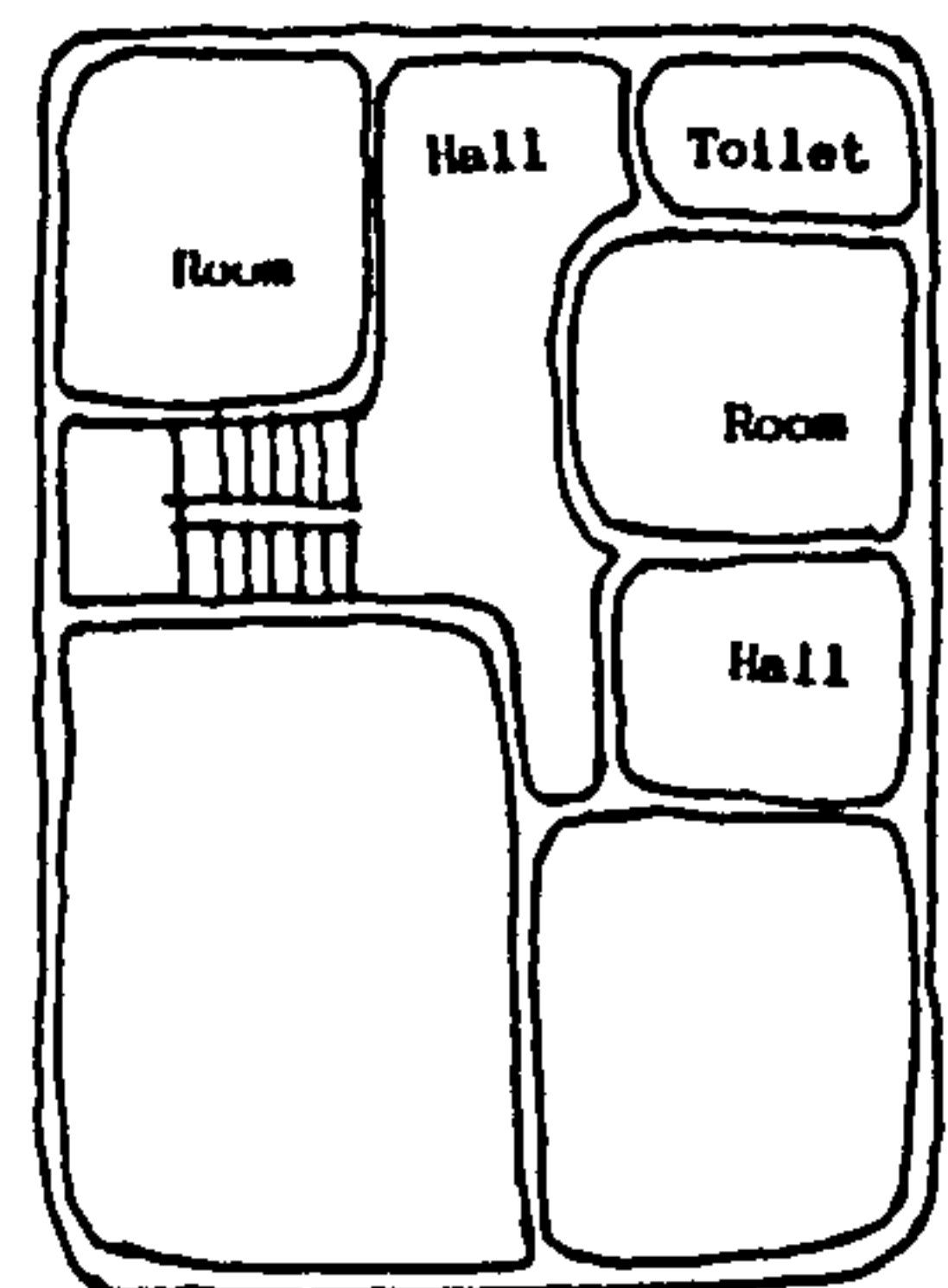
Stage I



Stage II



Stage III



Stage IV

FIGURE 7.14 : Historical changes of house No.2

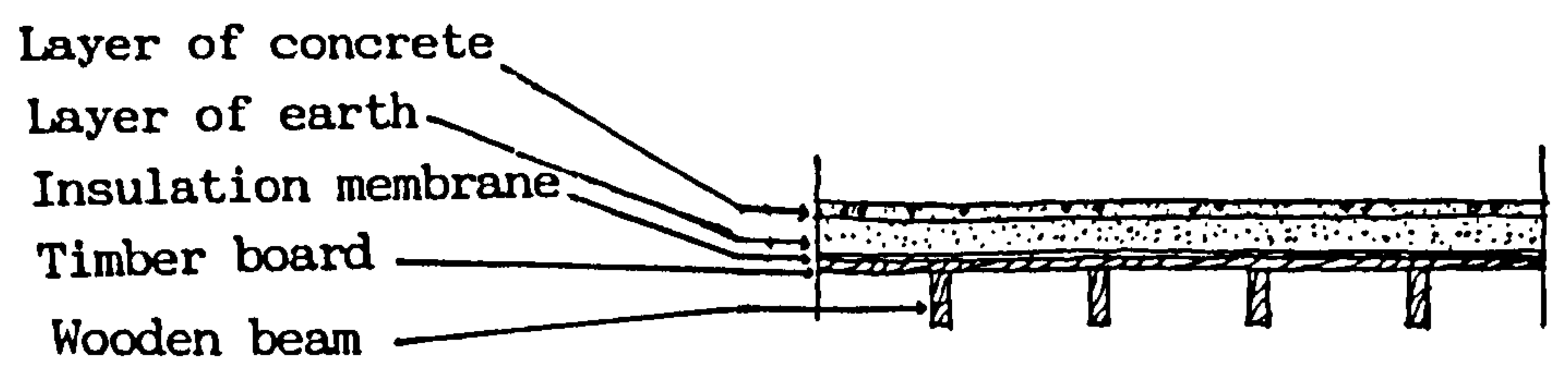


FIGURE 7.15 : Roof construction

during the construction of the house but later on were installed into the windows, creating a negative effect in the facade.

Locally made block with cement mortar was used to construct the foundations and the walls of these houses.

The roofs were constructed of wooden beams placed at intervals ranging from 25-35cm, supporting timber boarding, an insulation membrane sheet, a layer of earth and sand and a layer of concrete (Figure 7.15). It has been noticed that the wooden beams are placed closer together in the first floor than those of the roof.

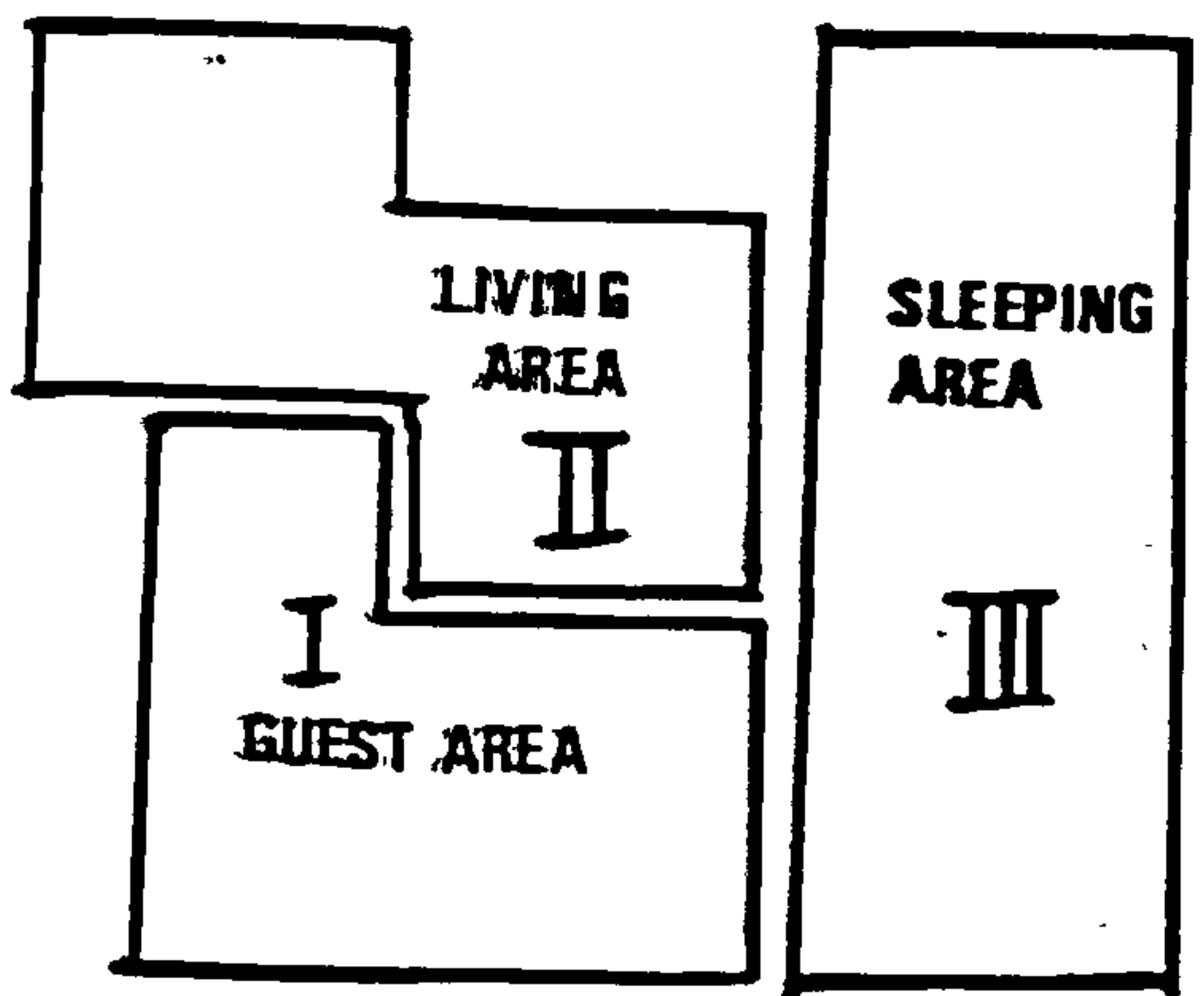
7.3 Case Study Three : Apartment Building

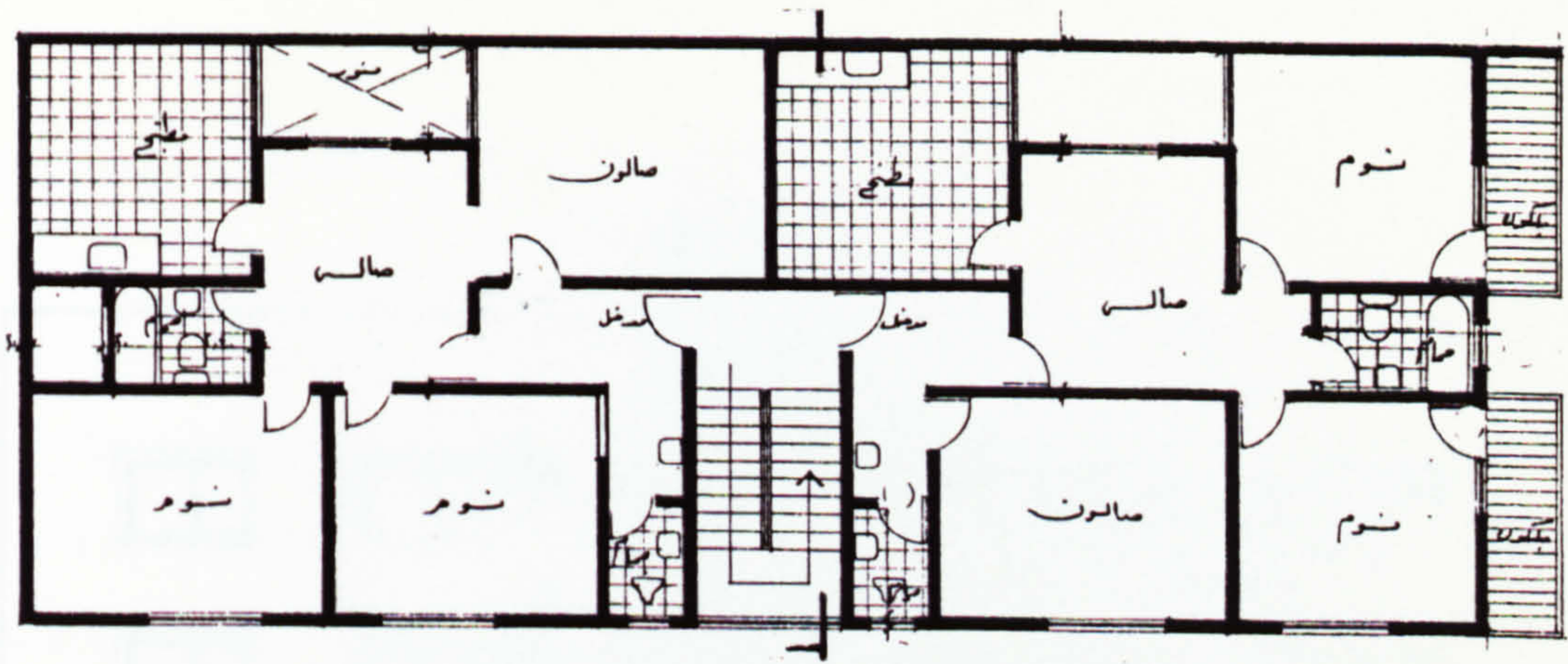
Apartment buildings are the main housing type in the city. They are mainly residential buildings. However, as mentioned earlier (in Chapters Five and Six), a mixture of residential and commercial activities are usually found in the same building. Two apartment buildings are selected, a residential apartment building (building no.1) and a commercial/residential apartment building (building no.2). Both buildings were designed by an architect and constructed by local contractors. They are designed to accommodate a large number of nuclear families. The flats are relatively small and less attention has been paid to the family privacy inside the flats.

Building No.1 : A Residential Apartment Building (Photograph 7.12)

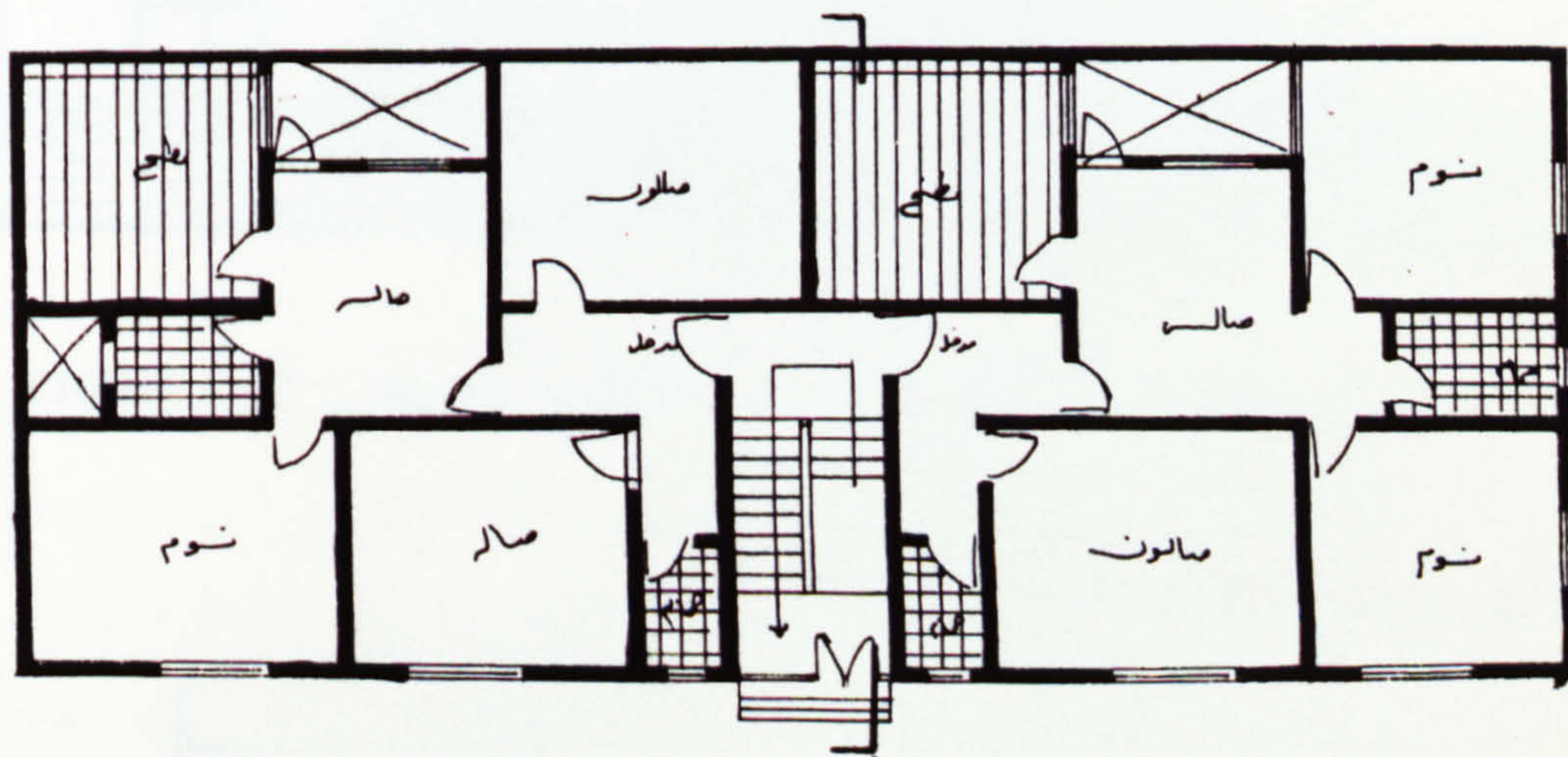
The building is located in 'Al Jameah' district in 'Al Amal Alsaleh' street. The residents of this building are an extended family : a man with three married sons. They were living previously on the same site but in 'Al Bayt Al Shabi' house type. In 1979, after receiving a loan from the Real Estate Development Fund, the head of the family decided to demolish the original house and build an apartment building instead. Currently each one of them is living in a separate flat within the building. It is interesting to note here that, as a result of this decision, many traditions and social ties have started to weaken. For instance, in the past they shared many facilities such as the reception room 'majlis', the kitchen, etc.; they ate and sat together. But nowadays each flat has its own facilities which enhance individuality within the extended family. Nevertheless this family have tried their best to maintain their tradition and social ties, for example on some occasions such as 'Ramadan' month (fasting month), Eid, etc. All the family meet together on the roof of their building during the night to break 'fast' congregationally, in addition to having other meetings from time to time.

The building consists of three floors with two flats on each floor. Each flat consists of two rooms, a reception room, a hall ('salah'), two toilets and a kitchen (Figure 7.16). The flat is reasonably organised. The reception area (I) is located near the entrance door and the family area (II, III) towards the rear of the flats.





Typical Floor Plan



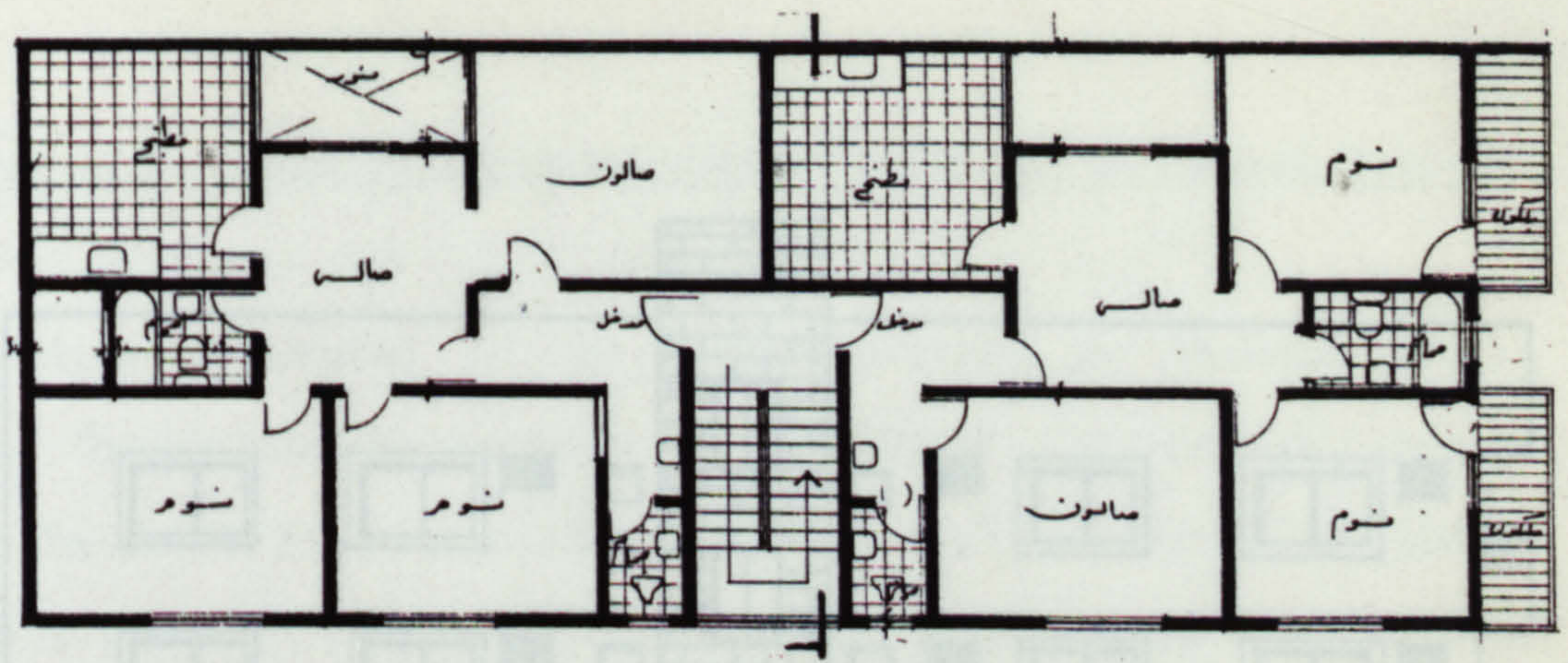
Ground Floor Plan

FIGURE 7.16 : Apartment Building No.1

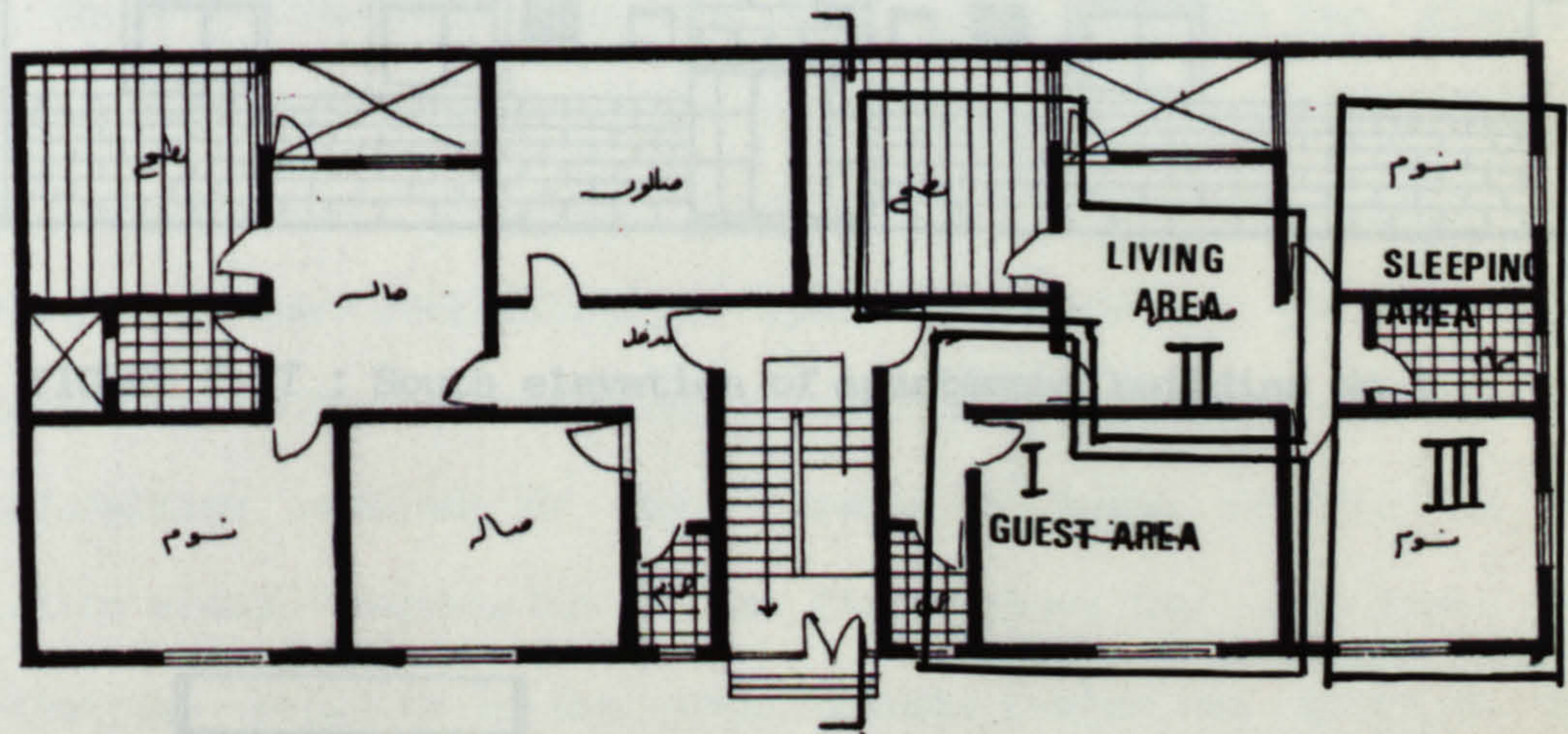


PHOTO 7.12 : View of apartment building No.1





Typical Floor Plan



Ground Floor Plan

FIGURE 7.16 : Apartment Building No.1



PHOTO 7.12 : View of apartment building No.1



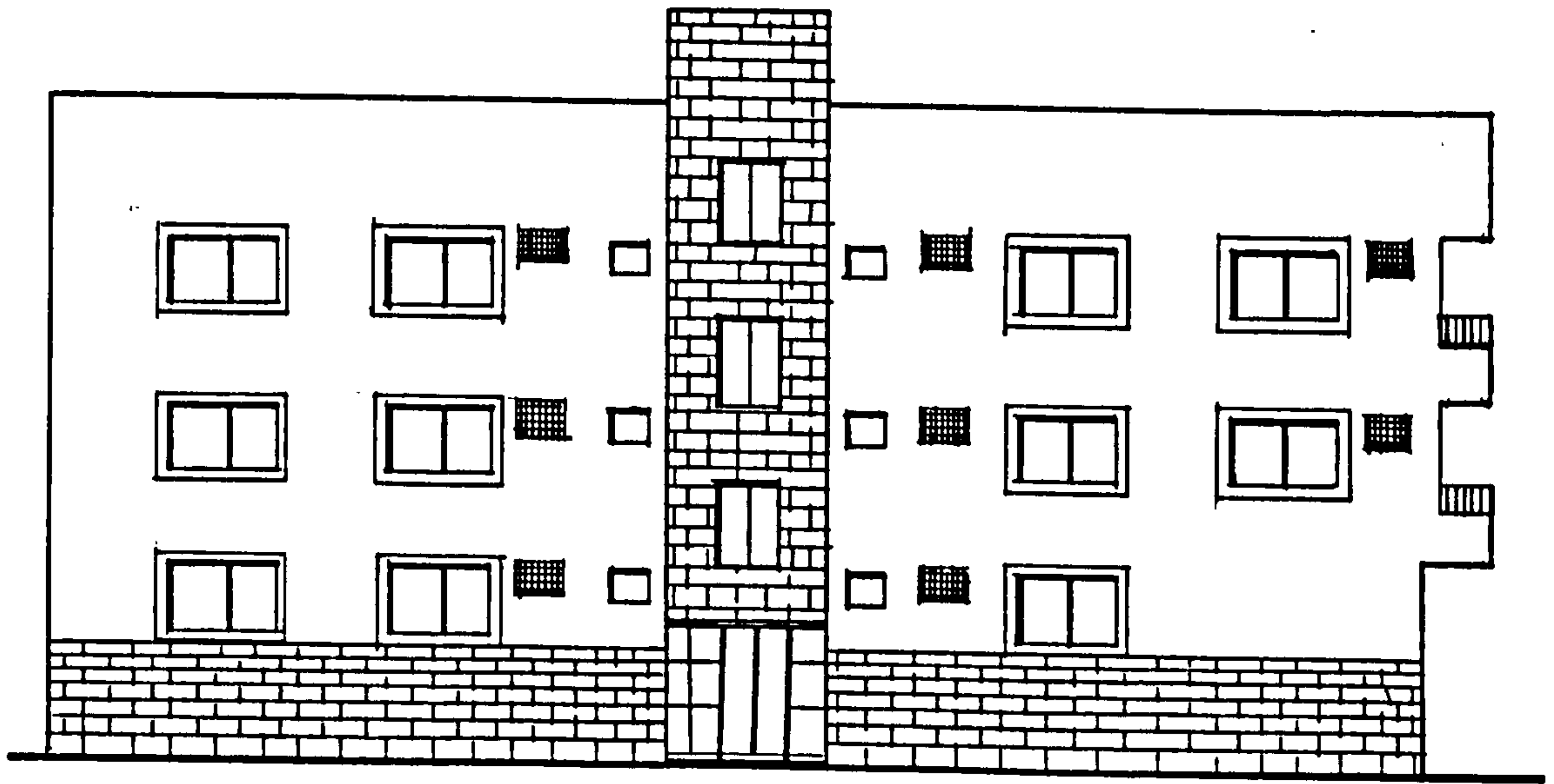


FIGURE 7.17 : South elevation of apartment building No.1

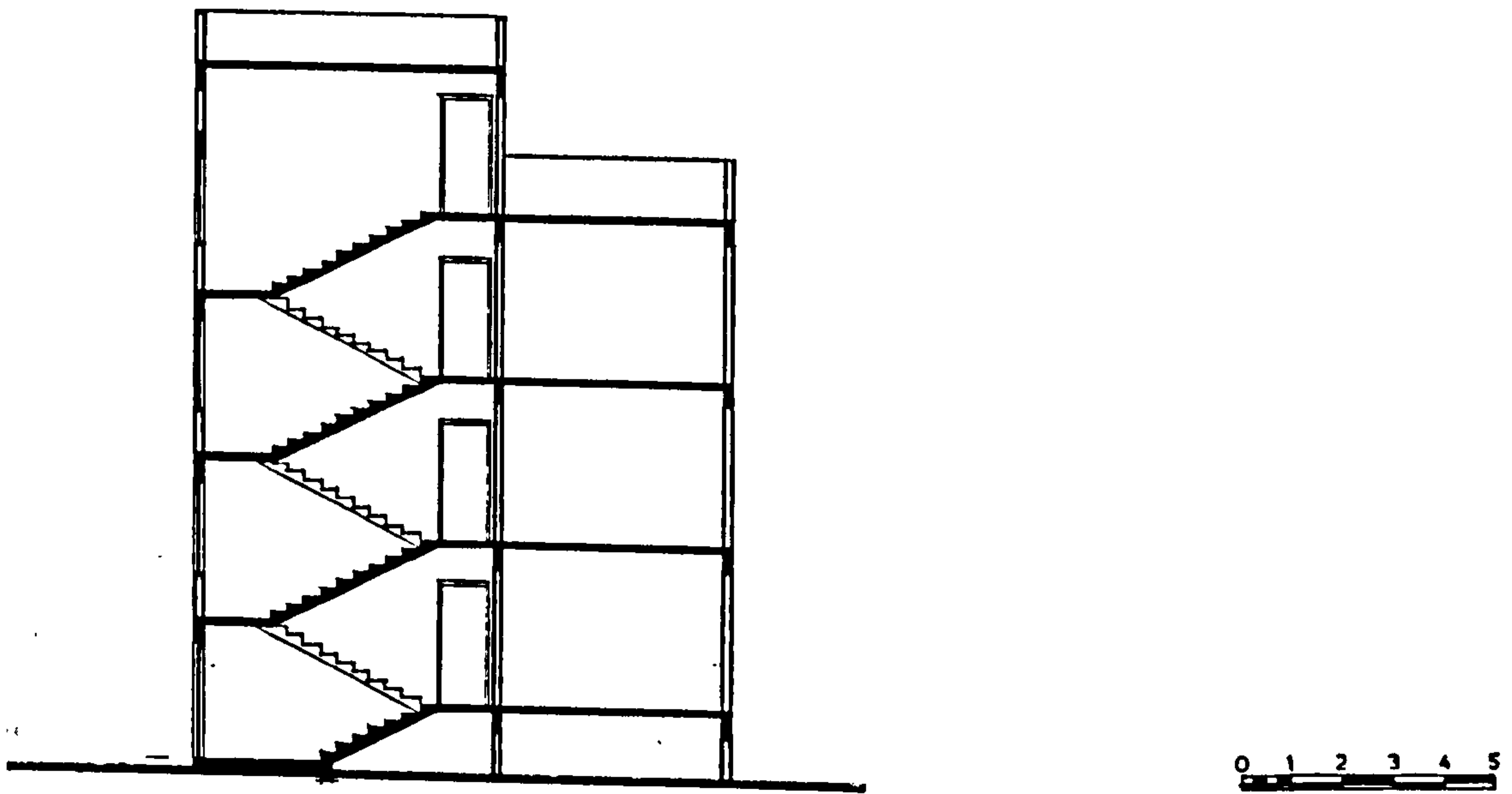


FIGURE 7.17a: Section of apartment building No.1

Building No.2 : Commercial and Residential Building (Photograph 7.13)

The building is located in 'Al Rawdah' district in 'Hudefah Redah' street. The building is recently built (1985/86). It is four storeys high. The ground floor consists of a commercial area mainly of shops, occupying the front part of the building which faces the main street, and three flats (Figure 7.18). The upper floors are mainly residential flats. There are four flats on each floor. Each flat has two sleeping rooms, a reception room, a dining room, a hall, two toilets and a kitchen (Figure 7.19). From the layout of the flat one can predict the difficulties in the utilisation of space as guests and visitors must pass family area (II) to reach reception room (I). Also, one can see the difficulties created by the increase of human traffic in the circulation areas, especially in the flats above the shop area. It seems that the priority in the architectural design was given to the shops.

In both buildings the service rooms (kitchens and toilets) as well as halls and the main living space for the family, depend for their light and ventilation on vertical open shafts known as 'manwar'. These spaces, 'manawar' (plural), are usually inaccessible and accordingly it is difficult to clean their floors. Consequently such open spaces are becoming a source of pollution.

The interior living environment of the flats is a combination of tradition and the western way of life, as can be deduced from the type of furniture used (Photographs 7.14-7.15). Also the standard of the kitchens and toilets have been improved if compared with those of

traditional buildings; piped water, ceramic tiles for walls and floor and modern equipment have been installed (Photograph 7.16).

Privacy inside the flats is achieved only if the doors are closed, that is, once the entrance door is opened the living area, where the family spend most of their time, is clearly viewed (Photograph 7.17).

Windows are just openings in the solid wall; they are made of aluminium and glass. There is no sign of any simple consideration of the family's privacy from neighbours' windows. From building No.1 it is possible to see the neighbour opposite and vice versa, but the situation is slightly better in building No.2 in that, in some positions openings are placed deep in balconies and shaded glass is used which reduces, to some extent, the invasion of privacy.

The balconies are the spaces of the flat which can be least used, especially by the women. This is because neither the area nor the design of the balconies has been well considered. They are narrow so that they are difficult to use as a sitting area, and there is no consideration for the inhabitants' privacy from the viewing of adjacent neighbours (Figure 7.20). It is left entirely to the inhabitants to ensure their privacy.

The buildings are built with a reinforced concrete frame structure. Cement blocks are generally used for internal and external infill walls (Figure 7.21). The floors and roofs are built with reinforced concrete slabs (Figure 7.22).



PHOTO 7.13 : View of building No.2

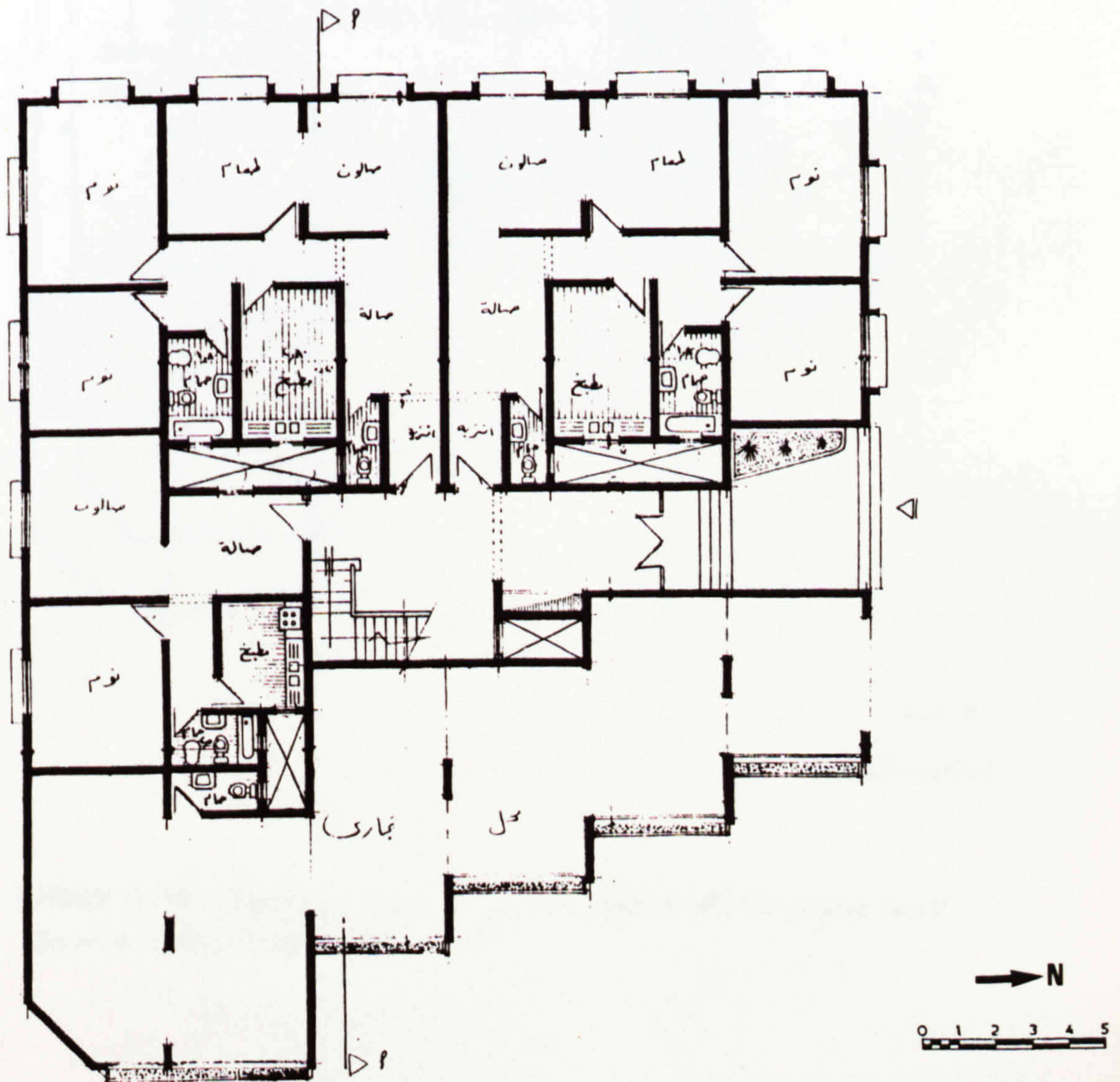


FIGURE 7.18 : Ground floor plan of apartment building No.2
Source : Building owner



PHOTO 7.13 : View of building No.2

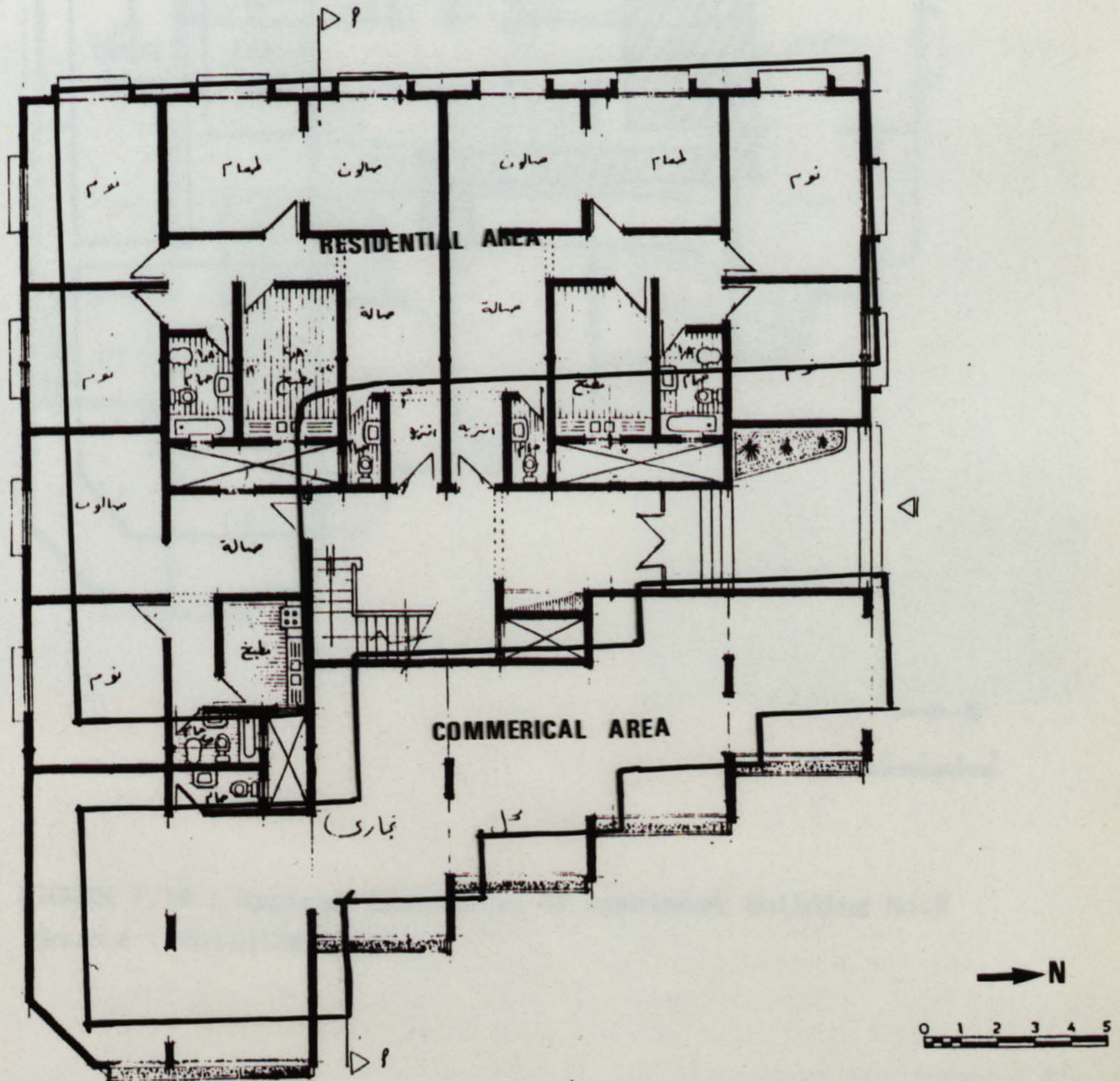
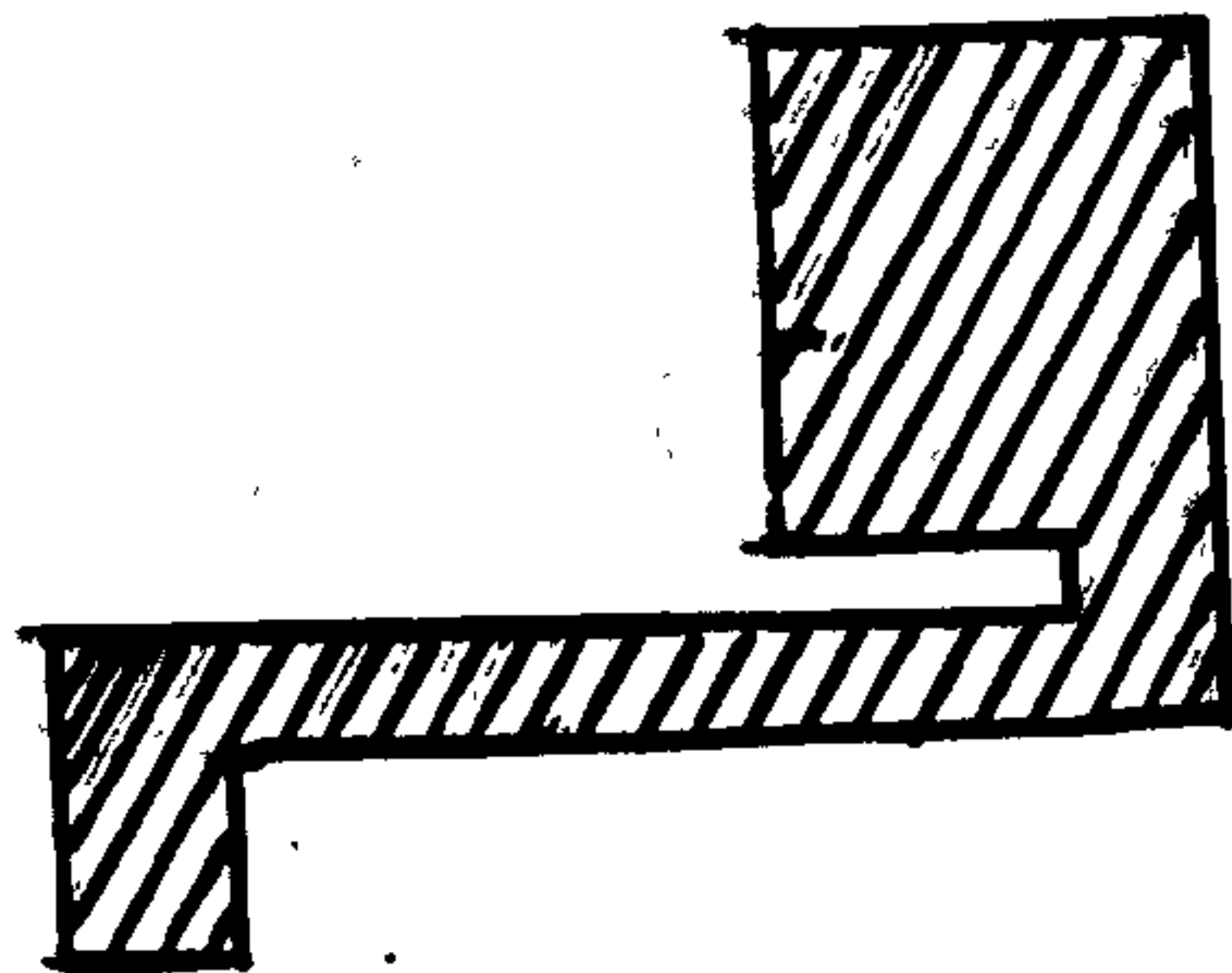
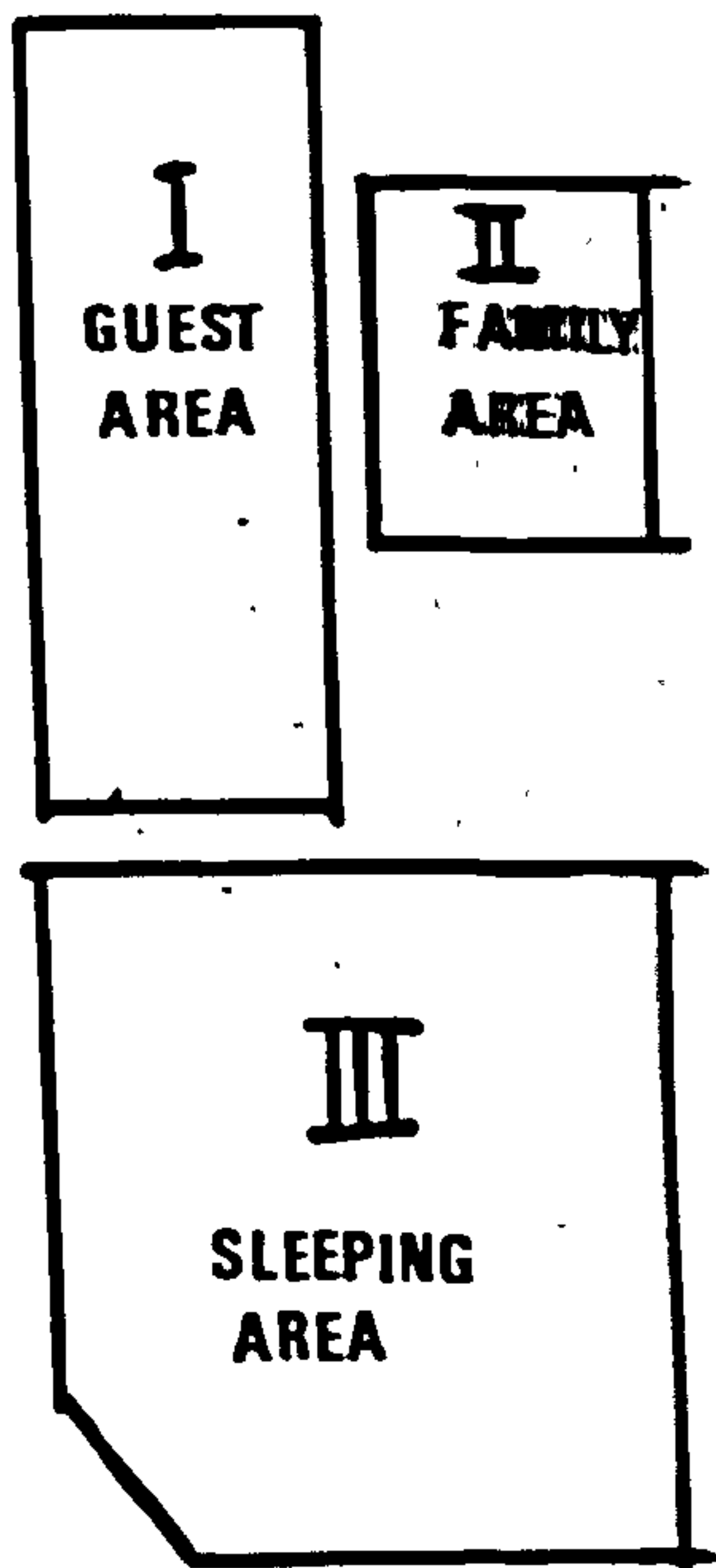


FIGURE 7.18 : Ground floor plan of apartment building No.2
Source : Building owner



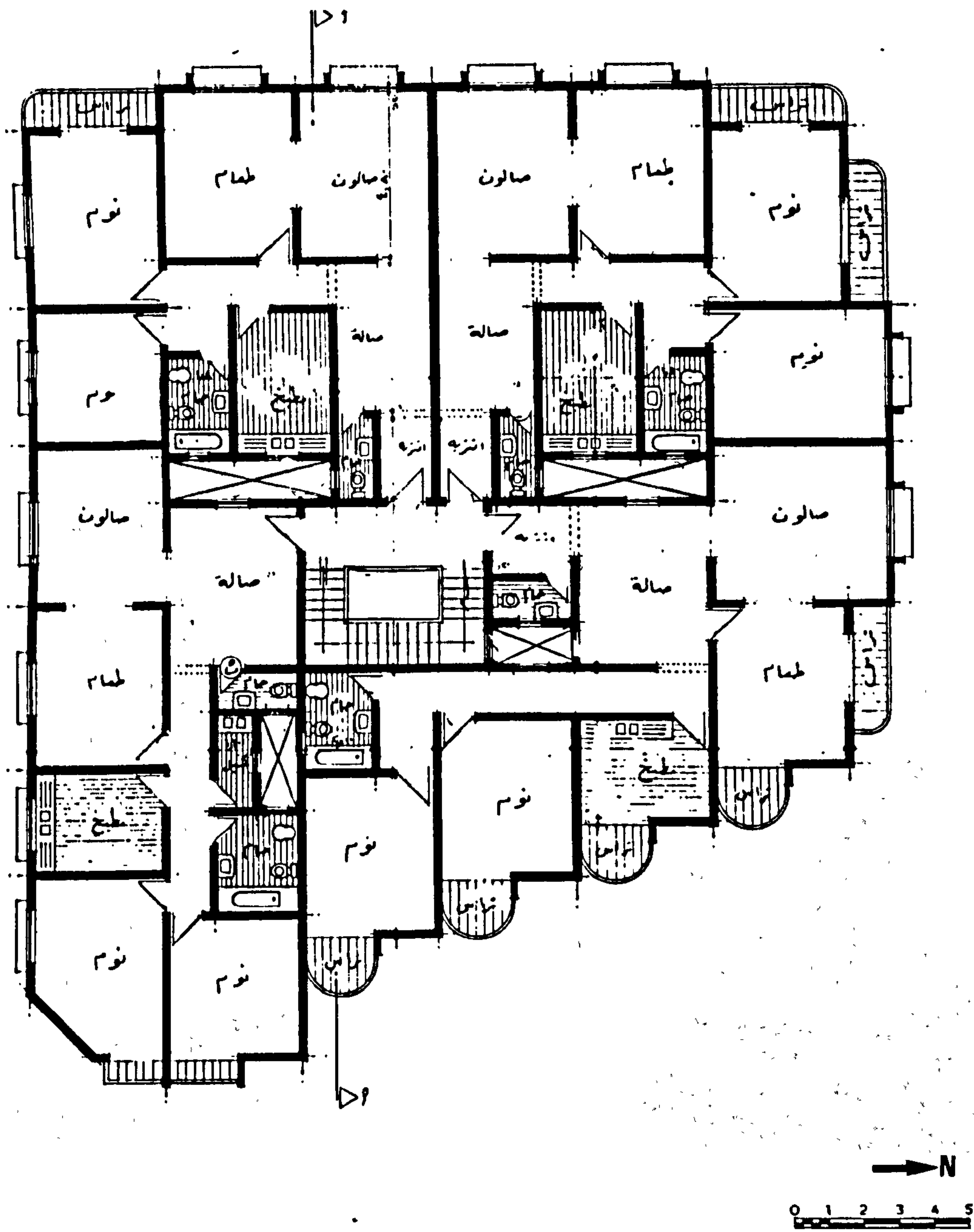


FIGURE 7.19 : Typical floor plan of apartment building No.2
 Source : Building owner



PHOTO 7.14

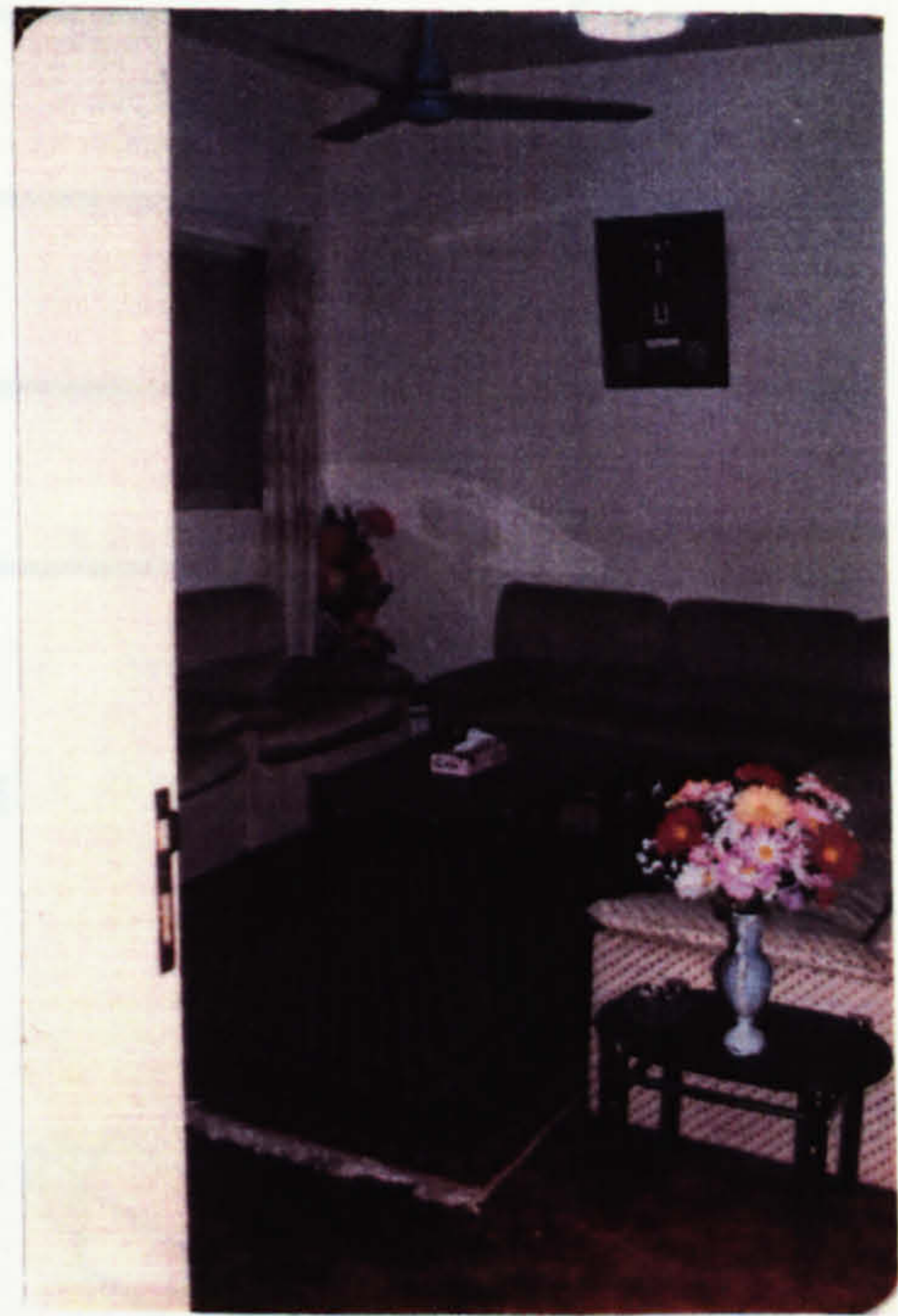


PHOTO 7.15



PHOTO 7.16



PHOTO 7.17

PHOTO 7.14 : Interior view of reception room
furnished with traditional furniture

PHOTO 7.15 : Interior view of reception room
furnished with western type furniture

PHOTO 7.16 : Interior view of the kitchen of building No.1

PHOTO 7.17 : Interior view of building No.1

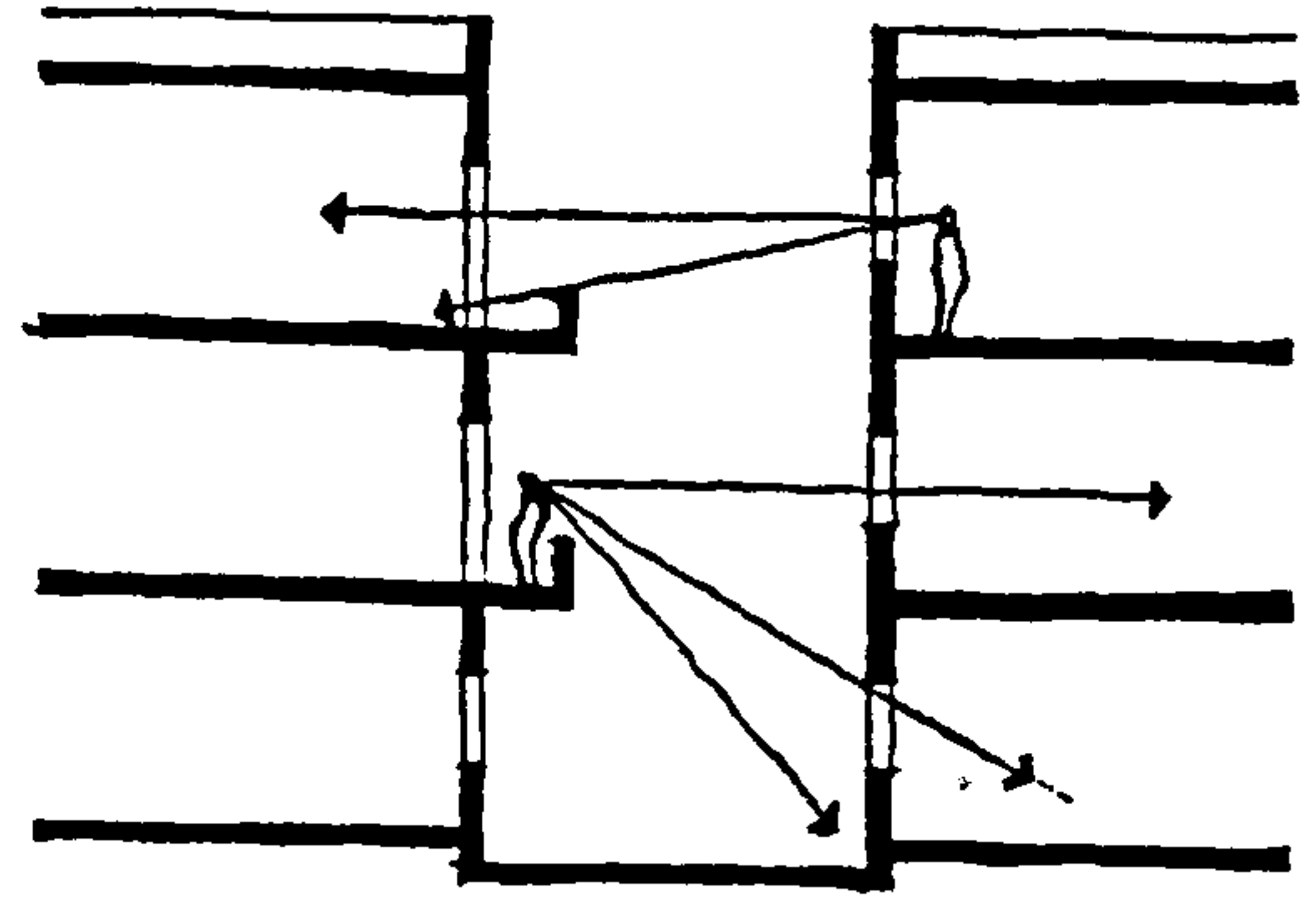


FIGURE 7.20 : Privacy problem in building No.1

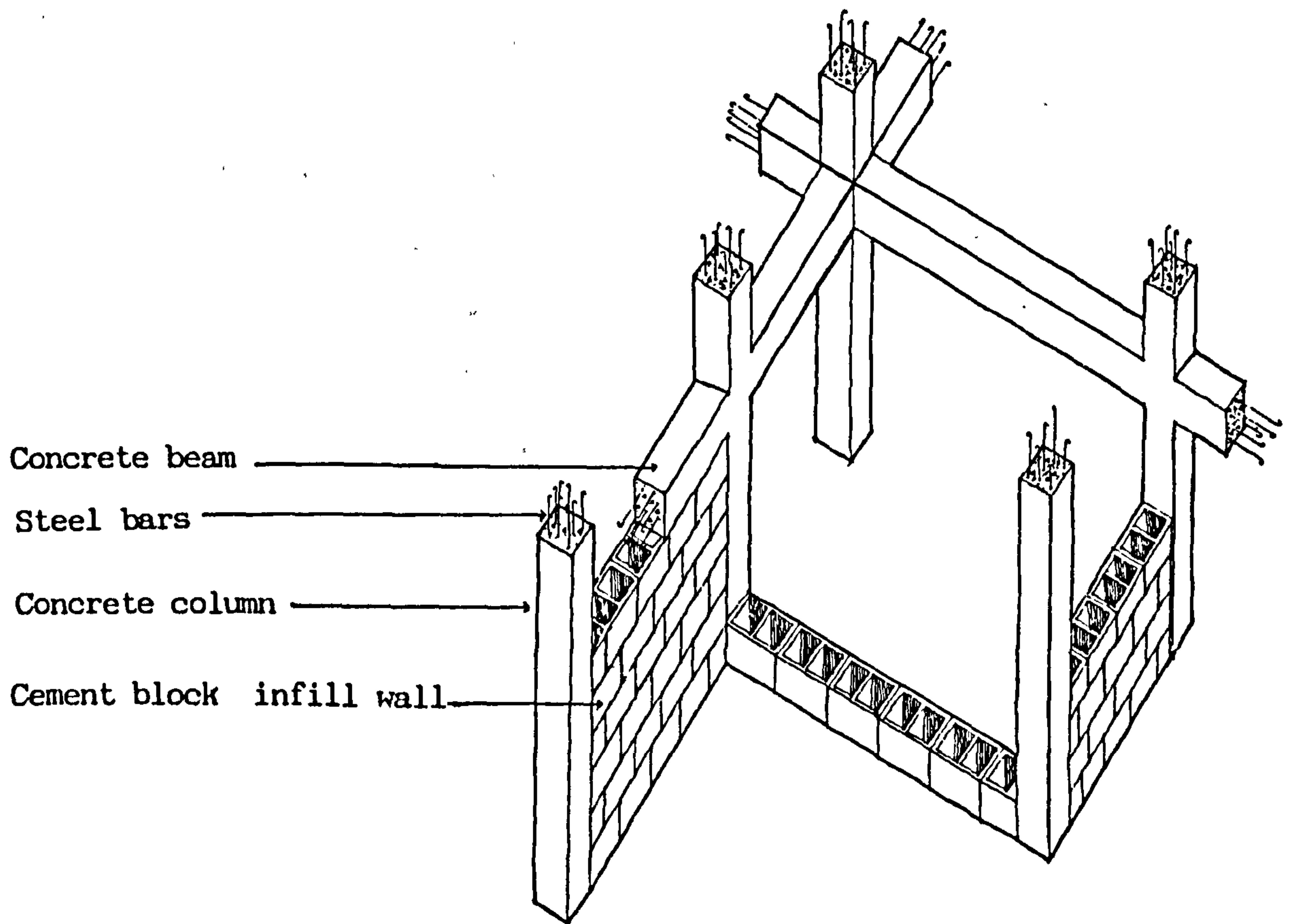


FIGURE 7.21 : Construction of the apartment building

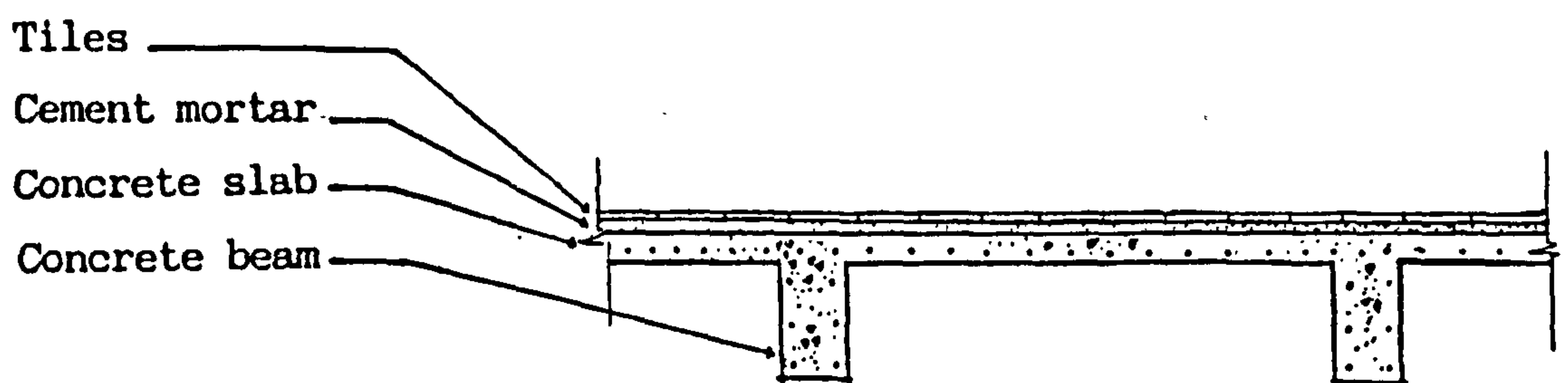


FIGURE 7.22 : Floor/roof construction

7.4 Case Study Four : The Villa Type

The villa is the house type most desired by almost all Saudi people. Space, privacy and the availability of private outdoor spaces are the most important reasons for preferring the villa type of dwelling.

A modern villa is selected (Photograph 7.18). The villa is located in 'Al Rawdah' district. It is newly built in 1985/86. The villa is two storeys high. The ground floor is the main section for the males and their guests and visitors. It consists of an entrance hall, two reception rooms, one furnished with traditional furniture and called 'majlis', and the other one furnished with western type furniture and called the salon. The ground floor also has a dining room, two bedrooms with bathrooms for guests, a kitchen and a staircase (Figure 7.23). The first floor is mainly for the family, and consists of five bedrooms, four bathrooms and a living room. One room with a bathroom is provided in the roof for the servant (Figure 7.24).

In this villa one can see clearly the spacious area of the interior spaces, an essential requirement of a Saudi family, as well as the adoption of the bathroom as a part of the sleeping area.

Although there is a consideration of the social and cultural norms in the design of the interior spaces, because there is a clear separation between the guests' and family section, the villa has only one main entrance and a secondary one to the kitchen, which seems inconvenient

for use except by the members of the family. Also the access to the kitchen and staircase is through the main entrance hall, which restricts the movement of the family if there are any guests. The family section is reasonably organised, where the required degree of privacy for each member of the family is achieved.

By reviewing the original drawings which were submitted to the local municipality, it has been noticed that there have been some alterations made to the facades of the villa (see Figure 7.25). In the original facade drawing the windows are, to some extent, visually protected from the vision of neighbours. Each window, especially those in the family section on the first floor, is placed deep in the wall and provided with a vertical concrete frame (an arch shape). However in the existing villa, openings are covered with wooden windows and once they are opened the privacy is lost.

Although the villa is provided with private outdoor spaces the use of such spaces is very limited because they are in full view of the neighbouring houses. However, the residents have overcome this problem by erecting high screens of corrugated plastic sheeting on top of the courtyard walls (Figure 7.26). The villa is constructed in a similar way to the apartment buildings.



PHOTO 7.18 : View of the villa

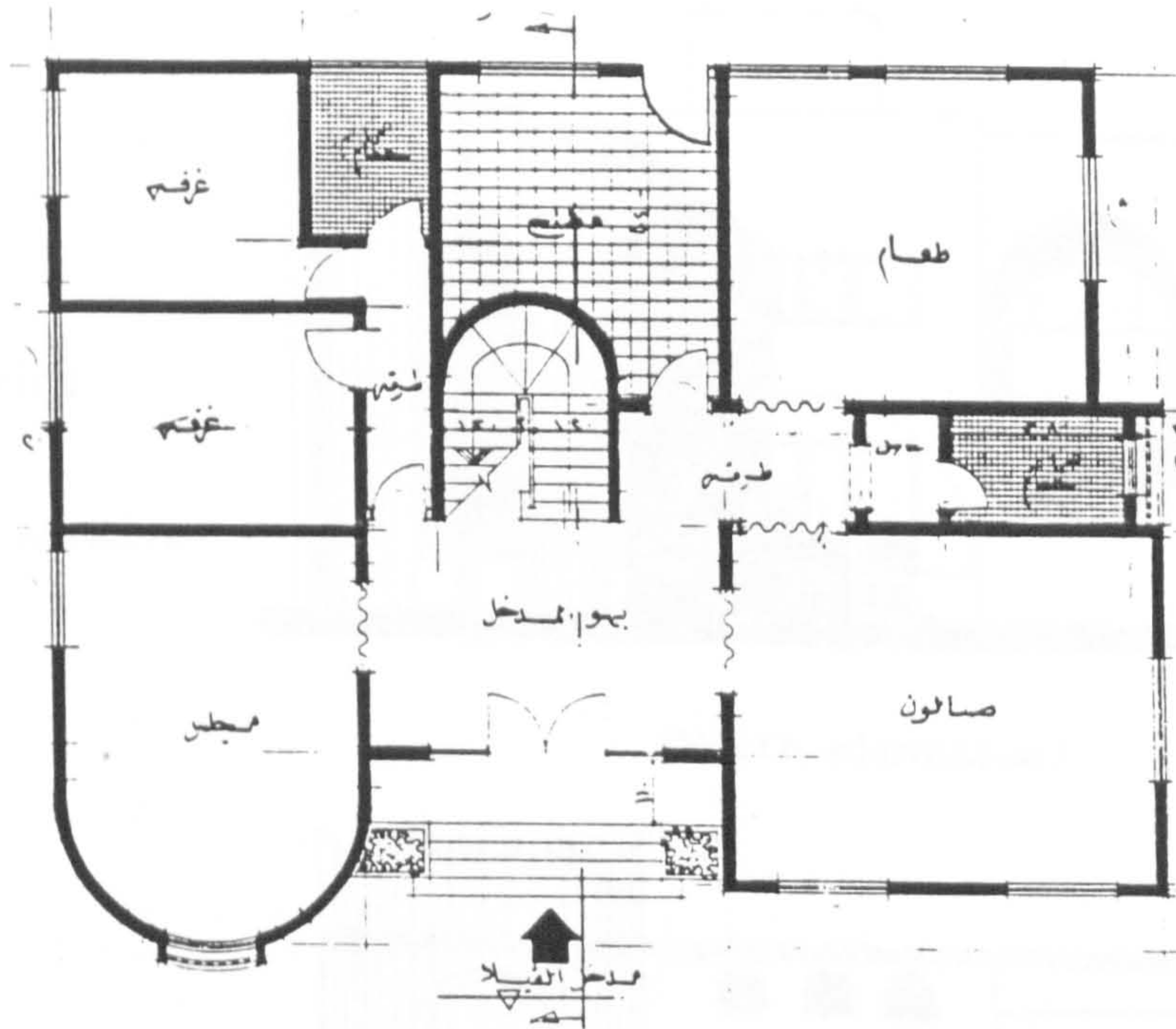


FIGURE 7.23 : Ground floor plan of the villa

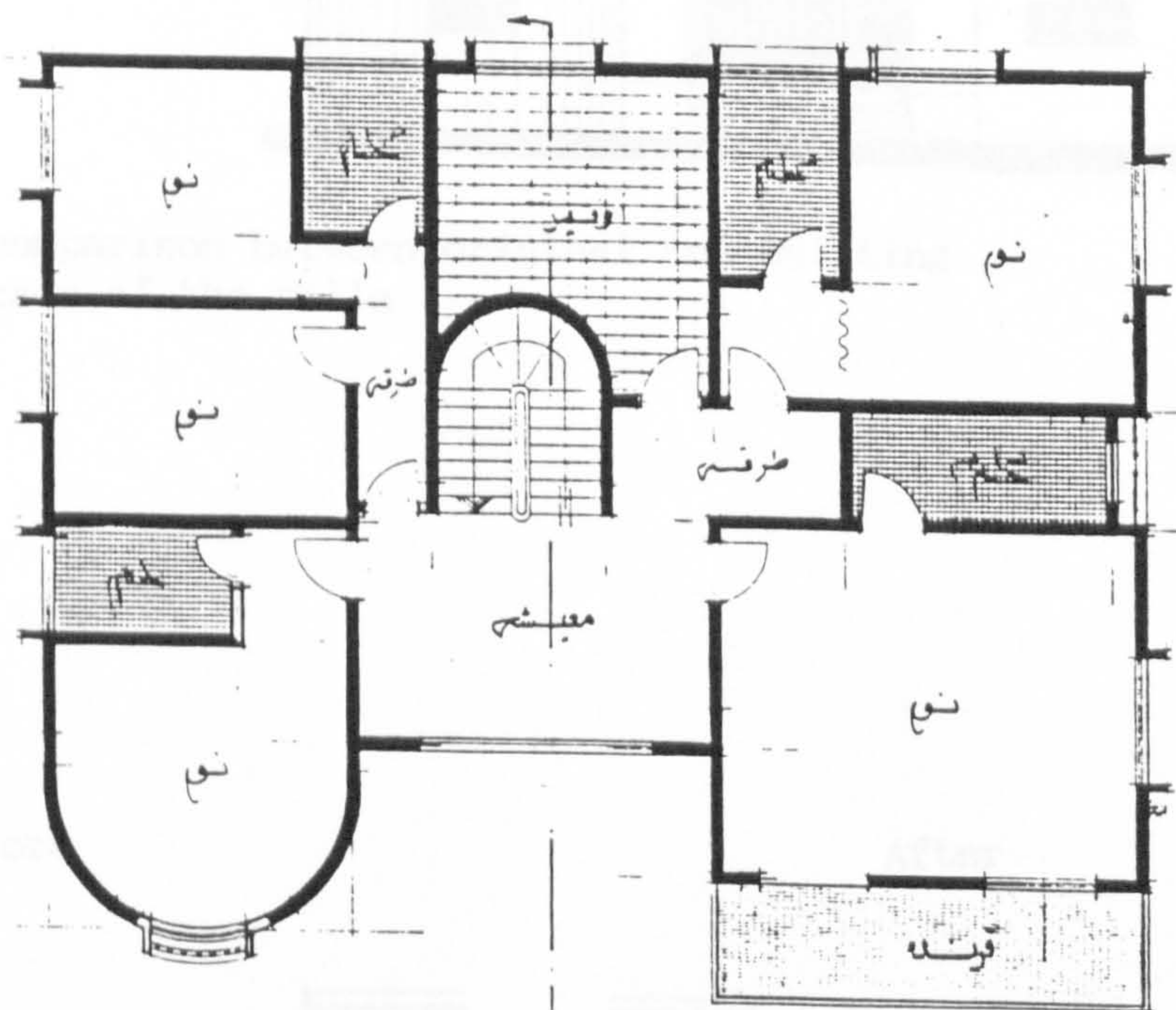
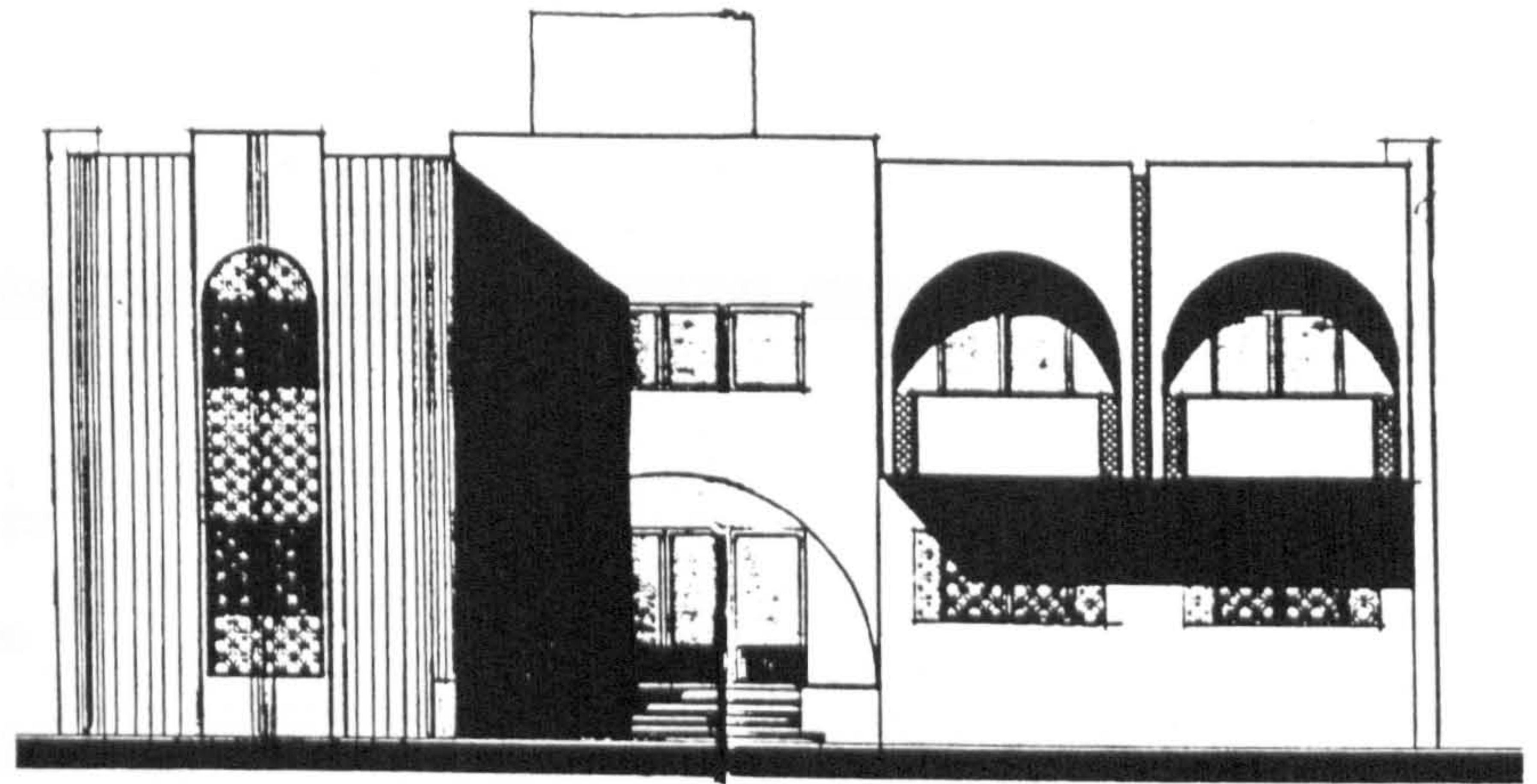


FIGURE 7.24 : First floor plan of the villa



Source : Municipality archive

Original drawing
Source :
Municipality archive



(North elevation)

Existing

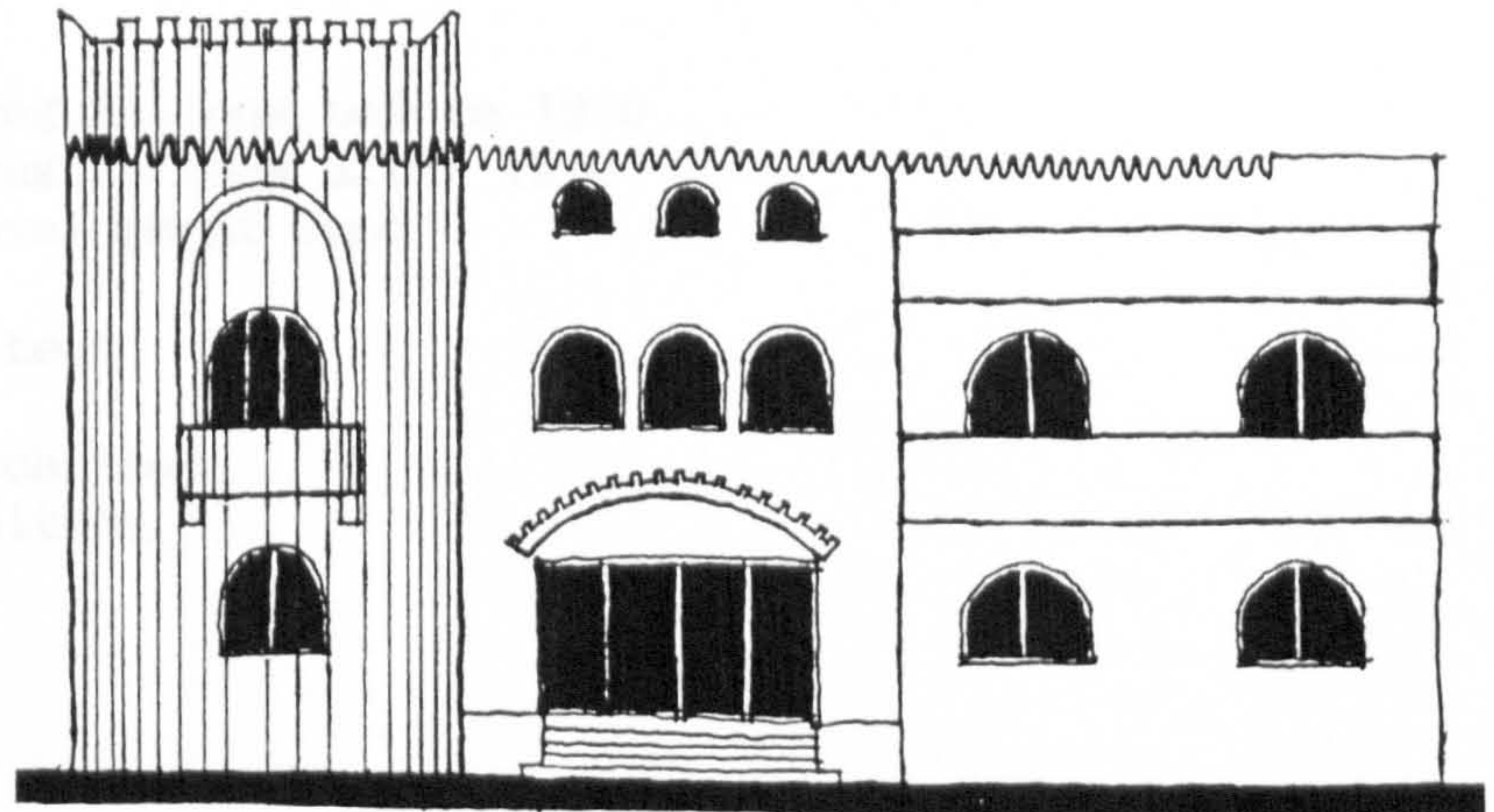
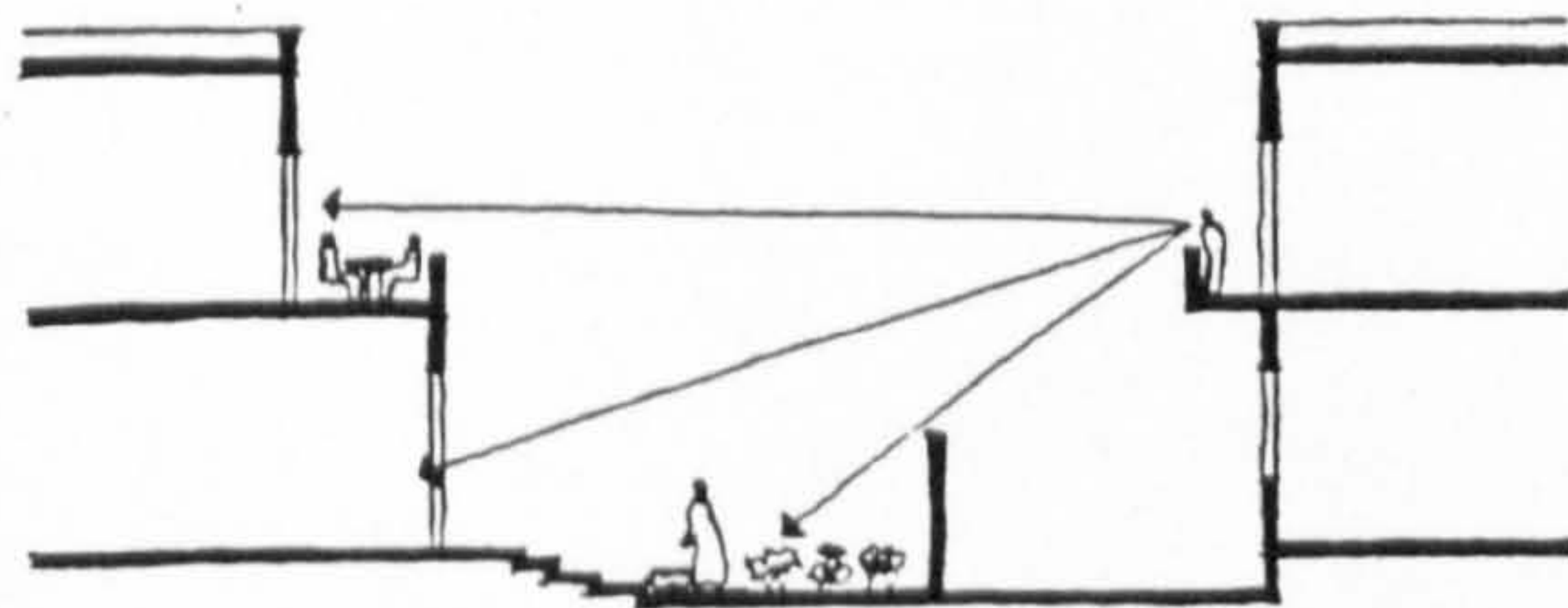


FIGURE 7.25 : A comparison between original and existing facade of the villa

Before



After



FIGURE 7.26 : Privacy problem in the villa

CHAPTER EIGHT : THE MAIN FACTORS INFLUENCING HOUSING CHANGE

Introduction

8.1 Socio-economic Factors

8.2 Technological Factors

8.2.1 Transport technology

8.2.2 Building technology

8.2.3 Electrical and mechanical services

8.3 Institutional Factors

8.3.1 The planning regulations before 1970

8.3.2 The planning regulations after 1970

8.3.3 Real Estate Development Fund

8.4 The Role of the Architect

8.4.1 The foreign architect

8.4.2 The local architect

8.5 Summary

References

CHAPTER 8

CHAPTER EIGHT

THE MAIN FACTORS INFLUENCING HOUSING CHANGE

Introduction

The process of change in the various aspects of the physical form of the city, as well as of housing, that has been discussed in the preceding chapters, can be explained as the collective impact of changing socio-economic, technological and institutional factors. This chapter discusses the impact of each one of these factors on the built environment of the city. It also discusses the role of the architects in changing the residential environment of the city.

8.1 Socio-Economic Factors

Before the discovery of oil in commercial quantities in Saudi Arabia, each region depended on its own resources for its economy. For instance the economy of the Middle Region depended upon an agricultural and pastoral socio-economy, while most of the Western Region depended upon fishing and trade in addition to custom duties and the Hajj revenue.

Jeddah has historically served as the commercial centre for the Western Region of the country as well as being the port of entry for pilgrims visiting the Holy Places, Makkah and Madinah, and the activities these generated have been the backbone of the city's economy. Nevertheless

the economic condition of the city is directly connected to the country's economic situation.

Oil was, and still is, playing a significant role in the country's economy. The increase in oil production of Saudi Arabia, as mentioned in Chapter Two, provided the government with a huge amount of wealth which accelerated its economy.

The growth of the economic situation enabled the government to achieve some of its major goals, for example, raising the living standards of the people. Until recently the government has been pursuing ambitious plans for increasing its budgeted expenditure in all areas, thus substantial construction has been commissioned for housing, schools, hospitals, etc., as well as large scale engineering projects such as roads, airports, docks and desalination plants⁽¹⁾. The impact of the oil-related boom is clearly seen in every part of Saudi Arabia. Ibrahim Hazem writes,

"with the increase of the Kingdom's resources, efforts have been oriented towards the development of urban and rural areas and their provision with the necessary public services and utilities, along with all other cultural facilities. Cities and towns have extended and grown in a dramatic manner. This can be obviously seen in various cities of the Kingdom such as Riyadh, Jeddah, Dammam, Khobar, Mecca and Medina"⁽²⁾.

Jeddah city from the beginning received a lot of attention, like other major cities in the Kingdom. Many urban development projects have taken place in the city, generating more jobs and business. The level of income of the inhabitants increased steadily until the early 1970s when the price of oil increased dramatically. According to the socio-economic survey carried out in 1978 by Sert Jackson International Saudi

Consult, the level of income increased sharply in the 1970's⁽³⁾. Table 8.1 shows the distribution of households by monthly income (1971-1978).

TABLE 8.1 DISTRIBUTION OF HOUSEHOLDS BY MONTHLY INCOME (1971-1978)

Income group Saudi Riyal (SR)	1971	1978
Less than 500	56.0	--
500-1000	26.3	4.9
1000-2000	12.6	19.6
2000-5000	4.0	45.8
5000 and over	1.1	29.7
Total	100	100

Source : Sert Jackson International Saudi Consult Socio-Economic Survey, No.5, Vol.3, 1980.

The table clearly illustrates the remarkable increase in the percentage of households who earned 2,000 to 5,000 SR monthly, 40.8% within 8 years with 28.6% of those earning 5,000 SR or more.

The remarkable increase in oil revenues had a great impact upon the urban expansion of the city. As indicated earlier, a huge number of people migrated to the city thus creating a great demand upon the housing and services. Consequently a variety of housing types, in addition to the main urban projects, have emerged, and these have created distinctive differences between the old and the new. Not only that but also the increase of the country's wealth has given new people an opportunity to enter commerce, which in one way or another has affected the city. The newly established merchants had a new attitude to commerce. They utilised the banking systems and business transaction

methods of western commercial establishments. Merchants very rarely conducted business in their shops, within the market place or in the reception room of their house, an essential practice of the older traditional merchants. Instead they used specialised office space and buildings. As a result new commercial and office buildings emerged within the city which affected its image and skyline. Instead of the Mosque Minarets which dominated the skyline of the old city, tall commercial and office buildings can now be seen.

Within this context, it must be mentioned that the old part of Jeddah, the walled city, witnessed to some extent a similar situation with regard to the changing economic condition. The city played a significant role in the trade between east and west, during the Ottoman period, especially after the opening of the Suez canal in 1869⁽⁴⁾; huge numbers of pilgrims passed through it and some of them settled in the city. But it would seem that the demand for housing was met through an indigenous way of building, whilst the planning and architectural features have been preserved. Moreover the city did not exceed its boundary walls.

However, the factors for change which faced the city from the beginning of the second half of the twentieth century until the present time, are much greater, as will be discussed later in this chapter.

The new economic base and the urban development plans have opened the country's doors, certainly with respect to the city of Jeddah, to the full flood of Western development. One of the most obvious consequences of the phenomenon was the influx of a huge number of immigrants, from the developed and the developing countries, who arrived in the city and

affected the social and physical aspect of the city. Each group of immigrants was involved in different degrees of social change and introduced different types of houses reflecting their level of cultural development.

Both the contact of Jeddah society with other societies and cultures, through work, travel and education, as well as the aspiration of the people for a more modern way of life and for modern houses, have influenced the old style of life and have led to the emergence of new building types which have less respect for the residents' social requirements. Not only that but also the social changes upon members of the family are substantial. The extended family, which was the natural composition of Jeddah society, nowadays is very rarely preserved. The loosening of social ties, and subsequently the dispersion of the extended family into nuclear units, has led to a great demand for separate residential units. It could be said in recent years that Jeddah has increasingly become a city of individualists, that the individuality of the families has become a major phenomenon of the present society, and that neighbours rarely know each other.

The social changes have affected the attitude of people towards their accommodation. People have moved from one place to another within the city searching for suitable accommodation. It has been found that 65.5% of the householders have moved from one neighbourhood to another within the city. Only 34.5% of the householders still live in their original house, while the others have changed their houses from one to five times (see Table 8.2).

TABLE 8.2 : NUMBER OF TIMES OF CHANGE OF HOUSE

No. of times of change of house	Percentage
One time	15.2
Two times	22.4
Three times	18.7
Four times	8.5
Five times	5.7
Total	65.5

Source : Field Survey.

The survey also revealed that the two major factors which influenced people to change their house were the floor area and the design of the residential unit. Only 37.2% of the households were satisfied with the design of the residential unit, and almost half of the households (52.9%) were satisfied with the floor area of the residential unit.

People considered many reasons when selecting a new neighbourhood. Table 8.3 shows the main reasons that the household considered when choosing a new neighbourhood.

TABLE 8.3 : REASONS FOR SELECTING THE NEIGHBOURHOOD

Reasons	Percentage
Near relatives and friends	76.0
Near work	62.0
Planned area	39.7
Services	47.1
New schools	80.2
Quiet area	76.2
Other	8.0

Source : Field Survey.

Table 8.3 illustrates that the majority of respondents (80.2%) mentioned the availability of the school in the neighbourhood. The other important reasons were the quietness of the area and the nearness of relatives and friends, and being in close proximity to their place of work. Access to the services was mentioned by nearly half of the respondents (47.1%). 39.7% of the respondents were attracted by the way that the neighbourhood is planned. It is interesting to note here that, although present day society is no longer characterised by the extended family, people tend to live near their relatives and friends.

It has been found that the new housing types, especially the apartment buildings, with their cleanliness and built in services, have attracted many people. At first glance the dwellers of the flat appear to be modern. However it seems that the traditional life style was hard to preserve within the arrangement of the flats. Consequently changes within the flats were unavoidable. The survey revealed that 10% of the house owners (41.6% of the total respondents) have made some changes in their residential units, which could be summarised as the following :

1. The demolition of some partition walls inside the flat to increase the area of some rooms.
2. Closing the balconies to maintain their privacy.
3. Providing a curtain along some internal doors to maintain privacy whilst the doors are open.

8.2 Technological Factors

The development of technology in various aspects led to the expansion of the city. For instance, many public health projects were constructed within the city, such as sewage disposal, piped water supplies, electricity and other infrastructure which enable people to live in better conditions. At the architectural level, high technology provides most of the requirements for the construction of various types of building within a short time.

The aspects of modern technology that have affected most crucially the urban fabric of the city are the automobile and building technology.

8.2.1 Transport technology

The introduction of the mechanical means of transportation affected the whole built environment, both physically and socially. Abdulla Bokhari writes,

"the advent of the automobile revolutionised the scale and the scope of the city and altered much of its social compactness as well"⁽⁵⁾.

Physically, the mechanical means of transportation does require an adequate road system, certainly with regard to the width and design of the streets, traffic control signals, car parks, etc. Accordingly, all the new streets are straight and wide; they are car-oriented rather than pedestrian-oriented. Farsi and Amer writes,

"automobiles possess different physical requirements vis-a-vis previous modes of transportation, giving a changed character to urban vistas and the morphology of the city-wide straight streets instead of narrow multi-directional passageways"⁽⁶⁾.

Since the early 1970s the car has become the dominant factor in the planning and urbanisation of Jeddah, as in all other Arab cities. Saba G. Shiber wrote, in describing the traditional setting and anatomy of the Arab town,

"Instead of a city for man, there is the city for the car. Instead of harmony, rhyme or reason, there are collections and accumulations of buildings, cars and people"⁽⁷⁾.

The situation in the new areas of Jeddah is similar; there are very wide straight streets along which people are very rarely found walking.

Although mechanised means of transportation improve the mobility of the population and facilitate the transportation of goods, nevertheless, cars generate many problems. These include congestion, a shortage of car parking spaces, pollution, and the conflicting situation which arises between the vehicular and pedestrian circulation. It is interesting to note here that with the increase in the number of vehicles within the city, (see Chapter Six), there is less concern about car parking spaces from the municipality's, as well as from the developer's point of view. For instance, public car parking spaces are found mostly in the low density areas of the city, whilst the more populated areas are lacking car parking spaces. The developers, or house owners, do not provide sufficient car parking facilities within their own properties. The result is that parked cars occupy the main elevation of the streets. The survey revealed that the majority of

people parked their cars in the streets. Table 8.4 illustrates the spaces used for car parking.

TABLE 8.4 : CAR PARKING SPACES

Spaces	Percentage
Private garage	10.0
On the street in front of the House	58.4
Adjacent street	26.8
Vacant land near the home	3.7
Public car parking in the neighbourhood	1.1
Total	100

Source : Field Survey.

Table 8.4 shows that 58.4% of the respondents parked their cars on the street in front of their house, the next priority being to park in the adjacent street (26.8%). Only 1.1% used the public car parking spaces.

Socially, most people use the automobile for their daily journeys within the city, so the chance of meeting and talking with other people is kept to the minimum, and the relationship with neighbours is weakened. N. Amer, writes,

"almost all bonds that tied dwellers of the lane in the past were weakened, and the result was noise and air pollution, as well as environmental changes, as the society of the lane is no longer the same class and friendly family"⁽⁸⁾.

Moreover, it seems that the car is one of the major factors which enhances the breaking of the extended families into nuclear families, as by the extensive use of cars family members are able to live far away from each other while still maintaining close contact.

8.2.2 Building technology

The impact of new building systems and materials began in the early 1950s, as a result of the first oil boom, and reached its peak in the 1970s and early 1980s.

In the field of building systems, steel and/or reinforced concrete skeleton structure infilled with bricks or blocks is the system utilised in construction. On the one hand this has enabled people to have wide span roofs and light external walls, and on the other hand it has provided almost unlimited freedom of arrangement at the designers' disposal.

In the field of building materials, almost all the modern building materials have found their way to Jeddah and have been utilised in building construction (Table 8.5). From Table 8.5 it is very clear that the new building materials are widely used, which has led to the disappearance of the traditional building materials, as mentioned in Chapters Five and Six.

TABLE 8.5 : THE UTILISATION OF BUILDING MATERIALS

Building Materials	Percentage
Coral reef stone	6.1
Bricks	82.6
Cement block	96.7
Wood	91.7
Cement	93.9
Steel	76.0
Glass	83.2
Aluminium	81.8
Marble	51.2
Paints	90.1
Other	1.7

Source : Field Survey.

Broadly speaking, cement blocks and prefabricated concrete panels have replaced the traditional coral reef stones. Transparent glass of different kinds, and aluminium frames have replaced the 'Mashrabiah'. Machines such as cement block machines, concrete mixers, etc. are widely used in the production of the building materials and in the construction process.

This has accelerated production, reduced the time of building construction, produced similar buildings and built environment, and accelerated the problems of change with the new scale of architecture. Not only that but also it has led to the loss of the identity of the traditional town and of traditional craft skills.

8.2.3 Electrical and mechanical services

The electrical appliances and mechanical and plumbing services, such as piped water, which are incorporated into all new housing, has resulted in a general improvement of the living environment in the residential units, and has generated a wide acceptance of the new types of housing, which were discussed in the preceding chapters. The widespread erection of high-rise apartment buildings in the city has been made possible by the use of mechanical systems, such as elevators, especially in the old area; these high-rise buildings have replaced the traditional buildings and changed the skyline of the city.

As a consequence of the extensive and inappropriate use of modern building materials, without any respect to the local climatic conditions or the performance of these materials, mechanical cooling devices such as air conditioners, have been introduced to moderate the internal environment of all the new housing in the city. For instance, reinforced concrete, characterised by a high thermal conductivity, is used as the basic material for roofs everywhere in Saudi Arabia, using the same thickness, and treatment without differentiating between hot, dry desert, hot-humid and cool climates.

Generally speaking, it seems that concrete buildings are unsuitable in a hot climate. Miles Danby observes :

"The widespread use of reinforced concrete wall panels or thin brick outside walls, means that the heat absorbed from solar radiation is stored and quickly passes to the interior which soon becomes overheated unless air conditioning in some form is used"⁽⁹⁾.

Unfortunately all the new houses adopt the new building systems which create environmental conditions dependent on abundant energy.

Consequently air conditioners are being used in almost every house in Jeddah. The survey revealed that the majority of houses (76.3%) have an air conditioner in every room of the house, 19.6% of the houses have an air conditioner in some rooms and only 4.1% of the houses do not have an air conditioner at all. It is important to indicate here that air conditioners are not used only in the house but almost everywhere in cars, markets, schools, working places, mosques, etc., so the adoption of these devices is very common amongst the inhabitants.

The mechanical air cooler - the air conditioner - has a significant impact on the living environment inside the house, as well as on the external features of the building.

It results in the residents of the newly built houses having no reason to prefer one space within the house rather than another during any particular time of the day, a ubiquitous feature of the living environment in traditional houses. The dynamic living atmosphere of the traditional houses has been abandoned in the modern houses. The wide openings of 'roshan' and 'mashrabiah' of the traditional building have been replaced by small glazed windows and air conditioners, because people are completely reliant upon the mechanical devices rather than natural ventilation. Not only that but also the appearance of the window type air conditioning units in the facades of the building creates an obtrusive effect upon the overall facades.

Although the technological innovations and appliances have raised the standard of living and of housing in general the traditional society and environment have suffered as a result. As mentioned in Chapter Five, it is through the media that new ideas, new modes of behaviour, new opinions, new wants are introduced into society. More and more people begin to seek out new, modern lifestyles. Many traditional solutions based on social and climatic conditions have disappeared in the brightness and cleanliness of the modern technological society. The importance of traditional buildings has been lessened and people have wanted progress, which means for them accepting what is new merely because it is new and discarding the old because it is old.

8.3 Institutional Factors

8.3.1 The planning regulations before 1970

Since the unification of the country and the discovery of oil in large quantities there has been great concern with the planning of the urban areas in the country. The concentration of this concern was on the use of decrees, instructions and regulations to standardise urban conditions in different cities. It is worth mentioning that all national guidelines and regulations concerning urban structure are uniform throughout the country. This comes as a result of the nature of the law which is derived from the Royal Decree No.8723, dated 20 Rajab 1357 A.H./1937 A.D.⁽¹⁰⁾ which governs the administrative organisation of a municipality as well as the duties and responsibilities of each department within it.

Article 3 of the Royal Decree, as quoted by Salah Al Hathloul states,

"The municipality of Makkah and (other) municipalities are (the bodies responsible) for the supervision of the towns' organisation, their beautification, and the work needed to result in their having an enhanced scenic setting. (The municipalities also) have the authority of general supervision for the public interest and for the betterment of utilities and services according to the limits stated in this statute"⁽¹¹⁾.

The statute also outlines the role of a municipality in respect of a preparation of development plans, development control, making a map of the town, provision of utilities, refuse collection and disposal, and other services⁽¹²⁾.

The part of the planning legislation which has been most influential in the transformation of the urban fabric of the city as well as the form of the house is the Roads and Building Statute. This statute was issued in 1941 by the municipality of Makkah and it was mainly concerned with planning procedure, building codes and zoning and right of way. As an attempt to organise the street pattern, Articles 7 and 23 of the statute, as quoted by Mohammed Al Shareef, indicated that,

"Roads should be aligned and designed according to town Plans and constructed in ordered sequence".

Additionally, Article 23 states,

"existing streets are to maintain their present condition unless public interest requires their widening according to the approved design in the town's map, on the condition that these newly opened streets do not exceed the following standards : main street, not less than 15m; secondary streets, not less than 8 to 12m; and lanes not less than 4 to 6m"⁽¹³⁾.

A limited case of setback requirements and minimum size of lot and its minimum dimension was explained in Articles 24 and 28 of the statute and stated by Mohammed Al Shareef⁽¹⁴⁾.

- "A - It is permissible for the Building Authority to fix a building line with a maximum of fifteen metres from the property line.
- B - When the building line is established in any residential district no building should be erected beyond this line, except for the fence.
- C - It is not permitted to erect dwellings on any new district unless it complies with the following conditions:
 - (1) It should not be less than 100 sq.m.
 - (2) The frontage width of any plot should not be less than 9m in any case.
 - (3) The conditions laid down in (A) above holds good for residential buildings".

In the 1960s, regulations concerning building on plots of land were issued in the form of a circular by the Deputy Ministry of the Interior for Municipalities and applied through the entire country. The regulations, as quoted by Salah Al Hathloul⁽¹⁵⁾, state that :

- (1) Prior to the issue of building permits, confirmation must be made of the existence of concrete posts.
- (2) Plots are to be sold according to their drawn and established boundaries, and should be strictly prohibited from further subdivision.
- (3) Heights should not exceed 8m, except with the approval of the concerned authority.

- (4) A built-up area generally should not exceed 60% of the land area, including attachments.
- (5) Front setbacks should be equal to one-fifth of the width of the road and should not exceed 6m.
- (6) Side and rear setbacks should not be less than 2m and projections should not be permitted within this area.
- (7) Building on plots of land specified for utilities and general services should only be permitted for the same purpose.
- (8) The owner should execute the whole approved Plan on the land by putting concrete posts for each plot of land prior to its disposal either by selling or building.

Generally speaking, most of the national guidelines and regulations for urban structure were based, to some extent, theoretically, on the traditional ones. For instance the nature of the road statute shows a hierarchical order in designating roads with a close relation to public interest and needs (see Articles 7 and 23 mentioned earlier). Also the minimum lot size is more or less equal to the average area of the traditional houses. On the other hand the application of the regulation showed the early signs of the physical change of the urban form of the city due to the following :

- (1) Most of the regulations were general and lacking a detailed regulation for a specific location in the city.
- (2) The natural guidelines and regulations were unable to facilitate the rapid urban growth of the major cities in the country such as Riyadh, Jeddah and Dammam.
- (3) The municipalities were lacking trained personnel to cope with the pressure of the urban growth.

The last point, in particular, was one of the leading factors that led the authorities to seek help from overseas experts in the preparation of comprehensive Planning and Master Plans for the larger cities in the country.

8.3.2 The planning regulations after 1970

The regulations of this period were incorporated within the Master Plan of the city. The development of Jeddah Master Plan passed through various stages (see Chapter Six).

The Master Plan of Jeddah, as mentioned earlier, institutionalised the grid as the most recommended and desired pattern to be followed in the Planning of Jeddah. It adopted the automobile as the predominant factor in the planning of the city, and the multi-storey apartment building and the villa with the setback, as the two basic models for residential areas. Also it identified a number of action areas where detailed studies are carried out.

The Master Plan area is divided into zones wherein these conditions shall apply⁽¹⁶⁾.

- (1) Within each zone the use, subdivision and zoning regulations shall apply uniformly.
- (2) Each parcel of land, building or structure shall be subject to the regulations and requirements specified for the zone in which it is located.

As far as the residential area is concerned, these are the general residential regulations in the Master Plan⁽¹⁷⁾ :

- (1) The minimum size of an individual plot in new residential developments shall be 600 sq.m., in the built-up areas and parts of old city shall be 100 sq.m. In the case of subdivision which has been approved prior to the approval and adoption of the Master Plan, the minimum plot size may be 400 sq.m.
- (2) The minimum frontage of a residential plot in the case of new developments shall be 20m and in the case of the built up action areas and part of the old city shall be 8m.
- (3) The minimum depth of a residential plot in the case of new development shall be 20m, and in the case of the built-up action areas and parts of the old city shall be 12m. The ratio between plot frontage : plot depth should not be less than 1:3.

- (4) The shape of plots : in general square shaped or rectangular plots should be provided; however plots that are not truly square or rectangular in shape may be permitted, provided the minimum requirements relating to plot area, depth and frontage are satisfied.
- (5) The plot coverage depends on the plot size, minimum width of frontage road and density zone, the maximum permissible ground coverage ranging from 40 to 60% of the plot.
- (6) The setback requirements are one-fifth of the width of the street for front setbacks, while the other setbacks should be at least 2m or 3m if a balcony is provided.
- (7) The frontage road; in the new development areas, the minimum width of frontage road shall be 15m, and in the case of built-up action areas and part of the old city shall be 9m to 12m. Table 8.6 shows the width of frontage roads as well as the maximum number of floors.

From studying these regulations one could safely say that, the Master Plan confirmed the existing regulations, in some cases continuing what existed before such as the setback requirements, while in other cases preserving the main concept but proposing different standards, such as the case of the minimum lot size.

TABLE 8.6 : NUMBER OF FLOORS BY WIDTH OF FRONTAGE ROAD

ZONE	DENSITY	USES	NO. OF FLOORS	WIDTH OF FRONTAGE ROAD
R1	Low density up to 75pph	Residential villa	2 floors	15m and above
R2	Low-medium density 75-125pph	Residential single or two family	2 floors	15m and above
R3	Medium density 125-175pph	Apartment building	2-5 floors	15m and above
R4 & R4A	Medium-high density 175-250pph	Apartment building	2-6 floors	9m and above
R5	High density over 250pph	Apartment building	2-8 floors	9m and above

Source : Jeddah Action Master Plans Technical Report No.7, Planning Byelaws, p.56, 1980.

As a matter of fact, the confirmation of the setback and the new standards for minimum lot size had a great impact on the development of the new areas of the city.

Mandating the setback in all residential areas resulted in the evolution of a box-like structure sitting in the middle of the walled lot. It promoted the tendency to open windows on all four sides which overlook surrounding buildings, thus violating privacy. Not only that but also new buildings no longer provide shade for each other, and the four sides of the building are exposed to the sun, which increases the dependency on mechanical cooling devices.

The mandating of the minimum lot size tends by one way or another to encourage the segregation of society according to income base. For instance, the adoption of 600 sq.m. as the minimum lot size in the new development areas means that the low income people can not afford to reside in the new areas. As a matter of fact, this concept is alien to the traditional one. Neighbourhoods, of Arab muslim cities, were never based on income, but on place of origin, ethnic background and religious belief, so that people in these neighbourhoods, some with vast incomes and therefore large and sometimes palatial houses and others with very limited income and therefore small modest houses, lived side by side with one another⁽¹⁸⁾. Unfortunately, this phenomenon has disappeared in new Jeddah, luxurious villas are found in one area and the apartment buildings in the other, instead of a homogeneous built environment as in the traditional section of the city.

In fact, the adoption of the large minimum lot size and the setback requirements in all new development areas ensure the departure of new Jeddah from its traditional environment.

It is important to indicate here that, as an attempt by the municipality of Jeddah to regulate the development of the city and the implementation of the Master Plan, branches of the main municipality (sub-municipalities), have been established. At present the metropolitan area has been divided into seventeen sub-municipalities. Each sub-municipality has powers to exercise building control in accordance with the guidelines laid down for the purpose. The technical

work of the sub-municipalities, besides the other municipal functions, includes examination of building applications the posting of applications requiring special planning permission relative to change in use and/or zoning regulations in favour of the sites and buildings for a variety of purposes⁽¹⁹⁾.

In practice, the creation of sub-municipalities has led to a kind of competition. Each sub-municipality tries to keep its area tidy, controlled and organised from the environmental, planning and architectural point of view, and more integrated than those of neighbouring sub-municipalities.

8.3.3 Real Estate Development Fund (REDF)

The government, in its efforts to curtail the housing shortage and the continuing increase in rents, made significant progress through several initiative housing programmes, one of the initiatives being the formation of the REDF in mid-1974 as a financial institution attached to the Ministry of Finance and National Economy⁽²⁰⁾. The major aim of the fund is to assist and support the development of private-sector housing by providing interest free loans to citizens so they can construct their own houses, as well as providing investment loans to individuals and corporate entities for commercial and residential exploitation⁽²¹⁾.

The loan is available to any Saudi person who holds a title to a plot of land on which he or she intends to build a private house, as sanctioned by the municipality. REDF provides up to 300,000 Saudi Riyals (£47,600)

repayable over twenty five years. Borrowers will continue to receive a 20% reduction on repayments that are paid on time⁽²²⁾.

Not surprisingly, a significant number of privately constructed houses have been built in the city. The number of dwelling units built in Jeddah with the assistance of the fund's loans amounted to 21,031 housing units in the period between 1975/76 and 1983/84⁽²³⁾.

Obviously REDF has encouraged many people to apply for a loan, to enable them to construct their own houses. The survey revealed that 24.4% of the house owners (41.6%) have taken a loan from the REDF.

When the respondents were asked about the regulations of the REDF the majority, 62.2%, of the respondents were generally satisfied with the regulations. However most, if not all of them, claimed that the amount of the loan was not enough to construct the house.

It is worth mentioning here that since planning permission and control of the design of the house is under the jurisdiction of the municipality, it seems that the REDF has a minor effect on the housing condition and standards. However in reality the REDF plays an important role in the building design, and choice of materials, as well as the standard of the houses. This emerges clearly from the application form of the REDF, called the design criteria, and the built area agreement (see Appendix IV). The application should be completed and signed by the landowner. It deals with different aspects of building construction and finishing, each aspect having three to four boxes of different

choices and credits. The amount of the loan is calculated on this form. So most, if not, all people will choose the higher credits to ensure they receive the maximum amount of loan regardless of the requirements of the structure, design, or even the social need of their decision.

The following are some points of the application as discussed by Majdi Hariri⁽²⁴⁾. The first point is concerned with the structure, where if the house is built with a reinforced concrete frame structure the landowner will have the highest credits, 300 credits in fact; if it is built with a load bearing wall structure, and if the roof is built with reinforced concrete the credit will be 150; if the roof is built of wood the credit will be 90.

The second point deals with the location of the building, as if it is set back from four sides the landowner will receive the highest credits, 140 credits; if the building is set back from three, two or one side he will get 120, 70 or 35 credits respectively.

The third point concerns the type of bathroom and toilet, the landowner being encouraged to have a complete Western bathroom and toilet in fact, consisting of four pieces, in order to obtain the highest credits, 130 credits; but if it consists of three, two or one piece he will receive 100, 60 or 25 credits respectively.

The last point concerns the type of windows. The landowner is encouraged to use aluminium windows rather than the wooden ones. If he uses the aluminium window in four, three, two or one facade(s) he will

receive 70, 65, 60, 55 credits respectively; if he uses wooden windows in four, three, two or one side(s) he will receive 55, 50, 45, 40 credits respectively.

It is thus reasonable to say that, the REDF contributed to the widening of the gap between the traditional and the new environment, by promoting the use of modern building techniques and materials which are inappropriate to the climatic conditions as mentioned earlier, and above all has accelerated the widespread use of the new housing types, namely the apartment buildings and villas.

8.4 The Role of the Architect

No one can deny or underestimate the role of the architect, since he is the one who is responsible for the design of the built environment. In Jeddah city the architects were, and still are, playing an important role in accelerating the change of the residential dwellings as well as the whole built environment. The traditional houses were the only house type to be found in the city up until the late 1940s. However, the intervention of the architects, mainly foreign architects, had a great impact on the traditional environment. They introduced new concepts, ideologies and forms to the traditional architecture.

The architect is the one principally responsible for introducing the new concepts of dwelling units such as flats in multi-storey buildings, and villas, and for creating new environments which differ in scale, area and proportion from the traditional one. As a matter of fact, these new

housing types attracted many people and became the predominant housing types in the city.

The following paragraph summarises the author's investigation into the involvement of the architect in housing design in the city and his role in satisfying the client's requirements.

41.6% of householders in Jeddah own the housing in which they live : (22.4% of those who live in apartments, 12.3% of those who live in 'Al Beut Al Shabiah' and 6.9% of those who live in villas). Of this percentage (41.6%), 29.6% had their building designed by an architect. The remaining 12% designed their building themselves or alternatively had them designed by builders or other professionals such as civil engineers, draftsmen, etc. (see Table 8.7).

TABLE 8.7 : BUILDING DESIGNER

<u>DESIGNER</u>	<u>PERCENTAGE</u>
Architect	29.6
Owner	6.3
Other	5.7
Total Owner	41.6

Source : Field Survey.

The survey also revealed that 92.9% of the apartment buildings were designed by an architect, and 59.4% of the owners have participated in the design. But it was also found that 62.8% of the apartment owners were not satisfied with the completed design of the residential unit.

This indicates that the architects very rarely developed a comprehensive view of their client's requirements. Consequently some owners were forced to modify the design of their residential units.

8.4.1 Foreign architects

In the 1950s and 60s there were no Saudi architects in the city. The leading architects during that time were mainly foreign Arab architects from Egypt, Iraq, Palestine, Lebanon and other neighbouring countries. Those architects found a fertile land in which to practice their architectural work, which was mainly copying what they had done or seen in other countries. In other words they brought with them ready made designs to be built in Jeddah, regardless of the different environment, culture and climate. These designs were, and still are, based on western concepts and standards. Consequently, various building types and architectural styles, alien to the traditional style and architecture, were introduced into the city (see Chapter Nine).

8.4.2 The local architect

Architectural education in Saudi Arabia is new : it started only two decades ago. Saudi architects are few in numbers and their role is very limited. Moreover, many Saudi architects followed the architectural trends that exist in the city with little consideration of the cultural and social needs of the society.

Not surprisingly, many Saudi architects adopted western architectural concepts into their designs, because the majority, if not all, of Saudi architects either studied and trained overseas (in Europe and America) or were taught through an educational system based upon western architectural philosophy and practice. This is not the only factor which limited the role of Saudi architects to participate effectively in providing appropriate architectural solutions which would satisfy the tradition and cultural needs of Saudi society. But, in spite of their limited architectural experience, they are faced with various architectural trends and styles as well as a huge urban expansion. So the local architects neither have an adequate opportunity for research nor enough time to improve and elevate the level of the architecture that will satisfy the social and cultural needs of the society.

8.5 Summary

The remarkable increase of the country's wealth led to dramatic changes in the socio-physical aspects of the city. A huge number of migrants settled in the city, influencing the tradition and the old way of life of the inhabitants and leading to the emergence of the new housing types. Technology played a significant role in changing the built environment of Jeddah. The adoption of the new planning legislation and regulations which, more or less, were based upon western concepts and standards, created a new built environment different from the traditional environment in scale and form. The Real Estate Development Fund played an important role in housing provision and at the same time enhanced the use of modern building techniques and materials which replaced the traditional one. Finally the architect is the principal person involved in introducing the new housing types in Jeddah.

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CHAPTER 9

CHAPTER NINE : JEDDAH ARCHITECTURE

Introduction

9.1 Traditional Architecture of Jeddah

9.2 Transitional Architecture of Jeddah

9.3 The Transformation of some Architectural elements of Jeddah

9.4 Contemporary Architecture of Jeddah

9.5 Summary

References

CHAPTER NINE

JEDDAH ARCHITECTURE

Introduction

During the last four decades the architecture of Jeddah has witnessed various changes in its form and concept. This chapter sheds some light on the architecture of the city, taking into consideration the various stages that the architecture has passed through. It discusses the overall architectural trends and styles in Jeddah. It also deals with the question to what extent is the traditional architecture understood.

9.1 Traditional Architecture of Jeddah

The traditional architecture of Jeddah was a practical application of the social life and tradition of the inhabitants. The architectural form of old Jeddah, like other Islamic architecture, was not confined to the effect of one designer or one builder's ideas but it grew out of a group work and skills that were inherited from many generations. Garry Martin writes,

"The architecture of Islamic societies was never the work of a single individual. Guilds of craftsmen and artisans were directed by masters who inherited traditional skills of building and whose responsibility it was to interpret essence into form"⁽¹⁾.

The traditional architecture of Jeddah represents one example of Islamic architecture. Although the inwardly oriented courtyard houses with one or two floors, is the typical housing type within the Islamic cities, the outward oriented multi-storey houses are also found, such as the tower houses of Sana and traditional houses of Jeddah, Makkah, etc. In fact the latter were no less significant than the former. For instance, we have seen (in Chapters Four and Seven) how the traditional houses of Jeddah responded to the culture and tradition of the inhabitants and to Islamic values in general, such as the segregation between sexes, and the need for overall privacy of the family.

It is worth mentioning here that one of the characteristics of the Islamic architecture is that, it gives more emphasis to interior spaces, whether in the courtyard houses or multi-storey buildings. Therefore the concept of the interior spaces usually fulfilled the family requirements (the social and religious requirements). Moreover Islamic architecture does not ignore the aesthetic factors that affect the occupiers' or users' attitude toward the interior spaces. Various decorations and ornamentation, that enhance the quality of the spaces and do not conflict with the Islamic religion, such as pictures of animals or human beings, have been used.

Architectural unity was one of the characteristics of the traditional architecture of Jeddah. There were very few architectural distinctions between the houses of rich people and those of the less well off. In other words, the houses of wealthy families were not designed and constructed as a powerful manifestation of wealth, but were

distinguished rather as first among equals. It is interesting to note here that architecture was not used as a means to express wealth and status of the inhabitants.

Generally speaking, builders and craftsmen produced a unique and genuine type of architecture richly conceived and beautifully designed in harmony with the physical elements and open spaces, alleyways and streets. This harmony was based upon the uniformity of the scale and the architectural form and details of the traditional houses. The richness of the traditional architecture appeared in the simplicity of the concept which satisfied the people's needs, the creation of a homogeneous living environment within the house, the well balanced relationships between solid and voids and the utilisation of the available local building materials. Moreover the multi-storey traditional houses of old Jeddah, with their 'rawashin' and 'mashrabiah', created a distinct architectural style, the like of which does not exist in the contemporary houses of Jeddah.

9.2 Transitional Architecture of Jeddah

In the early 1950s the local builders^{were} faced with the introduction of new building techniques and materials and new attitudes or ways of life. They could not cope with their primitive knowledge and construction techniques,^{with} the urgent need of housing. Since then the architecture of Jeddah has wavered between the old, to preserve the continuity of the traditional architecture, and the new which represents modernisation.

Consequently, in the 1950s some elements from the traditional architecture have been incorporated with the new form of housing. Unfortunately this phenomenon did not last long, and as a consequence of the aforementioned factors, discussed in Chapter Eight, Jeddah architecture took a complete turn.

The majority of the buildings built in the 1950s and 1960s did not contribute to the conservation of the traditional architectural heritage of old Jeddah. Their architectural quality was fairly poor; aesthetically, functionally and socially. They constitute incompatible design and architectural forms as compared with the traditional house. This architectural deterioration derived, as mentioned earlier, mainly from a lack of qualified architects and the adoption of alien western architectural concepts.

Furthermore, one should admit here that the clients and users did not ask for a better design from their designers, because they were impressed by modernisation and the high demand for housing as well as the new way of life.

Generally speaking, the architecture of the 1950s and 60s could be described as misdirected architecture, which neither had a specific direction nor objective. Most of the residential architecture was a direct imitation of western models designed for a different culture and environment, which resulted in a cultural and architectural destruction of the traditional environment (see Photograph 9). Also it led to an architecture that no longer satisfied the cultural and social



PHOTO 9

Traditional houses, with rawashin and mashrabiya, are gradually replaced by new buildings of reinforced concrete and with glazed windows

requirements of the society. It is worth mentioning here that the architecture of the Islamic world throughout history adapted and responded to different cultures and existing traditions of buildings, without breaking or weakening the spiritual essence which was its source of inspiration⁽²⁾. Unfortunately the designers were, and still are, unable to preserve this attitude; the majority of them knew how to adopt new things, but ^{not} how to adapt them.

9.3 The Transformation of some Architectural Elements of Jeddah

In the preceding chapters the author has tried to trace the transformation of the Jeddah houses by identifying the housing types that emerged in the city and analysing their spatial organisation, their layout within the built environment and the changes to them. In this section of the study an attempt has been made to trace the transformation of some architectural elements such as windows, doors and doorways and their details. It has been observed that the transformation of some of these elements has proceeded at a faster rate than that of other elements, depending upon the housing type. For instance in 'Al Beut Al Shabiah', the traditional shapes and details of windows, 'rawashin' and to some extent entrance doors, have continued for a longer period when compared with those in the apartment building or villa type. In the latter these elements disappeared within a short time and the new window types, glazed windows, were used.

Photographs 9.1 to 9.9 illustrate some examples of windows taken from different areas. These photographs are arranged, to some extent, in a

sequential order from the traditional to the contemporary examples. It can be seen clearly that the windows in the traditional houses (Photographs 9.1 and 9.2) received a great deal of attention, and have a lot of wooden details and carved decorations. They are characterised by a vertical window shape, while glazing was unusual in the traditional houses. Windows in the new housing types initially followed the same type of pattern, of wooden windows, but usually with less detail and decoration, simplicity being the major feature of these windows. Later on the transparent glazed windows became the predominant window type, which are mostly square, or have a horizontal window shape.

Photographs 9.10 to 9.16 illustrate some examples of doors and doorways. The entrances of the traditional houses are characterised by arched doors and doorways that lead to semi-private space called 'dahleeze' from which one can reach the stair or 'al maqad' where the head of the family usually sit. Doors are manufactured from fairly heavy planks and frames with great variety of ornamentation, either carved in the wood or moulded around the doorways. Great emphasis was given to the doorways of the traditional houses, whereas doors in the new housing types are usually a void in the wall, undistinguishable as doorways. They are the only object that separate the private and public space. Entrances in the new houses lead either to the hall, where the family spent most of their time, or to a small space that has a clear view of the hall. Doors in the new houses initially consisted of timber sheets in a wooden frame, while later on steel doors were used for the main entrance; these were, and still are used in 'Al Beut Al Shabiah' (Photograph 9.14). From the late 1960s onwards glazed doors with aluminium frames have been



PHOTO 9.1



PHOTO 9.2



PHOTO 9.3



PHOTO 9.4



PHOTO 9.5



PHOTO 9.6

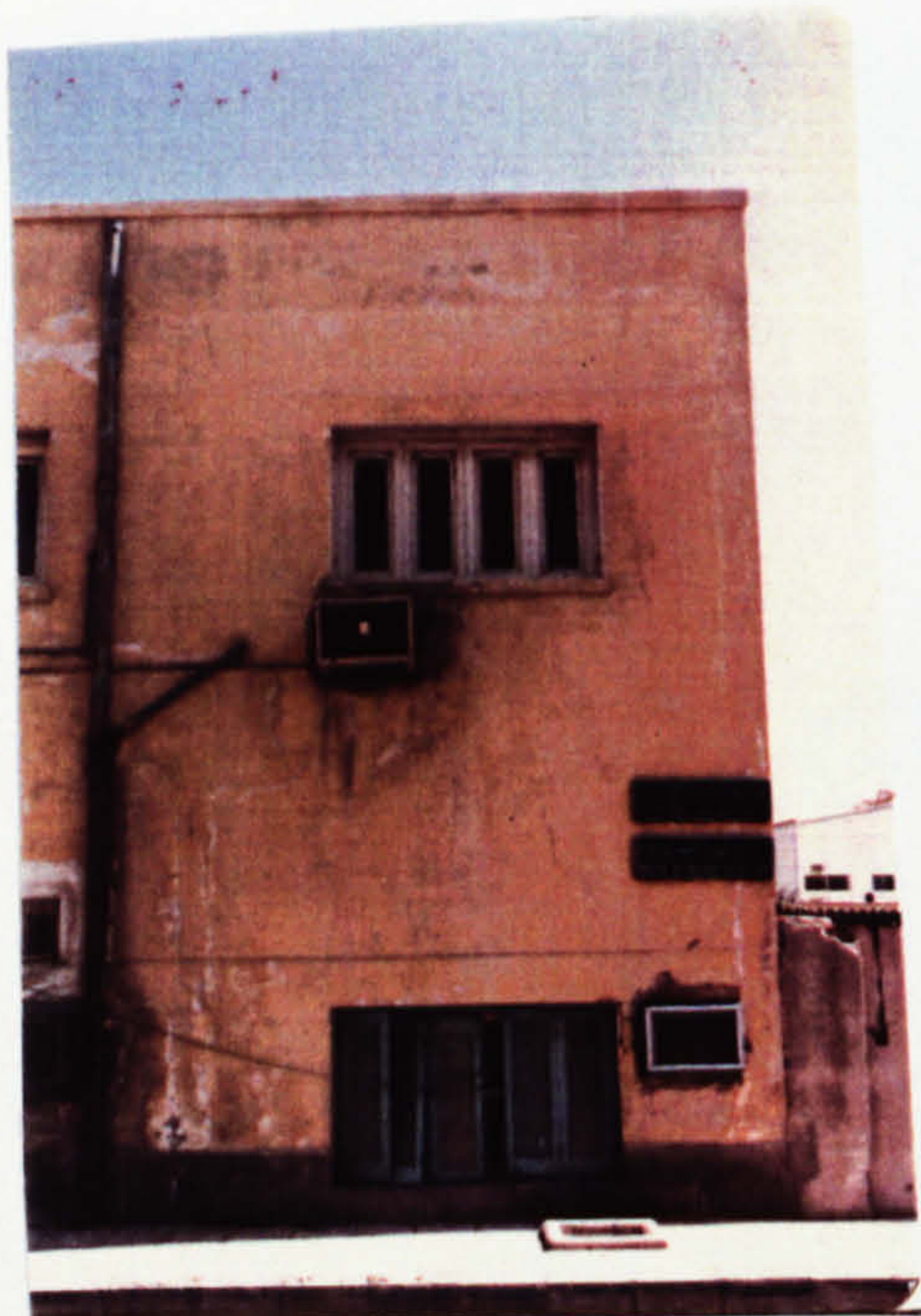


PHOTO 9.7



PHOTO 9.8



PHOTO 9.9

Photographs 9.1-9.9 shows the various types of windows. Notice the detail of wooden work and introduction of the glassed window



PHOTO 9.10



PHOTO 9.11



PHOTO 9.12



PHOTO 9.13



PHOTO 9.14



PHOTO 9.15



PHOTO 9.16

Photographs 9.10-9.16 show the doorways of selected houses, in sequence from the traditional to the contemporary. Notice the introduction of the steel door (in 9.14) and glass doors with aluminium frames (9.15 and 9.16)

widely used for the main entrances of the apartment buildings.

Generally speaking, the transformation of the architectural elements and details took a very short time. Instead of the hand-made windows and lattice work of the traditional houses, which exhibited a variety of shapes and details, the designers of the new houses adopted a standard approach, in which the factory-made windows and doors were designed, and then assembled, in the voids provided for them.

9.4 Contemporary Architecture of Jeddah

The city became a true melting pot of the world's collection of almost all architectural types. A stereo-type of buildings has been found in almost every part of the city. It is not only the architects who have created this situation, but also the clients and investors. As a matter of fact, these are the individuals who played an important role in the housing provision in Jeddah.

The limited financial resources of the people in the 1950s and 1960s have contributed to the emergence of the mediocre architectural and interior quality of the buildings. This situation has changed since the 1970's as a result of the increased wealth of the citizens and the intervention of the government in the housing supply by providing a free interest loan to their citizens. The quality of buildings has been improved due to the use of advanced building techniques and materials. However, the architecture has become a mixture of different styles from

almost all over the world. Moreover the architecture has become a means to express and show off personal wealth and status, each class of people having its own distinguishable architecture. Consequently, the social cohesion of the traditional society has been lost and the architectural disunity has become a major feature of the contemporary built environment.

Generally speaking, the influence of western architecture is very evident in Jeddah architecture and throughout the kingdom, as well as in other Arab countries. People are still impressed by the technology of the western countries and the modern international styles. Buildings are designed and built without any links with tradition. The architecture of each has been lost. Hassan Fathy has written,

"Modern Arab architecture is passing through a very critical stage of its history in most all Arab countries"⁽³⁾.

Moreover the architects (Saudi or other Arab architects), as mentioned earlier, are adopting the western concepts in their design. Abdelbaki Ibrahim writes,

"The Arab architect, as was his want throughout such a period, is still panting for what is given him by the western architectural thinking to the degree that he has become subordinate to it, and fears being independent of it. So much so that an Arab architect has no longer been able to discuss his special problems or his local reality"⁽⁴⁾.

In this respect the Saudi architect is no better than those architects in the rest of the Arab world. Although he is the person who can understand Saudi society most, his method of design, as well as the whole of his architectural works, are deeply affected by western

concepts and practice. However, there are a few Saudi architects, in Jeddah such as Ziyad Zaidan, Hydar Assad, Abdulla Bokhari and Zuhair Faiz, who show a great sense of understanding of the traditional architecture as well as modern architecture. Their works are almost limited to big projects and wealthy clients. Nevertheless, their contribution has enhanced the public awareness of the role of the local architect in creating an appropriate environment that enriches the contemporary architecture and satisfies the social needs of Saudi society.

Broadly speaking, looking at the city from a distance or from the air, one is impressed by its brightness, development and form, from planning, architectural and aesthetic points of view. Luxurious modern buildings, of different shapes and forms and of up-to-date building techniques and materials, are seen in the newly built areas of the city. However, by a close look at these examples one can clearly realise the real essence of their architecture, an architecture that is interesting only in the aesthetic value of the building, or as might be called, facade architecture.

It seems from the observation of the built environment that every designer has tended to concentrate his attention on the building as if it were located in isolation, paying little attention to the surrounding area. This has resulted in social problems, buildings overlooking each other (as will be discussed later on in this chapter) as well as the lack of a harmonious relationship between the buildings, a variety of forms and details being observed in almost every single street.

Moreover architects have ignored the fact that they must think of the effect on their buildings of climate during each and every season, and the consequential effects on the comfort of the inhabitants⁽⁵⁾. Instead they have adopted the mechanical air cooler, which hides the natural differences of the time of the year, and which at the same time has simplified the task of the architect in selecting the appropriate orientation, materials and design.

After the disappearance of the traditional architecture, which continued for more than twenty-five years, a new attitude and direction emerged in the early 1980s in the contemporary architecture of Jeddah, in searching for a better understanding of the cultural values of the society and absorbing them into the contemporary architecture. It also calls for the presentation of the distinctive Islamic character in the contemporary architecture.

Consequently attempts have been observed to preserve and revive the traditional architecture in the new built buildings. However, it seems the implication of this attitude is far from adequate due to the following :

- (1) Most of the traditional architectural elements, which emerged in the new buildings, have not fully served their original function.
- (2) Most of the architects (local or foreign) have failed to understand the traditional and Islamic architecture.

- (3) Most of these elements (ie. traditional architectural elements) are imposed, in one way or the other, by the municipality. Each of the aforementioned reasons will be discussed in the following pages.
1. Although some architectural elements have emerged in the new buildings, their concept is far away from that in the traditional building. For instance, 'roshan' and 'mashrabbah' in the traditional house provide a sub-space within the main interior spaces, so that the occupiers can relate themselves to the outside without being seen, as well as providing adequate ventilation and lighting. In the new houses they are no more than a wooden lattice screen fixed in front of a glazed opening or covering the balconies, which is mainly used for an aesthetic purpose. Furthermore, these features and elements are reproduced by employing economic contemporary methods of reproduction. Lacking the variety of shapes and details which are an essential feature of the traditional 'rawashin' and 'mashrabbah'. Moreover new materials such as aluminium are being used in the shape of wooden 'mashrabbah' to cover the openings and balconies of the buildings.
 2. Architects, as well as other people, thought that the use of 'mashrabbah' and arches in the facades of the buildings means that they have preserved the traditional and Islamic architecture. Also they thought that the traditional and Islamic architecture is an architecture of aesthetic, decoration and ornamentation, without grasping the traditional and cultural dimensions that produced the

architecture and without understanding the real meaning of the spaces that responded to social aspiration.

Nowadays, if any building has 'mashrabbiah', people call it a traditional building, even if it is built with reinforced concrete, and if it has arches, they call it an Islamic building or Islamic architecture. This has made most architects imitate some details and elements from the traditional houses and use arches, even decorated arches with coloured tiles. In fact the traditional architectural heritage has wavered between imitation and derivation from original sources of inspiration, and it suffers, in practice, from devastation and elimination⁽⁶⁾.

3. The municipality, especially the sub-municipalities, have tried by one way or another to impose regulations, unwritten regulations, to control the appearances of new buildings, especially those facing the main street, for example, that balconies and windows should be covered with lattice work similar to the traditional 'rawashin' and 'mashrabbiah'. Therefore 'mashrabbiah' are assembled on the facades regardless of their function, shape, maintenance or even materials.

Unfortunately this attitude has become a fashion applied to the older as well as the newly built buildings. For instance, this phenomenon has been observed in the transitional areas of the city, in buildings which should be preserved, rather than covering their windows with a new pattern of lattice work. The author has met one of the owners of such a building and conducted an informal interview with him. The interview

revealed that the owner had applied to one of the sub-municipalities to make some renovation for his building. The authorities accepted his application on condition that he should change or cover the windows with 'mashrabiah'. In fact, the original windows of the building are simple wooden window frames which illustrate the transitional period of the architecture in the city.

In this context, it is worth mentioning that preserving or reviving some elements of the traditional architecture does not mean preserving the whole traditional environment: what is most relevant is the awareness of the real understanding of the values of the traditional built environment. Furthermore, searching for architectural identity is very important, especially after the diversity of the present built environment which was caused by a blind imitation of the western concepts of architecture. Nevertheless, architectural identity should be considered as a means of achieving a satisfactory environment.

One of the major problems that accompanied the contemporary architecture of Jeddah is the ignoring of family privacy. The vast majority of the buildings in Jeddah are fully devoid of any protective means for the purpose of privacy.

The transparency of the facades of the new houses as a result of the panoramic glazed openings and the inadequate architectural solution has created a major social problem, that of privacy invasion. In Saudi society privacy plays an essential role in the peoples' lifestyle, particularly in the house. Its invasion is not acceptable, especially

the direct view of the other's domain. Consequently the residents of the new houses are forced to find their own solutions to maintaining the desired level of privacy, such as closing some openings and balconies by devices which range from pieces of rag to a high screen of corrugated plastic or metal sheeting, creating a negative effect upon the architecture.

9.5 Summary

From what has been discussed earlier one could say that the contemporary architecture is inferior if compared with traditional architecture. A unity within diversity is the important characteristic of the traditional architecture. It is very rare to find two identical houses with the same architectural details in the traditional area of the city, yet when seen from a distance, the buildings present a coherence and homogeneity of all their elements. In contrast disunity and monotony are the major characteristics of the contemporary environment.

Copying the traditional elements in the environment does not mean the revival or preservation of tradition. Abdel Wahid El Wakil, writes,

"Designing within a tradition is not a pretence for repeating the old in order to avoid the pains of new birth. It is no mere act of imitation. for mimicry destroys the significance of form... only through the re-establishment of our spiritual identity can the dynamic and continuous process of consolidation and reorganisation be truly assured"⁽⁷⁾.

References for Chapter Nine

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CONCLUSION & RECOMMENDATIONS

CONCLUSION

The purpose of this study was to describe the development of housing in Jeddah, and to analyse and illustrate the changes occurring in the residential units, both socially and physically. The aim was also to discuss the leading factors that have promoted such changes.

The city has been divided into three zones. This division helps to explain the chronological development of the residential types within their physical and socio-cultural context. The study reveals the following.

The surviving traditional built environment exhibits an excellent example of harmonious and distinctive architectural form. It is a great source from which to learn. The traditional house provided an appropriate shelter for the extended family and consisted of several habitation spaces erected vertically. Its physical and utilitarian features were derived from the inhabitants' socio-cultural and climatic requirements.

The transitional part of the city witnessed the early signs of the transformation of the built environment due to the introduction of mechanised transportation and the emergence of new housing. The city began to lose its uniqueness. Social relationships of the inhabitants were also affected, as open spaces and squares which were the focal points of the social life in the neighbourhoods, where people gathered,

were invaded by automobiles. Furthermore, social integration, an essential character of the traditional environment, was violated, some parts of the city becoming distinguishable from others, in terms of housing types, urban form and class of residents. The urban images of the north, east and south were established.

The aforementioned phenomena have become more apparent in the contemporary part of the city. The city has grown very rapidly and the organic urban form has been replaced by a new geometrical urban pattern, namely the grid pattern, with square or rectangular plots. This has been reinforced by rules and regulations adopted from western planning concepts.

New housing has emerged in the transitional and the contemporary parts of the city which replaced the traditional houses. Most of the new housing is derived not so much from social needs as from a blind imitation of other cultures. Instead of designs that have emerged from the occupants' (families') needs, nowadays the occupants have to adapt themselves to ready made designs. Moreover, the design of the new residential units does not take into consideration the climatic conditions, being dependent on advanced mechanical air cooling devices.

The new concept of the residential units, such as the flats in the apartment building, has contributed to the violation of the traditional social structure of the families. The extended family is no longer influencing the concept of the house. Furthermore, the apartment buildings lack a proper open space for children and women; open

balconies are neither large enough nor designed adequately, and the space surrounding the building, as a result of the setback regulations, is too narrow and too linear. The use of such space becomes too difficult because it is usually overlooked by neighbouring buildings, so it ends up being neglected.

The inhabitants of most new housing, especially the apartment buildings, have to fight to preserve their traditional and Islamic way of life. Family privacy inside the residential unit is the vital problem of the present built environment.

Modernity is a vital goal of the people. In achieving that they imitate the western world in their accommodation, and to some extent in their way of life.

The adoption and the wide use of the new type of furniture, mainly a western type of furniture, has dictated a specific function for each space. Each room in the residential unit is used for a limited range of activities, and this affects the concept of spaces within the residential units as well as the number of rooms required.

In the past, all spaces in the traditional houses, were multi-functional spaces; nowadays each room in the new housing is designed for a specific function. This creates a number of rooms either not used or less efficient for certain periods of time.

The modern concept of planning and building regulations, especially those concerning the setbacks, lot shape and maximum lot coverage have widened the gap between the traditional and contemporary urban form. Moreover they tend to overlook the merits of the traditional environment that of compact urban form, variety of open spaces, mutual shading, etc.

The development of housing and the transformation of the residential physical environment have been greatly influenced by the economic situation of the country, technology transfer and the alien architectural and planning concepts adopted by the professionals who participated in the designing and planning of the built environment.

Furthermore, the introduction of the automobile had a great impact upon the urban form of the city. It facilitated the urban expansion of the city. The streets became wider and lacked the organic irregularity of the traditional ones. Moreover they lacked shading areas which encourage people to walk. This became very evident in the contemporary part of the city where the streets are planned and designed primarily for vehicles.

From the discussion presented in this study it is also revealed that the new housing has shown a great improvement in the sanitary facilities, compared with those of a traditional house. This has enhanced the quality of the houses and contributed to their wide acceptance in preference to traditional housing. Furthermore there are potential concepts which have appeared in the new housing, namely the courtyard in 'Al Beut Al Shabiah', and the villa concept. Therefore a combination of

these concepts with some elements from traditional architecture would provide an appropriate house for a Saudi family.

The ignorance and devaluation of the traditional built environment, which has continued for more than two decades, is faced by a new movement calling for a revival of the architectural heritage. Unfortunately it seems that most of those who support this movement are interested in the aesthetic and the exterior features of the buildings, paying less attention to the essence of the traditional architecture, which showed a great respect for the interior spaces as well as the exterior features of the houses.

The city will grow and building will continue, but instead of being, to some extent, unimaginative and insignificant, it can be creative and contributive to a life-enhancing environment. Also one should mention that the residential environment being at the present time will influence a new generation to come. Therefore the author has suggested some recommendations regarding the layout of the neighbourhood, the residential units and some general recommendations.

RECOMMENDATIONS

The Layout

Although a car has become a necessity for the majority of the inhabitants, it should be considered that the layout of the newly developed areas should not be based entirely upon the use of the car. The conflicting requirements of vehicular and pedestrian circulation should be kept in consideration.

In the layout one should aim to preserve the identity of the traditional Arab Islamic city which is almost lost in the contemporary areas of the city. Moreover the layout should insure the social unity within the neighbourhood. Therefore the following should be considered :

- (1) Benefit from the concept of the neighbourhood as it is found in the traditional and transitional areas of the city.
- (2) Benefit from the sea breeze, ie. streets should be oriented towards the north-northwest direction.
- (3) Vehicular access should be planned in a hierarchical order starting from major roads and ending with vehicular culs-de-sac that serve a cluster of housing.
- (4) Avoid wide straight streets and large open spaces within the neighbourhood.
- (5) The dwelling should have a direct accessibility to a pedestrianised area and a direct accessibility to vehicular circulation.
- (6) Clear separation between vehicular and pedestrian movement.
- (7) Minimise the interference between the vehicular and pedestrian access.
- (8) Adequate shade should be considered for pedestrians.

- (9) At least one car parking space should be provided for each residential unit.
- (10) The open spaces should be well defined. Also access, size and privacy should be carefully considered.
- (11) A variety of lot size should be provided to allow different classes of people to reside near each other in the neighbourhood.
- (12) The relationship between neighbourhoods should be considered.

The Residential Unit

The house is the essential part of man's environment, in which he seeks comfort and dignity. More importance and emphasis should be given to the design of the residential units, their interior spatial organisation and relationship with other units. Therefore the following should be considered :

- (1) The residential units should be designed with full respect and understanding of the socio-cultural needs of the occupants as well as the new ways of life.
- (2) Family privacy must be assured.
- (3) Every residential unit should have a private open space.

- (4) The surrounding environment, whether houses, commercial buildings, open spaces or major streets, should be taken into consideration in the design of the residential unit.
- (5) The Designer should minimise the dependence upon the mechanical cooling system and maximise the use of the natural cooling system in the residential unit. They could be achieved by :
- (a) proper orientation
 - (b) allow for cross-ventilation and other forms of air movement
 - (c) adequate utilisation of local building materials to provide thermal insulation.
- (6) Each part of the residential unit should receive attention in the design process. Therefore the following should be considered :
- (a) The entrance.

Two entrances should be provided whenever possible one for men and their guests and the other for the family. The location of the entrance should ensure the following: firstly, to avoid the direct visual looking of neighbours. Secondly, to maintain the privacy of the interior spaces. Therefore the entrance doors of the residential units should not face each other and a bent corridor or hall is worth considering.
 - (b) The internal spatial organisation.

The internal spaces of the residential unit should be designed

in such a way that enables the occupants to preserve their tradition and their way of life. Therefore the interior spaces should be arranged in such a way that they have a defined area for men and their guests and an area for the family. Doors and circulation area should be carefully located in order to give each space, within their residential unit, the required level of privacy.

(c) The windows.

The location, size and treatment of the window should be carefully considered in the design of the residential unit. The following should be considered : Firstly, to allow an adequate natural light and air movement. Secondly, to retain the internal privacy. Thirdly, avoid direct view of neighbours. Fourthly, avoid the transparency of the building. Therefore the glazed window should be minimised and adequately treated. The treatment could be achieved by screens, louvres, angled windows, etc.

(d) The kitchen and toilets.

Two toilets should be provided, one in the guest area and the other in the family area. Kitchen and toilets should be adequately ventilated and finished to ensure its cleanliness and hygienic standard.

(e) The balconies.

The location, size and treatment of the balconies should be

taken into consideration. The design provision of small open balconies should be avoided.

(f) The roof.

The roof should be surrounded by parapet walls to ensure the family privacy. Voids in the parapet wall are advisable to allow cross-ventilation.

General Recommendations

- (1) The existing building regulations concerning set backs, lot size and shape and maximum lot coverage should be reviewed and evaluated in order to achieve an appropriate built environment that considers the socio-cultural and climatic requirements of the city.
- (2) The existing constraints of the Real Estate Development Fund concerning the building design, standard and the choice of building materials and construction should be reconsidered.
- (3) The municipality should tighten its control upon the building design, spatial organisation of the residential units, especially the flats in the apartment buildings to ensure the essential principles of family privacy and adequate natural light and ventilation for every space within the residential unit.
- (4) The conservation policies of the municipality should not be confined merely to the old traditional houses, but they should include some examples that represent the transitional period of the architecture of Jeddah.

- (5) Reviving the architectural heritage should not be confined only to the main facades of the streets. It should include the interior design of the residential units.
- (6) Responsibility for revitalisation of the architectural heritage should not be confined merely to a limited number of architects or on the municipality, but all professionals, planners, architects and clients are urged to cooperate with each other in order to create a meaningful architectural and homogeneously built environment.
- (7) The general public should be well informed about the importance of the preservation and revitalisation of the architectural heritage. Therefore the following should be considered :
- (a) Acknowledge, through the communication media, the advantages and the importance of this attitude.
 - (b) Make available all books, theses, articles, etc. that relate to architecture in^{the} Arabic language, to ensure that the general public can read them.
 - (c) Convince the owners of the buildings to adopt this attitude to ensure its success and continuity.
- (8) To ensure the continuity and revitalisation of the architecture heritage, architects should consider the following :

- (a) Understand the real essence of the traditional architecture.
- (b) Avoid merely copying the old traditional houses.
- (c) Avoid blind imitation of the western architectural styles.
- (d) Incorporate the traditional architectural elements with the concepts and principles of the modern architecture.

Finally, further research into building regulations and Real Estate Development Fund policies is essential. Any attempt to elevate the level of the contemporary architecture should be based on research, knowledge and awareness both from professionals and the general public.

It is hoped that this study has contributed to the understanding of the housing situation in Jeddah.

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GLOSSARY

GLOSSARY

- Al Maqad : Sitting room, next to the entrance hall, serving as business office, of the head of the family, or for receiving male friends.
- Bab : Door/gate.
- Bayt : House
(plural Beut)
- Bayt shabi : Detached or attached dwelling, mostly with court, usually
(plural built by unqualified builders of permanent construction
Beut Shabiah) with concrete blocks or bricks and slabs, one or two storeys high.
- Dahleez : Entrance hall. A transitional area between public and private. Sometimes wooden benches can be found on the sides of this hall where the head of the household receives passing and unexpected visitors.
- Dakah : Bench. An elevated space near the main entrance door.
- Gahwa : Coffee shop.
(plural gahawy)
- Gandel : Wooden beam.
- Hajar mangaby: Coral reef stone.
- Hara : Residential quarter.
- Hatab : Firewood.
- Kharja : Terrace, on the upper floors, semi-closed on all sides but open to the sky, used for sleeping, drying clothes, etc.
- Khazana : Safe, small storage room where valuables, possessions, clothes are stored.
- Madrasa : School.
(plural madares)
- Majlis : Reception room used for receiving family guests and a
(plural general meeting room at the time of feasts or other
majalis) special occasions.
- Malqaf : Wind catcher.
- Manwar : Light well, a small open space, court, within the
(plural building, for light and ventilation.
manawer)

- Mashrabiah : Lattice wooden screen of lattice work.
- Muallem : Builder.
(plural muallemeen)
- Qiblah : Direction of prayer toward Makkah.
- Roshan : Projecting windows, used for sitting or sometimes
(plural sleeping.
Rawashin)
- Sahreege : Cisterns, used to store rainwater.
(plural Sahareege)
- Salah : Hall.
(plural, salat)
- Sandakah : Shanty, a dwelling constructed of recycled or waste
(plural, materials, eg. wooden boxes, oil drums, etc.
sanadek)
- Shara : Street.
- Shish : A fixed wooden screen, supported away from the wall by
brackets and having adjustable components.
- Suffah : Family room multi-purpose, which serves various aspects
of family life, such as sitting, eating, sleeping.
- Suq : Market.
- Zawayah : Praying place, could be part of a house or a covered room
in an open space.
- Zeer : Water container, used in the toilet.

APPENDICES

APPENDIX I

MAJOR HOUSING PROJECTS

The severe housing shortages and the huge increase of the rent value of the properties in the 1970s, as a result of the increasing number of immigrants and of foreign companies and their employees, led the government, through the Ministry of Public Works and Housing and other ministries, companies and private investors, to construct several huge housing projects in the city. Examples of these include 'Al Khalidiah' City, initiated by a private investor, Mohammed Al Amoudi, in 1975 and then taken over by Saudia Airline, Public Housing sponsored by the Ministry of Public Works and Housing, the academic staff housing of King Abdulaziz University, National Guard housing, Ministry of the Interior Housing, Prince Fawwaz cooperative housing, etc. (A brief description of some schemes will be mentioned later in this section.)

Undoubtedly these schemes have added a considerable number of residential units which have contributed positively to the housing demand in the city. However all these schemes have had a clear impact upon the city both socially and physically.

Socially, it seems that there is little concern for any kind of social integration between the schemes and the city. The fact that most of the schemes are surrounded by walls and planned to accommodate a certain group of people enhances the social disintegration of the larger society of the city.

Physically, each scheme has developed independently without any relation to the adjacent areas of the city. For instance high rise buildings are found in areas with housing of two to three storeys high, such as Jeddah rush housing (commonly so-called because it was built at great speed, in a great rush) in 'Al Sharaffiah' district (see Photographs 7 and 8). Moreover, some schemes are walled-in, and that has separated them from the overall urban structure of the city. Furthermore, as it has been observed, a large number of similar buildings erected in relatively small sites create a distinctive feature in the urban landscape of Jeddah. All schemes adopted advanced construction techniques and prefabricated building techniques, which are entirely different from the overall housing construction of Jeddah. Broadly speaking, speed and standardisation of design and construction techniques resulted in distinctive features developing from this scheme.

The following is a brief description of some schemes erected in different parts of the city.

1. Al Khalidiah City

Al Khalidiah city is located about 8km north-west of Jeddah, on the Red Sea coast. The city occupies an area of 150 hectares of land. It consists of 3377 residential units, mainly single family houses (villas) and apartment buildings of different heights. In addition there is a shopping centre and a mosque, with community services and facilities⁽¹⁾. It is a city within a city in terms of the availability of the facilities and services. The city is constructed to accommodate the staff and employees of the Saudia Airline.

2. The Academic Staff Housing of King Abdulaziz University

The housing project is located within the University campus, about 6km east of the city centre. The housing covers 18.6 hectares of land. The built-up area, however, is only 3 hectares and the rest is open spaces (car parking spaces, green areas and roads). It consists of 106 apartment buildings, each building consisting of three residential units⁽²⁾. This project lacks basic facilities such as shopping centres and schools.

3. Prince Fawwaz Cooperative Housing

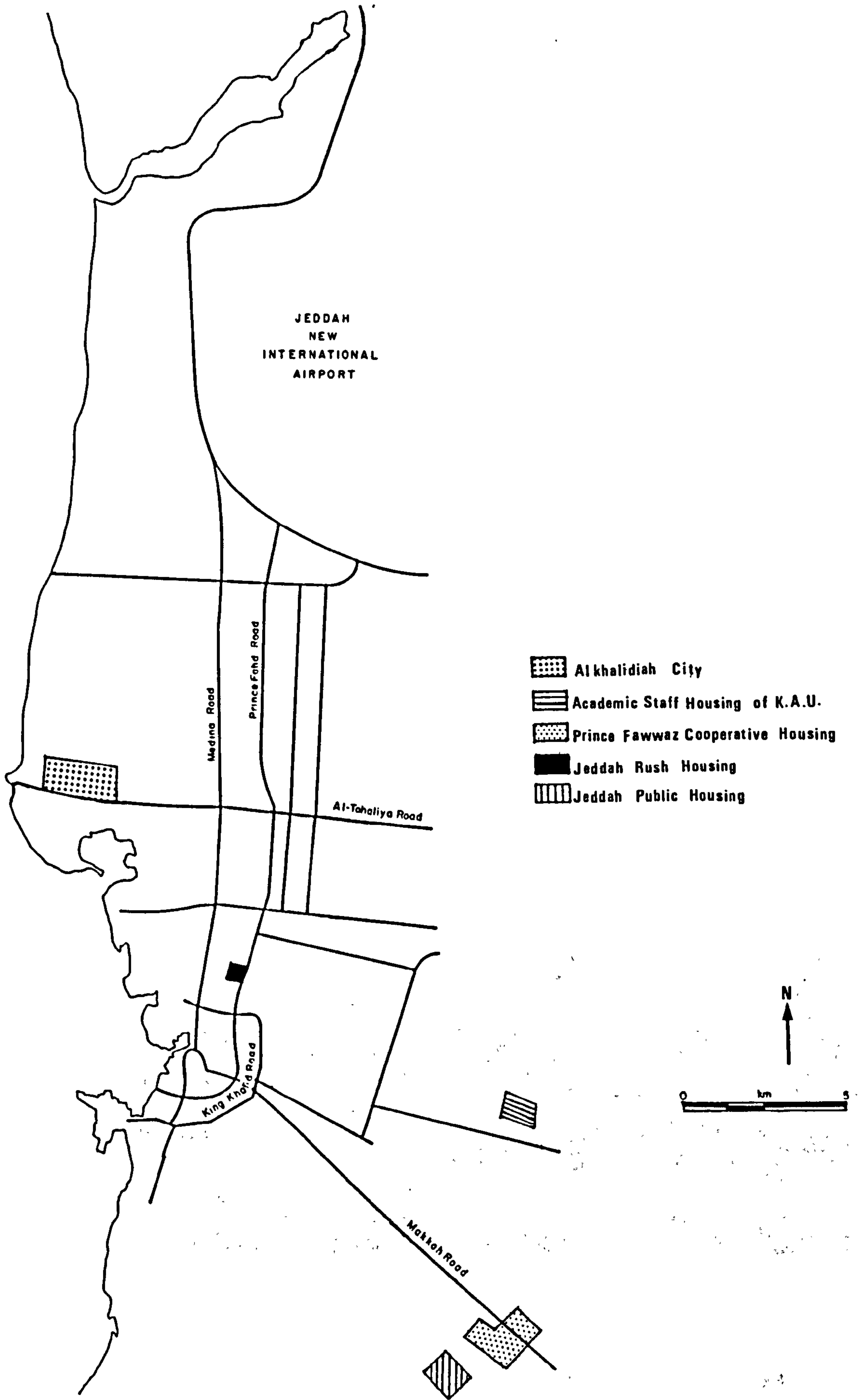
The project is located about 14km south-east of Jeddah. The project was initiated by a small group of King Abdulaziz University members and other individuals in order to overcome their housing problems. It attracted many people; as a result the size of the project has been increased several times, until it reached its final size, 1200 detached villas. The site of the project occupies 600 hectares of land. Three different sizes of villas were provided; a large size villa, six bedrooms, with a total area of 435 sq.m.; a medium size villa, five bedrooms, with a total area of 408 sq.m.; and a small size villa, four bedrooms, with a total area of 365 sq.m. In addition there are many services and facilities such as schools, mosques, recreation areas, supermarkets, etc.⁽³⁾.

4. Public Housing Projects

A home for every citizen was, and still is, a vital goal of the Saudi government. To achieve that the government provided free-interest loans via REDF and made available apartments in public housing projects. In Jeddah two housing schemes, sponsored by the Ministry of Public Works and Housing, have been erected. One is located on 'Al Ameer Fahad' road (in 'Al Sharaffiah' district) and is known as the Jeddah Rush Housing Project. The other is located about 14km south-east of Jeddah, and is known as the Jeddah Public Housing Project.

Jeddah Rush Housing Project consists of 32 high-rise apartment buildings, each is 18 storeys high with four apartments on each floor. Each apartment has six habitable rooms, with a total area of 232 sq.m. The project lacks some essential services such as health and education services. The other project, Jeddah Public Housing, consists of 188 apartment buildings with a total of 3420 apartments. Each apartment has six habitable rooms, with a total area of 241 sq.m. This project is provided with necessary services and facilities⁽⁴⁾.

In the second scheme the Ministry of Public Works and Housing realised the problem of the high rise buildings. Therefore the building height in the second scheme was reduced, ranging from four to eight storeys high. Broadly speaking, both schemes share many characteristics from the design and construction point of view. They were completed in 1981/82 and are not yet occupied.



Location of the Housing Projects



Photo 1

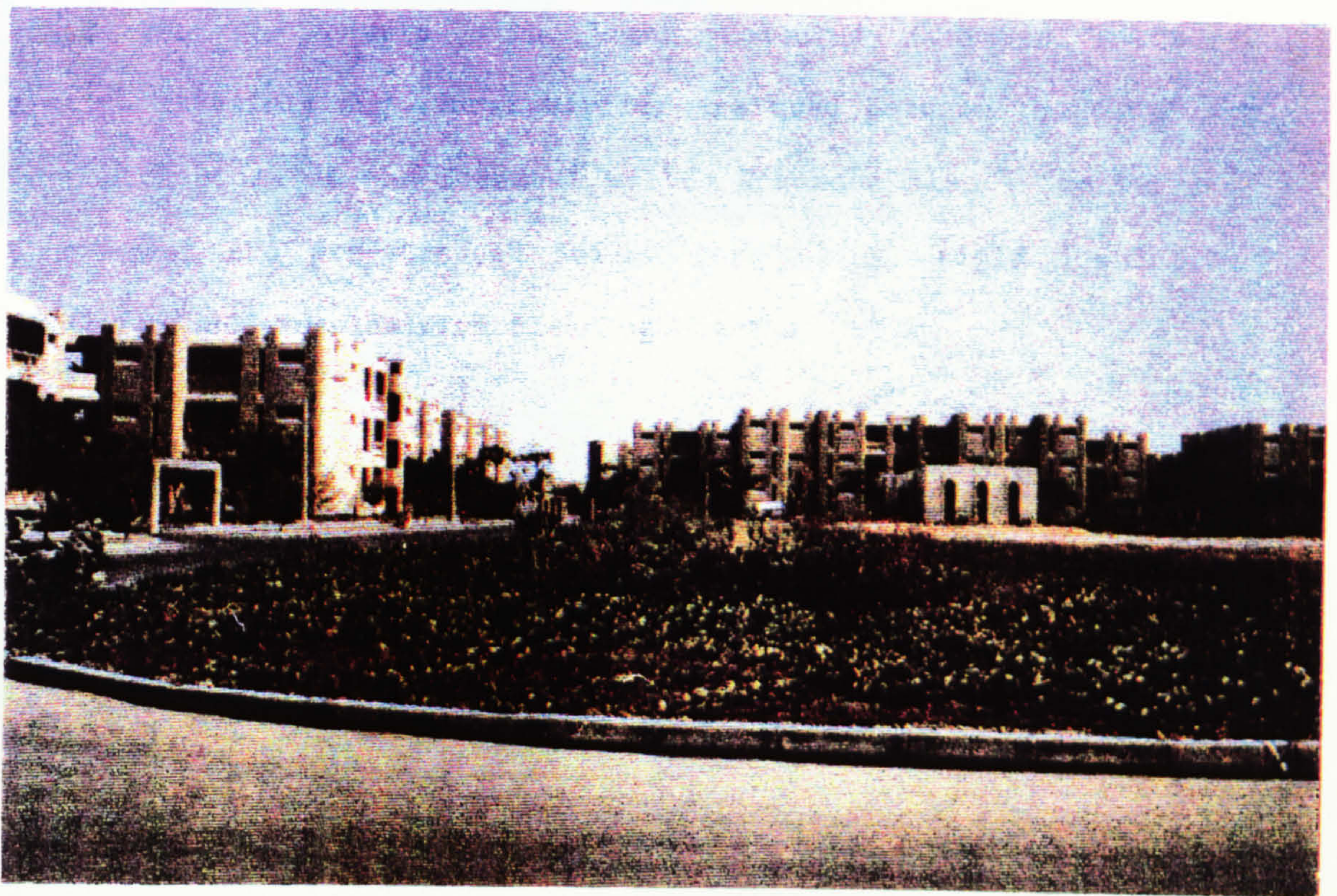


Photo 2

Photographs 1 & 2 show views of the academic staff housing of KAU

Source : Al Mutawea, F

Jeddah Public Housing

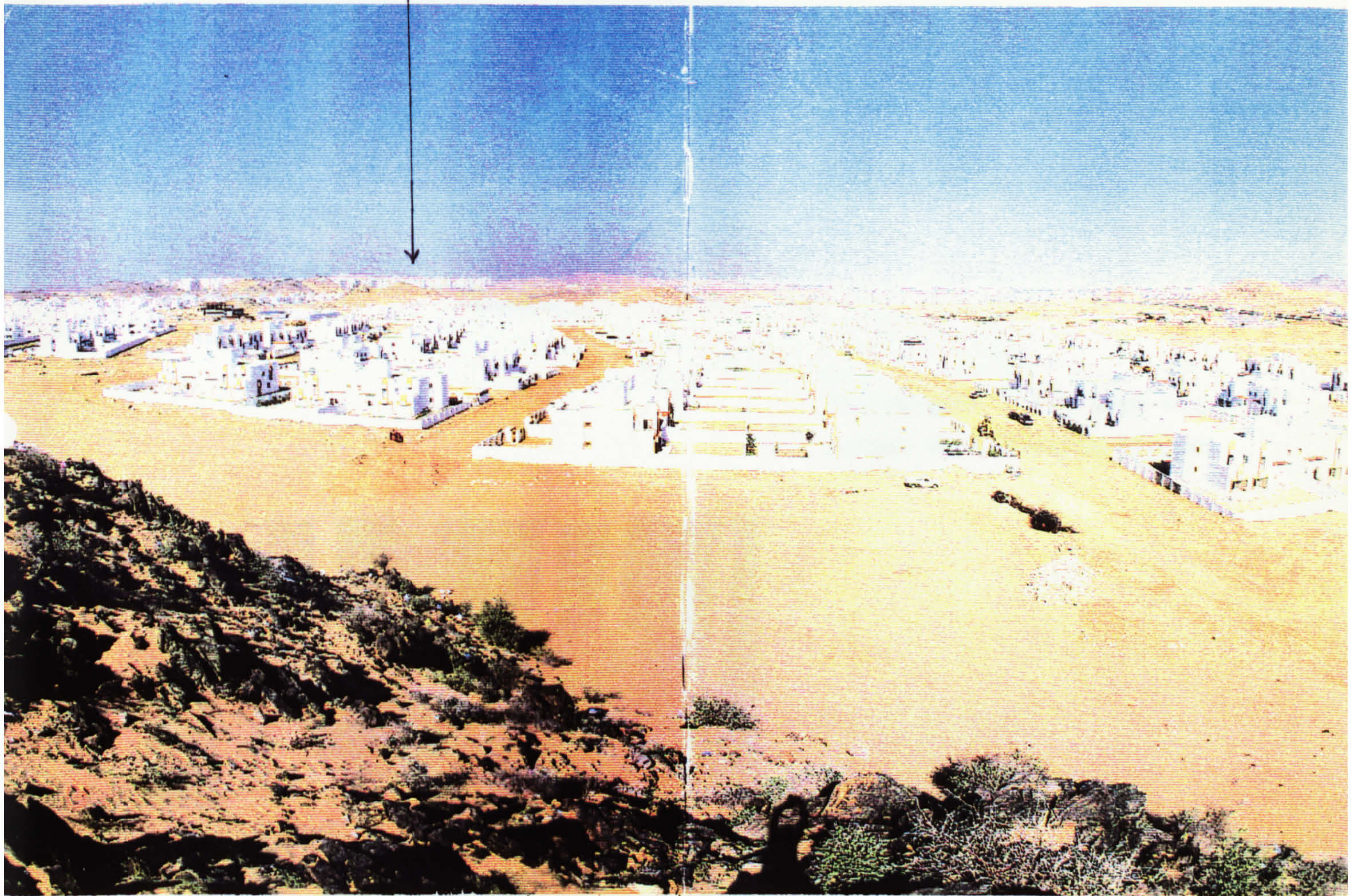


Photo 3

Source : The Project Booklet



Photo 4

Photographs 3 & 4 show views of Prince Fawaaz Cooperative Housing



Photo 5

Photographs 5 & 6 show views of
Jeddah Rush Housing Project



Photo 6

Photographs 7 & 8 show the relationship
between the project and the adjacent area



Photo 7



Photo 8



Photo 9



Photo 10

Photographs 9 & 10 show views of Jeddah public housing

References to Appendix I

1. Saudia Airline, Housing Section. Al Khalidiah City (Saudia City) Booklet.
2. Al Mutawea Fahad, 'The Housing of the Academic Staff of King Abdulaziz University, Jeddah, Saudi Arabia'. Unpublished M.Phil Dissertation, University of Newcastle upon Tyne, 1987.
3. Prince Fawwaz Cooperative Housing Project "Booklet".
4. Ministry of Public Works and Housing.

APPENDIX II

SUMMARY OF THE PHYSICAL CHECK LIST SURVEY

This measure, the check list, was adopted to trace some of the architectural elements and the exterior features of the houses of Jeddah. This check list was based upon personal observation, developed through the author's journeys around different neighbourhoods within the city, during the preliminary survey. Seventy-two houses were surveyed by this measure. Since the number of houses surveyed were very few the results of this survey will not be generalised to the whole city. However, it gives an overview about the architectural elements used in the houses of Jeddah.

The table illustrates that 43% of the houses surveyed were built using the whole plot; these houses were mainly found in the old town and the transitional parts of the city, also in the unplanned areas of the contemporary parts of the city. 9.8%, 6.9% and 2.8% of the houses were set back from one, two and three sides respectively. 37.5% of the houses were built in the middle of the plot, these houses being found in the planned areas of the city.

The majority of houses were two storeys high (40.3%), they were mainly villas and 'Al Beut Al Shabiah'. 30.6% of the houses were three storeys high and were apartment buildings; 16.7% of the houses were one storey high, 'Al Beut Al Shabiah'. 8.3% of the houses were four to five storeys high, including traditional houses and apartment buildings.

Most of the houses were plastered (84.7%), using different textures and colours, with a yellowish colour being the most noticeable. Some houses, 18.1%, have marble or Riyadh stone in some parts of the facades of the houses. It has been noticed that from the early 1980s the white colour has been imposed upon the buildings, a phenomenon which is clearly observed; in one building one could see Riyadh stones were initially used and then covered with white colour paint. Although this was a minor factor it contributed to the changes of the image of the residential environment.

70.8% of the houses used a solid parapet wall around the roof, 2.8% were used a semi-opened parapet wall (see category 5b in the drawing). 23.6%, 5.6%, 1.4% of the houses used categories 5c, 5d, 5e respectively.

It has been observed that the square opening with glazed windows was, and still is, the common window type of the houses built after the mid-1960s. 70.8%, 11.1%, 27.8%, 6.9% and 10.3% of the houses used square, elongated, tall, arched and semi-arched openings respectively. Different window types were observed; 8.1%, 26.6%, 16.7%, 34.6%, 1.4% and 5.6% of the houses used varieties of windows as shown in categories 7a, 7b, 7c, 7d, 7f respectively. It is worth mentioning that in few houses a combination of more than one window type was observed in one building.

Finally, the houses exhibited a variety of door and balcony shapes. The survey revealed that 13.9%, 54.1%, 13.9%, 4.2%, 5.6% and 8.3% of the houses used different doors, as shown in categories 8a, 8b, 8c, 8d, 8e

and 8f respectively. 4.1%, 15.2%, 9.7%, 4.2%, 15.3% of the houses illustrated different balconies, as shown in categories 9a, 9b, 9c, 9d and 9e respectively.

Physical Check List Survey (Percentage)

Category	A	B	C	D	E	F	G
1. Plot coverage	47.0	9.8	6.9	2.8	37.5		
2. Height	16.7	40.3	30.6	8.3	2.8		
3. Wall finishing	2.8	12.5	1.4	18.1	84.7		
4. Wall technique	6.9	95.8	52.8				
5. Roof	70.8	2.8	23.6	1.4			2.8
6. Opening	17.8	70.8	11.1	8.3	6.9	10.3	5.6
7. Windows	18.1	26.6	16.7	34.6	1.4	5.6	19.4
8. Main door	13.9	54.1	13.9	4.2	5.6	8.3	
9. Balconies	4.2	15.3	9.7	4.2	15.3		8.6

	A	B	C	D	E	F	G
1 Plot coverage	Quit one side plot 	Set back from one side 	Set back from two sides 	Set back from three sides 	Set back from four sides 		Other
2 height	one story 	Two stories 	Three stories 	four-five stories 	six stories 		
3 wall finishing	Coral rock stone 	Cement block 	Brick 	tile (marble) 	Plaster 		
4 wall tech	stone 	block 	Frame 	Panel 			
5 roof							
6 opening	fall 	square 	elongated 	Lancet 	semi circle (Arch) 	Pointed Arch 	
7 window							
8 main door							
9 balconies							

Physical checklist

LOCATION: AJ DAVIS

CONSTR. DATE: 1920-25

SURVEY DATE: 12-1967

	A	B	C	D	E	F	G
1	✓						
2				✓			
3	✓						
4	✓						
5			✓	✓			
6	✓						
7			✓				
8	✓						
9			✓				



LOCATION: Al Balad district (sample area No.1)

CONST. DATE: Before 1910

FILM NO. 505H

SURVEY DATE: 21-1-87

FILE NO. 1

	A	B	C	D	E	F	G
1	✓						
2	✓						
3					✓		
4		✓					
5			✓				
6	✓	✓					
7			✓			✓	
8				✓			
9							



LOCATION: Al Rawais (sample area No.9)

CONST. DATE: 1965-68

FILM NO. 8056-32

SURVEY DATE: 19-2-87

FILE NO. 9

	A	B	C	D	E	F	G
1			✓				
2			✓				
3					✓		
4		✓	✓				
5	✓						
6		✓					
7		✓					
8		✓					
9		✓					



LOCATION: Al Kandarah district (sample area No.7)

CONST. DATE: 1970-72

FILM NO. 5940-12

SURVEY DATE: 9-2-87

FILE NO. 7

	A	B	C	D	E	F	G
1					✓		
2				✓			
3				✓	✓		
4		✓	✓				
5	✓						
6	✓						
7				✓			
8						✓	
9					✓		



LOCATION: Al Rawdah district (sample area No.12)

CONST. DATE: 1982-83

FILM NO. 982-83

SURVEY DATE: 6-3-87

FILE NO. 12

APPENDIX III
THE QUESTIONNAIRE

House No.
Date
Street Name
District Name
Interviewer's Name

For All :

1. Nationality :

- 1) Saudi
- 2) Non Saudi
- 3) Specify

2. Age :

- 1) Less than 20 years
- 2) 21 - 30 years
- 3) 31 - 40 years
- 4) 41 - 50 years
- 5) More than 50 years

3. No. of family who live in the dwelling :

- 1) Wives
- 2) Sons
- 3) Daughters
- 4) Relatives
- 5) Servants
- 6) TOTAL

4. House tenure :

- 1) Owned
- 2) Rented

5. Is this the first house you have lived in?

YES

NO

If NO, how many times have you changed your house?

6. Where did you live before you came to this house?

- 1) In a village
- 2) Another city
- 3) Other district in Jeddah

7. How many years have you spent in this house?

- 1) Less than 5 years
- 2) 6 - 10 years
- 3) 11 - 15 years
- 4) More than 15 years

8. No. of rooms in the residential unit :

- 1) Guest room for men
- 2) Guest room for women
- 3) Living room
- 4) Dining room
- 5) Sleeping room
- 6) Kitchen
- 7) Toilets
- 8) TOTAL

9. Which rooms are air conditioned?

- 1) All
- 2) None
- 3) Some

10. Do you have private outdoor space?

YES NO

If YES, How much M^2

11. Are you satisfied with : (yes/no)

- 1) Location of the building
- 2) Neighbourhood
- 3) Area of the unit
- 4) Design of the unit
- 5) People around you
- 6) Services in the neighbourhood

12. Which services and facilities should be improved?

- 1) Sewer
- 2) Green areas
- 3) Childrens playground
- 4) Open space
- 5) Street condition (pavement/light, etc)

13. Do you have public open space in the neighbourhood?

YES

NO

If YES, do you use it?

14. Do you have a car?

YES

NO

If YES, where do you park your car?

- 1) Private garage
- 2) On the street in front of my house
- 3) Adjacent street
- 4) Vacant land near me
- 5) Public car park in the neighbourhood

FOR THE OWNER

1. Age of the building :

2. Is the building designed for :

- 1) Rent
- 2) Private use
- 3) Both

3. Did you take a loan to construct this house?

YES

NO

If YES, what is the type of loan?

- 1) Private
- 2) Investment

4. Do you think that the regulations of REDF should be changed?

YES

NO

If YES, what changes should be made :

5. Who prepared the design of the house?

- 1) Architect
- 2) Yourself
- 3) Other, specify

6. Did you take part in the design of your house?

YES

NO

7. Have you made any changes in the design of the unit?

YES

NO

If YES, what are the changes you made?

8. Building materials used in the construction of the house :

- 1) Brick
- 2) Cement block
- 3) Steel
- 4) Wood
- 5) Aluminium
- 6) Marble
- 7) Paints
- 8) Coral reef stone
- 9) Cement
- 10) Glass
- 11) Other, specify

9. Why did you select this area to live in?

- 1) Near relative
- 2) Near work
- 3) Access to central area
- 4) Planned area
- 5) Services are available
- 6) Supermarket is available
- 7) Near school
- 8) Quiet area (low density)

THESE QUESTIONS SHOULD BE ANSWERED BY THE INTERVIEWER

1. Type of house :

- 1) Historical house
- 2) Traditional (Bayt Shabi)
- 3) Apartment building
- 4) Villa
- 5) Shanti

2. Number of dwelling units in the building?

3. Number of storeys in the building?

4. The area of the dwelling unit (flat) approx. M^2

5. Area of the building approx. M^2

6. Construction technique

- 1) Traditional
- 2) Industrialised building
- 3) Other, specify

استفتاء حول الوحدة السكنية والإسكان بمدينة جدة

					رقم المنزل :
					اسم الشارع :
					اسم الحي :
					اسم الطالب :
					التاريخ :
					(1) الجنسية : <input type="checkbox"/> سعودي
					<input type="checkbox"/> غير سعودي حدد ٠٠٠٠
					(2) السن :
					<input type="checkbox"/> (1) اقل من عشرين سنة
					<input type="checkbox"/> (2) ٢١ - ٣٠ سنة
					<input type="checkbox"/> (3) ٣١ - ٤٠ سنة
					<input type="checkbox"/> (4) ٤١ - ٥٠ سنة
					<input type="checkbox"/> (5) اكثر من ٥٠ سنة
					(3) عدد الاسرة الساكنين بالمنزل <input type="checkbox"/> (1) زوجة
					<input type="checkbox"/> (2) أبناء
					<input type="checkbox"/> (3) بنات
					<input type="checkbox"/> (4) أكارب
					<input type="checkbox"/> (5) خدم
					<input type="checkbox"/> (6) المجموع
					(4) هل هذا الممكن :
					<input type="checkbox"/> (1) ملك
					<input type="checkbox"/> (2) إيجار
					(5) هل هذا أول منزل سكنت به <input type="checkbox"/> (1) نعم
					<input type="checkbox"/> (2) لا
					إذا كانت الاجابة بلا
					(6) أين كنت تسكن قبل هذا المنزل <input type="checkbox"/> (1) في قرية
					<input type="checkbox"/> (2) في مدينة
					<input type="checkbox"/> (3) من آخر في جده
					(7) كم سنة تليتها في هذا المنزل :
					<input type="checkbox"/> (1) اقل من ٥ سنوات
					<input type="checkbox"/> (2) ٦ - ١٠ سنوات
					<input type="checkbox"/> (3) ١١ - ١٥ سنة
					<input type="checkbox"/> (4) اكثر من ١٥ سنة

لجميع

					(٨) عدد الغرف في الوحدة السكنية :
					(١) <input type="checkbox"/> غرفة فيوف رجال
					(٢) <input type="checkbox"/> غرفة فيوف نساء
					(٣) <input type="checkbox"/> غرفة جلوس
					(٤) <input type="checkbox"/> غرفة معيشة
					(٥) <input type="checkbox"/> غرفة نسوم
					(٦) <input type="checkbox"/> مطبخ
					(٧) <input type="checkbox"/> حمامات
					(٨) <input type="checkbox"/> الخـــــــبر حدد
					(٩) الغرف التي بها تكييف : (١) <input type="checkbox"/> جميع الغرف (٢) <input type="checkbox"/> لا يوجد (٣) <input type="checkbox"/> بعض الغرف
					(١٠) هل يوجد فراع خارجي خاص بك :
					(١) <input type="checkbox"/> نعم
					(٢) <input type="checkbox"/> لا
					إذا كانت الإجابة بنعم كم مساحته م ^٢
					(١١) هل انت راقي من مسكن من حيث :
					(١) <input type="checkbox"/> موقع المنــــزل
					(٢) <input type="checkbox"/> الحـــــــسب
					(٣) <input type="checkbox"/> مساحة الوحدة السكنية
					(٤) <input type="checkbox"/> تميم الوحدة السكنية
					(٥) <input type="checkbox"/> الاشخاص اللذين حولك (الجيران)
					(٦) <input type="checkbox"/> الخدمات في الحسب
					(١٢) ماهي الخدمات التي تحتاج الي تطوير :
					(١) <input type="checkbox"/> المجارى
					(٢) <input type="checkbox"/> الاماكن الخضراء
					(٣) <input type="checkbox"/> اماكن لعب الاطفال
					(٤) <input type="checkbox"/> المراقات - الاماكن المفتوحة
					(٥) <input type="checkbox"/> حالة الشوارع من حيث :
					(الارضية - الانارة - السفلتة)
					(١٣) هل يوجد فراع عام (مكان عام) في الحى الذى تمكّن فيه :
					(١) <input type="checkbox"/> نعم
					(٢) <input type="checkbox"/> لا
					إذا كانت الإجابة بنعم هل تستخدم هذا المكان :
					(١) <input type="checkbox"/> نعم
					(٢) <input type="checkbox"/> لا
					(١٤) هل تملك سيارة
					(١) <input type="checkbox"/> نعم
					(٢) <input type="checkbox"/> لا
					إذا كانت الإجابة بنعم أين تولد سيارتك (١) <input type="checkbox"/> مودع خاص
					(٢) <input type="checkbox"/> في الشارع أمام المنزل
					(٣) <input type="checkbox"/> في أرب شارع
					(٤) <input type="checkbox"/> أرب خالية قريبة من المنزل
					(٥) <input type="checkbox"/> موالد عامة في الحى

				(1) ماهو عمر المنزل
				(2) هل هذه العمارة ممتدة : <input type="checkbox"/> (1) ايجار <input type="checkbox"/> (2) سكن خاص <input type="checkbox"/> (3) آخر حد
				(3) هل اخذت قرض لكي تبني هذا المنزل : <input type="checkbox"/> (1) نعم <input type="checkbox"/> (2) لا اذا كانت الاجابة بنعم ماهي مدة هذا القرض <input type="checkbox"/> (1) خاص <input type="checkbox"/> (2) استثماري
				(4) هل ترى ان بعض لوائح صندوق التنمية العقاري الخاصة بالمهندسين يجب ان تغير او تقرر : <input type="checkbox"/> (1) نعم <input type="checkbox"/> (2) لا اذا كانت الاجابة بنعم ماهي التغييرات التي يجب عملها :
				(5) من الذي صمم هذا المنزل : <input type="checkbox"/> (1) مهندس معماري <input type="checkbox"/> (2) نفس المالك <input type="checkbox"/> (3) آخر حد (.....)
				(6) هل شارك في تصميم المنزل <input type="checkbox"/> (1) نعم <input type="checkbox"/> (2) لا
				(7) هل ممتلك تغييرات في تصميم المبنى بعد ان مكنت لبي <input type="checkbox"/> (1) نعم <input type="checkbox"/> (2) لا اذا كانت الاجابة بنعم ماهي التغييرات التي عملت
				(8) مواد البناء : <input type="checkbox"/> (1) طوب <input type="checkbox"/> (2) بلوك اسمنت <input type="checkbox"/> (3) حديد <input type="checkbox"/> (4) خشب <input type="checkbox"/> (5) المونسيوم <input type="checkbox"/> (6) رخام <input type="checkbox"/> (7) بوية (دهانات) <input type="checkbox"/> (8) حجر منقش <input type="checkbox"/> (9) اسمنت <input type="checkbox"/> (10) زجاج <input type="checkbox"/> (11) آخر حد (.....)

				(٩) سبب اختيارك لهذه المنطقة (لأنها) :
				<input type="checkbox"/> (١) قريبة من الأتارب
				<input type="checkbox"/> (٢) قريبة من العمل
				<input type="checkbox"/> (٣) قريبة الى وسط المدينة .
				<input type="checkbox"/> (٤) منطقة مخططة
				<input type="checkbox"/> (٥) لتوفر الخدمات
				<input type="checkbox"/> (٦) لتوفر الاسواق (سوبرماركت)
				<input type="checkbox"/> (٧) قريبة من المدارس
				<input type="checkbox"/> (٨) منطقة هادئة



هذه الاسئلة تجاب بواسطة الشخص الذي يوزع هذا الاستفتاء

				(١) نوع المنزل :	<input type="checkbox"/> (١) بيت تقليدي تاريخي
					<input type="checkbox"/> (٢) بيت شعبي
					<input type="checkbox"/> (٣) عمارة
					<input type="checkbox"/> (٤) فيلا
					<input type="checkbox"/> (٥) آخر (حدد)
				(٢) كم عدد الوحدات السكنية (الشقق) في هذا المنزل	
				(٢) عدد الادوار	
				(١) مساحة الوحدة السكنية تقريبا	م ^٢
				(٥) مساحة المنزل تقريبا	م ^٢
				(٦) طريقة البناء :	<input type="checkbox"/> (١) تقليدي
					<input type="checkbox"/> (٢) استعمل به تقنية عالية
					<input type="checkbox"/> (٣) آخر حدد (.....)

APPENDIX IV

REAL ESTATE DEVELOPMENT FUND

THE DESIGN CRITERIA AND THE BUILT AREA AGREEMENT

المملكة العربية السعودية
مندوق التنمية العقارية

الادارة الفنية

اسمارة المواصفات والمساحات المتعاقد عليها

(على المقترضين قراءة التعليمات الموجودة في الوجه الخلفي قبل تعبئة هذا النموذج)

الاسم :
المدينة :
المساحات حسب رخصة البناء :
المساحات المراد تنفيذها :

مجموع قيم الدفعة الثانية	٩٠	سقف خشب	١٥٠	سقف مسلح بدون قواعد واحدة مسطحة	٢٠٠	خرسانة مسلحة	١	المبكل الانشائي
	٧٥	جبهة واحدة	٧٠	جبهتين	١٢٠	٤ جهات	٢	ارتدادات
مجموع قيم الرفة الثالثة	١١٠	اربع واجهات	١٣٠	اربع واجهات	١٥٠	اربع واجهات	٣	تكسيات خارجية
	١٥٠	ثلاث واجهات	١٢٠	ثلاث واجهات	١٤٠	ثلاث واجهات		
	٧٠	واجهتين	١١٠	واجهتين	١٣٠	واجهتين		
	٣٠	واجهة واحدة	٧٠	واجهة واحدة	١١٠	واجهة واحدة		
مجموع قيم الرفة الرابعة	٢٥	جانب مكون من قطعة واحدة	٦٠	جانب مكون من قطعتين	١٠٠	جانب كامل (٤ قطع) منظف . مضط كرسي بيده	٤	أدوات صحية
	٢٥	صبة استنسية	٨٠	كمر رخام او بدني	١٥٠	١٥ رخام او ٢٠ رخام اميلد	٥	بلاط
مجموع قيم الرفة الخامسة	٦٥	دهشمير او دهان بدون معجون	٨٥	دهان مع معجون أكثر من ٥٠	١٠٠	١٥ قيمان او ورق جدران بوقية الدهان بالمعجون	٦	تكسيات داخلية
	٥٥	حديد	٧٠	خشب ٥٠ أو أكثر	٨٠	٣٠ زان او مهاضي أو المنيوم	٧	أبواب
مجموع قيم الرفة السادسة	٤٥	اربع واجهات	٥٥	اربع واجهات	٧٠	اربع واجهات	٨	نوافذ
	٤٠	ثلاث واجهات	٥٠	ثلاث واجهات	٦٥	ثلاث واجهات		
	٣٥	واجهتين	٤٥	واجهتين	٦٠	واجهتين		
	٣٠	واجهة واحدة	٤٠	واجهة واحدة	٥٥	واجهة واحدة		

أتمهد بتنفيذ المواصفات المذكورة اعلاه وإذ لم أترم بذلك فللمندوق الحق في تخفيض مبلغ القرض حسب

التوقيع

ما يراه وعلى ذلك أوقع .

للاستعمال من قبل الادارة فقط

المساحات الموافقة على تنفيذها :
مبلغ القرض حسب الكلفة = تقدير كلفة المتر المربع x المساحات الموافقة على تنفيذها x ٧٠ %

= الحد الاعلى لمبلغ القرض حسب الكلفة

= مبلغ القرض المعتد
لدفعة الاول = مبلغ القرض المعتد x ١٠ %

اسم المستول

التوقيع

التاريخ

APPENDIX V

INTERVIEW WITH AN OLD MAN (OMER M. BAFARAJ) IN JEDDAH

The interview was conducted in 'Al Saheifah' district, from 4.30 to about 6.30 pm on the 18th February 1987.

I started the interview by talking about things in general and by asking the person's name and enquiring about his health and aspects of his everyday affairs. After that we began talking about the subject of the research.

Question : My father*, how many years have you lived in Jeddah?

Answer : Oh, my son, it is a very long time, approximately fifty years. When I came from South Yemen, (Hadramaut), I asked my relatives who came here before me, if it would be possible to live with them whilst I tried to find another place, where I could build a shelter for myself and my wife. I then selected this district.

* The term "My father", is one of respect and endearment which is shown to older people. It puts them at ease, allowing them to talk freely and it makes a good impression.

Question : Is it possible to tell us anything about this area, from the first day you came up until today?

Answer : Yes. When I came here, Al Saheifiah district, there was nothing except for one house. (He pointed to an old house in front of his own house, which is nowadays empty and nobody lives in it.) This area outside the Jeddah wall was a desert, with nothing in it except a few desert trees and sheep. I selected this area for many reasons :

- 1) I could not find a reasonably priced plot of land inside the Jeddah wall.
- 2) I did not have the money to buy a plot of land and construct a house.
- 3) The owner of that house, the old house that I mentioned before, belongs to one of my relatives.
- 4) It is the nearest area to old Jeddah where I work (he works with the old houses and sometimes on the sea).

Question : You have mentioned that you worked in the old houses of Old Jeddah, what was your job?

Answer : Yes, I worked on the old houses. In the beginning I worked as a general labourer, and after that, I worked as a builder's assistant.

Question : How long did the construction of the traditional house take?

Answer : This depends upon the size and financial situation of the family. As we all know that the families were very large, extended families, the father with his children, and married sons lived in one house. As the family grew so did the house. Therefore, the construction of the house took a long time. Generally the construction of the three to four storey houses took more than two years.

Question : Was the builder an inhabitant of Jeddah, or was he from outside Jeddah?

Answer : This story is very long. The most important thing is that most of the builders at that time, the time when I worked on the old houses, were local builders. However, it is said that the pilgrims have had a great role in training and educating the local builders. This is because during the time of Hajj, many people came from all over the world, and amongst the pilgrims there were builders, craftsmen, etc., and some of these people participated and worked in house construction and other work while they were here.

Question : Did the pilgrims stay a long time in Jeddah?

Answer : Maybe they stayed for up to three months or more, this was because there were no transport services like nowadays, so during this time people used to work.

Question : How did you construct your house?

Answer : I constructed my house firstly with wood (Sandakah). The wood was brought from old Jeddah. When they used to build houses there were many pieces left, so I collected them, and with wood from old boats I constructed the house, (shelter). This shelter consisted of one room, toilet, and a wall surrounding the property. I spent most of the daytime working either on the sea or in the old houses, it was after this that I built this house with mud.

Question : From where did you bring the mud and who built the house?

Answer : My sons and I did most of the work, ie. we worked together after I came home from my job, as mentioned before, we made mud bricks in that area, about ten to twenty metres from this house, because it has a large quantity of mud. Sometimes our friends joined us to help prepare the mud. After we had made a reasonable amount of mud bricks we brought them to the site and built the first room. After that was completed, I demolished the wooden room (Sandakah) and built another room for my sons. Then after ten years I built this house with cement blocks instead of mud.

Question : Why did you decide to build your house with cement blocks?

Answer : Most of my neighbours' houses are made with cement blocks and some of them had built second and third floors, so my house was the only one left which was built of mud; it was for this reason that I decided to build it with cement blocks.

Question : Did you build it by yourself?

Answer : No, my situation is different now, I am getting older and my financial situation is getting better; this has enabled me to hire a contractor to build my house for me, and this is what has happened. (I selected a contractor to construct my house.)

Question : Did you participate in the design of your house?

Answer : Yes, I did almost the whole design, with some guidance from the builder.

Question : How did you design your home?

Answer : The site was quite big and I have two old sons, my idea was to enable us to live together, so I divided the site into three parts and arranged the rooms in each part to satisfy my own goals. After that the builder came and plotted the foundations and then started to dig; soon after that the house was completed.

Question : Where did you live when the old house was demolished?

Answer : I rented a flat near to my old house, after the cement block house was completed I demolished the old house, as you can see. I chose to rent the nearest flat because I wanted to supervise and check the work being done to my house.

Question : Was there any space left for a courtyard?

Answer : No. I have built on all the site.

Question : Why did you leave space for a courtyard in the mud house while neglecting it in the cement block house?

Answer : As I said before, I needed all the space to live with my sons on the same site, it was for this reason I had to build on all the site.

Question : What kind of activities did you use the courtyard for?

Answer : I used it as a sleeping area, especially during the summer time at night, for washing line space, as a playground for my grandchildren, etc.

Question : You have not got a courtyard at the new house, do you neglect the aforementioned activities?

Answer : No. I am using the roof of this house as a courtyard as an alternative.

Question : Have you made any changes in the house since you built it?

Answer : Yes, I built another storey, but I used only half of the area available so I could continue using the rest of the space for the same purposes as mentioned before.

Question : What about your relationship with your neighbours?

Answer : My relationship was excellent with my neighbours, unfortunately these days most of them have left this area and moved to other districts in Jeddah such as, Al Rudah, Al Slaamah, Al Hamra districts, Al Medina road, etc. The relationship today has changed and has become much weaker than the previous one.

Nowadays, the majority of people have cars, and if they want to go anywhere, then they go by car, whereas in the past we used to walk and it was then the opportunity arose to meet and talk to the people and build up a good sense of community spirit, and friendships were made. Another factor which has added to the decline in the relationships between people, is the fact that not only the older people used to meet to chat and enjoy themselves, but also the children. Since the redevelopment of many areas, there is now a lack of meeting places, this has meant community ties are being broken and as a result, some traditions and their norms have started to disappear.

Question : You have said before that most of your neighbours have left this area and now live in Medina Road. What are the reasons behind this change?

Answer : I think that the first reason is their financial situation. Also people want to live in the new planned districts where there are wide streets and there are many other services available. The second reason is that, most people prefer to live independently, in houses such as villas.

Question : Why don't you move to a new house in another district with them?

Answer : NO. There are many reasons which encourage me to stay in this area :

- 1) Is is near to the city centre.
- 2) I like to stay near the old houses. I feel comfortable here, especially when I walk down the narrow streets in the area, because they remind me of the past. Also, I am getting older and I cannot cope with moving, and anyway, all my requirements are met, either in this district or very near to it.
- 3) I have good neighbours around me, and they have encouraged me to forget about moving.

Question : What about your sons, are they still living with you in the same house?

Answer : Yes, all my children are living with me, except for one daughter, she is married and now lives with her husband in Medina road.

Question : Finally, what is your impression of Jeddah in the past and present?

Answer : When I remember the old Jeddah and its living environment, I feel very sad about the present situation. All the people in the past used to live together as a family, they all knew each other, they visited and helped each other. I think the reasons behind that were FIRST the area of old Jeddah is very small, SECOND the narrow shaded streets, THIRD there were no cars to disturb the pedestrians' movements. Nowadays, the city has grown very much, and this has affected the relationships amongst the people, as well as amongst the family. Today it is very rare that the neighbours know each other, also the children want to leave their families and parents when they marry, etc. Also the cars and the introduction of high rise buildings affect the image of the city.